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UNITED STATES.

SPECIAL REPORTS.

Small-pox in New Mexico.—Report of Dr. S. S. Herrick, sanitary inspector.

The following report is published in full for the information of all concerned:

SAN FRANCISCO, July 1, 1890.

SIR: Inasmuch as the branch of Government service over which you preside joined in authorizing the inspection work which I have lately completed, it is incumbent on me to make a report to you of the result.

Arriving at El Paso May 28, I found that 29 cases of small-pox, with 6 deaths, had occurred there since its appearance December 14, 1889, all having been promptly sent to the pest-house, except a few who were guarded at home at their own expense. The last case originated April 11.

At Juarez (Paso del Norte) the public records showed 48 deaths, out of a total of 214, as due to small-pox between October 1, 1889, and May 28, 1890. The total number of cases is unknown, but is presumed to have exceeded 200. The population of these two cities is about alike in number, say 11,000 to 12,000. Much of the contrast in small-pox is attributable to characteristics of race, but more is probably due to good sanitary regulations in the American city, and to the efficiency of the health officer, Dr. W. H. Yandell, who gives his whole time to official duties.

On a subsequent visit I learned that a case of small-pox had been sent to the pest-house at El Paso June 2, and that one more death from this cause had occurred at Juarez June 5.

At Anthony Station, 20 miles north of El Paso, there was one case June 19, and three deaths from small-pox had occurred earlier in the season, all Mexican children. My informant stated that there were then several cases at La Union, a Mexican hamlet, 7 miles west, across the river.

Las Cruces is 44 miles by railway north of El Paso. A man traveling on horseback from the latter place reached here December 20, 1889, in the first stage of small-pox, and from him the present epidemic took origin. According to custom, Mexican women visited him, taking along their young children in order to give them the disease. The town has an estimated population of 2,500, two-thirds Mexican, and is not incorporated. The county commissioners appointed one of the

resident physicians health officer after the disease became epidemic, but he declined the office, since the law allows no compensation. The position was assumed May 1 by a public-spirited citizen, but his work has been confined to putting up the yellow flag at infected houses, burning infected articles, and vaccinating those who would consent. Public money has been used only for the purchase of vaccine virus. Bovine virus has been used almost exclusively, and it is believed to fail in at least half the trials.

Mesilla is an unincorporated town, 2 miles from the railway and 3 miles from Las Cruces. Its population is supposed to be 3,000, and is nearly all Mexican. Small-pox appeared there about April 15, undoubtedly from intercourse with Las Cruces. The mode of dealing with the disease is the same as just described. The total number of cases at either town is unknown, and the same is true of the deaths.

My first visit to Las Cruces was made May 29, and another on June 19. At the former date 16 cases were known there, and 10 cases at the latter. I should judge that at least 200 cases have occurred altogether, for 60 cases were found May 1. I visited Mesilla June 19, and learned that 16 cases were under observation that day. My informant gave the total number of recognized cases as 47, but, in my opinion, many more never came to his knowledge. The mortality was small, only one having died in June.

Socorro is a railway town, 178 miles north of El Paso, of some 3,000 inhabitants, about half Mexican. I learned that small-pox appeared there in December, 1887, and continued almost or quite continuously till the end of April, 1890. Its final disappearance was not long subsequent to the establishment of a pest-house. Most of the cases were Mexican children; the total number and the deaths unknown.

At San Antonio, 10 miles south of Socorro, an American man was said to be sick of small-pox June 20.

I learned that 2 cases had occurred just south of the limits of Albuquerque about the beginning of May, 1890, and 8 or 10 cases during the past season at Bernalillo, a railway town 16 miles north of Albuquerque.

Inquiries made at Deming, N. Mex., elicited trustworthy information of the existence of small-pox at Hillsborough, county seat of Sierra County, 18 miles from the terminus of a branch line of railway; also at Cañada Alamosa and Cuchillo, both Mexican towns, the latter 25 and the former 43 miles from Engle Station, which is 113 miles north of El Paso.

At Benson, Ariz., junction of the Southern Pacific Railway and one running south into Mexico, I learned that 6 cases of small-pox occurred in December and January last. Vigorous measures limited the disease to two houses.

The concurrent testimony of physicians in the valley of the Rio Grande indicates that small-pox is almost a constant companion of Mexicans aggregated in towns, and a frequent visitor of rural communities; in this respect resembling measles and whooping-cough in the older States of our Union. Examination of the sanitary legislation of New Mexico shows that incorporated towns have ample power to deal with contagious diseases, but elsewhere compensation is not allowed to health officers. This is a fatal defect, to which is due the continuance of small-pox at Las Cruces and Mesilla, and the probability of its indefinite spread. The defect may, and undoubtedly will, be in time reme-

died by appropriate legislation, but, meanwhile, small towns and rural communities are almost helpless.

In my judgment, the occasion calls urgently for the services of a skilled sanitarian, with aptitude for persuading the authorities to appropriate, and citizens to contribute, funds for sustaining a pest-house for Las Cruces and Mesilla and meeting other necessary expenses. It is, of course, important that the work of control should not be delayed, so that the epidemic may be suppressed before the return of cool weather.

Respectfully submitted.

S. S. HERRICK, M. D.

To the SURGEON-GENERAL, U. S. MARINE-HOSPITAL SERVICE.

Vessel from Valencia, Spain, bound for Tybee, Ga.—The United States consul at Barcelona, Spain, writes as follows, under date of July 5, 1890 :

SIR : Yesterday my agent at Grao de Valencia issued a bill of health, on which he noted the fact that Asiatic cholera exists in the province of Valencia, to the German bark, *Elena*, of which Fred Voss is the master, and which sails to-day for Tybee, Ga.

HERBERT W. BOWEN,
United States Consul.

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

CALIFORNIA—*Sacramento*.—Month of June, 1890. Population, 30,000. Total deaths, 23, including phthisis pulmonalis, 5, and diphtheria, 1.

COLORADO—*Denver*.—Month of June, 1890. Population, 150,000. Total deaths, 238, including phthisis pulmonalis, 28 ; croup, 6 ; diphtheria, 12 ; and enteric fever, 7.

ILLINOIS—*Chicago*.—Month of June, 1890. Population, 1,100,000. Total deaths, 1,642, including phthisis pulmonalis, 131, croup, 13 ; diphtheria, 40 ; scarlet fever, 15 ; enteric fever, 107 ; measles, 6 ; and whooping-cough, 11.

GALESBURGH.—Month of June, 1890. Population, 17,000. Total deaths, 12, including phthisis pulmonalis, 2.

INDIANA—*Evansville*.—Month of June, 1890. Population, 50,000. Total deaths, 99, including phthisis pulmonalis, 7 ; enteric fever, 3 ; whooping-cough, 1 ; and scarlet fever, 2.

IOWA—*Dubuque*.—Month of June, 1890. Population, 40,000. Total deaths, 32, including phthisis pulmonalis, 1.

KENTUCKY—*Louisville*.—Month of June, 1890. Population, 227,000. Total deaths, 301, including phthisis pulmonalis, 26 ; diphtheria, 2 ; enteric fever, 8 ; and measles, 2.

MASSACHUSETTS—*Fall River*.—Month of June, 1890. Population, 69,000. Total deaths, 97, including phthisis pulmonalis, 22 ; croup, 2 ; and whooping-cough, 1.

MICHIGAN.—Week ended July 5, 1890. Reports to the State board of health, Lansing, from 66 observers indicate that cerebro-spinal meningitis, membranous croup, whooping-cough, scarlet fever, pneumonia, cholera-morbus, inflammation of bowels, pleuritis, and remittent fever increased, and that typho-malarial fever, typhoid fever, and inflammation of brain decreased in area of prevalence.

Diphtheria was reported at 20 places; scarlet fever at 16 places; enteric fever at 6 places; and measles at 37 places.

Detroit.—Month of June, 1890. Population, 230,000. Total deaths, 282, including phthisis pulmonalis, 29; croup, 4; diphtheria, 10; enteric fever, 2; measles, 9; whooping-cough, 1; scarlet fever, 5; and varicella, 1.

Grand Rapids.—Month of June, 1890. Population, 80,000. Total deaths, 54, including phthisis pulmonalis, 5, and croup, 1.

NEW YORK—*Rochester*.—Month of June, 1890. Population, 130,000. Total deaths, 146, including phthisis pulmonalis, 24.

OHIO—*Dayton*.—Month of June, 1890. Population, 60,000. Total deaths, 102, including phthisis pulmonalis, 9; diphtheria, 1; and enteric fever, 1.

TENNESSEE—*Nashville*.—Month of June, 1890. Population, 68,531. Total deaths, 79, including phthisis pulmonalis, 14; croup, 1; enteric fever, 4; and whooping-cough, 2.

TEXAS—*San Antonio*.—Month of June, 1890. Population, 50,000. Total deaths, 92, including phthisis pulmonalis, 10, and enteric fever, 4.

Publications received.

Annual report of the board of health of the city of Mobile, Ala., 1889.

Temperature and precipitation, week ending July 12, 1890.

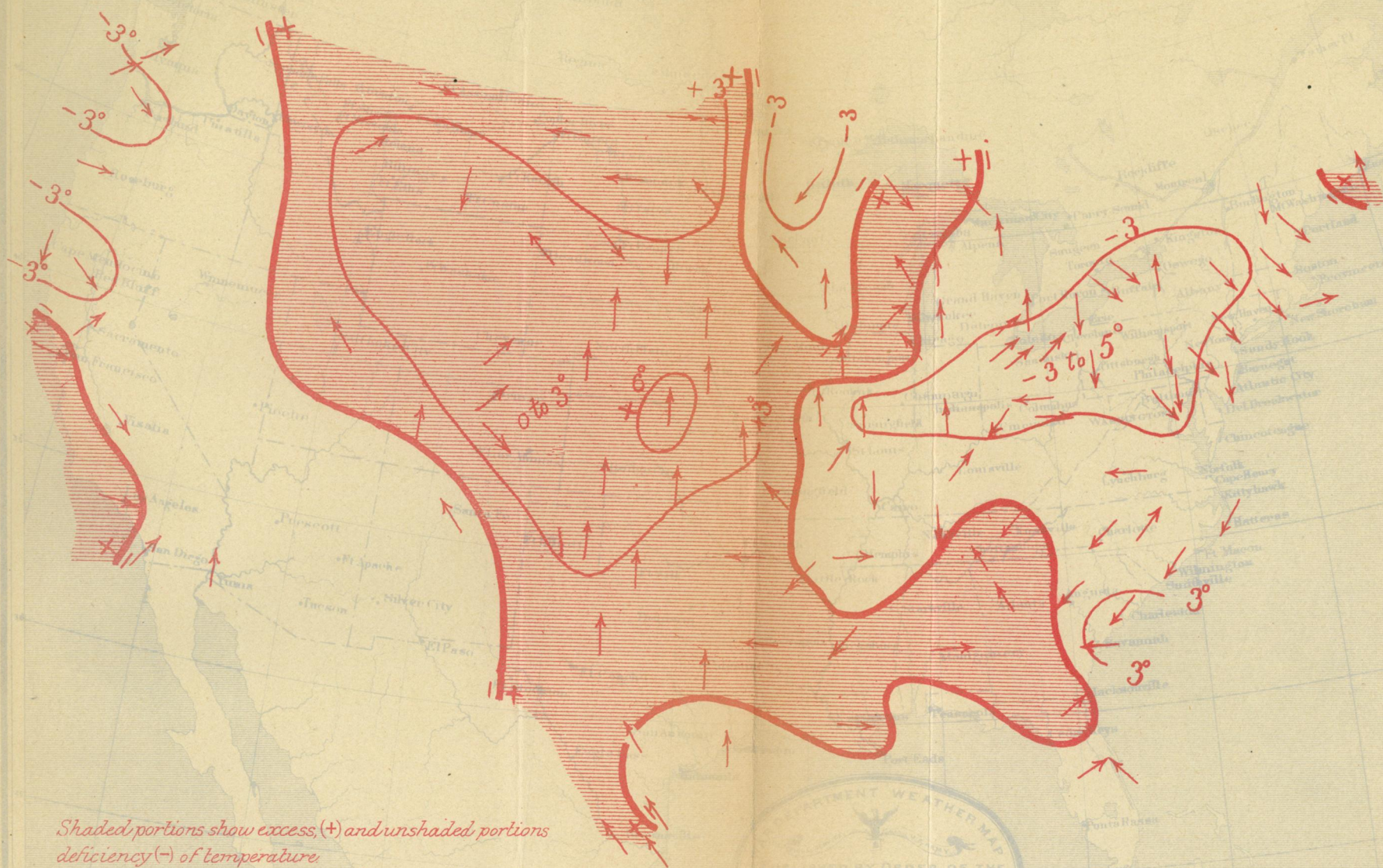
[Received from the Signal Office, War Department.]

TEMPERATURE.

The week ending July 12 has been cooler than usual generally throughout the northern States east of the Mississippi and on the south Atlantic coast, while it was slightly warmer in the Gulf States, and decidedly warmer over the eastern slope of the Rocky Mountains and over the northern Rocky Mountain district, including the country as far east as the Missouri valley. It was relatively cool on the north Pacific coast and in northern California, while it was slightly warmer than the average for the season on the southern and central California coasts.

The thermal conditions for the season from January 1 to July 12 remain substantially as reported in the bulletin for the previous week, except that the deficiency in temperature previously existing in the

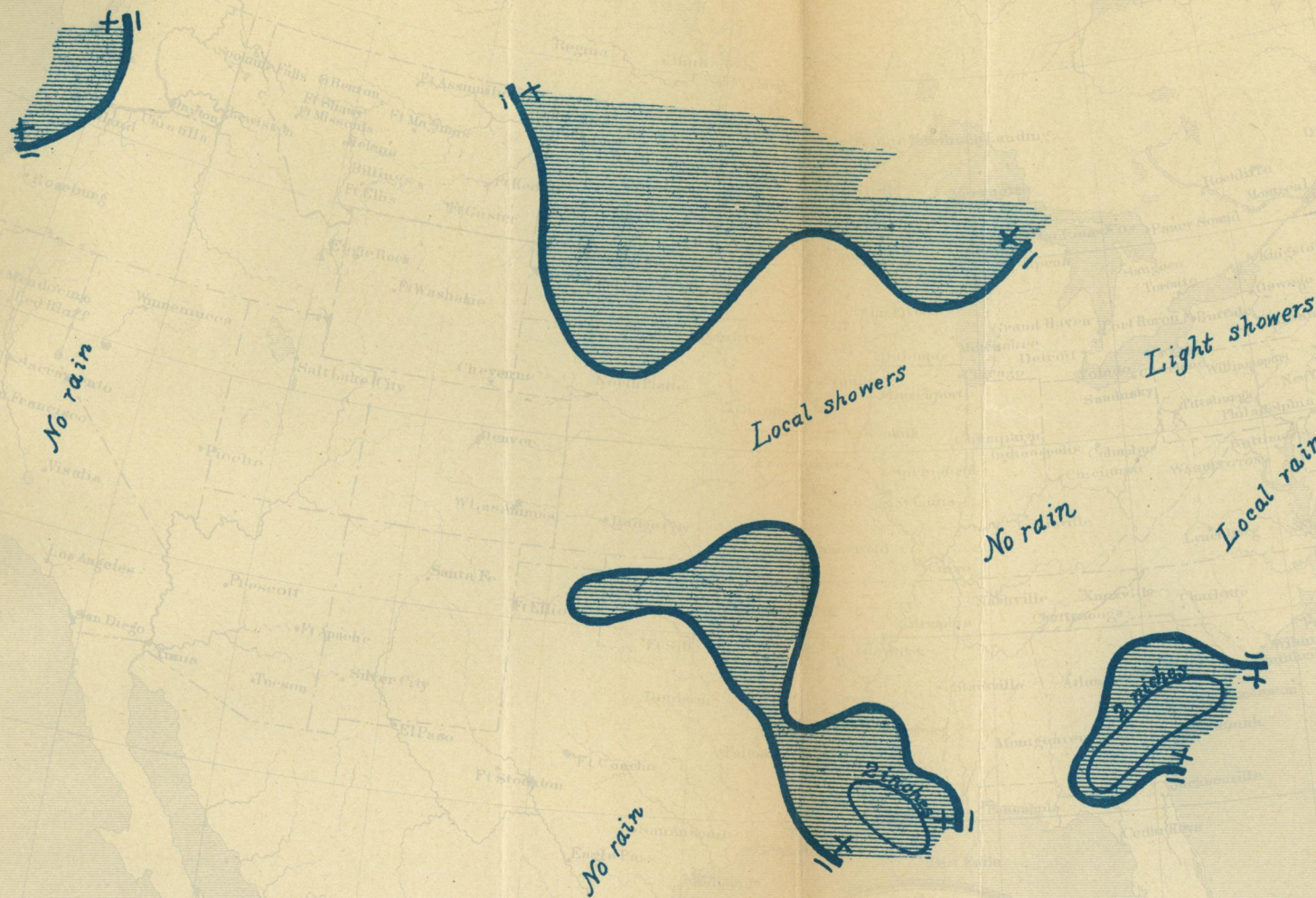
*Temperature and Prevailing Direction of Wind, week ending
July 11th 1890.*



*Shaded portions show excess (+) and unshaded portions
deficiency (-) of temperature*

*Figures show amount of excess (+) or deficiency (-) in
temperature over areas bounded by light lines.*

Rainfall, week ending July 11th. 1890.



*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.*



Missouri valley has been slightly reduced. The recent high temperature has forced the growth of crops in the central valleys, where about the normal seasonal conditions prevail. Throughout the cotton region the crops are growing rapidly, and the season, which was previously from one to two weeks late, is now but slightly retarded.

PRECIPITATION.

There was less than the usual amount of rain over the greater portion of the country east of the Rocky Mountains during the past week ; the only sections reporting an excess of precipitation were from Lake Superior westward over the Dakotas, eastern Georgia, southern portions of South Carolina, Louisiana, southern Mississippi, and western Arkansas. Well-distributed showers occurred generally in the east Gulf, south Atlantic States, and the lower Lake region. Very light showers occurred in New England and the middle Atlantic States, and from Ohio westward to Iowa, while drought continues in the lower Ohio and lower Missouri valleys. There was a slight excess of rain-fall on the north Pacific coast.

The rain-fall for the season continues in excess generally throughout the Mississippi and Ohio valleys and the Lake region, and on the Pacific coast north of the thirty-fifth parallel. In Minnesota, the Dakotas, and northern Nebraska the seasonal rain-fall generally exceeds 90 per cent. of the normal, but over the greater portion of Iowa, Kansas, eastern Nebraska, and northwest Missouri the seasonal rain-fall amounts to less than 70 per cent. of the normal. It also amounts to generally less than 70 per cent. throughout the south Atlantic States, but the recent rains over that section have been favorable for growing crops.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

[illegible]

FOREIGN.

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

GREAT BRITAIN—Ireland.—The average annual death rate, represented by the deaths registered during the week ended June 28, in the 16 principal town districts of Ireland, was 21.1 a thousand of the population. The lowest rate was recorded in Armagh, viz, 0.0, and the highest in Newry, viz, 49.2 a thousand. In Dublin and suburbs 152 deaths were registered, including measles, 4; enteric fever, 4; whooping-cough, 4; and typhus, 1.

Scotland.—The deaths registered in eight principal towns during the week ended June 28 corresponded to an annual rate of 20.6 a thousand of the population, which is estimated at 1,345,563. The lowest mortality was recorded in Paisley, viz, 14.7, and the highest in Glasgow, viz, 23.5 a thousand. The aggregate number of deaths registered from all causes was 534, including measles, 26; scarlet fever, 3; diphtheria, 6; whooping-cough, 33; fever, 2; diarrhoea, 10; and croup and laryngitis, 4.

FRANCE—Rouen.—*Sanitary report for the month of May, 1890.*—The following is furnished by the United States consul:

The sanitary condition of Rouen remains about stationary at present. It is not a healthy place. The bad system of drainage, the humidity and changeableness of the climate favor malarial and chest diseases. The deaths in the month of May, 1890, were the same as in the corresponding month of the year 1889.

In April there had been 282 deaths and 248 births; in May the deaths numbered 273 and the births 239, the same difference of 34 of excess of deaths over births occurring in the month of May, 1889. The great changes of temperature in the month of May were disastrous to those affected by pulmonary diseases.

Consumption caused 47 deaths, and bronchitis, pneumonia, and bronchial pneumonia 34 deaths. The mortality was about as usual among young children; there were 66 deaths of infants under a year old, of whom 26 were from intestinal diseases, such as diarrhoea, gastro-enteritis, or atrepsia.

The principal causes of death were, phthisis, 47; pneumonia, 24; bronchitis, 10; diarrhoea, 29; tumors, 18; cerebral congestion, 13; diseases of the heart, 14; congenital debility, 17; senility, 11. The population of Rouen is about 105,000.

Nice.—The United States consul informs the Department of State, under date of June 20, 1890, that a three days' quarantine has been declared by that port against all vessels coming from Spain, on account of the cholera there prevailing.

SPAIN—Cholera.—The following dispatch has been received by the Secretary of State from the United States chargé d'affaires at Madrid, dated June 28:

The foreign office has ceased issuing daily health bulletins. The

Madrid papers of yesterday were contradictory in their reports, but this morning are unanimous in their opinion that the epidemic is increasing. The most stringent quarantine and examinations are carried out here against travelers and goods from the Valencia district. The weather is unusual throughout Spain for the time of the year, being very hot and sultry. The better classes of Madrinese society are leaving Madrid in large numbers.

The United States consul at Barcelona, under date of July 5, reports as follows concerning the infected districts:

The cholera is slowly spreading. Two cases occurred yesterday at Benifayo and Vallidigua, and 1 death. In Gandia there were 10 new cases and 8 deaths. The city of Valencia enjoys good health.

Denia—Cholera.—The United States vice-consul at Denia telegraphs the Department of State, under date of July 15, that cholera has appeared at Denia. This town is in the province of Alicante, on the Mediterranean, adjoining the province of Valencia.

Barcelona—Disinfection of wells.—The United States consul furnishes the following:

JULY 5, 1890.

The mayor of this city issued an order yesterday, of which the following is the translation:

"The majority of the wells in this city are in a notoriously bad condition; infected more or less through negligence, or owing to filtrations, they are a constant menace to the public health. It is advisable, consequently, although not because of any unusual circumstance—for the sanitary condition of Barcelona fortunately leaves nothing to be desired—that means of a general character be adopted, in this particular, of sufficient efficacy to prevent the miasmatic centers produced by said wells from being converted into nurseries of infectious diseases, as they might easily be.

"With that object in view, and in conformity with the request of the board of health, I order:

"First. That within 48 hours of the publication of this notice all the wells, without exception, be disinfected, by throwing into them quicklime, from 5 to 10 kilograms, according to circumstances.

"Second. When such disinfection has taken place, and within 8 days thereafter, the wells must be completely cleansed, and then within 3 days thereafter disinfected anew, by the aforesaid means, to wit, by throwing into them from 5 to 10 kilograms of quicklime.

"Third. The wells not used, or whose waters remain in a bad state after having been treated in the manner prescribed, must be hermetically sealed, by filling them with earth, and covering them with an arched mud wall or a wooden lid, strong and perfectly adjusted, for doing which work there will be an extra allowance of 2 days.

"Fourth. Rigorous measures will be adopted to oblige those that are slow to comply with these directions to perform their duty."

DEMERARA—*Georgetown.*—Month of April, 1890. Population, 54,000. Total deaths, 185, including phthisis pulmonalis, 29; fevers, 18; diarrhoea, 14; and dysentery, 19.

On the structure of the bacteria.

[Translated for this Bureau from the "Annales de l'Institut Pasteur," Paris, April, 1890.]

Dr. Bütschli, of Leipsic, has formulated a new theory of the organization of the bacteria, based on the results of a series of comparative experiments, according to which the structure of these organisms consists of a nucleus covered with an extremely thin layer of cytoplasm, or else simply inclosed in a protoplasmic membrane. The first indications of such a structure were found on two large species of bacteria native to sulphur water and classed with the lower flagellæ. Careful examination shows these organisms to be covered externally with a comparatively solid membrane, which is readily isolated by pressure or by treatment with suitable re-agents. Dr. Bütschli considers this external membrane to represent a purely protoplasmic production, chemically differentiated. The cell contents consist of a thin wall layer and a central body, which is ordinarily colorless, but which imbibes coloring matter much more strongly than the surrounding parts. The structure of this body exhibits marked characteristics. It consists of an alveolate tissue containing a liquid, in which are small, disseminated grains, which are shown by examination to be identical with those described by Ernst as nucleus formations of the bacteria.

According to Dr. Bütschli, it is the nucleus and not the protoplasm which is to be considered as the essential part of an organic cell. In the history of cellular evolution, cells, consisting simply of a nucleus, similar to the bacteria, were the earliest manifestations of life in the organic world, protoplasm being a later arrival.

Mortality from phthisis in Switzerland.

[Translated for this Bureau from the *Berliner Klinische Wochenschrift*, May 26, 1890.]

Statistics of mortality in Switzerland for the decade from 1876 to 1886 show—

1. That phthisis is endemic in Switzerland, no canton being exempt from it.
2. That mortality from phthisis decreases with altitude, but not in the same proportion.
3. That the death-rate from phthisis increases in direct proportion to the number of the manufacturing population.
4. That at the same altitude the manufacturing cantons show a considerably higher death-rate than the agricultural.
5. That with an equal manufacturing population mortality is somewhat less in the high than in the low land cantons.

Cholera in Spain.

[Translated for this Bureau from an article by Dr. de Pietra Santa in *Le Journal d'Hygiène*, Paris, July 3, 1890.]

While attention has been directed to Mesopotamia and Persia, and while southeastern Russia has been the object of sanitary precautions,

a cholera epidemic has broken out in the province of Valencia, Spain. It showed itself on the 13th of May last at Puebla de Rugat, a village of 700 inhabitants. The disease can not have been imported, the village being remote from the sea-board and having no suspicious outside communication. It is undoubtedly a local epidemic, caused, it is asserted, by the turning up of earth in the vicinity of a sewer. It will be remembered that in 1884 and 1886 Valencia was infected with cholera. The present epidemic is probably, therefore, a fresh outbreak of the former epidemic.

From May 13 to June 15 one hundred persons were attacked; of these twenty died.

At Montechelvo there were 7 deaths out of 14 cases. The inhabitants left the town and the disease died out. One case is reported at Valencia and one death at Albaida.

The latest information received is that sanitary cordons have been placed around the infected localities, and that two-thirds of the population of these places have fled. It has been proposed to burn the earth infected by the sewers, an excellent means of disinfection when it can be effectively practiced. The quarantine applied in the sea-ports of the provinces against outside communication would seem an unnecessary stringent measure.

The cholera epidemic of 1884 was especially severe in the province of Alicante. Valencia was visited that year by the epidemic, but only to the extent of 300 cases. In 1885, according to official statistics, there were more than 300,000 cases of cholera in Spain and more than 100,000 deaths, of which 21,612 occurred in the province of Valencia. It is also known that cholera was observed in Spain up to the beginning of the year 1886.

The following sanitary facts may not be without importance in this connection:

The city of Valencia has no system of cess-pools. Private drains empty directly into immense sewers, constructed by the Moors hundreds of years ago, and which it is impossible to flush in a dry, warm country which has a slender water supply. Many of the houses are ill-ventilated, ill-lighted, of bad construction, and with slight communication with the outer air. It was in such localities that the greatest number of cholera cases were observed during the epidemic of 1885.

It is much to be desired that Spain should abandon the effete system of quarantine, which does more harm than good and which is equally opposed to sound scientific and humanitarian principles.

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.
Paris	June 28.....	2,260,945	865	.....	.....	1	.....	9	12	33	61	13
Liverpool.....	June 21.....	613,463	258	.....	.....	.....	.....	.....	15	12	27	4
Palermo.....	June 28.....	250,000	97	.....	.....	.....	.....	1	.....	.....	.....	.....
Lisbon.....	May 3.....	242,297	116	.....	.....	4	.....	.....	.....	12	1	.....
Lisbon.....	May 10.....	242,297	149	.....	.....	4	.....	1	1	3	3	.....
Antwerp.....	June 21.....	232,418	81	.....	.....	.....	.....	1	.....	.....	.....	3
Havana.....	July 5.....	200,000	172	.....	12	.....	.....	8	.....	.....	.....	.....
Genoa.....	June 28.....	180,335	71	.....	.....	3	1	.....	1	.....	.....	.....
Havre.....	June 28.....	112,074	71	.....	.....	.....	.....	3	.....	.....	3	2
Leghorn.....	June 29.....	103,659	46	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zurich.....	June 14.....	91,323	20	.....	.....	.....	1	.....	1	.....	.....	1
Zurich.....	June 21.....	91,323	33	.....	.....	.....	10	.....	6	9	.....	4
Messina.....	June 30.....	79,971	34	.....	.....	.....	.....	1	.....	3	1	.....
Merida.....	June 21.....	45,000	32	.....	1	.....	.....	.....	.....	.....	.....	.....
Merida.....	June 30.....	45,000	40	.....	3	.....	.....	.....	.....	.....	.....	.....
Cienfuegos.....	July 7.....	40,655	21	.....	3	.....	.....	.....	.....	.....	.....	.....
Alicante.....	June 28.....	40,000	6	.....	.....	.....	1	1	.....	4	.....	.....
Cardenas.....	July 7.....	25,000	25	.....	3	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande.....	July 5.....	15,605	10	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Sarnia, Ont.....	July 5.....	6,420	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clifton, Ont.....	July 12.....	3,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prescott, Ont.....	July 10.....	2,988	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,

Supervising Surgeon-General, Marine-Hospital Service.