

ABSTRACT OF SANITARY REPORTS.

VOL. V.

WASHINGTON, D. C., APRIL 18, 1890.

No. 16.

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UNITED STATES.

SPECIAL REPORTS.

Small-pox in Kentucky—Request for protection by the health authorities of Tennessee.

The secretary of the State board of health of Tennessee, under date of April 11, 1890, addressed a letter to this Bureau announcing that he had official notification from Kentucky of the existence of five cases of small-pox near Marion, Crittenden County, Kentucky, showing also the close connection between that locality by railroad and certain portions of the State of Tennessee, and requesting that action be taken to protect Tennessee from invasion, under the interstate quarantine act approved March 28, 1890. In response to a telegraphic inquiry from this Bureau, the secretary of the State board of health of Kentucky, Dr. J. N. McCormack, replied: "Ten cases under strict control in a section remote from Tennessee."

Surgeon C. S. D. Fessenden, of the U. S. Marine-Hospital Service, at Louisville, Ky., was directed to visit Marion and other portions of Crittenden County, and report details of measures now being taken by the local and State authorities to prevent the spread of the disease.

Small-pox at the Boston quarantine.

The barque *Sarah*, of Boston, arrived from the Azores Islands on the 15th with several cases of small-pox on board, and was towed to Galoupe's Island, where she will undergo quarantine.

The prevalence of small-pox in the Azores has been twice reported by the United States consul at Fayal, and published in abstracts of March 7 and April 4 of the present volume.

Yellow fever at sea—Arrival of vessel at Baltimore, Md.

A newspaper item to the effect that the American ship *A. McCallum*, Captain O'Brien, from Rio de Janeiro, was detained at the Baltimore

quarantine, and that three sailors had died on the passage, was referred to Dr. Geo. H. Rohé, commissioner of health, Baltimore, with request for definite information. In reply Doctor Rohé states, under date of April 7, that the item is about correct. The three sailors were buried at sea, and their bedding, etc., thrown overboard, and other articles in the forecandle hung above deck during the voyage. Upon arrival at the Baltimore quarantine the vessel was cleansed, fumigated, disinfected, and detained. There was no other sickness on board for a month prior to her reaching Baltimore.

Report upon the influenza epidemic at the U. S. Soldiers' Home, Washington, D. C.

Upon request from this Bureau, made to Surgeon-General John Moore, U. S. Army, the following report in relation to the recent epidemic of influenza, as it occurred at the U. S. Soldiers' Home, Washington, D. C., has been furnished :

U. S. SOLDIERS' HOME,
Office of Attending Surgeon,
Washington, D. C., April 5, 1890.

	Number present.	Cases of influenza.	Per cent. affected.	Deaths.	Date of first case.	Date of last case.
Inmates.....	732	80	10.928	0	Jan. 5, 1890	Jan. 29, 1890
Officers.....	5	4	80.000	0	Jan. 2, 1890	Jan. 13, 1890
Civil employes.....	38	14	36.842	0	Jan. 7, 1890	Jan. 20, 1890
Women.....	23	9	39.130	0	Dec. 26, 1889	Jan. 27, 1890
Children.....	21	8	38.095	0	Dec. 28, 1889	Jan. 27, 1890
Total.....	819	115	14.041	0		

From the above it will be seen that the inmates of the Home enjoyed an immunity from the disease, as compared with the other classes of patients at the Home, that is very remarkable, and for which I am unable to suggest any adequate explanation.

It is undoubtedly true that some of the inmates suffering from very light attacks of the influenza did not take the trouble to report at the hospital for treatment, but the number of these can not have been large.

C. C. BYRNE,

Lieut. Col. and Surgeon, U. S. A., Attending Surgeon.

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

ALABAMA—*Mobile*.—Month of March, 1890. Population, 40,000. Total deaths, 67, including phthisis pulmonalis 11.

CALIFORNIA—*Oakland*.—Month of March, 1890. Population, 60,000. Total deaths, 100, including phthisis pulmonalis 14 and enteric fever 5.

Sacramento.—Month of March, 1890. Population, 35,000. Total

deaths, 44, including phthisis pulmonalis, 2; croup, 1; and enteric fever, 1.

San Francisco.—Month of March, 1890. Population, 330,000. Total deaths, 600, including phthisis pulmonalis, 113; croup, 10; diphtheria, 8; enteric fever, 7; measles, 4; whooping-cough, 3; and scarlatina, 1.

COLORADO—*Denver*.—Month of March, 1890. Population, 150,000. Total deaths, 191, including phthisis pulmonalis, 26; croup, 5; diphtheria, 16; enteric fever, 3; measles, 4; and influenza, 4.

ILLINOIS—*Chicago*.—Month of March, 1890. Population, 1,100,000. Total deaths, 2,065, including phthisis pulmonalis, 191; croup, 34; diphtheria, 95; scarlet fever, 38; enteric fever, 103; measles, 2; and whooping-cough, 11.

INDIANA—*Evansville*.—Month of March, 1890. Population, 50,000. Total deaths, 63, including phthisis pulmonalis, 11; croup, 2; influenza, 1; and whooping-cough, 1.

IOWA—*Davenport*.—Month of February, 1890. Population, 33,715. Total deaths, 39, including diphtheria, 4; enteric fever, 1; and phthisis pulmonalis, 3.

Month of March, 1890. Total deaths, 23, including phthisis pulmonalis, 5; diphtheria, 3; and enteric fever, 1.

Des Moines.—Month of March, 1890. Population, 55,000. Total deaths, 45, including phthisis pulmonalis, 2; diphtheria, 6; influenza, 4; and whooping-cough, 1.

Dubuque.—Month of March, 1890. Population, 35,000. Total deaths, 30, including phthisis pulmonalis 11 and croup 1.

KENTUCKY—*Louisville*.—Month ending March 29, 1890. Population, 227,000. Total deaths, 257, including phthisis pulmonalis, 35; diphtheria, 4; scarlet fever, 3; enteric fever, 11; influenza, 1; and whooping-cough, 3.

MASSACHUSETTS—*Fall River*.—Month of March, 1890. Population, 69,000. Total deaths, 135, including phthisis pulmonalis, 17; croup, 3; diphtheria, 1; enteric fever, 3; influenza, 1; measles, 1; and whooping-cough, 3.

MICHIGAN.—Week ended April 5, 1890. Reports to the State board of health, Lansing, from 50 observers, indicate that typho-malarial fever, puerperal fever, dysentery, membranous croup, diphtheria, diarrhœa, and measles increased, and that cholera-infantum, cholera-morbus, typhoid fever (enteric), scarlet fever, inflammation of kidneys, and whooping-cough decreased in area of prevalence.

Diphtheria was reported present at 26 places and scarlet fever at 27 places. Measles increased by 27 per cent., and was reported at 47 places, and enteric fever at 10 places.

MISSOURI—*St. Louis*.—Month of March, 1890. Population, 450,000. Total deaths, 675, including phthisis pulmonalis, 75; scarlet fever, 8; diphtheria, 7; croup, 5; whooping cough, 3; and enteric fever, 6.

NEW JERSEY—*Hudson County*.—Year 1889. Population, 282,254. Total deaths, 6,776, including phthisis pulmonalis, 664; measles, 37; scarlet fever, 152; diphtheria, 390; whooping-cough, 81; enteric fever, 163.

NEBRASKA—*Omaha*.—Month of March, 1890. Population, 125,000. Total deaths, 81, including diphtheria, 4; enteric fever, 2; and la grippe, 1.

Eight cases of diphtheria and 2 cases of scarlet fever were reported during the month.

NEW YORK—*Rochester*.—Month of March, 1890. Population, 130,000. Total deaths, 189, including phthisis pulmonalis, 31; croup, 10; diphtheria, 1; enteric fever, 3; and measles, 3.

OHIO—*Cincinnati*.—Month of March, 1890. Population, 325,000. Total deaths, 582, including phthisis pulmonalis, 74; croup, 3; diphtheria, 34; influenza, 6; measles, 4; scarlet fever, 1; enteric fever, 17; and whooping-cough, 6.

Dayton.—Month of March, 1890. Population, 60,000. Total deaths, 82, including phthisis pulmonalis, 15; diphtheria, 1; and whooping-cough, 1.

TENNESSEE—*Nashville*.—Month of March, 1890. Population, 68,531. Total deaths, 125, including phthisis pulmonalis, 22; diphtheria, 1; enteric fever, 4; and whooping-cough, 1.

Publications received.

Annual report of the board of public affairs of Hamilton, Ohio, year ended March 1, 1890.

Biennial reports of the Mississippi State board of health, 1888-'89.

Report of the medical officer of health, Liverpool, England, 1889.

Annual report of the health officer, Madison, Wis., year ended March, 1890.

Twelfth annual report of the board of health, Fall River, Mass.

Eleventh annual report of the board of health of Atlanta, Ga.

Fourteenth annual report of the health officer to the board of health, Utica, N. Y., 1889.

Report of the State board of health of New Hampshire, volume 8, 1889.

Statistics of the hospitals for the insane, Norway, 1888.

Sanitary statistics of the cities and towns of France and Algeria, 1888.

Rainfall, week ending April 11 1890.

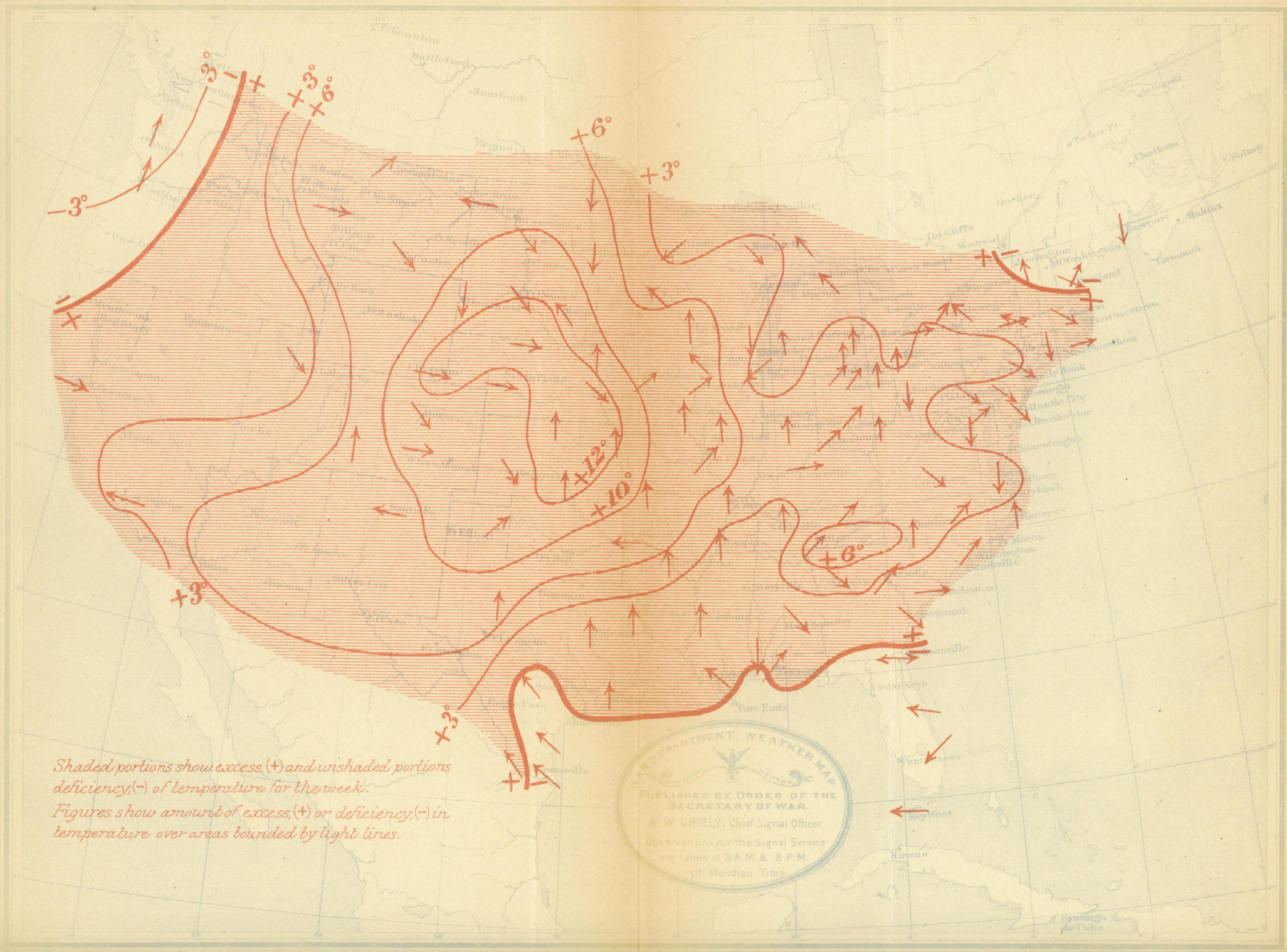
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Shaded portions show excess, (+) and unshaded portions deficiency, (-) in rainfall for the week.
 Figures show, in inches, amount of actual rainfall over areas bounded by light lines.

WAR DEPARTMENT WEATHER MAP
 PUBLISHED BY ORDER OF THE SECRETARY OF WAR.
 A. W. GREELY, Chief Signal Officer
 Observations for the Signal Service are taken at 8 A.M. & 8 P.M.
 75th Meridian Time

*Temperature and Prevailing Direction of Wind, week ending
April 11 1890.*



*Shaded portions show excess, (+) and unshaded portions
deficiency, (-) of temperature for the week.
Figures show amount of excess, (+) or deficiency, (-) in
temperature over areas bounded by light lines.*

U.S. DEPARTMENT WEATHER MAP
PUBLISHED BY ORDER OF THE
SECRETARY OF WAR.
A. W. GREELY, Chief Signal Officer.
Observations for the Signal Service
are taken at 8 A.M. & 8 P.M.
5th Meridian Time.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—																		
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.								
New York, N. Y.....	Apr. 12.....	1,608,119	756																			
Chicago, Ill.....	Apr. 12.....	1,100,000	376																			
Philadelphia, Pa.....	Apr. 5.....	1,064,277	390																			
Brooklyn, N. Y.....	Apr. 12.....	859,612	343																			
Baltimore, Md.....	Apr. 12.....	500,343	184																			
St. Louis, Mo.....	Apr. 5.....	450,000	134																			
Boston, Mass.....	Apr. 12.....	420,000	173																			
San Francisco, Cal.....	Apr. 4.....	330,000	146																			
Cincinnati, Ohio.....	Apr. 12.....	325,000	116																			
New Orleans, La.....	Apr. 5.....	254,000	134																			
Detroit, Mich.....	Apr. 5.....	250,000	70																			
Washington, D. C.....	Apr. 12.....	250,000	90																			
Pittsburgh, Pa.....	Apr. 5.....	240,000	106																			
Pittsburgh, Pa.....	Apr. 12.....	240,000	108																			
Cleveland, Ohio.....	Mar. 22.....	240,000	101																			
Cleveland, Ohio.....	Mar. 29.....	240,000	86																			
Louisville, Ky.....	Apr. 5.....	227,000	*123																			
Louisville, Ky.....	Apr. 12.....	227,000	55																			
Milwaukee, Wis.....	Apr. 12.....	210,000	88																			
Minneapolis, Minn.....	Apr. 5.....	200,000	37																			
Newark, N. J.....	Apr. 5.....	194,938	93																			
Providence, R. I.....	Apr. 12.....	130,000	44																			
Rochester, N. Y.....	Apr. 5.....	130,000	48																			
Indianapolis, Ind.....	Apr. 11.....	129,346	30																			
Richmond, Va.....	Apr. 5.....	100,000	49																			
Toledo, Ohio.....	Apr. 11.....	92,000	27																			
Fall River, Mass.....	Apr. 12.....	69,000	32																			
Nashville, Tenn.....	Apr. 12.....	68,531	28																			
Charleston, S. C.....	Apr. 12.....	60,145	27																			
Manchester, N. H.....	Apr. 12.....	43,000																				
Portland, Me.....	Apr. 12.....	42,000	8																			
Binghamton N. Y.....	Apr. 12.....	35,000	6																			
Yonkers, N. Y.....	Apr. 11.....	31,000	10																			
Altoona, Pa.....	Apr. 5.....	30,000	4																			
Newport, R. I.....	Apr. 3.....	23,000	1																			
Newport, R. I.....	Apr. 10.....	23,000	4																			
Newton, Mass.....	Apr. 12.....	22,011	7																			
Rock Island, Ill.....	Apr. 6.....	16,000	4																			
Pensacola, Fla.....	Apr. 5.....	15,000	5																			

* This number includes 66 whites and 6 colored persons killed by falling buildings from cyclone.

FOREIGN.

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

GREAT BRITAIN—*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 29 corresponded to an annual rate of 21.4 a thousand of the aggregate population, which is estimated at 9,715,559. The lowest rate was recorded in Nottingham, viz, 17.9, and the highest in Manchester, viz, 31.9 a thousand. Diphtheria caused 4 deaths in Hull, 2 in Sheffield, 2 in Manchester, and 4 in Salford.

London.—One thousand five hundred and seventy-one deaths were registered during the week, including measles, 45; scarlet fever, 10; diphtheria, 30; whooping-cough, 101; enteric fever, 7; and diarrhoea and dysentery, 13. The deaths from all causes corresponded to an annual rate of 18.5 a thousand. Diseases of the respiratory organs caused 375 deaths. In greater London 1,959 deaths were registered, corresponding to an annual rate of 17.7 a thousand of the population. In the "outer ring" the deaths included measles, 9; diphtheria, 11; and whooping-cough, 13.

Ireland.—The average annual death rate, represented by the deaths registered during the week ended March 29, in the 16 principal town districts of Ireland, was 31.7 a thousand of the population. The lowest rate was recorded in Lisburn, viz, 14.5, and the highest in Sligo, viz, 67.4 a thousand. In Dublin and suburbs 175 deaths were registered, including measles, 3; enteric fever, 1; whooping-cough, 5; influenza, 2; and diphtheria, 1.

Scotland.—The deaths registered in eight principal towns during the week ended March 29 corresponded to an annual rate of 24.2 a thousand of the population, which is estimated at 1,345,563. The lowest mortality was recorded in Perth, viz, 17.2, and the highest in Glasgow, viz, 28.0, a thousand. The aggregate number of deaths registered from all causes was 627, including measles, 31; scarlet fever, 6; diphtheria, 5; whooping-cough, 26; fever, 4; and diarrhoea, 11.

BRAZIL—*Rio de Janeiro.*—Week ended March 8, 1890. Population, 450,000. Total deaths, 392, including yellow fever, 30; small-pox, 10; enteric fever, 5; and typhus fever, 21. The United States consul says: "It is believed here that the heavy rains which have fallen this month have removed all danger of a yellow fever epidemic during this season. Pulmonary diseases prevail. The sanitary condition of the city is good."

Ceara.—Month of February, 1890. Population, 33,000. Total deaths, 145, including yellow fever 2 and beri beri 4.

CUBA—Havana.—Month of March, 1890. Five hundred and sixty-seven deaths were registered during the month, including yellow fever, 4; so-called pernicious fever, 7; enteric fever, 9; diphtheria and croup, 5; and glanders, 2.

BAHAMAS—Nassau, N. P.—April 5, 1890. City healthy. Weather hot and dry.

DEMERARA—Georgetown.—March 18, 1890. No diseases of a contagious character. A diminution of catarrhal and acute pulmonary diseases.

Action of the soil on pathogenic germs—Montefusco.

[Translated for this Bureau from *La Rivista Internazionale d'Igiene*, Naples, February, 1890.]

Pathogenic germs evidently exist in the soil. The bacilli of tetanus, typhus, and cholera have been observed, and it is probable that the bacillus of tuberculosis, the pneumo-coccus, will be found.

The superficial strata of the earth are extremely rich in pathogenic germs; at a certain depth there is a limit beyond which the number of germs rapidly diminishes until they cease altogether.

In the deep strata of the bacilliferous zone pathogenic species do not exist. Grancher and Deschamps have observed the arrest of the typhus bacillus at a depth of 50 centimeters. In the cultivated superficial strata there are fewer micrococci than bacilli. The bacilli exist in the soil chiefly as spores. Under this form they best resist destructive agents and may remain latent for years, retaining their virulence.

It is probable that the pathogenic bacilli germinate in the soil.

The cholera bacilli form numerous colonies at a depth of 3 metres during the months from August to October; from April to June at a depth of 2 metres there is no development, while at a depth of 1.50 metres the bacillus vegetates. At least 2 per cent. of humidity is necessary for the development of the germs. Soil rich in organic material is most favorable to this development.

Causes of death of the pathogenic germs exist in the soil. The principal cause is exsiccation. Koch and Duclaux have demonstrated that this is especially hurtful to the micrococci, and here, according to Koch, is the explanation of the fact that micrococci are relatively rare on the superficies of the soil. The cholera bacillus dies rapidly under exsiccation. Netter fixes three weeks as the extreme limit at which the exsiccated pneumo-coccus preserves its virulence.

The two most potent causes of destruction which the microbes encounter are the saprophytic bacilli and solar light.

The saprophytic bacilli are in continual strife with the pathogenic microbes and have generally the advantage. The bacillus of tetanus is exceptional and may develop favorably in the presence of other species.

Solar light is injurious to very many bacilli. According to Duclaux it is the most universal means of sanitation, and the most economical and potent to which public or private hygiene can have recourse.

The turning up of the soil liberates pathogenic germs, but when the soil is not disturbed for a long time a colossal germination frequently goes on. Exhumation frees the bacteria long latent in the soil; hence the epidemics that follow the turning up of the ground.

Pathogenic germs leave the earth in many ways to attack men and animals. The soil which adheres to the body, to the feet of animals, and that which is carried by insects disseminates pathogenic germs. Currents of air transport superficial dust and so propagate the spores which resist exsiccation. Water also carries germs.

Ordinarily subterranean waters are on a level with the bacteriological zone. Sometimes this zone is exposed by fissures or by openings made in the earth. The walls of a well are a prolongation of the superficies and are favorable to the life of the germs.

New bacteriological and experimental studies in tetanus.

[Translated for this Bureau from *La Rivista Internazionale d'Igiene*, Naples, February, 1890.]

Some cases of traumatic tetanus treated at Pavia enabled Dr. Sormani to study tetanus from the prophylactic and etiological point of view.

Recognizing the fact that the bacillus of tetanus is anaerobic, he used a method of culture (gelatinized blood-serum) adapted to the anaerobic method. With the collaboration of Dr. Parietti he succeeded in freeing the first cultures from impurities (staphylococci, streptococci, protei, bacillus subtilis, etc.) and obtaining two forms of anaerobic, sporogenic bacilli, which he could not separate in the media employed. Dr. Parietti succeeded with the roll-culture in agar-agar and in an atmosphere of hydrogen in isolating one of the two bacilli from the double culture. This he found to correspond with the *Clostridium fetidum* of Liborius (the saprophyte with oval spores of Rosenbach and the parasite of Bonome), repeated inoculations with which failed to produce tetanus, while the double culture always produced it. This leaves it to be inferred that the other bacillus contains the tetanic potency. Both are mobile. The *B. tetanus* is subtle, of variable length, hairy, sporific, having one rotund spore at the extremity, pin-shaped, has short and rapid oscillation, is anaerobic, specially cultivatable in gelatinized blood-serum.

Rabbits inoculated with these cultures died in from two to four days and frogs in twenty-four hours, with symptoms first of local tetanus, and then of opisthotonus and pleurosthotonus, with excessive reflexes. It is worthy of note that gastro-enteric administration of these cultures remained innocuous. This proves that the digestive tubes were not attacked. The virus was rejected intact, in a state to disseminate infection wherever favorable conditions were present, as in the case of wounds. The tetanic virus does not pass into the lactic secretions.

With regard to the prophylaxis of tetanus, Sormani asserts that in the treatment of wounds or sores liable to impart infection, solutions of sublimate, 3 p. in 1,000, iodoform, and iodol are efficacious.

Professor Bacelli's idea of treating tetanus, especially of the traumatic form, with phenic acid, has been put in practice at Rome. Several cures from this treatment are reported.

MORTALITY TABLE—FOREIGN CITIES.

Cities.	Week ended.	Estimated popula- tion.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping- cough.
London.....	Mar. 22.....	5,758,500	2,083					7	14	31	57
London.....	Mar. 29.....	5,758,500	1,959					7	12	41	54
Paris.....	Mar. 22.....	2,260,946	1,106					9	6	48	35	15
Paris.....	Mar. 29.....	2,260,946	1,167			2		9	6	48	41	10
Glasgow.....	Mar. 29.....	545,678	285					1	2	3	16	15
Warsaw.....	Mar. 15.....	445,770	270			19				13		
Warsaw.....	Mar. 22.....	445,770	251			18				5	5	
Calcutta.....	Feb. 22.....	433,219	267	19		45					2	
Rome.....	Dec. 14.....	409,692	285			1		4		4		
Rome.....	Dec. 21.....	409,692	232					3		2		
Rome.....	Dec. 28.....	409,692	208					3	1	5		
Rome.....	Jan. 4.....	415,498	200					4		5		
Rome.....	Jan. 11.....	415,498	206					4		2		
Rome.....	Jan. 18.....	415,498	285					5		8		
Rome.....	Jan. 25.....	415,498	309					2		3		
Copenhagen.....	Mar. 16.....	307,000	161						3	9		
Edinburgh.....	Mar. 8.....	271,135	120							2	8	8
Edinburgh.....	Mar. 15.....	271,135	108						1	3	10	
Palermo.....	Mar. 22.....	250,000	87							1		
Palermo.....	Mar. 29.....	250,000	105									
Bristol.....	Mar. 29.....	232,248	85									
Rotterdam.....	Mar. 22.....	203,486	110									
Rotterdam.....	Mar. 29.....	203,486	93									
Genoa.....	Mar. 22.....	180,217	98			4	1					
Genoa.....	Mar. 28.....	180,217	93			5	1			2		
Trieste.....	Mar. 22.....	158,054	105							5		
Stuttgart.....	Mar. 29.....	125,510	42							5		
Pernambuco.....	Feb. 25.....	120,000	93			1	1	1	2			
Pernambuco.....	Mar. 4.....	120,000	80			2	1	2	2			
Havre.....	Mar. 22.....	112,074	65							3	1	
Catania.....	Mar. 24.....	109,000	41							1		
Catania.....	Mar. 31.....	109,000	118									
Leghorn.....	Mar. 23.....	103,659	55						3	1		
Leith.....	Mar. 8.....	78,538	43									
Leith.....	Mar. 15.....	78,538	47				1		4			
Mayence.....	Mar. 31.....	65,802	27							2		
Cadiz.....	Mar. 22.....	57,157	58									
Vera Cruz.....	Mar. 27.....	23,800	26									
Gibraltar.....	Mar. 16.....	23,681	11									
Kingston, Can.....	Apr. 4.....	18,284	16									
Kingston, Can.....	Apr. 11.....	18,284	8									
Sagua la Grande.....	Mar. 29.....	15,605	6									
Sagua la Grande.....	Apr. 5.....	15,605	5									
Flushing, Neth.....	Mar. 22.....	12,793	4									
Flushing, Neth.....	Mar. 29.....	12,793	9									
La Guayra.....	Mar. 22.....	7,428	1									
La Guayra.....	Mar. 29.....	7,428	5									

JOHN B. HAMILTON,
Supervising Surgeon-General, Marine-Hospital Service.