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EXTENT OF RURAL HEALTH SERVICE IN THE UNITED STATES, 1924–1928

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According to data obtained by the Rural Sanitation Office of the Public Health Service from the health departments of the States, the following (Table 1) is a list, by States, of counties (or districts) in which the rural sections thereof at the beginning of the calendar years 1924, 1925, 1926, 1927, and 1928, respectively, were provided with local health service under the administration of whole-time county or (local) district health officers:

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*

1924	1925	1926	1927	1928
		ALABAMA		
Baldwin. Barbour. Calhoun. Colbert. Covington. Dallas. Escambia. Etowah. Franklin. Houston. Jefferson. Lauderdale. Limestone. Madison. Mobile. Montgomery. Morgan. Pike. Sumter. Talladega. Tuscaloosa. Walker.	Baldwin. Barbour. Calhoun. Colbert. Covington. Dallas. Escambia. Etowah. Franklin. Houston. Jefferson. Lauderdale. Limestone. Madison. Marengo. Marshall. Mobile. Montgomery. Morgan. Pike. Sumter. Talladega. Tuscaloosa. Walker.	Baldwin. Barbour. Calhoun. Coffee. Colbert. Covington. Dallas. Escambia. Etowah. Franklin. Houston. Jackson. Jefferson. Lauderdale. Lawrence. Lee. Limestone. Madison. Marengo. Marshall. Mobile. Montgomery. Morgan. Pike. Sumter. Talladega. Tuscaloosa. Walker.	Baldwin. Barbour. Calhoun. Chambers. Coffee. Colbert. Covington. Dallas. Escambia. Etowah. Franklin. Houston. Jackson. Jefferson. Lauderdale. Lawrence. Lee. Limestone. Madison. Marengo. Marshall. Mobile. Montgomery. Morgan. Pike. Sumter. Talladega. Tallapoosa. Tuscaloosa. Walker.	Baldwin. Barbour. Calhoun. Chambers. Coffee. Colbert. Covington. Cullman. Dale. Dallas. Elmore. Escambia. Etowah. Franklin. Houston. Jefferson. Lauderdale. Lawrence. Lee. Limestone. Madison. Marengo. Marshall. Mobile. Monroe. Montgomery. Morgan. Pike. Sumter. Talladega. Tallapoosa. Tuscaloosa. Walker.
		ARIZONA		
	Cochise.	Cochise.	Cochise. Yuma.	Cochise. Coconino. Yuma.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
		ARKANSAS		
		Garland. Jefferson. Pulaski.	Garland. Jefferson. Pulaski.	Arkansas. Ashley. Chicot. Conway. Crittenden. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Union. Woodruff. Yell.
		CALIFORNIA		
Los Angeles. Monterey. Orange. San Joaquin. San Luis Obispo.	Los Angeles. Monterey. Orange. San Diego. San Joaquin. San Luis Obispo.	Los Angeles. Monterey. Orange. San Diego. San Joaquin. San Luis Obispo. Santa Barbara.	Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.
		COLORADO		
		Otero.	Otero.	Otero.
		CONNECTICUT		
	Fairfield.[1]	Fairfield.[1]	Fairfield.[1]	Fairfield.[1]
		FLORIDA		
		Polk.	Manatee. Polk. Sarasota.	Manatee. Polk. Sarasota.

[1] District.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
		GEORGIA		
Baldwin. Bartow. Bibb. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Hall. Laurens. Lowndes. Mitchell. Richmond. Sumter. Thomas. Troup. Walker.	Baldwin. Bartow. Bibb. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Hall. Laurens. Lowndes. Miller. Mitchell. Richmond. Seminole. Sumter. Thomas. Troup. Walker.	Baker. Baldwin. Bartow. Bibb. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Sumter. Thomas. Troup. Walker. Ware.	Baker. Baldwin. Bartow. Bibb. Brooks. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Spaulding. Sumter. Thomas. Troup. Walker. Ware.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Floyd. Glynn. Hall. Laurens. Lowndes. Mitchell. Richmond. Spaulding. Sumter. Thomas. Troup. Walker. Ware. Washington.
		ILLINOIS		
Morgan.	Cook. Crawford. Morgan. Sangamon.	Cook. Morgan. Sangamon.	Cook. Morgan. Sangamon.	Cook. Du Page. Morgan.
		IOWA		
Dubuque. Washington.	Dubuque. Washington.	Dubuque.	Dubuque.	
		KANSAS		
Butler. Cherokee. Ellis. Geary. Lyon. Marion. Ottawa. Sheridan.	Cherokee. Geary. Lyon. Marion. Ottawa. Sheridan.	Butler. Coffey. Ellis. Geary. Jefferson. Lyon. Marion. McPherson. Ottawa. Phillips.	Butler. Coffey. Ellis. Geary. Jefferson. Lyon. Marion. Ottawa. Phillips.	Butler. Cherokee. Ellis. Geary. Greenwood. Jefferson. Lyon. Marion. Ottawa. Shawnee.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
		KENTUCKY		
Bell. Boyd. Daviess. Fayette. Fulton. Jefferson. Johnson. Mason. Scott.	Boyd. Daviess. Fayette. Fulton. Jefferson. Johnson. Mason. Scott.	Boyd. Daviess. Fayette. Fulton. Jefferson. Johnson. Mason. Scott.	Boyd. Daviess. Fayette. Fulton. Jefferson. Johnson. Knott. Mason. Scott.	Ballard. Boyd. Breathitt. Carlisle. Carter. Daviess. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Knott. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. Mason. McLean. Menefee. Morgan. Owsley. Perry. Pike. Scott. Webster. Wolfe.
		LOUISIANA [2]		
Beauregard. Caddo. Claiborne. De Soto. Natchitoches. Ouachita. Rapides. St. Mary. Tangipahoa. Washington.	Beauregard. Caddo. Claiborne. De Soto. Natchitoches. Ouachita. St. Mary. Tangipahoa. Washington.	Caddo. Claiborne. De Soto. Lafourche. Natchitoches. Ouachita. Plaquemines. St. Mary. Tangipahoa. Washington. Webster	Caddo. Claiborne. De Soto. Lafourche. Natchitoches. Ouachita. Plaquemines. St. Mary. Washington. Webster.	Assumption. Avoyelles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Lafayette. Lafourche. La Salle. Madison. Morehouse. Natchitoches. Ouachita. Plaquemines. Rapides. Richland. St. Martin. St. Mary. Tangipahoa. Tensas. Washington. Webster. West Carroll.
		MAINE		
Oldtown. Rumford. Sanford. Waterville. York.	Oldtown. Rumford. Sanford. Waterville. York.	Oldtown. Rumford. Sanford. Waterville. York.	Oldtown. Rumford. Sanford. Waterville. York.	Mothov Union.[3] Rumford.[4] Sanford.[4] Vassalboro.[4]

[2] Parishes.
[3] Including towns of Orono, Milford, Bradley, and Veazie.
[4] Town (township), wholly or partly rural.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
MARYLAND				
Allegany. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery. Prince George. Talbot.
MASSACHUSETTS				
Cape Cod.[1]	Cape Cod.[1]	Cape Cod.[1]	Cape Cod.[1]	Barnstable.[2]
MINNESOTA				
St. Louis.	St. Louis.	St. Louis.	St. Louis.	St. Louis.
MISSISSIPPI				
Bolivar. Coahoma. Forrest. Harrison. Hinds. Jones. Lauderdale. Lee. Tallahatchie. Washington.	Bolivar. Coahoma. Forrest. Hancock. Harrison. Jackson. Jones. Lee. Pearl River. Sharkey. Washington.	Bolivar. Coahoma. Forrest. Hancock. Harrison. Hinds. Jackson. Jones. Lee. Leflore. Pearl River. Sharkey. Washington.	Bolivar. Clarke. Coahama Forrest. Hancock. Harrison. Hinds. Holmes. Jackson. Jones. Lamar. Lee. Leflore. Pearl River. Perry. Sharkey. Union. Washington.	Bolivar. Clarke. Coahoma. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson. Jones. Lamar. Lee. Leflore. Pearl River. Perry. Sharkey. Sun Flower. Tishomingo. Union. Warren. Washington. Yazoo.
MISSOURI				
Dunklin. Gentry. Greene. New Madrid. Nodaway. Pettis. Polk. St. Francois. St. Louis.	Dunklin. Gentry. Greene. New Madrid. Nodaway. Pettis. Polk. St. Francois. St. Louis.	Boone. Dunklin. Greene. Jackson. New Madrid. Nodaway. Pemiscot. Pettis. Polk. St. Francois. St. Louis.	Boone. Dunklin. Greene. Holt. Jackson. Marion. New Madrid. Nodaway. Pemiscot. Pettis. St. Francois. St. Louis.	Boone. Dunklin. Greene. Holt. Jackson. Marion. Mississippi. New Madrid. Nodaway. Pemiscot. Pettis. Scott. St. Francois. St. Louis.

[1] District.
[2] See reprint No. 1184, p. 34, from Public Health Reports of Oct. 21, 1927.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
MONTANA				
Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.
NEW MEXICO				
Bernalillo. Chaves. Colfax. Dona Ana. Eddy. McKinley. San Miguel. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Colfax. Dona Ana. Eddy. McKinley. San Miguel. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Colfax. Dona Ana. Eddy. McKinley. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. San Miguel. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. Union Valencia.
NEW YORK				
Cattaraugus.	Cattaraugus.	Cattaraugus.	Cattaraugus.	Cattaraugus.
NORTH CAROLINA				
Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Hyde. Lenoir. Mecklenburg. New Hanover. Northampton. Pamlico. Pitt. Robeson. Rowan. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Hyde. Lenoir. Mecklenburg. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
OHIO				
Allen. Ashtabula. Athens. Auglaize. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Erie. Geauga. Hamilton. Hancock. Hocking. Huron. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Paulding. Perry. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Allen. Ashtabula. Athens. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Mongomery. Morrow. Muskingum. Paulding. Perry. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Allen. Ashtabula. Athens. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke Delaware. Erie. Fayette. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.
OKLAHOMA				
Ottawa.	Carter. Le Flore. Muskogee. Oklahoma. Pittsburg.	Carter. Le Flore. McCurtain. Muskogee. Oklahoma. Okmulgee. Ottawa. Pittsburg.	Carter. Kay. Le Flore. McCurtain. Muskogee. Oklahoma. Okmulgee. Ottawa. Pittsburg.	Carter. Kay. Le Flore. McCurtain. Muskogee. Okmulgee. Ottawa. Pittsburg. Seminole.
OREGON				
Coos.	Clackamas. Coos. Douglas. Jackson. Klamath.	Clackamas. Coos. Douglas. Jackson. Klamath.	Clackamas. Coos. Douglas. Jackson. Klamath.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

1924	1925	1926	1927	1928
SOUTH CAROLINA				
Aiken. Anderson. Charleston. Cherokee. Dillon. Fairfield. Greenville. Newberry. Orangeburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Colleton. Darlington. Dillon. Fairfield. Georgetown. Greenville. Marion. Newberry. Orangeburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Colleton. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.
SOUTH DAKOTA				
Brown.	Brown. Pennington. Yankton.	Brown. Pennington. Yankton.	Brown. Pennington.	Pennington.
TENNESSEE				
Blount. Davidson. Gibson. Montgomery. Obion. Roane. Sevier. Williamson.	Blount. Davidson. Gibson. Montgomery. Obion. Roane. Rutherford. Sevier. Williamson.	Blount. Davidson. Dyer. Gibson. Hamilton. Montgomery. Obion. Roane. Rutherford. Sevier. Weakley. Williamson.	Blount. Davidson. Dyer. Gibson. Hamilton. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Weakley. Williamson.	Blount. Bradley. Davidson. Dyer. Gibson. Hamilton. Lake. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Washington. Weakley. Williamson.
TEXAS				
Dallam. Hidalgo. Jefferson. Red River. Tarrant. Washington.	Falls. Hidalgo. Nueces. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Tarrant.	Cameron. Hidalgo. McLennan. Tarrant.
UTAH				
Weber.	Davis. Weber.	Davis. Weber.	Box Elder. Davis. Morgan. Summit. Wasatch. Weber.	Box Elder. Davis. Summit. Utah. Wasatch.

TABLE 1.—*List of counties or districts in which, as of January 1, 1924, 1925, 1926, 1927, and 1928, respectively, rural sections were provided with health service under whole-time local health officers*—Continued

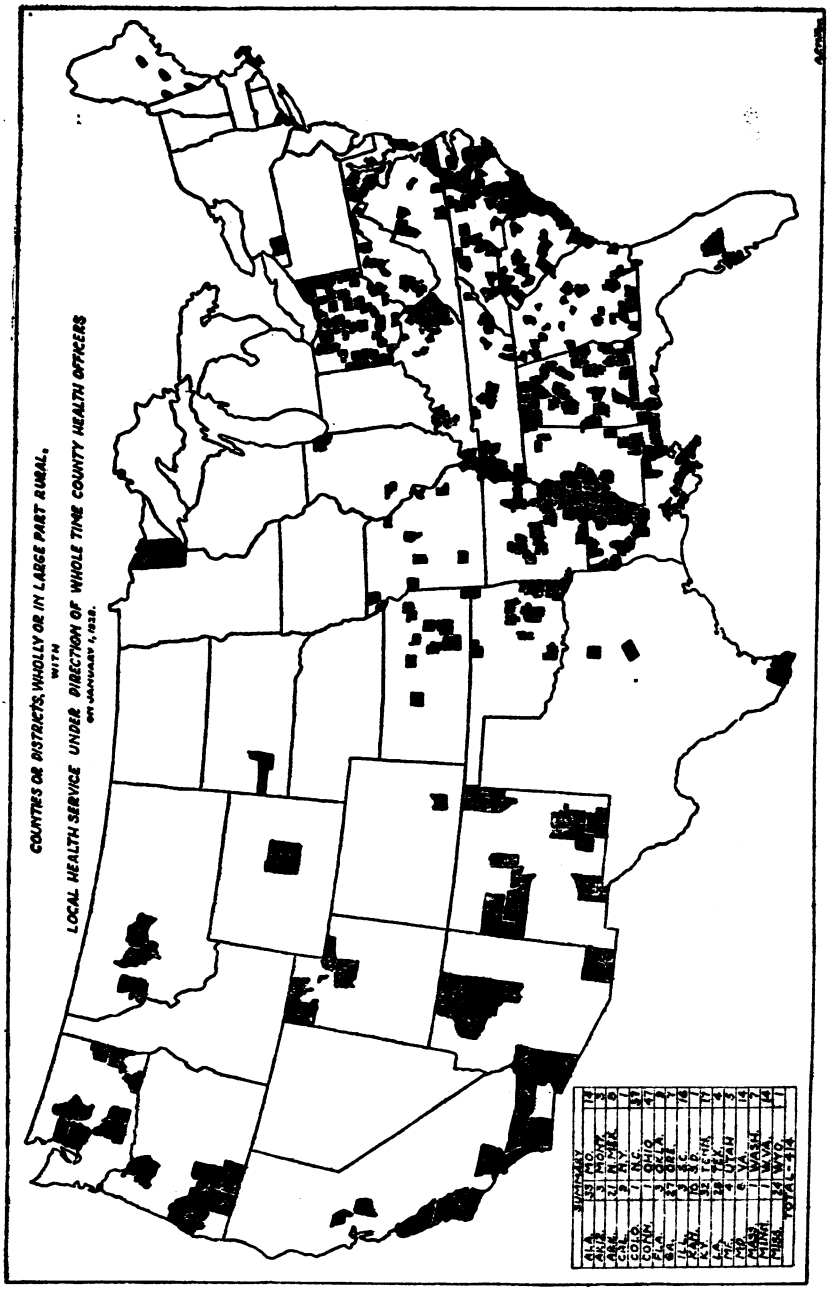
1924	1925	1926	1927	1928
VIRGINIA				
Accomac. Albemarle. Arlington. Augusta. Fairfax. Halifax. Henrico. James City. Loudoun. Nansemond. Norfolk. Princess Anne. Russell. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Sussex. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Southampton. Sussex. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton.
WASHINGTON				
Chelan. King. Spokane. Walla Walla. Yakima.	Chelan. King. Spokane. Walla Walla. Yakima.	Chelan. King. Walla Walla. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.
WEST VIRGINIA				
Hancock. Harrison. Logan. Marion. Preston. Taylor.	Gilmer. Hancock. Harrison. Logan. Marion. Marshall. Preston. Taylor.	Gilmer. Hancock. Harrison. Logan. Marion. Marshall. Preston. Roane.	Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Marshall. Ohio. Preston. Roane. Wood.	Berkeley. Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Lewis. Logan. Marion. Marshall. Ohio. Preston. Wood.
WYOMING				
Natrona.	Natrona.	Natrona.	Natrona.	Natrona.

Résumé of Table 1

State	Number of counties Jan. 1—					Increase or decrease in 1924	Increase or decrease 1925	Increase or decrease 1926	Increase or decrease 1927
	1924	1925	1926	1927	1928				
Alabama	22	24	28	30	33	+2	+4	+2	+3
Arizona	0	1	1	2	3	+1		+1	+1
Arkansas	0	0	3	3	21		+3		+18
California	5	6	7	9	9	+1	+1	+2	
Colorado	0	0	1	1	1		+1		
Connecticut	0	1	1	1	1	+1			
Florida	0	0	1	3	3		+1	+2	
Georgia	19	21	22	24	27	+2	+1	+2	+3
Illinois	1	4	3	3	3	+3	−1		
Iowa	2	2	1	1	0		−1		−1
Kansas	8	6	10	9	10	−2	+4	−1	+1
Kentucky	9	8	8	9	32	−1		+1	+23
Louisiana	10	9	11	10	28	−1	+2	−1	+18
Maine	5	5	5	5	4				−1
Maryland	3	6	6	6	8	+3			+2
Massachusetts	1	1	1	1	1				
Minnesota	1	1	1	1	1				
Mississippi	10	11	13	18	24	+1	+2	+5	+6
Missouri	9	9	11	12	14		+2	+1	+2
Montana	3	3	3	3	3				
New Mexico	10	10	9	9	8		−1		−1
New York	1	1	1	1	1				
North Carolina	33	35	35	37	37	+2		+2	
Ohio	45	47	47	47	47	+2			
Oklahoma	1	5	8	9	9	+4	+3	+1	
Oregon	1	5	5	5	7	+4			+2
South Carolina	9	14	16	16	16	+5	+2		
South Dakota	1	3	3	2	1	+2		−1	−1
Tennessee	8	9	12	14	17	+1	+3	+2	+3
Texas	6	4	5	5	4	−2	+1		−1
Utah	1	2	2	6	5	+1		+4	−1
Virginia	14	13	14	15	14	−1	+1	+1	−1
Washington	5	5	4	6	7		−1	+2	+1
West Virginia	6	8	8	13	14	+2		+5	+1
Wyoming	1	1	1	1	1				
Total	250	280	307	337	414	+30	+27	+30	+77

The accompanying map shows the location of the counties or districts in the United States in the rural sections of which local health service under the direction of whole-time local (county or district) health officers was in operation on January 1, 1928.

Within the period January 1, 1927, to January 1, 1928, whole-time county or (local) district health officer service was established in 84 units and was discontinued in 7—a net gain of 77. Of the units added to the list in 1927, 64 are counties which were more or less inundated by floods in the Mississippi valley or in the eastern part of Kentucky in the spring of that year and are located as follows: 18 in Arkansas, 22 in Kentucky, 16 in Louisiana, 5 in Mississippi, 2 in Missouri, and 1 in Tennessee. These projects were developed under a special arrangement—the respective State health departments directly concerned, the United States Public Health Service, and the Rockefeller Foundation, together, furnishing for a stipulated period about 75 per cent of the total funds for the operation of the county health departments. Whether this quota of progress in the development of whole-time county health officer service, which was precipitated by the flood conditions, is to be permanent or temporary will be


COUNTIES OR DISTRICTS, WHOLLY OR IN LARGE PART RURAL,
WITH
LOCAL HEALTH SERVICE UNDER DIRECTION OF WHOLE TIME COUNTY HEALTH OFFICERS
ON JANUARY 1, 1928.
TOTAL-418

determined when and if the county governments are called upon to provide more than 25 per cent of the money for operation. In cooperative projects established under usual conditions [1] over 50 per cent of the funds for the support of the work are provided from official local sources.

Of the 414 counties or districts with local health service under whole-time local (county or district) health officers at the beginning of the present calendar year, 368, or 89 per cent, are receiving financial assistance for the support of their local health service from one or more of the following agencies: The State board of health, the United States Public Health Service, the Rockefeller Foundation, and the Children's Bureau of the United States Department of Labor.

Without assistance from outside agencies, local governments of rural communities (counties, towns, townships, or districts) in general are not disposed to appropriate adequately for the support of efficient, whole-time, local health service. Some local governments even when offered such assistance decline to appropriate their part of the budget for the service; but, according to all the evidence, development in this vitally important field of general welfare could be greatly increased by provision (which could be made at comparatively small governmental cost) to enable the State health departments and the Federal health service to offer to counties now willing to accept, and to those which would soon become willing to accept, adequate technical advice along with financial cooperation on a basis of $1 of Federal money and $3 of State money to meet four or more dollars of county money.

As health conditions in a rural community in one State influence those in other communities in that State and in other States, it seems that all the State governments and the Federal Government may be properly concerned with the development and maintenance of efficient local health service throughout our extensive rural area. The local health service, in doing its work efficiently, necessarily performs duties such as the collection of morbidity and mortality statistics and the carrying out of measures to prevent the spread of infection in intercounty and interstate traffic, for which the State governments and the Federal Government have a degree of definite responsibility.

There are in the United States about 2,500 counties or districts comparable to counties wholly or in considerable part rural to which local health service under the direction of whole-time county or local district health officers is applicable and in which such service would be highly advantageous. The number of these units of population in which such service was in operation at the beginning of the calendar years 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, and 1928, respectively, was 109, 161, 202, 230, 250, 280, 307, 337, and 414. The

[1] Reprint No. 1184, p. 31, from the Public Health Reports, Oct. 21, 1927.

average annual net gain in this period has been 38. At such rate of progress, about 55 years yet would be required for reasonably adequate whole-time local rural health service to be extended to all communities of the United States in which such service is needed. To augment existing factors or to bring into operation additional factors, the speeding up of production seems critically important.

Experience indicates that the best foundation for rural health service in the United States is the county health department under the direction of the qualified whole-time county health officer. It becomes more and more evident to those with practical experience in the public health field that agencies concerned with the promotion of specialized health activities, such as typhoid-fever prevention, hookworm control, tuberculosis prevention, malaria control, venereal disease prevention, or child and maternity hygiene, can perform most effectively and economically by dovetailing their specific activities in with and making them a part of a well-balanced comprehensive program of local official health service under the immediate direction of qualified whole-time local health officers.

The present budgets for the support of the health service covering the rural communities and some of the incorporated cities and towns in the counties and districts designated in the 1928 column of Table 1 total $5,685,014.33. Of the total local population of 15,508,997 receiving this service 5,418,136, or 34.94 per cent, are urban. Therefore, about $3,698,670.32 of the total investment for the local health service in these 414 projects will be expended this year for strictly rural health service.

Reasonably adequate whole-time rural health service throughout this country would cost about $20,000,000 a year. Apart from the loss in human life, human health, and human happiness, our national economic loss annually in wage earnings and in other items incident to preventable sickness because of lack of efficient county health service is estimated at over $1,000,000,000. Money invested for well-directed whole-time county health service yields to the average local tax-paying citizen an annual dividend in dollars and cents ranging under different local conditions from 100 to 3,000 per cent.

Table 2 presents, by States, the percentage of rural population having local health service under the direction of whole-time local (county or district) health officers at the beginning of 1928.

TABLE 2.—*Percentage of rural population having on January 1, 1928, local health service under whole-time local (county or district) health officers*

State	Rural population (census, 1920)	Rural population with local health service under direction of whole-time health officers	Percentage of rural population with local health service under direction of whole-time health officers	State	Rural population (census, 1920)	Rural population with local health service under direction of whole-time health officers	Percentage of rural population with local health service under direction of whole-time health officers
Alabama	1,838,857	1,057,016	57.48	Nevada	62,153	0	0
Arizona	216,635	44,807	20.68	New Hampshire	163,322	0	0
Arkansas	1,461,707	485,261	33.19	New Jersey	680,964	0	0
California	1,095,132	327,377	29.89	New Mexico	295,390	89,515	30.30
Colorado	486,370	13,913	2.87	New York	1,795,383	39,708	2.21
Connecticut	444,292	11,475	2.58	North Carolina	2,068,753	1,020,067	49.31
Delaware	102,236	0	0	North Dakota	558,633	0	0
Florida	612,645	42,240	6.89	Ohio	2,082,258	1,272,144	61.09
Georgia	2,167,973	507,546	23.41	Oklahoma	1,488,803	262,563	17.63
Idaho	312,829	0	0	Oregon	392,370	128,014	32.63
Illinois	2,082,127	123,124	5.91	Pennsylvania	3,112,202	0	0
Indiana	1,447,535	0	0	Rhode Island	15,217	0	0
Iowa	1,528,526	0	0	South Carolina	1,389,737	593,360	42.70
Kansas	1,151,293	162,168	14.08	South Dakota	534,675	6,943	1.30
Kentucky	1,783,087	494,364	27.73	Tennessee	1,726,659	465,709	26.97
Louisiana	1,170,346	567,353	48.48	Texas	3,150,539	125,584	3.99
Maine	468,445	26,136	5.58	Utah	233,812	48,621	20.79
Maryland	580,239	280,251	48.30	Vermont	242,452	0	0
Massachusetts	202,108	16,562	8.19	Virginia	1,635,203	347,082	21.23
Michigan	1,426,852	0	0	Washington	607,886	231,888	38.15
Minnesota	1,335,532	50,898	3.81	West Virginia	1,094,694	338,391	30.91
Mississippi	1,550,497	535,160	34.52	Wisconsin	1,387,499	0	0
Missouri	1,817,152	339,722	18.70	Wyoming	137,054	3,188	2.33
Montana	376,878	32,711	8.68				
Nebraska	891,066	0	0	Total	51,406,017	10,090,861	19.63

Over 80 per cent of our rural population is as yet unprovided with official local health service approaching adequacy. As a consequence of this deficiency, there is a sacrifice of the health and lives and the material resources of many of our people every year—a sacrifice which is needless because preventable, and preventable by measures readily within our means and demonstrated to be in the highest sense economical.

EFFECT OF SALT ON SLUDGE DIGESTION [1]

By WILLEM RUDOLFS,[2] *Chief, Department of Sewage Disposal, New Jersey Agricultural Experiment Station, New Brunswick, N. J.*

The effect of increasing amounts of sodium chloride upon the rate of organic matter decomposition in sewage sludge by bacteria is, progressively, (*a*) indifferent, (*b*) stimulating, (*c*) retarding, and (*d*) toxic. These observations, based upon a large number of laboratory experiments, are in accord with the findings of Ricket (4), Falk and Winslow (3).

[1] Paper No. 58, Department of Sewage Disposal, New Jersey Agricultural Experiment Station, New Brunswick, N. J.

[2] C. N. Henderson assisted with the necessary analyses.

There is a comparatively large number of sewage disposal plants where salt is received as mine water, brine, or soil leachings. When rather concentrated salt solutions are received continuously or temporarily a number of questions arise:

(1) How much salt can be handled by a tank without upsetting the biological equilibrium?

(2) What is its effect upon gas production?

(3) Is the composition of the gas changed?

(4) How much larger should the digestion capacity be?

METHODS AND MATERIAL

Fresh sewage solids were collected by hanging pails for 24 hours in the different sections of the flow compartments of an Imhoff tank receiving domestic waste only. The solids were thoroughly mixed and brought to the laboratory. The next day these fresh solids were mixed with ripe sludge on the basis of volatile matter content of the materials. The ratio used was 1 part of ripe sludge to 2.3 parts of fresh solids on the basis of volatile matter. The estimated time required for complete digestion of this mixture was 35 days. For the experiment, the mixed material was divided into equal portions to which varying amounts of sodium chloride were added. Table 1 shows the percentage of solids in the mixtures, the percentage of ash of these solids at the start and the end of the experiment, and the amounts of NaCl added. The mixtures were kept at laboratory temperature (averaging 70° F).

TABLE 1.—*Analyses of mixtures at beginning and end of experiment*

Sludge mixture number	NcCl added (grams per liter)	pH		Per cent solids		Per cent ash in solids	
		Begin	End	Begin	End	Begin	End
I	0	7.7	8.2	5.11	3.84	34.9	47.0
II	2	7.7	8.1	5.47	4.01	36.1	48.1
III	5	7.7	8.2	5.59	4.34	39.1	50.5
IV	10	7.7	7.9	6.03	5.40	43.7	48.9
V	20	7.8	7.4	7.17	6.35	48.2	54.9
Fresh solids	----------	5.4	----------	6.39	----------	27.9	----------
Ripe sludge	----------	8.2	----------	3.88	----------	48.5	----------

RESULTS

The results obtained are presented in condensed form in Table 2. The figures show that the percentage volatile matter reduction, percentage ash increase, and total gas production of mixture II receiving 2 grams of NaCl per liter of sludge, compared favorably with the mixture to which no salt was added. The effect of salt was only slightly noticeable with an addition of 5 grams, but with larger quantities, volatile matter destruction and total gas production

decreased markedly. It is interesting to note that, even with a 2 per cent salt concentration, the biological organisms retained 50 per cent of their activity as measured by the destruction of volatile matter and 25 per cent as measured by the production of gas. This, seems to be a long way from sterilization; but if the gas analyses figures are considered, it is evident that large quantities of salt affect especially those organisms responsible for methane production. The effect of the different salt concentrations is graphically shown in Figures 1 and 2, where the results are plotted on the basis of fresh

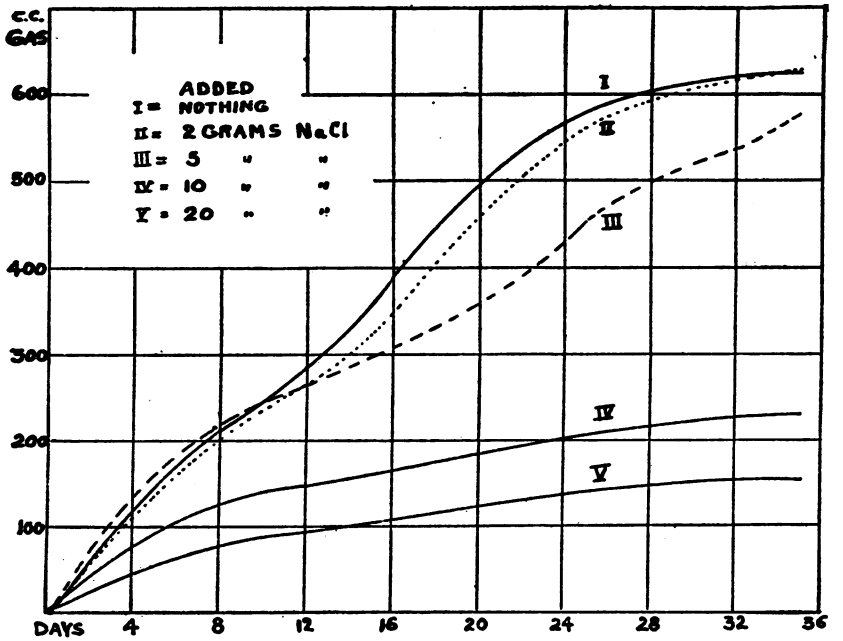


FIG. 1.—Gas production per gram of volatile matter added as fresh solids from different mixtures

organic matter used. It can be seen that the percentage of volatile matter destruction in the mixture receiving 2 grams of salt was somewhat greater than it was in the untreated mixture, indicating a possible stimulation, causing greater reduction in volatile matter, but not a greater gas production. If stimulation takes place, it is in the direction of liquefaction. It is also evident that a salt concentration up to 0.5 per cent has no material detrimental effect upon the total activities of the organisms and will therefore not upset the biological balance in a digestion tank. Although the ultimate amount of gas produced from mixtures with 0.5 per cent salt concentration is nearly the same as from lower concentrations, the rate of gas production is somewhat retarded. (Fig. 1.)

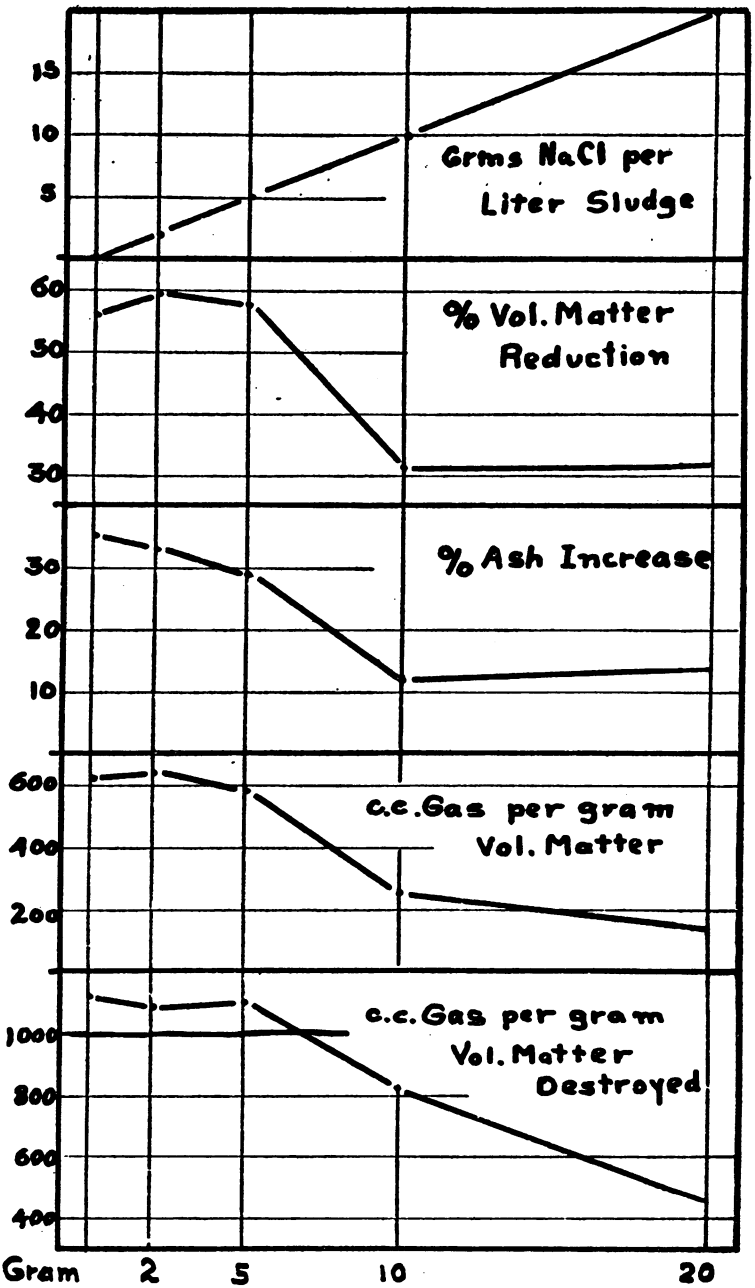


FIG. 2.—Percentage volatile matter destruction, ash increase, and total gas production from different mixtures

TABLE 2.—*Data on destruction of volatile matter and production of gas*

Sludge mixture No.	NaCl added (grams per liter)	Per cent reduction of volatile matter	Per cent increase ash in solids	Cubic centimeters of gas per gram of volatile matter			Analysis of gas [1]	
				In mixture	Destroyed	In fresh solids	Per cent CO_2	Per cent CH_4
I	0	38.9	34.7	434	1,112	621	11.0	70.9
II	2	41.3	33.2	447	1,080	638	10.0	75.3
III	5	36.8	29.2	404	1,100	580	13.7	80.7
IV	10	21.6	11.7	176	820	244	11.2	>1.0
V	20	22.0	13.7	108	492	156	19.8	>1.0

[1] Analyses of accumulated gas during third part of digestion period.

With higher concentrations (1 and 2 per cent concentrations), retardation of gas production is very pronounced. Blunk (2) has found that a great reduction in gas production took place in tanks receiving saft from mine drainage. Bach (1) states that the largest quantity of chlorides recorded amounted to 3,997 p.p.m., or, in the form of NaCl, 6,570 p.p.m. Sierp (6) conducting laboratory experiments, concludes that salt solutions up to 1 per cent concentration have no influence whatsoever upon digestion activities and that with concentrations of 3 per cent salt solution only about 20 per cent reduction in decomposition takes place. The total amounts of gas produced per gram dry material (fresh solids) after 80 days was practically alike for all mixtures, except with 3 per cent salt concentrations. The ripe sludge—fresh solids mixtures used by Sierp—were on an organic-matter basis of 1:1 (ripe sludge 47.1 per cent and fresh solids 45.4 per cent volatile matter). Such a mixture would, at average laboratory temperatures of 70° F., be completed in less than 35 days, and it is possible that after 80 days of incubation (the time employed by Sierp) the retarding effect was not noticed.

The figures given in Table 2 for the composition of the gas produced need amplification. A small quantity of methane (7.9 per cent) was produced during the first period of the digestion time (35 days' digestion time) in No. IV (with 10 grams salt), but less than 1 per cent was found in No. V (20 grams salt). Carbon dioxide production was higher at the beginning in all except No. IV. The following figures show the difference in percentages CO_2 production for the gas collected during the second and last periods of digestion:

Difference in percentages of CO_2 production during second and last periods of digestion

	Sludge mixture No.				
	I	II	III	IV	V
Second period	19.2	20.6	15.6	8.5	28.6
Last period	11.0	10.0	13.7	11.2	19.8

The usual reduction in percentage CO_2 and a corresponding increase in methane production took place with the advance of digestion in mixtures I, II, and III. The low methane production of mixture IV during the second part of digestion practically stopped, with a subsequent increase in CO_2 production. With smaller quantities of salt the percentage methane was high, possibly indicating that the methane producing organisms were somewhat stimulated, but with greater amounts of salt they were retarded.

Often when NaCl is received at a plant, smaller quantities of sulphates (Ca and Mg) are mixed with it, and it is of interest to compare such a mixture of approximately the same NaCl content with one receiving salt alone. The following figures show the total gas production in cubic centimeters per gram volatile matter present and per gram volatile matter destroyed in the processes of digestion:

Total gas production in cubic centimeters per gram volatile matter present and per gram volatile matter destroyed in digestion

Experiment	Salts added (grams per liter)	Cubic centimeters of gas produced—	
		Per gram volatile matter present	Per gram volatile matter destroyed
A	None	438	1,125
B	5.1 NaCl	404	1,100
C	5.25 NaCl, 1.15 gr. $CaSO_4$, and $MgSO_4$	466	1,645

The effect of NaCl on the total gas production is slight, but indicates retardation, whereas a mixture of NaCl and sulphates appeared to be somewhat stimulating. This stimulation came mainly after a somewhat prolonged retardation of gas production. This fact is well illustrated in Figure 3, in which the daily gas production is plotted in cubic centimeters per gram of volatile matter. However, an initial stimulation took place, probably due to the NaCl, because in the mixture with NaCl alone a similar initial stimulation in gas production was apparent. In another publication (5) we have drawn attention to the fact that sulphates produce considerable H_2S, and the mixture under discussion was not an exception. The strongest odors were present during the peak of gas formation.

As the rate of digestion is not materially affected with less than one-half of 1 per cent salt concentration, no additional sludge digestion capacity is required, provided a biological balance is established and maintained. Such a balance can be secured by maintaining a correct relation between ripe sludge and fresh solids, or, in other words, by the careful addition of fresh solids and withdrawal of sludge.

SUMMARY

The effect of salt upon the rate of decomposition of sewage sludge was only slightly noticeable with additions of 5 grams per liter of sludge, but with larger quantities the destruction of volatile matter and total gas production decreased markedly. The composition of the gas changed greatly with the salt additions. With the largest

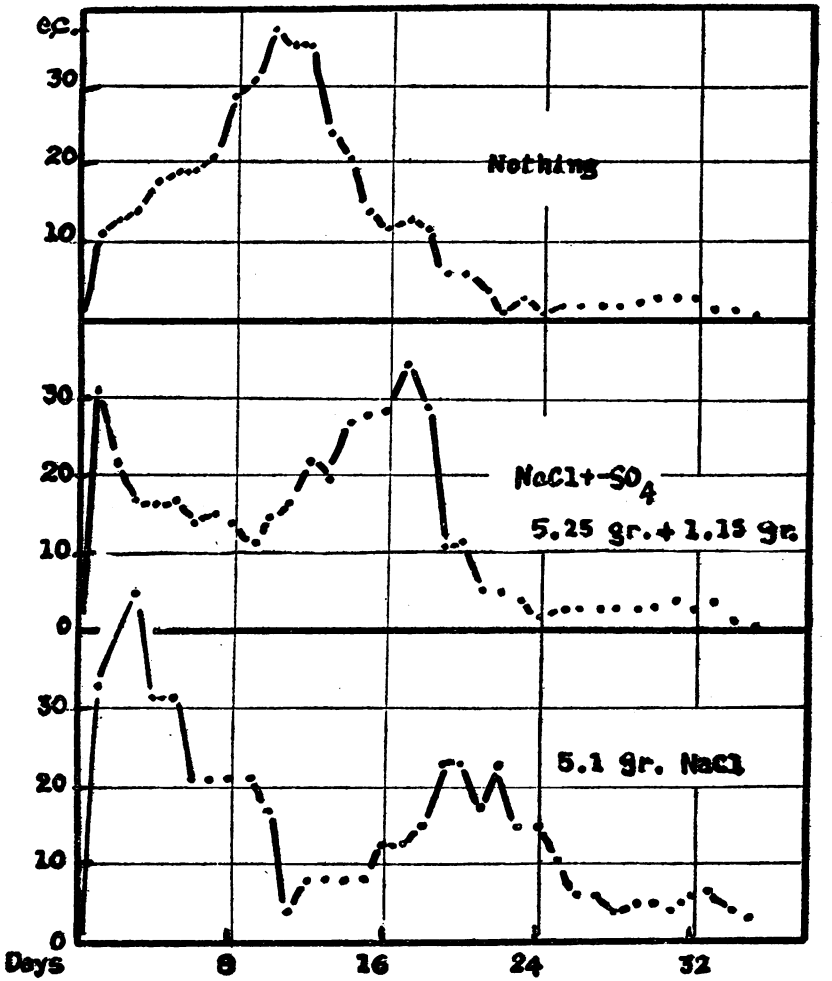


FIG. 3.—Effect of NaCl and sulphates on the rate of gas production (cubic centimeters of gas produced each day per gram of volatile matter)

quantities of salt practically no methane was produced. Mixtures of salt and sulphates appear to be somewhat stimulating.

REFERENCES

(1) Bach: Das Chemisch-technische Versuchs wesen der Emschergenossenschaft. 25 Jahre Emschergenossen-schaft, 1926, p. 283.
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(3) Falk and Winslow: Journ. Bact. 1926, v. 11, p. 1.

(4) Ricket: Compt. Rend. 1892, v. 114, p. 1492.
(5) Rudolfs, Willem, and Zeller, P. J. Alwin: Ind. and Eng. Chem. 1928 v. 20, p. 48.
(6) Sierp, Tech. Gemeindebl. 1926–27 v. 29, nos. 21–24.

TEST FOR PHENOLIC TASTES AND ODORS IN WATER AFTER CHLORINATION

A meeting was held in Pittsburgh, Pa., February 6, 1928, at which were present representatives of the Pennsylvania State department of health, the Ohio State department of health, the Kentucky State board of health, the Carnegie Steel Co., the Youngstown Sheet & Tube Co., the Republic Iron & Steel Co., the Jones & Laughlin Steel Corporation, the Bethlehem Steel Co., the United Gas Improvement Co., and the Koppers Co. Mr. W. L. Stevenson, chief engineer of the Pennsylvania State department of health, chairman of the meeting, appointed a committee to consider the test for phenolic tastes and odors in water after chlorination, proposed by Mr. J. W. Ellms, of Cleveland, Ohio, and report their opinion. The committee as appointed consists of F. W. Sperr, jr., director of research, the Koppers Co.; W. H. Fulweiler, chemical engineer, the United Gas Improvement Co.; F. E. Daniels, chief, industrial waste section, Pennsylvania department of health; and O. O. Malleis, chief chemist, the Koppers Co.

The committee has considered the method as presented and is of the opinion that, while in principle the method may be satisfactory for water works practice, it should be substantially modified to render it generally applicable. It is believed that, in general, a method of this sort should embody the principle of systematic dilutions with a test of each dilution, so that quantitative results can be secured. On this basis the committee has therefore drawn up a tentative method which is herewith submitted, not as final and binding, but for the purpose of inviting trial and comment. It is hoped that this method will be thoroughly examined and tried by all who are interested in the subject, and the committee would appreciate having reports of the results obtained, together with any suggestions for modification or improvement that may be considered necessary.

The tentative method proposed by the committee is as follows:

1. This test is designed as a measure of the so-called phenolic tastes and odors in water after chlorination.

2. Take 500 c. c. of the material under examination, acidulate with sulphuric acid until acid to litmus, and distill off 250 c. c. Catch the distillate in a 500 c. c. volumetric flask, make up to mark with distilled water and dilute as follows: 1 to 10; 1 to 100; 1 to 1,000, etc., preparing as many dilutions as may be necessary.

3. Take 200 c. c. of the distillate in the volumetric flask after making up to mark (this representing the original material undiluted) and a like amount of each successive dilution. Treat with a slight excess of chlorine water (a total of 0.3 p. p. m. of chlorine is usually sufficient). Let the sample stand for 15 minutes and then boil until excess of chlorine is removed as evidenced by test with orthotolidine.

Make the odor test by smelling the hot liquid. Make the taste test after the liquid is cooled. In the taste test, swallowing a small quantity of the liquid is the best method for revealing the presence of taste-producing substances.

4. Results shall be expressed as the lowest dilution in which the taste and the odor are negative.

F. W. SPERR, Jr.,
W. H. FULWEILER,
F. E. DANIELS,
O. O. MALLEIS,
Members of the Committee.

PITTSBURGH, PA., *February 27, 1928.*

Communications relative to the method should be addressed to F. W. Sperr, jr., Mellon Institute, Pittsburgh, Pa.

STUDIES ON OXIDATION REDUCTION

HYGIENIC LABORATORY BULLETIN NO. 151. STUDIES ON OXIDATION REDUCTION, PAPERS 1-10, INCLUSIVE, BY STAFF MEMBERS OF THE DIVISION OF CHEMISTRY, HYGIENIC LABORATORY, UNITED STATES PUBLIC HEALTH SERVICE

The Public Health Service has just issued a bulletin comprising 10 papers on oxidation reduction. These represent exhaustive studies upon certain fundamental principles of chemistry. They will be especially useful to chemists and to students of chemistry. The papers have already appeared separately in one form or another, but the demand for reprints has warranted the Service in collecting them under one cover.

The following list of subject headings of the different papers will give a conception of the scope of the studies collected in this bulletin:

I. Introduction. By W. Mansfield Clark.

II. An analysis of the theoretical relations between reduction potentials and pH. By W. Mansfield Clark and Barnett Cohen.

III. Electrode potentials of mixtures of 1-naphthol-2-sulphonic acid indophenol and the reduction product. By W. Mansfield Clark and Barnett Cohen.

IV. Electrode potentials of indigo sulphonates, each in equilibrium with its reduction product. By M. X. Sullivan, Barnett Cohen, and W. Mansfield Clark.

V. Electrode potentials of simple indophenols, each in equilibrium with its reduction product. By Barnett Cohen, H. D. Gibbs, and W. Mansfield Clark.

VI. A preliminary study of indophenols: (A) Dibromo substitution products of phenol indophenol; (B) substituted indophenols of the ortho type; (C) miscellaneous. By Barnett Cohen, H. D. Gibbs, and W. Mansfield Clark.

VII. A study of dichloro substitution products of phenol indophenol. By H. D. Gibbs, Barnett Cohen, and R. K. Cannan.

VIII. Methylene blue. By W. Mansfield Clark, Barnett Cohen, and H. D. Gibbs.

IX. A potentiometric and spectrophotometric study of meriquinones of the p-phenylene diamine and benzidine series. By W. Mansfield Clark, Barnett Cohen, and H. D. Gibbs.

X. Reduction potentials in cell suspensions. By R. K. Cannan, Barnett Cohen, and W. Mansfield Clark.

Copies of this bulletin may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C.

INTERNATIONAL SANITARY CONVENTION OF 1926 RATIFIED BY THE SENATE

On March 22, 1928, the Senate advised and consented to the ratification of the International Sanitary Convention signed at Paris on June 21, 1926.

This convention is a revision of the International Sanitary Convention of 1912, in which certain changes had become necessary because of the extension of knowledge in the field of sanitary science and a broader experience in the application of such knowledge in the field of international health. The preliminary arrangements for this revision were conducted through the International Office of Public Hygiene at Paris, which is constituted a central office for the collection and dissemination of sanitary intelligence and is empowered to cooperate with other international sanitary organizations. The convention was signed at Paris on June 21, 1926, by the plenipotentiaries of the following countries, colonies, and mandates:

Afghanistan.
Albania.
Argentine Republic.
Austria.
Belgium.
Brazil.
Bulgaria.
Chile.
China.
Colombia.
Cuba.
Czechoslovakia.
Denmark.
Dominican Republic.
Ecuador.
Egypt.
Ethiopia.
Finland.
France (including Algeria, French West Africa, French East Africa, French Indo-China, States of Syria, Grand Liban, Alaouites and Djebel-Druse, and other colonies, protectorates, possessions, and mandated territories).
Germany.
Great Britain (including Canada, Australia, New Zealand, and Union of South Africa).
Greece.
Guatemala.
Haiti.
Hedjaz.
Honduras.
Hungary.
Italy.
Japan.
Liberia.
Lithuania.
Luxemburg.
Mexico.
Monaco.
Morocco.
Netherlands.
Norway.
Paraguay.
Persia.
Peru.
Poland (and Free City of Danzig).
Portugal.
Rumania.
Salvador.
San Marino.
Serbs, Croats, and Slovenes, Kingdom of.
Soudan.
Spain.
Switzerland.
Tunisia.
Turkey.
Union of Soviet Socialist Republics.
United States of America.
Uruguay.
Venezuela.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Pneumonia held not compensable under workmen's compensation act.—(Minnesota Supreme Court; Costly *v.* City of Eveleth, 218 N. W. 126; decided February 17, 1928.) A member of a city fire department, as a result of exposure, chill, and some inhalation of smoke suffered while in the performance of his duties, contracted bronchial and lobar pneumonia from which he died. His widow was denied compensation under the workmen's compensation act by the State industrial commission, and appealed to the supreme court. Under the Minnesota compensation law mere sickness, with the exception of certain expressly enumerated occupational diseases, was not compensable unless the disease was "an accidental personal injury within the meaning" of the law. The law defined an accident as "an unexpected or unforeseen event, happening suddenly and violently, with or without human fault, and producing at the time injury to the physical structure of the body." The supreme court decided that

there had been no accident within the statutory definition, and affirmed the industrial commission's order, saying:

* * * In State ex rel. Faribault Woolen Mills Co. *v.* District Court, 138 Minn. 210, 164 N. W. 810, L. R. A. 1918F, 855, we held that typhoid fever contracted by an employee within the course of his employment and from a risk arising therefrom was not compensable. The reason was that there had been no accident within the statutory definition. The cases are reviewed and the reasons for the holding gone into at length in that decision. It is unnecessary to repeat or review them. In the present case there is no proof of "injury to the physical structure of the body" of the deceased, at the time, as a result of his work at the fire, as distinguished from the disease which soon followed. So, from the standpoint of the statutory definition of accident and its exclusionary effect upon mere sickness, we are unable to distinguish the pneumonia present in this case from the typhoid fever for which compensation was sought in the Faribault Woolen Mills Co. case.

The legislative definition of accident is admittedly difficult of application in such cases, but that difficulty does not permit us to ignore it or deny it effect. It is hard to see how it can have any function, or how we can give such obviously restrictive words their usual restrictive effect, unless we exclude from compensability such germ diseases as typhoid and pneumonia where there is no proof of a sudden and unforeseen event, as a cause, producing at the time injury to the physical structure of the body. * * *

Payment of pension to New York City Department of Health employee compelled.—(New York Supreme Court; Graef *v.* Department of Health et al., 227 N. Y. S. 82; decided January 30, 1928.) An employee of the health department of the city of New York became entitled to a pension, pursuant to city charter provisions. Beginning with January 1, 1927, the pension was denied him because the health commissioner suspected him of certain questionable activities during his employment in the department. The position the commissioner of health assumed was that, because of public policy, he had suspended the pension rights of the petitioner pending investigation. The city charter provided:

Any * * * employee who has or shall have performed duty as such * * * employee in any department of health in the city of New York, for a period of 20 years, or upward, upon his own application, in writing, * * * shall be retired from active service * * * and thereupon shall be awarded, granted, and paid from said health department pension fund by the trustees thereof, an annual sum during his lifetime not exceeding one-half the ordinary full pay of * * * [an] employee in the health department service, of the rank of the * * * employee so retired. Pensions granted under this section shall be for the natural life of the person receiving the same, and shall not be revoked, repealed, or diminished.

The employee sought to compel payment to him of the moneys withheld from him as a pension, and the court, in deciding in his favor, said that "it must be concluded that in the premises respondents are without power to order the suspension or discontinuance of the petitioner's pension, and, irrespective of how well intentioned the commissioner of health may be, the peremptory order of mandamus must be granted."

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Mosquito Nuisance and Malaria (Über Muckenplage und Malaria). E. Martini. *Medizinische Klinik*, No. 12, 1927, Berlin, Germany. (Abstract by A. L. Dopmeyer.)

The author of this article published an article on the same subject in January, 1924, in which he discussed the status of malaria in Germany and the prospects for the future. His optimistic predictions as to results to be expected in the control of the mosquito nuisance and malaria were confirmed by results obtained in 1924 and 1925, but not so in 1926. This article is written to explain the reason for the large increase in numbers of mosquitoes in 1926.

The heavy rains in June and July of the previous year, which reached flood proportions in places and were responsible for the creation of a large number of pools of standing water, are characterized as being responsible for mosquitoes in larger numbers in 1926 than has been the case for a long time.

Two means of combating the mosquito are offered: (1) Winter control, by killing the mosquitoes found in houses, and (2) summer control, by killing the larvae in the breeding places. The latter method is considered the more difficult and requires personnel trained in the work, and so the winter control is suggested, although its success must be considered limited. The mosquitoes which hibernate in basements consist almost entirely of the three species: (1) *Culex pipiens;* (2) *Theobaldia annulata;* and (3) *Anopheles maculipennis.*

Winter control, however, does not take care of the *Aëdes*, which lays its eggs in trenches or depressions in the earth and hatches in the spring after the first rains.

It is to be expected that after an autumn epidemic there will be a somewhat more severe epidemic in the spring of the following year, which latter begins in March, rises to a peak in May, and falls off abruptly in June. It consists of relapsing and new cases, the former being subject to immediate control, since they will be expected, but the latter probably not. These latter cases must be watched and treated so as to prevent the spread of infection.

If conditions in 1927 should again be favorable to the production of a large crop of pest mosquitoes, and meteorological conditions should be favorable to malaria production, a further increase in mosquitoes and malaria cases might result. In that event it would be wise to spare no efforts toward effective winter and summer control of mosquitoes, particularly the *Anopheles.*

Notes on the Pasteurization of Milk. J. M. Hamill. Ministry of Health. Reports on Public Health and Medical Subjects, No. 17. 14 pp. London, 1923. H. M. S. O. (Reprinted 1927). Abstract by W. G. Savage in *Bulletin of Hygiene*, vol. 3, No. 1, January, 1928, p. 17.

"A clear and concise report upon the essential factors concerned in successful Pasteurization, but one which does not go into many of the contentious scientific problems. For example, the temperature adopted for Pasteurization is taken at 145° F. to 150° F. for 30 minutes, this being regarded as a safe temperature without damage to the milk without discussing in detail the scientific evidence. (A slightly lower temperature is usually advocated in the United States.) Great stress is laid upon the absolute necessity of Pasteurizers of the 'holder' type. But little is said in regard to the mechanical difficulties in the way of the construction of a perfectly satisfactory 'holder' Pasteurizer.

" The report is intended as a brief general account of the subject and as a guide to local authorities as to requirements essential for the provision of the milk designated 'Pasteurized milk.' "

The Intermittent Irrigation Fields of Lubertzi (Moscow) During the First 10 Years of Operation (1914–1924). (In French). I. S. Bessonoff, P. S. Savos-

tianoff, and N. M. Welitchkine. 5th Report Res. Comm. No. 9, 1928. 152 pages. (Abstract by W. Rudolfs.)

The sewage of Moscow (separate system) is used for irrigating municipal lands at Lublino, which is 10 km. from Moscow, has a surface area of 948 hectares, and on which sewage is used at a rate of 56570 m^3 per day; and at Lubertzi, which is 22 km. from Moscow, has an area of 640 hectares and receives sewage at the rate of 37530 m^3 per day. Lutbertzi fields have been in service since 1914, and the report deals with the history of the fields during "maturation" (2–3 years), the abnormal years 1917–22, and the normal years of 1923–27. Distribution canals are constructed partly from masonry and partly from earth. The fields are divided into sections ranging from 0.25 to 2.5 hectares. The exploitation of the three farms requires 50 administrative and technical employees and 440 farmers and laborers. A stable with 150 horses and 22 cows is at the disposition of the workers. There is further a hospital, 2 schools, etc., for the nearly 2,000 persons.

The harvests are from two to two and one-half times larger than those of the surrounding prairies. Cabbage gives the best returns (33,600 kilos per hectare). Beets and hemp are also very good. The excess of green fodder is very useful for the dairy.

The effect of the treatment upon the irrigated lands is determined by chemical analyses of the sewage and drainage water collected in subterranean basins (Lysimeters). Chlorides are taken as basic figures for comparison. Suspended matter in sewage (1914) was 536 p. p. m.; fixed, 963; Cl, 147; total N, 90; NH_3, 83. During 8 years 22,000 tons of suspended matter have been placed on 450 hectares. Of the 3,099 tons of nitrogen received by the fields, 1,654 tons drained into the Pekhorka River. There were no harmful effects on the river, and it is given as an excellent example of self-purification. During 1920–21 the average results of tests of the river in p. p. m. were as follows:

	Up-stream	Down-stream		Up-stream	Down-stream
Suspended matter	5.9	4.0	NH_3	0.4	1.0
Cl	6.6	21.6	NO_3	.3	3.8
			O_2 demand	16.9	13.0

These figures give only average yearly conditions and can be used only as a summary. The authors expect to use American methods for interpretation. Three kilometers below the outfalls, the river is extensively used for recreational purposes.

Bacteriological results will be published in the following number of the reports.

Essential Features of an Efficient Municipal Sewerage System. C. A. Holmquist. *The American City*, vol. 37, No. 5, November, 1927, pp. 609–612. (Abstract by L. F. Warrick.)

The author points out, in a general discussion of municipal sewerage systems, that the essential features include (1) properly installed house plumbing, which may be regulated by plumbing code in village as well as city; (2) tight sanitary sewers laid in accordance with a comprehensive plant; (3) adequate sewage-treatment plant in charge of operators selected on the basis of knowledge and ability; (4) the tendency toward larger sewer systems, which are now made possible in New York State by the sanitary district laws; (5) the greater latitude given village trustees in sewer matters under the amended village law in the State of New York; and (6) the possibilities of sewer rentals based on water consumption as a source of revenue for building and operating sewage-treatment plants.

Some of the Newer Results Obtained at the New Jersey Experiment Station.—Willem Rudolfs. Proceedings Tenth Texas Water Works Short School, January, 1928. (Abstract by Jane H. Rider.)

Experimental work in New Jersey indicates that new methods of sewage disposal can be found only by studying the biophysicochemical conditions governing the settling, decomposition, and drying of sewage solids.

It has been found that combination of the activated sludge process and separate sludge digestion gave better results than a combination of single sedimentation and separate sludge digestion. When properly seeded, activated sludge digests more rapidly and with less odor than properly seeded solids from Imhoff or sedimentation tanks and gives a better effluent.

The addition of sea water or other liquids with high sulphate content retards the digestion of sewage solids in proportion to the amount of sulphates present. H_2S is markedly increased by even small amounts of sea water or wastes containing sulphates.

Experimental work is being done on the digestion of vegetable wastes and fine screenings. Garbage from one kitchen and fine screenings were finely ground before being mixed with ripe sludge and fresh solids. Maximum gas production took place in 20 days in mixtures of ripe sludge, fresh solids, and screenings, and was similar for the limed and unlimed portions, producing more gas in 40 days than the ripe sludge-fresh solids mixture. Sufficient stability had not been reached in the 20-day period to permit the sludge to be drawn.

In mixtures of ripe sludge, fresh solids, and vegetable waste, 1:1:1 ratio, maximum gas production was completed in 40 days, the addition of lime accelerating gas production. When the fresh solids were replaced with vegetable waste, little gas was produced; lime somewhat increased its production.

The excessive lime necessary to correct the acidity in vegetable waste mixtures indicates that high gas-yielding carbonaceous substances can not be added indiscriminately to domestic sewage. If the reaction is not kept slightly alkaline, the acidity will change the type of digestion, retard the activities of certain organisms, and cause the evolution of H_2S and other volatile, odoriferous substances. Greater digestion tank capacity will be necessary if vegetable wastes are added to domestic sewage on account of the increased weight of solids and the slower rate of digestion. The separate digestion of mixed vegetable wastes is not economical.

Tables and charts showing results obtained in these studies are given.

Imhoff Tanks—Their Function and Operation. A. L. Fales. Proceedings of the First Conference of Sewage Works Operators, Pennsylvania State College Bulletin, No. 1, January, 1927, pp. 10-20. (Abstract by L. F. Warrick.)

Imhoff tanks are discussed in a comprehensive manner as to function, importance of proper operation, method of putting into service, operation under both favorable and unfavorable conditions, value of records and research work, and care of plant and grounds. The function of the Imhoff tank is sedimentation of settleable suspended solids and bacterial digestion of resulting sludge in the same tank, without contaminating the settled sewage with products of sludge decomposition. Comparisons are made with plain sedimentation, septic, and separate sludge digestion tanks, in each case pointing out the advantages of Imhoff tanks operating under favorable conditions. Tried methods of overcoming various operating difficulties are briefly described and discussed.

Water Supply in Bradford (England). Lewis Mitchell. *Surveyor*, vol. 73, No. 1, 876, January 6, 1928, pp. 3-4. (Abstract by J. K. Hoskins.)

This report illustrates several divergent points of view on English and American water works practice. The city population of 288,700 consumes 58.1 gallons per capita, 35.3 gallons per capita of which are for domestic and 22.8 gallons for

industrial purposes; the corresponding consumption of outlying districts, with a population of 100,000, is 31.4 and 18.9 gallons per capita, respectively. Yet the statement is made that "although it is only one-third of the quantity consumed in 'dry' American cities, it is greatly in excess of what is reasonably required." (The word "dry" is not defined.) Metering of domestic services is not advocated, for sanitary reasons.

B. coli are present at times and are chiefly accounted for as coming from cultivated areas on the drainage area. Chlorination is not considered "expedient or desirable," and "may be considered purely as a last line of defense." Filtration is provided as a further safeguard for supplies from practically uncontaminated sources. The difficulty of finding pure sources requiring no chemical treatment is in many cases becoming acute, but Bradford has provided against this contingency.

The water is at times plumbo solvent, containing as high as 0.113 grains per gallon of lead. The acidity is neutralized by a "harmless reagent" to correct this solvent action.

Data on Applying Chlorine to Safeguard Water Systems. R. V. Donnelly. *Water Works Engineering*, vol. 81, No. 3, February 1, 1928, pp. 162–166. (Abstract by Chester Cohen.)

This article cites numerous practical points concerning the operation and care of chlorine-control apparatus. The functions of the various units of chlorinators are discussed and explained. All of the data could not well be repeated here. The following are examples of the type of information given: A solution-feed apparatus requires a water supply under at least 20 pounds per square inch pressure, and there must be 50 gallons of this water for every pound of chlorine used; the temperature of the apparatus should be kept at 45° F. or above; 50 pounds of chlorine per day can be safely drawn per cylinder; if none is drawn the cylinder tends to freeze; the usual chlorinator orifice has a ratio of 5 maximum to 1 minimum, thus an orifice of 50 pounds maximum will have a minimum of 10 pounds.

Proper care of the apparatus, protection against corrosion, flooding, stoppage, etc., are emphasized. The uses of chlorine as an algicide, as well as a bactericide, is brought out, together with present practices regarding superchlorination and dechlorination.

Colon Bacilli in Water Which May Cause Typhoid Diseases. Robb S. Spray. *Water Works Engineering*, vol. 81, No. 1, January 4, 1928, pp. 38 and 57. (Abstract by R. C. Beckett.)

The three general indices proposed for the determination of the index of pollution of water supplies, namely, fecal streptococci, proteolytic and fermentative anaerobes, and the colon bacillus group, have, due to difficulty of routine tests, been reduced to the latter group. This group, however, classifies some 34 bacteria, the most confusing being *B. aerogenes*. First indication of *B. aerogenes* is the greater amount of gas in lactose broth (60–80–90 per cent within 24 hours, as contrasted with 30–40 per cent with the true *B. coli*).

It has been impossible to devise any test which will differentiate the colon bacilli of human origin from those of lower animal origin—probably because they are the same.

Preliminary Experiments on the Treatment of Lake Michigan Water for Chicago. John R. Baylis. *Journal American Water Works Association*, vol. 17, No. 6, June, 1927, pp. 710–726. (Abstract by F. R. Shaw.)

This article gives a complete list of the studies planned at Chicago and discusses preliminary considerations in regard to clarification.

An investigation showed that it would not be economical to extend the intakes to such a distance (10 miles—40 ft. depth) from shore as would provide

a water of satisfactory clarity. The water at the present intakes has a turbidity of 3 to 100 p. p. m., averaging 10; a hardness of 130 p. p. m., mostly carbonate; appears to be saturated with soluble silica and alumina; and at times has an extremely high content of microorganisms, which presents the most difficult problem.

The author cites the desirability of designers paying more attention to "length of filter runs," and sets as a standard a yearly average of 24 hours. He says the minimum for efficient operation is 16 hours, and to secure runs in excess of 24 hours does not warrant much added expense. Reference is made to his studies at Baltimore which resulted in his suggesting a standard of clarity of 0.1 to 0.2 p. p. m. (0.5 is noticeable in bathtubs). A curve is given showing a decided break at 0.1 to 0.2 p. p. m., when the amount of coagulant was plotted against the turbidity of the filter effluent.

The laboratory at Chicago is equipped with a specially designed experimental filter which is particularly flexible, and with a stirring device which is adjustable as to depth of paddles in the sample and speed of rotation.

The experiments so far conducted indicate that the lake water is easily clarified and reacts economically to practically all the extensively used coagulants.

Experiments produced a resultant turbidity of 0.2 p. p. m., after treating with two-tenths of a grain per gallon of alum, stirring 30 minutes, and passing through the laboratory filter containing sand passing 20 mesh and retained on 30. The author believes that this should not be exceeded by more than 25 per cent in a well-designed plant. During periods when microorganisms are in abundance, more coagulant may be necessary. Treatment with iron and lime is considered. Two grains of lime (CaO) per gallon is the maximum that can be used without recarbonization, and this treatment reduces hardness 35 p. p. m.

The curve presented shows that a clarity of 0.2 p. p. m. results from a treatment of 2 g. p. g. of lime and 0.2 g. p. g. of iron with a raw water turbidity of 12 p. p. m. and 30-minute stirring.

Use of excess of lime with recarbonization is being considered, but it is initially thought to be uneconomical for a water of only 130 p. p. m. hardness. However, this treatment would solve the filter clogging troubles from microorganisms, and its sterilizing qualities might prove of value. If used, a treatment of 6 grains of lime would be desirable, with carbonization of the caustic alkalinity before passing the water through settling basins, thus reducing the total hardness to approximately 50 p. p. m.

Progress Report on Raw Water Carbon Dioxide Treatment at Lima. E. E. Smith. Sixth Annual Report of Ohio Conference on Water Purification, 1926, pp. 83–84. (Abstract by R. E. Thompson.)

Brief additional data are given on carbonization at Lima, Ohio. An improved type of coke burner has been installed. Experiments indicated that the use of artificial gas for generation of carbon dioxide would increase cost tenfold. Average amounts of chemicals used during period September, 1925–August, 1926, were as follows: Alum 2.27 g. p. g.; coke 5.9 p. p. m.; chlorine 0.25 p. p. m.—the average chemical cost per m. g. being $4.56.

DEATHS DURING WEEK ENDED MARCH 31, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended March 31, 1928, and corresponding week of 1927. (From the Weekly Health Index, April 4, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Mar. 31, 1928	Corresponding week, 1927
Policies in force	70, 802, 855	67, 195, 853
Number of death claims	15, 118	14, 265
Death claims per 1,000 policies in force, annual rate	11. 2	11. 1

Deaths from all causes in certain large cities of the United States during the week ended March 31, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, April 4, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Mar. 31, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 31, 1928 [2]
	Total deaths	Death rate [1]		Week ended Mar. 31, 1928	Corresponding week 1927	
Total (67 cities)	8,746	15.3	13.6	986	808	80
Akron	43			7	6	76
Albany [3]	45	19.5	15.3	3	3	61
Atlanta	92	18.9	14.7	13	8	
White	43		8.9	5	2	
Colored	49	(4)	28.2	8	6	
Baltimore [3]	291	18.3	14.6	37	26	117
White	220		12.9	19	19	76
Colored	71	(4)	24.2	18	7	282
Birmingham	67	15.8	14.4	5	8	43
White	36		8.6	2	5	28
Colored	31	(4)	23.4	3	3	68
Boston	268	17.5	15.5	39	31	108
Bridgeport	40			6	0	110
Buffalo	149	14.0	13.3	24	12	103
Cambridge	35	14.5	11.4	6	2	107
Camden	44	17.0	13.3	7	5	112
Canton	21	9.4	9.7	3	3	71
Chicago [3]	915	15.2	13.1	85	82	73
Cincinnati	166	21.0	17.8	19	16	115
Cleveland	220	11.4	11.2	23	25	62
Columbus	106	18.6	12.0	11	6	103
Dallas	66	15.9	11.6	12	8	
White	45		10.5	9	7	
Colored	21	(4)	19.0	3	1	
Dayton	49	13.9	16.2	0	5	0
Denver	92	16.4	13.5	6	7	
Des Moines	43	14.8	11.2	2	4	33
Detroit	384	14.6	11.9	61	44	94
Duluth	24	10.7	6.8	1	0	23
El Paso	60	26.6	16.1	12	6	
Erie	29			2	3	41
Fall River [3]	22	8.6	9.0	3	2	51
Flint	24	8.4	15.0	9	7	115
Fort Worth	44	13.7	11.5	7	1	
White	31		10.5	5	1	
Colored	13	(4)	18.6	2	0	
Grand Rapids	34	10.8	10.6	3	4	45
Houston	70			7	3	
White	51			3	3	
Colored	19	(4)		4	0	
Indianapolis	102	14.0	12.4	23	9	175
White	88		10.9	19	7	166
Colored	14	(4)	23.3	4	2	243

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Deaths for week ended Friday Mar. 30, 1928.
[4] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended March 31, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, April 4, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Mar. 31, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 31, 1928
	Total deaths	Death rate		Week ended Mar. 31, 1928	Corresponding week 1927	
Jersey City	79	12.7	12.2	15	4	112
Kansas City, Kans.	52	23.0	11.1	5	1	106
White	42		9.7	3	1	74
Colored	10	(4)	17.2	2	0	290
Kansas City, Mo.	147	19.7	16.5	15	6	106
Knoxville	20	9.9	18.4	0	1	0
White	18		16.8	0	1	0
Colored	2	(4)	29.9	0	0	0
Los Angeles	250			18	19	51
Lowell	29	13.7	13.7	6	0	125
Lynn	35	17.3	11.9	4	7	101
Memphis	79	21.7	22.2	8	2	94
White	44		16.7	6	0	112
Colored	35	(4)	32.1	2	2	63
Milwaukee	125	12.0	12.4	19	19	85
Minneapolis	88	10.1	12.0	10	8	60
Nashville	53	20.0	18.2	7	2	110
White	41		17.4	6	2	128
Colored	12	(4)	20.1	1	0	60
New Bedford	35	15.3	14.0	3	3	65
New Haven	50	13.9	15.2	4	7	56
New Orleans	179	21.8	18.8	12	15	58
White	101		13.8	3	6	22
Colored	78	(4)	33.1	9	9	131
New York	1,770	15.4	13.4	192	164	78
Bronx Borough	196	10.8	10.8	10	19	30
Brooklyn Borough	611	13.8	12.1	73	62	73
Manhattan Borough	749	22.4	18.1	83	62	98
Queens Borough	158	9.7	8.8	22	19	89
Richmond Borough	56	19.4	17.8	4	2	72
Newark, N. J.	128	14.1	15.0	16	11	82
Oakland	60	11.4	13.1	3	4	33
Oklahoma City	38			0	4	
Omaha	76	17.8	12.8	6	5	70
Paterson	49	17.7	8.0	7	1	121
Philadelphia	640	16.2	14.4	62	65	84
Pittsburgh	222	17.3	15.7	33	34	108
Portland, Oreg.	47			3	3	32
Providence	78	14.2	13.8	6	7	52
Richmond	57	15.3	13.9	4	3	52
White	33		11.9	1	3	20
Colored	24	(4)	18.8	3	0	110
Rochester	73	11.6	14.0	10	7	81
St. Louis	254	15.7	14.0	14	20	47
St. Paul	51	10.6	15.4	5	5	48
Salt Lake City [3]	45	17.0	10.4	7	4	114
San Antonio	86	20.6	13.6	11	12	
San Diego	51	22.3	19.0	10	3	190
San Francisco	169	15.1	13.9	10	9	63
Schenectady	24	13.4	12.9	2	2	63
Somerville	17	8.7	12.3	3	4	104
Spokane	40	19.2	11.5	4	4	103
Springfield, Mass.	35	12.2	13.4	2	6	32
Syracuse	45	11.8	11.9	5	6	61
Toledo	58	9.7	14.5	7	7	67
Trenton	43	16.2	14.5	6	4	102
Utica	35	17.6	18.7	6	3	135
Washington, D. C.	137	13.0	14.6	13	7	74
White	84		12.1	5	4	41
Colored	53	(4)	21.8	8	3	148
Waterbury	16			2	1	58
Wilmington, Del.	30	12.2	13.6	1	2	26
Worcester	77	20.4	12.0	10	4	121
Yonkers	27	11.6	10.5	0	4	0
Youngstown	35	10.5	8.0	9	2	120

[3] Deaths for week ended Friday, Mar. 30, 1928.

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

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended April 9, 1927, and April 7, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 9, 1927, and April 7, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928
New England States:								
Maine	5		3	8	206	25	1	0
New Hampshire		1				7		0
Vermont					109	56	0	0
Massachusetts	100	76	18	14	251	1,948	5	1
Rhode Island	8	7			3	242	0	0
Connecticut	35	25	7	9	95	371	2	3
Middle Atlantic States:								
New York	470	332	[1] 54	[1] 77	964	2,829	3	36
New Jersey	120	92	28	23	57	1,354	0	5
Pennsylvania	176	135			599	1,518	1	7
East North Central States:								
Ohio		78		34		814		2
Indiana	21	22	82	21	261	272	0	0
Illinois	125	167	68	228	1,990	226	10	13
Michigan	104	60		8	228	1,744	0	5
Wisconsin	34	27	44	360	691	127	5	7
West North Central States:								
Minnesota	43	23	1	2	248	53	2	2
Iowa	21	14			698	25	0	0
Missouri	43	37	1	57	276	392	0	7
North Dakota	2	5		19	145	2	0	4
South Dakota [4]	5		2	15	274	56	0	0
Nebraska	3	6		303	293	28	0	3
Kansas	15	12	5	15	1,008	117	1	1
South Atlantic States:								
Delaware	3	3	2		14	14	0	0
Maryland [2]	45	30	117	27	37	753	1	0
District of Columbia	19	15	2	2	5	234	0	1
Virginia								
West Virginia	21	34	61	26	170	131	0	2
North Carolina	16	43			885	2,736	0	
South Carolina	11	36	1,649	784	91	1,177	0	0
Georgia	12	7	304	121	126	143	1	0
Florida	10	5	1	8	182	42	0	2
								0

[1] New York City only.
[2] Week ended Friday.
[4] The report for New Mexico, p. 831, Public Health Reports, Apr. 6, 1928, was for the week ended Mar. 17, instead of Mar. 24, and that for South Dakota was for the week ended Mar. 24.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 9, 1927, and April 7, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928
East South Central States:								
Kentucky		10		33		345		0
Tennessee	6	11	114	185	186	309	1	1
Alabama	20	10	215	332	278	443	1	1
Mississippi	8	9						
West South Central States:								
Arkansas	6	6	86	222	180	244	0	0
Louisiana	65	31	16	27	214	222	0	[5] 1
Oklahoma [3]	21	29	135	579	323	314	1	5
Texas	37	53	49	611	245	561	0	1
Mountain States:								
Montana	1	1			35	2	8	7
Idaho	1				55		2	1
Wyoming	2			6	82	21	1	2
Colorado	11	15		1	320	183	9	16
New Mexico [4]	3	5		4	117	166	0	0
Arizona		5	1	129	47	33	0	2
Utah [3]	11	1	2		58	6	1	4
Pacific States:								
Washington	19	10	6	1	309	151	6	9
Oregon	14	6	54	36	242	77	1	3
California	107	91	61	25	3,168	125	8	4

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928
New England States:								
Maine	0	0	35	15	0	0	4	4
New Hampshire		0		3		0		0
Vermont	0	0	11	2	0	0	0	0
Massachusetts	1	4	464	316	0	0	8	1
Rhode Island	0	0	17	33	0	0	1	0
Connecticut	0	0	101	95	0	0	0	1
Middle Atlantic States:								
New York	4	1	1,230	873	6	0	15	14
New Jersey	1	3	362	290	0	25	9	5
Pennsylvania	1	1	606	367	0	1	5	13
East North Central States:								
Ohio		2		347		58		16
Indiana	0	0	179	124	119	138	1	3
Illinois	0	1	281	329	33	37	14	12
Michigan	0	0	243	239	20	24	5	9
Wisconsin	0	0	191	185	1	17	1	3
West North Central States:								
Minnesota	0	2	217	120	1	1	1	6
Iowa	0	0	71	80	17	56	9	0
Missouri	0	1	119	96	16	76	4	1
North Dakota	2	0	72	50	7	1	2	2
South Dakota [4]	1	0	67	53	16	29	0	2
Nebraska	0	0	80	109	20	53	3	0
Kansas	1	0	144	154	48	79	1	2
South Atlantic States:								
Delaware	0	0	13	2	0	0	0	0
Maryland [3]	0	0	61	57	0	2	4	7
District of Columbia	0	0	29	40	0	2	0	0
Virginia	0	1			1	0		
West Virginia	0	0	42	51	36	80	13	8

[3] Week ended Friday.
[3] Exclusive of Tulsa.
[4] The report for New Mexico, p. 831, Public Health Reports, Apr. 6, 1928, was for the week ended Mar. 17, instead of Mar. 24, and that for South Dakota was for the week ended Mar. 24.
[5] Delayed report.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 9, 1927, and April 7, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928	Week ended Apr. 9, 1927	Week ended Apr. 7, 1928
South Atlantic States—Continued								
North Carolina	0	0	27	26	21	60	2	1
South Carolina	3	1	3	3	22	14	9	9
Georgia	0	0	17	18	0	0	4	6
Florida	0	0	9	9	65	7	4	3
East South Central States:								
Kentucky		0		74		40		0
Tennessee	0	1	36	25	9	27	3	5
Alabama	1	0	7	8	38	7	24	7
Mississippi	0	2	2	12	1	2	9	11
West South Central States:								
Arkansas	0	0	9	19	3	16	2	1
Louisiana	0	0	13	8	4	14	18	10
Oklahoma [3]	0	0	61	55	34	151	8	6
Texas	0	0	38	145	92	146	4	14
Mountain States:								
Montana	0	0	56	15	16	22	4	2
Idaho	0	0	19	11	7	8	0	3
Wyoming	0	0	16	31	0	2	0	0
Colorado	0	1	146	121	1	15	2	0
New Mexico [4]	0	1	12	15	3	3	1	0
Arizona	1	0	8	5	0	28	0	0
Utah [2]	0	0	8	5	4	12	1	0
Pacific States:								
Washington	0	1	91	48	44	38	3	9
Oregon	1	0	40	11	25	47	2	3
California	1	4	216	120	41	21	4	3

[2] Week ended Friday.
[3] Exclusive of Tulsa.
[4] The report for New Mexico, p. 831 Public Health Reports, Apr. 6, 1928, was for the week ended Mar. 17 instead of Mar. 24, and that for South Dakota was for the week ended Mar. 24.

Report for Week Ended March 31, 1928

DISTRICT OF COLUMBIA

	Cases		Cases
Diphtheria	22	Scarlet fever	60
Influenza	1	Smallpox	1
Measles	229	Typhoid fever	1
Poliomyelitis	1		

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
February, 1928										
Georgia	3	44	879	56	758	12	0	86	20	29
Massachusetts	7	496	57		7, 174		13	1, 400	0	15
New Hampshire	0	8	56				0	88	0	0
Pennsylvania	15	1, 001			5, 363	3	8	2, 557	1	50
South Carolina	0	315	5, 114	458	5, 276	119	6	40	33	26
Virginia	1	122	3, 918	64	3, 905	15	7	293	20	27
Washington	18	60	43		1, 219		8	278	265	11

February, 1928

	Cases
Actinomycosis:	
Masschusetts	1
Anthrax:	
Pennsylvania	1
Chicken pox:	
Georgia	21
Massachusetts	1,092
Pennsylvania	3,121
South Carolina	247
Virginia	737
Washington	420
Dengue:	
Georgia	1
South Carolina	5
Dysentery:	
Georgia	11
Pennsylvania	1
Virginia	53
German measles:	
Massachusetts	110
Pennsylvania	247
Washington	37
Hookworm disease:	
Georgia	5
South Carolina	120
Virginia	4
Impetigo contagiosa:	
Washington	4
Lead poisoning:	
Massachusetts	1
Pennsylvania	1
Lethargic encephalitis:	
Georgia	2
Massachusetts	9
Pennsylvania	8
Washington	2
Mumps:	
Georgia	81
Massachusetts	1,325

February, 1928—Continued

	Cases
Mumps—Continued	
Pennsylvania	4,257
South Carolina	9
Washington	349
Ophthalmia neonatorum:	
Massachusetts	149
Pennsylvania	18
South Carolina	19
Paratyphoid fever:	
South Carolina	4
Washington	2
Puerperal fever:	
Pennsylvania	2
Rabies in animals:	
South Carolina	15
Washington	1
Rabies in man:	
Pennsylvania	1
Scabies:	
Georgia	2
Washington	17
Septic sore throat:	
Georgia	51
Massachusetts	22
Tetanus:	
Massachusetts	2
Pennsylvania	4
Trachoma:	
Massachusetts	8
Tularaemia:	
Georgia	3
South Carolina	5
Whooping cough:	
Georgia	57
Massachusetts	1,079
Pennsylvania	1,361
South Carolina	308
Virginia	544
Washington	69

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 101 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,650,000. The estimated population of the 95 cities reporting deaths is nearly 31,000,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended March 24, 1928, and March 26, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	1,767	1,734	
101 cities	959	1,058	917
Measles:			
42 States	19,642	15,663	
101 cities	8,030	5,615	
Poliomyelitis:			
43 States	28	10	
Scarlet fever:			
43 States	4,936	5,949	
101 cities	1,869	2,516	1,404
Cases reported—Contd.			
Smallpox:			
43 States	1,383	1,186	
101 cities	149	181	130
Typhoid fever:			
43 States	131	255	
101 cities	27	50	43
Deaths reported			
Influenza and pneumonia:			
95 cities	1,452	1,128	
Smallpox:			
95 cities	0	0	

City reports for week ended March 24, 1928

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

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

Division, State, and city	Population, July 1, 1928, 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	76,400	6	1	1	0	0	4	16	2
New Hampshire:									
Concord	[1] 22,546	0	0	0	0	0	1	0	0
Manchester	84,000	0	1	0	0	0	0	0	2
Vermont:									
Barre	[1] 10,008	1	0	0	0	0	0	1	0
Massachusetts:									
Boston	787,000	47	44	19	0	0	409	10	33
Fall River	131,000	2	3	4	0	0	1	2	2
Springfield	145,000	4	3	4	1	2	6	36	0
Worcester	193,000	8	4	8	0	0	29	63	6
Rhode Island:									
Pawtucket	71,000	1	1	2	0	0	6	27	3
Providence	275,000	3	8	6	0	0	69	20	10
Connecticut:									
Bridgeport	([2])	1	6	6	1	2	0	3	10
Hartford	164,000	9	7	2	2	0	12	5	5
New Haven	182,000	16	3	2	0	0	131	104	8
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000	10	11	23	3	1	266	71	26
New York	5,924,000	241	233	316	57	27	1,330	40	278
Rochester	321,000	18	11	8	----	0	38	38	11
Syracuse	185,000	31	5	0	----	0	108	13	6
New Jersey:									
Camden	131,000	2	5	7	3	3	52	0	6
Newark	459,000	33	12	27	18	0	425	24	20
Trenton	134,000	0	3	3	0	0	8	0	3
Pennsylvania:									
Philadelphia	2,008,000	85	74	53	1	10	423	114	108
Pittsburgh	637,000	45	20	13	0	4	204	94	39
Reading	114,000	3	3	6	0	0	5	0	5
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	9	8	12	0	7	150	0	21
Cleveland	960,000	54	27	56	39	5	57	230	32
Columbus	285,000	16	4	2	0	3	27	9	3
Toledo	295,000	24	4	0	2	2	375	15	11
Indiana:									
Fort Wayne	99,900	1	2	2	0	1	0	0	0
Indianapolis	367,000	28	7	6	0	2	73	126	19
South Bend	81,700	0	1	0	0	0	0	0	0
Terre Haute	71,900	5	1	0	0	1	0	0	3
Illinois:									
Chicago	3,048,000	123	77	111	51	16	38	45	106
Springfield	64,700	2	1	1	4	4	0	7	2
Michigan:									
Detroit	1,290,000	61	55	21	8	9	1,094	51	54
Flint	136,000	16	4	1	0	1	60	176	6
Grand Rapids	156,000	3	2	2	0	2	39	9	1

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 24, 1928—Continued

Division, State, and city	Population, July 1, 1926, 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									
Wisconsin:									
Kenosha	52,700	21	1	0	0	0	0	0	0
Milwaukee	517,000	67	17	12	4	3	3	57	12
Racine	69,400	6	2	0	0	0	1	3	2
Superior	[1] 39,671	3	0	0	0	0	0	0	2
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	2	0	0	0	0	0	12	1
Minneapolis	434,000	90	15	19	0	1	80	296	19
St. Paul	248,000	13	12	3	0	0	0	68	10
Iowa:									
Davenport	[1] 52,469	4	1	0	0	----	1	0	----
Des Moines	146,000	0	2	1	0	----	0	0	----
Sioux City	78,000	6	1	0	0	----	4	94	----
Waterloo	36,900	4	0	0	0	----	6	10	----
Missouri:									
Kansas City	375,000	35	6	3	0	1	38	131	15
St. Joseph	78,400	4	0	1	0	0	0	11	3
St. Louis	830,000	19	40	38	3	1	240	21	----
North Dakota:									
Fargo	[1] 26,403	2	1	0	0	0	0	4	0
Grand Forks	[1] 14,811	0	0	1	0	----	1	0	----
South Dakota:									
Aberdeen	[1] 15,036	9	0	0	0	----	0	0	----
Sioux Falls	[1] 30,127	0	0	0	0	----	0	0	----
Nebraska:									
Lincoln	62,000	15	1	2	0	0	0	34	0
Omaha	216,000	22	3	3	0	0	3	4	7
Kansas:									
Topeka	56,500	24	1	0	0	5	1	3	2
Wichita	92,500	20	2	1	0	0	0	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	0	2	4	0	0	1	5	3
Maryland:									
Baltimore	808,000	89	28	18	22	5	910	18	52
Cumberland	[1] 33,741	2	1	0	3	0	1	0	3
Frederick	[1] 12,035	0	0	1	0	0	0	0	0
District of Columbia:									
Washington	528,000	26	11	21	11	11	182	0	22
Virginia:									
Lynchburg	30,500	1	1	5	0	0	34	0	4
Norfolk	174,000	28	1	0	0	0	69	1	9
Richmond	189,000	9	2	4	0	2	180	2	6
Roanoke	61,900	1	1	2	0	0	12	1	5
West Virginia:									
Charleston	50,700	2	1	0	0	0	1	0	0
Wheeling	[1] 56,208	1	1	0	0	0	7	1	1
North Carolina:									
Raleigh	[1] 30,371	6	0	0	0	0	57	0	1
Wilmington	37,700	8	0	0	0	0	14	0	3
Winston-Salem	71,800	7	0	4	0	0	96	15	3
South Carolina:									
Charleston	74,100	0	0	0	17	1	2	0	1
Columbia	41,800	1	0	0	0	0	24	19	2
Greenville	[1] 27,311	0	0	0	0	0	2	1	3
Georgia:									
Atlanta	(2)	17	0	5	37	2	17	9	7
Brunswick	[1] 16,809	0	0	0	0	0	37	1	2
Savannah	94,900	5	0	0	17	0	4	3	8
Florida:									
Miami	[1] 69,754	17	3	4	0	0	0	7	7
St. Petersburg	[1] 26,847	----	0	----	----	0	----	----	0
Tampa	102,000	9	1	0	0	1	0	6	2

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 24, 1928—Continued

Division, State, and city	Population, July 1, 1926, 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	58,500	7	1	0	0	0	12	0	5
Louisville	311,000	2	3	4	6	4	92	16	17
Tennessee:									
Memphis	177,000	18	4	6	0	1	45	27	11
Nashville	137,000	2	0	2	0	5	26	2	3
Alabama:									
Birmingham	211,000	25	2	0	32	5	67	5	10
Mobile	66,800	4	1	0	1	2	0	0	0
Montgomery	47,000	11	0	0	0	----	44	1	----
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	[1] 31,643	2	1	0	0	----	0	0	----
Little Rock	75,900	0	1	0	4	5	27	1	11
Louisiana:									
New Orleans	419,000	8	8	6	10	3	0	0	14
Shreveport	59,500	8	1	1	0	3	166	2	7
Oklahoma:									
Oklahoma City	[2]	1	2	3	12	0	35	0	10
Tulsa	133,000	27	1	1	0	----	0	24	----
Texas:									
Dallas	203,000	26	5	3	16	5	5	0	4
Fort Worth	159,000	21	2	8	0	0	5	2	8
Galveston	49,100	0	0	2	0	0	17	0	2
Houston	[1] 164,954	11	3	12	0	1	43	0	15
San Antonio	205,000	3	2	5	0	7	22	0	14
MOUNTAIN									
Montana:									
Billings	[1] 17,971	0	0	0	0	0	0	0	0
Great Falls	[1] 29,883	0	1	0	0	1	1	0	0
Helena	[1] 12,037	0	0	0	0	0	0	0	1
Missoula	[1] 12,668	0	1	0	0	0	0	0	0
Idaho:									
Boise	[1] 23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	285,000	49	9	8	----	10	37	137	11
Pueblo	43,900	12	1	0	0	1	12	0	2
New Mexico:									
Albuquerque	[1] 21,000	8	0	0	0	0	28	0	0
Utah:									
Salt Lake City	133,000	11	2	1	0	3	7	10	5
Nevada:									
Reno	[1] 12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	[2]	40	5	1	0	----	184	5	----
Spokane	109,000	3	2	0	0	----	0	0	----
Tacoma	106,000	27	1	1	0	0	6	61	1
Oregon:									
Portland	[1] 282,383	31	8	4	2	0	24	2	3
California:									
Los Angeles	[2]	154	44	35	22	1	47	81	21
Sacramento	73,400	9	1	0	0	0	9	9	1
San Francisco	567,000	86	21	4	1	1	70	43	7

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 24, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	4	5	0	0	0	0	0	0	0	10	22
New Hampshire:											
Concord	1	0	0	0	0	1	0	0	0	0	13
Manchester	3	0	0	0	0	2	0	0	0	0	22
Vermont:											
Barre	0	1	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	82	75	0	0	0	15	1	2	0	59	227
Fall River	4	12	0	0	0	4	0	1	0	0	33
Springfield	6	29	0	0	0	1	0	0	0	7	35
Worcester	11	4	0	0	0	4	0	0	0	8	67
Rhode Island:											
Pawtucket	2	4	0	0	0	0	0	0	0	0	11
Providence	9	37	0	0	0	5	0	0	0	5	86
Connecticut:											
Bridgeport	13	4	0	0	0	1	0	0	0	5	45
Hartford	6	6	0	0	0	2	0	0	0	7	38
New Haven	10	2	0	0	0	0	0	1	0	39	46
MIDDLE ATLANTIC											
New York:											
Buffalo	23	44	0	0	0	6	1	1	0	26	153
New York	297	492	0	0	0	143	8	6	0	142	1,751
Rochester	16	14	0	0	0	3	1	0	0	7	99
Syracuse	13	6	0	0	0	2	0	0	0	33	44
New Jersey:											
Camden	7	8	0	0	0	2	0	0	0	2	38
Newark	34	44	0	0	0	10	1	0	0	29	120
Trenton	4	1	0	0	0	4	0	0	0	1	42
Pennsylvania:											
Philadelphia	88	101	0	0	0	31	3	0	0	78	568
Pittsburgh	31	26	0	0	0	12	1	1	0	11	199
Reading	4	32	0	0	0	1	0	0	0	0	33
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	19	28	1	2	0	9	0	1	0	6	181
Cleveland	41	30	1	0	0	17	2	0	0	60	234
Columbus	11	12	2	0	0	6	0	1	1	3	67
Toledo	14	11	3	0	0	3	0	2	1	4	69
Indiana:											
Fort Wayne	6	11	2	0	0	1	0	0	0	1	24
Indianapolis	9	15	11	5	0	9	0	0	0	4	110
South Bend	4	2	0	0	0	0	0	0	0	2	15
Terre Haute	3	1	0	11	0	1	0	0	0	0	37
Illinois:											
Chicago	130	151	3	2	0	58	2	0	0	117	897
Springfield	2	14	0	2	0	0	0	1	0	1	26
Michigan:											
Detroit	97	129	1	1	0	21	1	0	0	69	345
Flint	7	9	0	4	0	2	0	0	0	15	31
Grand Rapids	9	5	1	0	0	1	0	1	0	4	32
Wisconsin:											
Kenosha	3	1	0	0	0	0	0	0	0	1	5
Milwaukee	28	47	2	0	0	4	0	0	0	18	115
Racine	4	5	1	0	0	0	0	0	0	11	8
Superior	4	7	2	0	0	0	0	0	0	0	14
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	14	1	0	0	1	0	0	0	1	18
Minneapolis	54	27	5	0	0	8	1	0	0	17	98
St. Paul	33	12	5	0	0	3	0	0	0	27	69
Iowa:											
Davenport	1	2	3	0	--------	-------	0	0	--------	0	--------
Des Moines	7	10	1	5	--------	-------	0	0	--------	0	36
Sioux City	2	1	2	0	--------	-------	0	0	--------	1	--------
Waterloo	2	7	0	4	--------	-------	0	0	--------	1	--------

City reports for week ended March 24, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	11	46	4	12	0	9	0	0	0	14	124
St. Joseph	3	2	0	9	0	0	0	0	0	1	41
St. Louis	38	23	5	7	0	19	2	0	0	25	307
North Dakota:											
Fargo	2	3	0	0	0	1	0	0	0	10	7
Grand Forks	1	2	1	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	4	0	0	0	----	----	0	0	----	7	----
Sioux Falls	2	2	0	0	----	----	0	0	----	0	----
Nebraska:											
Lincoln	3	3	0	4	0	0	0	0	0	12	9
Omaha	4	7	8	1	0	5	0	0	0	2	69
Kansas:											
Topeka	2	1	1	11	0	1	0	0	0	5	25
Wichita	2	7	1	20	0	1	0	0	0	5	35
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	2	0	0	0	2	0	0	0	0	24
Maryland:											
Baltimore	40	34	0	0	0	16	2	0	0	85	275
Cumberland	1	1	0	0	0	0	0	0	0	0	17
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	26	44	2	2	0	14	1	1	0	13	177
Virginia:											
Lynchburg	0	1	1	0	0	1	0	0	0	12	16
Norfolk	1	10	0	0	0	2	0	0	0	1	----
Richmond	2	9	0	0	0	4	0	0	0	2	62
Roanoke	1	2	1	0	0	0	0	0	0	1	22
West Virginia:											
Charleston	0	7	1	1	0	0	0	0	0	0	3
Wheeling	2	1	0	0	0	1	0	1	0	0	19
North Carolina:											
Raleigh	0	1	0	3	0	0	0	0	0	2	13
Wilmington	1	2	0	0	0	1	0	0	0	2	20
Winston-Salem	0	0	5	0	0	1	0	0	0	0	23
South Carolina:											
Charleston	0	0	0	0	0	1	0	0	0	0	28
Columbia	0	1	1	0	0	0	0	0	0	4	17
Greenville	0	0	1	0	0	1	0	0	0	1	13
Georgia:											
Atlanta	4	9	5	2	0	4	1	1	1	4	76
Brunswick	0	0	0	0	0	1	1	0	0	0	6
Savannah	0	1	1	4	0	1	0	1	0	0	38
Florida:											
Miami	2	0	0	0	0	3	1	0	0	5	39
St. Petersburg	0	----	0	----	0	1	0	----	0	----	18
Tampa	0	3	0	1	0	2	0	2	0	0	17
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	0	0	0	2	0	0	0	0	29
Louisville	6	25	0	0	0	5	1	0	0	1	88
Tennessee:											
Memphis	4	7	4	1	0	6	1	0	0	1	76
Nashville	3	1	1	1	0	1	1	0	0	2	54
Alabama:											
Birmingham	2	7	8	1	0	4	1	0	0	1	67
Mobile	0	4	1	2	0	0	0	1	0	0	25
Montgomery	0	1	0	0	----	----	0	0	----	0	----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	----	----	0	0	----	0	----
Little Rock	1	2	0	1	0	3	0	0	0	0	----

City reports for week ended March 24, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—contd.											
Louisiana:											
New Orleans	7	4	1	0	0	16	2	2	1	3	158
Shreveport	1	1	1	2	0	1	1	0	0	4	44
Oklahoma:											
Oklahoma City	2	3	3	20	0	1	0	0	0	0	31
Tulsa	0	12	2	4	-------	-------	1	0	-------	0	-------
Texas:											
Dallas	3	22	5	5	0	2	0	0	0	3	51
Fort Worth	1	8	2	9	0	2	0	0	0	0	38
Galveston	0	1	1	0	0	1	1	0	0	0	21
Houston	2	1	2	1	0	3	0	0	0	0	52
San Antonio	0	0	0	0	0	9	1	0	0	0	85
MOUNTAIN											
Montana:											
Billings	1	1	1	0	0	0	0	0	0	0	6
Great Falls	1	0	0	2	0	0	0	0	0	5	11
Helena	0	0	0	3	0	0	0	0	0	0	5
Missoula	1	0	0	0	0	0	0	0	0	0	7
Idaho:											
Boise	1	0	1	0	0	0	0	0	0	0	8
Colorado:											
Denver	13	15	2	0	0	5	1	0	1	19	99
Pueblo	1	2	1	1	0	1	0	0	0	0	16
New Mexico:											
Albuquerque	1	0	0	0	0	6	0	0	0	0	15
Utah:											
Salt Lake City	2	2	1	1	0	0	0	0	0	11	32
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	7
PACIFIC											
Washington:											
Seattle	10	7	4	1	-------	0	1	-------	0	0	-------
Spokane	7	4	6	14	-------	0	0	-------	0	0	-------
Tacoma	2	0	5	0	0	1	0	0	0	1	18
Oregon:											
Portland	7	5	8	43	0	2	0	0	0	0	80
California:											
Los Angeles	29	34	4	7	0	32	1	0	0	24	-------
Sacramento	2	3	0	1	0	2	1	1	0	2	28
San Francisco	16	31	4	1	0	7	1	1	0	22	166

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	0	0	0	0	0	0	0
Springfield	1	1	0	0	0	0	0	0	0
Connecticut:									
Bridgeport	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	27	14	3	4	0	0	1	3	2
Pennsylvania:									
Philadelphia	0	0	1	1	0	0	0	0	0
Pittsburgh	2	0	0	0	0	0	0	0	0

City reports for week ended March 24, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Csaes	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cleveland	1	2	0	0	0	0	0	0	0
Illinois:									
Chicago [1]	10	6	1	0	0	0	0	1	0
Michigan:									
Detroit	4	2	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	2	2	1	1	0	0	0	0	0
Racine	0	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	0	0
Iowa:									
Davenport	0	0	1	0	0	0	0	0	0
Missouri:									
Kansas City	4	2	0	0	1	1	0	1	0
St. Louis	2	1	0	0	0	0	0	0	0
SOUTH ATLANTIC									
District of Columbia:									
Washington	1	0	0	0	0	0	0	1	0
North Carolina:									
Winston-Salem	0	0	0	0	1	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	2	0	0	0	0
Georgia:									
Savannah [2]	0	0	0	0	2	1	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham	2	0	0	0	2	0	1	0	0
Mobile	0	0	0	0	0	1	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	2	0	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Texas:									
Dallas	0	0	0	1	0	0	0	0	0
Houston	0	1	0	0	0	0	0	0	0
MOUNTAIN									
Montana:									
Great Falls	1	0	0	0	0	0	0	0	0
Colorado:									
Denver	5	2	0	0	0	0	0	0	0
Pueblo	4	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	4	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Spokane	2	0	0	0	0	0	0	0	0
Tacoma	0	0	0	0	0	0	0	1	0
Oregon:									
Portland	1	0	0	0	0	0	0	0	0
California:									
Los Angeles	2	0	0	0	0	0	0	0	0
San Francisco	1	0	5	1	0	0	0	0	0

[1] Rabies (in man): 1 case and 1 death at Chicago, Ill.
[2] Tularaemia: 3 cases at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended March 24, 1928, compared with those for a like period ended March 26, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of these cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, February 19 to March 24, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Feb. 26, 1927	Feb. 25, 1928	Mar. 5, 1927	Mar. 3, 1928	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928	Mar. 26, 1927	Mar. 24, 1928
101 cities	179	174	182	172	183	172	176	[2] 158	178	158
New England	149	138	163	140	128	145	137	[3] 136	130	124
Middle Atlantic	199	224	223	233	230	214	240	212	226	222
East North Central	198	169	176	164	165	171	157	135	178	148
West North Central	109	125	115	113	133	131	127	[4] 118	121	132
South Atlantic	191	156	195	130	155	124	141	139	146	112
East South Central	117	35	81	90	112	85	30	[5] 112	41	60
West South Central	194	188	149	92	190	168	161	136	174	116
Mountain	72	71	233	186	197	97	126	106	81	80
Pacific	151	161	133	141	198	171	165	125	193	105

MEASLES CASE RATES

101 cities	862	998	880	1,126	952	1,131	929	[2] 1,350	943	1,326
New England	228	1,908	172	1,979	198	1,657	212	[3] 2,277	198	1,536
Middle Atlantic	74	877	67	1,000	80	970	93	1,213	114	1,393
East North Central	1,015	565	1,173	761	1,169	865	1,233	1,063	1,138	1,009
West North Central	960	255	952	341	1,241	489	1,560	[4] 582	1,514	725
South Atlantic	651	2,406	794	2,576	783	2,784	1,010	2,972	972	2,893
East South Central	461	1,202	538	1,541	314	1,307	441	[5] 1,980	436	1,426
West South Central	591	1,959	720	1,695	1,187	1,300	1,026	1,328	1,754	1,120
Mountain	10,624	168	8,132	142	9,091	283	5,397	345	5,074	504
Pacific	2,865	749	3,030	892	3,252	904	2,923	830	3,163	807

SCARLET FEVER CASE RATES

101 cities	424	295	418	295	446	303	431	[2] 300	423	309
New England	542	414	423	347	591	377	546	[3] 404	479	411
Middle Atlantic	531	335	532	345	583	358	572	352	580	374
East North Central	366	285	399	309	369	292	353	296	347	306
West North Central	445	275	443	261	471	290	426	[4] 279	400	292
South Atlantic	218	282	180	254	193	268	220	223	179	224
East South Central	183	185	218	214	279	259	208	[5] 165	162	234
West South Central	116	120	66	96	120	128	62	208	58	124
Mountain	1,192	203	1,076	257	1,112	195	1,336	248	1,130	177
Pacific	313	233	329	194	285	192	253	217	360	202

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1927 and 1928, respectively.
[2] Barre, Vt., Sioux City, Iowa, and Mobile, Ala., not included.
[3] Barre, Vt., not included.
[4] Sioux City, Iowa, not included.
[5] Mobile, Ala., not included.

Summary of weekly reports from cities, February 19 to March 24, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

SMALLPOX CASE RATES

	Week ended—									
	Feb. 26, 1927	Feb. 25, 1928	Mar. 5, 1927	Mar. 3, 1928	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928	Mar. 26, 1927	Mar. 24, 1928
101 cities	25	24	21	17	30	22	31	[2] 21	30	25
New England	0	0	0	0	0	0	0	[3] 0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	15	13	21	18	34	14	33	26	29	18
West North Central	63	92	53	62	53	92	49	[4] 62	69	125
South Atlantic	45	26	52	19	54	25	51	33	41	23
East South Central	71	40	122	0	81	20	132	[5] 21	106	25
West South Central	50	8	50	20	70	36	45	44	74	36
Mountain	0	62	0	53	0	115	90	53	18	62
Pacific	104	125	13	49	94	69	84	38	99	61

TYPHOID FEVER CASE RATES

101 cities	8	5	9	10	8	4	7	[2] 4	8	4
New England	9	7	2	0	12	2	5	[3] 7	5	9
Middle Atlantic	1	5	5	8	8	3	6	2	7	4
East North Central	6	1	6	7	1	4	4	3	4	3
West North Central	8	4	10	6	4	2	0	[4] 4	4	0
South Atlantic	29	9	23	12	11	9	11	11	13	11
East South Central	25	20	41	50	30	5	20	[5] 11	41	5
West South Central	4	16	8	32	17	4	12	12	29	8
Mountain	18	0	9	9	0	0	9	0	0	0
Pacific	8	5	8	8	10	3	18	5	10	5

INFLUENZA DEATH RATES

95 cities	22	21	25	24	27	22	31	[6] 25	27	32
New England	12	7	9	7	12	21	19	[3] 7	7	9
Middle Atlantic	22	24	24	16	25	19	31	26	26	22
East North Central	17	14	23	17	16	16	18	12	16	35
West North Central	10	2	17	10	14	12	21	16	14	16
South Atlantic	41	28	47	32	70	25	79	19	65	39
East South Central	43	31	21	84	80	42	90	[5] 73	96	89
West South Central	25	74	38	103	47	74	21	115	25	98
Mountain	54	35	54	88	54	62	18	80	27	133
Pacific	17	20	17	24	7	20	14	10	28	7

PNEUMONIA DEATH RATES

95 cities	163	161	171	190	188	191	184	[6] 221	167	213
New England	184	147	202	193	188	205	172	[3] 238	156	182
Middle Atlantic	176	155	193	217	222	221	226	258	198	245
East North Central	145	156	132	148	157	156	142	194	141	211
West North Central	91	71	104	106	81	96	114	139	101	118
South Atlantic	253	228	229	217	272	214	262	214	218	240
East South Central	122	220	271	240	186	272	191	[5] 331	197	240
West South Central	161	271	183	263	161	254	195	263	136	275
Mountain	134	248	126	265	170	265	161	203	170	168
Pacific	131	115	121	155	148	122	93	125	110	101

[2] Barre, Vt., Sioux City, Iowa., and Mobile, Ala., not included.
[3] Barre, Vt., not included.
[4] Sioux City, Iowa, not included.
[5] Mobile, Ala., not included.
[6] Barre, Vt., and Mobile, Ala., not included.

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

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

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended March 10, 1928.—The following report for the week ended March 10, 1928, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

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

PLAGUE

Egypt.—Suez.
Aden Protectorate.—Aden.
India.—Bassein, Bombay, Rangoon.
Ceylon.—Colombo.
Straits Settlements.—Singapore.
Siam.—Bangkok.

CHOLERA

India.—Bombay, Calcutta, Rangoon.
Siam.—Bangkok.
French Indo-China.—Saigon, Tourane.

SMALLPOX

Iraq.—Basrah.
India.—Bombay, Calcutta, Madras, Negapatam, Rangoon, Vizagapatam.
French India.—Pondicherry.
French Indo-China.—Saigon.
Dutch East Indies.—Belawan-Deli, Banjermasin, Pontianak.
China.—Shanghai, Hong Kong.
Korea.—Fusan.

Returns for the week ended March 10 were not received from the following ports:

Dutch East Indies.—Samarinda.
Kwantung.—Port Arthur, Dairen.
Towns of the South Manchurian Railway Zone.
Union of Socialist Soviet Republics.—Vladivostok.

ARABIA

Aden Protectorate—Plague.—Information received under date of March 7, 1928, shows spread of the plague epidemic which has been reported present in the Aden Protectorate, Arabia, since the first week in January, 1928, with 464 cases and 294 deaths reported to March 7, 1928. It was stated that about one-fourth of the native population of Aden had fled to the interior.

CANADA

Communicable diseases—Provinces—Week ended March 17, 1928.—The Canadian Ministry of Health reports cases of certain communicable diseases in six Provinces of Canada for the week ended March 17, 1928, as follows:

Disease	Nova Scotia	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	28		1		6		35
Poliomyelitis			1				1
Smallpox			19		14	7	40
Typhoid fever		20	4			5	29

Quebec Province—Communicable diseases—Week ended March 24, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended March 24, 1928, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Scarlet fever	70
Chicken pox	22	Smallpox	40
Diphtheria	43	Tuberculosis	31
German measles	12	Typhoid fever	8
Influenza	8	Whooping cough	21
Measles	269		

Vancouver, British Columbia—Smallpox.—Smallpox in epidemic form has been reported in Vancouver, British Columbia, and its vicinity. On April 3, 1927, there were said to be 50 cases.

ECUADOR

Vital statistics—Health conditions.—Information received under date of February 18, 1928, shows the population of Ecuador, estimated as of December 31, 1925, to be about 2,000,000.

In 1925, 88,943 births were registered in Ecuador, or 44.5 per 1,000 population, and there were 15,237 deaths of infants under one year of age, the infant mortality rate being 171.3 per 1,000 births. In 1926, the death rate was 24.18 per 1,000 population in Ecuador. In Quito, with a population of about 100,000, the birth rate was 34.5 per 1,000 in 1926, and the death rate was 20 per 1,000.

The cities of Quito, Guayaquil, Ambato, Riobamba, Ibarra and Cuenca have municipal water supplies derived from springs or small streams.

Quito and Ambato are stated to have sewerage systems which are nearly completed; those of Guayaquil, Ibarra, and Latacunga are only partially constructed. In Riobamba and Cuenca sewage and surface waters are carried by open ditches through the streets.

Disease prevalence.—Prevalence of certain diseases in Ecuador is stated as follows:

Dysentery is common throughout the country.

Hookworm infection exists in the coastal region, but the index of occurrence has not been determined.

Leprosy is stated to be frequent, but, not being considered dangerous, receives little attention.

Malaria exists only in certain zones, including almost all of the coastal region.

Plague is stated to be always present at Guayaquil.

Typhoid fever is prevalent in many parts of Ecuador, especially in the interior.

Tuberculosis is said to be prevalent both in the lowlands and in the high interior of Ecuador.

GREAT BRITAIN

Scotland—Vital statistics, 1927.—The Registrar-General of Scotland has published the following statistics for Scotland for the year 1927:

	Number	Rates per 1,000 population		Number	Rates per 1,000 population
Births	96,669	19.75	Deaths—Continued.		
Illegitimate births	6,952		Influenza	2,026	.41
Marriages	32,589	6.66	Lethargic encephalitis	117	.02
Deaths:			Measles	660	.13
Total	65,830	13.45	Pneumonia (all forms)	5,894	1.20
Apoplexy	6,053	1.24	Puerperal sepsis	184	.04
Bronchitis	3,914	.80	Scarlet fever	200	.04
Cancer	6,918	1.41	Tuberculosis of respiratory system	3,466	.71
Cerebrospinal meningitis	138	.03	Tuberculosis (other forms)	1,401	.29
Diarrhea and enteritis under 2 years	698	.14	Typhoid fever	41	.01
Diphtheria	485	.10	Typhus fever	2	
Heart disease	7,900	1.61	Whooping cough	850	.17

The birth rate for the year in Scotland was 19.8 per thousand population. This is the lowest birth rate ever recorded in that country.

The infant mortality rate for the year was 89 per thousand live births. The mean of the infant mortality rates of the preceding five years was 90 per thousand births.

MADAGASCAR

Plague—December 16–31, 1927.—During the period December 16 to 31, 1927, 217 cases of plague with 184 deaths were reported in the island of Madagascar. The occurrence was distributed according to Provinces as follows: Ambositra, cases, 18, deaths, 10; Antisirabe, cases, 38, deaths, 38; Itasy, cases, 37, deaths, 30; Moramanga, cases, 8, deaths, 8; Tananarive, cases, 116, deaths, 98, of which 17 cases with 12 deaths occurred in the town of Tananarive. The distribution of occurrence according to type was: Bubonic, cases, 153, deaths, 120; pneumonic, cases, 46, deaths, 46; septicemic, cases, 18, deaths, 18.

Certain localities officially declared infected.—Information dated February 6, 1928, indicates that certain localities in the island of Madagascar have been officially declared infected and that sanitary restrictions have been ordered enforced. These localities are situated in the Provinces of Ambositra and Antisirabe. The town of Antisirabe is the sole resort and watering place in the island, having natural hot springs, government controlled.

SPAIN

Madrid—Mortality from communicable diseases—January-February, 1928.—During the months of January and February, 1928, mortality from communicable diseases was reported at Madrid, Spain, as follows:

Disease	Deaths	
	January, 1928	February, 1928
Diphtheria	2	1
Influenza	6	8
Measles	22	20
Scarlet fever	1	1
Tuberculosis	150	159
Typhoid fever	3	11

Population, 766,552.

Mortality from all causes.—The total number of deaths from all causes reported in Madrid was for January, 1928, 1,587, and for February, 1928, 1,490.

SYRIA

Beirut and the Lebanon—Smallpox—January 26-March 4, 1928.—During the period January 26 to March 4, 1928, 73 cases of smallpox were reported at Beirut, Syria, and 31 cases at other localities in the Lebanon.

UNION OF SOUTH AFRICA

Plague—Cape Province—Orange Free State—February 12-18, 1928.—During the week ended February 18, 1928, plague was reported in the Union of South Africa as follows: Cape Province—suspect case, native, in the Philipstown District; Orange Free State—three suspect cases, native, fatal, reported during week ended February 11, 1928, confirmed, and three further cases, native, with one fatality, occurring in the same locality, a farm in Heilbron District. A fatal case, native, was reported in a contact of one of the cases reported during the week ended February 11, 1928.

Typhus fever.—Fresh outbreaks of typhus fever were reported occurring in two districts of the Cape Province, in one district of Natal, and one district of Orange Free State.

During the month of January, 1928, there were reported in the Union of South Africa 50 cases of typhus fever. Of these, 48 cases with 13 deaths occurred among the native population, distributed as follows:

Cape Province, cases, 45; deaths, 13.

Natal, Orange Free State, and Transvaal, each one case. The two cases occurring in the white or European population were reported in the Cape Province.

VENEZUELA

Caracas—Communicable diseases—January, 1928.—During the month of January, 1928, mortality from communicable diseases at Caracas was reported as follows:

Disease	Deaths	Disease	Deaths
All causes	265	Diarrhea and enteritis (2 years and over)	13
Cerebrospinal meningitis	2	Tuberculosis	41
Diphtheria	2	Typhoid fever	2
Diarrhea and enteritis (under 2 years)	21		

YUGOSLAVIA

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

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	17	3	Poliomyelitis	1	
Cerebrospinal meningitis	6	4	Rabies	1	1
Diphtheria	298	41	Scarlet fever	1,583	235
Dysentery	25	5	Tetanus	12	6
Leprosy	1		Typhoid fever	194	31
Measles	3,406	44	Typhus fever	24	

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

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

CHOLERA

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

Place		Week ended— July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	December, 1927: 24	December, 1927: 31	January, 1928: 7	January, 1928: 14	January, 1928: 21	January, 1928: 28	February, 1928: 4	February, 1928: 11	February, 1928: 18	February, 1928: 25	March, 1928: 3	March, 1928: 10
China:																		
Amoy	C	28	72	16														
	D	7	3															
Canton	C	31	36	14	12	1												
	D	16	25	14	11	1												
Foochow	C	P	P	P														
Hong Kong	C	P	1	P														
Shanghai (settlement and concession)—																		
Foreigners only	C	1	6	3														
Including natives	D	20	74	7														
Swatow	C	42	P	P	P													
	D		P	P	P													
Tientsin	C	P	15	2	P	1												
Dutch East Indies: Java—Batavia	C				28	3												
	D				18	3												
India	C	45,163	31,390	20,160	23,047	25,139	4,624	3,960	3,550	3,243	3,267	3,097						
	D	22,051	15,895	10,371	12,863	15,026	2,617	2,353	2,046	1,847	1,765	1,739						
Bassein	D												1			1	1	
Bombay	C	42	3		2							1						
	D	30	2		2													1
Calcutta	C	87	76	101	190	428	69	42	43	22	39	36	70	58				
	D	40	39	64	138	281	48	34	27	16	18	24	38	32	35	42	63	101
Madras	C	547	59	14	13	1				1	1			1		3		
	D	278	48	8	7	2				1		3		1	2	2	7	7
Madras Presidency	C	7,660	3,056	2,050	3,073	3,702	503	382	482	497	1,163	1,301						
	D	3,513	1,581	1,055	1,736	2,104	241	209	254	280	623	813						
Negapatam	C										4							
	D										4	1		1	2	2		
Rangoon	C	1	2	6	2	8	1	2		1	4		1	1	10			
	D	1	2	5	5	6	1	1		1			1	1	8	4	2	4
Tuticorin	C			1		8												
	D			1	37	14												

India (French):																		
Chandernagor	C	1	1		6	10	6	3	4	1	1		5					
	D	1			6	10	4	2	2	1			1					
Karikal	C	18	1		1	1			6	2	9	7	8					
	D	12	1		1	1			4		5	4	5					
Pondicherry	C	12	15		1	25	4	1	2	4	2	3	2					
	D	11	15		1	21	6	1	2	3	2	3	2					
Indo-China: Saigon	C		1	1					2	1	1	1		2	1	5		8
	D								1					1	1	1		6
Iraq [1]																		
Philippine Islands: Manila		1																
Siam	C	77	40	18	110	88	24	24	13	49	50	33	48	69	74			
	D	53	24	11	76	64	18	21	5	36	34	21	42	42	50			
Bangkok	C	2	3	5	4	3	2	3	7	9	11	28	28	34	23	17	12	
	D	1	1	3	2	2	2	1	3	5	7	16	26	17	12	11	7	
Straits Settlements: Singapore	C				7	5	3	15	3	2	2			1				
	D				5	4	1	4	5	2	1							
On vessel:																		
S. S. Adrastus: At Yokohama, Japan	C	1																
	D	1																
S. S. Tabaristan: At Basra, Iraq	C			1														

Place		July-September	October, 1927	November, 1927			December, 1927			January, 1928			February, 1928		
				1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-29
Indo-China (French):															
Annam	C	3,179	226	13	75	38	16	2		79	95	93	23	36	14
Cambodia	C	251	180	56	1	28	21	12	39	30	9	15	38	22	51
Cochin-China	C	469	178	21	27	52	17	38	58	46	119	130	178	113	153
Laos	C	246	67	10											
Tonkin	C	1,297	1			1			2	1					
Kwangchow-wan	C	16													

[1] From July 19 to Dec. 26, 1927, 1,479 cases of cholera were reported in Iraq, with 1,063 deaths, as follows: Amarah Liwa, 261 cases, 205 deaths; Baghdad Liwa, 80 cases, 60 deaths; Basra Liwa, 421 cases, 330 deaths; Diwaniah Liwa, 122 cases, 72 deaths; Diyalah Liwa, 1 case, 1 death; Dulaim Liwa, 100 cases, 69 deaths; Hillah Liwa, 105 cases, 71 deaths; Kerbalah Liwa, 79 cases, 60 deaths; Kut Liwa, 66 cases, 44 deaths; Muntafiq Liwa, 244 cases, 151 deaths.

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

PLAGUE

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

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Algeria: Oran	C	4	1		2														
	D	3	1																
Arabia: Aden	C									19	13	22	54	89	63	45	77	158	
	D									7	8	8	33	55	50	31	26	99	
Argentina:																			
Bahia Blanca district	C					3													
Buenos Aires	C													2					
Cordoba Province	C	2		P	P	10	1	1											
Entre Rios	C	5																	
Firmat	C					1													
Quilino	C					3													
Rosario	C					4	2	3				4			1				
Santiago Province	C														1				
Ucacha	C					1													
Azores: St. Michaels Island	C	2	2	3	3	3	1		1		3	1	2	2					
	D		1	1		1				1	1	1	1	1	1				
Brazil:																			
Bahia	C							1	2	1	2		2	1	4				
	D							1	1	2		1	2	1	2				
Porto Alegre																	2		
Rio de Janeiro	C										1		1	2	1	1			
	D													1	2				
British East Africa:																			
Tanganyiki	C	P		P	P	P	P						2						
	D												2						
Uganda	C	456	226	99	99	67													
	D	345	158	88	96	61													
Canary Islands:																			
Las Palmas [1]	C			9		3			2	1	1				1				2
	D					1				1	1				1				
Teneriffe	C										1	3	3	3					
	D										1		3						

Ceylon: Colombo	C	1	3	1		6	3	2	1	1	1	1	1		3	3	4	1	
	D		3			6	3	1	1	1	1	1			1	3	1	1	
China:																			
Tientsin	C	2																	
Tungliao	D			200															
Dutch East Indies:																			
Balik-Papan	C						1												
	D						1												
Celebes—Makassar	C				6	2	2	1		3	2	1	1	1		1			
	D				6	2	2	1		2	2	1	1	1		1			
Java	D		432	779	829	1,017	209	179	176	187									
Batavia and West Java	C	71	68	130	132	154	32	36	24	36	46	37	27	31					
	D	71	68	129	132	152	32	36	24	36	44	37	27	31					
Cheribon	C					1													
	D					1													
East Java and Madura	C	28	18	17	10	8	3	2	1	1	5	2					P		
	D	27	18	17	10	8	3	2	1	1	5	2							
Pasoeroean Residency	C					P													
Surabaya Residency	C					P													
Surakarta Residency	C				P	P													
Egypt:																			
Alexandria	C	2	1			12	3	2					1		1				
	D					7	1	1					1		1				
Cairo	C							2											
	D							2											
Suez	C		1							1	1		3		3	4		3	
	D									1	1		1		3	3	2	1	
Greece:																			
Athens and Piræus	C	1	3	1				2	1										
	D			1				1											
Mitylene	C	1	5	1	3	3													
Patras	C	2	2	1	1														
	D			1	1														
Hawaii Territory: Hawaii	D	1													1				
India	C	1,391	2,710	3,246	3,600	5,518	1,085	1,197	2,596	2,219	2,544	2,699							
	D	836	1,428	1,792	2,065	3,269	733	899	1,804	1,498	1,653	1,661							
Bassein	D	12	14	8	4	4	2	13	2		3	3		2	1	2	4	5	
Bombay	C	14	7	4				1		2	5	4	2	3	5				
	D	11	5	3				1		1	2	2	3	2	6	14	7	6	
Calcutta	C		18																
	D		10									1							
Madras Presidency	C	620	465	583	470	791	174	167	56	153	107	132	79						
	D	321	230	298	282	359	69	27	38	72	63	64	60						
Rangoon	C	15	6	11	11	15	2	4	4	7	8	9	7	11	15				
	D	14	6	11	11	15	2	3	4	7	7	7	6	10	12	15	6	10	
Indo-China: Saigon	C		2		1														
Iraq:																			
Baghdad	C										1	1		2		1			
	D										1			1		1	1		
Dulaim Liwa	C												1						

[1] 2 cases of plague were reported at Las Palmas, Canary Islands, Mar. 29, 1928.

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

PLAGUE—Continued

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

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Nigeria: Lagos	C				17	13	2	1	1	6	2	3	3	2	2	3	2		
	D				17	13	1	1	1	5	3	3	3	2	2	3	2		
Senegal:[1]																			
Baol	C	23	72	95	P	P													
	D	13	33	40															
Cayor	C	227	463	176	48														
	D	166	233	88	28														
Dakar	C	46	20	1															
	D	32	12																
Louga	C		5	8															
	D		4																
Rufisque	C	44	16																
	D	38	12																
Thies	C		9	1	1														
	D		7																
Siam	C			13	1	3	1	7	4	4	5	3	6		13				
	D			9		2	1	1	5	4	1	1	5		10				
Bangkok	C			2				1				1	1		1				
	D				1			1				1	1		1				
Straits Settlements: Singapore	C				1								1	1	1		1		
	D				1								1	1	1				
Tunisia[2]																			
Turkey: Constantinople	C		1	1		2													
	D			1		1													
Union of South Africa:																			
Cape Province	C				2	2					1								
	D				2	1					1								
Orange Free State	C				1	8						2		3					
	D				1	6						1		3					
U. S. S. R.:																			
Chita district	C			1															
	D			1															
Northern Caucasus	C		14	1															
	D		10																

Venezuela: State of Miranda—Tacata and Cua..	C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P
On vessel:																							
At La Plata, from Rosario, Argentina	C	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
S. S. Aghios Gerasimos, at Vigo, Spain	C	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Place		July-September	October	November	December	January	February
Algeria: Algiers	C	.....	2	.....	.....	.....	.....
British East Africa: Kenya	C	95	18	28	16	26	.....
Ecuador: Guayaquil	C	15	4	9	5	4	6
	D	.....	.....	3	2	4	3
Indo-China (French)	C	14	3	3	4	7	.....
Madagascar	C	314	166	209	317	427	.....
	D	286	155	189	261	388	.....
Ambositra Province	C	7	6	1	18	105	.....
	D	7	6	1	10	96	.....
Antisirabe Province	C	39	19	18	72	117	.....
	D	38	19	17	72	117	.....
Itasy Province	C	46	16	26	62	33	.....
	D	41	15	25	54	29	.....
Moramanga Province	C	12	24	46	25	19	.....
	D	12	20	41	22	19	.....
Madagascar—Continued.							
Tananarive Province	C	211	99	170	139	155	.....
	D	189	93	153	108	129	.....
Mauritius	C	1	.....	.....	.....	.....	.....
Nigeria	C	32	27	16	20	16	.....
	D	29	27	16	18	16	.....
Peru	C	34	14	6	14	.....	.....
	D	19	5	2	4	.....	.....
Callao	D	3	.....	.....	3	.....	.....
Lima	C	.....	.....	.....	7	.....	.....
	D	.....	1	1	1	.....	.....
Syria: Beirut	C	.....	.....	.....	2	.....	.....

[1] During January, 1928, 5 cases of plague were reported in interior of Senegal.
[2] 8 cases of plague with 6 deaths were reported in Bengardane region, Tunisia, Mar. 17 to 27, 1928.

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

SMALLPOX

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

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928			
							24	31	7	14	21	28	4	11	18	25	3	10	17	24
Algeria	C	459	382	683	661	170	81	26	7	15	17	18	11							
Algiers	C					3	3	4		2	3	1	7	4	4			1		
Oran	C	9	16	11	20	39	8	15	2	4	2	2	4		1		2	2		
Arabia: Aden	C				1	3	1								1					
Brazil:																				
Para	C	1																		
Rio de Janeiro	C	6	10		1															
	D	4	9		1															
British East Africa: Tanganyiki	D	21	8	P	P	P			2	6	4		1							
British South Africa:																				
Northern Rhodesia	C	55	39	164	185	252	2	81	141	12	3		230		79					
	D	1	2	11	64	62		8	23				23		5					
Southern Rhodesia	C				3	2	1						P	3	2	4				
	D															1				
Canada:																				
Alberta	C	17	17	23	10	19		3	3	5	1	19	1	6		3		7		
Calgary	C	1																	1	
Edmonton	C			1	1	8			3	2	1			2	1		11	1	1	11
British Columbia: Vancouver	C		2			4	1	3	3	1	11	3	1	11	2	1	3	4	2	5
Manitoba	C	13	9	7	19	7	2	2	2	5		1								
Winnipeg	C	5	4	2	2	2	1			1	1	1								
New Brunswick	C		2				1									1				
Nova Scotia	C		1	1																
Halifax	C			1																
Ontario	C	60	22	96	264	347		53	83	76	52	77	63	51	40	51	36	20		
Hamilton	C					2													2	
Kingston	C				1		1							1						
Ottawa	C	27	40	67	134	63	18	9	10	23	20	16	23	9	11	3	1	7	6	8
Toronto	C		2	10	34	39	7		11	10	8	5	1	6	4	4	2	4	2	3
Windsor	C			9																
Quebec	C	1		8	25	16	14	3	10	17	7		11	8	11	13		18		
Montreal	C				1		1		1	6	3	4	1		5	1	3		6	3
Quebec	C					4		2		3		5				2	5	4	3	
Riviere du Loup	C				3															
Saskatchewan	C	14	68	31	34	58	12	13	15	12	39	15	9	34	7	8		7		
Moose Jaw	C	10	16	3		1		1	2	1	4	2	3	2		2	6	5	2	5

Regina	C	8		5	1	1						13	1		1		2			
Saskatoon	C					2		4				1		1	2	2	1	3		
Ceylon: Colombo	C	1			1	2						1								
China:	D	1				1						1								
Antung	C										1									
Canton	C		1																	
	D		1																	
Chefoo	C		1	P		P														
	D		1															1		
Foochow	C	P	P	P	P	P	P	P		P		P		P						
Hong Kong	C	1	2							1	1		1		1	3		3		
	D	1	2						1			1	1			1	1	2		
Manchuria—																				
Changchun	C					1						4								
Dairen	C			1	2	1			2	3	1		5	9	3					
	D			1								1	2	5	4					
Fushun	C		1		1															
Harbin	C					2		1				2	1	2	2					
Mukden	C			2	1							1		3	18		3			
Pensihu	C			1																
Shanghai—																				
Foreigners only	C											1	2		2	1	1	1		
Including natives	D											3	2	3	3	5	4	4	6	
Tientsin	C		4	13	8	9	2			6		20	10	10	8	5				
Curacao (alastrim)	C											2				3				
Dutch East Indies:																				
Borneo—																				
Samarinda district	C				P															
South and East Borneo Residency	C	P																		
Java—																				
Batavia and West Java	C	4		4	25									1	3					
	D				15															
East Java and Madura	C	4	22	8	9	9		3	1	1	2									
	D			1																
Sumatra: Medan	C					3		8		1	3	5	5	10	7	3				
	D					2		1		2	4	4		3						
Egypt	C		3			4		4								1				
	D		1	1		1														
Cairo	C					2														
Great Britain:																				
England and Wales	C	568	508	473	902	1,041	255	247	275	393	405	370	386	369	369	392	365	347	359	
Birmingham	C	1		1							14	17	11	2	1		2		1	
Bradford	C				11	19	2	2	4	24	6	9	7	2	7	1		4	9	
Bristol	C			6	4	8						2		1			1	3		
Cardiff	C				1				1											
Leeds	C	5	3	7	5	16	4	6	1		1			2	1	2	4	2		
Liverpool	C									1								1		
London	C										2		1	5	10	1	2	1	10	
Manchester	C			3	6	25		1	2	2	11	6	4	4	1	4	1	2	4	
Newcastle on Tyne	C	1	2	6	9	55	2	13	2	5	14	3	4	6	4	1	4	3	5	
Nottingham	C								7	6	4	8	6	9	6	1	3	1		
Sheffield	C	2	1	10	6	9	3		1	10	4		4		1	2	2	1		
Stoke on Trent	C	1							3	1			1		2	4	3	6	11	

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

SMALLPOX—Continued

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

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928			
							24	31	7	14	21	28	4	11	18	25	3	10	17	24
Greece: Saloniki	D	2																		
India	C	5,911	4,398	3,153	4,052	6,731	2,225	2,502	2,664	3,285	4,129	3,631								
	D	1,668	1,120	715	927	1,650	515	578	551	785	964	803								
Bassein	C	1												1						
	D	1																		
Bombay	C	33	12	10	4	9		4	4	6	10	23	10	18	29	23	46	51		
	D	19	8	2	3	2					2	8	7	7	15	13	23	22		
Calcutta	C	27	22	5	5	25		17	9	14	14	11	23	10	9	18	14	30		
	D	25		6	2	11		17	4	6	10	7	10	7	5	11	10	24		
Madras	C	6	7	8	7	11	2		11	8	9	16	20	29	15	33	21	31		
	D		2		2	3	1		4	1	3	2	2	1	3	3	3	10		
Nagapatam	C	3	1							5		4	2	2	1		1	1		
	D	2	1							3		2	1							
Rangoon	C	14	9	17	6	14	36	28	23	49	41	34	103	97	68	82	132	95		
	D	3	2	3	1	4	5	13	4	9	13	10	18	23	22	24	26	32		
Vizagapatam	C		3						3		2	1	5	2		1		1		
	D		2								6	1		1						
India (French):																				
Karikal	C	3	1	2	P															
	D	3	1	2																
Pondicherry	C	39	37	38	42	41	6	16	25	18	15	17	15				6	3		
	D	31	37	38	42	41	6	14	12	18	15	17	15				6	3		
Indo-China: Saigon	C	1	1			1		1	1	1								1		
Iraq:																				
Baghdad	C		1	7	5	25	9	9	3	2	7	6	3	3	2					
	D		1	4	4	14	7	3	2		3	5	2	1	1					
Basra	C	1	4	2	3	4		2			1						2	4		
	D	1	4	2	1	3		1												
Italy:																				
Leghorn	C																1			1
Rome and vicinity	C		1				2													
Jamaica (outside Kingston) (alastrim)	C	6	9	9	7	3		2				4	1		1	3				
Kingston	C		3	2																
Japan:																				
Nagasaki	C	2																		
	D	1																		
Tokyo	C										2	1		1		1				
	D											1								

Mexico:																				
Acapulco	C		2		1															
	D		2		1															
Chihuahua	D								1											
Guadalajara	D					2											1			
Manzanillo	D									1									1	
Mexico City and surrounding territory	C					4							1	1	2					
San Luis Potosi	D	1																		
Tampico	C															1				
Torreon	D	1		2																
Palestine: Jerusalem	C					1						1								
	D											1								
Poland	C	2				1	5	1			1	1	1							
	D	1																		
Porto Rico	C																		P	
Portugal:																				
Lisbon	C		3	8	4	10	1	2	4	5	5	2	2	3	3	9	4			
	D					1														
Oporto	C		1																	
Senegal: Dakar	C															8				
Siam	C	51	27	6	1	9	2	5	8	8	13	7	5	10	1	7				
	D	10	15			1			2		1	1	2		1	1				
Bangkok	C		3		1	1		1	2											
	D		1						1											
Spain:																				
Malaga	D				1	1														
Seville	C									1										
Valencia	C			1				1	1									1		
Straits Settlements: Singapore	C				1									1						
Switzerland	C						2													
Tunisia: Tunis	C							2	2			3			2	4				
Union of South Africa:																				
Cape Province	C	P		P							P									
Orange Free State	C	P			P	P	P				P									
Transvaal	C			P	7															
Venezuela: Maracaibo	D		2	1										1				1		

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928			February, 1928		
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-29
Algeria	C	376	459	382	682												
Oran	C	14	10	16	11												
Indo-China (French)	C	19	3	21	25	13	3	22	10	4	20		40	18	50	31	90
Syria:																	
Aleppo	C										1		1				
Beirut	C								1		1			15	11	26	
Damascus	C		3	5	22		13		4	6	2	11	2				

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

SMALLPOX—Continued

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

Place		July-September	October	November	December	January	February
Angola	C	51	73	71			
	D		2				
Congo	C	5	77				
Cuanza-Norte	C	1					
Cuanza-Sul	C		2				
Loanda	C	1					
Zaire	C	3	4	1			
Brazil: Porto Alegre	C	11	4	1			
British East Africa: Zanzibar	C		2				
	D		1				
Chosen	C	21	2	2			
	D	6		1			
Ecuador: Guayaquil	C	4	1	1	4	2	9
France	C	37	7	4	14	11	
Gold Coast	C	7	4				
Greece	C	10	4		5	6	11
	D						2
Latvia	C		2				
Mexico	D	221		157			
Morocco	C	180	81	140	401	55	
Nigeria	C	820	223	93			
	D	173	51	30			
Persia	D			2		7	
Spain: Madrid	D			1			
U. S. S. R.:							
Railways, etc	C	26	7	11			
Other territories in Europe	C	366	220				
Transcaucasus, Siberia, and Central Asia	C	80	40	21			
Ukraine	C	27	11	20			

TYPHUS FEVER

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

Place		July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Oct. 23-Nov. 19, 1927	Nov. 30-Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Algeria:																			
Algiers	C											1						1	
Oran	C						1	1	1	1		2			2	1	6		
Austria: Vienna	C												1						
Bulgaria: Sofia	C			17	6	1	1	4	1		1								
	D				1														

Chile:																			
Antofagasta	D			1															
Valparaiso	C		1		1	2				1									
	D	2	1		2														
China:																			
Manchuria—Harbin	C	2			1														
Tientsin	C		2																
Egypt	C	2		12	4	14	1		3	4	2			1				1	
	D	3		5		8			3	1									
Cairo	C					3													
	D					3													
Port Said	C			1		1													
Ireland (Irish Free State):																			
Cork County	C					3			1										
Donegal County, Letterkenny	C			4															
Mexico:																			
Guadalajara	D					1													
Mexico City, including municipalities in Federal District	C	17	19	18	28	17	4	4	4	3	2	1		2	1		4	3	6
	D				2	1	1	3	1								3	1	
Morocco	C								107	235	257	214	370	210					
Palestine	C	11	1	5	3	9				8		2	2	1	1	2	6		
Poland	C	50	35	19	64	93	26	33	68	68	101	92	87	66	57				
	D	6	2	4	11	10	1	3	6	6	4	3	5	7	10				
Portugal: Oporto	C	1			1									1					
Rumania	C	36	16	17	22	35	32	17	19				15	24					
	D	1		2				2	1				2	7					
Syria: Aleppo	C		2						2										
Tunisia	C	14	1	3	1	1	1			5	4				1				
Union of South Africa:																			
Cape Province	C	P	P	P	P	P	P	1	P		P	P	1	P					
Natal	C	P	P	P	P	2	2	P	P	1		P		1					
Orange Free State	C			P		P							P	P					
Transvaal	C	1		5	P	P													

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

TYPHUS FEVER—Continued

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

Place		1927				November, 1927			December, 1927			January, 1928			Feb. 1-10, 1928
		July	August	September	October	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	
Algeria	C	67	33	10	12										
	D	13			1										
Algiers	C	2	2	6	2										
Bulgaria	C	12	24	7	2						2	7	6		6
	D		1	2	1						1		1		1
Morocco	C	148	76	7	11	5	14	7	5	6	75				

Place		July-September	October	November	December	January	February
Argentina: Rosario	C			1			
	D				1	1	
China: Shanghai	D			1			
Chosen	C	90	16	26	38		
	D	8	1	2	3		
Chemulpo	C	3				1	
Gensan	C	2				1	
	D					1	
Seoul	C	5	2				
	D	1	1				
Czechoslovakia	C	12	1		6		
Greece: Athens	C	3			1	2	2
Japan	C	1		1			
Latvia	C	6					

Place		July-September	October	November	December	January	February
Lithuania	C	69	9	18	27	86	
	D	14	1	1	1	10	
Mexico	D	64	36	29			
Peru:							
Arequipa	D	3	2		1	2	
Lima	D	8					
U. S. S. R.:							
Railways, etc	C	77	23	33			
Transcaucasus, Siberia, and Central Asia	C	208	61	49			
Ukraine	C	295	151	198			
Other territories in Europe	C	1,839	521				
Yugoslavia	C	20	1	1		7	
	D	5				3	

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

YELLOW FEVER

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

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				February, 1928			
							5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25
Ashanti: Obuasi	C		1																				
	D		1																				
Belgian Congo:																							
Boma	C														3								
	D														2								
Matadi	C														0	12	11	1	5	8			1
	D														2	6	8	2	5	6			
Dahomey:																							
Grand Popo	C									1													
	D									1													
Porto Novo	C	1																					
	D	1																					
Ivory Coast	C	1											1										
	D	1											1										
Liberia: Monrovia	C			1																			
Nigeria	C			2																			
	D			2																			
Senegal	C	3	10	21	31	9	16	6	6	7													
	D	3	9	21	31	8	10	4	4	6													
Dakar	C	1			12	3	6		5	2	1	4		1	1								
	D				7	2	4		4	2	1	4		1	1								
Togoland	C		1																				
	D		1																				

Place		July	August	September	October
Gold Coast	C	15	2	6	1
	D	4	2	4	1