

ABSTRACT OF SANITARY REPORTS.

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UNITED STATES.

SPECIAL REPORTS.

Yellow fever in Livingston, Guatemala.—The following notice has been received from the Honorable the Secretary of State :

WASHINGTON, D. C., *May 31, 1892.*

To the SECRETARY OF THE TREASURY :

The consul-general at Guatemala telegraphs to-day as follows: "Advise not to enter Guatemala by Livingston; yellow fever."

JAMES G. BLAINE.

Arrival of an infected vessel at Delaware Breakwater Quarantine Station.—The following telegram has been received :

LEWES, DEL., *June 1, 1892.*

To SURGEON-GENERAL M.-H. S.:

British bark *Willow Bank* arrived this morning, fifty days from Rio; had several cases yellow fever at Rio, and one death after leaving. All well on arrival. Detained.

ORR,

Acting Assistant Surgeon.

Reports of States, and yearly and monthly reports of cities.

DISTRICT OF COLUMBIA—*Washington.*—Month of April, 1892. Population, 230,392. Total deaths, 446, including enteric fever, 7; scarlet fever, 10; diphtheria, 7; whooping cough, 5; and phthisis pulmonalis, 59.

MICHIGAN.—Week ended May 21, 1892. Reports to the State board of health, Lansing, from 62 observers, indicate that cerebro-spinal meningitis, measles, and cholera infantum increased, and that typhoid fever, whooping cough, diphtheria, inflammation of brain, erysipelas, puerperal fever, membranous croup, and pneumonia decreased in area of prevalence.

Diphtheria was reported present during the week at 40 places, scarlet fever at 47 places, enteric fever at 11 places, and measles at 14 places. The one case of varioloid at Detroit recovered during the week.

NEW YORK.—Month of April, 1892. Reports to the State board of health from 157 cities and towns, including New York and Brooklyn, show a total of 10,590 deaths, including enteric fever, 77; smallpox, 11; scarlet fever, 248; measles, 161; whooping cough, 60; croup and diphtheria, 491; and phthisis pulmonalis, 1,252.

From the *Monthly Bulletin* for April the following is extracted:

The average daily reported mortality for the State during April was 353; in March it was 354; in February, 371; in April, 1891, it was (at the height of the grippe epidemic) 463; the average daily mortality in April for the past seven years is 347. Deaths continue to be reported from influenza and may be estimated at not less than 500, or 5 per cent. of all deaths—the entire mortality from this cause since the present epidemic began being to May 1 about 12,000. There were 250 less deaths from acute respiratory diseases than in March, and a similar diminution in deaths from old age. The percentage of deaths under the age of five years has increased. Measles caused an increased number of deaths. Diphtheria is reported as prevalent at several localities, among them Jamestown, Hoosick Falls, and Oneonta; the mortality from it in the State is somewhat diminished. Typhus fever caused 3 deaths in New York. Smallpox caused 11 deaths, all in New York, except one in the hospital for contagious diseases at Flatbush, and one in Syracuse, which was imported from Brooklyn, its spread being limited to one secondary case. The annual death rate for the month, allowing for delayed returns not yet reported, is about 22.00 per 1,000 population for the entire State.

TENNESSEE.—Month of April, 1892. The State board of health *Bulletin* furnishes the following:

The principal diseases, named in the order of their greater prevalence, in the State for the month of April were: Bronchitis, pneumonia, malarial fever, typhoid fever, consumption, whooping cough, and measles.

Typhoid fever was reported in the counties of Anderson, Davidson, Hamilton, Knox, Shelby, and Wayne. Whooping cough in Carter, Davidson, Hamilton, and Stewart. Measles in Carter, Hamilton, Hardeman, and McMinn. Scarlet fever in Humphreys, Knox, and Shelby. Influenza in Decatur, Grundy, and Robertson. Mumps in Anderson, Hamilton, and McMinn. Diphtheria in Davidson and Shelby. Croup in Decatur and Gibson. Cerebro-spinal meningitis in Hamilton and Hardeman.

WASHINGTON—*Seattle*.—Month of April, 1892. Estimated population, 50,000. Total deaths, 37, including phthisis pulmonalis 10 and enteric fever 2.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	S. Population, U. S. Census of 1890.	Total deaths from all causes.	Deaths from—											
				Phthisis pul- monalis.	Yellow fever.	Smallpox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.	
New York, N. Y.	May 28	1,515,301	845	111		3		1			8	33	35	36	1
Chicago, Ill.	May 28	1,099,850	439							14	5	16	3	3	
St. Louis, Mo.	May 21	451,770	126							3			1		
Boston, Mass.	May 28	459,062	195	30						2		9	11		1
Baltimore, Md.	May 28	455,427	137	22							4	5	5		
San Francisco, Cal.	May 21	298,997	126	18						1	1	4	4		
Cincinnati, Ohio.	May 27	296,908	89	13						1	1	4	4		1
New Orleans, La.	May 21	242,039	163	16								2	2		1
Washington, D. C.	May 21	230,392	106	15						2	1	3	3		
Washington, D. C.	May 28	230,392	86	10						3	1	4	4		1
Detroit, Mich.	May 28	205,876	92	5							5	5	5	2	2
Minneapolis, Minn.	May 28	164,738	41										1		
Louisville, Ky.	May 14	161,129	60	9						2			2		2
Louisville, Ky.	May 28	161,129	51	9						1			1		2
Rochester, N. Y.	May 28	133,896	62	11						1			2		3
Providence, R. I.	May 29	132,146	57							2		2	1		
Toledo, Ohio.	May 27	81,434	26												1
Manchester, N. H.	May 21	44,126											1		
Portland, Me.	May 28	36,425	20												
Binghamton, N. Y.	May 21	35,005	12												
Binghamton, N. Y.	May 28	35,005	15							1					
Mobile, Ala.	May 28	31,076	14	1											
Galveston, Tex.	May 20	29,084	17												
San Diego, Cal.	May 21	16,159	2												
Shreveport, La.	May 21	11,979	6												
Shreveport, La.	May 28	11,979	8	2											
Pensacola, Fla.	May 21	11,750	9							2					

Table of temperature and rainfall, week ended May 27, 1892.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	*Excess.	*Defic'ncy.	Normal.	Excess.	Deficiency.
New England States:						
Eastport, Me.....	49		1	.96	.23	
Portland, Me.....	56		3	.77	1.31	
Boston, Mass.....	59		3	.84	1.48	
Block Island, R. I.....	55		4	.84	.75	
Middle Atlantic States:						
Albany, N. Y.....	62		7	.73	1.37	
New York, N. Y.....	62		4	.70	.98	
Philadelphia, Pa.....	63		6	.72	1.00	
Atlantic City, N. J.....	60		2	.63	.15	
Baltimore, Md.....	66		6	.84	1.21	
Washington, D. C.....	66		7	.93	1.43	
Lynchburg, Va.....	68		7	.84		.36
Norfolk, Va.....	69		6	.91	.26	
South Atlantic States:						
Charlotte, N. C.....	71		9	1.05		.74
Wilmington, N. C.....	72		4	1.09		.77
Charleston, S. C.....	75		5	.98		.50
Augusta, Ga.....	75		9	.77		.05
Savannah, Ga.....	75		5	.84		.30
Jacksonville, Fla.....	77		5	1.09		.96
Key West, Fla.....	80		1	.88		.88
Gulf States:						
Atlanta, Ga.....	71		10	.91		.69
Pensacola, Fla.....						
Mobile, Ala.....	76		10	1.12		1.12
Montgomery, Ala.....	75		10	.98		.61
Vicksburg, Miss.....	75		10	1.05		.99
New Orleans, La.....	77		8	1.26		1.26
Shreveport, La.....	76		11	.99		.90
Fort Smith, Ark.....	71		9	.98		.08
Little Rock, Ark.....	72		9	1.23		1.05
Palestine, Tex.....	74		9	1.35		1.25
Galveston, Tex.....	78		7	1.05		1.03
San Antonio, Tex.....	76		5	.71		.71
Corpus Christi, Tex.....	77		4	.88		.86
Brownsville, Tex.....	79		3	.84		.78
Ohio Valley and Tennessee:						
Memphis, Tenn.....	72		8	.98	.08	
Nashville, Tenn.....	70		10	.77		.67
Chatanooga, Tenn.....	70		8	.98		.28
Knoxville, Tenn.....	68		9	.85	.29	
Louisville, Ky.....	68		8	.84		.34
Indianapolis, Ind.....	65		9	1.00		.32
Cincinnati, Ohio.....	67		10	.85		.67
Columbus, Ohio.....	64		8	1.07		.69
Pittsburg, Pa.....	65		10	.77	.11	
Lake Region:						
Oswego, N. Y.....	57		9	.65	.70	
Rochester, N. Y.....	58		6	.76	1.50	
Buffalo, N. Y.....	57		8	.76	2.19	
Erie, Pa.....	59		8	.86	1.20	
Cleveland, Ohio.....	60		7	.81	.34	
Sandusky, Ohio.....	62		7	.85	.14	
Toledo, Ohio.....						
Detroit, Mich.....	60		7	.84		.15
Port Huron, Mich.....	55		4	.77		.24
Alpena, Mich.....	52		1	.84		.31
Marquette, Mich.....	51		2	.67		.55
Grand Haven, Mich.....	56		6	.84		.71
Milwaukee, Wis.....	57		3	.79		.68
Chicago, Ill.....	59		6	.90		.28
Duluth, Minn.....	51		1	.98		.58
Upper Mississippi Valley:						
St. Paul, Minn.....	60		3	.81		.70
La Crosse, Wis.....	61		4	.81		.68
Dubuque, Iowa.....	62		5	.98		.87
Davenport, Iowa.....	63		6	1.05		.77

* The figures in these columns represent the average daily departure. To obtain the accumulated excess or deficiency of the week these should be multiplied by seven.

Table of temperature and rainfall, week ended May 27, 1892—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	*Excess.	*Deficiency.	Normal.	Excess.	Deficiency.
Upper Mississippi Valley—Cont'd.						
Des Moines, Iowa.....	64		6	1.21		1.16
Keokuk, Iowa.....	65		7	.98		.54
Springfield, Ill.....	65		9	1.26		.74
Cairo, Ill.....	69		8	.91		.83
St. Louis, Mo.....	68		9	.99		.91
Missouri Valley:						
Springfield, Mo.....	69		10	1.47		1.39
Kansas City, Mo.....	67		7	1.05		.97
Concordia, Kans.....	65		6	.98		.78
Omaha, Nebr.....	65		8	1.10		.81
Yankton, S. Dak.....	62		4			.94
Valentine, Nebr.....	60		2	.91		.79
Huron, S. Dak.....	58		4	.77		.71
Pierre, S. Dak.....	60		2	.64		.64
Extreme Northwest:						
Moorhead, Minn.....	56		3	.63		.25
Saint Vincent, Minn.....	54		3	.49		.29
Bismarck, N. Dak.....	57		2	.61		.54
Buford, Fort, N. Dak.....	57			.48		.45
Rocky Mountain Slope:						
Havre, Mont.....	56	4		.42		.24
Helena, Mont.....	55	5		.37		.36
Spokane, Wash.....	59	4		.28		.28
Salt Lake City, Utah.....	62	4		.33		.25
Cheyenne, Wyo.....	54	2		.49		.43
North Platte, Nebr.....	61		2	.70		.59
Denver, Colo.....	59	1		.56		.50
Montrose, Colo.....	60		1	.07		
Pueblo, Colo.....	63		1	.28	.04	
Dodge City, Kans.....	66		5	.82		.66
Abilene, Tex.....	74		3	.94		.30
El Paso, Tex.....	76		4	.07		.07
Santa Fé, N. Mex.....	59		2	.21	.02	
Tucson, Ariz.....	76	2		.00	.05	
Pacific Coast:						
Olympia, Wash.....	56	5		.49		.43
Portland, Oreg.....	61	4		.50		.50
Roseburg, Oreg.....	59	5		.35		.35
Red Bluff, Cal.....	70	0		.21	.50	
Sacramento, Cal.....	66	2		.11		.11
San Francisco, Cal.....	59		1	.12		.12
Los Angeles, Cal.....	65		1	.07		.07
San Diego, Cal.....	63	0		.07		.00
Yuma, Ariz.....	80	4		.00		.00

* The figures in these columns represent the average daily departure. To obtain the accumulated excess or deficiency of the week these should be multiplied by seven.

FOREIGN.

(Reports received through the Department of State and other channels.)

AUSTRALIA—*Melbourne*.—Month of January, 1892. Population, 490,902. Total deaths, 776, including scarlet fever, 1; influenza, 5; whooping cough, 21; diphtheria, 6; and enteric fever, 16.

Month of February, 1892. Total deaths, 698, including influenza, 4; whooping cough, 14; diphtheria, 12; and enteric fever, 23.

Queensland—*District of Brisbane*.—Month of February, 1892. Population, 93,657. Total deaths, 113, including enteric fever, 2; influenza, 3; diphtheria, 3; and phthisis pulmonalis, 7.

BRAZIL—*Paramaribo*.—Month of March, 1892. Population, 28,221. Total deaths, 83. None from contagious diseases.

CHINA—*Hongkong*.—Month of March, 1892. Estimated population, 151,171. Harbor population, 18,350. Total deaths, 390, including smallpox, 2; diphtheria, 1; influenza, 1; beriberi, 11; and phthisis pulmonalis, 57.

CUBA—*Havana*.—Week ending May 19, 1892. Total deaths, 152, including enteric fever, 9; so-called pernicious fever, 5; croup, 1; and hydrophobia, 1.

Cienfuegos.—Month of April, 1892. Population, 20,000. Total deaths, 59, including enteric fever 2.

FRANCE—*Nantes*.—Month of April, 1892. Population, 127,482. Total deaths, 247, including typhus fever, 6; enteric fever, 31; and diphtheria, 4.

GREAT BRITAIN—*England and Wales*.—The deaths registered in 33 great towns of England and Wales during the week ended May 14 corresponded to an annual rate of 20.4 a thousand of the aggregate population, which is estimated at 10,188,489. The lowest rate was recorded in West Ham, viz, 13.0, and the highest in Wolverhampton, viz, 28.1 a thousand.

London.—One thousand five hundred and ninety-seven deaths were registered during the week, including smallpox, 3; measles, 136; scarlet fever, 25; diphtheria, 24; whooping cough, 66; enteric fever, 7; and diarrhea, 9. The deaths from all causes corresponded to an annual rate of 19.5 a thousand. Diseases of the respiratory organs caused 304 deaths. In greater London 1,996 deaths were registered, corresponding to an annual rate of 18.1 a thousand of the population. In the "outer ring" the deaths included whooping cough 16 and measles 25.

Ireland.—The average annual death rate represented by the deaths registered during the week ended May 14, in the 16 principal town districts of Ireland, was 27.7 a thousand of the population. The lowest rate was recorded in Armagh, viz, 7.0, and the highest in Waterford viz, 40.0 a thousand. In Dublin and suburbs 208 deaths were registered, including enteric fever, 1; influenza, 2; measles, 24; and whooping cough, 3.

Scotland.—The deaths registered in 8 principal towns during the week ended May 14 corresponded to an annual rate of 22.8 a thousand of the population, which is estimated at 1,447,500. The lowest mortality was recorded in Leith, viz, 13.4, and the highest in Glasgow, viz, 27.6 a thousand. The aggregate number of deaths registered from all causes was 635, including measles, 32; scarlet fever, 2; diphtheria, 6; whooping cough, 24; fever, 8; and diarrhea, 8.

ITALY—*Turin.*—Ten days ending April 10, 1892. Population, 328,777. Total deaths, 179, including enteric fever, 4; diphtheria, 2; and phthisis pulmonalis, 40.

JAMAICA.—Week ended April 16, 1892. The health of all the ports of the island is reported as good.

Week ended April 23. The health of the island is good.

MALTA AND GOZO.—March 16 to 31, inclusive. Total deaths, 180, including influenza, 6; enteric fever, 2; and dysentery, 1.

MEXICO—*Guaymas.*—Month of April, 1892. Population, 6,600. Total deaths, 14. None from contagious diseases.

Paso del Norte.—Two weeks ended May 15, 1892. Population, 10,000. Total deaths, 14. None from contagious diseases.

SWITZERLAND—*Lucerne.*—Month of April, 1892. Population, 20,900. Total deaths, 30, including diphtheria, 1.

Zurich.—Month of March, 1892. Population, 91,323. Total deaths, 173, including measles, 13; scarlet fever, 1; diphtheria and croup, 10; whooping cough, 4; typhus fever, 2; and phthisis pulmonalis, 22.

WEST INDIES—*St. Thomas.*—First quarter of 1892. Total deaths, 802, including influenza, 3; enteric fever, 1; and phthisis pulmonalis, 10.

Experimental study in the self-purification of running water.

[Translated for this Bureau from *Le Journal d'Hygiène*, Paris, May 19, 1892.]

A recent issue of the *Annals of Experimental Hygiene* at Rome contains a paper by Dr. Alessandro Serafini on the spontaneous and rapid purification of running water from all deposits received during its passage through the centers of population. Dr. Serafini's observations appear to be in direct agreement with those recorded by the Royal

Commission of London and the report made on the purification of the Seine; also with the chemical and bacteriological analyses made by Schelhaas of the water of the Isar, by Fleck of the Elbe, and by Celli and Scalla of the Tiber. They show that the quantity of organic matter, ammonia and bacteria, carried along by the water diminishes at a short distance from the point at which they are discharged into the stream, while the proportion of products which indicate the process of oxydation, viz, nitrous and nitric acid, increases. The following is a summary of the conclusions drawn by Dr. Serafini from his experimental studies:

1. Aëration by continuously-renewed contact with the air does not prevent the development of microorganisms in running water, and it is not, *per se*, sufficient to accelerate the process of oxydation. Experiment shows that there is no appreciable and constant difference between water in which aëration is constantly renewed by the motion of the current and that in which aëration occurs under the influence of temperature or barometric pressure.

2. The transformation of organic matter takes place so slowly in water that it is extremely difficult to follow the process, either in the general flow of the stream or in any section of it which is made the subject of special analysis. While there is no doubt that nitrification is due to the bacteria in the water, some time must elapse before the process can be recognized, whether the water be flowing or stagnant, deep or shallow.

Light retards the transformation of organic matter by destroying the bacteria which are the essential factors of oxydation.

3. A temperature of 0° or -6° incontestably destroys great numbers of the bacteria and arrests the development of those which survive. For this reason water contains the minimum number of bacteria in winter.

4. In great masses of water a lowering of the temperature of the surrounding atmosphere does not necessarily exercise a destructive influence on microorganisms. This explains the fact, observed in experimental research and in local observation of streams of rapid as well as sluggish current, that a gradual and continuous deposit of bacteria takes place.

5. The rapid diminution of the bacteria discharged into rivers from the sewers of cities is not due to oxydation occurring in the body of water, but to the concurrence of several factors, viz: Sedimentation, dilution, the mechanical action of substances which are first held in suspension in the water and then deposited, the movement and disturbance of the water, low temperature, the superficial filtration which takes place in the bed of the stream, and finally some inherent action of the water itself.

Purification from organic matter and the intermediate products of decomposition, is probably due to sedimentation and the slow and continuous oxydation occurring in the bed of the river. Water flowing over the river bottom dissolves the nitrites and nitrates formed in the zone in which sedimentation takes place. Sedimentation and dilution cause the rapid diminution of organic matter and ammonia, and solution facilitates the liberation of the nitrates and nitrites, the result of this double process being the purification of the water.

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.
Vienna.....	Apr. 9.....	1,406,933	773			1			2	49	23	5
Hamburg.....	Apr. 9.....	570,534	258					5	7	4		
Rome.....	Apr. 16.....	437,419	184							7	4	1
Lyons.....	May 7.....	416,000	159							7		
Munich.....	Apr. 30.....	366,000	191		2				1	5		
Copenhagen.....	May 7.....	326,000	133							6		
Odessa.....	Apr. 16.....	302,000	152			4	3			1		1
Odessa.....	May 7.....	302,000	108		1	3	1				1	
Cologne.....	May 14.....	292,203	135						1	8		1
Dresden.....	May 7.....	286,200	95						1	5		
Rotterdam.....	May 14.....	216,679	95					1	4			
Trinidad.....	Apr. 9.....	189,566										
Trinidad.....	Apr. 16.....	189,566										
Trinidad.....	May 7.....	189,566	49									
Prague.....	Apr. 16.....	183,703	138			2		1		1		
Prague.....	Apr. 23.....	183,703	135			2		2		5		
Frankfort-on-the-Main.....	May 7.....	180,000	83							7		
Trieste.....	May 7.....	158,054	87						1			
Christiania.....	Apr. 16.....	151,130	55						2			
Christiania.....	Apr. 23.....	151,130	74					1				
Nuremberg.....	Apr. 30.....	149,506	84							2		
Stuttgart.....	May 14.....	139,659	56							6		
Bremen.....	May 7.....	126,000	54						1	1		
Havre.....	Apr. 16.....	116,369	62		2							2
Aix-la-Chapelle.....	May 8.....	106,523	49									
Catania.....	May 7.....	111,000	57					1	2			
Gotheuburg.....	May 7.....	105,800	57							1		
Crefeld.....	May 14.....	108,000	78							1		
Zurich.....	Apr. 9.....	91,323	21						5	6	9	1
Zurich.....	May 7.....	91,323	24						5	7	2	6
Cartagena, Col.....	Apr. 16.....	25,000	27				4					
Sagua la Grande.....	Apr. 30.....	18,109	6									
St. George's, Bermuda.....	Apr. 25.....	15,103										
St. George's, Bermuda.....	May 2.....	15,103	2									
Hamilton.....	Apr. 25.....	15,103	1									
Flushing.....	May 14.....	14,000	3									
Guelph.....	May 7.....	10,539	2									
Guelph.....	May 21.....	10,539	4								2	
Port Stanley and St. Thomas.....	Apr. 22.....	10,500										
Tuxpan.....	Apr. 16.....	10,780	7									
Chatham.....	Apr. 30.....	10,000										
Port Sarnia.....	May 7.....	6,600	1									
St. Helena.....	Apr. 1.....	3,700	1									
St. Helena.....	Apr. 8.....	3,700	1									
Clifton.....	Apr. 30.....	3,249										
Clifton.....	May 7.....	3,249										
Amherstburg.....	May 21.....	2,260										
Waubauskene.....	Apr. 30.....	1,000										
Waubauskene.....	May 21.....	1,000										

OFFICIAL :

WALTER WYMAN,

Supervising Surgeon-General Marine-Hospital Service.