

Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

VOL. XII.

WASHINGTON, D. C., AUGUST 27, 1897.

No. 35.

UNITED STATES.

[Reports to the Supervising Surgeon-General United States Marine-Hospital Service.]

Smallpox in Birmingham.

The following daily telegrams from County Health Officer J. W. Barclay give the progress of smallpox :

August 21 : Only 1 case in city, none from country. August 22 : No cases in city or country to-day. August 23 : Number cases in city, 1 ; country, 2 ; from Camp Detention, 4. August 24 : No cases in city, 1 in country. August 25 : 2 cases in city, 1 in country.

Smallpox in the United States as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 29, 1896, to August 27, 1897.

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama :				
Birmingham and adjacent country.....	May 8-Aug. 12....	96	1	
	Aug. 21-Aug. 25....	12		
Mobile.....	Dec. 28-Jan. 28....	2		
	Mar. 28.....	1		
	Apr. 17.....	1		
	May 21.....	1		
	May 31.....	1		
Montgomery.....	Aug. 7-Aug. 13....	28		
Union Springs.....	Mar. 21.....		1	
Connecticut :				
New Haven.....	Feb. 17.....	1		
Florida :				
Pensacola.....	Jan. 19-Feb. 20....	13		
	Feb. 28-Mar. 10....	14		12 varioloid.
	Mar. 27-Apr. 3....	3		Varioloid.
	Apr. 10-May 1....	10		Do.
	May 2-May 22....	7		Do.
	May 29-June 5....	2		Do.
	July 4-July 10....			1 case varioloid.
Escambia County (not including Pensacola).....	Dec. 2-Jan. 19....	18		

Smallpox in the United States as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 29, 1896, to August 27, 1897—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Illinois:				
Chicago.....	Mar. 25.....			Smallpox reported; brought from Mexico.
	Mar. 27-Apr. 3.....		1	
	Apr. 10-Apr. 17.....	2		
	May 8-May 15.....		1	
Indiana:				
Greenwood.....	Feb. 12.....	1		
Massachusetts:				
Boston.....	May 1-May 8.....	4		Varioloid. 1 smallpox.
	May 22-May 29.....	1		
Cambridge.....	June 6-June 26.....	3		
Gloucester.....	June 19-June 26.....	1	2	
New Bedford.....	Apr. 10-Apr. 17.....	1		
Michigan:				
Blissfield Township.....	Mar. 27-Apr. 10.....			Smallpox reported. Do.
	Apr. 17-May 1.....			
Missouri:				
St. Louis.....	April 29.....	2		
	May 1-May 22.....	2	3	
New York:				
Brooklyn.....	Apr. 24-June 26.....	5	2	Do.
	June 27-July 24.....	2	1	
New York.....	Mar. 1-Mar. 31.....		2	
	Apr. 17-May 15.....		10	
	June 13-June 19.....		3	
	July 4-July 24.....		3	
Ohio:				
Toledo.....	Apr. 1-May 31.....	14	2	
	June 1-June 30.....	4	1	
Pennsylvania:				
Drifton.....	Apr. 6.....	1		
Tennessee:				
Memphis.....	Apr. 1-June 26.....	21		
	July 4-July 17.....	3		
	Aug. 15-Aug. 21.....	1		
Washington:				
Tacoma.....	Feb. 6.....	1		
Olympia.....	Mar. 1.....	1		

Report of immigration at Boston for the week ended August 21, 1897.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Boston, August 21, 1897.

*Number of alien immigrants who arrived at this port during the week ended August 21, 1897;
also names of vessels and ports from which they arrived.*

Date.	Vessel.	Where from.	No. of im- migrants.
Aug. 15	Steamship Yarmouth.....	Yarmouth, Nova Scotia.....	124
Do.....	Steamship Pavonia.....	Liverpool, England, and Queens- town, Ireland.....	166
Aug. 16	Steamship Belvidere.....	Port Antonio, Jamaica.....	11
Do.....	Steamship Halifax.....	Halifax, Nova Scotia.....	114
Do.....	Schooner Swantilda.....	Cheverie, Nova Scotia.....	2
Aug. 17	Steamship Sachem.....	Liverpool, England.....	1
Do.....	Steamship Victorian.....	do.....	7
Do.....	Steamship Constantia.....	Hamburg, Germany.....	57
Aug. 18	Steamship Boston.....	Yarmouth, Nova Scotia.....	49
Do.....	Steamship Olivette.....	Halifax, Nova Scotia.....	42
Aug. 19	Steamship Yarmouth.....	Yarmouth, Nova Scotia.....	70
Do.....	Steamship Pro Patria.....	St. Pierre, Miquelon.....	2
Aug. 21	Steamship Boston.....	Yarmouth, Nova Scotia.....	21
Do.....	Steamship Olivette.....	Halifax, Nova Scotia.....	52
Do.....	Steamship Galileo.....	London, England.....	2
Total.....			720

GEORGE B. BILLINGS,
U. S. Commissioner of Immigration.

*Report of immigration at New York for the week ended August 21, 1897.*OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
*Port of New York, August 23, 1897.**Number of alien immigrants who arrived at this port during the week ended August 21, 1897;
also names of vessels and ports from which they arrived.*

Date.	Vessel.	Where from.	No. of immigrants.
Aug. 15	Steamship Furnessia	Glasgow and Londonderry	64
Do....	Steamship La Bretagne	Havre.....	206
Aug. 17	Steamship Southwark.....	Antwerp.....	176
Aug. 18	Steamship Mongolian.....	Glasgow	45
Do....	Steamship Fulda	Naples and Genoa.....	234
Aug. 19	Steamship Island.....	Copenhagen, etc.....	80
Do....	Steamship Friedrich der Grosse.....	Bremen.....	197
Do....	Steamship Servia.....	Liverpool and Queenstown	93
Do....	Steamship Prussia.....	Hamburg	65
Do....	Steamship Lahn	Bremen.....	90
Aug. 20	Steamship Hevelius.....	Rio de Janeiro.....	19
Do....	Steamship Britannic	Liverpool and Queenstown	130
Do....	Steamship Neustria	Naples and Marseilles.....	264
Aug. 21	Steamship St. Paul.....	Southampton	165
Do....	Steamship Umbria	Liverpool and Queenstown.....	103
Total.....			1,931

THOMAS FITCHIE,
U. S. Commissioner of Immigration.

QUARANTINE REPORTS.

National quarantine and inspection stations.

[Vessels named only when detained or given treatment at quarantine.]

Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
Alexandria, Va.....	Aug. 21	Sp. bkn. Maria *	July 25	Habana.....	Brunswick.....	Disinfected and held.....	Aug. 8	No transactions.....	.....
Brunswick, Ga.....	Aug. 14	Sp. bk. Tulsa *	July 27	St. Vincent, P.R.	do.....	do.....	Aug. 11	.....	.....
		Port. sc. Alice *	July 31	Puerto Rico	do.....	do.....	do.....	.....	.....
		Br. bk. Lindores Abey *	Aug. 2	Rio via Port Elizabeth.	do.....	Held for disinfection.....	.....	.....	.....
		Nor. bk. Hvasfruen.....	Aug. 8	Santos.....	St. Simons.....	do.....	.....	.....	.....
		Sp. bg. Joven Antonio.	do.....	Habana.....	Brunswick.....	Ordered to South Atlantic Quarantine.	.....	2 cases yellow fever.....	.....
		Am. sc. Susie M. Plummer	Aug. 12	Rey Francis.....	do.....	Disinfected and held.....	.....	.....	.....
		Am. sc. Georgia Gilkey	Aug. 13	Martinique.....	do.....	Held for disinfection.....	.....	.....	.....
		Am. sc. John R. Fenrose.	Aug. 14	Cardenas.....	do.....	do.....	.....	.....	.....
Cape Charles, Va.....	Aug. 21	Am. sc. Bertha Louise, *	Aug. 12	Kingston, Jamaica.	Wilmington.....	Disinfected and held.....	Aug. 17	.....	8
Cape Fear, N. C.....	do.....								14
Delaware Breakwater Quarantine, Del.	do.....							No transactions.....	1
Eureka, Cal.....	Aug. 11								2
Grays Harbor, Wash.....	Aug. 18								.....
Gulf Quarantine, Ship Island, Miss.	Aug. 14	Am. sc. Eleanor *	Aug. 4	Habana.....	Ship Island.....	Disinfected and held.....	Aug. 9	.....	.....
		Am. sc. Eleanor *	Aug. 7	Colon.....	Shieldsboro.....	do.....	.....	4 cases intermittent malarial fever occurred in quarantine.	.....
		Am. sc. Palos *	Aug. 8	Calbarlen.....	Pascagoula.....	do.....	Aug. 13	.....	.....
		Am. sc. Hildegard	Aug. 10	Habana.....	do.....	do.....	.....	.....	.....
		Am. bkn. Vidette.	do.....	Vera Cruz.....	do.....	do.....	.....	.....	.....
		Am. sc. Millie Williams.							
Newbern, N. C.....	Aug. 21	Jap. ss. Yamaguchi Maru.	Aug. 12	Hongkong.....	Seattle.....	Inspected and passed.....	Aug. 12	No transactions.....	6
Port Townsend Wash.....	Aug. 14							14 passengers bathed, 7 vaccinated, 20 pieces baggage disinfected.	20
Reedy Island Quarantine, Del.	Aug. 21								

San Diego, Cal.....	Aug. 14	Am. ss. City of Para.....	Aug. 8	Panama.....	San Francisco	Disinfected and held.....	Aug. 10	39 passengers and 82 crew disinfected and held on island.	5
San Francisco Quarantine, Cal.	do.	Am. ss. City of Pueblo.....	Aug. 10	Victoria.....	do.	Inspected and passed.....	do.	8 Japanese sent to island for disinfection.	18
		Am. ss. Peru.....	do.	Hongkong.....	do.	do.	do.	73 Chinese and 20 Japanese steerage passengers disinfected.	
		Br. sp. Torteth.....	Aug. 14	Panama.....	do.	Held for disinfection.....		2 cases fever.	
South Atlantic Quarantine, Black beard Island, Ga.	July 31	Br. s. E. J. Spicer *.....	July 24	Rio.....	Sapelo.....	do.		1 case suspicious sickness sent to hospital in Rio.	
		Nor. bk. Rosenius.....	July 26	Bahia.....	Brunswick.....	do.		2 cases and 1 death from yellow fever at hospital in Bahia; 2 cases of unknown nature; vessel remanded from Brunswick.	
		Am. sc. James A. Garfield.....	July 31	Puerto Plata, San Domingo, Rio.....	Union Island, Ga.	do.			
	Aug. 7	Br. s. E. J. Spicer *.....	July 24	Bahia.....	Sapelo.....	Disinfected.....	Aug. 7		
		Am. sc. James A. Garfield *.....	July 31	Puerto Plata, San Domingo.....	Union Island, Ga.	Disinfected.....	Aug. 7		
	Aug. 14	Nor. bk. Rosenius *.....	July 26	Bahia.....	Brunswick.....	do.	Aug. 9		
		Sp. ship Serra.....	Aug. 9	Manzanillo and other Cuban ports.....	Port Royal.....	Disinfected and held.....		Remanded from Fort Royal, S. C.	
		Sp. bg. Joven Antonio.....	Aug. 14	Habana.....	Brunswick.....	Held for disinfection.....		Remanded from Brunswick; 2 cases sickness at Brunswick.	
Tortugas Quarantine, Key West, Fla.	do.	Am. bkn. Harriet S. Jackson *.....	Aug. 4	Colon.....	Pensacola.....	Disinfected.....	Aug. 12	5 cases malarial fever, 4 on voyage, 1 after arrival.	
		Br. ss. Bendl.....	Aug. 11	Rio.....	New Orleans.....	do.	Aug. 13	Without pratique at request of master.	
		Am. sc. Rollin Sanford.....	Aug. 13	Matanzas.....	Apalachicola.....	Disinfected and held.....			
		Am. sc. Wm. H. Shubert.....	Aug. 14	Sagua.....	do.	Held for disinfection.....		No transactions.	
Washington, N. C.	Aug. 21								

* Previously reported.

QUARANTINE REPORTS—Continued.

State and municipal quarantine stations.

[Vessels named only when detained or given treatment at quarantine.]

Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
Andole, Fla.....	.....	.....	.....	.....	.....	.....	.....	No report.....	.....
Apalachicola, Fla.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Bangor, Me.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Boston, Mass.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Carabelle, Fla.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Cedar Keys, Fla.....	Aug. 21	.....	.....	.....	.....	.....	.....	do.....	1
Charleston, S. C.....	.....	.....	.....	.....	.....	.....	.....	No report.....	17
Charlotte Harbor, Fla.....	Aug. 21	.....	.....	.....	.....	.....	.....	do.....	.....
Elizabeth River, Va.....	.....	.....	.....	.....	.....	.....	.....	No transactions.....	.....
Galveston, Tex.....	.....	.....	.....	.....	.....	.....	.....	No report.....	.....
Gardiner, Oreg.....	Aug. 21	.....	.....	.....	.....	.....	.....	No transactions.....	.....
Georgetown, S. C.....	.....	.....	.....	.....	.....	.....	.....	No report.....	.....
Gloucester, Mass.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Key West, Monroe Co., Fla.....	Aug. 21	.....	.....	.....	.....	.....	.....	.....	5
Mayport, Fla.....	do	Nor. s. Chipman *.....	Aug. 6	Rio.....	Mobile.....	Disinfected and held.....	Aug. 15	.....	.....
Mobile Bay, Ala.....	.....	Am. sc. Mary *.....	Aug. 12	Fronters.....	do.....	do.....	Aug. 18	.....	.....
.....	.....	Nor. ss. Ufo *.....	Aug. 13	Vera Cruz.....	do.....	do.....	Aug. 21	.....	.....
.....	.....	Am. sc. E. Knowlton.....	Aug. 15	Matanzas.....	do.....	do.....	Aug. 20	.....	.....
.....	.....	Am. sc. R. H. Rathburn.....	Aug. 16	Demerara.....	do.....	do.....	.....	.....	2
New Bedford, Mass.....	July 31	.....	.....	.....	.....	.....	.....	.....	1
.....	Aug. 14	.....	.....	.....	.....	.....	.....	.....	2
.....	Aug. 21	.....	.....	.....	.....	.....	.....	No report.....	.....
New Orleans, La.....	.....	.....	.....	.....	.....	.....	.....	No transactions.....	4
Newport News, Va.....	Aug. 21	.....	.....	.....	.....	.....	.....	No report.....	.....
Newport, R. I.....	do	.....	.....	.....	.....	.....	.....	No transactions.....	.....
New York, N. Y.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
Perth Amboy, N. J.....	.....	.....	.....	.....	.....	.....	.....	do.....	3
Portland, Me.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Port Royal, S. C.....	Aug. 21	.....	.....	.....	.....	.....	.....	No report.....	1
Providence, R. I.....	do	.....	.....	.....	.....	.....	.....	.....	.....
Sabine Pass, Tex.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Helena Entrance, S. C.....	Aug. 21	Br. st. Mungo.....	Aug. 20	Cape Town.....	Coosaw.....	Detained 4 days and fumigated.....	Aug. 24	No report.....	1
Savannah, Ga.....	do	Sp. brn. Alfreda *.....	Aug. 11	Habana.....	Savannah.....	Disinfected and held.....	Aug. 21	.....	5
.....	.....	Br. st. Scottish Min-strel.*	Aug. 13	Santos.....	do.....	Discharging ballast.....	.....	.....	.....

Reports of States and yearly and monthly reports of cities.

ALABAMA—*Mobile*.—Month of June, 1897. Estimated population, 37,817. Total deaths, 77, including phthisis pulmonalis, 7, and enteric fever, 4.

CALIFORNIA—*San Francisco*.—Month of July, 1897. Estimated population, 360,000. Total deaths, 470, including phthisis pulmonalis, 70; enteric fever, 3; diphtheria, 2; croup, 3, and whooping cough, 2.

ILLINOIS—*Chicago*.—Month of July, 1897. Estimated population, 1,750,000. Total deaths, 2,275, including phthisis pulmonalis, 184; enteric fever, 27; scarlet fever, 5; diphtheria, 44; measles, 12, and whooping cough, 21.

MARYLAND—*Baltimore*.—Month of July, 1897. Estimated population—white, 431,054; colored, 75,344; total, 506,398. Deaths, white, 725; colored, 236; total, 961, including phthisis pulmonalis, 68; enteric fever, 13; scarlet fever, 4; diphtheria, 8; measles, 1, and whooping cough, 5.

MASSACHUSETTS—*Brockton*.—Month of July, 1897. Estimated population, 35,853. Total deaths, 38, including phthisis pulmonalis, 4; diphtheria and croup, 1, and whooping cough, 1.

Worcester.—Month of July, 1897. Estimated population, 103,086. Total deaths, 172, including phthisis pulmonalis, 22; enteric fever, 1; scarlet fever, 1, and diphtheria, 3.

MICHIGAN.—Week ended August 14, 1897. Reports to the State board of health, Lansing, from 62 observers, indicate that enteric fever increased and intermittent fever and inflammation of kidney decreased in area of prevalence. Phthisis pulmonalis was reported present during the week at 191, measles at 33, enteric fever at 29, diphtheria at 16, scarlet fever at 14, and whooping cough at 10 places.

Grand Rapids.—Month of July, 1897. Estimated population, 90,000. Total deaths, 71, including phthisis pulmonalis, 5; enteric fever, 1, and diphtheria, 2.

MISSOURI—*Kansas City*.—Month of July, 1897. Estimated population, 175,000. Total deaths, 187, including phthisis pulmonalis, 8; enteric fever, 1; croup, 1, and whooping cough, 1.

NEW YORK—*Yonkers*.—Month of July, 1897. Estimated population, 40,000. Total deaths, 80, including phthisis pulmonalis, 4, and diphtheria, 4.

OHIO—*Cleveland*.—Month of July, 1897. Estimated population, 350,000. Total deaths, 610, including phthisis pulmonalis, 15; enteric fever, 7; scarlet fever, 1; diphtheria, 5, and measles, 8.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Population, U. S. Census of 1890.	Total deaths from all causes.	Deaths from—										
				Phthisis pul- monalis.	Yellow fever.	Smallpox.	Varioloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Amesbury, Mass.	Aug. 21.	9,798	0											
Ashtabula, Ohio.	do.	8,338	7											
Baltimore, Md.	do.	434,439	167	18						7		1		
Binghamton, N. Y.	do.	35,005	10	1										
Boston, Mass.	do.	438,477	212	17						4		5		1
Braddock, Pa.	July 31.	8,561	0											
Do	Aug. 7.	8,561	0											
Do	Aug. 14.	8,561	0											
Bristol, R. I.	do.	5,478	5											
Do	Aug. 21.	5,478	3											
Brooklyn, N. Y.	do.	806,343	410	36						4		17	2	5
Cambridge, Mass.	do.	70,028	30	4							1			
Carlisle, Pa.	do.	7,620	3											
Charleston, S. C.	Aug. 14.	*54,955	†26	4						2				1
Cincinnati, Ohio.	Aug. 20.	296,908	84	9						2		1		1
Cleveland, Ohio.	Aug. 14.	261,353	99	4						1				
Do	Aug. 21.	261,353	77	4						3		3		2
Columbus, Ind.	do.	6,719	2	1										
Columbus, Ohio.	do.	88,150	31							1				
Dayton, Ohio.	do.	61,220	29	2										
Dedham, Mass.	June 25.	7,123	4											1
Do	July 3.	7,123	0											
Do	July 10.	7,123	0											
Do	July 17.	7,123	0											
Do	July 24.	7,123	0											
Do	July 31.	7,123	2											
Do	Aug. 7.	7,123	1											
Dunkirk, N. Y.	do.	9,416	1											
Do	Aug. 14.	9,416	1											
Do	Aug. 21.	9,416	5											
Everett, Mass.	Aug. 13.	11,068	8											
Fall River, Mass.	Aug. 21.	74,398	54	2										1
Fitchburg, Mass.	Aug. 14.	22,037	9											
Do	Aug. 21.	22,037	8											
Flint, Mich.	do.	9,803	0											
Gloucester, Mass.	Aug. 14.	24,651	14											
Do	Aug. 21.	24,651	7											
Grand Rapids, Mich.	do.	60,278	26	3						1		1		
Green Bay, Wis.	Aug. 14.	9,069	3											
Haverhill, Mass.	Aug. 21.	27,412	2											
Hoboken, N. J.	do.	43,648	16	5										
Ironton, Ohio.	do.	10,939	3											
Jacksonville, Fla.	do.	17,201	14	4										
Jersey City, N. J.	Aug. 8.	163,003	53	2						2		1		
Do	Aug. 15.	163,003	77	8								4		1
Johnstown, Pa.	Aug. 21.	21,805	4											
Kalamazoo, Mich.	Aug. 14.	17,853	6											
Lawrence, Mass.	do.	44,654	24											
Lebanon, Pa.	Aug. 22.	14,664	3											
Lowell, Mass.	Aug. 21.	77,696	46	4										
Lynchburg, Va.	do.	19,709	3											
McKeesport, Pa.	Aug. 14.	20,741	7											
Manchester, N. H.	Aug. 21.	44,126	24											
Medford, Mass.	do.	11,079	3											
Memphis, Tenn.	do.	64,495	22	3										
Michigan City, Ind.	do.	10,776	3											2
Middletown, N. Y.	Aug. 15.	11,977	6											
Middletown, Ohio.	Aug. 7.	7,681	1											
Do	Aug. 14.	7,681	3											
Milwaukee, Wis.	Aug. 21.	204,468	85	5						1				1
Minneapolis, Minn.	Aug. 14.	164,738	50	5						1		1		1
Do	Aug. 21.	164,738	43	4						2				
Mobile, Ala.	do.	31,076	20	2						1				
Nashville, Tenn.	do.	76,168	39	3										
New Bedford, Mass.	do.	40,733	18	2								1	1	
Newburyport, Mass.	Aug. 14.	13,947	4											
New Orleans, La.	Aug. 21.	242,039	82	13						3				
Newport, R. I.	do.	19,457	16											
New York, N. Y.	do.	1,515,301	750	86						9		2	16	10
Norristown, Pa.	do.	19,791	6											
North Adams, Mass.	do.	16,074	9											
Omaha, Nebr.	Aug. 14.	140,452	20											
Oneonta, N. Y.	Aug. 21.	6,272	0											

* Estimated population, white, 28,870; colored, 36,295. Total, 65,165. † White, 5; colored, 21.

Table of temperature and rainfall, week ended August 23, 1897.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	* Excess.	* Deficiency.	Normal.	Excess.	Deficiency.
Atlantic Coast:						
Eastport, Me.....	60		0	.77		.57
Portland, Me.....	66		2	.84		.64
Northfield, Vt.....	62		10	1.13		.73
Boston, Mass.....	69		1	1.00		.00
Vineyard Haven, Mass.....	72		2	1.17	1.83	
Nantucket, Mass.....	68		0	.70		.00
Woods Hole, Mass.....	68		0	.98	1.02	
Block Island, R. I.....	68		0	.77	.03	
New Haven, Conn.....	70		2	1.14	.86	
Albany, N. Y.....	70		4	.91		.11
New York, N. Y.....	72		2	1.05		.45
Harrisburg, Pa.....	72		2	1.04		.64
Philadelphia, Pa.....	74		0	.98		.78
New Brunswick, N. J.....	73		3	1.14		.94
Atlantic City, N. J.....	72		0	1.16		1.16
Baltimore, Md.....	75		1	.91		.91
Washington, D. C.....	74		1	.87		.75
Lynchburg, Va.....	76		4	.91		.91
Cape Henry, Va.....	77		3	1.23		1.23
Norfolk, Va.....	77		1	1.37		.97
Charlotte, N. C.....	77		5	1.20		.70
Raleigh, N. C.....	76		2	1.76		.86
Kittyhawk, N. C.....	78		2	1.56		.36
Hatteras, N. C.....	77		1	1.40	1.30	
Wilmington, N. C.....	78		2	1.67		1.07
Columbia, S. C.....	78		4	1.56	2.04	
Charleston, S. C.....	81		1	1.68	.72	
Augusta, Ga.....	79		5	1.18	2.92	
Savannah, Ga.....	80		2	1.80	.80	
Jacksonville, Fla.....	81	1		1.47	.53	
Jupiter, Fla.....	81	1		1.13		1.13
Key West, Fla.....	84	2		1.11		1.11
Gulf States:						
Atlanta, Ga.....	77		5	1.05	1.85	
Tampa, Fla.....	81	1		2.11		.21
Pensacola, Fla.....	80		4	1.87	.73	
Mobile, Ala.....	80		4	1.55		1.05
Montgomery, Ala.....	80		6	.91	3.00	
Vicksburg, Miss.....	80		4	.77	.63	
New Orleans, La.....	81		3	1.36		.26
Shreveport, La.....	81		3	.46	.64	
Fort Smith, Ark.....	79		7	.84		.84
Little Rock, Ark.....	79		5	.94		.94
Palestine, Tex.....	81		3	.63		.33
Galveston, Tex.....	83		5	1.33	3.17	
San Antonio, Tex.....	82		2	.95		.75
Corpus Christi, Tex.....	82		0	.75	.45	
Ohio Valley and Tennessee:						
Memphis, Tenn.....	79		5	.84		.84
Nashville, Tenn.....	78		6	.74		.04
Chattanooga, Tenn.....	76		4	.91	.69	
Knoxville, Tenn.....	75		3	.91	.59	
Louisville, Ky.....	76		6	.79		.19
Indianapolis, Ind.....	74		8	.70		.50
Cincinnati, Ohio.....	75		5	.84		.34
Columbus, Ohio.....	72		4	.74		.54
Parkersburg, W. Va.....	72		4	.91		.61
Pittsburg, Pa.....	73		5	.70		.30
Lake Region:						
Oswego, N. Y.....	68		6	.56		.36
Rochester, N. Y.....	68		6	.70		.40
Buffalo, N. Y.....	68		6	.70	.40	
Erie, Pa.....	69		7	.77		.37
Cleveland, Ohio.....	70		8	.70		.30
Sandusky, Ohio.....	71		7	.70		.30
Toledo, Ohio.....	71		9	.61		.61
Detroit, Mich.....	70		8	.63		.33
Lansing, Mich.....	68		8	.63		.63
Port Huron, Mich.....	67		5	.56		.36
Alpena, Mich.....	63		7	.77		.37
Sault Ste. Marie, Mich.....	60		4	.59		.59
Marquette, Mich.....	63		7	.65		.15
Green Bay, Wis.....	65		5	.63		.13

* The figures in these columns represent the average daily departure.

Table of temperature and rainfall, week ended August 23, 1897—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	*Excess.	*Deficiency.	Normal.	Excess.	Deficiency.
Lake Region—Continued.						
Grand Haven, Mich.....	67		7	.62		.52
Milwaukee, Wis.....	69		7	.59		.39
Chicago, Ill.....	71		7	.63		.63
Duluth, Minn.....	64		4	.75	.15	
Upper Mississippi Valley:						
St. Paul, Minn.....	69		7	.74		.24
La Crosse, Wis.....	70		8	.73		.33
Dubuque, Iowa.....	72		10	.65		.45
Davenport, Iowa.....	73		9	.78		.68
Des Moines, Iowa.....	72		10	.70		.40
Keokuk, Iowa.....	75		11	.56		.46
Springfield, Ill.....	73		7	.55	.85	
Cairo, Ill.....	77		5	.63		.43
St. Louis, Mo.....	77		7	.77		.67
Missouri Valley:						
Columbia, Mo.....	75		7	.52	.08	
Springfield, Mo.....	73		5	.86		.36
Kansas City, Mo.....	76		8	.86		.36
Wichita, Kans.....	76		4	.89	.11	
Concordia, Kans.....	74		6	.63		.63
Lincoln, Nebr.....	73		7	.93	.37	
Omaha, Nebr.....	73		9	.72		.12
Sioux City, Iowa.....	70		6	.93	.57	
Yankton, S. Dak.....	71		7	.70		.20
Valentine, Nebr.....	69		5	.49		.49
Huron, S. Dak.....	68		4	.56	.04	
Pierre, S. Dak.....	71		3	.35		.35
Moorhead, Minn.....	64		0	.56		.56
Bismarck, N. Dak.....	67	3		.42		.22
Williston, N. Dak.....	65	1		.23		.23
Rocky Mountain Region:						
Havre, Mont.....	66	4		.28		.28
Helena, Mont.....	66	6		.14		.14
Miles City, Mont.....	71		1	.21		.21
Rapid City, S. Dak.....	69		1	.28		.28
Spokane, Wash.....	69	9		.07		.07
Wallawalla, Wash.....	76	8		.07		.07
Baker City, Oreg.....	66	12		.00		.00
Salt Lake City, Utah.....	74	2		.16		.16
Lander, Wyo.....	67		3	.21		.21
Cheyenne, Wyo.....	64		4	.35		.35
North Platte, Nebr.....	71		5	.56		.56
Denver, Colo.....	70		4	.35		.35
Pueblo, Colo.....	70		4	.49		.39
Dodge City, Kans.....	75		5	.64	.66	
Oklahoma, Okla.....	80		8	.68		.68
Amarillo, Tex.....	73		3	.71	.09	
Abilene, Tex.....	80		4	.63		.43
Santa Fe, N. Mex.....	66		4	.53	.27	
El Paso, Tex.....	79		5	.42		.42
Phoenix, Ariz.....	88	4		.23		.23
Pacific Coast:						
Fort Canby, Wash.....	59	1		.22		.22
Portland, Oreg.....	66	12				
Roseburg, Oreg.....	66	12		.07		.07
Eureka, Cal.....	56		0	.01		.01
Redbluff, Cal.....	81	5		.00		.00
Carson City, Nev.....	67	5		.05	.05	
Sacramento, Cal.....	72	8		.00		.00
San Francisco, Cal.....	59		1	.00		.00
Fresno, Cal.....	81	7		.00		.00
Los Angeles, Cal.....	71	7		.00		.00
San Diego, Cal.....	69	5		.00		.00
Yuma, Ariz.....	91	3		.09		.09

* The figures in these columns represent the average daily departure.

FOREIGN.

[Reports received from United States consuls through the Department of State and from other sources.]

Cholera, yellow fever, and plague as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 29, 1896, to August 24, 1897.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Dec. 8-Dec. 15...	1	1	
	Dec. 22-Dec. 29...	1	1	
	Mar. 23-Mar. 30...	1	1	
	Mar. 31-June 29...	68	166	
	July 1-July 27...	267	311	
Calcutta.....	Nov. 14-Jan. 30...	125	1,310	
	Jan. 31-Feb. 27...	176	100	
	Feb. 28-Mar. 6...	2	6	
	Mar. 6-May 29...	22	13	
	May 30-June 26...	2	1	
	June 27-July 17...	4	2	
Madras.....	Nov. 21-Nov. 27...	2	1	
	Nov. 28-Dec. 4...	6	22	
	Dec. 12-Dec. 25...	13	2	
	Dec. 26-Jan. 29...	1	1	
	Jan. 30-Feb. 26...	2	4	
	Feb. 27-Mar. 5...	2	2	
	Mar. 6-Mar. 19...	2	4	
	Mar. 20-Mar. 26...	2	2	
	May 29-June 25...	12	5	
	June 26-July 9...	1	1	
Singapore.....	Nov. 1-Nov. 30...	5	3	
	Dec. 1-Dec. 31...	3	3	
	June 1-June 30...	114	1	
Ceylon:				
Colombo	Nov. 28-Jan. 23...	1	1	
	Jan. 23-Jan. 30...	3	3	
	July 3-July 10...	4	4	
England:				
Plymouth.....	Jan. 9.....			On steamship <i>Nubia</i> . No cases in city.
Japan:				
Fukuoka Ken.....	June 28-July 25...	4	2	
Hioگو Ken.....	June 28-July 6...	1	1	
Kanagawa Ken.....	July 7-July 25...	6	4	
Kioto Fu.....	July 16-July 25...	1	1	
Osaka.....	May 1-July 6...	13	2	
	July 16-July 25...	2	2	
Oyama Ken.....	June 28-July 6...	1	1	
Saitama.....	July 16-July 25...	1	1	
Tokyo	Dec. 4-Dec. 29...	8	7	
	Dec. 30-Jan. 18...	3	3	
	June 28-July 25...	15	7	
Yamanashi Ken.....	July 7-July 15...	1	3	
Yokohama.....	Dec. 4-Dec. 29...	4	3	
	Dec. 30-Jan. 18...	2	2	

YELLOW FEVER.

Brazil:				
Bahia	May 13-May 19...	5	3	
Para.....	Dec. 12-Jan. 30...		32	
	Jan. 31-Feb. 27...		20	
	Feb. 27-Mar. 6...		9	
	Mar. 13-Mar. 20...		3	
	Apr. 3-Apr. 10...		3	
	May 30-June 5...		4	
	June 20-July 3...		7	
	July 4-July 17...		8	
Rio de Janeiro.....	Nov. 21-Dec. 26...		10	
	Dec. 26-Jan. 30...		28	
	Jan. 31-Feb. 6...	12	5	
	Feb. 13-Feb. 20...	21	6	

Cholera, yellow fever, plague, etc.—Continued.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil—Continued.				
Rio de Janeiro.....	Feb. 20-Mar. 6...	.....	16	
	Mar. 7-May 29...	174	78	
	May 30-July 3...	10	7	
	July 4-July 24...	3	2	
Cuba: *				
Cardenas.....	Dec. 25-Jan. 30...	84	8	
	Jan. 31-Feb. 27...	38	1	
	Apr. 17-June 26...	46	9	
	June 27-July 31...	7	3	
	Aug. 1-Aug. 14...	.....	3	
Cienfuegos.....	Dec. 20-Dec. 27...	.....	8	
	Dec. 28-Jan. 17...	.....	2	
	Apr. 4-Apr. 11...	.....	1	
	May 17-May 23...	.....	1	
	June 20-July 25...	.....	30	
	July 26-Aug. 1...	.....	16	
	Aug. 2-Aug. 15...	.....	14	
Habana.....	Dec. 17-Dec. 31...	220	79	
	Jan. 1-Jan. 28...	400	144	
	Jan. 28-Feb. 25...	117	44	
	Feb. 25-Mar. 23...	130	38	
	Mar. 25-Apr. 29...	342	85	
	Apr. 30-July 1...	750	279	
	July 2-July 29...	.....	192	
	July 3-Aug. 5...	.....	28	
	Aug. 6-Aug. 19...	.....	50	
Manzanillo.....	Apr. 1-Apr. 15...	.....	1	
	May 15-May 31...	.....	1	
	June 1-June 15...	.....	1	
	July 2-July 31...	.....	6	
Matanzas.....	Dec. 9-Dec. 23...	.....	8	
	Dec. 23-Jan. 27...	.....	19	
	Jan. 27-Feb. 24...	.....	4	
	Feb. 25-Mar. 31...	.....	2	
	Apr. 1-June 30...	9	24	
	July 1-July 28...	.....	17	
	July 29-Aug. 4...	.....	4	
	Aug. 5-Aug. 18...	.....	16	
Santiago.....	Dec. 5-Dec. 26...	.....	17	
	Dec. 26-Jan. 30...	.....	16	
	Jan. 16-Jan. 30...	.....	5	
	Jan. 30-Feb. 27...	.....	6	
	Feb. 27-Mar. 27...	.....	3	
	May 2-July 3...	54	64	140 cases in military hospital.
	July 4-July 31...	.....	82	
	Aug. 1-Aug. 7...	.....	7	
Sagua la Grande.....	Dec. 19-Dec. 26...	50	5	
	Dec. 26-Jan. 9...	65	6	
	Jan. 9-Jan. 30...	110	12	
	Jan. 31-Feb. 27...	35	7	
	Feb. 27-Mar. 27...	54	17	
	Mar. 28-June 26...	304	.....	Number of deaths not given.
	June 27-July 31...	185	9	
	Aug. 1-Aug. 7...	32	4	
Ecuador:				
Guayaquil.....	Dec. 18-Jan. 10...	.....	9	
Haiti:				
Port au Prince.....	Dec. 1-Dec. 7...	.....	2	
	Dec. 14.....	.....	.....	Yellow fever epidemic.
	Mar. 1-Mar. 8...	.....	3	
Guadeloupe:				
Basse Terre.....	Jan. 5.....	1	.....
Jamaica:				
Kingston.....	July 17-July 31...	2	1	
Mexico:				
Vera Cruz.....	June 28.....	.....	.....	Yellow fever reported.
	June 25-July 1...	.....	2	
	June 29.....	.....	2	
Peru:				
Callao.....	June 10-June 17...	.....	2	In harbor on steamship <i>Santiago</i> from Panama.
United States of Colombia:				
Bocas del Toro.....	Aug. 22.....	.....	.....	1 case yellow fever.
Panama.....	Apr. 14.....	20	17	
	June 25.....	91	62	Estimated.

* February 23, 1897, 300 cases of yellow fever were reported among the sick soldiers on the Island.

Cholera, yellow fever, plague, etc.—Continued.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
United States of Colombia— <i>Continued.</i>				
Panama	June 23-July 3...	12	7	
	July 4-Aug. 3...	33	15	
	Aug. 4-Aug. 13...	4	2	
Colon	May 12-May 25...		5	
	Aug. 4-Aug. 14...		1	

PLAGUE.

Arabia:				
Jeddah	June 10.....	16	23	
Egypt:				
Suez	Mar. 31.....			One case of plague on Br. ss. <i>Dilwara</i> from Bombay.
India:				
Bombay *	Dec. 1-Dec. 22.....		694	This is the number of deaths officially reported. The United States consul estimates the number of deaths for the same period at 2,763.
	Dec. 22-Jan. 5.....		738	Estimated deaths for this same period, 2,953.
	Jan. 5-Jan. 12.....		335	Estimated deaths for this same period, 1,388.
	Jan. 12-Jan. 19.....		470	
	Jan. 19-Jan. 26.....		443	Estimated deaths for this same period, 1,462.
	Jan. 26-Feb. 23.....		2,884	Estimated deaths for this same period, 5,845.
	Feb. 23-Mar. 9.....		1,282	Estimated deaths for this same period, 2,265.
	Mar. 9-Mar. 30.....		1,431	Estimated deaths for this same period, 2,730.
	Mar. 31-June 1.....		1,681	Estimated deaths from March 31 to April 20, 2,892.
	June 2-June 29.....		90	
	July 1-July 27.....		34	
Calcutta.....	Feb. 6-Feb. 13.....		1	
Karachi.....	Jan. 11.....			Plague epidemic; 220 cases, 214 deaths to date.
China:				
Amoy	June 30.....			Plague epidemic reported.
Hongkong	Dec. 13-Dec. 29.....			A few cases.
	May 21-May 29.....	4	2	
	June 6-June 12.....		1	
Macao	Apr. 1-May 31.....		154	
	June 1-June 3.....	43		
	June 1.....			Plague epidemic reported.
Swato	May 4.....			Epidemic of plague reported.
Japan:				
Formosa	Nov. 6-Nov. 30.....	53	37	
	Dec. 4-Dec. 29.....		15	
	Jan. 19-Jan. 27.....	3		
	Feb. 23-Mar. 12.....	3		
	Mar. 13-Mar. 23.....	4		
	Mar. 24-Mar. 31.....	3		
	Apr. 1-Apr. 20.....	64	54	
	Apr. 20-May 20.....	268		
	May 31-June 27.....	144		
	June 28-July 25.....	25		
Kanagawa Ken	July 7-July 25.....	2	2	
Nagasaki Ken	June 9-June 27.....	3	3	
Taihoku	Apr. 20-Apr. 27.....	3		
Russia:				
St. Petersburg	Apr. 10-Apr. 17.....		1	
Theodosia	Mar. 31.....			One case of plague on Br. ss. <i>Baldwin</i> .

* Official returns show 9,118 cases and 7,602 deaths to March 12.

Elucidation of the part played by insects in the spread of plague—On the receptivity of different animals to plague infection.

An experimental study by Dr. GEO. H. F. NUTTALL, Berlin.

[Translated in this Bureau from the "Centralblatt für Bakteriologie und Parasiten Kunde."]

In 1894 Yersin stated, in his report on bubonic plague, "that flies contract the disease and die of it, and that they may serve as agents of transmission. I remarked many dead flies in the laboratory in which I made my animal autopsies. I caught one of these flies and having removed its wings, head, and feet, I steeped it in bouillon and inoculated it to a guinea pig. The inoculation liquid contained a great number of bacilli, precisely similar to the bacillus of plague, and the guinea pig died in forty-eight hours with specific plague lesions." (See Annals of Pasteur Institute, Vol. VIII, p. 667.)

The only other mention of flies in connection with plague, to my knowledge, was made by Haeser in 1882. He states that the city of Bengasi, in Tripoli, was attacked by plague in 1858-59, and lost two-thirds of its inhabitants, who numbered 10,000. Bengasi was a very dirty town, an on account of the number of flies there it was called by the Turks the "Kingdom of Flies."

Yersin's statement that the flies died of plague did not seem to me proven. Dead flies are often observed, especially in hot weather and in closed rooms. They probably die from want of water. It is also possible that the flies in Yersin's laboratory died of corrosive sublimate fumes. That the dead flies (observe that he reports examining one only) contained plague bacilli is no proof that they died of plague.

To decide this question I instituted the following experiments: The culture which I used came from a traveler from Bombay, who died of plague in London, and it killed mice in thirty-six to forty-eight hours. I received it from Dr. W. Kolle, who had it from Dr. Allan Macfadden.

INFECTION EXPERIMENTS WITH PLAGUE BACILLUS IN FLIES.

The flies (*Musca domestica*) were caught usually shortly before the experiment began and inclosed in a lamp cylinder closed with corks. The cylinders were about 30 centimeters in length and had a diameter of 5 centimeters. In the cylinder was placed a folded fly paper, on which it is observed flies light preferably. Both corks had an incision made for ventilation. These incisions were covered with fine wire netting. Into each cork was also fitted a tube for administering food. Only a small number of flies were placed in the apparatus. A drop of fluid food was placed on a folded piece of filter paper which was then passed through the tube. The cylinder was placed in a wire basket set in a bowl of corrosive sublimate solution to prevent the penetration of very small organisms through the wire-netting cover. The whole apparatus was then covered with a well ventilated bell glass.

The living flies were withdrawn by shaking through a glass tube inserted into the cork in the mouth of the cylinder, and passing into another similar cylinder or reagent glass. They were killed by a slight blow on the head by a glass rod passed into the second cylinder. Their contents were removed and inoculated to a mouse.

Experiment I.—Two apparatus were prepared at a room temperature of 12° to 14° C. One contained 6, the other 11 flies which had been caught four days before. The infected food (bouillon solution of fresh plague organs from mice dead thirty-six hours after inoculation) was renewed every two days. After eight days the flies were all alive and quite active. Six flies were then killed and inoculated to 2 mice. Two flies were still alive after eighteen days. The others had died by degrees. On microscopical examination plague bacilli were found in great numbers.

II. Three apparatus were prepared at a temperature of 14° C., and received, respectively, 9, 8, and 10 flies. The first two received infected food every twenty-four hours; the last served as control and received normal mouse organisms in bouillon.

The results are shown in the following table:

Number of flies.	Dead after—						
	24 hours.	48 hours.	72 hours.	96 hours.	120 hours.	144 hours.	168 hours.
9 infected.....	0	*2	4	5	6	6	9
8 infected.....	0	0	*2	4			
10 control.....	0	0	1	2	2	2	2

* Small.

III. Room temperature 14° to 16° C. Flies taken twenty-four hours previously in a bakery. They received infected food only during the first forty-eight hours.

Number of flies.	Dead after—							
	24 hours.	48 hours.	72 hours.	96 hours.	120 hours.	144 hours.	168 hours.	192 hours.
17 infected.....	0	0	0	4	6	10	16	17
14 control.....	0	0	0	1	1	3	5	6

IV. In a thermostat at 23° to 26° C. The flies were fed with bouillon during the first twenty-four hours after catching. At the beginning of the experiment they received bouillon infected with normal mouse organs. They had good ventilation and light and were protected against dryness.

Number of flies.	Dead after—		
	24 hours.	48 hours.	72 hours.
21 infected.....	9	18	21
5 control.....	1	3	4

V. In thermostat at 28° C. At the beginning of the experiment all the flies had been without food for twenty-four hours. On receiving the infected food they took it eagerly. They were supplied with infected food during the first sixteen hours.

Number of flies.	Dead after—		
	24 hours.	48 hours.	72 hours.
24 infected.....	1	18	24
12 infected.....	1	4	12
10 control.....	1	2	6

VI. In thermostat at 26.5° to 31° C. The flies had been kept for forty-eight hours before the commencement of the experiment at 26.5° C.

Number of flies.	Dead after—		
	24 hours.	48 hours.	72 hours.
12 infected.....	0	0	5
5 control.....	0	0	1

The experiments were interrupted.

These experiments show that flies die when they are fed on plague material. Unfortunately a number of control flies died also. The average temperature of Hongkong during July, the hottest month, is about 31° C., and it would seem that Yersin must have made his observations on flies at that time. I therefore made that temperature the limit in my experiments.

Another fact of especial practical significance is the following :

Flies may live many days after they have taken infected food, and hence it can not be denied that they may play a part in the spread of plague, if they fall into food supplies or void their excreta into them. Many experiments that show living infected flies may, after remaining twenty-four or forty-eight hours and even longer in a clean apparatus, with no infected food, be full of virulent plague bacilli.

From a practical standpoint, and on the basis of these experiments, the utmost precautions should be taken against flies. Plague bodies should be covered immediately with cloths soaked in disinfectants. All excreta of the body should be disinfected. Food supplies should be kept covered. Ogata says that in localities infested with flies, fleas, and mosquitoes the plague patient should be kept under mosquito nets.

That other insects than flies may play a part in the spread of plague is stated from

different quarters. Hankin, in Bombay, found that mice and rats when inoculated with excreta of ants, which had fed on rats dead of plague, died in twelve hours. Hankin believes that ants spread the plague in Bombay. Ogata found that plague bacilli were on rats sick of plague. He thought they might inoculate with plague by their bite. This has not been experimentally shown, and the same is true of the influence of mosquitoes.

RECEPTIVITY OF OTHER ANIMALS TO PLAGUE.

(a) *The spontaneous outbreak of plague among animals.*—From recent publications we should derive the idea that the death of animals from plague was of recent observation. That it has, on the contrary, been long known will be shown by a glance at the literature on the subject.

Boccaccio states in the Decameron that he himself had seen 2 hogs die of plague in the streets of Florence (1348). Dogs, cats, and chickens died at other places. The bodies of animals dead from plague in Africa were observed by Haeser to be black. Birds which alighted on human plague corpses sickened and died. In Dalmatia the plague broke out first in animals. The death of cattle, horses, etc., is reported from different countries. Many of these animals doubtless die of other diseases. Birds fly from a plague-infected country. Haeser relates that fish disappeared when men and the domestic animals sickened. Nierphorus speaks, as quoted by Haeser, in his Byzantine History, that birds, domestic animals, horses, and house mice died of plague. Skene, of Edinburgh, says, in his report of the plague of 1868, that the death of chickens, moles, and snakes was the forerunner of a plague epidemic. "If domestic fowls become pestilential it is a sign of a most dangerous pest to follow."

Lodge says, in his treatise of the plague, London, 1603, "and when as rats and moles and other creatures (accustomed to live underground) forsake their holes and habitations, it is a token of corruption in the same."

In the present century it is reported that in 1836, at the time of the second epidemic at Pali, in India, a great mortality among the animals, but especially among the rats in the vicinity of the city, was observed. At the time of the plague epidemic at Kermam and Gahrwal, in 1851, there were two huts in the vicinity of Dudoli in which 16 men were attacked with plague, of which number 14 died. Great numbers of rats in these huts died, while 30 head of cattle that occupied the huts were not affected. Rocher states that the bodies of Chinese, who died of the plague in the province of Junnan, were not buried, but exposed to the sun, which afforded the flies an excellent scope for their influence. The rats were first attacked. They left their holes in crowds, tumbled about and died. Buffalo and dogs were also affected. These facts are confirmed by many other observers.

During the last epidemic the death of animals from plague was frequently observed. Kitasato and Yersin examined dead rats and mice and isolated the plague bacillus. Lawson states that rats and mice did not die spontaneously of plague during the epidemic at Hongkong. Janson, in his article, "Black death among animals," states that official reports from Canton show that Chinese who had eaten hog flesh infected with plague were attacked with plague. It has been frequently observed that first rats and mice and then hogs and cattle begin to die before the disease attacks men. Ogata, in his report on plague in Formosa, says that plague was called there "Rat pest." He found plague bacillus in 6 rats found in the streets of Taihokus.

(b) *Plague artificially induced in animals.*—The following is a short statement of my experiments in inoculation, together with those of other authors:

Rats: Died two to four days after inoculation. (Kitasato, Yersin, and others.)

White rats: Died after fifty-four hours (2 animals). (Nuttall.)

White mice: Were less receptive than house mice and rats. (Wilm.) They behave very differently. Of 2 inoculated under the same circumstances, 1 died after forty hours, another after five and one-half days. (Nuttall.)

House mice: Die one to three days after inoculation. (Kitasato and Yersin.)

Field mice: Of 2 animals which were inoculated with a not perfectly virulent culture, 1 died of plague in six days; the other continued to live.

Guinea pigs: Died after two to five days. (Yersin and Kitasato.) Young animals died still sooner.

Rabbits: Died after two to five days (Kitasato); four to seven days (Wilm); two to six days (Ogata).

Monkeys: A monkey died five days after feeding with pure culture in sugar cane. Two other animals died spontaneously in the laboratory. (Wilm.)

Cats: Wilm observed 2 cats fed with bubo material. They were ill seven days, but recovered. Ogata saw cats (number not given) die after inoculation.

Chickens died usually three to four days after inoculation. (Wilm.) Are refractory according to Ogata.

Sparrows: One died after seventy-two hours. (Nuttall.)

Adders (*Pelias borus*): At 26° to 28° C. died of plague after forty-three hours. A control animal remained alive at this temperature, and was quite alert after two weeks. (Nuttall.)

Lizards (*Lacerta agilis*): At 21° to 26° C. one died of plague after thirty-six hours. Another remained alive for a week.

Swine: Lawson inoculated and fed swine with plague organs from man. They had fever, but recovered. (Lancet, July 27, 1895.) Wilm saw a hog die twenty-two days after feeding with human plague spleen. Ogata stated that swine died some days after inoculation.

Horses: I have never known a horse to die after inoculation, but the following shows that the horse may be receptive to plague: An entire gelatine culture, which had killed house mice in two days, was intravenously injected. A violent fever ensued, which lasted one week. Cure followed. (Yersin, Calmette, and Borrel, Annals of Pasteur Institute, Vol. IX, 1895, p. 594.) A quarter culture, subcutaneously injected, induced violent fever for forty-eight to sixty hours, with large tumor on spot of inoculation, which developed into an abscess.

When not otherwise stated, the animals were subcutaneously inoculated. I could not keep moles alive long enough to test their immunity. They do not bear captivity. In short, it appears that during plague epidemics in various countries the death of rats, mice, swine, cats, dogs, cattle (viz, buffalo, goats, horses, and mules), snakes, chickens, and birds has been observed and reported. By bacteriological examination it has been shown that rats and mice contract plague and die. It has been shown that plague may be experimentally induced, with fatal results, by feeding or inoculating with plague matter rats, white mice, house mice, field mice, wood mice, guinea pigs, rabbits, swine, monkeys, cats, chickens, sparrows, and flies. Pigeons, hedgehogs, and frogs are immune. Lizards and snakes are receptive at high temperatures, but are otherwise immune. Experiment with dogs and cattle is negative.

Further investigation in this field should prove interesting, if we consider the results obtained by Yersin, Calmette, and Borrel. These writers find that by inoculation of the same species of plague bacillus from animal to animal a definite degree of virulence is obtained. "The microbe which kills the mouse in two days, when it is carried through the rabbit, requires, in its first transition, considerable time to cause the death of that animal. After several passages it kills the rabbit regularly in three days, but it has then lost its virulence for mice, and some passages from mouse to mouse are needed to restore it."

BERLIN, July 15, 1897.

BRAZIL.

Sanitary report from Rio.

RIO DE JANEIRO, July 19, 1897.

SIR: I have the honor to transmit report for the week ended July 17, 1897:

There were 12 deaths from *accesso pernicioso*, an increase of 9; 2 from yellow fever, none in the foregoing week; 1 from beriberi, a decrease of 4; 1 from enteric fever, the same as in the foregoing week; 3 from measles, an increase of 2; 47 from tuberculosis, an increase of 9, and 273 from all causes, an increase of 5.

Smallpox in Para.—A telegram from Para this morning states that smallpox is prevalent there in epidemic form.

The health of this town continues good.

Since last report the following-named ships have been inspected or received bills of health from this office: July 13, ship *Deccan*, British, for New York. July 15, bark *Julius*, Portuguese, for Pensacola, and steamship *Hathor*, British, for St. Lucia, West Indies. July 16, steamship *Netherfield*, British, for Hampton Roads, Va.; bark *Lerak*, British, for Delaware Breakwater, and bark *Venturoso*, Portuguese, for Philadel-

phia. July 17, steamship *Galileo*, Belgian, for New York, and bark *Avenire*, Italian, for Pensacola.

Respectfully, yours,

R. CLEARY, M. D.,
Sanitary Inspector, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine Hospital Service.

Sanitary report from Rio—Sanarelli's discovery of the yellow fever bacillus confirmed by the National Academy of Medicine at Rio.

RIO DE JANEIRO, July 26, 1897.

SIR: I have the honor to transmit report for the week ended July 24, 1897:

There was 1 death from *accessio pernicioso*, a decrease of 11; 1 from yellow fever, none in the foregoing week; 1 from beriberi, the same as in the foregoing week; 6 from enteric fever, an increase of 5; 1 from whooping cough, none in the foregoing week; 2 from measles, a decrease of 1; 54 from tuberculosis, an increase of 7; and 283 from all causes, an increase of 10.

The health of the town is as good as it ever is.

Sanarelli's microbe.—The National Academy of Medicine confirmed the discovery of Sanarelli of the yellow fever bacillus on the 23d of this month, basing its opinion on the full reports of the bacteriologists, Drs. Fajarda and Lacerda, made in the bacteriological laboratory of the army, with the assistance of Dr. Miguel Conto, and by permission of the director, Dr. Ismael da Rocha.

Smallpox is again reported as epidemic in Para.

Since last report the following-named ships have been inspected or received bills of health from this office: July 19, steamship *Grecian Prince*, British, from Santos for New York. July 20, steamship *Bendi*, British, for St. Lucia, West Indies. July 21, steamship *Benrath*, British, for St. Lucia, West Indies. July 24, steam bark *Severn*, British, for Baltimore, Md.; bark *Carl Hemdret*, Swede, for Sabine Pass, Tex., and steamship *Cuvier*, British, for New York from Santos. July 26, bark *Eikundasund*, Norwegian, for Pensacola, Fla., and bark *George Thompson*, British, for Brunswick, Ga.

Respectfully, yours,

R. CLEARY, M. D.,
Sanitary Inspector, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

CANADA.

Smallpox in Montreal.

MONTREAL, August 18, 1897.

The present status of smallpox in this province is as follows:

Municipality.	Date of out-break.	New cases since last report.	Total cases since outbreak.	Died.	Still sick.	Houses infected since outbreak.	Houses still infected.
Montreal City *.....	July 2	†3	10	4	6	7	†0
Westmount (Hochelaga Co.)†	July 26	0	4	1	3	1	†0

* Population, 240,000.

† One doubtful case in a new house.

‡ Except the isolation hospital.
§ Population, 6,000.

Yours, respectfully,

ELZÉAR PELLETIER,
Secretary Board of Health of the Province of Quebec.

CUBA.

Smallpox and yellow fever in Cuban seaports.

August 17: The United States consul at Cardenas reports that during the week ended August 14 there were in that city 1 death from yellow fever and no deaths from smallpox.

August 16: The United States consul at Cienfuegos reports that during the week ended August 15 there were in that city 8 deaths from yellow fever and 1 death from smallpox.

August 21: The United States sanitary inspector at Habana reports that during the week ended August 19 there were in that city 27 deaths from yellow fever and no deaths from smallpox.

August —: The United States consular agent at Manzanillo reports that during the week ended August — there were in that city — deaths from yellow fever.

August 20: The United States sanitary inspector at Matanzas reports that during the week ended August 18 there were in that city 7 deaths from yellow fever.

August —: The United States consul at Santiago de Cuba reports that during the week ended August — there were in that city — deaths from yellow fever.

August —: The United States consul at Sagua la Grande reports that during the week ended August — there were in that city — cases and — deaths from yellow fever, and — cases and — deaths from smallpox.

Sanitary report from Habana.

HABANA, CUBA, *August 21, 1897.*

SIR: The following report for the week ended Thursday, August 19, is respectfully submitted:

The deaths from all causes are increasing rapidly each week and the table of comparative statistics will show the increase of deaths for the past six weeks.

The deaths from yellow fever show a slight increase over the preceding week. Of the 27 deaths 2 occurred among the civilians and 25 among the Spanish soldiers and sailors.

While comparatively few cases are reported as occurring among crews of the war vessels it is noticed that the largest man-of-war here has been removed from the Habana side of the harbor to a point in the open bay, considered to be free from infection. It has been the policy of the Spanish Government in the last few weeks not to send sick soldiers from all parts of the island, as has been done formerly, and this, in a measure, accounts for the decrease of cases during the past few weeks.

Convalescents among the soldiers are being removed rapidly to Spain. Recruits are not coming over to take their places, and it is probable that there will be less yellow fever during the following months for the corresponding time during the past two years. Smallpox has almost disappeared, or at least confined to a few cases, not more than 8 being in the city. There are two vessels at the Tallapiedra Wharf, but having only gone there a few days ago sufficient time has not elapsed for any

cases of yellow fever to develop, which must occur unless the crews are immunes. The weather conditions are most unfavorable, intense heat during the greater part of the day, followed by heavy rains which now fail to cool the atmosphere.

The direct rays of the sun are almost unbearable when the trade winds are not blowing.

Very respectfully,

W. F. BRUNNER,
Sanitary Inspector, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure.]

Comparative statistics of the mortality of the city of Habana for the weeks ended July 15, July 22, July 29, August 5, August 12 and August 19, 1897.

Disease.	Week ended—					
	July 15.	July 22.	July 29.	Aug. 5.	Aug. 12.	Aug. 19.
Yellow fever.....	41	48	40	28	23	27
Enteric fever.....	11	14	17	21	20	22
Pernicious fever.....	10	6	14	14	13	8
Paludal fever.....	2	3	3	2	7	7
Dysentery.....	9	22	21	23	39	24
Enteritis.....	12	23	30	42	36	32
Smallpox.....	1	3	0	0	0	0
Glanders.....	1		1	1	1	0
Diphtheria.....		1	1	1	1	0
Pneumonia.....	6	3	3	3	14	11
Tuberculosis.....	29	28	32	38	31	46
From all causes.....	235	264	284	306	317	342
Annual ratio per 1,000.....	61.10	68.64	73.64	79.56	82.42	88.90

GERMANY.

Method of testing antidiphtheritic serum in Berlin.

BERLIN, GERMANY, *August 5, 1897.*

SIR: I have the honor to submit the following observations upon the methods employed in Berlin in the testing of antidiphtheritic serum, which present some points which seem worthy of note, as illustrating the great care taken in the procedure, and improvements which have been made as the result of experience. For the information and the privilege of making the observations I am indebted to Dr. Bonhoff, who has charge of the testing of all serums made under the direction of Professor Behring, whose establishment supplies by far the larger portion of serums used in the German Empire, besides a large export demand. The general principle involved is of course the simultaneous injection of given quantities of diphtheria toxins and antitoxines. The former are prepared by cultivating in bouillon a virulent growth of the Klebs-Loeffler bacillus. The potency of these toxins is determined by blank experiments upon susceptible animals, usually guinea pigs. A departure from the generally accepted practice is the preparation of these toxins in large quantities, which are kept in flasks in a dark and cool place, a quantity of thymol being added to prevent the growth of adventitious germs which may find their way into the liquid after it has been subjected to filtration through a Pasteur-Chamberland filter. The thymol floats in a layer upon the surface of the liquid, and is removed from beneath this layer by a sterilized pipette in the usual manner.

The serums come from the stables in vials, sealed and marked with their reputed strength in immunizing units, according to the method of Behring, and contain sufficient antiseptic, trikresol or carbolic acid, to prevent decomposition. From the time that the bleeding is performed until the claims of potency have been verified the product is under official supervision, and every care is taken to prevent imposition and to guard against accidental contamination.

The test is as follows: One hundred times a minimal fatal dose of the toxines are measured. To this is added a quantity of the antitoxines sufficient to neutralize them as calculated from the claimed potency, whether in 100 or 200 immunizing units, the two strengths usually claimed. Of this mixture one-tenth is administered by subcutaneous injection, particular care being taken not to penetrate deeply beyond the subcutaneous tissue in making the injection. If the result of the experiment does not justify the claims, further experiments are made with reduced quantities until the exact value of the serum in terms of toxines is arrived at, and it is claimed for the method that a variation of 5 per cent in the strength of the serums can be detected by observing the reaction of the animals. The experiments are made in duplicate by independent observers, and the results must accord within a certain very narrow limit, and no serum is passed officially which falls more than 5 per cent below the claimed strength. I am informed that it is not infrequent to reject large batches of serum on this account. Further tests are then made with a view of determining the purity of the product. Of course it must contain no diphtheria bacilli, to determine which special plants are made upon blood serum and agar-agar, the tubes containing which are put in the thermostat and there kept for seventy-two hours. Cultures are also made in bouillons of various compositions and if any bacterial growth makes its appearance in the above-mentioned time, the lot of serum which the sample represents is rejected. Formerly it was allowed that the serum should show a growth of a limited number of nonpathogenic organisms, but as absolute bacterial purity was regarded as only a matter of perfection of technique, the above rigorous requirement was adopted. It will thus be seen that the preparation of the antidiphtheritic serum is a process demanding great care, and which has been brought to a high degree of perfection under the present arrangement.

It may be interesting here to compare the practice of the Pasteur Institute with that as conducted above. At the institute the bleeding of the animals is conducted under the most rigorous aseptic conditions; the blood is received in vessels previously sterilized by heat, and the separation of the clot from the serum takes place in a special apartment kept at a uniform temperature and in a condition of absolute surgical cleanliness. It is carefully tested, and the potency is expressed in a manner differing from that of Behring, being based upon the number of grams of guinea pig which are protected against a fatal dose of diphtheria toxines by 1 cubic centimeter of the serum. The strength determined, the serum is either dried in vacuo and marketed in this form, or, being put into special distributing and filling apparatus, which is a marvel of ingenuity, it is then distributed into small, previously sterilized vials. Special stress is laid upon the fact that the serum is sterile from the care taken in all manipulations and not from the addition of any chemical germicidal agent. Both plans have their advantages and disadvantages, it seems to me. If the antiseptic is added the serum is converted into a liquid unfavorable for bacterial growth, but

the potency of the antitoxin is diminished, by just how much is, as yet, not accurately determined. On the contrary, without the addition of the germicide, the antitoxines are preserved in all their purity and potency, but the process is open to the objection that if only a part of the contents of a flask is withdrawn for use the remainder is apt to become contaminated by the accidental introduction of bacteria through faulty technique or improperly cleaned instruments.

I am not now prepared to express an opinion on the merits of the case, but would suggest that the determination of the diminution of potency by the addition of chemical agents would be a study of value. I am deeply impressed with the belief that the toxins and antitoxines are bodies of such delicate composition and so prone to decomposition and deterioration, that every manipulation not actually demanded is better avoided; therefore, until convinced to the contrary, I would prefer, on general principles, to give my adherence to the Paris plan.

I have the honor to remain, sir,

Very, respectfully, yours,

H. D. GEDDINGS,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

NICARAGUA.

Quarantine at San Juan del Norte.

SAN JUAN DEL NORTE, *July 30, 1897.*

SIR: Referring to my dispatch, No. 395, of the 22d instant, relative to quarantine at Limon, Costa Rica, I have the honor to report as follows:

The Colombian sloop *Whisper* arrived here to-day from Colon, having touched at Bocas del Toro and Limon. There was 1 passenger, a woman. The sloop was boarded by the health officer about 2 miles from the town. The crew reported the prevalence of yellow fever at Limon. The master was ordered to remain in the lagoon, about a mile from town, and not suffer any of the crew to land until further orders. The woman passenger was ordered to remain in a building near the harbor entrance and about a mile from town for a period of seven days.

I am, sir, your obedient servant,

THOMAS O'HARA,

United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

UNITED STATES OF COLOMBIA.

Vessels clearing from Colombian ports required to take bill of health from local medical officer.

CARTAGENA, *July 30, 1897.*

SIR: I have the honor to report that I have been officially notified by the governor of this department, Hon. Edward B. Gerlein, that in accordance with authority received by him for the purpose from the executive department in Bogota, it will, hereafter, be made compulsory on all vessels, prior to receiving their clearance papers from the port authorities, to take out a bill of health from the local medical officer. This bill of health is to be similar in form to that in use by Colombian consuls in foreign ports. It will certify as to the general sanitary con-

dition of Cartagena and of the particular vessel desiring clearance. The fee is three dollars, Colombian currency. The order from Bogota extends to all Colombian ports. Agents of steamship companies in this city do not regard the order with favor, as the bill of health required can be of no use to them in other ports, and merely adds one more item to the official charges in force here.

I am, sir, your obedient servant,

CLIFFORD SMYTH,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

Yellow fever at Bocas del Toro.

MOBILE, ALA, August 23, 1897.

SIR: Cablegram from Dr. Henry Goldthwaite, medical agent of this board at Bocas del Toro, Republic of Colombia, reports under date of 22d instant: "Isolated case of yellow fever" at said port.

Most respectfully, yours,

T. S. SCALES, M. D.,
Health Officer.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Sanitary report from Colon.

COLON, REPUBLIC OF COLOMBIA, August 14, 1897.

SIR: I was notified on the 26th of July, by the Hon. J. L. Pearcy, United States consul at Colon, that I had been appointed sanitary inspector, United States Marine-Hospital Service, for the port of Colon. I took the oath of office the same day, and entered upon the discharge of my duties. Previous to this, by request of Consul Pearcy, I had been assisting him, inspecting vessels and disinfecting those which were infected, and procuring for him such information as would be useful to your department.

Perhaps, if you are not already acquainted with the sanitary conditions here, a brief description of Colon will enable you to arrive at a proper understanding.

Colon is situated on a low, flat island, the highest point of elevation being only 7 feet above the level of the sea; consequently, there is little chance for natural drainage, and very little has been done to help nature in this respect. The Panama Railroad Company has done a great deal to improve the sanitation of the part along the beach occupied by the Americans and known as the American colony. The greater part of the island is swampy. During the rainy season, which begins in April and ends about the 1st of January, pools of stagnant water accumulate under and around a large number of the houses. Hogs, goats, and such animals are allowed to roam at will. I believe there is a law to prevent this nuisance, but it is not rigidly enforced.

The Colombian Government has harbor rules and regulations, but they are not effectively enforced. Ships from all parts of the world can come alongside the docks, and may bring contagious and infectious disease.

Quarantine rules and regulations are largely disregarded until ships are at their pier, but when contagious or infectious disease is discovered they are required to haul out into the bay.

In regard to the present outbreak of yellow fever, which commenced about the first of April, having visited Panama and consulted with the

doctors there, I have ascertained the following facts: That the infection was carried to Panama from Guayaquil, and thence from Panama to Colon. Foreigners and persons not thoroughly acclimated were those who contracted the disease. There have been treated in the St. Thomas Hospital, Panama, to date, 36 cases, 14 deaths. At the French Hospital (foreign department), Panama, 58 cases, 26 deaths. Three of the above cases have occurred since August 1, 1 fatal. There have been a number of cases outside of hospitals.

I have treated in the Panama Railroad Company's hospital, Colon, 14 cases; no deaths. Outside of hospital, 6 cases, 1 death.

I have obtained from the physician of the French hospital at Colon, the following report: Ten cases, 7 deaths. This report is incomplete, as I know of at least, 6 cases, that have died there of yellow fever, whose names do not appear in this report. I have good reasons to believe there have been three times as many cases, with the same ratio of deaths as stated in this report. I am sorry to inform you that the Colombian Government has tried to suppress the fact that yellow fever exists, or has existed on the Isthmus, and, as the attending physician at this hospital is an employee of the Government, this explains why he fails to give a correct report. There have been some cases treated in Colon, outside of the hospitals, by other physicians.

Very respectfully, yours,

J. P. RANDALL,

Sanitary Inspector, U. S. M. H. S.

P. S. There has been 1 fatal case in Colon within the past ten days.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

Sanitary report from Panama.

PANAMA, August 13, 1897.

SIR: Since last mail the number of cases of yellow fever have diminished considerably. Four cases with 2 deaths is the number I have been able to discover.

Very truly, yours,

CHAS. A. COOKE, M. D.,

Sanitary Inspector, U. S. M. H. S.

STATISTICAL REPORTS.

FRANCE—*Nantes*.—Month of July, 1897. Estimated population, 125,757. Total deaths, 185, including 5 from enteric fever.

Nice.—Month of June, 1897. Estimated population, 108,227. Total deaths, 159, including phthisis pulmonalis, 22; enteric fever, 2, and diphtheria, 1.

GREAT BRITAIN—*England and Wales*.—The deaths registered in 33 great towns in England and Wales during the week ended August 7 correspond to an annual rate of 26.9 a thousand of the aggregate population, which is estimated at 10,992,524. The highest rate was recorded in Preston, viz, 46.2, and the lowest in Halifax, viz, 12.0 a thousand.

London.—Two thousand two hundred and four deaths were registered during the week, including smallpox, 1; measles, 31; scarlet fever, 12; diphtheria, 42; whooping cough, 23; enteric fever, 7, and diarrhea and dysentery, 575. The deaths from all causes correspond to an annual rate

of 25.7 a thousand. In greater London, 2,926 deaths were registered, corresponding to an annual rate of 24.2 a thousand of the population. In the "outer ring" the deaths included 10 from diphtheria, 2 from measles, 2 from scarlet fever, and 8 from whooping cough.

Ireland.—The average annual death rate represented by the deaths registered during the week ended August 7 in the 23 principal town districts of Ireland was 22.0 a thousand of the population. The lowest rate was recorded in Galway, viz, 0.0, and the highest in Clonmel, viz, 58.5 a thousand. In Dublin and suburbs 150 deaths were registered, including scarlet fever, 4; whooping cough, 1; diphtheria, 1, and enteric fever, 1.

Scotland.—The deaths registered in 8 principal towns during the week ended August 7 correspond to an annual rate of 20.5 a thousand of the population, which is estimated at 1,549,907. The lowest mortality was recorded in Aberdeen, viz, 12.8, and the highest in Leith, viz, 26.3 a thousand. The aggregate number of deaths registered from all causes was 612, including measles, 19; scarlet fever, 8; diphtheria, 1, and whooping cough, 22.

JAMAICA—Kingston.—Estimated population, 19,264. Total deaths, 129, including yellow fever, 1; enteric fever, 3; whooping cough, 1, and phthisis pulmonalis, 14.

ST. HELENA.—Four weeks ended July 10, 1897. Estimated population, 3,600. Total deaths, 6. No deaths from contagious diseases.

ST. THOMAS.—Quarter ended June 30, 1897. Estimated population, 12,019. Total deaths, 470. No deaths from contagious diseases.

UNITED STATES OF COLOMBIA—Barranquilla.—Month of June, 1897. Estimated population, 40,000. Total deaths, 114. No deaths reported from contagious diseases.

PANAMA.—Ten days ended August 13, 1897. Estimated population, 16,000. Total deaths not reported. Four cases of yellow fever and 2 deaths therefrom.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Aix la Chapelle.....	July 31.....	112,937	83								
Alexandria.....	June 17.....	231,396	231		1					1	4
Do.....	July 1.....	231,396	233		1			1		4	9
Do.....	July 8.....	231,396	258		4			2		1	3
Do.....	July 15.....	231,396	257		1			1			4
Do.....	July 22.....	231,396	249					1			2
Amherstburg.....	Aug. 11.....	2,300	0								
Amapala.....	July 24.....	1,500	1					1			
Amsterdam.....	Aug. 7.....	497,443	162								1
Belfast.....	do.....	281,431	146					9		2	2
Belize.....	Aug. 13.....	13,000	2								
Bergen.....	July 23.....	57,800	16					1			
Birmingham.....	Aug. 1.....	506,772	329					1	3	1	17
Bluefields.....	Aug. 7.....	3,000	1								2
Bombay.....	July 20.....	821,764	*678	32							3
Bremen.....	July 24.....	142,500	50							2	
Bristol.....	do.....	232,242	70					1			
Do.....	July 31.....	232,242	78						1		
Do.....	Aug. 7.....	232,242	79					1	1	1	
Brussels.....	July 31.....	531,011	183					2			4
Budapest.....	Aug. 6.....	640,000					1			2	1
Cairo.....	June 17.....	374,838	400		8	7	2			2	7
Do.....	July 1.....	374,838	422		1	2	6			4	12
Do.....	July 8.....	374,838	447		1	2	7			1	9
Do.....	July 15.....	374,838	438				5			3	2
Do.....	July 22.....	374,838	499		2	1	5			2	7
Calcutta.....	July 10.....	681,560	354	23							
Cardiff.....	July 17.....	170,063	44						1		
Do.....	July 24.....	170,063	45						2		2
Do.....	July 31.....	170,063	44						1		
Catania.....	Aug. 3.....	120,000	58		1		2				1
Christiania.....	July 31.....	192,141	60				1				
Do.....	Aug. 7.....	192,141	94						1	1	
Cienfuegos.....	Aug. 15.....	24,030	57	8	1		1				2
Cologne.....	July 31.....	335,473	266				2		1		6
Colombo.....	July 10.....	127,836	94	3			3				
Copenhagen.....	July 31.....	333,714	99								
Corunna.....	July 17.....	37,000	23				2				
Do.....	July 24.....	37,000	29						1		1
Do.....	July 31.....	37,000	33				1		1		
Dresden.....	do.....	371,700	183				1		4	1	1
Dublin.....	Aug. 7.....	350,000	150					3			
Dundee.....	do.....	163,090	74				1	2	1		2
Dusseldorf.....	July 31.....	175,861	148								
Edinburgh.....	Aug. 7.....	292,364	110					1		1	
Flushing.....	Aug. 9.....	17,193	2								
Frankfort on the Main.....	July 31.....	240,000	77				1			1	1
Gibraltar.....	Aug. 1.....	25,900	4								
Girgenti.....	July 31.....	24,428	13								
Do.....	Aug. 7.....	24,428	7								
Glasgow.....	do.....	714,919	290					2		3	13
Gothenburg.....	July 31.....	115,896	28						1		
Halifax.....	Aug. 14.....	38,700	13								
Hamburg.....	Aug. 7.....	641,780	309					1	2	1	2
Hamilton, Bermuda.....	Aug. 10.....	2,000	0								
Do.....	Aug. 17.....	2,000	0								
Havre.....	July 31.....	119,470	73								
Do.....	Aug. 7.....	119,470	76				1				
Iquique.....	July 3.....	33,106	31								
Do.....	July 10.....	33,106	25				1				
Do.....	July 17.....	33,106	30				1				
Do.....	July 22.....	33,106	32				2				
Kingston, Jamaica.....	July 24.....	19,264	11								
Do.....	July 31.....	19,264					1				
Konigsberg.....	Aug. 7.....	171,700							1		
Leeds.....	do.....	402,449	238						1	4	1
Leghorn.....	do.....	103,755	45				2				
Leith.....	do.....	75,186	38					1		10	5
Licata.....	July 31.....	20,000	14			1	5				
Do.....	Aug. 7.....	20,000	9				1				
Liege.....	do.....	166,110	75				1				
Liverpool.....	do.....	644,129	505				6	5		12	5
Livingston.....	do.....	2,000	1								

* Nine deaths from plague.

MORTALITY TABLE, FOREIGN CITIES—Continued.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
London, England.....	Aug. 7.....	6,291,677	2,926			1		8	14	52	33	31
Lyons.....	July 31.....	466,028	171					1	1		1	
Madras.....	July 16.....	452,518	304			1					7	
Magdeburg.....	July 24.....	218,383	134							1		
Manchester.....	Aug. 7.....	536,426	313					2	1		23	3
Mannheim.....	do.....	101,500	79				1				6	
Maracaibo.....	July 31.....	50,000	16									
Do.....	Aug. 7.....	50,000	12									
Matamoras.....	Aug. 13.....	12,000	6									
Mayence.....	July 31.....	74,917	39									1
Do.....	Aug. 7.....	74,917	33									
Messina.....	do.....	107,000	18					1				
Monte Cristy.....	do.....	1,200	0									
Moscow.....	July 24.....	989,000	609				1	2	6	2	12	1
Munich.....	July 31.....	418,000	218							5	2	2
Newcastle on Tyne.....	Aug. 7.....	212,223	79								1	
Odessa.....	July 31.....	404,000	190					1	1	1		1
Palermo.....	do.....	273,000	100							1		
Do.....	Aug. 7.....	273,000	87									
Plymouth.....	do.....	97,340	35					1				
Port au Prince.....	July 19.....	60,000	12									
Do.....	July 26.....	60,000	15									
Do.....	Aug. 2.....	60,000	17									
Do.....	Aug. 9.....	60,000	23									
Puerto Cortez.....	Aug. 11.....	2,000	0									
Queenstown.....	July 31.....	15,000	3									
Do.....	Aug. 7.....	15,000	4									
Rheims.....	July 31.....	108,943	58									
Do.....	Aug. 7.....	108,943	69								1	1
Rio de Janeiro.....	July 17.....	679,000	273		1							
Do.....	July 24.....	679,000	283		1			6			2	1
Rotterdam.....	Aug. 7.....	292,551	125							1		
St. Georges.....	do.....	2,150	1									
Do.....	Aug. 14.....	2,150	0									
St. John, Antigua.....	July 24.....	16,679	13									
Do.....	July 31.....	16,679	9									
Do.....	Aug. 7.....	16,679	14									
St. Petersburg.....	July 31.....	1,267,023	562				2	16	8	32	16	
St. Stephen.....	Aug. 14.....	3,000	1									
St. Thomas.....	July 31.....	12,019	10									
Sanchez.....	July 24.....	1,000	0									
San Juan del Norte.....	July 31.....	1,156	1									
Santos.....	July 25.....	200,000	26									
Schiedam.....	Aug. 7.....	25,533	9									
Sheffield.....	do.....	354,550	237					3	1	1	5	2
Sonneberg.....	July 24.....	12,150	4									
Southampton.....	July 31.....	98,002	19									
Do.....	Aug. 7.....	98,002	21								1	
South Shields.....	do.....	95,798	28							1	1	
Stockholm.....	July 31.....	274,611	107									
Stuttgart.....	Aug. 5.....	158,378	85									
Sunderland.....	Aug. 7.....	142,107	44									2
Tampico.....	do.....	11,000	24									
Tegucigalpa.....	July 31.....	14,000	8									
Trapani.....	do.....	45,095	14									
Do.....	Aug. 7.....	45,095	15									
Trieste.....	July 31.....	158,314	82				1			2		
Tuxpan.....	do.....	10,280	8									
Venice.....	July 24.....	165,222	78									1
Do.....	July 31.....	165,222	51				1			1		
Vera Cruz.....	Aug. 12.....	30,000	31				1					
Warsaw.....	July 31.....	601,408	287		3	3		12	7	2	3	
Zurich.....	do.....	158,000	54			2		1				1

By authority of the Secretary of the Treasury :

WALTER WYMAN,
Supervising Surgeon-General U. S. Marine-Hospital Service.