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TREASURY DEPARTMENT,
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Abstract of Domestic and Foreign Sanitary Reports received during the week ended December 20, 1889, published in accordance with section 4, Act of Congress, approved April 29, 1878.

UNITED STATES.

Steam disinfecting-chambers.

The following are the specifications for the steam disinfecting-chambers about to be constructed for the United States Quarantine Station, Angel Island, San Francisco Bay. The drawings, to which the specifications refer, may be seen in the Annual Report of the Marine-Hospital Service, 1889. These plans have been developed from the ideas first promulgated by Dr. Joseph Holt, formerly president of the State board of health of Louisiana, and from the improvements made by Dr. C. P. Wilkinson, the present president of the same board. The principle involved, however, has recently been published in a description of Washington Lyon's steam-disinfector, on page 420 of "Hygiene and Public Health," by Louis C. Parkes, M. D., of London:

There will be three disinfecting-chambers, consisting of jacketed cylindrical shells, 7 feet interior diameter, 40 feet long, with doors at each end.

The construction of these chambers is fully shown on miscellaneous drawing No. 224. The inside and outside shell of jacket to be constructed of $\frac{3}{8}$ -inch thick C. H. No. 1 boiler-iron, of an ultimate tensile strength of 50,000 pounds to the square inch of section, and showing a reduction of area at fracture of 50 per cent. when tested in specimens of the shapes and sections required by the regulations of the United States Board of Supervising Inspectors of Steam-Vessels.

The sheets of the shells to be as large as possible and as indicated on the drawing, each section of the shells preferably to consist of two sheets only. The seams to be riveted with $\frac{3}{8}$ -inch diameter rivets, spaced $1\frac{1}{2}$ inch from centers, and driven without the use of a button set. All horizontal seams to be double-riveted staggered. Holes may be drilled or punched, but in no case must a drift-pin be used to bring holes fair.

All seams to be split and calked inside, and chipped and calked outside of shells, calking to be done with a blunt tool square driven.

The inner and outer shell at each end of chambers to be properly riveted to solid faced and turned wrought-iron rings, as shown. The latter to be grooved to receive head of doors. The shells are also to be held apart and stayed by $\frac{3}{4}$ -inch diameter stay-bolts, riveted as indicated by the drawings.

The doors to be constructed of same thickness of metal as shells of chamber, and riveted to solid turned and faced wrought-iron rings, provided with proper head, as indicated.

Each door is also braced by a number of radial and circular braces of $2\frac{1}{2}$ by $\frac{1}{2}$ -inch iron properly riveted on, as shown by the drawing.

Heavy cast-iron hinges to be constructed in accordance with the drawing and properly riveted on.

In opening and closing the doors of the chambers the weight of the former is partly carried by rollers, constructed as shown, and moving on a quadrant iron track, 2 by $\frac{3}{8}$ inches, secured firmly to floors in the required positions.

Each door to be closed by twelve 1-inch diameter screws, with handle secured in sleeve-nuts with proper fork-plates. Each bolt and nut with fork-plates to be swinging, and secured with 1-inch diameter bolt to hinge-plate, 4 feet long, 3 inches wide, and $\frac{5}{8}$ inch thick, securely riveted to outer shell of chamber. The entire construction of closing the doors to be as shown by the details on the drawing.

The ground-bars for bolts, tightening doors, to be forged to ends of door-braces in a first-class manner. The joints of doors and chambers to be made perfectly steam-tight, with $\frac{1}{2}$ -inch thick "Jenkins Bros." patent packing secured to face of grooved wrought-iron rings of chambers in a proper manner. The packing to cover entire exposed face of each ring.

The hexagonal framing inside of chambers to be of fir or spruce, 3 by 8 inches, spaced as shown, cut segmental to fit inner lining of chambers, mortised and tenoned one into the other. The slats on segments to be fir or spruce, 1 inch thick, $2\frac{1}{2}$ inches wide, except on lower segment, where they will be $1\frac{1}{2}$ inches thick, 3 inches wide, all secured to segments with composition nails, the ends of slats to butt on the center of segments; the slats on upper segments to be furnished with tinned hooks, as may be directed by the superintendent.

The disinfecting-chambers to rest upon cast-iron saddles, six to each chamber, of design and dimensions shown.

Each chamber is also to be provided with a high-grade thermometer, arranged in nickel-plated brass open casing for protection.

The thermometers must be so attached as to indicate the temperature existing in each chamber.

The steam supply and return pipes to be of the sizes noted, and so arranged with steam-gauges, valves, safety-valves, and pressure-regulators, as shown on the drawing, so that steam from the boiler can be supplied to the jackets of chambers or the chambers themselves, as desired. The pipe-connections with the chambers must be made in a first-class and workman-like manner.

Reports of States, and Yearly and Monthly Reports of Cities.

ALABAMA—*Mobile*.—Month of November, 1889. Population, 40,000. Total deaths, 72; including enteric fever, 1.

CALIFORNIA.—Reports to the State board of health, Sacramento, for the month of November, 1889, from 104 localities, with an estimated

population of 884,400, give the number of deaths as 992, which is a percentage of 1.17+ per thousand in the month, or an annual mortality at the rate of 14.04+, which is a remarkably small death-rate, and indicates a most favorable condition of the public health. Consumption is credited with causing 156 deaths, or little less than one-sixth of the total mortality of the State for the month. The deaths included whooping-cough, 4; diphtheria and croup, 49; scarlet fever, 4; and enteric fever, 40. During the earlier part of the month disorders of the bowels seemed generally to prevail, but after the excessive rain-fall in the latter part of November, diarrhœal disorders were not noticed so frequently as diseases of the respiratory system, which prevailed in quite a number of localities. Diarrhœa and dysentery were reported from 23 places; small-pox in 1 place; measles in 4 places; scarlet fever in 8 places; whooping-cough in 4 places; enteric fever in 29 places; and diphtheria and croup in 25 places. In Gold Run, Placer County, there has been quite an epidemic of diphtheria, which Dr. Miner attributes to the bad sanitary condition of the town and the neglect of sanitary precautions in isolating those attacked.

Oakland.—Month of November, 1889. Total deaths, 59; including diphtheria, 2; enteric fever, 3; and scarlet fever, 2.

Sacramento.—Month of November, 1889. Population, 35,000. Total deaths, 29; including croup, 1; diphtheria, 1; and enteric fever, 3.

GEORGIA—*Savannah.*—Month of November, 1889. Population, 57,000. Total deaths, 76; including croup, 2; diphtheria, 1; and enteric fever, 1.

ILLINOIS—*Galesburg.*—Month of November, 1889. Population, 17,000. Total deaths, 26; including diphtheritic croup, 9.

Peoria.—Month of November, 1889. Population, 40,000. Total deaths, 46; including enteric fever, 1.

IOWA—*Keokuk.*—Month of November, 1889. Population, 16,000. Total deaths, 20; including croup, 1; and diphtheria, 4.

KENTUCKY—*Louisville.*—Month of November, 1889. Population, 227,000. Total deaths, 190; including croup, 3; diphtheria, 10; scarlet fever, 4; and enteric fever, 11.

MASSACHUSETTS—*Worcester.*—Month of November, 1889. Population, 82,000. Total deaths, 114; including croup, 1; diphtheria, 8; and enteric fever, 1.

MICHIGAN.—Week ended December 7, 1889. Reports to the State board of health, Lansing, from 52 observers, indicate that inflammation of brain, cerebro-spinal meningitis, cholera morbus, consumption of lungs, diphtheria, intermittent fever, inflammation of kidney, measles, and whooping-cough increased, and dysentery, remittent fever, typho-

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 November 30 corresponded to an annual rate of 19.0 a thousand of the aggregate population, which is estimated at 9,555,406. The lowest rate was recorded in Norwich, viz, 11.6, and the highest in Plymouth, viz, 32.0 a thousand. Diphtheria caused 6 deaths in Salford, 2 in Liverpool, 3 in Plymouth, and 2 in New Castle-upon-Tyne.

London.—One thousand four hundred and forty-eight deaths were registered during the week, including measles, 18; scarlet fever, 19; diphtheria, 33; whooping-cough, 44; enteric fever, 15; and diarrhoea and dysentery, 12. The deaths from all causes corresponded to an annual rate of 17.4 a thousand. Diseases of the respiratory organs caused 345 deaths. In greater London 1,876 deaths were registered, corresponding to an annual rate of 17.3 a thousand of the population. In the "outer ring" the deaths included measles, 6; scarlet fever, 7; diphtheria, 9; and whooping-cough, 6.

Ireland.—The average annual death rate, represented by the deaths registered during the week ended November 30, in the 16 principal town districts of Ireland, was 26.6 a thousand of the population. The lowest rate was recorded in Newry, viz, 10.5, and the highest in Kilkenny, viz, 50.7 a thousand. In Dublin and suburbs 194 deaths were registered, including diphtheria, 1; measles, 4; enteric fever, 9; whooping-cough, 5; and diarrhoea, 5.

Scotland.—The deaths registered in eight principal towns during the week ended November 30 corresponded to an annual rate of 20.6 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Dundee, viz, 15.0, and the highest in Aberdeen, viz, 23.1 a thousand. The aggregate number of deaths registered from all causes was 536, including small-pox, 1; measles, 18; scarlet fever, 13; diphtheria, 9; whooping-cough, 21; fever, 8; and diarrhoea, 11.

Malta and Gozo.—One hundred and four deaths were registered during the last half of October, 1889, including diphtheria 2 and dysentery, 1.

BRAZIL—*Rio de Janeiro.*—Two hundred and fourteen deaths were registered during the week ended November 16, 1889, including yellow fever, 4; small-pox 25; enteric fever, 3; typhus fever, 5; and scarlet fever, 1.

Maceio.—Sixty-one deaths were registered during the month of October, 1889, none of which were from contagious diseases.

Ceara.—One hundred and twenty-three deaths were registered during the month of September, 1889, including 1 from yellow fever; and 113 during the month of October, none of which were from contagious diseases. Population, 35,000.

MEXICO—*Guaymas*.—Fourteen deaths were registered during the month of November, 1889. No particular diseases prevailed. Sanitary condition good. Population, 6,600.

BRITISH WEST INDIES—*Trinidad*.—Three hundred and sixty deaths were registered during the period from August 10 to October 26, inclusive, in the city of Port of Spain, having a population of 40,000. No contagious diseases were reported.

CUBA—*Havana*.—Five deaths from yellow fever were reported during the week ended December 5, 1889.

Cardenas.—December 5, 1889. Weather dry and cool. Good health in town and harbor. Population, 24,500.

DEMERARA—*Georgetown*.—November 13, 1889. No contagious diseases. Consumption, malarial fevers, and diseases of the bowels and kidneys prevail.

UNITED STATES OF COLOMBIA—*Colon*.—November 30, 1889. Health of the city remarkably good.

BAHAMAS—*Nassau, N. P.*—November 30, 1889. Population, 12,000. Number of deaths never reported. City healthy. Weather very rainy.

Influenza.

(Cable reports from *Der Deutscher Correspondent*, Baltimore, Md., translated for this Bureau.)

Berlin, December 14.—Professor Leyden, who last evening made an address in the "Clinical Institute," attributed the influenza epidemic to the same causes that produce the dengue fever, which makes its appearance particularly in the East. The medical periodicals state that the epidemic keeps spreading.

Professor Virchow has recovered from his attack of influenza; several members of the Imperial family have also been attacked by the same. The *National Zeitung* is censuring those who spread pessimistic theories about the epidemic. This paper shows that the sanitary condition of Berlin is excellent, and that its mortality is smaller than any other capital city of Europe, with the exception of London. Official data of the number of cases of influenza here have not been made. It is known, however, that but few families have escaped the plague, and that a third of the population has been ill with it. The medical press refutes the theory that there is any connection between the influenza plague and cholera, although it is known to be a fact that cholera has repeatedly appeared after an influenza epidemic.

Berlin, December 15.—The number of cases of influenza is rated at 15,000. In many courts the administration of justice is suspended on account of the judges being ill with influenza. It has been proposed to close the schools in Danzig, half of the school children being ill with it.

Antwerp, December 13.—The influenza epidemic has made its appearance here, and many soldiers of the garrison are ill with it.

Paris, December 11.—The epidemic of grippe keeps spreading. The disease has broken out in the barracks, the markets, and at the "École Centrale." A medical report on the raging epidemic shows that among the employés of the large dry-goods emporium, "Magasin du Lanure," 670 have fallen sick. The disease generally lasts four days, and complications only arise in rare cases. In other large stores the disease is raging in the same degree. Special preventive measures are considered unnecessary.

Rome, December 13.—The influenza epidemic has broken out here in a mild form. Doctor Canabis, director of the board of health, has gone to St. Petersburg to study the disease there, and, if possible, to confirm what caused it to assume later a malignant character. This is done to avoid a similar result here.

Epidemic of dengue in Asiatic Turkey.

(From the *Revue Medico-Pharmaceutique*, Constantinople, November 30, 1889. Extracts translated for this Bureau.)

Having first ravaged Smyrna, dengue appeared at Magnesia, Asia Minor, two and one-half hours by rail from Smyrna, at the beginning of August, 1889, and prevailed in the form of a severe epidemic. Three-quarters of the population, which numbers 40,000, were afflicted. About the middle of August it appeared in Salonica, where it was sporadic and benign. It reached Dardanelles in the latter part of September. The Jewish quarter of this city was the first attacked. There were but few cases in the Greek and Armenian quarters. At Bourgas there occurred the case of a woman who had had the disease at Smyrna, passed the period of convalescence at Constantinople, and ten days later arrived at Bourgas, where she was attacked with fever, curvature, characteristic articular pains, and, finally, with the secondary red eruption.

Observations on dengue fever.

The epidemic at present existing in the East is best known under its scientific name of "dengue fever." Although its microbe has not been discovered, dengue fever is doubtless a disease to be classed among acute infectious maladies; moreover, on account of resemblance, it should take rank with acute articular rheumatism, the morbus maculosus of Werlhofii, the purpura and the peliosis rheumatica. It may be classed as such by the same right by which Hueter described acute articular rheumatism as an infectious malady, although its microbe has not been discovered, because nothing better explains the propagation, symptoms, and progressive development of the disease than the hypothesis of a specific organized poison.

Zaeros Pascha, director of the bacteriological laboratory of Constantinople, has begun a series of researches with a view to the discovery of the microbe of dengue. He states that up to the present

time he has not found it, and that the only point worthy of notice is that the blood of persons attacked by dengue does not contain the microbe. But these negative examinations and cultures are not sufficient reason for denying its existence or even its presence in the blood, for we know absolutely nothing of this microbe, its manner of propagation and discovery. It is true that Cunningham and Charles found in the blood enormous masses of round corpuscles which, by the means of hyperosmic acid, turn an intense carmine red, and they declare this matter to be the microbe sought, but so far their results have not been verified by culture or inoculation.

For the rest, this microbe must, *a priori*, be found in the blood. The disease, the symptoms, and reactions are too general to allow of a doubt that the microbe circulates in the body by means of the blood.

As to the contagiousness of dengue fever, the writer has never observed or read a striking proof that this disease is propagated from person to person, as is the case with variola or exanthematic typhus, while there are reasons for believing that its method of propagation is identical with that of Asiatic cholera and abdominal typhus.

Dengue is not contagious; it is not miasmatic, like malaria, but a miasmatico-contagious disease, like Asiatic cholera, abdominal typhus, and epidemic cerebro-spinal meningitis.

The poison is prepared in infected soil, and received by means of water and emanations.

A rocky soil, according to the theory of Pettenkofer, is highly unfavorable to the development of dengue.

Dengue has been believed to be contagious from the fact that several persons in a household are apt to be attacked by it. There are instances to the contrary.

Dengue attacks both sexes and every age without the least predilection. Very few persons are immune. The epidemic may become pandemic and attack even domestic animals.

Reported epidemic of dingha in Jerusalem.

The *Jewish World*, London, November 29, 1889, reports an epidemic of "dingha," presumably dengue, to be prevailing in Jerusalem.

Leprosy in Turkey—Island of Samos.

(Briefed translation for this Bureau from the *Revue Medico-Pharmaceutique*, Constantinople, Turkey, November 30, 1889.)

The population of the Island of Samos is about 42,000 souls.

According to the official report of this little principality, printed in 1886, there are but 22 men and 21 women lepers, but many cases have been discovered which are not on the official list. Only the lepers in whom the disease has reached an advanced stage are isolated.

The Samian physicians and people attribute leprosy to uncleanness, the excessive use of inferior olive oil, and of a sort of red caviar, known as tarama, a mixture of eggs in a state of putrefaction, very salty and offensive.

Marriage among lepers, or between a leprous and non-leprous person, is not prohibited. But if the non-leprous person asks for divorce the law accords it.

The Samians consider leprosy as contagious; still, the leper may go about freely and exercise the calling of muleteer or porter in the sight and knowledge of all men, until some day he is brutally expelled to the mountains and abandoned to his fate, unless received into a monastery where the monks accommodate the lepers in huts a little removed from the convent. The prince of Samos has lately constructed a refuge in which he proposes to collect and isolate the lepers of the island.

The archimandrite of a monastery in which there are fifteen lepers states the results of his observation of leprosy since 1839. He has observed a great many lepers at his convent. He does not believe leprosy to be contagious, basing his belief on the fact that he has never seen the disease transmitted to parents or by marriage. He also relates the history of a man attacked by a deep ecthyma, which made him repulsive, and for which he was expelled from the community. This unfortunate man took refuge among the lepers, and lived among them twenty years. His body, covered with suppurating surfaces, exposed him to the easy transmission of the disease. He never, however, contracted leprosy. He cites the cases of many mixed marriages, lasting as much as twenty years, in which there was no transmission of the disease. Finally, he cites himself as an example. For forty years he has lived in daily communication with lepers without contracting the disease.

With regard to hereditary leprosy, he is convinced of it by many facts. He cites cases of hereditary leprosy transmitted by grandparents to descendants whom they have never seen, and who have, in some cases, been born after their death.

The superior of the same monastery has studied leprosy in the cases of two hundred lepers, who have died in the convent since 1835. His ideas differ little from those of the archimandrite. He has never seen leprosy transmitted from husband to wife. He has seen leprosy spontaneously arrested in the case of one leper, who lived many years after having lost successively his fingers, toes, hands, and feet.

In another convent at Samos the result of careful observation of leprosy is that it is not contagious.

Doctor Panos, of Samos, has observed many facts opposed to the contagion of leprosy. He says, however, "the discovery of the bacillus embarrasses me," from which remark it may be seen that practitioners who are opposed to the theory of contagion can not resist the influence of the seductive theories of the day.

Mr. Zambounis, for many years secretary-general of the principality, and who has, consequently, been in a position to be aware of all that passes on the island, states that he has known many marriages in which one of the couple was a leper. He has never known the other to become contaminated by the disease. He cites one case of which the following is a brief account:

A few years ago the people of a certain village demanded the expulsion of a woman, become a leper, who belonged to one of the best families of the place. The prince, Aristarchi, was opposed to it, and had a detailed medical report on her case drawn up and sent simultaneously to Paris and Vienna. Casenave, Devergie, and Gibert, of Paris, and Hebra and Sigmund, of Vienna, expressed themselves in opposition to the contagiousness of the disease, and advised that the woman should not be expelled. On these reports the unhappy woman was left unmolested. The leper lived fifteen years in her family, with her rela-

tions and friends, none of whom contracted the disease. They lived in free intercourse with her and took no precautions against contagion.

A young lady of good family became attached to a man in whom leprosy was beginning. She married him in spite of opposition, and lived with him for eight years. She did not wish to survive him and took no means to avoid the disease. She was even inoculated with it several times by her husband, who wished to communicate it to her, all without result. The husband died a leper, while the woman still lives, strong and well.

In some villages lepers continue to live in their own homes for a length of time. They draw water at the wells with their bleeding, ulcerated hands. After them the women and children of the village draw water at the same well, making use of the same well ropes. There has never been an example of inoculation or transmission.

In spite of the opinion of doctors, authorities, and of each Samian in particular, especially of such Samians as have been intimately thrown with leprous relatives and friends, the people are so afraid of leprosy that they oppose the erection of the lazaretto at less than six hours travel from Vathy, the capital of the island.

The present prince of Samos, Catheodori Pacha, a man of superior mind and education, consulted the writer of this article as to the means of extirpating leprosy in his principality, and of ameliorating the condition of its victims. The following is his reply:

1. A lazaretto should be erected at a distance from dwellings, conformed to the laws of hygiene, and removed from the regions where the malady is endemic, for close observation has shown that there are localities which are immune from this plague, and others where it is persistent. All things being equal, certain meteorological and telluric conditions unknown up to the present time have to do with this predilection of the disease.

2. To collect in the lazaretto all lepers, in all stages of the disease, whom a medical board capable of diagnosing leprosy from its inception shall certify.

3. To prohibit marriage between lepers or persons suspected of leprosy, until a medical inspector shall authorize it.

4. To prohibit the use of salted food, spoiled potatoes, tarama, oil and pork, and to require at least one bath a week.

5. To have the lepers treated therapeutically, for experience shows that some cases are curable and all may be ameliorated by good hygiene and medical care intelligently directed.

6. To isolate all children of lepers, and put them under observation until the adult age, ordinarily the extreme term of the manifestation of hereditary leprosy.

7. To draw up and distribute among the people, pamphlets formulating hygienic principles, especially as regards cleanliness and food, the neglect of which appears to be a potent factor in the development of leprosy in those countries in which it is endemic.

The Samiotes are an uncleanly people. Many of them acknowledge to taking only one bath a year.

Leprosy, in the opinion of the writer, will progressively diminish and disappear by the observation of the preceding principles. It will definitely disappear only when the people shall be better housed, better fed, and have acquired better personal habits. The extirpation of leprosy appears to be synonymous with the extirpation of poverty.

CHOLERA IN MESOPOTAMIA.

Fourth article.

(Translated for this Bureau from the *Revue Médico-Pharmaceutique*, Constantinople, November 30, 1889.)

The cholera epidemic which has been experienced during the past four months by the population of Mesopotamia has made fresh progress. It has invaded the city of Mossoul, one of the principal centers of that country. This fact is not surprising to any one, for if on the one hand a hope for the arrest of the disease at the cordon of the Great Zâb might have been based on the progressive diminution of the disease in the infected districts, it was incontestable, on the other hand, that given the slow but sure march of the disease toward the north, and the vigor with which it attacked one by one most of the quarantine stations on the two rivers Zâb, it was evident that the disease would overthrow and clear the lines of defense and force the city of Mossoul to pay tribute.

After Erbil, attacked October 14, and which lost, up to November 2, 164 of its inhabitants, the appearance of cholera was noticed at Reven-douz, a quarantine station on the Great Zâb. This locality was relatively less afflicted than others. From October 26 to November 17 only 75 deaths were reported there.

In the city of Mossoul the first choleraic death was reported on November 10. The following days, from the 11th to the 16th, about 5 deaths a day were reported. On the 18th the bulletin announced the number of deaths as 30. If, now, we compare the number of persons deceased during the nine first days at Bagdad and Mossoul, we find for Bagdad, from August 14 to 22, a total of 240 deaths, against 62 at Mossoul from November 10 to 18. It is not out of place here to remark that the population of these two great cities is not very different. Bagdad has, it is said, 70,000, and Mossoul about 80,000. Taking everything into account, the population and the figures furnished by the cholera bulletins, we find that at Mossoul the intensity of the disease is about 65 per cent. less than at Bagdad.

Although on this calculation we might base optimistic predictions, we think there is, on the contrary, reason for extreme reserve. We know, indeed, how cholera disappoints theoretic calculations. Very often, without any apparent reason, mortality ascends suddenly to 50, 60, 100 per cent. in 24 hours, and it is precisely where the disease was believed to be slight in extent that it shows considerable development.

It can not be concealed that the situation, if not grave, is at any rate serious; for from Mossoul diverge roads by which fugitives may reach other centers which they might contaminate.

We must then make use without reserve of the authority of the vilayet of Mossoul, and of the neighboring vilayets of Bitlis, Diarbekir, Aleppo, and Syria, which, conformably to the commands of his majesty the Sultan, and with the enlightened co-operation of the sanitary physicians, endeavor to restrict the spread of the plague. The ill success of the measures adopted up to the present time does not discourage them; and rightly, for if the cordons and sanitary stations have not been able to prevent cholera from invading three-fourths of Mesopo-

tamia and the Turco-Persian frontier, it is none the less true that they have considerably retarded its progress. The disease spreads still, but, as we have already remarked above, it has lost much of its force.

Apart from Mossoul and the less important cities of Suleimaniah and Revendouz, which give rise to some anxiety, the rest of the contaminated country, especially the region to the south, is found in a tolerably satisfactory condition. The group of the cities of Mussayeb, Nedjef, Kerbela, Hindiah still offer a certain number of deaths, as also the old quarantine station of Coubeïssa, but there is no need for special concern in this connection.

With regard to the measures of defense, the cordon by the Great Zâb, Ali-Hamman, Tell-Afar, is about to be replaced by another farther to the north, beginning at Katoum, on the frontier, and passing by Amadiah, Daoudiah, Zakko, Feïchabour on the Tigris, and Tchelaha. Leaving this station the cordon will follow the course of the river Hessaoui, tributary of the Khabour, to rejoin the stations of Tell-Kaukaub, Busseïra, Abour-Kemal, and Djuh-Kavakep, which have been maintained. In addition, the competent authorities of the vilayets of Aleppo and Damascus are about to establish new cordons within the preceding, which could in time of need serve as lines of re-enforcement.

The following table indicates the choleraic mortality from October 25 to November 18. It shows a total of 275 deaths. Previously, from September 26 to October 25, the number of deaths reached 694.

Recapitulative table of choleraic mortality in Mesopotamia from October 25 to November 18, 1889.

Place.	Date.		Deaths.
	From—	To—	
Bassora	October 27.....		1
Bagdad	November 8.....		1
Musseyeb.....	October 25.....		2
Bakauba.....	November 5.....		1
Kerbela.....	October 25.....	October 28.....	18
Hindiah and environs.....	October 24.....	November 4.....	15
Nedjef.....	October 25.....		1
Altin-Keupru environs.....	October 29.....	November 4.....	5
Suleimaniah.....	October 25.....	November 15.....	35
Coubeïssa.....	October 26.....	November 27.....	37
Hit.....	October 28.....		1
Erbil.....	October 24.....	November 2.....	21
Revendouz.....	October 26.....	November 17.....	75
Mossoul.....	November 10.....	November 18.....	62
			275
To which we must add the total of deaths returned from July 27 to October (see <i>Revue</i> , pp. 139, 154).....			6,867
General total.....			7,142

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
London.....	Nov. 23.....	5,642,015	1,737				22	25	35	37		
Paris.....	Nov. 23.....	2,260,945	968			1	18	3	32	13		10
Glasgow.....	Nov. 23.....	545,678	243				3	4	3			5
Glasgow.....	Nov. 30.....	545,678	229				1	6	4	5		
Warsaw.....	Nov. 16.....	445,770	245			28			11	15		
Calcutta.....	Oct. 19.....	433,219	250	7								
Calcutta.....	Oct. 26.....	433,219	223	8								
Calcutta.....	Nov. 2.....	433,219	263	9		1				1		
Rome.....	Sept. 21.....	407,936	170			1		3		1		
Amsterdam.....	Nov. 23.....	399,051						1	1			
Amsterdam.....	Nov. 30.....	399,051								4		
Copenhagen.....	Nov. 16.....	307,000	105				1	1	12			
Copenhagen.....	Nov. 23.....	307,000	108				2	2	4			
Munich.....	Oct. 19.....	281,000	132				2		11			
Munich.....	Oct. 26.....	281,000	142				1		9			
Munich.....	Nov. 2.....	281,000	133				1	2	6			
Munich.....	Nov. 9.....	281,000	112						8			
Munich.....	Nov. 16.....	281,000	119						7			
Edinburgh.....	Oct. 19.....	266,900	98					1	1	2		2
Edinburgh.....	Oct. 26.....	266,900	79						1	3		5
Palermo.....	Nov. 23.....	250,000	70						1			
Bristol.....	Nov. 9.....	229,361	73				1					
Bristol.....	Nov. 16.....	229,361	53				2					
Bristol.....	Nov. 23.....	229,361	80				1					
Bristol.....	Nov. 30.....	229,361	73						1			
Rotterdam.....	Nov. 23.....	197,724	88					2				
Genoa.....	Nov. 23.....	180,427	98			1						
Genoa.....	Nov. 30.....	180,427	102				3			1		
Toronto.....	Nov. 29.....	175,000	35					2		2		
Toronto.....	Dec. 6.....	175,000	61					57		1		
Trieste.....	Nov. 16.....	158,054	72			1				1		
Trieste.....	Nov. 23.....	158,054	65			2		1		4		
Stuttgart.....	Nov. 23.....	125,510	40							6		
Stuttgart.....	Nov. 30.....	125,510	49									
Pernambuco.....	Nov. 5.....	120,000	86					1	2			
Pernambuco.....	Nov. 12.....	120,000	52				1		1			
Havre.....	Nov. 16.....	112,074	59					1		1		
Barmen.....	Nov. 16.....	109,000	49				1			1	I	
Barmen.....	Nov. 23.....	109,000	35						1			
Catania.....	Nov. 17.....	108,000							3	1		1
Leghorn.....	Nov. 24.....	103,287	46									
Edinburgh.....	Oct. 19.....	76,400	30						2			
Edinburgh.....	Oct. 26.....	76,400	32						1			
Mayence.....	Nov. 16.....	65,802	14							4		
Mayence.....	Nov. 23.....	65,802	40				1			3		
Cadiz.....	Nov. 23.....	57,157	55									
Vera Cruz.....	Nov. 28.....	23,800	29									
Gibraltar.....	Nov. 17.....	23,681	3							1		
Kingston, Can.....	Dec. 6.....	18,284	26									
St. Thomas.....	Nov. 1.....	13,500	11									
St. Thomas.....	Nov. 8.....	13,500	14									
St. Thomas.....	Nov. 15.....	13,500	8									
St. Thomas.....	Nov. 23.....	13,500	12									
Laguayra.....	Nov. 23.....	7,428	2									

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