

Public Health Reports

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UNITED STATES.

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

The bubonic plague bacillus as studied at the Pasteur Institute.

NO. 5 RUE DE BASSANO, PARIS, April 21, 1897.

SIR: I have the honor to submit for your consideration the following observations upon my studies upon the bubonic plague, with a full consciousness that they embrace nothing new, but with the hope that at this time they will possibly prove of some interest.

The bubonic plague, or pest, is an acute, contagious, communicable disease, primarily, it is now supposed, affecting the lower animals, as rats, mice, hogs, dogs, etc., and by them communicable to man. The specific organism of the disease was first discovered and described by Kitasato and Yersin, working independently and at some distance from each other, and the first published description which appeared in the United States was that of Kitasato, which was extensively quoted, and at this date is somewhat misleading. By him the organism was likened in size and appearance to that of chicken cholera, a small fine bacillus with rounded ends, staining well with the ordinary basic aniline dyes. In reality the organism is a cocco-bacillus, almost as broad as long, about two micromillimeters in greatest diameter, staining readily, it is true, with the ordinary aniline dyes, but also very easily overstaining with them, and its true characters are very apt to be overlooked. The best stain is a 1 per cent solution of thionin, carbolized, colored with which its true characteristics stand revealed, and it is seen to be, as said before, a cocco-bacillus, staining more deeply at the poles than in the center, and forming sometimes chains of three or four elements. It is completely decolorized by the method of Gram, and this is a point which is insisted on with much earnestness by Professor Roux. It grows readily upon ordinary culture media, as peptone-agar, peptone gelatine, and peptone bouillon. Upon agar the separate colonies are very small, round in shape, almost transparent by transmitted, and white by reflected, light. In bouillon, under ordinary conditions of temperature, it forms flakes or flocculi, which rapidly sink to the bottom of the test tube, leaving the liquid above clear. So characteristic is this appearance

that at the Institute Pasteur, in seeking to make pure cultures in bouillon, it has passed into a proverb that if the bouillon is turbid it is useless to examine the growth microscopically, for the culture is not pure. Examined in the hanging drop the microbe is perfectly devoid of automobility.

In old cultures, both on agar and bouillon, the organism rapidly assumes involution forms, some of which are very curious, and most prominent among them is that of a rather long, slender bacillus, segmented and presenting a vacuolated appearance. In this state they stain badly and irregularly, and have notably lost some of their virulence.

By passing the organism successively through animals, as guinea pigs, rabbits, and mice it acquires an extreme virulence, a subcutaneous injection of a very small quantity sufficing to kill a rabbit or a guinea pig in forty-eight to sixty hours, and a mouse in even a shorter time, sometimes not more than twenty-four hours. Successive cultures upon ordinary media rapidly lose their virulence, but this is easily restored by again passing it through animals.

After death the microbe is found in all the organs and tissues of the body, notably the lymphatic glands, the spleen, liver, and heart blood. The glands near the seat of injection are enlarged and are surrounded by an extensive cedematous effusion, the bubo, which has given its name to the disease. The swelling is not confined to the glands near the seat of injection, but those in other parts of the body are enlarged, sometimes in chains, and all contain the bacillus in nearly pure culture. The spleen contains the microbe in enormous numbers; in animals which have died slowly the organ is enlarged and presents a mottled appearance, studded with white or yellowish minute spots, which spots are aggregations of the microbe in almost pure culture. If the animal has died rapidly the spleen is enlarged to a great size, and is uniformly red in color, the organism being also very abundant. In cases of slow death the organism has been found in the lungs and kidneys, indeed it is always present in the lungs in man in all cases in which there are bronchial or pneumonic symptoms, a by no means rare complication.

The term "almost pure culture" is used advisedly, for the microbe of pest is almost always found associated in animals and man with the pus organisms, notably staphylococci and streptococci, and this is offered as an explanation of the fact that after convalescence from the pest, suppuration of the glands often continues for a considerable time.

If, instead of being inoculated subcutaneously, the animal is subjected to intraperitoneal injection, death is more rapid, the organs are affected in the same way, and the swelling of the superficial lymphatics is replaced by swelling of the mesenteric glands, forming, as it were, internal bubos.

The virulence of the pest bacillus is extreme, and it would seem that a breach of continuity is not necessary for infection, as healthy rats have been caused to contract the disease by being fed either upon a culture of the microbe, or upon the spleen or other organs of an animal dead with the plague.

During the process of growth there is a toxine formed; this is proved by the fact that if a bouillon culture of the microbe is kept for some time at a temperature of 37° C., there are formed, as has before been said, flakes or flocculi, which sink to the bottom of the tube. Now, if these are removed by filtration through a Pasteur-Chamberland filter, there results a slightly turbid liquid in which the absence of microorganisms can be demonstrated by microscopic examination and cultivation experiments, yet this liquid injected subcutaneously into an

animal will cause its death by an intoxication, and post-mortem examination will demonstrate the absence of the bacillus of pest.

Surpassing in interest, perhaps, the study of the disease itself, is that of the preparation of the serum for the therapeutic and prophylactic treatment of the malady. At this time extensive experiments are being made with it in India, and the results are said to be most favorable, within certain limitations, viz: That the remedy should be administered in sufficient quantities and as early as possible in the course of the disease. Given an ordinary case in the early stages, the hypodermatic injection of 10-25 c. c. of the remedy will usually suffice to produce a rapid amelioration of the symptoms, disappearance of the fever, relief of the profound prostration, and rapid absorption or disappearance of the bubo. In more pronounced or further advanced cases the administration of the remedy must be governed by the course of the disease. A dose of 25 c. c. should be administered at once, and some amelioration of the symptoms will be probably noted; but should these recur, the remedy must be pushed in doses of 10 c. c. or more, until permanent relief is secured or the uselessness of the treatment demonstrated.

I am perfectly aware that in the Indian correspondence of some English medical journals, and in the editorial columns of another the results of the serum treatment of the plague in Bombay have been rather disparagingly spoken of. I pin my faith to the statements of Dr. Roux, who has asserted to me, and in my presence to others, that the reports received by him were satisfactory. Until he sees reason to change his opinion my faith in the remedy will remain unshaken. I am not in possession of statistics, and as they have not been offered me I feel a hesitancy in asking for them. Neither am I prepared to speak from personal observation as to the preparation of the serum, for the reason that I have not as yet arrived at this point in the course which has been marked out for me, and for the additional reason that for obvious reasons the serum is not prepared in Paris, but at a place in the country at some distance. From all I can learn there is no radical departure from the method which has already been outlined by Yersin in the "*Annales de L'Institut Pasteur*." The horse selected for the purpose is treated by intravenous injections of a small quantity of a recent agar culture of pest, suspended in bouillon or sterilized water. The injections are made by the intravenous method, for the reason that in the earlier experiments, when they were made subcutaneously, there was always much swelling and cedema at the site of the injection, and almost invariably the formation of an abscess. After each injection the horse is much prostrated, there are chills, and a fever reaching 40°-41° C. and lasting for several days and gradually subsiding. As the animal is noticeably reduced in flesh and strength by the preparation, it is necessary to exercise great care in increasing and repeating the dose. The process is therefore rather a slow one, nor is a point arrived at where the animal ceases to react to the injection. These reactions are always present, but only become more feeble and last for a shorter period. The treatment is continued and the animal allowed to rest, and a trial made of the strength of the serum. It is the object to have it of such a strength that a dose of one-twentieth to one-tenth of a cubic centimeter will protect a white mouse of about 20 grammes in weight against a lethal dose of the pest culture, not more than forty-eight hours old.

I have had the pleasure of witnessing several series of such experiments in which the animals protected by the serum are still alive and flourishing, while the controls, treated with an equal dose of culture

and protected by a dose of the serum of a normal horse, are long since dead with typical symptoms and post-mortem appearances of pest. The serum of the normal horse was administered to the control animals to avoid any possibility of a claim that there might be a protective influence in any ordinary blood serum.

The serum has certain peculiar properties of its own; added to a turbid emulsion of pest in bouillon in the proportion of one-fiftieth to two-fiftieths, it will in some cases produce an agglutination of the organisms and their subsidence in the liquid, which becomes more or less clear. It is possible that the completeness of this clearing is an index to the potency of the serum, for all serum must be tested by inoculation experiments, and it is not believed that all horses are equally susceptible of immunization.

If the serum is heated to between 50°–60° C. its protective power is much diminished, and at a higher temperature is altogether destroyed; therefore great care must be exercised in the cooling of all pipettes, syringes, and instruments which are used in the inoculations and which have been sterilized by boiling. It is possible that the agglutinating power of the serum mentioned above may form the basis of a clinical test for pest similar to the Widal reaction for typhoid, though, of course, it will be understood that the diagnosis of pest is usually all too easily made.

This, I believe, will about cover all the information on the subject of which I am in possession at the present time, though, of course, something new is developing every day, and further observations will form the basis of subsequent reports. I have also been much interested in witnessing certain experiments made by Dr. Calmette with the serum for the bites of venomous serpents. I have seen rabbits successfully resisting, with the aid of this serum, an intravenous injection of the mixed venom of serpents which caused the death of control animals in from ten to fifteen minutes. It strikes me that the subject might become one of great importance for the people of the United States.

I would feel that I might well be accused of ingratitude if I omitted to make mention here of the uniform kindness and courtesy of which I have been the recipient at the hands of Professor Roux and his assistant, Dr. Borel. Of the former I can only say that language of mine can convey no adequate conception of his enthusiasm as a teacher, the incisiveness and clearness of his speech, and his perfect personal kindness of nature. Instruction under him is a source of perpetual pleasure, and can not help being of the utmost value to the pupil.

I have, sir, the honor to remain, respectfully, yours,

H. D. GEDDINGS,

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

Smallpox in Memphis, Tenn.

MEMPHIS, TENN., May 4, 1897.

SIR: I have the honor to report as follows concerning the recent occurrence of smallpox in Memphis:

About the last of March a colored man came to Memphis from Montgomery, Ala., and shortly after his arrival was taken sick. He applied for relief at the city dispensary. The case was diagnosed as smallpox by the physician in charge, and was sent to the county pesthouse. The county health officer, however, did not think it a case of smallpox, in which view he was supported by other physicians, so that I did not report the case. Subsequent events have, however, proved the correct-

ness of the diagnosis. On April 23, 2 more cases were found in the house at which the first case boarded. These were reported to you by Dr. McGowan on the 24th. On the 27th another case was found in an adjoining house, and on the 30th another, in the person of a colored barber, who had shaved one of the cases found on the 24th. This last man had been sick about a week when found. The patients are all at the pesthouse. They are all negro adults. The houses were disinfected, and all exposed persons who would submit were vaccinated; some, however, refused.

Very respectfully,

G. B. YOUNG,
Passed Assistant Surgeon, U. S. M. H. S.

Infected Vessel at Carrabelle, Fla.

CARRABELLE, FLA., May 4, 1897.

SIR: Brig *Brazil* arrived yesterday, seventy-three days from Rio. Captain died three days before reaching this port, and one man was sick on arrival. The vessel was ordered to Ship Island for disinfection. From what I could learn the sickness is very much like beriberi, but I do not know just what it is. No one went on board of her from here, only went in hailing distance. They were out of provisions, and I carried them what they needed.

Yours, truly,

T. S. ANDERSON,
Port Sanitary Inspector.

Quarantine at Galveston, Texas.

AUSTIN, TEX., May 3, 1897.

SIR: I have the honor to transmit herein for your information a copy of special instructions to the quarantine officer at Galveston, with reference to vessels touching at Key West.

Very truly yours,

R. M. SWEARINGEN,
State Health Officer.

[Inclosure.]

QUARANTINE DEPARTMENT OF TEXAS,
Austin, Tex., April 28, 1897.

DEAR DOCTOR: Your letter of April 27, asking for special instructions as to Mallory steamers and other vessels touching at Key West, received. In addition to the usual instructions, require the officer of the ship, under oath, to state if any persons, baggage, or freight had been received at Key West. If answered "yes," require oath of each person that they had been five or more days from Cuba before going aboard ship, and that they and their baggage had been treated and passed by the quarantine officer at Key West. If doubtful freight is found, or a questionable class of persons discovered who can not comply with these requirements, hold the vessel for proper treatment.

R. M. SWEARINGEN, *State Health Officer.*

Dr. J. C. MAYFIELD, *Quarantine Officer, Galveston, Tex.*

*Smallpox in the United States as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 29, 1896, to May 14, 1897.**

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Mobile.....	Dec. 28-Jan. 26....	2	.....	
	Mar. 28.....	1	.....	
	Apr. 17.....	1	.....	
Union Springs.....	Mar. 21.....	.....	1	
Connecticut:				
New Haven.....	Feb. 17.....	1	.....	

*For table of smallpox in the United States, etc., May 9, 1896, to December 29, 1896, see PUBLIC HEALTH REPORTS, Vol. XII, No. 1.

Smallpox in the United States as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 29, 1896, to May 14, 1897—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Florida :				
Pensacola	Jan. 19-Feb. 20....	13	.....	12 varioloid. Varioloid. Do. Do.
	Feb. 28-Mar. 10....	14	.....	
	Mar. 27-Apr. 3.....	3	.....	
	Apr. 10-May 1.....	10	.....	
	May 2-May 8.....	3	.....	
Escambia County (not including Pensacola).....	Dec. 2-Jan. 19....	18	.....	
Illinois:				
Chicago.....	Mar. 25.....	.....	.....	Smallpox reported; brought from Mexico.
	Mar. 27-Apr. 3.....	.....	1	
	Apr. 10-Apr. 17....	2	.....	
Indiana:				
Greenwood.. ..	Feb. 12.....	1	.....	
Massachusetts:				
Boston	May 1-May 8.....	4	.....	
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 8.....	2	.....	
New York:				
Brooklyn.....	Apr. 24-May 8.....	2	.....	Do.
New York.....	Mar. 1-Mar. 31....	.....	2	
	Apr. 17-May 8.....	.....	9	
Pennsylvania:				
Drifton.....	Apr. 6.....	1	.....	
Tennessee:				
Memphis.....	Apr. 1-Apr. 30....	5	.....	
Washington:				
Tacoma.....	Feb. 6.....	1	.....	
Olympia.....	Mar. 1.....	1	.....	

Report of immigration at Boston for the week ended May 8, 1897.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,

Port of Boston, May 8, 1897.

Number of alien immigrants who arrived at this port during the week ended May 8, 1897 ; also names of vessels and ports from which they arrived.

Date.	Vessel.	Where from.	No. of immigrants.
May 1	Schooner Zulmira*.....	Brava, Cape Verde Islands.....	79
May 2	Steamship Yarmouth.....	Yarmouth, Nova Scotia.....	147
Do....	Steamship Pavonia.....	Liverpool and Queenstown.....	739
May 3	Steamship Halifax.....	Halifax, Nova Scotia.....	69
Do....	Steamship Barnstable.....	Jamaica.....	6
May 4	Steamship Victorian.....	Liverpool, England.....	2
May 5	Schooner Valiant.....	Liverpool, Nova Scotia.....	2
May 6	Steamship Yarmouth.....	Yarmouth, Nova Scotia.....	122
Do....	Steamship Scandinavian.....	Glasgow, Scotland, Londonderry, and Galway.	231
	Total.....	.....	1,397

* Entered at port of New Bedford.

THOMAS F. DELHANTY,
U. S. Commissioner of Immigration.

Report of immigration at New York for the week ended May 8, 1897.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of New York, May 10, 1897.

*Number of alien immigrants who arrived at this port during the week ended May 8, 1897;
 also names of vessels and ports from which they arrived.*

Date.	Vessel.	Where from.	No. of im- migrants.
May 3	Steamship Andalusia.....	Hamburg.....	104
May 4	Steamship Christiania.....	Stettin.....	113
May 5	Steamship Noordland.....	Antwerp.....	126
May 6	Steamship Palatia.....	Hamburg.....	95
Do.....	Steamship Italia.....	Genoa, Naples, etc.....	587
Do.....	Steamship Kaiser Wilhelm II.....	do.....	905
Do.....	Steamship Havel.....	Bremen.....	291
May 7	Steamship Island.....	Copenhagen, etc.....	153
Do.....	Steamship Halle.....	Bremen.....	189
Do.....	Steamship Germanic.....	Liverpool and Queenstown.....	756
May 8	Steamship Columbia.....	Hamburg.....	344
Do.....	Steamship St. Louis.....	Southampton.....	312
Do.....	Steamship Sarnia.....	Naples.....	1,010
	Total.....		4,985

J. J. QUINLAN,
Acting U. S. Commissioner of Immigration.

Report of immigration at Philadelphia for the week ended May 8, 1897.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Philadelphia, May 8, 1897.

*Number of alien immigrants who arrived at this port during the week ended May 8, 1897;
 also names of vessels and ports from which they arrived.*

Date.	Vessel.	Where from.	No. of im- migrants.
May 2	Steamship Waesland.....	Liverpool and Queenstown.....	238
May 4	Steamship Illinois.....	Antwerp.....	70
May 7	Steamship Maine.....	London.....	1
	Total.....		309

JNO. J. S. RODGERS,
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.
Brunswick, Ga.....	May 1	Nor. bk. Hermod * Nor. bk. Saron * Sp. bk. Angellia * Sp. bk. Progresso * Br. bk. Ben Lawers. Sp. bk. Tuyá.....	Apr. 21 Apr. 22 do. Apr. 23 do. Apr. 27 Apr. 28	Maranham Para. Habana do. do. Santos Habana	Brunswick do. do. do. do. do. do.	Held for disinfection. do. Disinfected and held. Held for disinfection. do. do. Ordered to South Atlantic Quarantine.	Apr. 29 Apr. 28		6
Cape Charles, Va.....	May 8								4
Cape Fear, N. C.....	do.								10
Delaware Breakwater, Del.	do.							No transactions.	
Eureka, Cal.....	Apr. 28							No transactions.	1
Grays Harbor, Wash.	May 5							No transactions.	
Gulf, Ship Island, Miss.	May 1							No transactions.	5
Newbern, N. C.....	do.							354 passengers detained at quarantine.	7
Port Townsend, Wash...	Apr. 24	Br. s. Victoria.....	Apr. 19	Hongkong.....	Tacoma	Held for disinfection.	Apr. 20		
						do.	Apr. 29		
Reedy Island, Del.....	May 1	Jap. ss. Matsuyama Maru.	Apr. 29	Yokohama...	Seattle.....				25
San Diego, Cal.....	May 8								2
San Francisco, Cal.....	May 1								14
South Atlantic Quarantine, Blackbeard Island, Ga.	do.	Br. ss. Osborne *.....	Apr. 23	Santos.....	Savannah	Held for disinfection.	Apr. 28		5
Tortugas, Key West, Fla.	Apr. 24	Br. ss. George T. Hay. Sp. bk. Tuyá.....	Apr. 25 Apr. 29	Rio Habana	Sapelo Brunswick	do. do.		Sent from Brunswick. No transactions.	
Washington, N. C.....	May 1	Am. sc. John H. Butlerick.	May 1	Tampico.....	Fernandina...	Held for disinfection.		No transactions.	
	May 8							No transactions.	

* 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.
Anclote, Fla.....	May 8							No report	12
Apalachicola, Fla.....	May 8								26
Boston, Mass.....	do.	Port. bk. Brazil.....	May 2	Rio	Apalachicola.	Ordered to Gulf Quarantine.	May 3	Captain died and 1 man sick en route.	
Charleston, S. C.....	do.								1
Elizabeth River, Va.....	May 1								6
Galveston, Tex.....	May 8	Nor. ss. Gylfer.....	May 3	Cienfuegos.....	Galveston.....	Held for disinfection.....	May 7		13
	do.	Br. s. British Prince.....	May 6	Savonillo.....	do.....	do.....	May 9		16
		Br. s. Vestal.....	do.	Cartagena.....	do.....	do.....	do.		
		Br. s. McInnis.....	do.	Tuxpan, Mex.	do.....	do.....	do.	No transactions	
Georgetown, S. C.....	do.								1
Gloucester, Mass.....	May 1								11
Key West, Monroe Co., Fla.....	May 8								17
Mayport, Fla.....	do.							No report	6
New Bedford, Mass.....	May 8							No report	1
Newport News, Va.....								No transactions	2
Newport, R. I.....	May 8								7
Portland, Me.....	do.								3
Port Royal, S. C.....	do.								
Providence, R. I.....	do.								
St. Helena Entrance, S. C.....	do.								
Savannah, Ga.....	Apr. 17	Nor. bk. Camilla.....	Apr. 5	Para.....	Savannah	Disinfected and held.	Apr. 11		
	Apr. 24	Nor. bk. Roenbourg.....	Apr. 9	Rio via Sapelo	do.....	Held for discharge of rock.	Apr. 12		
West Point, Va.....	May 7	Nor. bk. Oro.....	Apr. 6	Demerara	do.....	Held for discharge of ballast		No transactions	

Reports of States and yearly and monthly reports of cities.

CONNECTICUT—*Hartford*.—Month of April, 1897. Estimated population, 72,000. Total deaths, 100, including phthisis pulmonalis, 12; enteric fever, 1; diphtheria, 1; measles, 1, and whooping cough, 1.

Meriden.—Month of April, 1897. Estimated population, 28,500. Total deaths, 31, including 8 from phthisis pulmonalis.

Westport.—Month of April, 1897. Estimated population, 4,000. Total deaths, 6, including 2 from phthisis pulmonalis.

COLORADO—*Denver*.—Month of March, 1897. Estimated population, 160,000. Total deaths, 184, including phthisis pulmonalis, 50; enteric fever, 6; scarlet fever, 2; diphtheria, 4; croup, 1; measles, 5, and whooping cough, 4.

FLORIDA.—Month of January, 1897. Reports to the State board of health from 45 counties, having an aggregate population of 391,418, show a total of 312 deaths, including phthisis pulmonalis, 40; croup, 2; enteric fever, 5, and whooping cough, 1.

Pensacola.—Month of April, 1897. Estimated population, 15,000. Total deaths, 16, including 4 from phthisis pulmonalis.

Tampa.—Month of April, 1897. Estimated population, 26,000. Total deaths, 28, including phthisis pulmonalis, 3, and whooping cough, 1.

KENTUCKY—*Louisville*.—Month of April, 1897. Estimated population, 215,572. Total deaths, 190, including phthisis pulmonalis, 34; enteric fever, 7; diphtheria, 2, and whooping cough, 1.

LOUISIANA—*Shreveport*.—Month of April, 1897. Estimated population—white, 7,500, colored, 7,500; total, 15,000. Deaths—white, 3, colored, 10; total, 13, including 1 from phthisis pulmonalis.

MAINE—*Portland*.—Four weeks ended April 17, 1897. Estimated population, 41,500. Total deaths, 64, including phthisis pulmonalis, 6; enteric fever, 1; croup, 1, and diphtheria, 1.

MARYLAND—*Cumberland*.—Month of April, 1897. Estimated population, 12,729. Total deaths, 10, including 1 from phthisis pulmonalis.

MICHIGAN.—Week ended May 1, 1897. Reports to the State board of health, Lansing, from 58 observers, indicate that remittent fever, diarrhea, and pleuritis increased, and intermittent fever decreased in area of prevalence. Phthisis pulmonalis was reported present during the week at 166 places, measles at 91, diphtheria at 24, scarlet fever at 23, enteric fever at 12, whooping cough at 5, and smallpox at 1 place (Blissfield Township).

MINNESOTA—*Winona*.—Month of April, 1897. Estimated population, 22,000. Total deaths, 21, including phthisis pulmonalis, 1, and enteric fever, 1.

NEW HAMPSHIRE—*Manchester*.—Month of March, 1897. Estimated population, 60,000. Total deaths, 119, including phthisis pulmonalis, 11, and diphtheria, 2.

NORTH CAROLINA.—Month of March, 1897. Reports to the State board of health from 24 towns having an aggregate population of 128,385—white, 73,172; colored, 55,213, show a total of 151 deaths—white, 51; colored, 100, including phthisis pulmonalis, 37; enteric fever, 1; measles, 2; and whooping cough, 1.

OHIO—*Dayton*.—Month of April, 1897. Estimated population, 85,000. Total deaths, 78, including phthisis pulmonalis, 17; scarlet fever, 1; diphtheria, 3, and whooping cough, 2.

PENNSYLVANIA—*Pottsville*.—Two weeks ended May 6, 1897. Estimated population, 14,117. Total deaths, 12, including phthisis pulmonalis, 1, and diphtheria, 1.

Williamsport.—Month of March, 1897. Estimated population, 35,000. Total number of deaths not reported. The deaths included 2 from phthisis pulmonalis, 1 from enteric fever, and 1 from whooping cough.

Month of April, 1897. Total deaths, 17, including 2 from phthisis pulmonalis.

TENNESSEE.—Month of March, 1897. Reports to the State board of health from 5 cities and towns having an aggregate population of 197,888—white, 119,168; colored, 78,720. Deaths, white, 129; colored, 152; total, 281, including phthisis pulmonalis, 33; enteric fever, 2; measles, 2, and whooping cough, 3.

Chattanooga.—Month of April, 1897. Estimated population—white, 27,000; colored, 13,000; total 40,000. Deaths—white, 9; colored, 15; total 24, including phthisis pulmonalis, 1, and enteric fever, 2.

Memphis.—Month of April, 1897. Estimated population—white, 28,573; colored, 27,561; total, 56,134. Deaths—white, 43; colored, 57; total, 100, including phthisis pulmonalis, 27; enteric fever, 1; diphtheria, 1; measles, 2, and whooping cough, 1.

NASHVILLE.—Month of March, 1897. Estimated population—white, 54,595; colored, 33,159; total, 87,754. Deaths—white, 64; colored, 66; total, 130, including phthisis pulmonalis, 11; measles, 1, and whooping cough, 3.

VIRGINIA—*Richmond*.—Month of April, 1897. Estimated population—white, 56,440; colored, 47,120; total, 103,560. Deaths, white, 48; colored, 50; total, 98, including phthisis pulmonalis, 19; enteric fever, 1, and whooping cough, 5.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Population, U. S. Census of 1890.	Total deaths from all causes.	Deaths from—										
				Phthisis pulmonalis.	Yellow fever.	Smallpox.	Varioloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Amesbury, Mass.....	Apr. 21.....	9,798	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 1.....	9,798	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashtabula, Ohio.....	May 8.....	8,338	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baltimore, Md.....	do.....	434,439	145	26	.....	.....	.....	.....	.....	2	.....	3	.....	3
Binghamton, N. Y.....	do.....	35,005	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Boston, Mass.....	do.....	448,477	201	19	.....	.....	.....	.....	1	5	13	.....	.....	1
Braddock, Pa.....	Apr. 24.....	8,561	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 1.....	8,561	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bristol, R. I.....	May 8.....	5,478	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brooklyn, N. Y.....	do.....	806,343	359	39	.....	.....	.....	.....	1	4	18	7	.....	.....
Brownsville, Tex.....	Apr. 17.....	6,134	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	Apr. 24.....	6,134	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 1.....	6,134	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Butler, Pa.....	May 8.....	8,734	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass.....	do.....	70,028	25	5	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Carlisle, Pa.....	do.....	7,620	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Ill.....	May 1.....	1,009,850	360	44	.....	.....	.....	.....	4	3	12	3	7	.....
Cincinnati, Ohio.....	May 7.....	296,908	90	8	.....	.....	.....	.....	2	1	5	.....	.....	.....
Cleveland, Ohio.....	May 8.....	261,353	76	4	.....	.....	.....	.....	1	.....	3	.....	.....	.....
Columbus, Ind.....	do.....	6,719	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbus, Ohio.....	do.....	88,150	23	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Council Bluffs, Iowa.....	Apr. 24.....	21,474	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 1.....	21,474	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dayton, Ohio.....	Apr. 29.....	61,220	18	6	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Do.....	May 6.....	61,220	22	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dedham, Mass.....	Apr. 30.....	7,123	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkirk, N. Y.....	May 1.....	9,416	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erie, Pa.....	May 8.....	40,634	13	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Everett, Mass.....	May 7.....	11,068	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fall River, Mass.....	May 8.....	74,398	33	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fitchburg, Mass.....	May 1.....	22,037	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids, Mich.....	do.....	60,278	20	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	60,278	20	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Green Bay, Wis.....	May 1.....	9,069	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	9,069	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.....	do.....	27,412	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Hoboken, N. J.....	May 17.....	43,648	17	2	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Do.....	May 1.....	43,648	23	2	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Ironton, Ohio.....	May 8.....	10,939	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jacksonville, Fla.....	May 1.....	17,201	14	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	17,201	11	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Jersey City, N. J.....	Apr. 25.....	163,003	61	8	.....	.....	.....	.....	1	1	7	.....	.....	1
Do.....	May 2.....	163,003	62	6	.....	.....	.....	.....	1	2	1	.....	.....	.....
Johnstown, Pa.....	May 8.....	21,805	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lawrence, Mass.....	May 1.....	44,654	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lebanon, Pa.....	May 9.....	14,664	2	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Lowell, Mass.....	May 8.....	77,696	3	.....	.....	.....	.....	.....	1	.....	2	.....	.....	.....
Lynchburg, Va.....	do.....	19,709	6	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
McKeesport, Pa.....	May 1.....	20,741	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manchester, N. H.....	do.....	44,126	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	44,126	20	3	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Medford, Mass.....	do.....	11,079	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan City, Ind.....	Apr. 24.....	10,776	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middletown, N. Y.....	May 7.....	11,977	4	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Milwaukee, Wis.....	May 8.....	204,468	62	4	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Minneapolis, Minn.....	May 1.....	164,738	45	4	.....	.....	.....	.....	4	.....	.....	.....	.....	1
Mobile, Ala.....	do.....	31,076	18	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	31,076	18	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashville, Tenn.....	do.....	76,168	26	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford, Mass.....	do.....	40,733	23	5	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Newburyport, Mass.....	May 1.....	13,947	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Orleans, La.....	do.....	242,039	108	17	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Newport, R. I.....	May 8.....	19,457	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York, N. Y.....	do.....	1,515,301	770	106	2	.....	.....	.....	2	7	50	7	9	.....
Norristown, Pa.....	May 1.....	19,791	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.....	May 8.....	19,791	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Adams, Mass.....	do.....	16,074	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Omaha, Nebr.....	Apr. 24.....	140,452	26	3	.....	.....	.....	.....	.....	.....	1	2	.....	.....
Do.....	May 1.....	140,452	18	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Oneonta, N. Y.....	May 8.....	6,272	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla.....	May 1.....	11,750	7	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petersburg, Va.....	May 2.....	22,680	11	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Do.....	May 9.....	22,680	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philadelphia, Pa.....	May 8.....	1,046,964	418	32	.....	.....	.....	.....	11	6	16	3	3	.....

[illegible]

Table of temperature and rainfall, week ended May 10, 1897.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	*Excess.	*Defic'ncy.	Normal.	Excess.	Deficiency.
Atlantic Coast:						
Eastport, Me.....	45	1	.....	.84	.46	.....
Portland, Me.....	50	.....	0	.77	.....	.27
Northfield, Vt.....	50	.....	2	.65	.....	.55
Boston, Mass.....	54	.....	0	.84	.....	.54
Vineyard Haven, Mass.....	54	.....	0	.70	.....	.70
Nantucket, Mass.....	49	1	.....	.84	.....	.84
Woods Hole, Mass.....	51	.....	1	.81	.....	.71
Block Island, R. I.....	50	.....	2	.89	.....	.59
New Haven, Conn.....	54	2	.....	.84	.....	.54
Albany, N. Y.....	56	2	.....	.70	.....	.30
New York, N. Y.....	57	.....	1	.75	.....	.75
Harrisburg, Pa.....	57	1	.....	1.03	.....	.63
Philadelphia, Pa.....	60	.....	0	.70	.....	.60
New Brunswick, N. J.....	58	.....	0	.82	.....	.72
Atlantic City, N. J.....	54	.....	4	.64	.....	.54
Baltimore, Md.....	61	.....	1	.84	.....	.64
Washington, D. C.....	61	.....	1	.86	.....	.24
Lynchburg, Va.....	65	.....	3	.86	.....	.86
Cape Henry, Va.....	62	.....	2	.92	.....	.82
Norfolk, Va.....	63	.....	3	.95	.....	.74
Charlotte, N. C.....	66	.....	2	.94	.....	.95
Raleigh, N. C.....	65	.....	1	1.17	.....	1.17
Kittyhawk, N. C.....	63	.....	5	.87	.....	.57
Hatteras, N. C.....	64	.....	2	1.05	.....	.85
Wilmington, N. C.....	68	.....	4	.87	.....	.87
Columbia, S. C.....	70	.....	2	.82	.....	.82
Charleston, S. C.....	71	.....	1	.84	.....	.84
Augusta, Ga.....	71	.....	3	.76	.....	.76
Savanna, Ga.....	72	.....	2	.46	.....	.16
Jacksonville, Fla.....	73	.....	3	.79	.....	.79
Jupiter, Fla.....	75	.....	1	1.10	.....	1.10
Key West, Fla.....	79	.....	3	.54	.....	.14
Gulf States:						
Atlanta, Ga.....	68	.....	2	.78	.....	.78
Tampa, Fla.....	74	.....	2	.48	.....	.48
Pensacola, Fla.....	72	.....	2	.63	.....	.63
Mobile, Ala.....	72	.....	2	.91	.....	.91
Montgomery, Ala.....	71	.....	1	.92	.....	.92
Vicksburg, Miss.....	71	1	.....	1.18	.....	1.18
New Orleans, La.....	73	.....	1	1.07	.....	1.07
Shreveport, La.....	72	.....	0	1.00	.....	.60
Fort Smith, Ark.....	67	3	.....	1.10	.....	.10
Little Rock, Ark.....	68	.....	0	1.29	.....	.89
Palestine, Tex.....	70	2	.....	1.31	.....	.31
Galveston, Tex.....	74	.....	0	.75	.....	.75
San Antonio, Tex.....	73	3	.....	.77	.23	.....
Corpus Christi, Tex.....	74	.....	0	.67	.....	.67
Ohio Valley and Tennessee:						
Memphis, Tenn.....	68	.....	0	1.11	.....	.41
Nashville, Tenn.....	66	.....	2	.87	.....	.77
Chattanooga, Tenn.....	68	.....	4	.92	.....	.72
Knoxville, Tenn.....	64	.....	0	.93	.....	.83
Louisville, Ky.....	64	.....	0	.86	.04	.....
Indianapolis, Ind.....	60	4	.....	.91	.29	.....
Cincinnati, Ohio.....	61	1	.....	.77	.....	.47
Columbus, Ohio.....	59	.....	1	.95	.....	.65
Parkersburg, W. Va.....	60	2	.....	.85	.....	.65
Pittsburg, Pa.....	61	.....	1	.77	.....	.67
Lake Region:						
Oswego, N. Y.....	50	.....	2	.58	.....	.18
Rochester, N. Y.....	52	2	.....	.73	.....	.23
Buffalo, N. Y.....	50	4	.....	.76	.14	.....
Erie, Pa.....	52	.....	0	.83	.07	.....
Cleveland, Ohio.....	53	3	.....	.73	.17	.....
Sandusky, Ohio.....	55	1	.....	.70	.....	0.00
Toledo, Ohio.....	55	3	.....	.76	.....	.16
Detroit, Mich.....	55	3	.....	.76	.....	.05
Lansing, Mich.....	55	3	.....	.63	.....	.33
Port Huron, Mich.....	49	5	.....	.76	.....	.56
Alpena, Mich.....	46	4	.....	.77	.....	.57
Sault Ste. Marie, Mich.....	44	6	.....	.49	.....	.29
Marquette, Mich.....	45	7	.....	.59	.....	.59
Green Bay, Wis.....	50	8	.....	.78	.....	.78
Grand Haven, Mich.....	51	3	.....	.70	.....	.40

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

Table of temperature and rainfall, week ended May 10, 1897—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	*Excess.	*Deficiency.	Normal.	Excess.	Deficiency.
Lake Region—Continued.						
Milwaukee, Wis.....	50	6	.....	.77	.....	.77
Chicago, Ill.....	54	4	.....	.84	.....	.84
Duluth, Minn.....	45	5	.....	.72	.....	.52
Upper Mississippi Valley:						
St. Paul, Minn.....	54	10	.....	.70	.....	.60
La Crosse, Wis.....	55	9	.....	.68	.....	.48
Dubuque, Iowa.....	56	10	.....	.79	.....	.79
Davenport, Iowa.....	57	7	.....	.90	.....	.80
Des Moines, Iowa.....	58	6	.....	.98	.12	.....
Keokuk, Iowa.....	59	7	.....	.91	.....	.81
Springfield, Ill.....	60	4	.....	1.08	.....	.88
Cairo, Ill.....	65	1	.....	.79	.....	.39
St. Louis, Mo.....	64	2	.....	.98	.....	.08
Missouri Valley:						
Columbia, Mo.....	60	4	.....	1.31	.....	.51
Springfield, Mo.....	65	0	.....	1.37	.....	.27
Kansas City, Mo.....	62	4	.....	1.00	.....	.80
Wichita, Kans.....	63	1	.....	.76	.....	.06
Concordia, Kans.....	60	2	.....	.82	.....	.32
Lincoln, Nebr.....	59	3	.....	.89	.....	.49
Omaha, Nebr.....	59	5	.....	.91	.09	.....
Sioux City, Iowa.....	57	7	.....	.84	.....	.54
Yankton, S. Dak.....	56	8	.....	.91	.....	.71
Valentine, Nebr.....	54	.....	.....	.63	.....	.....
Huron, S. Dak.....	53	9	.....	.65	.....	.35
Pierre, S. Dak.....	55	11	.....	.49	.....	.49
Moorhead, Minn.....	50	14	.....	.56	.....	.56
Bismarck, N. Dak.....	51	13	.....	.56	.....	.56
Williston, N. Dak.....	51	9	.....	.42	.....	.22
Rocky Mountain Region:						
Havre, Mont.....	51	7	.....	.28	.....	.28
Helena, Mont.....	51	5	.....	.28	.....	.28
Miles City, Mont.....	54	10	.....	.43	.....	.23
Rapid City, S. Dak.....	50	12	.....	.70	.....	.70
Spokane, Wash.....	55	1	.....	.28	.22	.....
Wallawalla, Wash.....	61	.....	1	.42	.08	.....
Baker City, Oreg.....	52	2	.....	.42	.....	.12
Winnemucca, Nev.....	52	6	.....	.21	.....	.....
Salt Lake City, Utah.....	57	3	.....	.42	.....	.42
Lander, Wyo.....	49	.....	.....	.70	.....	.....
Cheyenne, Wyo.....	49	3	.....	.49	.....	.49
North Platte, Nebr.....	56	4	.....	.56	.....	.56
Denver, Colo.....	54	4	.....	.69	.....	.69
Pueblo, Colo.....	57	.....	1	.48	.22	.....
Dodge City, Kans.....	61	1	.....	.63	.....	.13
Oklahoma, Okla.....	65	.....	1	1.10	.80	.....
Amarillo, Tex.....	62	.....	2	.39	1.01	.....
Abilene, Tex.....	70	.....	2	.77	.73	.....
Santa Fe, N. Mex.....	54	.....	2	.21	.69	.....
El Paso, Tex.....	71	1	.....	.07	.....	.07
Phoenix, Ariz.....	72	2	.....	.07	.....	.07
Pacific Coast:						
Tatoosh Island, Wash.....	49	.....	.....	1.10	.....	.....
Fort Angeles, Wash.....	49	.....	.....	.31	.....	.....
Fort Canby, Wash.....	52	.....	2	.80	.60	.....
Portland, Oreg.....	58	.....	2	.56	.....	.26
Roseburg, Oreg.....	56	0	.....	.49	.01	.....
Eureka, Cal.....	53	.....	3	.76	.....	.46
Redbluff, Cal.....	66	2	.....	.35	.....	.35
Carson City, Nev.....	53	1	.....	.14	.....	.14
Sacramento, Cal.....	63	1	.....	.30	.....	.30
San Francisco, Cal.....	57	1	.....	.25	.....	.25
Fresno, Cal.....	66	2	.....	.09	.....	.09
Los Angeles, Cal.....	62	0	.....	.14	.....	.14
San Diego, Cal.....	61	.....	1	.14	.....	.14
Yuma, Ariz.....	76	2	.....	.01	.....	.01

* 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 May 11, 1897.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Dec. 8-Dec. 15.....		1	
	Dec. 22-Dec. 29.....		1	
	Mar. 23-Mar. 30.....		1	
	Mar. 31-Apr. 6.....		1	
Calcutta.....	Nov. 14-Jan. 30.....		267	
	Jan. 31-Feb. 27.....		311	
	Feb. 28-Mar. 6.....		125	
	Mar. 6-Apr. 3.....		601	
Madras.....	Nov. 21-Nov. 27.....		2	
	Nov. 28-Dec. 4.....		1	
	Dec. 12-Dec. 25.....		6	
	Dec. 26-Jan. 29.....		22	
	Jan. 30-Feb. 26.....		13	
	Feb. 27-Mar. 5.....		2	
	Mar. 6-Mar. 19.....		1	
	Mar. 20-Mar. 26.....		2	
Singapore.....	Nov. 1-Nov. 30.....		12	
	Dec. 1-Dec. 31.....		5	
Ceylon:				
Colombo	Nov. 28-Jan. 23.....		114	
	Jan. 23-Jan. 30.....	1	1	
England:				
Plymouth.....	Jan. 9.....		4	On steamship <i>Nubia</i> . No cases in city.
Japan:				
Tokyo	Dec. 4-Dec. 29.....	8	7	
	Dec. 30-Jan. 18.....	3	3	
Yokohama.....	Dec. 4-Dec. 29.....	4	3	
	Dec. 30-Jan. 18.....	2	2	

YELLOW FEVER.

Brazil:				
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	
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	
	Feb. 20-Mar. 6.....		16	
	Mar. 7-Apr. 3.....	85	32	
Juba:				
Cardenas.....	Dec. 25-Jan. 30.....	84	8	
	Jan. 31-Feb. 27.....	38	1	
	Apr. 17-May 1.....	6	2	
Cienfuegos.....	Dec. 20-Dec. 27.....		8	
	Dec. 28-Jan. 17.....		2	
	Apr. 4-Apr. 11.....		1	
Habana.....	Dec. 17-Dec. 31.....	220	79	
	Jan. 1-Jan. 28.....	400	144	
	Jan. 28-Feb. 25.....	117	41	
	Feb. 25-Mar. 23.....	130	38	
	Mar. 25-Apr. 29.....	342	85	
	Apr. 30-May 6.....	70	18	
Matanzas.....	Dec. 9-Dec. 23.....		8	
	Dec. 23-Jan. 27.....		19	
	Jan. 27-Feb. 24.....		4	
	Feb. 25-Mar. 31.....		2	
	Apr. 1-Apr. 28.....		2	
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	

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

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Cuba*:				
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-May 1...	90	11	
Ecuador:				
Guayaquil.....	Dec. 18-Jan. 1...		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		
United States of Colombia:				
Panama.....	Apr. 14.....	20	17	
	May 4.....			Yellow fever continues.

PLAGUE.

Egypt:				
Suez	Mar. 31.....			One case of plague on Br. S. S. <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-Apr. 13.....	777		Estimated deaths for this same period, 1,412.
Calcutta.....	Feb. 6-Feb. 13.....	1		
Karachi.....	Jan. 11.....			Plague epidemic; 220 cases, 214 deaths to date.
China:				
Hongkong	Dec. 13-Dec. 29.....			A few cases.
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		
Russia:				
St. Petersburg.....	Apr. 10-Apr. 17...		1	
Theodosia.....	Mar. 31.....			One case of plague on Br. S. S. <i>Baldwin</i> .

* February 28, 1897, 300 cases of yellow fever were reported among the sick soldiers on the Island
† Official returns show 9,113 cases and 7,602 deaths to March 12.

Current quarantine measures.

[Translated in this Bureau from the "Veröffentlichungen des Kaiserlichen Gesundheitsamtes," Berlin, April 22, 1897.]

PLAGUE.

TURKEY.—According to recent advices the establishment of quarantine stations has been ordered at Seihun and Girzelan, near Fão, on the Chat el Arab, and between that place and Basra.

By resolution of the international sanitary council the regulation which requires vessels arriving from the East Indies and Beloochistan to undergo a fifteen days' quarantine before passing the Dardanelles, has been suspended. Vessels bound to other than Turkish ports of the Black Sea may in future pass the Dardanelles and the Bosphorus under the regulations governing transit in quarantine.

MALTA.—By order of April 2 the quarantine regulations of March 11 are so amended that arrivals from the west coast of India, from ports between Cape Comorin and the Persian frontier, may proceed to a quarantine port and there take on coal and provisions under quarantine restrictions.

BRITISH EAST INDIES.—By order of the chief commissioner of Burmah quarantine restrictions have been ordered at the ports of Maulmain and Bassein against arrivals from Bombay. The restrictions in force at the port of Madras against arrivals from Goa and all other ports of Scind and the presidency of Bombay are extended to apply to all ports in the presidency of Madras.

PERSIA.—The government has extended the quarantine regulations ordered at Persian ports for preventing the introduction of plague, as follows:

The frontier of Afghanistan and Beloochistan, with the exception of the great lines of traffic from Herat to Mesched, from Kandahar to Berdgin, and from there to Kirman and Yezd, together with the route from Beloochistan to Bampur, shall be under military observation. Along the free routes herein named military sanitary stations shall be established close to the frontier, at which inspection, observation, and if necessary quarantine shall be performed for travelers and merchandise. Special regulations are formulated for the erection and maintenance of these stations, and for the handling of travelers. Persons found to be sick shall, with their baggage, be sent back across the frontier, or in case of severe sickness, shall be removed to a lazaretto, and there be kept fifteen days under observation. If during this period a case of plague shall develop, the patient shall be cared for at the lazaretto, his baggage shall be burned, and the tent in which he is sheltered shall be isolated and disinfected. The surroundings of the tent shall also be disinfected, and the persons who have been domiciled in it shall be subject to a further quarantine of fifteen days' duration. In case of recovery, the patients shall remain in quarantine one month, and their clothing and bedding shall be burned. Regulations for disinfection will shortly be issued.

AFGHANISTAN.—According to recent advices, the ameer has forbidden the pilgrimage for this year and ordered close watch on the frontier against India.

YELLOW FEVER.

DANISH ANTILLES.—According to advices of April 6, the five days' quarantine ordered for arrivals from the Island of Guadeloupe has been suspended.

ARABIA.

*Smallpox at Hodeida.*ADEN, ARABIA, *March 25, 1897.*

SIR: I had been hearing of rumors of smallpox prevailing to a great extent in Hodeida and neighboring places on the Red Sea coast, and in order to get the truth of the matter I addressed a letter of inquiry to the consular agent, J. R. Muller, asking him to give me full particulars as to the number of cases and deaths from smallpox in Hodeida, as well as to whether the disease was prevailing back in the interior. This letter of mine was written February 20, and in it I urged him to answer immediately.

Fearing that I could not get much information from the request to Mr. Muller, I also addressed a letter of the same import to Mr. C. Foley, of the same place. In due time I received an answer from Mr. Foley giving me the information asked for, which letter I inclose in this dispatch. As you will see from the inclosed letter, a rather serious state of affairs exists in Hodeida and surrounding country.

I received a verbal message from Mr. Muller in answer to my letter of inquiry, in which he said the rumor about the prevalence of smallpox in Hodeida is all a mistake, that there were a few cases, but none of any importance.

I attach no credence to the verbal message of Mr. Muller, for there have been at least a dozen persons infected with smallpox taken from bungalows by the health officer here, who have come from Hodeida or that vicinity, and besides, all the natives here in the bazaar coincide with Mr. Foley's report. As you are aware, all the Mocha coffee of commerce comes from this port, a portion of it being brought here from the interior by caravans, but the greater portion comes from Hodeida and is sent here for transshipment. This coffee is all cleaned and prepared for shipment by manual labor, whether from the interior or Hodeida or Aden, and Sanaa is the great interior market for this article, and there is where this disease, according to Mr. Foley, is raging most extensively. There are also quite a lot of skins of sheep and goats being brought here for shipment to the United States from this same country, but I suppose as all these skins are thoroughly disinfected with naphthaline no contagion can be carried in them. Now I do not know whether this coffee can carry the contagion to the United States, New York being the largest market in the world for Mocha coffee, but I thought it best to inform the Department of these particulars and then be governed by your instructions.

I may say in closing, that there are some cases of smallpox here in the hospital, but they have all been imported, and there is none at all in this city with that exception.

Mr. Muller is engaged in handling both skins and coffee, the greater part of which goes to America.

I have the honor to be, sir, your obedient servant,

WM. M. MASTERSON,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

[Inclosure.]

HODEIDA, *March 8, 1897.*

DEAR SIR: Yours of the 6th of March to hand. I have made inquiries about the smallpox raging here, and I find that it is even worse than you were informed. During

the last four months there have been more than 1,000 deaths. I was told this by the sheik in charge of the graveyard. He says, however, that there has been a great decrease lately, and that only a few die daily at present.

From other sources I hear that the disease is very bad over the interior. At Zebid large numbers have died, and I hear from an Italian merchant that has just gone to Sanaa, that 5,000 deaths have occurred there, mostly children. This is about all I can tell you on this subject at present. If I hear anything new I will let you know. I, myself, do not think that the disease is on the decrease, but rather the contrary. * * *

I am of the opinion that there should be somebody here to safeguard this firm. Otherwise, a consular agency here is of no use whatever. As you have (at least I understand so) no jurisdiction for Hodeida, and therefore could not help it if any question turned up, I do not think it advisable to abolish the consular agency here.

In case you may ever require any more information from here I will be only too glad to oblige you.

Yours, truly,

G. FOLEY.

W. M. MASTERSON, Esq.,
United States Consul, Aden.

BRAZIL.

Sanitary report from Rio.

RIO DE JANEIRO, *February 8, 1897.*

SIR: I have the honor to transmit report for the week ended February 6, 1897:

There were 8 deaths from *accessio pernicioso*, the same as in the foregoing week; 5 from yellow fever, a decrease of 5; 1 from smallpox, none in the foregoing week; 8 from beriberi, an increase of 3; 1 from enteric fever, a decrease of 3; 40 from tuberculosis, an increase of 2, and 282 from all causes, an increase of 17.

There is no marked change in the exceptionally good sanitary condition of the port and town for the season.

Since last report the following-named ships have been visited or received bills of health from this office: February 3, bark *Otago*, Swedish, for Tybee Roads, Georgia. February 4, steamship *Tolosa*, British, for Galveston, Tex. February 5, bark *Quitaria*, Portuguese, for Philadelphia, Pa., and bark *Rosenberg*, Norwegian, for Tybee Roads, Georgia. February 6, bark *Mariposa*, Portuguese, for Savannah, Ga. February 8, bark *Cambria*, British, for Pensacola, Fla.

Respectfully, yours,

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

CUBA.

Smallpox and yellow fever in Cuban seaports.

May 8: The United States sanitary inspector at Habana reports that during the week ended May 6 there were in that city 18 deaths from yellow fever, with 70 new cases, and 96 new cases of smallpox, with 12 deaths.

May 4: The United States consul at Cardenas reports that during the week ended May 1 there were in that city 3 new cases and 1 death from yellow fever, and 18 cases and 2 deaths from smallpox.

April 30: The United States consul at Matanzas reports that during the week ended April 28 there were in that city 5 deaths from smallpox and 1 death from yellow fever.

May 3: The United States consul at Sagua la Grande reports that during the two weeks ended May 1 there were in that city 42 cases and 5 deaths from yellow fever.

May 4: The United States consul at Cienfuegos reports that during the two weeks ended May 2 there were no new cases and no deaths from yellow fever and 1 death from smallpox.

Sanitary reports from Habana.

HABANA, CUBA, May 4, 1897.

SIR: I have the honor to inform you that there were 1,062 deaths in this city in the month of April, 76 of which were caused by yellow fever, 93 by smallpox, 32 by enteric fever, 20 by so-called pernicious fever, 6 by paludal fever, 73 by dysentery, 91 by enteritis, 8 by diphtheria, 2 by measles, 2 by grippe, 2 by glanders, 23 by pneumonia, and 157 by tuberculosis.

Very respectfully,

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

HABANA, CUBA, May 8, 1897.

SIR: I have the honor to inform you that during no week for the last eight months has the mortality from smallpox been so small in this city as in the week ending May 6th, 12 deaths in all. The deaths from yellow fever in the same time have been confined to the Spanish soldiers in the military hospitals and have not increased.

Mortuary report.—During the week ended May 6 there were 225 deaths in all in this city, 18 of which were caused by yellow fever, with 70 new cases approximately; 12 were caused by smallpox, with approximately 96 new cases; 12 were caused by enteric fever, 7 by so-called pernicious fever, 3 by paludal fever, 11 by dysentery, 20 by enteritis, 7 by pneumonia, and 29 by tuberculosis.

All of the 18 deaths from yellow fever during the week occurred among Spanish soldiers in military hospitals, and all of the 12 deaths from smallpox were among civilians.

The weather continues dry and quite cool for the season, which serves to keep yellow fever in check.

Very respectfully,

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

CURACAO.

Sanitary precautions at Curacao.

MARACAIBO, April 1, 1897.

SIR: I have the honor to notify the Department that, since a short time, all the passengers leaving the port of Maracaibo for the Dutch island of Curacao, with the steamers under our flag, are obliged to provide themselves with a medical certificate from a physician of this place by order of the board of health of said island.

It can not be denied that sometimes lately a few passengers had to be sent to the hospital at Curacao, but Maracaibo is surely not so unhealthy as to justify such rigid orders, which bring the passengers into much inconvenience and extra expenses.

I have the honor to be, sir, your most obedient servant,

ED. PLUMACHER,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

GIBRALTAR.

*Quarantine regulation.*GIBRALTAR, *April 24, 1897.*

With reference to the board of health notice of the 28th of January last, it has this day been decided, at a meeting of the board, to admit to pratique vessels arriving from Calcutta and other eastward Indian ports, provided that they bring clean bills of health and have health on board.

H. M. JACKSON,
Colonial Secretary for Secretary to Board of Health.

HAWAIIAN ISLANDS.

*Smallpox at Honolulu.*HONOLULU, HAWAIIAN ISLANDS, *April 18, 1897.*

SIR: I have the honor to inform you that on the 12th instant smallpox was discovered among the Japanese laborers who were landed on the quarantine station from the Kinai Maru on the 9th instant. Six cases in all have developed, but no deaths. No cases of the disease have appeared on shore.

I am, sir, your obedient servant,

ELLIS MILLS,
United States Consul-General.

Hon. ASSISTANT SECRETARY OF STATE.

INDIA.

Remarks on the official summary of deaths and births in the city of Bombay for the week ended April 6, 1897.

BOMBAY, *April 8, 1897.*

SIR: The energetic daily house-to-house visitation under the direction of General Gatacre and his plague committee appears to be gradually stamping out the epidemic. The weekly average decrease in the total mortality of the city for the past eight weeks has been 113, and it is estimated that if this rate of improvement is maintained for another six weeks, the death rate should be back to about the normal rate for this season of the year. Many persons are still leaving the northern part of the city, where the disease is still very bad. But the influx to other parts is greater than the exodus, and the average population has been increasing rapidly for some weeks past. It is not probable, however, that the present population exceeds one-half the census of 1891.

Population according to census of 1891.....	821, 764
Present population, for the purpose of this report, estimated one-half the above..	410, 882
Total number of deaths reported for the week.....	1, 007
Total number of deaths for corresponding week last year.....	665
Mean of corresponding week previous five years	559
Allowing that one-half the population has left the city, the proportionate number of deaths based on the mean of previous five years would be.....	279
Number of deaths last week that may be attributed to plague.....	728

Average per day from plague.....	104
Number of deaths from plague officially reported for week.....	399
Average per day	57
Probable average number of deaths per day from plague reported as having died of other diseases.....	47
Officially reported death rate for the last week per 1,000.....	65. 51
Same for corresponding week last year.....	39. 67
Mean for corresponding week previous five years.....	33. 34
Number of births reported last week.....	92
Number of births for corresponding week last year.....	329
Mean number for corresponding week previous five years	281

S. COMFORT,
United States Consul.

Remarks on the official summary of deaths and births in the city of Bombay for the week ended April 13, 1897.

BOMBAY, April 15, 1897.

SIR: The population is increasing by influx of natives at a rate of from 1,000 to 2,000 per day. But notwithstanding this, there has been a small reduction in the number of deaths from plague. It is reported that there have been 5 deaths from plague during the week among the servants at Government House, at Malabar Hill, in the city.

Population according to census of 1891.....	821, 764
Present population, for the purpose of this report, estimated one-half the above.....	410, 882
Total number of deaths reported for the week.....	970
Total number of deaths for corresponding week last year.....	587
Mean number of deaths corresponding weeks, previous five years.....	572
Allowing that one-half the population has left the city, the proportionate number of deaths based on the mean of previous five years would be.....	286
Number of deaths last week that may be attributed to plague.....	684
Average per day from plague.....	98
Number of deaths from plague officially reported for week.....	378
Average per day	54
Probable average number of deaths per day from plague reported as having died of other diseases.....	44
Officially reported death rate for the last week per 1,000.....	60. 05
Same for corresponding week last year	35. 75
Mean number for corresponding week previous five years.....	34. 42
Number of births reported last week.....	68
Number for corresponding week last year.....	306
Mean number for corresponding week previous five years	218

S. COMFORT,
United States Consul.

UNITED STATES OF COLOMBIA.

Yellow fever in Panama.

PANAMA, April 23, 1897.

SIR: The yellow fever referred to in my cable of the 13th instant has much subsided, and the excitement is over, although there is yellow fever yet.

The people of Panama were blessed with a truly tropical rain on the 18th instant, after some twenty weeks of dry weather. This has refreshed the atmosphere and flushed the miserable sewers. The authorities are not approachable on health matters; they will give no information on the contagious diseases, and that which is found out is by accident. So far as I know only one American has died of yellow fever; the French, English, and Spanish consuls have all had losses among their nationalities.

To show how fearful the local authorities are in matters of yellow fever, suffice it for me to say that Captain Robinson, whose death was reported by me in my No. 132 of the 13th instant, was in his grave within two hours after his death.

If the rainy season has opened in earnest, there is little fear of epidemics.

I am, sir, your obedient servant,

NOTE.—May 4, 1897, the United States consul at Panama reports that yellow fever continues. The steamer *Pallena*, leaving Panama during the last week, was quarantined on account of yellow fever aboard. Several deaths were reported.

VICTOR VIFQUAIN,
United States Consul-General.

STATISTICAL REPORTS.

BERMUDA.—Week ended April 23, 1897. Estimated population, 15,013. No deaths.

CANADA—*Nova Scotia—Windsor*.—Month of April, 1897. Estimated population, 3,000. Total deaths, 8, including 1 from phthisis pulmonalis.

CHILE—*Valparaiso*.—Month of February, 1897. Estimated population, 126,000. Total deaths, 440, including enteric fever, 4; diphtheria 1, and whooping cough, 2.

CUBA—*Manzanillo*.—Two weeks ended April 15, 1897. Estimated population, 15,000. Total deaths, 42, including 4 from phthisis pulmonalis.

FRANCE—*Nice*.—Month of March, 1897. Estimated population, 108,227. Total deaths, 245, including smallpox 1; phthisis pulmonalis, 25; enteric fever, 1; diphtheria and croup, 2, and measles, 2.

GREAT BRITAIN—*England and Wales*.—The deaths registered in 33 great towns of England and Wales during the week ended April 24 correspond to an annual rate of 18.8 a thousand of the aggregate population, which is estimated at 10,992,524. The highest rate was recorded in Bolton, viz, 36.1, and the lowest in Derby, viz, 10.1 a thousand.

London.—One thousand five hundred deaths were registered during the week, including measles, 20; scarlet fever, 9; diphtheria, 40; whooping cough, 50; enteric fever 7, and diarrhea and dysentery, 15. The deaths from all causes correspond to an annual rate of 17.5 a thousand. In greater London 1,963 deaths were registered, corresponding to an annual rate of 16.3 a thousand of the population. In the "outer ring"

the deaths included 9 from measles, 5 from scarlet fever, 9 from diphtheria, and 10 from whooping cough.

Ireland.—The average annual death rate represented by the deaths registered during the week ended April 24 in the 16 principal town districts of Ireland was 28.1 a thousand of the population. The lowest rate was recorded in Drogheda, viz, 0.0, and the highest in Armagh, viz, 56.1 a thousand. In Dublin and suburbs 232 deaths were registered, including scarlet fever, 1; whooping cough, 14; 2 from enteric fever, 19 from measles, and 1 from diphtheria.

Scotland.—The deaths registered in 8 principal towns during the week ended April 24 correspond to an annual rate of 22.6 a thousand of the population, which is estimated at 1,549,907. The lowest mortality was recorded in Greenock, viz, 14.4, and the highest in Edinburgh, viz, 29.2 a thousand. The aggregate number of deaths registered from all causes was 673, including scarlet fever, 5; diphtheria, 2; measles, 39, and whooping cough, 41.

Dundee.—Month of March, 1897. Estimated population, 140,054. Total deaths, 344, including phthisis pulmonalis, 32; enteric fever, 3; scarlet fever, 1; diphtheria, 3, and croup, 2.

JAMAICA—Kingston.—Month of March, 1897. Estimated population, 34,314. Total deaths, 144, including phthisis pulmonalis, 17; enteric fever, 5; croup, 1, and whooping cough, 4.

SPAIN—Barcelona.—Month of March, 1897. Estimated population, 440,000. Total deaths, 855, including smallpox, 34; phthisis pulmonalis, 105; enteric fever, 22; diphtheria, 42, and measles, 36.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated popula- tion.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Acapulco.....	Apr. 13....	5,000	7									
Aix la Chapelle.....	Apr. 17....	112,378	59						1	1		
Amherstburg.....	May 1....	2,300	1									
Amsterdam.....	Apr. 24....	495,589	170							3	2	4
Belfast.....	do.....	277,354	163					5	1		3	6
Belize.....	Apr. 29....	13,000	2									
Belleville.....	May 3....	10,459	7									
Bergen.....	Apr. 14....	57,800	30						1		2	1
Birmingham.....	Apr. 24....	505,772	181					3	1	2	2	4
Bluefields.....	do.....	3,000	4									
Do.....	May 1....	3,000	1									
Bologna.....	Apr. 17....	121,579	76				2					
Do.....	Apr. 24....	121,579	73									
Bombay.....	Apr. 6....	821,764	*1007	1		1					14	
Bordeaux.....	Jan. 30....	265,000	139					3			1	
Do.....	Feb. 6....	265,000	138					2				
Do.....	Feb. 13....	265,000	103									
Do.....	Feb. 20....	265,000	112					2				
Do.....	Feb. 27....	265,000	121								1	
Do.....	Mar. 6....	265,000	96								1	
Do.....	Mar. 13....	265,000	106					1		1		
Do.....	Mar. 20....	265,000	104					1		1		
Do.....	Mar. 27....	265,000	85			1						
Bradford.....	Apr. 24....	221,610	82					1	1			1
Bristol.....	do.....	232,242	75					1		1	1	4
Brussels.....	Apr. 17....	509,985	176					2	1	1		1
Budapest.....	Apr. 23....	640,000					3		3	3	2	1
Calcutta.....	Mar. 27....	681,560	593	153		3					5	
Cardenas.....	May 1....	23,517	57		1	2		31		1		
Cardiff.....	Apr. 17....	170,063	57						1	1	2	2
Do.....	Apr. 24....	170,063	56						1	1	2	
Catania.....	Apr. 20....	120,000	59						1		1	
Champerico.....	Apr. 18....	931	0									
Chatham.....	May 4....	9,052	3									
Christiania.....	Apr. 17....	182,856	43					3		1		
Cienfuegos.....	Apr. 25....	24,030	35			1		1			1	
Do.....	May 2....	24,030	35									
Coaticook.....	Apr. 17....	2,500	0									
Do.....	Apr. 24....	2,500	1									
Do.....	May 1....	2,500	1									
Cognac.....	Apr. 17....	21,000	5									
Cologne.....	do.....	332,910	150									
Colombo.....	Mar. 27....	130,000	83					4		4		3
Do.....	Apr. 3....	130,000	78					1				
Copenhagen.....	Apr. 17....	333,714	125									
Dresden.....	do.....	350,100	142						3		1	
Dublin.....	Apr. 24....	350,000	232								2	
Dundee.....	do.....	163,090	61					1				
Dusseldorf.....	Apr. 17....	183,579	62							2	1	1
Edinburgh.....	Apr. 24....	292,364	164					1	3	1	20	14
Flushing.....	Apr. 17....	17,193	4									
Do.....	Apr. 24....	17,193	5									
Frankfort on the Main.....	do.....	238,000	86							1		
Ghent.....	Apr. 3....	159,218	63							1		1
Do.....	Apr. 10....	159,218	74									
Do.....	Apr. 17....	159,218	63									
Do.....	Apr. 24....	159,218	64									1
Gibraltar.....	Apr. 18....	28,500	13									
Girgenti.....	Apr. 17....	24,428	13								1	
Glasgow.....	Apr. 24....	714,919	302					2	1	1	14	23
Gothenburg.....	Apr. 17....	115,896	40					1	1			3
Halifax.....	May 1....	38,700	18									
Hongkong.....	Mar. 27....	232,662				7	2					
Honolulu.....	Apr. 3....	30,000	14									
Do.....	Apr. 10....	30,000	11									
Do.....	Apr. 17....	30,000	12									
Kingston, Canada.....	May 7....	18,040	6									
Konigsberg.....	Apr. 24....	171,700								1		
Leeds.....	do.....	402,449	139					4	1	2		1
Leghorn.....	do.....	103,755	37									
Leith.....	do.....	75,186	34								1	2
Licata.....	Apr. 17....	20,000	10					1				

*399 deaths from plague.

† April 12 to 15, 6 cases of varioloid on Steamship Kinai Maru; arrived 680 Japanese in quarantine.

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.
Liverpool.....	Apr. 24.....	644,129	304					2	1	1	10	7
Livingston.....	do.....	2,000	1									
London, Canada.....	May 1.....	34,855	12							1		
London, England.....	Apr. 17.....	6,291,677	1,852					3	14	37	33	63
Do.....	Apr. 24.....	6,291,677	1,963					10	14	49	29	60
Madras.....	Apr. 2.....	452,518	273			3					8	
Madrid.....	Apr. 21.....	482,816	264			2		9	1	2	12	
Manchester.....	Apr. 24.....	536,426	295					1	2		21	6
Maracaibo.....	Apr. 17.....	50,000	8									
Do.....	Apr. 24.....	50,000	10									
Matamoros.....	Apr. 30.....	12,000	7									
Matanzas.....	Apr. 28.....	62,000	104		1	5		7			12	
Mayence.....	Apr. 17.....	74,917	30						1			
Do.....	Apr. 24.....	74,917	30									
Messina.....	do.....	107,000	25									
Monte Cristi.....	May 1.....	1,200	0									
Montevideo.....	Mar. 12.....	21,506	63					4				
Do.....	Mar. 19.....	21,506	60					2				
Munich.....	Apr. 17.....	418,000	235						1	7	4	2
Nagasaki.....	Apr. 6.....	71,730	.....			4		9		1		
Naples.....	Apr. 10.....	542,396	235								2	
Do.....	Apr. 16.....	542,396	241					10			1	
Newcastle on Tyne.....	Apr. 17.....	212,223	77					1	1	1	5	1
Do.....	Apr. 24.....	212,223	69							1	3	1
Nuremberg.....	Apr. 3.....	173,917	89						1	2	2	1
Do.....	Apr. 10.....	173,917	88								7	3
Odessa.....	Apr. 17.....	353,000	109			6	1	1	1			
Osaka and Hiogo.....	Apr. 3.....	182,730	102					1				
Palermo.....	Apr. 17.....	273,000	115							2		
Paris.....	Apr. 24.....	2,511,955	1,016					5	3	8	42	10
Plymouth.....	do.....	89,686	44							1		4
Prague.....	Apr. 17.....	197,634	118					1			4	3
Puerto Barrios.....	Apr. 24.....	2,000	0									
Puerto Cortez.....	Apr. 28.....	2,000	0									
Rheims.....	Apr. 17.....	108,943	47							1		
Do.....	Apr. 24.....	108,943	61									
Rome.....	Mar. 13.....	476,917	180					1			3	
Do.....	Mar. 20.....	476,917	185					2		1	3	
Rotterdam.....	Apr. 24.....	286,910	96							3		
Sagua la Grande.....	Apr. 17.....	17,536	28		4							
Do.....	Apr. 24.....	17,536	30		5							
St. Georges.....	May 1.....	2,150	1									
St. Johns, Antigua.....	Apr. 10.....	16,679	6									
Do.....	Apr. 17.....	16,679	10									
St. Petersburg.....	do.....	1,013,000	*554			3	2	21	14	32	30	3
St. Stephens.....	May 1.....	3,000	0									
St. Thomas.....	Mar. 26.....	12,019	9									
Do.....	Apr. 2.....	12,019	13									
Sanchez.....	May 1.....	1,000	3									
San Juan del Norte.....	Apr. 17.....	1,404	1									
Do.....	Apr. 24.....	1,404	0									
San Pedro.....	Apr. 10.....	3,800	3									
Santos.....	Mar. 20.....	9,871	2		2							
Schiedam.....	Apr. 24.....	26,627	11									
Sheffield.....	Apr. 17.....	352,274	106					1	2	2	2	1
Do.....	Apr. 24.....	352,274	122						2	1	2	3
Sonneberg.....	Apr. 10.....	12,150	5									
Do.....	Apr. 17.....	12,150	2									
Southampton.....	Apr. 24.....	89,002	39							1		6
South Shields.....	do.....	95,798	27					1	2		3	
Stuttgart.....	Apr. 22.....	158,378	73							1		
Trapani.....	Apr. 17.....	43,095	14									
Trieste.....	do.....	158,314	.....					1		4		
Vera Cruz.....	Apr. 29.....	30,000	28		1					1		
Venice.....	Apr. 17.....	163,852	50					2				1
Zurich.....	do.....	153,000	54				1			2		3

*One death from plague.

By authority of the Secretary of the Treasury :

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