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DISTRIBUTION OF ENDEMIC GOITER IN THE UNITED STATES AS SHOWN BY THYROID SURVEYS

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A knowledge of the distribution of endemic goiter in the United States is essential both to an understanding of the causation of the malady and the intelligent application of prophylactic measures. Obviously, when accurately determined fluctuations in distribution are known, clues to the remote etiology of simple thyroid enlargement will be nearer at hand. Likewise, a knowledge of distribution enables the formulation of effective plans for prophylactic endeavor. In the present article an effort has been made to assemble the known facts concerning the distribution of endemic goiter in the United States. While due diligence has been exercised in compiling the data, it is probably far from complete. However, the publication of a list of thyroid surveys may cause additional work of similar character to be made known.

Goiter among drafted men.—Prior to the World War no information concerning the nation-wide distribution of goiter was available, for relatively few surveys had been made. The draft examinations, however, provided valuable information concerning both simple and exophthalmic goiter. Manifestly, the draft examinations, particularly as they applied to goiter, were subject to certain unavoidable handicaps which, to some extent, affected the accuracy of the observations. In the first place the subjects of the examinations were men of military age, in whom endemic goiter is likely to be less prevalent than among adolescent girls. Secondly, the examiners were physicians with varying degrees of skill and experience in diagnosing thyroid disorders. Consequently the various findings may not be strictly comparable with each other.

Another difficulty with the draft figures, as customarily presented, is the failure to indicate variations in distribution of goiter within the individual States. Inasmuch as differences in goiter incidence within relatively small areas are common, it is desirable that the information derived from the draft examinations be supplemented. However, even with their manifest limitations the draft figures represent a reliable general index of nation-wide goiter incidence.

Table 1, in which is shown the incidence of endemic goiter among men examined for military service during the World War, is reproduced because of its continued interest. Generally speaking this tabluation indicates a greater frequency of the malady in the Pacific Northwest and in the Great Lakes Basin.

TABLE 1.—*Number of instances of endemic goiter and ratio per 1,000 examinations among 2,510,701 men examined for military service in the United States during the World War (by States)* [1]

State	Number of cases	Ratio per 1,000	State	Number of cases	Ratio per 1,000
Idaho	336	26.91	Kentucky	90	1.41
Oregon	421	26.31	District of Columbia	16	1.39
Washington	832	23.40	Kansas	48	1.25
Montana	576	21.00	Arizona	10	1.21
Utah	185	15.72	New York	408	1.19
Wyoming	102	15.37	Maryland	35	.91
Wisconsin	886	14.02	South Carolina	37	.94
Alaska	16	13.14	Connecticut	32	.89
Michigan	1,131	11.43	New Mexico	9	.88
North Dakota	156	8.73	Oklahoma	44	.72
Minnesota	578	8.04	New Hampshire	6	.70
West Virginia	307	7.89	Maine	13	.66
Illinois	1,397	7.79	Mississippi	24	.64
Iowa	458	6.68	Louisiana	32	.62
Indiana	464	6.49	Delaware	3	.59
Nevada	21	6.38	Alabama	29	.56
Ohio	798	5.59	Rhode Island	8	.55
Colorado	119	5.29	Georgia	33	.52
California	359	4.45	New Jersey	33	.43
Pennsylvania	829	4.10	Arkansas	17	.40
South Dakota	85	4.09	Massachusetts	29	.32
Missouri	342	3.99	Texas	36	.30
Virginia	188	3.38	Florida	6	.25
Nebraska	63	2.14	State not specified	186	1.96
Vermont	18	2.14			
Tennessee	120	1.96	Total	11,971	4.35
North Carolina	100	1.81			

[1] Table 18, p. 111, of Defects Found in Drafted Men, by A. G. Love and C. B. Davenport. Prepared under the direction of the Surgeon General, M. H. Ireland, War Department, Washington, D. C., 1920.

Independent thyroid surveys.—In addition to assembling again the findings of the draft examinations there are presented in the present article the results of thyroid surveys made in various sections of the United States. Quite naturally the results of independently made goiter surveys can be accepted only after making due allowances for the conditions under which the figures were secured. This reluctance to accept the findings is due to several causes.

The chief difficulty in comparing goiter statistics in different sections of the country arises from the fact that the dividing line between the normal and enlarged thyroid gland is not definitely known. Consequently a thyroid which is considered normal in a section having a considerable incidence may be regarded and often is recorded as a definite enlargement in districts of slight prevalence.

Another obvious defect in thyroid surveys made by independent workers results from the failure to employ similar methods of examination, as well as a common means of classifying the several degrees of goiter detected. These facts, when considered in connection with the varying skill and experience of the examiners,

militate to a considerable extent against the usefulness of the data for purposes of comparison.

However, the information derived from the various surveys is of value as illustrating the widespread interest which is being taken in the solution of the goiter problem. Moreover, the evidence adduced by thyroid surveys among individuals of elementary grades, high school, and college, is largely confirmatory of the results of the draft figures.

An interesting point which has been brought out in connection with the goiter surveys is the finding of goiter in places in which its presence has heretofore been unsuspected. Many variations in incidence would undoubtedly be brought to light by additional systematic surveys. Consequently, valuable data relating to goiter would become available.

How the data were secured.—The material presented in Table 2 was obtained from two principal sources: First, by consulting the literature and, second, by direct correspondence with all State, county, and city health officers in the United States, the last-named officials being located in communities with populations in excess of 10,000. More than 95 per cent of the health officers from whom information was requested by the Public Health Service, promptly submitted replies concerning the presence or absence of simple thyroid enlargement. In many instances valuable collateral comment was forthcoming at the same time.

In Table 2 the available information has been arranged to show the number of persons of each sex examined and also the percentage of thyroid enlargements recorded. In some instances this information is not complete; in others, only estimates are presented. From the many localities not listed in Table 2 the information was elicited that thyroid surveys had not been made. However, sufficient survey data are at hand to enable the formulation of rather definite opinions concerning the distribution of simple goiter in many sections of the United States.

In several places, among which may be mentioned Rochester, N. Y., Lorain, Ohio, and Aroostook County, Me., resurveys have been made. Provided such reexaminations are conducted by the same observers, under similar conditions, the resulting information serves to indicate changes, or lack of changes, which have either occurred naturally or followed the institution of prophylactic measures. Authentic facts of this character are valuable contributions to the epidemiology of goiter.

The need for uniformity in making surveys.—Particularly noteworthy in the tabulation of surveys is the irregularity of goiter distribution within many States. This condition may be due either to actual variations in incidence or to differences in the methods of

examination employed by the examiners. Conceding the desirability of a more accurate knowledge concerning the distribution of endemic goiter in the United States, there would appear to be need for careful schooling of examiners in diagnostic procedure, thereby insuring findings of comparable character. Particularly valuable in obtaining such results are personal study and practice, supplemented by instruction from persons familiar with normal and abnormal thyroid glands.

Instructions for making thyroid surveys are available in several publications.[2] However, for practical purposes a theoretical knowledge can not supplant the advantages accruing from actual experience. As procedure becomes standardized it is conceivable that valuable information regarding the epidemiology of goiter will be forthcoming. Furthermore, such data will be useful in encouraging the application of prophylactic measures where they are most needed.

In this connection it should be pointed out that a thyroid survey is a time-consuming procedure and is not to be undertaken to the exclusion and detriment of more important public-health projects. Frequently a thyroid survey can be made as a collateral portion of general physical examinations. When this policy is pursued, time is conserved, and at the same time possible correlations between thyroid enlargement and other physical states may be indicated.

SUMMARY

1. The distribution of goiter in the United States, as disclosed by numerous thyroid surveys, parallels the goiter findings among drafted men.

2. There are manifestly wide variations in the methods of determining thyroid enlargements. The classifications of various degrees and types of involvement also range within wide limits. Uniform procedure is a necessity if findings in different sections of the country are to be compared.

3. Based upon incidence, wholesale prophylaxis for endemic goiter is apparently not required in all States.

4. Individual thyroid surveys disclose foci of endemic goiter in localities not previously regarded as being located in goitrous territory.

5. Resurveys are desirable for the purpose of learning the extent and character of changes occurring either under natural conditions or after widespread prophylaxis has been instituted.

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[2] Marine, Lenhart, Kimball, and Rogoff: The Prevention of Simple Goiter. Western Reserve University Bulletin, vol. 26, No. 7, July, 1923.

Robert Olesen: Thyroid Survey of 47,493 Elementary-School Children in Cincinnati. Public Health Reports, vol. 39, No. 30, pp. 1777-1862 (July 25, 1924). (Reprint No. 941.)

Robert Olesen: Endemic Goiter in Colorado. Public Health Reports, vol. 40, No. 1, pp. 1-22, (Jan. 2, 1925). (Reprint No. 983).

TABLE 2.—*Number of examinations and percentage of thyroid enlargements reported in 40 States by different observers, according to age and sex of the individuals examined, and location of the places*

Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
ALABAMA									
Florence	15–18		158			18.3		W. D. Hubbard	
Baldwin County				5,000			0.08	G. C. Marlette	Very rare.
Colbert County				36,000			.06	W. T. Burkett	Entire population.
Dallas County								L. T. Lee	Unknown.
Franklin County								L. J. Graves	Very little goiter.
Limestone County								L. R. Murphree	Not much goiter.
Mobile County								C. A. Mohr	No goiter problem.
Morgan County								H. C. McRee	Not many found, but increasing.
Talladega County				3,000			.1	J. H. Hill	
ARIZONA									
Cochise County				3,500			0.08	R. B. Durfee	Not a local problem.
CALIFORNIA									
San Francisco	10–14	2,795	6,379	9,174	4.2	17.4		W. R. P. Clark	
Santa Cruz	12–18		372			58.6		E. B. Philbrook	
Monterey County								R. C. Main	Very little goiter.
Orange County								V. G. Presson	Do.
San Joaquin County.								J. J. Sippy	Goiter rare.
San Luis Obispo County.								H. K. Sutherland.	Not prevalent.
San Francisco County.								W. R. P. Clark	Does not exist in endemic form.
11 counties							(1)	State board of health.	Circular letter.
CONNECTICUT									
Stratford								DeRuyter Howland.	Quite scarce.
28 localities	10–23	5,797	6,609		7.0	29.4		United States Public Health Service.	
COLORADO									
Colorado Springs		853	846		38.2	44.6		O. M. Gillette	
Denver			9,493			27.3		V. Van Meter	White girls.
Do			163			26.3			Colored girls.
39 localities	2–19	1,630	1,644		10.1	23.3		Colorado Health Conference.	
8 localities		825	937		53.3	73.4		State board of health.	
Do	2–21	1,495	1,214		26.5	37.9		United States Public Health Service.	
FLORIDA									
Jacksonville								H. N. Parker	Not regarded as a goitrous area.

[1] Present.

TABLE 2.—*Number of examinations and percentage of thyroid enlargements reported in 40 States by different observers, according to age and sex of the individuals examined, and location of the places*—Continued

Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
GEORGIA									
Brunswick								H. L. Akridge	Goiter rare.
Decatur County								M. A. Fort	Very rare.
Hall County	10–20			3,000			0.8	B. D. Blackwelder.	
Laurens County	12–18					1.0		O. H. Cheek	
State								E. G. Jones	Relatively rare.
ILLINOIS									
Alton								D. F. Duggan	Quite a number of goiter cases Ward school.
Chicago		171	255		19.1	40.7		Koch	
Do				145,565			6.2	Department of health.	
Do								C. G. Buford	Frequent among children.
Do		193	605		6.7	17.8		E. T. Olsen	Men and women.
Chicago Heights							3.5	E. H. Hay	School children.
Decatur	5–12			5,000			75.3	William S. Keister.	
East St. Louis								J. T. Counors	Very rare.
Galesburg								E. D. Wing	Not troubled with goiter.
Oak Park	12–15		731			28.3		F. S. Needham	
Do						34.7		W. J. Potts	High school, 1924.
Rock Island								Harry Frey	Not very prevalent.
Cook County								H. L. Wright	Plenty of cases.
State		10,829	4,325		4.6	24.5		J. H. Beard	High school graduates.
University of Illinois.			609			45.3		R. P. Guilder	
Western Illinois Teachers College	14–62		596			38.9		E. B. Ball	An outstanding defect.
INDIANA									
Elwood								H. W. Fitzpatrick.	Many cases.
Fort Wayne	10–18					62.0		D. R. Bemminghoff.	
Hammond								William A. Buchanan.	To a certain extent.
Do							76.0	H. S. Kuhn	3 grade and 1 high school.
Terre Haute	11–15			1,904		82.2		George T. Johnson.	
University of Indiana.						32.8		F. H. Luck	
KANSAS									
Topeka	5–18	3,345	3,703		30.9	49.7		E. G. Brown	
McPherson County.	5–18	780	720		38.0	56.0		L. S. Steadman	
KENTUCKY									
Fayette County				2,593			0.48	J. S Chambers	

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Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
LOUISIANA									
Lafourche Parish				553			21.7	H. S. Smith	"River" parishes.
St. Charles Parish	6–18	583	583		35.7	67.6		L. C. Scott	
St. James Parish	6–18	839	809		55.7	71.9		do	
Washington and St. Tammany Parishes	6–18	1,158	1,227		47.5	58.2		do	"Forest" parishes.
MAINE									
Aroostook County		690	979		7.2	44.3		C. F. Kendall	1923.
Do		833	1,039		8.9	38.8		do	1925.
MARYLAND									
Carroll and Howard Counties.								W. C. Stone	Many adolescent girls with some enlargement.
MASSACHUSETTS									
Berkshire towns around Pittsfield.					4.0	17.0		George H. Bigelow.	
Boston					.0	7.0		do	
Greenfield				600			1.6	George P. Moore	
Newburyport								W. Thurston	No cases of goiter for number of years.
Pepperell and Townsend.					.0	5.0		George H. Bigelow.	
Wellesley College						16.0		Canavan	From all parts of country.
57 localities	13–20	7,140	10,057		8.7	22.0		Public Health Service.	1925.
MICHIGAN									
Adrian				9,000			0.3	G. Dock	1895.
Alma	4–21	161	193		44.0	56.0		C. F. DuBois	College.
		678	722		41.0	59.0		do	Public school.
Calumet				14,000			.3	G. Dock	1895.
Central Mine				2,000			.5	do	1895 (a few miles from Calumet).
Gaylord							25.0	do	1895.
Grand Rapids		12,631	13,584		32.0	67.0		T. Reed and H. T. Clay.	
Iron Mountain							54.0	State Department of health	
Saginaw				12,742			23.4	W. DeKleine and S. Yntema.	
Houghton County	5–18	6,860	6,865		58.1	70.5		R. M. Olin.	
Macomb County	5–18			3,292			35.7	E. F. Eldridge	North of Berea Sandstone.
Do	5–18			6,246			20.2	do	South of Berea sandstone.
Midland County	5–18	5,152	1,811		24.4	41.1		R. M. Olin	
Olmstead County	9–14						4.4	D. C. Mebaue	City schools.
Do	9–14						8.0	do	Rural schools.
Wexford County	5–18	1,963	2,021		47.6	63.4		Department of health.	

TABLE 2.—*Number of examinations and percentage of thyroid enlargements reported in 40 States by different observers, according to age and sex of the individuals examined, and location of the places*—Continued

Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
MICHIGAN—Continued									
4 counties (Houghton, Wexford, Midland, Macomb).	5–18			31,612			47.2	Department of health.	
Torch Lake and Schoolcraft townships.	1–61	790	993		44.9	79.6		S. Levin	
State				583			30.3	do	Registrants.
MINNESOTA									
Austin							9.5	C. C. Lock	816 enlargements in first, fifth, and ninth grades.
Duluth	5–14	6,284	5,974		59.0	65.0		J. M. Robinson	
Minneapolis	0–18	843	1,063		59.2	73.8		Chester A. Stewart.	
Winona County							40.0	W. V. Lindsay	
Nicollet County		134	201		12.0	45.3		T. Clark and J. N. Gehlen.	
St. Louis and Cook Counties.		639	678		49.1	76.1		A. R. Blakey	
13 localities	10–19	1,770	2,291		40.9	71.0		Public health service.	Public health survey. Reprint 963.
MISSISSIPPI									
Meridian								T. J. Houston	Very few goiters.
Jones County								J. M. Kittrell	Light incidence.
Harrison County				50,000			.07	D. J. Williams	Estimate.
State							0.16	H. A. Gamble	
MISSOURI									
Craig	6–18		50			46.0		R. R. Miller	
Springfield								Lon Sharp	Not prevalent.
St. Louis							3.0	B. Lloyd	
Cape Girardeau County.							5–12.0	E. E. Huber	In swamp section; very little goiter.
New Madrid County.								W. N. O'Bannon.	25 cases in school children in county.
MONTANA									
Anaconda								G. R. Soper	A great many goiters.
Missoula County	5–14			3,001			20.4	F. O. Peak	
7 counties	6–20	4,631	4,690		13.4	32.0		Fred T. Foard	
University of Montana.					14.0	43.0		F. O. Peak	
NEBRASKA									
State								W. H. Wilson	Comparatively free.

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Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
NEW HAMPSHIRE									
Manchester				5,745			0.2	H. A. Streeter	
NEW JERSEY									
Irvington	6-17	982	1,168	2,150	3.5	14.7		H. S. Reichle	
NEW MEXICO									
Dona Ana County							0.1	C. W. Gerber	
NEW YORK									
Cohoes								E. M. Bell	20 females, 5 males with goiter.
Ithaca					25.0	50.0		Health department.	
New York City			11,084			20.3		I. H. Goldberger and A. K. Aldinger.	
Do	8-21	783	11,084		5.4	15.9		Frances Cohen	
Do			3,000			3-4.0		City department of health.	Washington Irving High School, 1917.
Do	14-16			5,000			1.6	do	20 girls, 64 boys, in mercantile office, 1922.
Do	20-30		7,500			3.0		J. C. Horan	Employees of Metropolitan Life Ins. Co.
Rochester						25.0		Department of health.	High school and college.
Do								do	3,844 cases among school children before iodizing water; 1,766 after.
Do								do	Incidence per year, 1923—3,844; 1924—1,926; 1925—2,010.
Saratoga Springs								C. B. Small	Very infrequent.
Syracuse				23,303			15.0	City department of health.	Grammar schools.
Do							20.0	do	High schools.
Do				7,149	26.6	73.4		do	Parochial schools.
Do				25,875			16.0	do	Public schools.
Tonawanda				2,636			41.8	J. E. Mabee	1924-25.
Do				2,116			22.2	do	1925-26.
State				595,206			2.6	I. H. Goldberger and A. K. Aldinger.	Urban and rural.
NORTH CAROLINA									
Asheville								D. E. Sevier	Very little goiter.
Winston-Salem								R. L. Carlton	Goiter not a problem.
Hyde County								Clyde Ruff	No goiter.
State		49,350			0.2			State department of health.	Drafted men.

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Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
OHIO									
Akron	9–18		3,872			56.4		O. P. Kimball	
Do			9,679			48.64		Marine and Kimball.	
Cincinnati	6–17	23,710	23,783		26.6	39.8		Public Health Service.	
Cleveland			406			37.69		Marine and Kimball.	
Glendale				363			29.2	O. P. Kimball	5 schools and kindergarten.
Hamilton				4,251			39.0	A. L. Smedley	
Lorain	6–16			3,455			17.9	W. S. Baldwin	1921–22.
Do	6–12			2,938			14.6	do	1922–23.
Do	6–12			3,447			19.4	do	1924–25.
Do	16–18	1,191	931		13.0	30.0		do	Examinations for work permits.
Norwood				4,701			40.3	H. Wittenberg	
Springfield							24.0	O. M. Craven	Ratio of girls to boys, 4 to 1.
Warren			925			24.43		Marine and Kimball.	
Allen County							7.0	J. J. Sutter	
Ashtabula County								W. S. Weiss	Incidence of goiter same as for all of northern Ohio.
Belmont County	5–10	908	831		22.0	36.0		F. R. Dew	
Butler County				500	20.0	40.0		C. J. Baldridge	
Coshocton County				1,850			36.2	D. M. Criswell	
Crawford County	6–16			1,603			56.0	G. T. Wasson	
Delaware County				3,048			29.3	A. J. Pounds	
Geauga County	5–14			2,500	20.0	40.0		G. L. Lyne	
Mahoning County					35.0	45.0		J. F. Edder	
Ross County								G. E. Robbins	Quite prevalent.
Washington County.		2,194	2,043		24.5	35.7		A. G. Sturgiss	
Wayne County	5–14						40.0	C. D. Barrett	
Marion		1,525	1,697		20.0	41.0		W. J. Weiser	
OKLAHOMA									
Oklahoma City				1,496			10.9	G. F. Mathews	2 counties.
Le Flore County							.33	W. F. Lunsford	
OREGON									
Newport		620	1,647		10.8	26.1		W. C. Belt	Men and women (1916).
Portland		407	2,279		27.0	56.2		City Club's public health section.	
Do					30.0	60.0		J. Earl Else and B. Peden.	
Do				4,698			42.2	H. A. Cary	
Douglas County				1,253			7.6	W. C. Belt	1925.
Do				1,583			8.6	do	Do.
Do				1,933			13.7	do	1926, south end of county.

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Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
PENNSYLVANIA									
Bradford								C. L. Peterson	Prevalent in a small way.
Erie		11,401	11,702		2.4	9.8		H. R. Steadman	
Do						25.0		do	High school.
New Castle								W. L. Steen	Quite prevalent.
Pittsburgh	4–21	43,555	54,218		33.16	50.92		H. J. Benz	
State							2–3.0	Goldberger and Aldinger.	
RHODE ISLAND									
Newport								Edw. Murphy	Not common.
Providence								S. D. Gage	Very few cases.
Westerly								S. C. Webster	Not common.
SOUTH CAROLINA									
Florence								P. H. Brigham	No appreciable number of cases.
TENNESSEE									
Gibson County							3.0	F. L. Roberts	Practically no goiter.
Obion County				10,000			.1	J. W. Dennis	
Rutherford County.				1,869			3.79	H. S. Mustard	White children.
Do				983			4.88	do	Colored children.
State								E. L. Bishop	Percentage low.
TEXAS									
El Paso								George Turner	No cases.
Denison								Alex. W. Acheson.	Extremely rare.
UTAH									
Alpine							57.0	J. F. McClendon.	
Brigham City							29.0	do	
Farmington							54.5	do	
Fort Duchesne							71.7	do	
Goshen							15.0	do	
Huntsville							41.1	do	
Kansas							46.4	do	
Kaysville							49.1	do	
Lakeview							6.0	do	
Levan							73.4	do	
Logan City							40.5	do	
Millcreek							42.5	do	
Milford							23.0	do	
Mount Pleasant							58.6	do	
Murray							34.4	do	
Nephi							64.3	do	
Oak City							82.2	do	
Ogden							53.0	do	
Park City							42.2	do	
Parowan							69.1	do	

TABLE 2.—*Number of examinations and percentage of thyroid enlargements reported in 40 States by different observers, according to age and sex of the individuals examined, and location of the places*—Continued

Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
UTAH—Continued									
Payson							6.0	Curtis	
Salt Lake City							41.6	J. F. McClendon.	
Santaqun							45.0	do	
Do							67.0	Curtis	
Syracuse							23.1	J. F. McClendon.	
Vernal							40.8	do	
Virgin Valley						75.0		G. W. Middleton.	Women.
West Warren							7.1	J. F. McClendon.	
Iron County							44.0	M. J. McFarlane.	
Kane County	9–18	153	170		61.0	70.0		H. J. Sears	
Millard County	9–18	541	604		43.8	57.5		do	
Washington County.	9–18	526	621		32.0	62.0		do	
10 counties				69,256		30.0	54.3	Board of health	
State				95,488			42.7	do	
Do	10–14			30,413	36.4	59.9		do	
Butler School							67.3	J. F. McClendon.	
University of Utah				1,945	31.2	56.6		Porter	
VIRGINIA									
Lynchburg	5–19	2,380	2,967		6.0	15.9		M. G. Perrow	
Do	14–19	460	678		6.3	24.7		do	
Albemarle County								G. B. Young	Very little goiter.
Arlington County				4,000			4.5	P. M. Chichester.	
Fairfax County								W. P. Caton	Do.
9 counties				6,432			12.7	Clark and Pierce	
52 counties							(2)	E. G. Williams	Circular letter, State board of health.
34 counties							(3)	do	
83 counties							(4)	do	
WASHINGTON									
Montesano	11–18			159			27.04	D. C. Hall	
Do	5–14			466			23.42	do	
Seattle	5–14				42.0	48.0		do	
Do	14–18	575	521		38.3	65.6		do	
Tacoma	8–20			310			10.6	W. J. Kerr	Indians.
Chelan County	5–14			2,000			46.5	P. T. West	
Yakima County							46.0	H. H. Smith	Circular letters.
State	12–18				65.0	75.0		J. Tate Mason	Estimate.
Camp Lewis		21,182			21.0			W. J. Kerr	
University of Washington.				13,000	26.37	33.2		D. C. Hall	1914.
WEST VIRGINIA									
Charleston						75.0		H. C. Lonsberry	
Do						60.0		David Littlejohn.	
Grafton		949	949	1,898	8.6	24.5	16.5	C. C. Hedges	
Do					36.0	64.0		David Littlejohn.	
Do					29.0	56.0		W. T. Henshaw	

[2] Goiter reported prevalent by 194 physicians (393 physicians reporting).
[3] Goiter reported somewhat prevalent by 44 physicians (234 physicians reporting).
[4] Goiter reported not present by 285 physicians (605 physicians reporting).

TABLE 2.—*Number of examinations and percentage of thyroid enlargements reported in 40 States by different observers, according to age and sex of the individuals examined, and location of the places*—Continued

Place	Ages	Number examined			Percentage with goiter			Reported by—	Remarks
		Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
WEST VIRGINIA—Continued									
Ethel							59.0	David Littlejohn.	
Huntington							50.0	do	
Logan							63.0	do	
Martinsburg							14.35	do	Adults.
Montgomery							43.4	do	Colored.
Do							21.0	do	White.
Three Forks							53.0	do	
Gilmer County				720			97.0	H. C. Douglas	
Harrison County				6,704			25.1	V. A. Selby	
11 counties				13,836			8.91	Clark and Pierce.	
WISCONSIN									
Altoona, Fairchild, and Augusta.				531			31.0	L. W. Hutchcroft.	
Ashland							90.0	Hertzman	
Barron City					35.0	47.0		V. A. Gudex	
Beloit						60.0		L. M. Field	Junior high school.
Do						80.0		do	High School.
Drummond								L. W. Hutchcroft.	17 students free of goiter.
Eau Claire	5–12	1,963	2,302		29.0	39.0		J. F. Farr	
La Crosse	7–12	3,126	3,232		12.0	23.6		V. A. Gudex and A. M. Murphy.	
Lake Nebagamon							100.0	L. W. Hutchcroft.	
Long Lake							75.0	A. D. DeNeveu	
Marinette							44.46	L. W. Hutchcroft.	
Marshfield							65.0	do	
Menomonie	−12				22.0	50.0		V. A. Gudex	
Mercer				120			97.5	A. V. DeNeveu	
Monroe							33.3	Anna Stuppi	
Neenah							45.0	Ada Garvey	
Oshkosh							50.0	do	
Rhinelander							75.0	A. V. DeNeveu	
Stevens Point							60.0	F. A. Southwick	
Do							8.0	do	Kindergarten.
Do						58.0		do	Above kindergarten.
Viroqua				26			69.2	G. W. Henika	Training school for teachers
Wausau								L. F. Bugbee	500 children in city with goiter.
Eau Claire County							20.0	Mollie Smith	Rural schools.
La Crosse County							75.0	L. W. Hutchcroft.	In some sections 95 per cent.
Pepin County	12+			767	46.0	70.0		V. A. Gudex	
Polk County	12+			2,975	29.0	52.0		Karstens	
Alton Township							50.0	L. W. Hutchcroft.	
University of Wisconsin.				13,706			28.0	R. C. Blankinship.	1921.
Milwaukee Downer College.	12–22		1,435			7–37		J. G. Taylor	14 States represented.
WYOMING									
Natrona County				6,000			15.0	H. Garst	
INDIANS									
15 localities							0.1–1.5	E. L. Munson	1895.

REPORT OF THE COMMITTEE ON SANITARY CONTROL IN THE DEVELOPMENT OF GROUND-WATER SUPPLIES[1]

This report considers the sanitary defects affecting the safety of water obtained from various types of ground-water supplies and the safeguards which should be employed to remedy same. Examples are given of towns in which epidemics have occurred due to the various defects. It is of interest to note that a survey of engineering literature and correspondence incident to the preparation of this report revealed 40 authentic epidemics of typhoid, dysentery, or intestinal disorders, attributed to infection of ground-water supplies. This number is, of course, only a portion of all those which have occurred from this cause, but it serves to impress us with the urgent need of properly safeguarding our new and existing ground-water supplies against these known dangerous sanitary defects.

The first epidemic of which we find record was that occurring at Mankato, Minn., in 1908, with 5,000 cases of diarrhea, 511 cases of typhoid, and 35 deaths. A decision of the Minnesota Supreme Court, arising from a suit brought on account of this epidemic, holds that a municipality is liable for sickness and deaths resulting from the pollution of the public water supply. Probably the largest epidemic was that occurring at Salem, Ohio, in 1920, resulting in 884 cases of typhoid and 27 deaths in a population of 10,000. The most recent large epidemic was that occurring in Santa Ana, Calif., in 1923, resulting in 308 cases of typhoid.

A code of principles summarizing the safeguards necessary to prevent pollution of ground-water supplies is attached to this report. References to articles describing the epidemics and others giving detailed discussions of the various sanitary hazards and safeguards are given in Appendixes A and B. The detailed report outlining the various sanitary defects occurring on ground-water supplies and corresponding safeguards follows. For the purpose of this report, ground-water supplies are separated into the following four groups: Wells, springs, mine water, and infiltration galleries.

GENERAL

Defects common to all types of ground-water supplies include the following:

(1) Poor location of the source of a ground-water supply as to surface drainage, flooding in times of high water, and proximity to sources of surface or sewage contamination, such as streams,

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Members of the committee: G. W. Putnam (chairman), H. J. Darcey, E. L. Filby, H. R. Fullerton, E. D. Rich, W. G. Swendsen, and E. S. Tisdale.

sewers, abandoned uncapped wells, sink holes, privy vaults, and pits, cesspools, sewage wells, and other leaching devices for sewage.

EPIDEMICS: Bad Axe, Mich.,; Corning N. Y.; Watervliet, N. Y.; Walden, N. Y; Bethlehem Mines, W. Va.; Tuscola, Ill.

SAFEGUARDS: These conditions should be remedied, according to the particular circumstances, by establishing a supply in a new location, by furnishing adequate surface protection and eliminating sources of sewage pollution, or by adequate treatment. Chlorination alone may be sufficient when the contamination is slight. All wells should be tightly capped before abandonment to prevent accidental contamination of a water-bearing stratum. Sewage wells are a menace and permissible only under exceptional circumstances. Shallow wells, springs, and infiltration galleries used as a source of municipal supply should preferably be located outside the built-up area of a town to remove them from sources of contamination. The sewer from a toilet in a pumping station should be constructed of cast-iron pipe for a distance of at least 50 feet from the source of supply, suction or gravity piping, or reservoir.

(2) Suction or gravity piping located so that a leak developing in same will permit contamination of the supply. Proximity to sewers or other sources of pollution is particularly dangerous.

EPIDEMICS: Salem, Ohio; Benson, Minn.; Martinsburg, W. Va.; South Pasadena, Calif.; Greenville, Ill.; pollution at St. Louis, Mich.

SAFEGUARDS: All suction piping in a pump room should be run exposed, well above the floor level. All gravity and suction lines located in the ground should be constructed with water-tight material and joints, preferably cast iron, and never with sewer pipe. These lines should be located at a safe distance from sources of pollution and tested frequently with pressure to determine tightness. All sources of pollution which would contaminate supply if lines leaked should be carefully determined. If sources of sewage pollution are within a dangerous distance or if the line leaks, the condition should be remedied as circumstances warrant, such as by removing source of pollution, changing location of pipe, repairing leaks, or providing purification. Gravity and suction lines passing through polluted streams should be avoided or continuous purification provided.

(3) Collecting or storage reservoir and receiving or suction well subject to contamination on account of improper location or construction.

EPIDEMICS: New Ulm, Minn.; Brenham, Tex.

SAFEGUARDS: The reservoir location should be at a safe distance from sources of sewage pollution and safe from flooding. The reservoir should be of continuous concrete construction with water-tight bottom, sides, and top, using 4 to 8 pounds of hydrated lime per

sack of cement or an approved waterproofing preparation. Brick construction is unsatisfactory. All openings should be satisfactorily protected from dust, small animals, and willful pollution, providing manhole openings with raised edges and overlapping locked covers and pipe ventilators with openings screened and pointing down. Clean-out, drain, or overflow pipes should under no conditions be connected direct to a sewer or installed in a manner such that they will be subject to a back flow of surface water or sewage during high-water periods.

(4) Connection of a safe source of ground-water supply with a polluted water supply. Many times old forgotten piping permits pollution of the source of a safe supply. The connection of the source to a body of polluted water, protected from it only by the maintenance of a higher level, or other arrangement, is often the cause of contamination through careless operation.

EPIDEMICS: Schenectady, N. Y.; Cochrane, Ontario.

SAFEGUARD: Complete elimination of these connections.

WELLS

(5) The sanitary defects permitting the pollution of well supplies at the surface include the following:

(*a*) Connection of well pit or subground level pump room to a sewer or drain subject to back flow.

(*b*) Lack of adequate facilities for removing seepage or waste water from a well pit or pump room.

(*c*) Lack of a water-tight connection on cased wells to close the annular opening between the well casing and pump column (sometimes called drop pipe or suction pipe).

(*d*) Lack of a water-tight top for dug and bored wells.

(*e*) Failure to locate properly and protect the air inlet on air-lift pumping systems.

EPIDEMICS: Mankato, Minn.; Santa Ana, Calif.; Lansing, Mich.; Benson, Minn.; pollution at Montgomery, Ala.

SAFEGUARDS: (*a*) A well pit or subground level pump room should be avoided whenever practicable and the pumps installed on a pump-room floor located above the surrounding ground level.

(*b*) If conditions necessitate the installation of a well pit or subground-level pump room, the floor and walls should be made water-tight and drained to an open outlet (under no condition connected to a sewer), or a sump and automatic ejector should be provided to remove the waste water.

(*c*) The outside casing or curbing of wells should be extended above the level of the ground or floor of the pump room or pit, and a water-tight connection installed to close the annular opening between the well casing and pump column or drop pipe. Dug wells

should be provided with a water-tight cover, and the pump pipe, manhole, and other openings should be properly protected so as to prevent waste water or other contaminating material from entering the well. Pumping equipment should not be installed in the well in a manner requiring entrance of an attendant.

(*d*) On air-lift pumping system the air inlet should be properly located and protected to minimize the entrance of dust and other contaminating material.

A set of suggested regulations has been formulated covering the installation of well-pumping machinery for the benefit of consulting engineers, well and pump contractors, and manufacturers of pumping machinery, and is given in Appendix C.

(6) Sanitary defects permitting underground contamination of well supplies are as follows:

(*a*) Failure to extend a water-tight outside well casing or curbing to a sufficient depth and to seal the bottom into a solid formation, permitting contaminated surface and shallow ground water or other pollution to drain into the well. This is found dangerous, particularly in strata consisting of limestone lava flows, and similar strata containing solution channels, fissures, faults, and sink holes in very porous formations, like coarse gravel, and in formations shattered by blasting operations.

Casing, curbing, collecting piping, and galleries constructed of wood, sheet metal, riveted steel or slip joint pipe, brick, porous concrete, and vitrified clay or concrete pipe with open joints are generally unsatisfactory. Riveted pipe may leak along seams or through rivet holes. The type of well in sand in which coarse gravel is fed in around a concrete casing to increase the yield is subject to similar vertical contamination through the gravel unless properly protected.

EPIDEMICS: Shallow wells: Assembly of Old Salem Chautauqua, Ill.; Healdsburg, Calif.; Centralia, Wash.; Brunswick, Mo.; Stonewall, Okla.; Pawhuska, Okla. Deep wells: Jonesboro, Tex.; Rockville, Md.; Monroe, Mich,; Monett, Mo.; Miller, Mo., school.

SAFEGUARDS: A water-tight outside casing or curbing should be installed, extending deep enough to prevent contaminated surface or shallow ground water or other pollution from entering the well through such strata. The bottom of the casing or curbing should be effectively sealed into a solid formation and thoroughly tested to make certain that contaminated water on the outside of the casing can not enter the well.

Drilled wells.—Screw-joint steel or wrought-iron pipe is the standard well casing for drilled wells and can be installed water-tight tight when new. To prevent water of unsatisfactory sanitary or

mineral quality from draining down the annular space between the drill hole and the casing into the supply, a satisfactory seal should be made or installed at the bottom, such as the following:

(*a'*) Setting bottom of casing in drill cuttings of a cementing character on a shoulder in the well made by reducing the size of the drill hole.

(*b'*) Driving casing into clay or shale or similar sealing formation.

(*c'*) Cement grout.

(*d'*) Lead packer.

(*e'*) Expanding rubber packer.

The seal should be tested by bailing out the drill hole and making sure there is no leakage into same over a period of 48 hours. When no water has been encountered up to time of sealing, water should be run into annular space on outside of casing.

To install a casing in an old well it is usually necessary to ream out the drill hole to furnish a shoulder for the casing to seal into. Where a wall packer will make a tight joint between the bottom of the casing and drill hole, reaming is not required.

Dug or bored wells.—Concrete curbing and pipe are commonly used for these types of wells and can be made water-tight by careful selection of materials and construction. For concrete, make rich mixture, adding 4 to 8 pounds of hydrated lime per sack of cement or an approved waterproofing preparation; mix, pour, and puddle carefully. Vitrified clay or concrete pipe should be replaced with screw-joint wrought-iron casing or the joints made water-tight with an approved bituminous joint filler.

The safe vertical depth of soil in various formations is that which will effectively filter out surface bacterial pollution, and is conservatively as follows: Solid clay, 6 feet; fine sand, 12 feet; gravel, dry adobe soil, indefinite; fissured rock, no distance—water unsafe without treatment. Wells installed with a gravel wall should be protected by forcing into the space between the outside casing and well hole sufficient puddled clay to give a protective clay depth of at least 12 feet below the ground surface or any strata carrying contaminated water.

(*b*) Holes produced by corrosion in outside metal casing, above safe water-bearing stratum, are dangerous defects because they permit pollution of well water by seepage through same. The use of the outside well casing as a suction pipe, or as a discharge pipe in air-lift or deep-well pumping, is a questionable practice, as leaks will develop in the casing above the static water level if the well water is corrosive.

EPIDEMICS: Abbot, Hamilton, Tex.; pollution due to this defect has occurred at Savannah, Ga., Whitewater, Wis., St. Francois County, Mo. (private wells), Carl Junction, Mo.

SAFEGUARDS: Corrosion of a casing can be prevented by installing a shell of cement grout around same, or reduced by using cast-iron or best grade strictly wrought-iron pipe with a double coating of bituminous material. At least a 2-inch annular opening between the casing couplings and drill hole is necessary to permit the installation of a suitable cement shell around the casing. This opening can be filled with cement grout through a 1¼-inch pipe, using a tank pump. In the case of an old well, a corroded casing must be removed and the drill hole must be reamed to the proper size to allow for the cement shell. Another method, which reduces the size of the well, is to install a smaller casing of light material inside the old one to furnish an inside form for the cement shell.

Where a well is to be pumped by a suction, air-lift, or deep-well pump the safe practice is to install a separate suction or discharge pipe inside the well casing rather than to use the outside well casing for this purpose.

Frequent laboratory tests should be made of all water supplies, even though well safeguarded, and purification provided if tests show its desirability.

SPRINGS

Contrary to the popular belief that nothing is purer than a clear, cold, spring supply, contamination of springs is found to be general in many sections of the country from one or both of the following defects:

(7) Inadequate surface protection. Failure properly to curb many springs results in the washing of surface water directly into them during rains. Failure to cover the spring reservoir or to maintain the overflow level above high-water level in an adjacent watercourse often results in flooding or backing up of surface water directly into the spring.

EPIDEMICS: Walnutport, Pa.; Straight Creek, Ky.; Spring Township, Center County, Pa.; serious pollution at Locust Grove, Salina, Spavinaw, Okla.; Cassville, Mo.

SAFEGUARDS: A tight concrete curbing and top to the spring reservoir should be installed, with overflow above back-water level. All openings should be protected and locked, similar to storage reservoirs, to prevent access of animals or persons.

(8) Surface water or pollution reaching water-bearing strata. Springs in a country underlaid with limestone usually receive water of recent surface origin immediately following rains. This is evidenced by the increased flow and milkiness or turbidity of the water. In many instances sink-holes and streams have been found to be connected directly to springs through solution channels in the limestone or a coarse gravel stratum. Water from springs in other

ground formations should also be regarded with suspicion. Even where the water is clear at all times, the quality of a spring supply is doubtful and should be checked by frequent bacteriological analyses.

EPIDEMICS: Adairville, Harlan, and Versailles, Ky.; Pierce City, Palmyra, and Springfield, Mo.; serious pollution at Mount Vernon, Mo., Martinsburg, W. Va., Elizabethtown, and Russellville, Ky.

SAFEGUARDS: Adequate purification or treatment to fit the particular circumstances. Water from springs which becomes turbid should receive the same treatment as a surface water, namely, coagulation and settling, filtration and chlorination. Some supplies may be safeguarded by careful chlorination, with sufficient storage capacity in a reservoir to supply clear water during a brief period of turbid flow. Spring supplies which are clear at all times may often require disinfection.

MINE WATER

Many mines furnish water for municipal supplies. Defects encountered include the following:

(9) Use of mine water without treatment, from portions of a mine being worked. Very few mines are equipped with sanitary toilets, with the result that the mine water is badly contaminated with bowel discharges.

Serious pollution occurred from this defect at Flat River, Mo.

SAFEGUARD: Adequate purification or treatment; coagulation, filtration, chlorination. Due to the consistently low turbidity of mine water, pressure filters with a brief period of coagulation will often suffice.

(10) Flooding of special water supply drifts with general mine drainage. Safe supplies are often obtained from isolated unused drifts which are closed off from the rest of the mine by suitable bulkheads. Unless this bulkhead is water-tight, the drift is sometimes flooded with general mine drainage due to shutdown to repair pumps, etc., with resulting contamination of the normally safe supply.

SAFEGUARD: A water-tight concrete bulkhead should be constructed, providing water-tight manhole opening if one is necessary.

INFILTRATION GALLERIES

(11) Use of water from the majority of such supplies without treatment. Where the stratum is fine sand and the distance of water travel sufficient, safe water is obtained. However, in many instances, water travels rapidly from a stream or other surface source through a stratum of gravel or a short distance through sand with fair to excellent removal of turbidity, but with unreliable bacterial removal. Further, the flooding of the infiltration well or gal-

lery usually changes the direction of flow, and while the horizontal distance may effect excellent bacterial removal the vertical distance is usually so short that the water reaching the gallery will not be purified.

Pollution due to this defect occurred at Des Moines, Iowa, and Austin, Tex.

SAFEGUARD: Adequate purification or treatment to fit the circumstances.

CONCLUSION

Experience indicates that there are many sanitary defects in connection with ground-water supplies which have in the past caused the intermittent infection of otherwise safe supplies, resulting in a great many serious epidemics with a large amount of sickness and loss of life. The most common of these defects, together with safeguards which have been found effective, have been detailed in an effort to summarize past experience as a guide to future practice.

In many instances difficulty in adequately safeguarding a ground-water supply amply justifies the continuous disinfection of the water as insurance against intermittent slight contamination. In other instances, complete purification is required, as with a surface supply.

With a clear understanding of the experience of the past the correction of sanitary defects on existing supplies, before the combination of circumstances arises which causes the infection of a supply and a resulting epidemic, is a matter of thoroughness of the field investigation and securing the necessary improvements by the responsible authorities. To prevent these same sanitary defects on future installations requires full understanding of them by city officials, designing engineers, well drillers, pumping equipment manufacturers, erectors, and construction men. The approval of plans controls this in a measure, but such plans are often changed in construction, so that a final inspection of all new construction work is necessary to make sure that some essential safeguard has not been left out by a careless erector.

Agreement on a code of principles on sanitary control in the development of ground-water supplies and regulations for the installation of well-pumping machinery would be welcomed by engineers, manufacturers, and contractors. The principal manufacturers of deep-well pumping equipment have already agreed to the "suggested regulations" submitted, have prepared a special erection drawing, and are favorable to furnishing a sanitary well-top seal to conform to these requirements if regulations are adopted.

Code of Principles on Sanitary Control in the Development of Ground-water Supplies

GENERAL

1. Sources of ground-water supplies should be located so as to prevent their contamination by surface drainage, flooding at times of high water, and by pollution resulting from proximity to sewers, privy vaults, cesspools, sewage wells, other leaching devices for sewage, streams, abandoned uncapped wells, sink holes, etc.

2. Suction and gravity piping should be constructed with water-tight material and joint, preferably cast iron and never sewer pipe. These lines should be located at a safe distance from sources of pollution and tested frequently to determine their tightness.

3. Collecting or storage reservoirs and suction wells should be carefully located, of waterproof construction, and covered. All manholes, vents, and overflow openings should be properly protected from dust, small animals, and willful pollution.

4. All connections between a safe source of supply and a polluted water supply should be effectively eliminated.

WELLS

5. Well supplies should be protected from contamination at the surface by the following safeguards:

(*a*) A well pit or subground level pump room should be avoided wherever practicable, and the pumps installed on a pump-room floor located above the surrounding ground level.

(*b*) If conditions necessitate the installation of a well pit or subground level pump room, the floor and walls should be made water-tight and a drain to an open outlet (under no condition connected to a sewer), or a sump and automatic ejector, should be provided to remove the waste water.

(*c*) The outside casing or curbing of wells should be extended above the level of the ground or floor of the pump room or pit and a water-tight connection installed to close the annular opening between the well casing and pump column or drop pipe. Dug wells should be provided with a water-tight cover, and the pump pipe, manhole, and other openings should be properly protected so as to prevent waste water or other contaminating material from entering the well. Pumping equipment should not be installed in the well in a manner requiring entrance of an attendant.

(*d*) On air-lift pumping systems the air inlet should be properly located and protected to minimize the entrance of dust and other contaminating material.

6. Well supplies should be protected from underground contamination by the following safeguards:

(*a*) A water-tight outside casing or curbing should be installed, extending deep enough to prevent contaminated surface or shallow ground water or other pollution from entering the well through strata such as coarse gravel and limestone containing fissures, openings, and solution channels. The bottom of the casing or curbing should be effectively sealed into a solid formation and thoroughly tested to make certain that contaminated water on the outside of the casing can not enter the well.

(*b*) Wells installed with a gravel wall should be protected by forcing into the space between the outside casing and well hole sufficient puddled clay to give a protective clay depth of at least 12 feet below the ground surface or any strata carrying contaminated water.

(*c*) Where the water is known to be or suspected of being corrosive, a metal well casing should be protected by providing a shell of cement grout, at least 2 inches thick around same. An alternate method, suitable in some instances, is the use of a casing consisting of cast-iron or best grade strictly wrought-iron pipe with a double coating of bituminous material.

(*d*) A separate suction or discharge pipe should be installed inside a well casing in all instances, whether the well is to be pumped by suction, air-lift, or deep-well pump.

7. Continuous purification or treatment should be provided to suit the circumstances where wells are not provided with the required sanitary safeguards as outlined above or where bacteriological or chemical tests or other conditions indicate that contamination is reaching the water-bearing strata.

SPRINGS

8. Springs should be protected from surface contamination by a waterproof concrete curbing and top. Springs which show analytical or field evidence of underground contamination with surface water or sewage should be effectively purified or treated.

MINE WATER

9. Water from mines subject to contamination or pollution requires adequate purification or treatment to make a safe supply. Special water-supply drifts located in mines should be protected from flooding and drainage from working shafts and drifts.

INFILTRATION GALLERIES

10. Water from infiltration galleries should receive suitable purification or treatment unless located and operated so that satisfactory bacterial removal is secured.

APPENDIX A

Reports of Epidemics from Ground-water Supplies

Abbott, Tex., typhoid, 1924, correspondence, C. C. Hays, city chemist, Waco.
Adairville, Ky., typhoid, 1924, correspondence, F. C. Dugan.
Assembly of Old Salem Chautauqua, typhoid, 1915, Journal A. W. W. A., 3: 874.
Austin, Tex., pollution, no epidemic; E. N., 79: 355.
Bad Axe, Mich., intestinal disorders, 1921, E. N., 91: 138.
Benson, Minn., typhoid, 1914, Report Minnesota State Board of Health.
Bethlehem Mines, W. Va., typhoid, 1923. Report West Virginia State Board of Health.
Brenham, Tex., typhoid, 1923, E. N. R., 92: 947.
Brunswick, Mo., typhoid, 1918. Report Missouri State Board of Health.
Clyde, Calif., pollution, no epidemic, correspondence, C. G. Gillespie.
Cochrane, Ontario, typhoid, 1923, E. N., 90: 714.
Corning, N. Y., typhoid, Journal A. W. W. A., 10: 132.
Des Moines, Iowa, pollution, no epidemic, E. N., 82: 1247.
Elizabethtown, Ky., typhoid, correspondence, F. C. Dugan.
Flat River, Mo., pollution, no epidemic, correspondence, G. W. Putnam.
Greenville, Ill., dysentery, January, 1925, Illinois Health News, 11: 3.
Hamilton, Tex., typhoid, 1924, correspondence, C. C. Hays.
Harlan, Ky., typhoid, 1922, correspondence, F. C. Dugan.
Healdsburg, Calif., typhoid, 1914, E. and C., 44: 179.
Jonesboro, Tex., typhoid, 1923, correspondence, C. C. Hays.
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APPENDIX B

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APPENDIX C

Suggested Regulations Covering the Installation of Well-pumping Machinery

A. The use of a well-pit or subground-level pump room shall be avoided wherever practicable on account of the possibility of stoppage of the drain or ejector and neglect to replace the well-top seal after making repairs.

B. Where the pump head is installed without a pit—

1. The pump head shall be installed on a concrete base of sufficient height to permit the outside casing to extend at least 4 inches above the pump-room floor and to enable the installation of a suitable connection as under B–2.

2. The annular opening between the outside casing and pump column shall be closed by means of a suitable water-tight connection which will effectually prevent waste water, oil, or other contaminating material from entering the well.

C. Where the pump head is installed with a pit or in a pump room below the ground level—

1. The sides and bottom of the pit or pump room below the ground level shall be constructed of water-tight concrete. It is preferable that the pit be left uncovered, surrounded by a railing, to permit easy inspection by the pump operator.

2. The annular opening between the outside casing and pump column shall be closed by means of a water-tight connection capable of withstanding for 24 hours without leakage, the water pressure resulting from complete filling of the pit with water. The types of connections approved are given below in order of preference:

(*a*) An all-flanged or threaded connection.
(*b*) A stuffing-box connection.

(c) Metal to grouted cement connection with suitable gasket (not rubber); to be used only when joint carries weight of pump column and the pump head is rigidly supported to prevent vibration.

Any vents provided for the well shall be extended by a pipe with screw or flange connections to a point above the floor level. A return ell shall be screwed on the upper end of this pipe and screened.

3. Drainage shall be provided for the pump pit or pump room by one of the following methods:

(a) By means of a drain, consisting of a sewer pipe not less than 6 inches in diameter, with cemented joints, installed in a straight line and on an even grade of not less than 0.6 foot per 100 feet, with a concrete bulkhead at the outlet to insure an open discharge at all times; provided that under no conditions shall this drain receive sewage or be connected to a sewer and that the bottom of the pit so drained is above the high-water level in any adjacent watercourse.

(b) By means of a pump or ejector drawing from a sump of not less than 12 cubic feet capacity situated so as to collect all waste water. This pump or ejector should operate automatically or be connected to some moving part of the pump head so as to operate continuously with this pump. This pump shall discharge above the pump-room floor level into a suitable drain at a point safely removed from the pump pit and pump room.

4. The bottom of the pit or pump room shall be sloped away from the top of the well casing toward the drain or sump with sufficient grade to insure ready flow. At least 6 inches difference in elevation shall be provided between top of the well casing and high-water level in the sump.

THE DECREASE IN THE DEATH RATE AS A MEASURE OF PUBLIC-HEALTH WORK

Prof. C. Pirquet, of Vienna, has made a study of the declining death rate of England in an article appearing in the Monthly Epidemiological Report of the health section of the League of Nations for September 15, 1926 (fifth year, No. 9). The following three paragraphs and table are quoted from this article as being of interest to all persons engaged in public-health work:

If we wish to form an exact idea of the progress made in connection with public health, we can scarcely find better evidence than that supplied by the English mortality statistics, which have been kept on uniform principles since 1838 and are published in the Statistical Review of the registrar general.

The figures indicated in the following table show the number of deaths in a calendar year per 10,000 persons of the corresponding age group living in that year.

Death rate according to age groups in the respective decades, 1841–1920

[Number of deaths per 10,000 per calendar year and age]

	0–5	5–10	10–15	15–20	20–25	25–35
1841–1850	660	90	53	75	93	103
1851–1860	676	85	50	70	87	98
1861–1870	686	80	45	64	82	98
1871–1880	634	65	37	54	71	90
1881–1890	568	53	30	44	56	76
1891–1900	577	43	25	37	47	64
1901–1910	400	36	21	30	38	51
1911–1920	344	35	22	(15–45)54		

	35–45	45–55	55–65	65–75	75–85	Over 85
1841–1850	129	170	299	636	1,415	3,010
1851–1860	123	165	289	617	1,399	2,965
1861–1870	127	174	304	628	1,404	2,966
1871–1880	127	178	316	650	1,422	3,083
1881–1890	115	171	314	650	1,376	2,840
1891–1900	105	168	315	650	1,372	2,708
1901–1910	83	143	281	588	1,272	2,608
1911–1920	(15–45)54	130	259	573	1,320	2,668

If we take the figure at the head of column 2, 90 indicates that from 1841 to 1850, on an average, 90 children between the ages of 5 and 10 per 10,000 died in each calendar year. The figure at the bottom of the second column, 35, indicates that from 1911 to 1920 only 35 deaths per 10,000 children between 5 and 10 occurred. The difference between these figures can be ascribed to the progress made in public health.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Establishment and maintenance of isolation hospital in residence district not enjoined.—(California Supreme Court; Jardine *v.* City of Pasadena, 248 p. 225; decided July 1, 1926.) The establishment and maintenance by the city of Pasadena of an isolation hospital in a residential district were sought to be enjoined by owners of property adjacent to the block selected as the hospital site. The court decided adversely, however, to the plaintiffs and refused to grant an injunction.

Damages for tuberculosis contracted because of working conditions denied.—(New York Supreme Court, Appellate Division; Wager *v.* White Star Candy Co., Inc., 217 N. Y. S. 173; decided July 2, 1926.) The plaintiff brought action to recover damages for illness from tuberculosis. The disease was alleged to have been contracted because of the insanitary conditions under which she worked. The court dismissed the complaint on the ground that the plaintiff, being fully aware of the conditions under which she worked and having continued in the employment for several months in spite of such knowledge, assumed the risk attendant upon her remaining in the employment.

Injunction to restrain city in its method of garbage disposal refused.— (Louisiana Supreme Court; Gibson *v.* City of Baton Rouge, 109 So. 339; decided June 28, 1926.) In a suit against the city of Baton Rouge by persons residing in the suburbs, complaint was made that the system of garbage disposal was offensive to their senses of sight, smell, and hearing, and that it interfered with their comfort and jeopardized their health. The court refused to issue an injunction restraining the city from disposing of its garbage by the only means and in the only way which seemed available, but also stated in the opinion that "we do not decide, and it is not now necessary for us to decide, that plaintiffs are without a remedy for such damages as they may suffer after due demand upon the city for the suppression of the noxious sights, smells, and noises, surrounding the garbage disposal plant herein complained of, and after reasonable time given in which to suppress them."

Certain product held not within act relating to butter substitutes.— (Illinois Appellate Court, First District; People *v.* Waskow Butter Company, 239 Ill. App. 604; decided March 2, 1926.) An Illinois law prohibited the coloring of "any substance designed as a substitute for butter, whereby such substitute * * * shall be made to resemble butter, the product of the dairy." The article under consideration in this case was made from coconut and peanut oils, salt, and harmless yellow coloring matter, and was not injurious to health. It was sold in 1-pound, triangular paper packages, and was labeled as being a nut product prepared for cooking and baking and as containing coloring matter. It was distinguishable from butter at a distance of about 10 feet, and was not suitable for table use, and had a different odor and taste from butter. The court held that the act was not applicable to the product in question, stating as follows in the opinion:

> A reasonable construction of the words of the Illinois act, "any substance designed as a substitute for butter," means a substance designed as a substitute for butter in all the usual and customary uses of butter. The act could not reasonably apply to a substance which can not be used for the largest and most usual use of butter—namely, as a spread on bread. A reasonable construction must take into account butter's major use and not alone its use for cooking. We construe the language of the statute as nonapplicable to the nut product in question.
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> * * * * * * *
>
> The evidence before us shows that the nut product contains no dairy products and there is no pretense in any of the advertising that it does. It is represented only as a cooking compound, and it is not advertised as butter or as a substitute for butter, and the word "butter" is not used in the advertising. It is conceded by the plaintiff that the product was not designed to deceive or to be sold as butter or for butter. As no element of deception is alleged, proven or claimed, we hold that the prohibition of this article is not within the intent of the act

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for September, 1926

The accompanying table is taken from the Statistical Bulletin of the Metropolitan Life Insurance Co. for October, 1926, and presents the mortality experience of the industrial insurance department of the company for the month of September, 1926, as compared with August, 1926, September, 1925, and the year 1925. The rates are based on the records of approximately 17,000,000 insured persons in the industrial populations of the United States and Canada.

The bulletin states:

Health conditions in September among the industrial populations of the United States and Canada showed a decided improvement as compared with the same month of 1925. The death rate this year was 8.1 per 1,000, which marks an improvement of approximately 6 per cent over the figure for September, 1925 (8.6). The September rate was slightly higher, as compared with August of this year, but the figures for both months are lower than the average for recent years.

The advent of the fall season has been accompanied by the usual rise in the typhoid fever death rate, which almost doubled as compared with August. The September figure, nevertheless, is lower than for the same month last year, and the mortality record for typhoid fever thus far in 1926 shows that the downward trend of the death rate, which has been prevailing for a long series of years, is still in evidence.

Whooping cough had a higher death rate in September than the other three principal diseases of childhood—diphtheria, scarlet fever, and measles. It was the only one of these four diseases to show an above-average September death rate.

The influenza death rate in September was only 4.6 per 100,000, which is slightly below the August figure and considerably below the rate for September, 1925. The mortality from pneumonia was virtually identical with that recorded for August, and considerably lower than the figure for September of last year. There were absolutely no signs, in September, pointing to unusual prevalence of influenza.

Two other items of primary public health interest, namely, diarrheal diseases, and conditions incidental to pregnancy and childbirth, showed very gratifying declines as compared with September a year ago.

In no single instance did any disease show a substantial increase as compared with last year.

During September there were 132 suicides, corresponding to a death rate of 9 per 100,000. This, with a single exception (May, 1923), is the highest suicide death rate recorded for any month among Metropolitan industrial policyholders. Automobile fatalities numbered 301, with a death rate of 20.5 per 100,000. This marks a high point for the months so far in 1926, and is, in fact, the highest rate recorded for any month since October, 1925.

Death rates (annual basis) for principal causes per 100,000 lives exposed, August and September, 1926, and September and year 1925

[Industrial department, Metropolitan Life Insurance Co.]

Causes of death	Rate per 100,000 lives exposed [1]			
	Sept., 1926	Aug., 1926	Sept., 1925	Year 1925
Total, all causes	814.2	785.8	859.9	907.5
Typhoid fever	8.4	4.8	8.8	4.6
Measles	1.9	3.1	.9	3.3
Scarlet fever	1.1	2.0	.9	3.5
Whooping cough	9.0	7.9	9.3	7.7
Diphtheria	6.5	5.7	7.6	10.6
Influenza	4.6	5.0	5.5	22.0
Tuberculosis (all forms)	89.6	89.0	88.8	98.1
Tuberculosis of respiratory system	79.1	75.3	76.9	85.9
Cancer	72.8	72.3	70.1	70.5
Diabetes mellitus	15.1	13.1	13.4	15.2
Cerebral hemorrhage	46.1	45.2	47.1	53.6
Organic diseases of heart	105.1	99.6	102.6	126.6
Pneumonia (all forms)	36.3	36.0	40.0	86.5
Other respiratory diseases	9.0	10.2	10.2	13.2
Diarrhea and enteritis	63.6	49.7	89.4	36.7
Bright's disease (chronic nephritis)	60.4	58.4	61.8	69.8
Puerperal state	11.5	13.2	14.6	16.5
Suicides	9.0	6.7	7.6	6.9
Homicides	6.5	6.2	8.2	7.2
Other external causes (excluding suicides and homicides)	68.5	70.6	70.8	64.3
Traumatism by automobiles	20.5	15.6	20.4	16.6
All other causes	189.1	187.3	202.2	190.7

[1] All figures include infants insured under one year of age.

Death rates per 1,000 (annual basis), 1924, 1925, 1926, by months

[Industrial department, Metropolitan Life Insurance Co.]

Month	1924	1925	1926	Month	1924	1925	1926
January	10.0	9.7	9.8	July	8.6	8.3	8.2
February	10.2	10.3	9.8	August	7.5	7.6	7.9
March	10.4	10.5	12.1	September	8.5	8.6	8.1
April	10.7	10.3	12.0	October	8.5	8.1	.....
May	9.5	9.0	9.1	November	7.9	8.2	.....
June	9.3	9.6	9.5	December	9.5	8.9	.....

NOTE.—Figures include mortality of infants under one year of age.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Practical Aspects of Plague in Wild Rodents. Wu Lien Teh. League of Nations' Health Organization, Geneva, 1925. October 7. C. H. 360, 19 pp. (37 refs.). (Abstracted by J. F. C. H.) From *Bulletin of Hygiene*, vol. 1, No. 4, April, 1926, pp. 310–311.

"The author reviews available knowledge as to the mode of transmission of plague from one animal to another, from one settlement of animals to another, and from the various animals to man. He discusses the respective problems of California (ground squirrels), South Africa (gerbilles), South Russia (sisels or spermophiles and mice), and Transbaikalia and Mongolia (tarabagans). The failure of costly attempts at extermination of some of these animals is emphasized. Stress is laid upon the economic importance of the

tarabagan, which does not harm crops and is itself a chief means of sustenance to the population of a wide area. He shows how it is only in the hunting and subsequent handling of tarabagans that risk of plague infection occurs, and how the prohibition of such hunting led to illicit trade and increased risk, and gives an outline of the measures of control proposed now that the regulation of the tarabagan trade has replaced prohibition. An appendix gives a revised list of rodents, other than the domestic rat and mouse, known to suffer from spontaneous plague. (Cf. Kauntze's list for South Africa. *Bulletin of Hygiene*, vol. 1, p. 66.)"

The Natural Enemies of Rats; Their Possibilities in Plague Prevention. G. H. Goldfinch, with note by W. H. Kauntze. *Kenya M. J.*, 1925, vol. 2, pp. 225–234. (Abstracted by J. F. C. H.) From *Bulletin of Hygiene*, vol. 1, No. 4, April, 1926, p. 311.

"Stimulated by an article by Dr. W. H. Kauntze (*Bulletin of Hygiene*, vol. 1, p. 66), the author contributes an interesting but speculative paper in which a large number of different animals are considered as natural enemies of rats in Kenya Colony. He thinks the mole rat likely to be the most dangerous rodent as regards plague in that colony, and, among the many enemies of rodents considered, appears to favor the European little owl and the Indian mongoose for introduction to Kenya.

"Kauntze adds a note in which he points out that there are as yet insufficient facts upon which to base plans for Kenya, but that in South Africa the mole rat seems to escape plague. He has doubts, too, as to the ability of natural enemies to prevent the multiplication anew of rodents practically wiped out by plague, and points out that while the mongoose is perhaps more or less immune to plague he may yet spread it by means of his numerous fleas.

"(Neither Kauntze nor Goldfinch indicates the zoological position of the rodent spoken of as a 'mole rat.' Indeed, the latter says he can not remember whether it is a true rat or a vole. The 'mole rat' is not mentioned by that name in the booklet 'Rodents,' published by the health department of South Africa, but Wu Lien Teh (see summary on p. 310) quotes Mitchell as having described the 'mole rat *Cryptomys*' as plague infected)."

Earlier determination of bacterium coli. C. J. Lauter, *Water Works*, vol. 65, No. 9, September, 1926, pp. 451–453. (Abstract by E. A. Reinke.)

Research work at Washington filtration plant on use of brilliant green bile medium shows possibility of getting *B. coli* test results one or two days earlier than by use of present standard methods. A much higher percentage of confirmatives was obtained than with lactose. Samples of chlorinated effluent gave gas in lactose, but did not confirm and would not grow on bile. Tables are given.

Night-soil disposal in unsewered areas. Anon. The Sanitary Engineer Commission of Public Health, State of Victoria, Australia. *Health Bulletin* No. 4, October–December, 1925, pp. 110–113. (Abstract by W. H. Wendler.)

Due to the lack of constant water supply with adequate pressure, and also the scattered positions of the houses in rural communities, a sewerage system is out of the question, and other means of night-soil disposal must be relied upon. Such means are fixed and movable receptacles, cesspools, and chemical closets. With all of these a great risk is taken of contaminating the local wells, streams, and other sources of water supply. With these different methods of disposal great care must be taken with regard to flies, odors, and other conditions causing a nuisance.

The most generally adopted mode of night-soil disposal is by earth burial. It is an accepted sanitary principle that putrescible refuse should be disposed of by shallow burial in soil whose upper layer is well drained, light, friable, sandy loam, capable under cultivation of supporting vegetation and in which nitrifying organisms can reside and flourish. It is not desirable to disinfect the night soil that is disposed of in this manner, as the germicidal matter destroys the nitrifying organisms. It is also undesirable to deposit night soil below a depth of 2 or 3 feet, as nitrification is believed to be confined to this depth. Air is of vital importance in the operation of the oxidizing organisms.

Experiments have shown that organic matter buried deep in the soil develops intense putrefaction and may remain in a potentially offensive condition for years. The size and arrangement of the trenches, in the case of municipal depots, should be under the supervision of the council's engineer.

Ice cream as a cause of epidemics. Frederick W. Fabian, Associated Professor of Bacteriology and Hygiene, Michigan Agricultural Experiment Station, East Lansing, Mich. *American Journal of Public Health*, vol. 16, No. 9, September, 1926, pp. 873–879. (Abstract by R. E. Irwin.)

To-day ice cream has become such a common article of diet that it should be taken into account by the epidemiologist when tracing an epidemic. The public-health official, if he has not already done so, will in the very near future need to regulate its sanitary quality.

References are given showing research work proving the very low temperatures at which pathogenic bacteria live in ice cream. Twenty-six epidemics traceable to ice cream are cited and references given.

The summary states: "It has been demonstrated by several investigators that exposure to the temperatures used in freezing and storing ice cream can not be relied upon to kill all pathogenic bacteria that may be present.

Numerous outbreaks of disease, such as typhoid fever, diphtheria, scarlet fever, diarrhea, and intestinal disturbances have been definitely traced to contaminated ice cream. It is believed that the same sanitary precautions should be taken by health officers, State and city boards of health, in protecting the ice-cream supply as are taken with the milk supply.

Three safeguards are suggested: (1) Pasteurizing the ice-cream mix at 150° F. for 30 minutes; (2) establishing a bacteriological standard 100,000 bacteria (colonies) per gram; (3) regular sanitary inspection of ice-cream plants."

The Pasteurization of milk and cream. J. R. Corry. *Rhodesia Agric. J.*, 1925, vol. 22, pp. 940–948, 5 figs. (Abstracted by W. G. Savage.) *Bulletin of Hygiene*, vol. 1, No. 4, April, 1926, p. 279.

"Gives a useful description of the two methods of Pasteurization—i. e., the continuous process and the intermittent process, with illustration of common types of apparatus. The author prefers the first process (often called 'flash' Pasteurization) as more practical where large amounts of milk and cream are handled, while in favor of the vat or intermittent process are the simplicity of construction, ease of operation, and economical working. (The relative bacterial efficiency of the two processes is not discussed.) He mentions that Pasteurization in bottles is rapidly gaining favor with dairies.

"The author realizes the objection to Pasteurization in that it encourages careless methods of production and handling. While condemning such methods, he does so on bacteriological grounds which are not in accordance with English experience. In his view the Pasteurization destroys the acid-producing bacteria, while the more harmful and more resistant types remain, so that dirty Pasteurized milk is still dangerous to the consumer. (Many putrefactive bacilli are destroyed at Pasteurization temperatures.)

"Pasteurization in the butter and cheese industry is strongly advocated, in that it makes possible the manufacture of a uniform product, it improves the keeping qualities of the article, it improves the flavor and aroma, and it destroys pathogenic organisms, making the product a safe and healthful food. The author again emphasizes that even with Pasteurization cleanliness in the production of the raw material is essential."

An outbreak of anthrax contracted from handling infected beef. A. K. Mukerji. *Indian M. Gaz.*, 1926, vol. 61, 22, 1 fig. (Abstracted by C. O. Stallybrass.) From *Bulletin of Hygiene*, vol. 1, No. 5, May, 1926, p. 349.

"Seven persons in a village near Tipperah who had taken part in killing a cow, or in dressing the meat, were attacked with malignant pustules in various situations. Despite the absence of precautions,

no spread occurred to others who had not handled the meat. Four of the cases proved fatal."

Milk Pasteurization in Illinois in 1926. Lewis Shere, Milk Sanitarian, and Harry F. Ferguson, Chief Sanitary Engineer, Illinois State Department of Health. *Illinois Health News*, vol. 12, No. 9, September, 1926, pp. 317–333. (Abstract by I. W. Mendelsohn.)

The 1925 legislature enacted a milk Pasteurization-plant law with the following features: "(1) Pasteurization is defined as the process of heating milk or milk products to a temperature of at least 142° F. and holding at such temperature for not less than 30 minutes; (2) operators of Pasteurization plants shall apply to the State department of public health for a certificate of approval; (3) the State department of public health shall prepare minimum requirements for the construction, equipment, operation, and maintenance of Pasteurization plants; (4) certain provisions for the sanitary quality of the raw milk which is to be Pasteurized are made; (5) Pasteurization plants located in and supplying milk exclusively to cities having populations over 500,000 are exempted. This actually exempts only Chicago and was made at the request of representatives of Chicago because it was considered that the city health department would undertake equivalent sanitary control under existing or new ordinances."

Some of the principal requirements adopted by the department are given. Preliminary inspections were made by the division of sanitary engineering in accordance with the law for the purpose of determining the conditions at the plants in regard to the construction, equipment, and operation, and especially to inform the owners wherein their plants did not comply with the law and the minimum requirements. These inspections were completed June 1, 1926, and showed: (1) In Illinois an estimated average of three-fourths of the milk is Pasteurized in cities with a population of 30,000 or over, exclusive of Chicago. In Chicago about 99 per cent of the milk supply is Pasteurized; (2) Pasteurization is more general in the larger than the smaller cities of Illinois. All of the cities having a population ranging from 25,000 to 100,000, and 85 per cent of the cities with a population of 10,000 to 25,000 have Pasteurization plants, whereas Pasteurized milk is available in only 2.6 per cent and 19 per cent of the cities with populations of less than 1,000 and between 1,000 and 5,000, respectively; (3) summary of number and volume of Pasteurization plants: Pasteurization plants, 306; cities having Pasteurization plants, 140; gallons Pasteurized daily (average), 337,778; total commercial Pasteurizers in milk plants, 449; average daily plant volume (gallons), 1,080; largest plant, daily volume (gallons), 24,000; smallest plant, daily volume (gallons), 25.

Illustrations are given of sanitary and insanitary types of equipment found, also table summarizing data regarding the investigation.

The more important problems requiring attention are: (1) Proper recording devices; (2) elimination of leaky valves; and (3) overcoming foaming and splashing.

The legal aspects of the stream pollution problem.—John H. Fertig, Pennsylvania Legislative Bureau. *American Journal of Public Health*, vol. 16, No. 8, August 1926, pp. 782–787. (Abstract by John H. O'Neill.)

The common law of the several States on the subject of stream pollution is to be found in many hundreds of adjudicated cases, and the whole intricate legal structure which has been developed by these cases rests in the end upon a few simple principles which are rather definitely settled.

The American common-law doctrine was derived from the French Code Napoleon rather than from the English common law. The original doctrine may be stated—that each riparian owner has the right to have a stream come down to him with its quality unimpaired and its quantity undiminished. At the present time this is an extreme statement and can not be literally accepted. There is not a property right in flowing water, it is not the subject of ownership but is subject simply to a reasonable, or, as it is usually called, a natural, use by the owner through whose land it flows. On the other hand, the right to use flowing water is not a mere easement, but is inseparably annexed to the soil and must be regarded as a property right.

Among the many cases which point out what is to be considered a natural and reasonable use of a stream are found as most common ones, domestic supply, swimming, pasturing of cattle, cultivation of lands, drainage of swamps, and the collection of surface water and its discharge into the water course which is the natural outlet. The natural use of a water course can not be supported if its use becomes immoderate. The distinction between that which is and that which is not a natural use is entirely a question of degree, and it is difficult to define the precise limits which separate the reasonable and permitted use of a stream from its wrongful application. The uniform customs of the community for generations may be of some significance in determining what is a reasonable or natural use of a stream, but is not conclusive upon the question. There are cases in which rights to pollute streams have been gained by custom or prescription and can be maintained as against riparian owners, but not as against the public.

There is need for the establishment of a firm and definite State policy with regard to pollution, for the adoption by the State of just and correct principles of legislation, and for more extensive cooperation between industry and the State.

The article contains an extensive list of references to court decisions illustrative of the principles presented.

DEATHS DURING WEEK ENDED NOVEMBER 13, 1926

Summary of information received by telegraph from industrial insurance companies for week ended November 13, 1926, and corresponding week of 1925. (From the Weekly Health Index, November 17, 1926, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 13, 1926	Corresponding week, 1925
Policies in force	65, 619, 100	62, 053, 222
Number of death claims	11, 216	11, 502
Death claims per 1,000 policies in force, annual rate	8. 9	9. 7

Deaths from all causes in certain large cities of the United States during the week ended November 13, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925. (From the Weekly Health Index, November 17, 1926, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 13, 1926		Annual death rate per 1,000 corresponding week, 1925	Deaths under 1 year		Infant mortality rate, week ended Nov. 13, 1926 [2]
	Total deaths	Death rate [1]		Week ended Nov. 13, 1926	Corresponding week, 1925	
Total (65 cities)	6, 737	12. 2	12. 6	697	755	[3] 59
Albany [4]	32	14. 0	20. 4	0	5	0
Atlanta	83			11	11	
White	40			3	5	
Colored	43	(5)		8	6	
Baltimore [4]	241	15. 6	13. 2	31	24	94
White	190			25	16	94
Colored	51	(5)		6	8	96
Birmingham	61	15. 1	17. 2	4	9	
White	34			4	3	
Colored	27	(5)		0	6	
Boston	203	13. 4	15. 6	22	35	61
Bridgeport	22			2	6	34
Buffalo	142	13. 6	16. 1	21	20	88
Cambridge	23	9. 8	12. 2	2	6	36
Camden	21	8. 4	16. 6	6	7	101
Canton	25	11. 9	10. 8	3	2	66
Chicago [4]	595	10. 2	11. 1	62	84	54
Cincinnati	120	15. 2	18. 6	9	12	56
Cleveland	189	10. 3	10. 7	20	25	52
Columbus	90	16. 5	10. 2	9	7	84
Dallas	47	12. 3	15. 4	2	8	
White	38			2	7	
Colored	9	(5)		0	1	
Denver	62	11. 3	11. 9	7	6	
Des Moines	45	16. 1	10. 0	8	3	134
Detroit	264	10. 7	11. 1	45	43	73
Duluth	18	8. 3	6. 6	2	2	46
El Paso	32	15. 3	13. 9	3	2	
Erie	27			3	6	59
Fall River [4]	36	14. 3	12. 9	2	8	31
Flint	30	11. 4	8. 4	4	3	68
Fort Worth	30	9. 8	12. 3	3	4	
White	23			3	4	
Colored	7	(5)		0	0	
Grand Rapids	28	9. 4	11. 3	1	4	14
Houston	81			7	5	
White	57			5	4	
Colored	24	(5)		2	1	
Indianapolis	99	14. 1	13. 8	9	9	68
White	86			8		70
Colored	13	(5)		1		57
Jersey City	74	12. 1	11. 1	7	4	53
Kansas City, Kans	20	8. 9	13. 5	2	3	39
White	14			2	2	45
Colored	6	(5)		0	1	0

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in registration area for births.
[3] Data for 62 cities.
[4] Deaths for week ended Friday, Nov. 12, 1926.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Norfolk, 38; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 13, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925—Continued

City	Week ended Nov. 13, 1926		Annual death rate per 1,000 corresponding week, 1925	Deaths under 1 year		Infant mortality rate, week ended Nov. 13, 1926
	Total deaths	Death rate		Week ended Nov. 13, 1926	Corresponding week, 1925	
Kansas City, Mo	103	14.3	15.6	13	10	----
Los Angeles	250			23	23	64
Louisville	77	12.9	14.7	7	5	60
White	61			7	5	68
Colored	16	(5)		0	0	0
Lowell	20			3	4	58
Lynn	20	10.0	10.1	0	2	0
Memphis	59	17.4	16.7	8	7	----
White	31			3	7	----
Colored	28	(5)		5	0	----
Milwaukee	109	11.0	11.1	9	18	42
Minneapolis	85	10.2	12.9	7	10	39
Nashville [4]	37	14.1	22.6	7	6	----
White	18			5	3	----
Colored	19	(5)		2	3	----
New Bedford	30			5	3	87
New Haven	45	12.9	8.2	2	7	27
New Orleans	166	20.7	18.7	16	16	----
White	97			8	13	----
Colored	69	(5)		8	3	----
New York	1,360	12.0	12.1	116	144	47
Bronx Borough	141	8.2	10.8	11	18	37
Brooklyn Borough	456	10.6	10.3	45	38	46
Manhattan Borough	598	16.6	16.3	48	79	53
Queens Borough	124	8.5	8.2	11	9	50
Richmond Borough	41	15.0	11.7	1	0	18
Newark, N. J	112	12.7	10.7	14	20	67
Norfolk	37	11.1	8.6	7	1	141
White	18			2	1	65
Colored	19	(5)		5	0	265
Oakland	48	9.6	9.0	2	3	23
Oklahoma City	15			2	2	----
Omaha	47	11.4	10.1	5	2	53
Paterson	23	8.4	9.6	3	3	51
Philadelphia	470	12.2	12.2	64	45	85
Pittsburgh	151	12.4	16.3	11	14	36
Portland, Oreg	76			5	2	50
Providence	60	11.4	12.5	3	9	25
Richmond	66	18.2	16.2	10	6	124
White	41			6	4	116
Colored	25	(5)		4	2	139
Rochester	67	10.9	11.2	6	5	48
St. Louis	187	11.7	13.7	17	16	----
St. Paul	48	10.1	12.3	5	2	44
Salt Lake City [4]	39	15.3	12.7	7	6	106
San Antonio	48	12.2	16.3	4	7	----
San Diego	32	15.2	13.8	1	3	21
San Francisco	138	12.7	13.4	4	3	24
Schenectady	25	14.0	9.0	7	1	201
Seattle	60			1	4	10
Somerville	17	8.9	8.4	1	1	28
Spokane	24	11.5	15.8	1	4	23
Springfield, Mass	31	11.1	11.0	3	1	46
Syracuse	41	11.6	12.6	4	6	51
Tacoma	30	14.8	10.5	3	1	71
Toledo	66	11.7	11.6	6	7	58
Trenton	47	18.3	10.3	4	0	68
Utica	20	10.1	13.9	4	4	91
Washington, D. C	140	13.8	13.5	13	11	74
White	78			5	5	42
Colored	62	(5)		8	6	146
Waterbury	25			4	4	94
Wilmington, Del	39	16.4	6.0	6	0	133
Worcester	43	11.6	13.9	8	6	96
Yonkers	24	10.8	9.6	3	7	68
Youngstown	29	12.2	7.8	2	1	25

[4] Deaths for week ended Friday, Nov. 12, 1926.

[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Norfolk, 38; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Week Ended November 20, 1926

ALABAMA

	Cases
Chicken pox	6
Diphtheria	120
Influenza	69
Lethargic encephalitis	3
Malaria	54
Measles	20
Mumps	4
Ophthalmia neonatorum	1
Pellagra	2
Pneumonia	51
Poliomyelitis	2
Scarlet fever	44
Smallpox	1
Tetanus	4
Trachoma	3
Tuberculosis	122
Typhoid fever	63
Typhus fever	1
Whooping cough	39

ARIZONA

Chicken pox	3
Diphtheria	2
Measles	2
Mumps	1
Scarlet fever	16
Trachoma	2
Tuberculosis	37
Typhoid fever	1

ARKANSAS

Chicken pox	8
Diphtheria	8
Hookworm disease	6
Influenza	61
Malaria	52
Measles	4

ARKANSAS—continued

	Cases
Mumps	1
Pellagra	5
Scarlet fever	12
Tuberculosis	10
Typhoid fever	10
Whooping cough	31

CALIFORNIA

Chicken pox	308
Diphtheria	189
Influenza	17
Measles	776
Mumps	207
Poliomyelitis:	
Glendale	1
Los Angeles County	3
Orange County	1
San Joaquin County	1
Scarlet fever	296
Smallpox	12
Tuberculosis	165
Typhoid fever	13
Whooping cough	97

COLORADO

Chicken pox	19
Diphtheria	9
Impetigo contagiosa	1
Influenza	2
Measles	12
Mumps	4
Pneumonia	4
Scarlet fever	59
Trachoma	1
Tuberculosis	17
Typhoid fever	9
Vincent's angina	5
Whooping cough	6

CONNECTICUT

	Cases
Cerebrospinal meningitis	2
Chicken pox	102
Diphtheria	34
German measles	3
Influenza	2
Measles	10
Mumps	6
Pneumonia (broncho)	20
Pneumonia (lobar)	32
Poliomyelitis	1
Scarlet fever	54
Septic sore throat	3
Tuberculosis (pulmonary)	22
Typhoid fever	2
Whooping cough	35

DELAWARE

Chicken pox	3
Diphtheria	2
Scarlet fever	17
Tuberculosis	2

FLORIDA

Chicken pox	4
Dengue	1
Diphtheria	47
Influenza	1
Malaria	1
Measles	9
Pneumonia	14
Scarlet fever	13
Smallpox	11
Tetanus	2
Tuberculosis	11
Typhoid fever	3
Typhus fever	1
Whooping cough	11

GEORGIA

Cerebrospinal meningitis	1
Chicken pox	14
Conjunctivitis	1
Diphtheria	88
Dysentery	2
Influenza	72
Malaria	22
Measles	5
Mumps	1
Paratyphoid fever	1
Pellagra	2
Pneumonia	21
Scarlet fever	15
Septic sore throat	7
Smallpox	13
Tuberculosis	15
Typhoid fever	22
Whooping cough	15

IDAHO

Chicken pox	6
Diphtheria	1
Measles	36
Scarlet fever	36
Tuberculosis	2
Typhoid fever	3

ILLINOIS

	Cases
Cerebrospinal meningitis—Cook County	2
Chicken pox	523
Diphtheria	139
Influenza	22
Lethargic encephalitis—Champaign County	1
Measles	289
Mumps	83
Pneumonia	268
Poliomyelitis:	
Lawrence County	1
Macon County	2
Scarlet fever	269
Smallpox	9
Tuberculosis	257
Typhoid fever	53
Whooping cough	242

INDIANA

Cerebrospinal meningitis	1
Chicken pox	166
Diphtheria	104
Influenza	33
Measles	41
Mumps	1
Pneumonia	6
Poliomyelitis	1
Scarlet fever	188
Smallpox	83
Tuberculosis	71
Typhoid fever	12
Whooping cough	113

IOWA

Cerebrospinal meningitis	2
Chicken pox	82
Diphtheria	37
Measles	24
Mumps	4
Ophthalmia neonatorum	1
Scarlet fever	53
Smallpox	6
Tuberculosis	7
Typhoid fever	5
Whooping cough	11

KANSAS

Chicken pox	142
Diphtheria	29
German measles	1
Influenza	1
Measles	33
Mumps	14
Pneumonia	37
Scarlet fever	108
Smallpox	2
Tuberculosis	36
Typhoid fever	7
Whooping cough	62

LOUISIANA

Cerebrospinal meningitis	1
Diphtheria	52
Influenza	10

LOUISIANA—continued

	Cases
Malaria	12
Pneumonia	34
Poliomyelitis	1
Scarlet fever	30
Smallpox	2
Tuberculosis	26
Typhoid fever	19
Whooping cough	9

MAINE

Cerebrospinal meningitis	1
Chicken pox	129
Diphtheria	6
German measles	2
Influenza	1
Measles	68
Mumps	3
Pneumonia	3
Scarlet fever	50
Tuberculosis	6
Typhoid fever	1
Vincent's angina	1
Whooping cough	88

MARYLAND [1]

Cerebrospinal meningitis	1
Chicken pox	182
Diphtheria	41
Dysentery	1
German measles	2
Influenza	16
Measles	42
Mumps	3
Paratyphoid fever	2
Pneumonia (broncho)	38
Pneumonia (lobar)	38
Scarlet fever	32
Septic sore throat	1
Tuberculosis	42
Typhoid fever	22
Vincent's angina	2
Whooping cough	79

MASSACHUSETTS

Anthrax	2
Cerebrospinal meningitis	2
Chicken pox	341
Conjunctivitis (suppurative)	7
Diphtheria	98
German measles	5
Influenza	7
Lethargic encephalitis	1
Measles	32
Mumps	134
Ophthalmia neonatorum	33
Pellagra	1
Pneumonia (lobar)	83
Poliomyelitis	4
Scarlet fever	305
Septic sore throat	2
Trachoma	1
Tuberculosis (pulmonary)	106
Tuberculosis (other forms)	23
Typhoid fever	8
Whooping cough	78

[1] Week ended Friday.

MICHIGAN

	Cases
Diphtheria	189
Measles	76
Pneumonia	106
Scarlet fever	259
Smallpox	28
Tuberculosis	31
Typhoid fever	7
Whooping cough	95

MINNESOTA

Chicken pox	266
Diphtheria	95
Influenza	2
Lethargic encephalitis	1
Measles	140
Pneumonia	4
Scarlet fever	221
Smallpox	4
Tuberculosis	41
Typhoid fever	1
Whooping cough	26

MISSISSIPPI

Diphtheria	24
Poliomyelitis	1
Scarlet fever	16
Smallpox	3
Typhoid fever	13

MISSOURI

Chicken pox	71
Diphtheria	76
Influenza	10
Measles	29
Mumps	11
Ophthalmia neonatorum	1
Pneumonia	13
Rabies (in animals)	3
Scarlet fever	106
Septic sore throat	7
Tuberculosis	47
Typhoid fever	8
Whooping cough	53

MONTANA

Chicken pox	27
Diphtheria	2
Measles	105
Mumps	6
Ophthalmia neonatorum	1
Scarlet fever	94
Smallpox	6
Tuberculosis	1
Whooping cough	4

NEBRASKA

Chicken pox	26
Diphtheria	6
German measles	1
Influenza	16
Measles	6
Mumps	6
Pneumonia	1
Poliomyelitis	1
Scarlet fever	32
Smallpox	11

NEBRASKA—continued

	Cases
Tuberculosis	1
Typhoid fever	5
Whooping cough	4

NEW JERSEY

Cerebrospinal meningitis	2
Chicken pox	198
Diphtheria	102
Influenza	13
Measles	31
Paratyphoid fever	1
Pneumonia	128
Poliomyelitis	4
Scarlet fever	122
Trachoma	1
Typhoid fever	32
Whooping cough	153

NEW MEXICO

Chicken pox	1
Diphtheria	1
German measles	1
Influenza	2
Malaria	2
Measles	1
Mumps	1
Pneumonia	7
Scarlet fever	56
Tuberculosis	24
Typhoid fever	18
Whooping cough	13

NEW YORK

(Exclusive of New York City)

Cerebrospinal meningitis	1
Chicken pox	505
Diphtheria	101
Dysentery	1
German measles	71
Influenza	6
Malaria	3
Measles	653
Mumps	162
Pneumonia	250
Poliomyelitis	6
Scarlet fever	175
Septic sore throat	6
Smallpox	17
Typhoid fever	29
Vincent's angina	9
Whooping cough	283

NORTH CAROLINA

Cerebrospinal meningitis	1
Chicken pox	125
Diphtheria	164
German measles	5
Malaria	5
Measles	9
Scarlet fever	132
Septic sore throat	7
Smallpox	31
Typhoid fever	23
Whooping cough	296

OKLAHOMA

	Cases
(Exclusive of Oklahoma City and Tulsa)	
Cerebrospinal meningitis—Seminole County	1
Chicken pox	10
Diphtheria	43
Influenza	173
Malaria	36
Pneumonia	70
Scarlet fever	32
Smallpox:	
McCurtain County	33
Scattering	6
Tetanus—Carter County	1
Typhoid fever	54
Whooping cough	32

OREGON

Chicken pox	44
Diphtheria	24
Influenza	12
Measles	9
Mumps	16
Pneumonia	[1]5
Scarlet fever	74
Smallpox:	
Josephine County	9
Scattering	15
Tuberculosis	[1]3
Typhoid fever	3

PENNSYLVANIA

Anthrax—Philadelphia	1
Chicken pox	690
Diphtheria	257
German measles	5
Impetigo contagiosa	16
Malaria	2
Measles	629
Mumps	39
Ophthalmia neonatorum:	
Harrisburg	2
Pittsburgh	1
Pneumonia	54
Poliomyelitis:	
Avondale	1
Philadelphia	1
Scabies	20
Scarlet fever	371
Smallpox	2
Tetanus—Philadelphia	1
Tuberculosis	55
Typhoid fever	65
Whooping cough	322

RHODE ISLAND

Chicken pox	3
Diphtheria	8
German measles	2
Measles	2
Mumps	1
Ophthalmia neonatorum	1
Pneumonia	8
Scarlet fever	20
Tuberculosis	10
Typhoid fever	2
Whooping cough	4

[1] Deaths.

SOUTH DAKOTA

	Cases
Cerebrospinal meningitis	1
Chicken pox	15
Measles	53
Pneumonia	3
Scarlet fever	53
Trachoma	2
Whooping cough	10

TENNESSEE

Chicken pox	31
Diphtheria	102
Influenza	51
Lethargic encephalitis—Loudon County	1
Malaria	13
Measles	12
Ophthalmia neonatorum	1
Pellagra	6
Pneumonia	57
Scarlet fever	94
Smallpox	2
Tuberculosis	25
Typhoid fever	48
Whooping cough	66

TEXAS

Chicken pox	4
Diphtheria	101
Influenza	21
Measles	4
Mumps	7
Pellagra	20
Pneumonia	9
Scarlet fever	40
Smallpox	9
Tuberculosis	20
Typhoid fever	37
Whooping cough	11

UTAH

Cerebrospinal meningitis—Ogden	1
Chicken pox	61
Diphtheria	14
German measles	28
Measles	246
Mumps	10
Pneumonia	10
Scarlet fever	25
Smallpox	2
Typhoid fever	1
Whooping cough	2

VERMONT

Chicken pox	13
Diphtheria	1
Measles	178
Mumps	14
Poliomyelitis	1
Scarlet fever	3
Whooping cough	66

WASHINGTON

Cerebrospinal meningitis	1
Chicken pox	179
Diphtheria	96

WASHINGTON—continued

	Cases
German measles	4
Measles	86
Mumps	15
Pneumonia	1
Scarlet fever	84
Septic sore throat	1
Smallpox	29
Tuberculosis	31
Typhoid fever	9
Whooping cough	21

WEST VIRGINIA

Chicken pox	62
Diphtheria	64
Influenza	3
Measles	16
Scarlet fever	66
Smallpox	1
Tuberculosis	12
Typhoid fever	46
Whooping cough	83

WISCONSIN

Milwaukee:	
Cerebrospinal meningitis	4
Chicken pox	121
Diphtheria	20
German measles	1
Influenza	1
Measles	11
Mumps	33
Ophthalmia neonatorum	1
Pneumonia	18
Scarlet fever	17
Tuberculosis	15
Whooping cough	61
Scattering:	
Chicken pox	228
Diphtheria	45
Influenza	41
Measles	308
Mumps	102
Pneumonia	12
Poliomyelitis	2
Scarlet fever	109
Smallpox	11
Tuberculosis	29
Typhoid fever	4
Whooping cough	111

WYOMING

Cerebrospinal meningitis—Hot Springs County	1
Chicken pox	19
Diphtheria	1
Influenza	3
Measles	26
Mumps	6
Pneumonia	5
Scarlet fever	23
Septic sore throat	1
Tuberculosis	1
Whooping cough	17

Reports for Week Ended November 13, 1926

DISTRICT OF COLUMBIA

	Cases
Chicken pox	16
Diphtheria	68
Influenza	3
Pneumonia	16
Scarlet fever	20
Tuberculosis	17
Typhoid fever	3
Whooping cough	3

NORTH DAKOTA

Chicken pox	31
Diphtheria	2
Measles	56
Mumps	4
Pneumonia	1
Scarlet fever	31
Smallpox	2
Trachoma	3
Typhoid fever	1
Whooping cough	14

OKLAHOMA

(Exclusive of Oklahoma City and Tulsa)

Chicken pox	15
Diphtheria	58
Influenza	147
Malaria	42
Pneumonia	45
Poliomyelitis:	
Kingfisher County	1
Texas County	1
Scarlet fever	36
Smallpox:	
Cleveland County	18
McCurtain County	14
Typhoid fever	56
Whooping cough	30

SOUTH CAROLINA

Chicken pox	42
Dengue	4
Diphtheria	113
Hookworm disease	32
Influenza	571
Malaria	396
Measles	1
Paratyphoid fever	3
Pellagra	29
Poliomyelitis	4
Scarlet fever	38
Smallpox	4
Tuberculosis	27
Typhoid fever	32
Whooping cough	44

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever [1]
August, 1926										
New Mexico	0	2	0	0	12	1	0	3	0	32
September, 1926										
New Mexico	0	12	1	19	6	1	0	14	8	46
October, 1926										
Indiana	3	470	106	-------	100	-------	9	448	53	232
Massachusetts	7	291	38	2	120	1	27	729	0	87
Michigan	0	787	7	3	111	2	34	669	34	93
New Jersey	6	405	9	1	48	-------	6	330	0	106
New Mexico	1	17	0	8	5	1	0	52	1	101
New York	19	868	155	25	761	-------	98	625	17	344
North Dakota	0	14	0	-------	215	-------	2	191	24	30
South Carolina	0	304	551	2,227	24	228	25	37	23	443
Tennessee	5	524	130	364	20	37	4	328	16	725
Wisconsin	6	172	94	-------	562	-------	12	296	29	28

[1] Including paratyphoid fever.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

Diphtheria.—For the week ended November 6, 1926, 39 States reported 2,459 cases of diphtheria. For the week ended November 7, 1925, the same States reported 2,009 cases of this disease. One hundred cities, situated in all parts of the country and having an aggregate population of more than 30,400,000, reported 1,308 cases of diphtheria for the week ended November 6, 1926. Last year for the corresponding week they reported 923 cases. The estimated expectancy for these cities was 1,345 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty-seven States reported 2,371 cases of measles for the week ended November 6, 1926, and 1,740 cases of this disease for the week ended November 7, 1925. One hundred cities reported 474 cases of measles for the week this year, and 856 cases last year.

Poliomyelitis.—The health officers of 40 States reported 61 cases of poliomyelitis for the week ended November 6, 1926. The same States reported 117 cases for the week ended November 7, 1925.

Scarlet fever.—Scarlet fever was reported for the week as follows: Thirty-nine States—this year, 2,885 cases; last year, 2,500 cases; 100 cities—this year, 1,103 cases; last year, 936 cases; estimated expectancy, 846 cases.

Smallpox.—For the week ended November 6, 1926, 39 States reported 246 cases of smallpox. Last year for the corresponding week they reported 265 cases. One hundred cities reported smallpox for the week as follows: 1926, 15 cases; 1925, 52 cases; estimated expectancy, 35 cases. No deaths from smallpox were reported by these cities for the week this year.

Typhoid fever.—Seven hundred and fifty-five cases of typhoid fever were reported for the week ended November 6, 1926, by 39 States. For the corresponding week of 1925 the same States reported 853 cases of this disease. One hundred cities reported 140 cases of typhoid fever for the week this year and 155 cases for the corresponding week last year. The estimated expectancy for these cities was 113 cases.

Influenza and pneumonia.—Deaths from influenza and pneumonia were reported for the week by 94 cities, with a population of more than 29,700,000, as follows: 1926, 634 deaths; 1925, 820 deaths.

City reports for week ended November 6, 1926

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

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1917 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	26	3	0	0	0	1	0	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	2
Manchester	83,997	0	4	0	0	1	0	0	1
Vermont:									
Barre	10,008	3	0	0	0	0	15	0	0
Burlington	24,089	4	0	1	0	0	0	0	0
Massachusetts:									
Boston	779,620	31	62	24	2	0	7	28	18
Fall River	128,993	2	5	3	2	2	1	2	1
Springfield	142,065	2	4	1	2	0	2	0	1
Worcester	190,757	21	8	3	1	1	1	0	5
Rhode Island:									
Pawtucket	69,760	4	1	0	0	0	0	0	0
Providence	267,918	0	8	12	0	2	1	0	6
Connecticut:									
Bridgeport	(1)	0	9	4	0	0	0	1	1
Hartford	160,197	1	9	1	2	0	0	1	1
New Haven	178,927	5	4	2	0	0	0	0	6
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	40	25	2	1	2	0	2	10
New York	5,873,356	122	179	149	29	11	8	40	138
Rochester	316,786	7	12	4	1	1	2	1	1
Syracuse	182,003	7	12	6	-------	0	6	1	3
New Jersey:									
Camden	128,642	2	7	18	0	0	0	1	3
Newark	452,513	11	16	13	3	0	2	4	3
Trenton	132,020	0	6	3	0	0	0	0	3
Pennsylvania:									
Philadelphia	1,979,364	112	76	71	-------	2	5	1	50
Pittsburgh	631,563	90	38	20	-------	2	9	0	16
Reading	112,707	3	5	0	-------	0	0	1	1
Scranton	142,266	0	5	3	-------	0	0	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	10	23	12	1	2	1	9	11
Cleveland	936,485	59	51	105	1	2	8	2	11
Columbus	279,836	0	6	21	0	1	1	0	6
Toledo	287,380	71	15	12	0	0	1	0	5
Indiana:									
Fort Wayne	97,846	1	3	7	0	0	0	0	1
Indianapolis	358,819	34	12	41	0	0	0	0	12
South Bend	80,091	6	3	4	0	0	4	0	1
Terre Haute	71,071	3	3	1	0	0	0	0	5
Illinois:									
Chicago	2,995,239	87	156	66	8	2	73	14	37
Peoria	81,564	14	2	1	0	1	0	0	6
Springfield	63,923	6	3	0	0	0	16	0	1

[1] No estimate made.

City reports for week ended November 6, 1926—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,245,824	97	70	120	4	2	6	11	25
Flint	130,316	19	12	10	0	0	0	0	2
Grand Rapids	153,698	0	8	2	0	0	1	0	1
Wisconsin:									
Kenosha	50,891	6	3	0	0	0	0	2	1
Madison	46,385	6	1	1	0	0	0	0	0
Milwaukee	509,192	56	32	14	0	0	4	19	8
Racine	67,707	36	2	1	0	0	3	2	2
Superior	39,671	1	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	3	5	0	0	0	50	0	5
Minneapolis	425,435	99	31	35	0	1	2	1	7
St. Paul	246,001	18	20	16	0	0	15	0	8
Iowa:									
Davenport	52,469	0	2	0	0	-------	6	0	-------
Sioux City	76,411	19	2	3	0	-------	1	1	-------
Waterloo	36,771	19	1	1	0	-------	0	0	-------
Missouri:									
Kansas City	367,481	27	15	11	2	2	1	2	9
St. Joseph	78,342	0	4	0	0	0	0	0	5
St. Louis	821,543	16	56	54	0	0	1	4	-------
North Dakota:									
Fargo	26,403	18	0	0	0	0	0	2	0
South Dakota:									
Aberdeen	15,036	5	0	0	0	-------	0	0	-------
Sioux Falls	30,127	0	1	0	0	-------	0	0	-------
Nebraska:									
Lincoln	60,941	2	3	3	0	0	0	0	0
Omaha	211,768	4	11	4	0	0	3	1	4
Kansas:									
Topeka	55,411	4	3	1	0	0	0	0	0
Wichita	88,367	0	7	0	0	0	2	0	2
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	2	4	3	0	0	1	0	1
Maryland:									
Baltimore	796,296	46	33	31	6	1	1	7	14
Cumberland	33,741	1	1	0	0	0	0	0	1
Frederick	12,035	0	1	1	0	0	0	0	0
District of Columbia:									
Washington	497,906	5	23	36	0	0	1	0	9
Virginia:									
Lynchburg	30,395	0	3	3	0	1	0	0	2
Norfolk	(1)	0	5	5	0	0	0	1	3
Richmond	186,403	0	19	28	0	4	6	0	9
Roanoke	58,208	0	5	10	0	0	0	0	1
West Virginia:									
Charleston	49,019	0	4	1	0	0	0	0	1
Huntington	63,485	0	4	15	0	----	0	0	-------
Wheeling	56,208	15	4	0	0	0	0	0	1
North Carolina:									
Raleigh	30,371	1	3	3	0	0	0	0	1
Wilmington	37,061	0	1	1	0	0	0	0	3
Winston-Salem	69,031	1	3	7	0	0	1	1	2
South Carolina:									
Charleston	73,125	0	2	2	17	1	0	0	2
Columbia	41,225	0	2	5	0	0	0	0	0
Greenville	27,311	0	2	2	0	0	0	0	0
Georgia:									
Atlanta	(1)	0	10	25	22	0	0	1	10
Brunswick	16,809	1	0	0	0	0	0	2	1
Savannah	93,134	0	4	2	7	1	0	0	1
Florida:									
Miami	69,754	0	------	5	0	0	0	0	3
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	94,743	0	1	5	0	0	1	0	2

[1] No estimate made.

City reports for week ended November 6, 1926—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	8	0	0	0	0	2
Louisville	305,935	2	13	8	1	1	1	0	8
Tennessee:									
Memphis	174,533	8	15	15	0	1	2	0	3
Nashville	136,220	2	5	19	0	2	0	0	1
Alabama:									
Birmingham	205,670	2	6	13	9	0	1	0	3
Mobile	65,955	0	2	4	0	0	1	0	2
Montgomery	46,481	0	2	15	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	1	2	0	----	0	0	----
Little Rock	74,216	0	4	0	0	----	0	0	1
Louisiana:									
New Orleans	414,493	1	13	15	3	7	2	0	9
Shreveport	57,857	0	1	5	0	0	0	0	3
Oklahoma:									
Oklahoma City	(1)	0	5	2	0	0	0	0	1
Texas:									
Dallas	194,450	0	14	25	3	2	0	2	2
Galveston	48,375	0	1	2	0	0	0	0	1
Houston	164,954	1	5	7	0	0	0	0	4
San Antonio	198,969	0	3	3	1	0	0	1	6
MOUNTAIN									
Montana:									
Billings	17,971	12	0	0	0	0	18	0	1
Great Falls	29,883	22	1	0	0	0	0	0	1
Helena	12,037	----	0	----	----	----	----	----	----
Missoula	12,668	1	0	0	0	0	0	0	3
Idaho:									
Boise	23,042	3	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	11	15	14	----	1	7	0	6
Pueblo	43,787	5	6	0	0	1	0	0	1
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	0	0	1
Arizona:									
Phoenix	38,669	0	0	0	0	0	0	0	2
Utah:									
Salt Lake City	130,948	24	3	7	0	0	62	0	5
Nevada:									
Reno	12,665	0	0	3	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	(1)	44	6	10	0	----	3	19	----
Spokane	108,897	27	4	4	0	----	25	0	----
Tacoma	104,455	20	3	21	0	0	0	0	0
Oregon:									
Portland	282,383	14	11	3	0	1	8	3	7
California:									
Los Angeles	(1)	18	40	60	2	1	6	4	13
Sacramento	72,260	0	2	0	0	0	12	7	0
San Francisco	557,530	34	17	12	1	1	71	40	1

[1] No estimate made.

City reports for week ended November 6, 1926—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	1	3	0	0	0	0	1	0	0	9	22
New Hampshire:											
Concord	1	0	0	0	0	0	0	0	0	0	10
Manchester	1	0	0	0	0	0	0	0	0	0	12
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	7	2
Burlington	1	0	0	0	0	1	0	0	0	2	6
Massachusetts:											
Boston	34	61	0	0	0	10	3	6	0	9	185
Fall River	2	2	0	0	0	2	1	0	0	2	28
Springfield	7	1	0	0	0	3	0	0	0	4	27
Worcester	9	11	0	0	0	1	0	0	0	15	41
Rhode Island:											
Pawtucket	0	0	0	0	0	1	0	0	0	1	19
Providence	5	8	0	0	0	5	1	1	0	2	55
Connecticut:											
Bridgeport	6	17	0	0	0	0	0	0	0	0	26
Hartford	5	2	0	0	0	1	0	0	0	12	27
New Haven	5	7	0	0	0	2	2	0	0	0	38
MIDDLE ATLANTIC											
New York:											
Buffalo	17	5	0	0	0	6	2	4	1	14	137
New York	79	97	0	0	0	[1] 91	22	12	1	48	1,260
Rochester	6	3	0	0	0	3	1	1	0	4	63
Syracuse	10	3	0	0	0	2	1	0	0	8	41
New Jersey:											
Camden	3	1	0	0	0	1	0	1	0	5	35
Newark	11	10	0	0	0	5	2	2	0	14	97
Trenton	1	0	0	0	0	2	1	1	0	5	40
Pennsylvania:											
Philadelphia	58	50	1	0	0	34	8	2	2	24	478
Pittsburgh	37	17	0	0	0	11	2	1	2	5	125
Reading	1	2	0	0	0	1	0	1	0	11	23
Scranton	2	10	0	0	0	1	0	0	0	2	31
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	12	10	0	0	0	11	1	1	0	1	128
Cleveland	23	18	0	0	0	19	3	3	2	34	190
Columbus	9	10	0	2	0	8	1	0	1	3	79
Toledo	11	11	0	0	0	7	1	0	1	27	89
Indiana:											
Fort Wayne	1	1	0	0	0	0	1	0	0	0	20
Indianapolis	9	22	2	7	0	5	1	4	0	24	87
South Bend	3	4	1	0	0	0	1	1	0	1	14
Terre Haute	3	6	0	0	0	1	0	0	0	0	20
Illinois:											
Chicago	97	88	1	0	0	41	7	2	2	55	601
Peoria	8	3	0	0	0	0	0	0	0	4	25
Springfield	2	0	0	0	0	0	1	0	0	3	13
Michigan:											
Detroit	61	76	2	0	0	17	3	6	0	45	283
Flint	9	7	0	0	0	1	0	0	0	3	24
Grand Rapids	9	8	0	0	0	0	0	1	0	0	34
Wisconsin:											
Kenosha	2	1	1	0	0	0	1	1	0	9	7
Madison	1	5	0	0	0	0	0	1	0	0	------
Milwaukee	22	20	3	0	0	7	1	0	0	71	100
Racine	4	1	1	0	0	1	0	0	0	6	11
Superior	2	1	1	0	0	0	0	0	0	0	12
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	17	0	0	0	1	0	0	0	0	24
Minneapolis	36	87	1	0	0	2	1	1	0	1	83
St. Paul	15	22	5	0	0	2	0	0	0	7	62

[1] Pulmonary tuberculosis only.

City reports for week ended November 6, 1926—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—contd.											
Iowa:											
Davenport	1	2	0	0	-------	-------	0	0	-------	0	-------
Sioux City	3	7	1	0	-------	-------	0	0	-------	1	-------
Waterloo	2	1	1	0	-------	-------	0	0	-------	3	-------
Missouri:											
Kansas City	11	3	0	1	0	6	2	2	1	6	92
St. Joseph	3	1	0	0	0	0	1	0	0	2	21
St. Louis	34	33	0	0	0	7	3	7	0	20	206
North Dakota:											
Fargo	2	6	0	0	0	0	0	0	0	1	9
South Dakota:											
Aberdeen	0	6	0	1	-------	-------	0	0	-------	2	-------
Sioux Falls	2	2	0	1	0	0	0	0	0	0	-------
Nebraska:											
Lincoln	1	4	0	0	0	0	0	1	0	4	12
Omaha	4	10	2	0	0	5	0	0	0	1	43
Kansas:											
Topeka	3	0	0	0	0	0	1	1	1	6	16
Wichita	3	19	0	0	0	0	0	2	1	2	28
SOUTH ATLANTIC											
Delaware:											
Wilmington	4	18	0	0	0	1	1	0	0	3	26
Maryland:											
Baltimore	14	18	0	0	0	14	5	5	1	45	193
Cumberland	1	0	0	0	0	0	1	0	1	1	11
Frederick	0	3	0	0	0	0	0	0	0	0	1
District of Columbia:											
Washington	15	6	0	0	0	9	3	2	0	1	131
Virginia:											
Lynchburg	1	5	0	0	0	2	0	4	1	0	13
Norfolk	1	6	0	0	0	3	0	3	0	4	-------
Richmond	9	7	0	0	0	2	1	0	0	0	68
Roanoke	3	10	0	0	0	0	1	0	2	0	19
West Virginia:											
Charleston	1	2	0	0	0	2	0	0	0	0	19
Huntington	2	13	0	0	-------	-------	0	0	-------	0	-------
Wheeling	3	1	0	0	0	0	1	4	1	3	16
North Carolina:											
Raleigh	2	4	0	0	0	1	0	1	1	13	14
Wilmington	1	0	0	0	0	0	0	0	0	2	8
Winston-Salem	2	8	0	0	0	0	0	1	0	5	21
South Carolina:											
Charleston	1	1	0	0	0	2	0	0	0	0	20
Columbia	1	5	0	0	0	0	0	0	0	0	-------
Greenville	1	0	0	0	0	0	0	0	0	0	3
Georgia:											
Atlanta	6	12	0	0	0	3	1	3	0	0	73
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	0	0	0	0	3	0	0	0	1	28
Florida:											
Miami	-------	1	-------	0	0	0	-------	0	0	9	42
St. Petersburg	0	-------	0	-------	0	0	0	-------	0	-------	16
Tampa	0	0	0	0	0	3	0	1	0	0	29
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	3	0	0	0	1	0	0	0	0	21
Louisville	4	12	0	1	0	2	2	1	0	8	75
Tennessee:											
Memphis	5	20	0	0	0	3	2	3	0	16	59
Nashville	4	10	0	0	0	5	2	10	1	5	65
Alabama:											
Birmingham	4	0	0	1	0	4	2	6	1	0	47
Mobile	1	2	0	0	0	3	0	0	1	0	24
Montgomery	1	1	0	0	0	0	0	0	0	0	19

City reports for week ended November 6, 1926—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	----	----	0	0	----	6	----
Little Rock	2	2	0	0	----	3	1	0	----	0	----
Louisiana:											
New Orleans	5	9	0	0	0	10	3	1	0	2	153
Shreveport	1	0	0	2	0	6	1	0	0	0	23
Oklahoma:											
Oklahoma City	2	2	0	0	0	0	1	1	0	0	32
Texas:											
Dallas	4	14	0	0	0	4	1	0	0	0	46
Galveston	1	0	0	0	0	0	0	0	0	0	17
Houston	1	1	0	0	0	4	0	0	0	0	48
San Antonio	1	0	0	0	0	7	0	4	1	0	44
MOUNTAIN											
Montana:											
Billings	1	1	0	0	0	1	0	0	0	0	7
Great Falls	1	2	0	0	0	0	0	0	0	0	6
Helena	0		0	----	----	----	0	----	----	----	----
Missoula	0	14	0	0	0	0	0	0	0	0	5
Idaho:											
Boise	1	2	1	0	0	0	0	0	0	0	----
Colorado:											
Denver	8	42	2	0	0	5	1	1	0	0	79
Pueblo	1	1	0	0	0	0	1	0	0	0	7
New Mexico:											
Albuquerque	0	2	0	0	0	3	1	0	0	0	17
Arizona:											
Phoenix	2	0	0	0	0	5	0	0	0	0	17
Utah:											
Salt Lake City	2	2	0	0	0	0	1	0	0	1	33
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	8	5	3	0	----	----	1	6	----	2	----
Spokane	7	10	2	0	----	----	0	5	----	2	----
Tacoma	2	4	1	1	0	0	1	0	0	1	24
Oregon:											
Portland	8	18	3	3	0	0	1	1	0	1	66
California:											
Los Angeles	16	39	3	0	0	30	3	1	0	1	225
Sacramento	1	4	1	0	0	3	1	2	1	0	26
San Francisco	8	14	0	0	0	4	1	3	0	10	114

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Vermont:									
Burlington	0	1	0	0	0	0	0	0	0
Massachusetts:									
Boston	1	1	0	0	0	0	1	1	1
MIDDLE ATLANTIC									
New York:									
New York [1]	4	1	2	0	0	0	7	5	1
Pennsylvania: [1]									
Philadelphia	1	0	1	1	0	0	0	0	0

[1] Rabies; (human) 1 case and 1 death at New York, N. Y., and 1 death at Pittsburgh, Pa.

City reports for week ended November 6, 1926—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cleveland	0	0	1	1	0	0	0	0	0
Toledo	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	0	0	1	1	1	1	2	2	0
Michigan:									
Detroit	1	0	3	1	0	0	1	0	0
WEST NORTH CENTRAL									
Missouri:									
Kansas City	0	0	1	1	0	0	0	0	0
St. Louis	1	1	0	0	0	0	0	0	0
Nebraska:									
Omaha	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	1	0	0	0	0	0	1	0
District of Columbia:									
Washington	0	0	0	0	1	0	0	1	1
Virginia:									
Richmond	0	0	0	0	0	0	0	1	1
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
South Carolina:									
Columbia	1	0	0	0	0	0	0	0	0
Georgia: [2]									
Brunswick	0	0	0	0	1	0	0	0	0
Florida:									
St. Petersburg	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	0	0	1	1	0	0	0	0	0
Alabama:									
Birmingham	0	0	2	1	0	0	0	1	1
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	1	0	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	0	0
Spokane	1	0	0	0	0	0	0	0	0
Oregon:									
Portland	0	0	0	0	0	0	0	1	0
California:									
Los Angeles	0	0	0	0	0	0	1	1	0
San Francisco	0	0	0	0	1	0	1	0	0

[2] Typhus fever; 1 case at Atlanta, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended November 6, 1926, compared with those for a like period ended November 7, 1925. The population figures used in computing the rates are approximate estimates as of July 1, 1925 and 1926, respectively, authoritative figures for many of the cities not being available. The 101 cities

reporting cases had an estimated aggregate population of nearly 30,000,000 in 1925 and nearly 30,500,000 in 1926. The 95 cities reporting deaths had more than 29,200,000 estimated population in 1925 and more than 29,730,000 in 1926. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 3 to November 6, 1926—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 10, 1925	Oct. 9, 1926	Oct. 17, 1925	Oct. 16, 1926	Oct. 24, 1925	Oct. 23, 1926	Oct. 31, 1925	Oct. 30, 1926	Nov. 7, 1925	Nov. 6, 1926
101 cities	134	159	150	165	[2] 163	203	[3] 176	[4] 213	161	[3] 224
New England	96	66	120	85	[5] 94	85	132	106	93	118
Middle Atlantic	114	118	129	100	128	122	148	138	125	142
East North Central	153	188	166	219	180	261	186	[4] 244	178	276
West North Central	198	177	233	209	256	240	278	264	264	252
South Atlantic	179	216	209	218	[6] 252	302	213	357	198	319
East South Central	89	254	89	270	100	400	89	384	126	425
West South Central	79	176	88	219	101	280	251	331	189	254
Mountain	194	173	157	164	361	255	[3] 170	155	277	[3] 223
Pacific	102	200	105	175	135	191	149	205	141	288

MEASLES CASE RATES

101 cities	53	31	67	43	[2] 91	49	[3] 102	[4] 61	149	[3] 81
New England	371	33	431	26	[5] 578	26	582	24	822	66
Middle Atlantic	47	11	65	9	87	12	110	13	159	16
East North Central	24	29	24	36	45	47	54	[4] 69	70	80
West North Central	6	26	10	44	10	42	12	85	14	151
South Atlantic	15	15	52	21	[6] 37	26	56	9	144	21
East South Central	11	5	5	0	37	21	16	21	16	26
West South Central	0	0	0	13	13	4	4	0	9	9
Mountain	37	109	18	237	28	337	[3] 19	391	37	[3] 809
Pacific	11	181	28	291	11	278	14	342	17	315

SCARLET FEVER CASE RATES

101 cities	92	111	121	130	[2] 127	152	[3] 155	[4] 168	163	[3] 189
New England	105	144	127	144	[5] 125	194	194	246	261	265
Middle Atlantic	65	57	75	62	96	51	106	92	110	94
East North Central	109	121	143	132	135	155	185	[4] 155	159	189
West North Central	119	215	256	318	284	373	292	354	358	415
South Atlantic	92	100	129	126	[6] 126	163	180	133	173	199
East South Central	121	145	142	145	121	223	74	332	100	249
West South Central	62	69	53	86	40	95	40	112	97	112
Mountain	148	300	46	264	111	446	[3] 189	364	166	[3] 595
Pacific	102	159	135	205	127	235	141	237	155	205

SMALLPOX CASE RATES

101 cities	5	3	8	4	[2] 7	3	[3] 10	[4] 3	9	[3] 3
New England	0	0	0	0	[5] 7	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	1	1	8	3	4	3	16	[4] 1	12	6
West North Central	10	2	0	6	4	0	25	2	10	2
South Atlantic	6	0	6	4	[6] 0	9	6	6	12	0
East South Central	16	10	42	0	5	10	5	5	26	10
West South Central	0	4	0	4	0	0	0	4	0	9
Mountain	9	9	28	9	9	0	[3] 9	9	18	[3] 0
Pacific	44	19	55	32	75	16	44	22	47	3

[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, 1925 and 1926, respectively.
[2] Barre, Vt., and Winston-Salem, N. C., not included.
[3] Helena, Mont., not included.
[4] Milwaukee, Wis., not included.
[5] Barre, Vt., not included.
[6] Winston-Salem, N. C., not included.

Summary of weekly reports from cities, October 3 to November 6, 1926—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Oct. 10, 1925	Oct. 9, 1926	Oct. 17, 1925	Oct. 16, 1926	Oct. 24, 1925	Oct. 23, 1926	Oct. 31, 1925	Oct. 30, 1926	Nov. 7, 1925	Nov. 6, 1926
101 cities	36	33	35	32	[2] 32	26	[3] 25	[4] 28	27	[5] 24
New England	26	17	24	57	[5] 14	19	17	12	22	17
Middle Atlantic	31	27	28	26	25	20	21	14	12	12
East North Central	21	23	31	15	9	13	15	[4] 18	18	13
West North Central	33	22	20	14	33	22	18	24	31	26
South Atlantic	52	77	65	66	[6] 73	77	25	75	60	45
East South Central	163	145	121	140	147	99	100	140	168	104
West South Central	57	22	44	26	79	22	79	39	48	22
Mountain	120	64	46	46	65	27	[3] 85	46	37	[3] 93
Pacific	8	22	19	16	30	13	19	19	8	46

INFLUENZA DEATH RATES

95 cities	3	4	6	6	[2] 8	7	[3] 10	[4] 11	13	[5] 11
New England	0	0	0	5	[5] 2	7	12	7	5	12
Middle Atlantic	3	3	5	4	8	8	10	8	14	9
East North Central	3	2	8	2	9	5	7	[4] 15	11	6
West North Central	4	6	6	11	6	2	11	2	6	6
South Atlantic	2	6	2	8	[6] 2	8	6	21	17	15
East South Central	0	5	16	16	5	10	26	10	37	21
West South Central	15	14	10	14	19	14	34	24	15	43
Mountain	9	18	0	27	37	27	[3] 9	9	9	[3] 19
Pacific	0	0	11	11	4	0	4	7	15	7

PNEUMONIA DEATH RATES

95 cities	63	64	90	77	[2] 88	85	[3] 117	[4] 96	133	[5] 101
New England	58	33	93	76	[5] 87	83	108	99	134	99
Middle Atlantic	63	76	94	88	89	104	136	101	143	113
East North Central	61	54	89	63	79	60	114	[4] 86	119	84
West North Central	45	63	58	53	60	49	97	63	86	84
South Atlantic	71	60	121	88	[6] 116	113	129	107	194	120
East South Central	110	83	95	52	121	99	105	135	152	99
West South Central	63	94	53	104	111	57	116	80	150	118
Mountain	92	55	120	118	111	127	[3] 76	182	102	[3] 167
Pacific	51	53	80	82	76	99	47	89	91	50

[2] Barre, Vt., and Winston-Salem, N. C., not included.
[3] Helena, Mont., not included.
[4] Milwaukee, Wis., not included.
[5] Barre, Vt., not included.
[6] Winston-Salem, N. C., not included.

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

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1925	1926	1925	1926
Total	101	95	29,900,058	30,427,598	29,221,531	29,733,613
New England	12	12	2,176,124	2,206,124	2,176,124	2,206,124
Middle Atlantic	10	10	10,346,970	10,476,970	10,346,970	10,476,970
East North Central	16	16	7,481,656	7,655,436	7,481,656	7,655,436
West North Central	12	10	2,550,024	2,589,131	2,431,253	2,468,448
South Atlantic	21	21	2,716,070	2,776,070	2,716,070	2,776,070
East South Central	7	7	993,103	1,004,953	993,103	1,004,953
West South Central	8	6	1,184,057	1,212,057	1,078,198	1,103,695
Mountain	9	9	563,912	572,773	563,912	572,773
Pacific	6	4	1,888,142	1,934,084	1,434,245	1,469,144

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended October 30, 1926.—The following report for the week ended October 30, 1926, was transmitted by the Eastern Bureau of the Secretariat of the Health Section of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox		Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Mauritius: Port Louis	4	3	0	0	0	0	Dutch East Indies:						
Union of South Africa:							Belawan Deli	0	0	0	0	---	1
Durban	0	0	0	0	11	---	Padang	0	0	0	0	6	---
British India:							Surabaya	0	1	0	0	0	0
Bombay	---	0	---	0	3	0	Siam: Bangkok	0	0	1	1	8	4
Madras	---	0	---	0	1	0	China:						
Rangoon	---	1	---	0	0	0	Amoy	0	0	2	---	0	0
Karachi	---	0	---	0	1	0	Shanghai	0	0	1	1	0	0
Tuticorin	---	0	---	0	1	0	U.S.S.R.: Vladivostok	0	0	0	0	1	---
							Japan	0	0	0	0	1	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Aden, Jeddah, Kamaran, Perim.

Iraq.—Basrah.

Persia.—Mohammerah, Bender-Abbas, Bushire.

British India.—Chittagong, Cochin, Vizagapatam, Negapatam.

Ceylon.—Colombo.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Cheribon, Samarang, Batavia, Sabang, Makassar, Banjermasin, Palembang, Menado, Pontianak, Balik-Papan.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

French Indo-China.—Saigon and Cholon, Turane, Haiphong.

China.—Hongkong.

Formosa.—Keelung.

Japan.—Yokohama, Osaka, Nagasaki, Kobe, Niigata, Tsuruga, Hakodate, Shimonoseki.

Korea.—Chemulpo, Fusan.

Manchuria.—Mukden, Changchun, Harbin, Antung.

Kwantung.—Port Arthur, Dairen.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez, Alexandria.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Jibuti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenco, Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town.

Reports had not been received in time for distribution from—

British India.—Calcutta.
Dutch East Indies.—Samarinda, Tarakan.
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.
Madagascar.—Tamatave, Majunga.

AZORES

Gastroenteritis—Horta—September, 1926.—During the month of September, 1926, four cases of gastroenteritis with four deaths were reported at Horta, Island of Fayal, Azores.

BRAZIL

Mortality—Leprosy—Malaria—Manaos—July 1-September 30, 1926.—During the three months ended September 30, 1926, 6 deaths from leprosy and 52 from malaria were reported at Manaos, Brazil. The total number of deaths from all causes was 233. Population, estimated, 80,949.

CANADA

Communicable diseases—Week ended October 30, 1926.—The Canadian Ministry of Health reports cases of certain communicable diseases for the week ended October 30, 1926, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta[1]	Total
Influenza	13							13
Lethargic encephalitis						2		2
Poliomyelitis				5				5
Smallpox				30	29	6	9	74
Typhoid fever		9	5	23	2	6	9	54

[1] Report for week ended Oct. 23, 1926, smallpox, 3; typhoid fever, 2.

Communicable diseases—Ontario—October, 1926—Comparative.—During the month of October, 1926, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease	1926		1925	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	5	1	5	5
Chancroid	1			
Chicken pox	544		460	
Diphtheria	429	22	407	14
German measles	7		6	
Gonorrhea	177		141	
Influenza		10		11
Lethargic encephalitis	7	5	2	2
Measles	383		399	
Mumps	25		103	
Pneumonia		128		165
Poliomyelitis	27	4	14	
Scarlet fever	361	1	384	6
Septic sore throat	3		4	
Smallpox	75		19	
Syphilis	173		128	
Tuberculosis	96	54	142	66
Typhoid fever	101	10	137	5
Whooping cough	304	3	247	6

Smallpox.—Smallpox was reported in eight localities, with the greatest number of cases, viz, 48, reported at Timmins.

Hospital standardization—Nova Scotia.—Information dated October 27, 1926, shows that 11 hospitals in Nova Scotia have received full or conditional approval from the American College of Surgeons, which in 1918 established hospital standardization. The list of hospitals in Nova Scotia which conform to the requirements shows 2 of over 100 beds, and 9 of 50 to 100 beds.

CHILE

Reorganization of Public Health Service.—Under date of September 4, 1926, the reorganization of the Public Health Service of Chile was stated to include 13 local boards of health appointed and functioning, and 12 municipal sanitary districts organized and operating. There have been created 83 sanitary divisions, of which 25 were stated to be actually functioning.

Teachers' correspondence courses in hygiene.—The department of sanitary education of the bureau of sanitation is stated to have organized a correspondence course in hygiene for all primary school teachers in Chile. It was stated that 4,000 teachers had enrolled themselves for the course.

CHINA

Cholera — Plague — Hospitalization — Preventive measures — North Manchuria—Third quarter, 1926.—The following information was received under date of October 18, 1926, with regard to disease prevalence in North Manchuria, China, for the quarter ended September 30, 1926:

Cholera and choleraic diseases.—Cholera appeared at Harbin during the summer of 1926, the first authentic case being in a bean-cake worker reported August 5, followed by three other cases in the same group. Cases appeared in the Special Area, the greatest number reported for any one day seldom exceeding 10. The last case in the Chinese city was reported September 12 and the last in the Special Area about September 19. The number of cases admitted to hospital was: For the municipal hospital, 66 cases, with 36 deaths; Pinchiang (Plague Prevention Service), 168 cases with 29 deaths; railway hospital, 55 cases with 18 deaths. Cholera was reported in practically every large city in North Manchuria, the greatest number of cases being reported at Antung (500), and Changchun (320). Dairen had 10 cases and Newchwang 167 cases. The total number of cases in North Manchuria was stated to be not much over 1,500.

The total number of cases reported in Manchuria was stated to have been one-tenth of that reported in the year 1919.

Related diseases.—Dysentery and infantile diarrhea were stated to have been unusually prevalent during the summer of 1926.

Typhoid fever.—Typhoid fever prevalence was noted during the period under report.

Plague.—A few sporadic cases of plague, occurring in Russians, were reported in the transbaikal region. The bubonic cases occurred in tarabagan hunters. Two cases of pneumonic plague were reported among horse breeders at Olovianaya, an important city situated between Manchouli and Chita.

EGYPT

Plague—Western Desert Province.—During the week ended October 21, 1926, four cases of plague were reported in the Western Desert Province 60 kilometers distant from Sidi Barrani.

Summary—January 1–October 21, 1926.—During the period January 1 to October 21, 1926, 139 cases of plague were reported in Egypt as compared with 131 cases reported for the corresponding period of the year 1925.

JAMAICA

Smallpox (alastrim)—September 26–October 30, 1926.—During the period from September 26 to October 30, 1926, 89 cases of smallpox (reported as alastrim) were notified in the Island of Jamaica, occurring in localities other than Kingston.

Other communicable diseases.—During the same period other communicable diseases were reported in the island as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Chicken pox	1	9	Ophthalmia		1
Diphtheria		2	Paratyphoid fever		1
Dysentery	27	19	Puerperal fever	1	2
Erysipelas	1	1	Tuberculosis	17	60
Leprosy		1	Typhoid fever	19	111

Population of island, estimated, 858,118; population of Kingston, 62,707, census.

JAPAN

Cholera—Taiwan Island.—During the period September 21 to October 10, 1926, 11 cases of cholera were reported in the island of Taiwan, Japan, making a total of 16 cases occurring since September 1, 1926. The first case was stated to have arrived in the Taihoku Province from Foochow, China, through the port of Tansui.

MEXICO

Cerebrospinal meningitis—Gastroenteritis—Progreso—October 10–16, 1926.—During the week ended October 16, 1926, two deaths from cerebrospinal meningitis and two from gastroenteritis were reported

at Progreso, Yucatan, Mexico. Meningitis was stated to be of frequent occurrence as a cause of mortality in children.

Influenza.—During the same period influenza was reported present in epidemic form but not of virulent type.

PERU

Cooperation of the press in sanitary work.—According to information dated August 20, 1926, a meeting of leading editors called on that date at Lima considered the subject of the responsibility of the press in regard to the defense of public health and agreed on a program for broadcasting information in the interest of a sanitary campaign then being carried on. Especial attention was given to the need for cement foundations in house building to prevent the ingress of rats.

Inauguration of anticancer league—Lima.—Information has been received under date of September 11, 1926, in regard to the inauguration by the Surgical Society of Peru, of the anticancer league for conducting a campaign against cancer in Peru. It was stated that a permanent committee had been established for the study of cancer conditions, the program of the committee to include the establishment of dispensaries for cancer treatment in various hospitals, establishment of a library of medical information on the subject of cancer, and a bureau of propaganda to distribute data as to the prevention and treatment of the disease. The program was to include the appointment of a visiting service for cancer work, special care of cancer patients in general hospitals, and the creation of a special hospital for the treatment of cancer cases.

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

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

Reports Received During Week Ended November 26, 1926 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Oct. 3–9	18		
Changsha	do	1		
Manchuria—				
Antung				August, 1926: Cases, 500.
Changchun				August, 1926: Cases, 320.
Dairen				August, 1926: Cases, 10.
Harbin	Aug. 5–Sept. 12	289	83	
Newchwang				August, 1926: Cases, 167.
Swatow	Oct. 3–9	7		
French Settlements in India	July 25–Aug. 28	52	47	
India				Sept. 19–25, 1926: Cases, 1,359; deaths, 832.

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

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

Reports Received During Week Ended November 26, 1926[1]—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Japan:				
Taiwan Island	Sept. 21-Oct. 10	11		Sept. 1-Oct. 10, 1926: Cases, 16. Occurring in Taihoku Province. First case stated to have been in Chinese from Foochow, arrived by port of Tansui.

PLAGUE

Egypt				Jan. 1-Oct. 21, 1926: Cases, 139; corresponding period 1925—cases, 126
Province—				
Western Desert—				
Sidi Barrani	Oct. 16-21	4		Bubonic.
India				Sept. 19-25, 1926: Cases, 1,535; deaths, 860.
Bombay	Sept. 26-Oct. 9	4	4	
Madras Presidency	Sept. 19-25	65	31	
Rangoon	Oct. 3-9	1	2	
Java:				
Batavia	do	10	10	
Surabaya	Sept. 19-25	1		
Madagascar				August 16-31, 1926: Cases, 112; deaths, 106.
Province—				
Itasy	Aug. 16-31	1	1	Pneumonic.
Maevatanana	do	2	2	Bubonic.
Majunga	do	15	15	Do.
Tamatave	do	15	10	Do.
Nigeria	July 1-31	121	112	
Senegal	June 1-30	192	136	
Siam				Apr. 1-Oct. 2, 1926: Cases 15; deaths, 10.

SMALLPOX

Algeria	Aug. 21-Sept. 20	143		
Belgium	Sept. 1-30	2		
Canada:				
Alberta	Oct. 24-30	9		
Calgary	do	5		
Manitoba	do	29		
Winnipeg	Oct. 31-Nov. 6	1		
Ontario				October, 1926: Cases, 75; corresponding period, 1925—cases, 19.
Saskatchewan	Oct. 24-30	6		
China:				
Chungking	Sept. 26-Oct. 2			Prevalent.
Manchuria—				
Penhsihu	Sept. 27-Oct. 3	1		South Manchuria Railway.
Tieh-ling	do	1		Do.
Chosen	July 1-31	82	27	
France	Aug. 1-31	7		
French Settlements in India	July 25-Aug. 28	31	31	
Germany:				
Coblenz	Oct. 24-30	1		
Gold Coast	July 1-31	20	1	
Great Britain:				
England and Wales—				
Newcastle-on-Tyne	Oct. 24-30	1		
Sheffield	Oct. 17-23	12		
India				Sept. 19-25, 1926: Cases, 1,067; deaths, 281.
Bombay	Sept. 26-Oct. 9	6	3	
Madras	Oct. 10-16	5	1	
Jamaica	Sept. 26-Oct. 30	89		
Japan	July 17-Aug. 28	30		
Java:				
Batavia	Oct. 3-9	6		Province.
Surabaya	Sept. 12-25	46	1	
Mexico	June 1-30		246	
San Luis Potosi	Oct. 31-Nov. 6		2	
Torreon	Oct. 17-23		1	
Poland				Aug. 30-Sept. 11, 1926: Cases, 414.

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

Reports Received During Week Ended November 26, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Siam				Sept. 26–Oct. 2, 1926: Cases, 7; deaths, 6. Apr. 1–Oct. 2, 1926: Cases, 590; deaths, 236.
Bangkok	Sept. 26–Oct. 2	3	5	District.
Spain				Jan. 1–June 30, 1926: Deaths, 99.
Tunisia				Aug. 21–Sept. 20, 1926: Cases, 23.
Union of South Africa:				
Transvaal—				
Johannesburg	Sept. 19–25	1		Native.
Pretoria	do	1		Stated to have come from Johannesburg.

TYPHUS FEVER

Algeria	Aug. 21–Sept. 20	16		
Chosen	July 1–31	37	6	
France	Aug. 1–31	5		
Ireland (Irish Free State):				
Cobh (Queenstown)	Aug. 17–23	1		
Latvia	Aug. 1–31	2		
Lithuania	do	6		
Mexico	June 1–30		34	
Mexico City	Oct. 17–30	14		Including municipalities in Federal District.
Morocco	Aug. 1–31	10		
Poland	Aug. 15–Sept. 18	83	7	
Rumania	June, 1926	188	16	
Do	July, 1926	65	9	
Spain	Jan. 1–June 30		13	
Tunisia	Aug. 1–Sept. 20	43		

Reports Received from June 26 to November 19, 1926 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
Ceylon				Apr. 18–May 29, 1926: Cases, 31; deaths, 29.
China:				
Amoy	Aug. 8–Oct. 2	235		Stated to be present in epidemic form.
Canton	June 1–30	38	14	
Do	July 15–31	54	28	
Foochow	Aug. 15–Oct. 2		1	In foreign population.
Kulangsu	Sept. 12–18		2	
Manchuria—				
Dairen	Aug. 23–29	1	1	
Nanking	July 25–Oct. 2			Present.
Shanghai	Reported July 20	35	8	
Do	July 25–Oct. 2	38	409	Cases, foreign; deaths, native and foreign.
Swatow	July 11–Oct. 2	36	63	
Tsingtao	July 11–Aug. 30	4	4	Japanese settlements, 10 deaths; Chinese, 30 to 40 deaths daily; estimated.
Chosen:				
North Heian Province	Sept. 3–16	70	30	Deaths estimated.
Shingishu	Sept. 13	19		Including places in vicinity.
French Settlements in India	Mar. 7–June 26	31	30	
Do	June 27–July 24	42	36	
India				Apr. 25–June 26, 1926: Cases, 18,526; deaths, 11,531. June 27–Sept. 18, 1926: Cases, 25,044; deaths, 15,977.
Bombay	May 30–June 5	1	1	
Do	July 18–Aug. 28	3	3	
Calcutta	Apr. 4–May 29	478	418	
Do	June 13–26	73	69	
Do	June 27–Sept. 25	304	272	
Madras	May 16–June 5	2	1	
Do	Aug. 1–Sept. 25	7	6	
Rangoon	May 9–June 26	67	44	
Do	June 27–Sept. 4	31	29	

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

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

Reports Received from June 26 to November 19, 1926—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China:				
Saigon	May 2–15	52	48	
Do	May 22–June 26	42	32	
Do	June 27–Aug. 14	31	17	
Japan				To Sept. 10, 1926: Cases, 35.
Ken (Prefecture)—				
Hiroshima	To Sept. 10	1		
Hyogo	do	7		
Kagakawa	do	8		
Kanagawa	do	3		Including Yokohama.
Kochi	do	1		
Ookayama	do	7		
Osaka	do	6		
Taihoku	Sept. 1–10	2		
Wakayama	To Sept. 10	2		
Philippine Islands:				
Manila	May 18–24	2	2	
Do	June 27–Oct. 2	14	3	
Provinces—				
Albay	Apr. 18–24	1	1	
Davao	May 23–29	1		
Mindoro	Feb. 21–Mar. 6	3	3	
Pampanga	July 25–31	1	1	
Rizal	July 18–24	1		
Romblon	Dec. 14–31	42	43	
Do	Jan. 2–Mar. 27	41	35	
Siam				Apr. 1–Sept. 25, 1926: Cases, 7,643; deaths, 5,023.
Bangkok	May 2–June 12	1,325	736	
Do	June 20–26	56	26	
Do	June 27–Sept. 25	94	68	
Straits Settlements:				
Singapore	July 4–17	2	1	
On vessel:				
Steamship Macedonia	Aug. 5	7		At Yokohama, Japan. Vessel sailed from Singapore, July 18, 1926.

PLAGUE

Algeria:				
Algiers	June 21–30	1		Under date of July 16, 2 cases reported.
Do	July 1–20	1		
Do	Sept. 23	1		
Bona	Aug. 14	1		
Oran	Sept. 21–Oct. 10	9	4	
Philippeville	Sept. 7	1		
Azores:				
Fayal Island—				
Horta	Aug. 2–29	2	2	
St. Michaels Island	May 9–June 26	4	1	
Do	June 27–July 10	3	1	
Brazil:				
Paranagua	Oct. 8			Present
British East Africa:				
Kisumu	May 16–22	1	1	
Do	Aug. 17–Sept. 11	3	2	
Uganda	Mar. 1–June 30	732	574	
Canary Islands:				
Teneriffe	Aug. 2	2		
Ceylon:				
Colombo	May 29–June 5	1	1	
Chile:				
Iquique	June 20–26		1	
China:				
Amoy	Apr. 18–June 26	40	30	
Do	June 27–Aug. 7	28		
Foochow	June 6–July 31			Several cases. Not epidemic.
Nanking	May 9–Sept. 18			Prevalent.
Swatow	July 25–31	14		
Ecuador				January–June, 1926: Cases, 335; deaths, 154.
Chimborazo	January–June	9	2	Rats taken, 766.

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

Reports Received from June 26 to November 19, 1926—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Ecuador—Continued.				
Guayaquil	May 16–June 30	6		Rats taken, 30,914; found infected, 31.
Do	July 1–Sept. 30	16	3	Rats taken 62,544; found infected, 89.
Leon	January–June	43	19	Localities, 2.
Loja	do	176	75	Cantons, 2.
Tungurahua	do	83	29	At Ambato, Huachi, and Picayhua. Rats taken, 1,542.
Egypt				Jan. 1–Sept. 9, 1926: Cases, 128.
City—				
Alexandria	July 27–Aug. 12	4	1	
Suez	May 21–July 1	9	5	
Do	July 29	2		
Provinces—				
Behera	July 23–Aug. 15	4	1	
Beni-Suef	May 23–June 8	8	2	
Charkieh	July 27	1	1	
Gharbieh	June 2	1	1	
Minieh	July 24	1	1	
Sidi Barrani	Sept. 30–Oct. 12	19	3	In western desert.
France:				
Marseille	July 8	1	1	Reported July 24.
Paris	Oct. 18	1		
St. Denis	Reported Aug. 2	1		Vicinity of Paris.
St. Ouen	Aug. 14	2		Suburb of Paris.
Great Britain:				
Liverpool	Aug. 29–Sept. 4	2	1	
Greece:				
Athens	Apr. 1–May 31	16	4	Including Piræus.
Do	Aug. 1–Sept. 30	20	5	Do.
Patras	May 27–June 12	4	1	
Do	July 25–Oct. 2	8	4	
Zante	May 17	1		
Hawaii Territory:				
Hamakua	June 9			1 plague rodent trapped near Hamakua Mill.
Honokaa	Oct. 6	1	1	
Paauhau	July 18–24			Plague-infected rat trapped.
India				Apr. 25–June 16, 1926: Cases, 53,001; deaths, 41,576. June 27–Sept. 18, 1926: Cases, 5,739; deaths, 3,275
Bombay	May 2–June 26	16	15	
Do	July 18–Sept. 18	9	8	
Karachi	May 23–June 26	15	13	
Do	July 11–17	1	1	
Madras Presidency	Apr. 25–June 26	162	93	
Do	July 4–Sept. 18	655	318	
Rangoon	May 9–June 26	20	15	
Do	June 27–Oct. 2	83	72	
Indo-China:				
Saigon	May 23–June 26	8	3	
Do	July 18–Aug. 7	2	1	
Iraq:				
Baghdad	Apr. 18–June 12	161	108	
Do	July 18–Sept. 11	4	4	
Japan:				
Yokohama	July 2–Aug. 10	9	80	
Java:				
Batavia	Apr. 24–June 19	65	65	
Do	June 26–Oct. 2	70	68	
Cheribon	Apr. 11–24	3	3	
Do	Sept. 12–18	1	1	
East Java and Madura	June 13–19	1	1	
Do	July 25–31	1	1	
Surabaya	Aug. 22–28	17	2	
Madagascar:				
Ambositra Province	May 1–15	4	4	Septicemic
Antisirabi Province	June 16–30	4	4	
Itasy Province	do	17	10	
Majunga Province	do	10	6	
Mananjary Province	do	1	1	
Moramanga Province	Apr. 1–15	2	2	Do.
Tananarive Province				Apr. 1–June 30, 1926: Cases, 130; deaths, 120. July 1–Aug. 31, 1926: Cases, 126; deaths, 119.
Towns—				
Majunga	Aug. 1–15	14	10	
Tamatave (Port)	May 16–31	1	1	
Do	July 1–Aug. 15	6	5	
Tananarive	Apr. 1–June 30	7	7	
Do	July–Aug. 31	24	24	

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

Reports Received from June 26 to November 19, 1926—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Mauritius:				
Port Louis	July 31	1	1	
Nigeria				Feb. 1-June 30, 1926: Cases, 191; deaths, 163.
Peru				May-June, 1926: Cases, 57; deaths, 16. July 1-Sept. 30, 1926: Cases, 89; deaths, 52.
Departments—				
Ancash	May 1-31			Present.
Do	July 1-Sept. 30	2		
Cajamarca	May 1-June 30	10	4	
Do	Aug. 1-Sept. 30	1		
Ica	May 1-31	1		
Do	July 1-31	1		
Junin	Sept. 1-30	21	20	
Lambayeque	do	1		
Libertad	May 1-31	4		
Do	Sept. 1-30	3	1	
Lima	May 1-June 30	29	12	
Do	July 1-Sept. 30	69	31	
Piura	June 1-30	13		
Russia				Jan. 1-Mar. 31, 1926: Cases, 37.
Senegal				Nov. 1-30, 1925: Cases, 3; deaths, 2. Mar. 1-May 31, 1926: Cases, 150; deaths, 77.
Siam				Apr. 1-Sept. 25, 1926: Cases, 15; deaths, 10.
Bangkok	May 23-June 26	2	2	
Do	July 18-24	1	1	
Straits Settlements:				
Singapore	May 2-8	1	1	
Do	July 4-17	1	1	
Syria:				
Beirut	July 1-Aug. 10	2		
Do	Oct. 15			Present.
Tunisia	May 11-June 30	174		
Do	July 1-Aug. 20	13		
Kairouan	June 9	3		9 cases 30 miles south of Kairouan.
Turkey:				
Constantinople	Aug. 1-Sept. 25	7	4	
Union of South Africa:				
Cape Province	May 16-22	5	3	
Calvinia District	June 13-26	12	6	
Do	June 27-Aug. 21	3	3	
Williston District	June 13-26	2		
Do	June 27-July 3	1		
Orange Free State—				
Hoopstad District	Aug. 15-21	1		
Protestpan	May 9-22	3	3	
On vessel:				
Steamship Zaria	September, 1926	2	2	At Liverpool, England, from Lagos, Nigeria, West Africa; 29 plague-infected rats found on board.

SMALLPOX

Algeria				July 21-Aug. 20, 1926: Cases, 87.
Algiers	May 21-June 20	14		
Do	July 1-Aug. 31	3		
Arabia:				
Aden	Oct. 3-9	1		Imported.
Belgium:				
Antwerp	Aug. 1-7	1	1	
Bolivia:				
La Paz	May 1-June 30	14	7	
Do	July 1-Aug. 31	16	8	
Brazil:				
Bahia	June 20-26	1		
Do	June 27-Oct. 2	71	39	
Manaos	Apr. 1-30		5	
Para	May 16-June 26	26	25	
Do	June 27-Sept. 25	29	19	
Pernambuco	July 11-Sept. 25	166	22	
Porto Alegre	Aug. 10-31	2		

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

Reports Received from June 26 to November 19, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Brazil—Continued.				
Rio de Janeiro	May 2–June 19	132	91	
Do	July 4–Sept. 25	2,534	1,338	
Do	Oct. 3–16	196	113	Jan. 1–Oct. 16, 1926: Cases, 3,601; deaths, 1,896.
Sao Paulo	June 27–Aug. 22		5	
Santos	Mar. 1–7		1	
British East Africa:				
Mombasa	July 5–11	5	4	
Tanganyika	May 1–31	252	46	
Uganda	Mar. 1–May 31	3		
British South Africa:				
Northern Rhodesia	May 18–24	17	6	Natives.
Do	June 8–14	5		
Do	Sept. 11–17	1		
Canada:				
Alberta				May 30–June 12, 1926: Cases, 3 June 27–Oct. 16, 1926: Cases, 59.
Calgary	Sept. 5–Oct. 16	21		
British Columbia—				
Vancouver	Aug. 16–Sept. 12	3		
Manitoba				May 30–June 26, 1926: Cases, 15. June 27–Sept. 25, 1926: Cases, 19.
Winnipeg	June 6–12	5		
Do	July 4–Sept. 4	12		
New Brunswick—				
Northumberland County.	Oct. 11–23	1		
Ontario				May 30–June 26, 1926: Cases, 36. June 27–Oct. 23: Cases, 87.
Fort William	July 25–Aug. 7	2		
Kingston	May 23–June 26	5		
Do	July 11–17	2		
Kitchener	Apr. 26–May 29	3	1	
North Bay	May 2–22	5		
Do	July 25–31	2		
Orillia	Apr. 26–May 29	7		
Ottawa	July 18–24	1		
Packenham	do	10		
Peterboro	Sept. 1–30	10		
Toronto	July 18–Oct. 23	12		
Waterloo	July 18–24	6		
Saskatchewan				May 30–June 26, 1926: Cases, 16. June 27–Oct. 23: Cases, 89.
Regina	July 4–Sept. 25	3		
Ceylon				Mar. 14–May 29, 1926: Cases, 44; deaths, 3. Sept. 12–18, 1926: Cases, 2.
Colombo	Sept. 19–Oct. 2	6		
Chile:				
Antofagasta	June 6–12	1		
China:				
Amoy	May 1–June 26	4	8	
Do	July 4–10	1		
Antung	May 17–June 19	5		
Do	July 4–18	2		
Canton	May 1–31	4	2	
Changsha	Aug. 8–14	1		
Chungking	May 2–Sept. 18			Present
Foochow	May 2–Oct. 2			Do.
Fushun	Sept. 12–18	1		
Hongkong	May 2–June 26	19	10	
Do	June 27–July 3	1	1	
Manchuria	July 4–31	18		Railway stations.
An-shan	May 16–June 12	5		South Manchurian Railway.
Antung	May 16–June 19	5		
Changehun	May 16–June 26	6		Do.
Do	June 27–Sept. 11	2		Do.
Dairen	Apr. 26–June 20	69	16	
Do	June 28–Aug. 8	5	3	
Fushun	May 16–June 5	4		Do.
Harbin	May 14–June 30	21		Do.
Do	July 1–28	12		
Kai-yuan	May 16–June 30	10		Do.
Kungchuling	June 13–19	1		Do.
Liaoyang	May 16–June 30	4		Do.
Mukden	do	4		Do.
Penhsihu	May 16–June 19	4		Do.
Do	Aug. 8–22	2		Do.
Ssupinghai	May 16–June 30	2		Do.
Do	Aug. 1–7	1		Do.
Teshihchiao	May 16–June 30	2		Do.
Wa-feng-tien	do	3		Do.
Do	Aug. 1–7	1		Do.

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

Reports Received from June 26 to November 19, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China—Continued.				
Nanking	May 8-Sept. 18			Present.
Shanghai	May 2-June 26	10	25	Cases, foreign: Deaths, population of international concession, foreign and native.
Do	June 27-July 24	3	3	
Swatow	May 9-Sept. 25			Sporadic.
Tientsin	June 2-26		1	Reported by British municipality.
Wanshien	May 1			Prevalent.
Chosen				Mar. 1-June 30, 1926: Cases, 667; deaths 146.
Fusan	May 1-31	1		
Seishun	do	2	1	
Egypt:				
Alexandria	May 15-July 1	18	3	
Do	July 23-Oct. 7	13	6	
Cairo	Jan. 29-May 13	39	8	
Estonia				May 1-June 30, 1926: Cases, 3.
France				Mar. 1-June 30, 1926: Cases, 141; July 1-31: Cases, 17.
Paris	Sept. 1-Oct 10	43	9	
St. Etienne	Apr. 18-June 15	7	3	
Do	Sept. 16-30	2	1	
French Settlements in India	Mar. 7-June 26	282	282	
Do	June 27-July 31	37	37	
Gold Coast	Mar. 1-June 30	9		
Great Britain:				
England and Wales				May 23-June 26, 1926: Cases, 933; June 27-Oct. 16, 1926: Cases, 1,638.
Birmingham	Sept. 26-Oct. 2	1		
Bradford	May 23-29	1		
Do	Aug. 29-Sept. 4	1		
Hull	Oct. 17-23	1		
London	Sept. 26-Oct. 16	3		
Newcastle-on-Tyne	June 6-12	1		
Do	July 11-Oct. 9	4		St. Gateshead, several cases reported.
Nottingham	May 2-June 5	7		
Do	July 18-24	1		
Sheffield	June 13-19	1		
Do	July 4-Oct. 2	9		
South Shields	Oct. 3-9	1		
Greece:				
Athens	July 1-31	71	6	Including Piræus.
Saloniki	June 1-14		3	
Guatemala:				
Guatemala City	June 1-30		2	
India				Apr. 25-June 26, 1926: Cases, 54,851; deaths, 14,771. June 27-Sept. 18, 1926: Cases, 25,994; deaths, 7,950.
Bombay	May 2-June 26	220	134	
Do	June 27-Sept. 18	112	61	
Calcutta	Apr. 4-May 20	171	152	
Do	June 13-26	24	18	
Do	June 27-Oct. 2	45	42	
Karachi	May 16-June 26	44	18	
Do	June 27-Oct. 2	14	7	
Madras	May 16-June 26	7	4	
Do	June 27-Oct. 9	71	19	
Rangoon	May 9-June 26	10	5	
Do	July 4-Sept. 11	21	4	
Indo-China:				
Saigon	May 9-June 26	2		
Iraq:				
Baghdad	do	8	3	
Do	July 4-Sept. 11	3	1	
Basra	Apr. 18-June 22	34	25	
Do	Aug. 15-21	1		
Italy				Mar. 28-June 26, 1926: Cases, 34. June 27-July 31, 1926: Cases, 11.
Catania	Aug. 9-15	2		Entire consular district, including island of Sardinia.
Rome	June 14-20	4		
Jamaica				Apr. 25-June 26, 1926: Cases, 201. (Reported as alastrim.)
Do				June 27-Sept. 25, 1926: Cases, 238. (Reported as alastrim.)
Japan				Apr. 11-June 26, 1926: Cases, 658. June 27-July 17, 1926: Cases, 40.
Kobe	May 30-June 5	1		
Nagoya	May 16-June 22		1	
Do	July 4-10	1		

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

Reports Received from June 26 to November 19, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Japan—Continued.				
Taiwan Island	May 11-20	24		
Do	June 1-20	23		
Do	July 11-Aug. 10	2		
Tokyo	June 26-July 17	3		
Yokohama	May 2-8	2		
Java:				
Batavia	May 15-June 25	2		Province.
Do	July 24-Sept. 25	10		Do.
East Java and Madura	Apr. 11-July 3	100	6	
Do	July 4-Aug. 7	43	1	
Malang	Apr. 4-10	6	1	Interior.
Surabaya	May 16-22	14	1	
Do	July 18-Sept 11	97	7	
Latvia				Apr. 1-June 30, 1926: Cases, 5.
Mexico				Feb. 1-May 31, 1926: Deaths, 1,279.
Aguascalientes	June 13-26		3	
Guadalajara	June 8-14		2	
Do	June 29-Sept. 27		8	
Mexico City	May 16-June 5	3		Including municipalities in Federal District.
Do	July 25-Sept. 25	6		Do.
Saltillo	July 18-24		1	
San Antonio de Arenales	Jan. 1-June 30			Present: 100 miles from Chihuahua.
San Luis Potosi	June 13-26		7	
Do	July 4-Oct. 23		19	
Tampico	June 1-10		2	
Torreon	May 1-June 30		17	
Do	July 1-Sept. 30		13	
Netherlands:				
Amsterdam	July 18-24		9	
Nigeria				Feb. 1-June 30, 1926: Cases, 521; deaths, 49.
Persia:				
Teheran	Apr. 21-July 23		10	
Peru:				
Arequipa	June 1-30		1	
Poland				Mar. 28-May 1, 1926: Cases, 12; deaths, 1. June 27-July 24, 1926: Cases, 2; deaths, 1.
Portugal:				
Lisbon	Apr. 26-June 19	10	3	
Do	July 11-Oct. 23	26	6	
Oporto	May 23-June 5	4		
Do	July 11-24	2		
Russia				Jan. 1-Apr. 30, 1926: Cases, 2,529.
Siam				Apr. 1-Sept. 25, 1926: Cases, 583; deaths, 230.
Bangkok	May 2-June 12	23	20	
Do	July 4-Sept. 25	74	55	
Spain:				
Valencia	Aug. 22-Oct. 23	3		
Straits Settlements:				
Singapore	Apr. 25-May 1	1		
Do	July 11-17	1		
Sumatra:				
Medan	Aug. 22-28			One case varioloid.
Switzerland:				
Lucerne Canton	June 1-30	1		
Do	July 1-31	2		
Tripolitania	Apr. 1-June 30	12		
Tunisia				Apr. 1-June 30, 1926: Cases, 17. July 1-Aug. 20, 1926: cases, 15.
Tunis	Aug. 11-30	2		
Union of South Africa	June 1-30	8	1	
Cape Province	June 20-26			Outbreaks.
Do	Aug. 15-21			Do.
Idutya district	May 23-29			Do.
Natal	May 30-June 5			Do.
Orange Free State	June 20-Aug. 28			Do.
Transvaal				June 6-12, 1926: Outbreaks in Pietersburg and Rustenburg districts.
Do	Aug. 29-Sept. 4	1		Native.
Johannesburg	May 9-June 12	5		
Do	July 11-Sept. 25	4		
Yugoslavia				Apr. 15-30, 1926: Cases, 2; deaths, 1.
Zagreb	Aug. 9-15	2		

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

Reports Received from June 26 to November 19, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
On vessels:				
S. S. Karapara				At Zanzibar, June 7, 1926: One case of smallpox landed. At Durban, Union of South Africa, June 16, 1926; One suspect case landed.
Steamship	July 2	1		Vessel from Glasgow, Scotland, for Canada. Patient from Glasgow; removed at quarantine on outward voyage.

TYPHUS FEVER

Algeria				July 21–Aug. 20, 1926: Cases, 18; deaths, 1.
Algiers	May 21–June 30	7	1	
Do	July 21–Aug. 31	3		
Argentina:				
Rosario	Feb. 1–28	2		
Bolivia:				
La Paz	June 1–30		1	
Do	Aug. 1–31	9	1	
Bulgaria				Mar. 1–June 30, 1926: Cases, 87 deaths, 14.
Chile:				
Antofagasta	May 23–June 26	4		
Do	June 27–July 3	1		
Concepcion	June 1–7		1	
Valparaiso	Apr. 29–May 5		1	
Do	Aug. 14–Sept. 18	7		
China:				
Antung	June 14–27	7	1	
Do	June 28–Oct. 10	37	1	
Canton	May 1–31	1		
Chungking	Aug. 29–Sept. 4			Present.
Ichang			1	Reported May 1, 1926. Occurring among troops.
Wanshien				Present among troops, May 1, 1926. Locality in Chingking consular district.
Chosen				Feb. 1–June 30, 1926: Cases, 1,005; deaths, 112.
Chemulpo	May 1–June 30	38	2	
Do	July 1–31	7	2	
Gensan	June 1–30	1		
Seoul	——do	8	3	
Do	July 1–Aug. 31	8		
Czechoslovakia				Jan. 1–June 30, 1926: Cases, 156; deaths, 6.
Egypt:				
Alexandria	July 16–Aug. 19	3		
Do	Oct. 1–7	1	1	
Cairo	Jan. 29–May 13	89	27	
Do	July 23–Aug. 5	1		
Port Said	June 4–24	4	1	
Do	July 9–Oct. 7	5	1	
Great Britain:				
Scotland—				
Glasgow	July 30–Aug. 21	9	1	
Greece:				
Athens	Sept. 1–30		17	Including Piræus.
Hungary	May 1–June 30	3		
Ireland (Irish Free State):				
Cobh (Queenstown)	May 30–June 5	1		
Do	June 27–July 3	1	1	
Cork	June 5	1		
Cork county	Oct. 17–23	1		
Kerr County—				
Dingle	June 27–July 3	1		
Italy				Mar. 28–May 8, 1926: Cases, 3.
Palermo	Sept. 12–18	1		
Japan				Mar. 28–May 29, 1926: Cases, 37.
Latvia				May 1–June 30, 1926: Cases, 19.
Lithuania				Mar. 1–June 30, 1926: Cases, 199; deaths, 22. July 1–31, 1926: Cases, 17.

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

Reports Received from June 26 to November 19, 1926—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Mexico				Feb. 1–May 31, 1926: Deaths, 155.
Durango	July 1–31		1	
Mexico City	May 16–June 5	20		Including municipalities in Federal District.
Do	June 13–19	9		Do.
Do	July 25–31	3		Do.
Do	Aug. 15–Oct. 23	59		Do.
San Luis Potosi	June 13–26			Present, city and country.
Morocco				Mar. 1–June 30, 1926: Cases, 426. July 1–31, 1926: Cases, 10.
Norway:				
Stavanger	Sept. 6–12	1		
Palestine				Mar. 1–June 30, 1926: Cases, 14; deaths, 1. Aug. 10–Oct. 11, 1926: Cases, 12.
Gaza	July 6–12	1		
Haifa	July 13–Aug. 30	5		
Halalsl	Aug. 17–23	1		
Jaffa district	June 15–28	5		
Do	Sept. 28–Oct. 4	1		
Jerusalem	Sept. 14–27	2		
Majdal district	July 13–Aug. 2	2		
Nazareth district	do	3		
Petah Tokvah	Oct. 5–11	3		
Tiberias	Aug. 3–9	1		
Yavneil	Aug. 17–23	1		
Persia:				
Teheran	May 23–June 22		1	
Peru:				
Arequipa	Jan. 1–31		2	
Poland				Mar. 28–June 26, 1926: Cases, 1,272; deaths, 85. June 27–Aug. 14, 1926: Cases 211; deaths, 15.
Rumania				Mar. 1–May 31, 1926: Cases, 711; deaths, 69.
Russia				Jan. 1–Apr. 30, 1926: Cases, 18,647.
Tunisia				Apr. 1–June 30, 1926: Cases, 110.
Tunis	June 11–30	3		July 1–Aug. 20, 1926: Cases, 58.
Turkey:				
Constantinople	June 16–22	1		
Union of South Africa				Apr. 1–May 31, 1926: Cases, 153; deaths, 19.
Do				July 1–31, 1926: Cases, 90; deaths, 17.
Cape Province				Apr. 1–June 30, 1926: Cases, 202; deaths, 24, native. July 1–31, 1926: Cases, 58; deaths, 15.
Glengray district	June 27–July 3			Outbreaks.
Grahamstown	do	1		
Natal				Apr. 1–June 30, 1926: Cases, 28.
Durban	July 25–Sept. 18	11	1	July 1–31, 1926: Cases, 23; deaths, 2.
Orange Free State				Apr. 1–June 30, 1926: Cases, 24; deaths, 4. July 1–31, 1926: Cases, 7.
Transvaal				Apr. 1–June 30, 1926: Cases, 10; deaths, 5. July 1–31, 1926: Cases, 2. Aug. 15–21, 1926.
Johannesburg	Aug. 29–Sept. 4	1		Outbreaks.
Walkkerstroom district.	June 20–26			Do.
Wolmaransstad district.	do			Do.
Yugoslavia				Apr. 15–June 30, 1926: Cases, 48; deaths, 7. July 1–Aug. 31, 1926: Cases, 3; deaths, 1.
Zagreb	May 15–21	1		

YELLOW FEVER

Brazil	Reported June 26			Present in interior of Bahia, Pirapora, and Minas.
Bahia	May 9–June 26	10	7	
Do	July 4–10	1		
Gold Coast	Apr. 1–June 30	8	4	
Nigeria	June 1–30	1	1	

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