

WEEKLY ABSTRACT OF SANITARY REPORTS.

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TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL,
U. S. MARINE-HOSPITAL SERVICE,
Washington, D. C., November 8, 1889.

Abstract of Domestic and Foreign Sanitary Reports received during the week ended November 8, 1889, published in accordance with section 4, Act of Congress, approved April 29, 1878.

UNITED STATES.

Special Reports.

YELLOW FEVER.—Key West, Florida—

STATE BOARD OF HEALTH OF FLORIDA,
Key West, Fla., October 23, 1889.

SIR; Confirming my telegram to you of Monday night, the 21st instant, stating the occurrence of another sporadic case of yellow fever, unconnected with previously reported cases, I have to report to-day in addition the following history as gotten from Dr. R. D. Murray, the now attending physician, from Dr. Armona who attended the case from the 17th to the 19th instant, and from my own observations. The records from the physicians are given now as I obtained them verbally: Dr. Murray promises a written clinical history, which will be sent you when received.

Ernest Ellenger, a prominent cigar manufacturer, of the firm of Julius Ellenger & Co., of this place, has been living here for the past three years, but not continuously; arrived here from New York on October 1, having left Havana on September 21, going direct to New York by sea. On Thursday, October 17, he called on Dr. J. R. Armona at his office, complaining of no appetite, and lassitude, no particular pain or ache; he had no fever at that visit and talked with the doctor for some time concerning the strike of the cigar-makers, which had been the day before precipitated, and received as a prescription Fellows hypophosphites. Friday evening Dr. Armona called on him by request at the hotel and found him in the billiard-room playing billiards; on examination he found that his temperature was $101\frac{1}{2}$ and pulse 75; he ordered him to bed and gave him rhubarb and podophyllin; calling on Saturday about noon he learned that Dr. Murray had been called in, but ascertained his temperature was 102 and pulse 96; Dr. Armona then left the case. Dr. Murray says he saw the patient a little before noon Saturday, the 19th instant, his pulse was 70, temperature 37.5 C., tongue coated with white fur, eyes slightly injected, no headache, no backache, no pain in limbs, and no nausea or vomiting, bowels mildly running off owing to cathartic or purge taken the day before. Saturday afternoon he was up and playing billiards; Saturday night his temperature went up to 40 C., pulse 76; but on Sunday morning (20th) it was 38 C., pulse 76; Sunday night (20th) pulse 76, temperature 39.2 C.; Monday morning (21st) pulse 76, temperature 38.6 C.; Monday evening (21st)

pulse 74, temperature 38 C. I first saw the patient at this visit. He was in bed, skin moist, eyes injected and jaundiced with a glistening appearance, and answered questions in an apathetic, jerky manner; urine was tested and 25 per cent. of albumen was found. The test was the usual one, by heat first, and heat with nitric acid. I have not seen the patient since Monday evening, but the previous history, although obscure, was sufficient with the condition I found him in, and with albuminous urine (he not being a subject of Bright's disease), to cause a diagnosis of yellow fever to be made. In this diagnosis the attending physician (Dr. Murray) agreed.

Tuesday morning, the 22d, the patient's pulse was 68, temperature 37.2 C. ; Tuesday evening (22d) pulse 66, temperature 37 C. ; Wednesday (23d) morning, pulse 68, temperature 36.6 C. ; Wednesday evening, pulse 66, temperature 37 C.

There is no history of Ellenger going near or having any contact with any of the other previously reported cases. His attending physician does not think his case traceable to Key West, but to Havana. He reasons that the poison may remain latent a month, to be excited to activity by some extraordinary depressing physical or psychical cause; in this case the cause is thought to be the general strike of the cigar-makers, and consequent suspension of business. I have not yet come to any definite conclusion. * * *

In respect to removing the quarantine restrictions on last Saturday, 19th instant, which action you in your letter of the 20th considered unwise, I must respectfully beg to disagree with you. We are a unit, I think, in opinion that it is the duty of all health officials to take every necessary precaution, and every requirement that is deemed necessary for the public good and safety should unhesitatingly and without murmur be complied with by the public, still, at the same time, no restriction on the personal liberty of the citizens or on commercial pursuits should be enforced beyond the period that either science or common consent of expert authorities agree is demanded. Now, what are the facts in this instance? They are these: When I reached Key West, on the 8th of the present month, I found that there had been four cases of yellow fever within the month on the island, commencing probably on the 13th of September (for when Dr. Murray saw Horn on the 19th of September he was well, or nearly so); there had been no deaths; three of the cases were up and about when I reached here, the other case was convalescent. It had been three weeks since the last case had been taken sick and there had been no new development of cases in the family, although the other members were exposed. The weather had been *dry* and cool; unusually cool for this place at this season, and finally the infected articles had been destroyed and the town had been cleaned up and all foul spots treated liberally with disinfectants; therefore, in view of the fact that the Montgomery conference adopted Mr. Hyer's answer to "Topic 10: "Query, When may refugees safely return to their houses?" viz:

After the occurrence of ice ;

After the occurrence of three killing frosts ;

After the occurrence of no cases of fever for a period of two weeks ; and

After thorough disinfection and ventilation of all localities infected, and bedding and such other articles as are capable of conveying germs (see Report, p. 37), I felt, as there had been no epidemic prevailing, and with no knowledge of a case of a suspicious nature existing in the city, I would not be justified in enforcing any longer quarantine restrictions on the individual or on commerce.

It was indeed unfortunate that the Ellenger case was not discerned earlier, but the obscure and irregular symptoms rendered such pre-conception of its nature impossible until Monday, when Dr. Murray called upon me and intimated his fears, and it was only late in the afternoon that a positive diagnosis could be determined upon.

The restrictions upon travel will be now continued until contrary instructions are received from your office, and from time to time I will endeavor to keep you fully informed of the situation here.

Very truly,

JOSEPH Y. PORTER,
State Health Officer.

Dr. R. P. DANIEL,
President State Board of Health, Jacksonville, Fla.

STATE BOARD OF HEALTH OF FLORIDA,
Key West, Fla., October 26, 1889.

SIR: I herewith acknowledge the receipt of your letter of the 24th instant, and will give due consideration to its contents. Since my last communication (23d) nothing further in the development of fever cases has arisen. I am giving attention to and endeavoring by inquiries frequently made to learn whether any of the other peddlers have been taken sick since the Wolff Abraham family experienced a seizure; the result so far is negative. It is an exceedingly difficult matter to learn anything about these people, for, being of a nation naturally suspicious and skeptical, they are wary of all queries of any kind that may be put to them, and answer very reservedly, being particularly non-committal of their own doings or whereabouts; answers are usually of a negative character. Coupled with this is one of greater embarrassment, the failure to recognize mild yellow fever by the Cuban physicians, who generally, so I am informed, have attended this class in all their ailments, they living in the Cuban quarter of the town.

Unless a case of yellow fever is of a particularly virulent and violent type, developing fierce fever, black vomit, and death, it is thought by the Cuban physicians to be merely a "calentura" (mild fever of the tropics, ephemeral of our nomenclature). You can understand this more perfectly by reading a reported interview in this evening's paper with Dr. J. R. Armona, the Cuban physician who, for the first few days, attended Mr. Ellenger. You will perceive that he emphatically denies the case to be yellow fever, although he has not seen Mr. Ellenger since last Saturday, the 19th instant. Whilst on this point, permit me to pause, and to say, by way of information, that on Tuesday evening, about 8 o'clock, Dr. Armona called on me, asking to see Mr. Ellenger. I endeavored, as well as I could, to explain to the doctor that unless Dr. Murray, who was Mr. Ellenger's physician, desired his (Dr. Armona's) presence at Mr. Ellenger's bed-side, or as a consultant, that I could not suspend the quarantine restrictions placed upon the room merely for the sake of satisfying a curiosity, either by acclimated physicians or by citizens, to view the patient and pass their opinion on his condition. I further tried to impress on him that, since my first visit with Dr. Murray (Monday night), when my public office carried me there, I had not seen the case, as I did not propose to break my own regulations. Dr. Armona, being very persistent in his demands, and claiming that his reputation as a physician was at stake, I yielded so far as to accord permission, provided his clothes were

changed after coming from the sick-room and before again mingling with the unacclimated. Then he wished to visit the patient at once, but I reminded him that the patient was not mine, and that his professional attendant must be consulted, and suggested waiting until the morning. This he demurred to, and, finally, after seeing Dr. Murray with me, declined to go at all, even that same evening, as he did not care to change his clothes. It matters not for what disease or ailment Dr. Armona attended Mr. Ellenger in former years or in former sicknesses, in his present sickness he has yellow fever, and whenever contracted is not now pertinent to the diagnosis. Upon the ability to promptly recognize this disease and deal with it depends altogether the safety of the State and the prevention of epidemics of yellow fever in the future. I exceedingly regret the discussion of this matter in the daily press, although, as far as I am concerned, the discussion is all on one side. It settles nothing and proves nothing, for adherents and followers of the several physicians are never convinced. It has always been the case here that whenever yellow fever was recognized and announced, the medical man having the courage of his convictions to publicly make the statement was always (and I invite contradiction) vilified and traduced, contradicted, and denounced, not only by the citizens (all of whom claim expert ability), but also by many of his own profession.

In 1887 it was a Cuban physician who denied in the public press the existence of yellow fever on the island, and wrote sensational articles on the subject. This year the denial is repeated, and again by a Cuban physician. I do not wish to indulge in unkind or unjust strictures upon the members of my profession here of other nationalities; socially, they are pleasant, affable, courteous gentlemen, and conversant with the amenities of life, but there is a disposition with them, probably due to foreign birth and education, to accord very little of professional knowledge to the American doctor, and to claim a special "patent right" in the diagnosis of yellow fever. The custom, very prevalent in this place, of visiting the sick, commendable in some respects in the non-contagious disorders, is to be discountenanced and prohibited for a contagious sickness; no better way of scattering the poison of yellow fever can be found than frequent and promiscuous visiting of those so sick. Let a case be announced in this place as yellow fever by a medical man, the house is soon filled by men and women possessing not a scintilla of medical light, eager to express his or her opinion as to the correctness of what the doctor says, with a leaning always against his opinion, and only too willing, by argument, to attempt to disprove his judgment and to supplant it by his or her own. There are but few adults of either sex on this island above the age of fifteen years who do not claim to be experts in yellow fever, and to know more than the doctor. Of course, an order that prohibited this promiscuous visiting, and isolated stringently the patient, is denounced as an outrage, and the official who enforces it is cursed and silently and secretly threatened with violence.

Mr. Ellenger is doing very well, so his professional attendant informs me, and will recover.

The city commissioners have received reports from two engineers (which appearing in public print, I inclose) on the sanitary requirements of the island, and it is to be hoped work of some kind to better the health of the place will soon be commenced.

Key West is fast becoming a miniature Havana, in nature of population and in the habits of the individual, and unless stringent health laws,

looking to cleanliness primarily, are enforced, and adequate facilities provided by the city government to effect this object, it will be but a year or two before the yellow fever germ, by occasional visitations, finds in the filth of the town a suitable nidus for the propagation and proliferation of the destructive elements of its nature, and acquiring citizenship on American soil permanently abides here; in other words, becomes endemic in Key West. As yet I have not been able to satisfy myself that the cases this year owed their origin to an imported germ.

Very truly,

JOSEPH Y. PORTER,
State Health Officer.

Dr. R. P. DANIEL,
President State Board of Health, Jacksonville, Fla.

INFECTED BALLAST—*South Atlantic Quarantine Station, Ga.*—Passed Assistant Surgeon J. H. White, U. S. Marine-Hospital Service, in charge of this station, reports as follows concerning the Spanish bark Gran Canaria, arrived from Havana October 25, 1889:

Condition of vessel, dirty; condition of cargo, suspicious; ballast being removed for disinfection. Two of the crew were sick at Havana with yellow fever, and were sent to the hospital as soon as the disease was discovered. The ballast is stone taken from just below Moro Castle, and from what I learn of that locality the dejecta from fever-stricken Spanish soldiers is poured out from the sewers of Moro upon this pile of stone. Under the circumstances I consider the vessel to be a fit subject for very careful work in the way of disinfection.

For previous notice of infected ballast taken by vessels at Havana from the same locality, see Abstracts No. 52, December 28, 1888, and No. 2, January 11, 1889.

SMALL POX—*Near Sandusky, Ohio (Peelee Island, Canada).*

U. S. MARINE-HOSPITAL SERVICE,
DISTRICT OF THE GREAT LAKES,
Port of Sandusky, Ohio, November 2, 1889.

SIR: In compliance with paragraph 94, Revised Regulations of U. S. Marine-Hospital Service, I have respectfully to report that there are 8 cases of small-pox at this date, on Pelee Island, Canada, 25 miles from this port. Steamboats near said island are freighted with fish taken by vessels which land at this port. The fish are disposed of here in the fish-houses, where they are salted and shipped to all parts of the country. There is a partial quarantine in operation at this port, caused by the mayor's enforcement of the municipal sanitary ordinances. On the aforesaid island is a population of 400, and in defiance of the quarantine regulations at said island persons from there are seen in this city, but thus far a strict watch for them has been maintained. I have been requested by the mayor to assist in the quarantine of this port against small-pox, but have deferred doing anything more than to give advice until instructions, if any, are received from yourself.

Very respectfully,

ELWOOD STANLEY,
A. A. Surgeon.

Surgeon-General J. B. HAMILTON,
Washington, D. C.

SMALL-POX.—*Liability incurred in its suppression.*—The Southern California Practitioner, for October, 1889, states :

A verdict of \$7,000 and costs was rendered against Dr. Hagan, ex-health officer of the city of Los Angeles, for alleged malpractice in treating a small-pox patient at the city pest-house in January, 1888. The doctor is thus made to suffer because he did his duty in removing a patient to the small-pox hospital; and because the city did not furnish the best of accommodations, a jury is made to believe that a case of confluent small-pox would have recovered had it been allowed to remain and infect a thickly populated neighborhood.

It is understood that the case will be appealed to the Supreme Court.

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

IOWA—Keokuk.—Month ended October 31, 1889. Population, 16,000. Total deaths 10; including diphtheritic croup, 1. *Cases of scarlet fever and diphtheria are reported and quarantined.* Since January 1, 1889, 50 cases of scarlet fever have been reported; cases occurred every month excepting September. During the same period there were 21 cases of diphtheria, the exempt months being May, June, and September.

KENTUCKY—Louisville.—Annual statement of mortality for the year ended August 31, 1889. Population, 227,000. Total deaths, 3,192; including diphtheria, 35; scarlet fever, 9; yellow fever, 2; small-pox, 2; typhoid fever, 144; consumption, 376.

MASSACHUSETTS—Newton.—Month of September, 1889. Population, 21,553. Total deaths, 23; diphtheria, 7; scarlet fever, 6; typhoid fever, 16.

The following notice has been published by the local board of health :

In view of the prevalence of typhoid fever, and malaria in its various forms, citizens are earnestly recommended to carry out the following : In a sick room use a 4-per-cent. solution of *fresh* chloride of lime; for all plumbing cleanse the pipes thoroughly by using potash or sal soda, and disinfect with a similar solution of choride of lime; for vaults and cess-pools, first use corrosive sublimate in solution 1 : 500, and then throw in chloride of lime in powder.

Board of health :

WILLIAM S. FRENCH, *Clerk.*

MASSACHUSETTS.—*Annual Report of the State board of health for the year ended September 30, 1888.*—The report embraces the following topics : General work of the board; protection of the purity of inland waters; food and drug inspection; trichinosis; the opium habit; the health of towns; biological inquiries as to the quality of the air in hospital wards; and a summary of weekly mortality reports.

The whole number of deaths in a reporting population of about 1,100,000 for the year 1888 was 23,259. The months in which the greatest number of deaths were reported were August, January, and February, and those in which the least number were reported were June, November, and December.

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 October 19 corresponded to an annual rate of 18.7 a thousand of the aggregate population, which is estimated at 9,555,406. The lowest rate was recorded in Derby, viz, 13.2, and the highest in Preston, viz, 34.1 a thousand. Diphtheria caused 3 deaths in Salford, 3 in Sheffield, and 2 in Derby.

London.—One thousand four hundred and ten deaths were registered during the week, including measles, 23; scarlet fever, 25; diphtheria, 41; whooping-cough, 26; enteric fever, 11; diarrhœa and dysentery, 22; and not one from cholera or small-pox. The deaths from all causes corresponded to an annual rate of 16.9 a thousand. Diseases of the respiratory organs caused 300 deaths. In greater London 1,728 deaths were registered, corresponding to an annual rate of 16 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 7; scarlet fever, 5; and diphtheria, 9.

Ireland.—The average annual death rate, represented by the deaths registered during the week ended October 19, in the 16 principal town districts of Ireland, was 24.1 a thousand of the population. The lowest rate was recorded in Wexford, viz, 4.3, and the highest in Kilkenny, viz, 46.5 a thousand. In Dublin 179 deaths were registered, including measles, 2; enteric fever, 10; diarrhœa, 6; and scarlet fever, 1.

Scotland.—The deaths registered in 8 principal towns during the week ended October 19 corresponded to an annual rate of 20.5 a thousand of the population, which is estimated at 1,329,884. The lowest mortality was recorded in Paisley, viz, 14.9, and the highest in Glasgow, viz, 23.1 a thousand. The aggregate number of deaths registered from all causes was 524, including measles, 9; scarlet fever, 9; diphtheria, 6; whooping-cough, 11; fever, 11; and diarrhœa, 15.

CANADA—*Pelee Island, Lake Erie.*—For account of prevalence of small-pox, see domestic report, Sandusky, Ohio.

[Translated from the *Hamburgischer Correspondent.*]

SPAIN—SUSPECTED YELLOW FEVER IN VIGO.

MADRID, SPAIN, *September 16, 1889.*

The epidemic at Vigo is now thought to be stamped out. The Portuguese have abolished their quarantine measures, both land and maritime, leaving but a few mild restrictions in force. It will always

remain a question whether this was actually an epidemic of yellow fever. A very prominent physician of Madrid, a professor in the University, assured me that it was, and the Portuguese have declared likewise. The Spanish Government, however, says that it was not. Regarded as yellow fever the disease was not very malignant, yet nearly 1,000 persons, including the victims at Vigo and those of the neighboring coast-cities, were attacked, and 10 to 12 per cent. of these died, according to the official acknowledgment. Northerly winds (later than usual) and the cool weather have caused the fever to subside and gradually disappear. The great steamer lines, even the Spanish Compañia Transatlantica, all keep their ships distant from the Galician west coast, a measure of precaution which will be kept up for some time to come. This, and the sanitary campaign begun by Portugal, naturally caused considerable loss to the city of Vigo and to the entire Spanish commerce. In this fact may be seen the true reason why officially and in the Spanish press the existence of yellow fever in Vigo has been so persistently denied.

CUBA.—*Havana*.—There were 9 deaths from yellow fever during the week ended October 25. The sanitary inspector U. S. Marine Hospital Service reports the sanitary condition of the port as good in the open bay, but suspicious at wharves on Havana side of harbor and in the city.

PERSIA.—*Proceedings of sanitary council in relation to the cholera.*

LEGATION OF THE UNITED STATES,
Teheran, September 17, 1889.

SIR: I have the honor to respectfully submit herewith, for your consideration, the copy of a report I have received from Dr. W. W. Torrence, of the proceedings of the last meeting of the sanitary council here, in relation to the cholera.

I am, etc.,

E. SPENCER PRATT.

Hon. JAMES G. BLAINE,
Secretary of State.

Transactions of sanitary council held in Teheran on September 10, and submitted by Dr. W. W. Torrence to E. Spencer Pratt, United States minister, on September 16, 1889.

It is reported that 4 Jews, natives of Bagdad, having avoided quarantine, have arrived at Kermanshah. They are closely confined and have been forbidden to go about.

Various information received from Khanakin regarding cholera is reported to have been without foundation and unofficial. Some objection being raised by the European physicians as to the reliability of this report, it was suggested that the Persian consul resident at Khanakin should be the proper informant.

The Turkish physician asked as to state of inhabitants of the country lying between Kerse-ih-Shirun and Khanakin; that they should be led to hope that something definite was being done for their relief; that it is necessary that four physicians be stationed each at Kerse-ih-

Shirun and Kermanshah, two to be engaged attending patients with cholera, and the other two to attend those suffering from other disorders, and perhaps one other to be engaged in superintending quarantine regulations.

A question having been asked by a European physician as to the measures being taken to remove bad odors, his excellency the Nasier el Malk, president of the council, replied that full regulations had been instituted formally for the carrying out of all that is necessary in that respect in quarantine.

The physicians said in reply that strict regulations were necessary and must be carried out wherever cholera exists; that most particular pains should be taken as regards cleanliness and removal of bad odors, the thorough cleansing of houses and thorough fumigation, and that those dying of cholera should be wrapped in cloths dipped in a proper solution of perchloride of mercury. His excellency, the president, replied that as regards cleanliness and fumigation such orders have, and will continue to be given, but that as regards burial and corpses nothing could be done contrary to the religion and custom of the country.

According to latest reports from Khanakin cholera has increased, and at Bundakauh and on the other side of river also; that it is very severe in the tribe Jof and on the increase, many dying daily; that the people are scattered.

In Khanakin, on the 17th of Moharum, 6 persons died of cholera, on the 18th 5. Apparently the disease is milder, but it is reported that the Gaiam-Migom has forbidden any one reporting the number of deaths.

CHOLERA IN MESOPOTAMIA.

First article.

[Translation from the *Revue Médico-Pharmaceutique*, Constantinople, August 31, 1889.]

On the 1st of August the Turkish sanitary administration received a telegram from its inspector at Bagdad, Dr. Lubicz, which conveyed information that a fatal disease had made great ravages at Nazriéh, a place having about 8,000 inhabitants, situated near the Euphrates, where it joins with the Chat-el-Hai, and that Dr. Gazala, the sanitary physician of Hillah, in Mesopotamia, had gone there to investigate its nature. The next day, August 2, a second telegram, also from Dr. Lubicz, signalized the presence of cholera at Chatra, a city of 4,000 inhabitants, on the north of Nazriéh. This disease had manifested itself since the 27th of July occasionally, up to the 2d of August, causing about 200 deaths. Upon the reception of this news the most rigorous methods were ordained by the sanitary administration. The Mesopotamian authorities were asked to establish, wherever it was necessary, cordons of isolation, and to proceed to the most active disinfection or destruction of infected houses, etc. At the same time Dr. Lubicz left Bagdad to give assistance on the lines where the epidemic was present. In the execution of these regulations they commenced to cut the communications on the Tigris at Kut-el-Amara, in order to preserve Bagdad, and on the Euphrates, from Samava, to protect the countries above this point. In addition the infected localities were rigorously disinfected. At Nazriéh Dr. Gazala recognized Asiatic cholera. All persons attacked by the epidemic presented the same symptoms, vomit-

ing, with profuse diarrhœa, rice-water dejections, with very low temperature, algid extremities, livid spots, cramps in the epigastrium and in the muscles, thread-like pulse, nearly imperceptible, and dry white tongue, yellow at the border, with anuria. Death occurred in six, twelve, and forty-eight hours. From the 1st to the 6th of August, at Nazriéh, cholera followed the characteristic ascending progression, 2, 7, 13, 21, 32, 37. Thus, to the 6th of August the zone of the disease remained limited to the localities of Chatra and Nazriéh, but it was evident to all attentive observers, familiar with the ordinary march of cholera, that the epidemic would pass the barriers by which they sought to oppose it, and enter the great plane of lower Mesopotamia, which is one of the regions where the disease is endemic, and on that date cholera was seen at Bassora in a curious fashion. A young woman, twenty years of age, arrived, after spending some days at Filiéh, a place in Persia, near Mohamara, and she was seized on the 5th of August with vomiting and choleraic diarrhœa. The next morning she died. We are assured that this was the first case. At any rate, it was on the 7th of August that a new death was announced. The following day the epidemic began its ascending march. At Nazriéh the situation was aggravated, while at Chatra the mortality was considerably abated. In the first of these two localities the cholera arrived at its apogee on the 8th of August with 85 deaths. On the next day the ascertained number of deaths declined to 248. The most active measures were taken. The huts which in great part compose the city of Nazriéh were burned, and the habitations, which were constructed of brick and stone, were disinfected. The people were turned out in camps near the village, and habitations were improvised by the local authorities for their need. At the meeting of the 8th of August the superior council of health prescribed the following measures:

“The productions of Bassora are subjected to ten days’ quarantine for those sent out from the 5th day of August, inclusive, in one of the lazaretto ports of the Turkish coast. In addition, a sanitary cordon is established against the infected localities in Mesopotamia, and communications on the Tigris between Bassora and Bagdad are provisionally interrupted until the establishment on the river of a quarantine station, where productions destined to Bagdad shall be subjected to an observation of ten days with transshipment.”

From the 8th to the 13th of August the epidemic was propagated notwithstanding the station which had been established at Kut-el-Amara. On the 8th of August the cholera appeared at Réméyta, a market village of about three hundred families, five hours from Samava, on the Euphrates. On the 12th the disease had progressed to Chouq-el-Chouq, still on the Euphrates but to the southeast, and at last, on the 13th, Hamar and Kourna, at the point of junction of the two rivers, were infected. From the 10th to the 15th of August, Réméyta lost 76 inhabitants; at the same time Chouq-el-Chouq, on the 13th, had 31 deaths. At Nasriéh, where the first case had appeared fifteen days before, Dr. Lubicz arrived on the 13th of August; on his side Dr. Gazala stated the presence of cholera in the tribes to the northwest of Detcha near Chatra, and gave to the flames 700 infected huts. In the space of two weeks the epidemic was propagated over considerable space. It extended along the Euphrates and the Chat-el-Arab from Réméyta to Kourna, and even to Bassora. The region of the Chat-el-Haï was equally infected. The 14th of August was an ill-omened day. The cholera manifested itself unexpectedly at Bagdad, bounding by

the last quarantine station, Kut-el-Amara. The first case was stated by Dr. Adler, who temporarily supplied the place of Sanitary Inspector Lubicz. The case was that of a soldier who, up to the 12th of August, had been in good health. On the 13th he was taken with vomiting and diarrhoea, was taken to hospital, and after six hours was dead. The sanitary measures were then re-enforced; a second cordon was established at a greater distance from the infected localities, thus maintaining them in a state of almost absolute isolation. Recourse was had to every practice of cleanliness and public hygiene which could be thought of at this time of public calamity. Everywhere reigned desolation, for day by day the mortality increased. If there were some localities where the number of deaths diminished, the proportion of deaths to the whole population was not modified. On the contrary, at Bassora the panic was at its height. The inhabitants abandoned the city *en masse*. The sanitary physicians, Lubicz and Gazala, were everywhere. A cordon of defense was established across Mesopotamia, with stations at Kut-el-Amara on the Tigris, at Mahava and Mussayeb on the Euphrates. At the meeting of the 15th of August the superior council of health approved of all the measures which had been taken. The quarantine against the river communication and by roadways was carried from ten to fifteen days, cordons of isolation were re-enforced, and a cordon of observation established to the north of Bagdad from Tékrit to Saklavieh. In the second fortnight of August cholera increased, following a line of march more rapid and aggressive.

Having taken new force at Bagdad, where, from the 17th to the 26th, it mowed down 537 victims, having always maintained itself victoriously in all localities where it had manifested itself up to that time, it was announced at Fâo, where the sanitary officer, Eugene Coidan, died a victim to his duty; then, on August 18, in the city of Kut-el-Amara, where, as we said above, a sanitary station had been established, having contained 800 quarantine inmates at the moment cholera manifested itself. On the other side it ascended the Euphrates towards Hillah. Dr. Gazala, having arrived August 19 at Samava, found it in the huts of the Arabs in the surroundings of Réméyta.

On August 18 a "cordon of repulsion" was established on the north and west of Bagdad, Kifri (Salahieh), Tekrit, and Saklavieh. On the other side barracks were established on the Diala, a tributary of the Tigris, about three hours distance below Bagdad, in order to serve as a hospital.

In its session of August 20, the superior health council ordered the cordon of Saklavieh-Tekrit-Kifri to be re-enforced. Rigorous measures were prescribed in order to keep the country immune on the side of Nedjef, Divaniah, Hillah, and Kerbella. A cordon was likewise established on the south of Bassora against the productions of this city on the side of Fâo. The quarantine station at Kut-el-Amara was suppressed. The maritime productions of the Persian Gulf were subjected to the same quarantine rule as those of Bassora.

From August 20 to 27 cholera continued its sinister march. A slight decrease was signalized in southern Mesopotamia, but the regions in the north, west, and east were progressively infected. The epidemic seemed to spread itself like a fan over the Euphrates, the Tigris, and the Diala, a tributary of the latter. On August 20 cholera was announced at Mussayeb, on the Euphrates, to the north of Hillah. From August 23 to 24 it was developed in the entire Ottoman basin of the Diala, at Kiasmieh, Bacouba, Kyzylrobot, as far as Hanéguine.

The city of Bagdad was in desolation. A great panic reigned there. The inhabitants had left, some were camping in the surroundings whilst others were taking refuge to the north. On August 25, 100 deaths were counted at Bagdad, 93 of which were from cholera. Mortality at Bassora showed a tendency to diminish; on August 26 it fell to 8 deaths; unfortunately this decrease could partly be attributed to emigration.

Organization of defense cordons and sanitary stations did not happen to march as rapidly as the epidemic. Hardly was a cordon established, a quarantine station installed, when cholera went beyond them and was found on the other side pursuing its march. Thus the barracks of the Diala had been of no use, the epidemic having passed over, continuing its route as far as Hanéguine.

At the hour we are writing, on the 31st, in the evening, the epidemic, having already raged at Bouchir, on the Gulf of Persia, is extending over all Chat-el-Arab, as also in the regions along the Tigris from Kourna to Bagdad, then to the east as far as Mendehli and Kiazmié on one side and to Hanéguine on the other side; on the Euphrates cholera had gained the countries from Kourna to Sahlavié and threatened Ramadi.

Consequently, the western station of the "repulsion-cordon" was carried from Saklavieh to Hith, and the outline of this cordon was modified so as to form a circular line commencing on the Diala to the Turco-Persian frontier, passing through Kifri, Touzchourmati, Tekrit, and coming out at Hith on the Euphrates.

A second "observation-cordon" will be established farther toward the north, through the country to the north of Suleimanié, continuing through Altynkeupru, the small Zâb (tributary of the Tigris), and ending at Deir, on the Euphrates.

The following is the summary of a statistical table of cholera in the different localities where it manifested itself from July 27 to August 27. It is useless to forewarn our readers that the numbers of this table are approximate, and that, in order to arrive at the exact figures, 50 per cent. should be added over and above.

Place.	Date.		Deaths.
	From—	To—	
Chatra	July 27	August 18	345
Nazrieh	July 1	August 24	471
Bassora	July 6	August 26	394
Réméyta	July 8	August 18	82
Chouq-el-Chouq	July 12	August 22	103
Hamar	July 13	August 15	6
Kourna	July —	August 13	3
Bagdad	July 14	August 26	541
Fão	July 18	August 26	4
Musseyeb	July 20	August 21	4
Beida	July —	August 20	15
Kut-el-Amara	July —	August 21	2
Samava	July 21	August 23	3
Hay	July 22	August 23	5
Touradje	July —	August 23	8
Kyzlrobat	July —	August 23	1
Hanéguine	July —	August 23	1
Medhatié	July —	August 23	1
Kiazmieh	July 23	August 25	7
Bakauba	July —	August 18	8
Total August 27			2,003

Second article.

[From the *Revue-Medico-Pharmaceutique*, Constantinople, Sept. 30, 1889.—Translation.]

In our preceding article we traced the line of march of cholera from its first appearance, about July 27, to the latter part of August. We noted its progress successively from Chatra, Nazriéh, Bassora, and Fâo to Bagdad and beyond; on the side of the Euphrates to Saklavieh, Felandja, and in the direction of the Persian frontier towards Kiazmieh, Mendelé, and Hanéguine. Finally we pointed out the measures of defense adopted: (1) A cordon of defense by Couheïssa, Hith, Tekrit, Touz, Kourmati, Kifri (Selahieh), and the Persian frontier. (2) A cordon of observation by Deir on the Euphrates, El Hamr on the Tigris, Altin-Keupru, Keuy-Sandjak, and Babaderbent (the basin of the Little Zab).

The epidemic then continued its progress:

(1) On the Euphrates it extended towards the northwest, to Ramadi (September 7), then to the quarantine stations of the Hith and Caubeïssa (September 20). Moreover, a cholera focus formed in the important group of localities extending along and to the northwest of the Euphrates between the 31st and 32d parallels of north latitude, and comprising, from the southeast to the northwest, the towns of Samava, Chenafieh, Nedjef, Koufa, Hindieh, Hillah (Babylon), Kerbela, and Musseyeb. The Mouharem pilgrimage having unfortunately coincided with the appearance of cholera, the epidemic made serious ravages throughout this region, visiting not only the towns, but also the Arab tribes (Chamieh, etc.) who live there crowded in unclean huts. On information received at Constantinople, more than 1,400 deaths were noted in the region in question from August 10 to September 20.

(2) In the city of Bagdad the cholera, which had attained its maximum, August 26, with 93 deaths, considerably abated. In the latest report, from September 17 to September 26, the number of deaths from cholera oscillated between 2 and 3 a day. If, on the other hand, we add the daily figures furnished from Bagdad from August 14, the day of the appearance of the epidemic, to September 26, we obtain a total of about 1,000 deaths.

(3) Along the Tigris, above Bagdad, cholera manifested itself, August 29, at Isnam-Azam, a suburb of Bagdad; later, on September 16, at the quarantine station of Tekrit 2 deaths were reported.

(4) Between the Tigris and the Persian frontier, from the basin of the Diala, the basins of the Adhim and the Little and the Great Zab were in turn contaminated. In spite of the cordon of repulse established in the latter part of August by Tekrit, Kifri (Selahieh), and the frontier, from the 2d of September, cholera appeared at Tissyner, a locality situated in the environs of Kerkouk, a very important town from which a number of routes radiate. Again, cholera manifested itself beyond the barriers designed to oppose its march. Two days later, September 4, the epidemic showed itself at Selahieh (Kifri), a quarantine station, where, from September 4 to 24, it made 143 victims. Encountering a well-watered country and a dense population, two conditions favorable to its development, the cholera extended in every direction, visiting, by preference, populous towns and quaran-

tine stations. At Kerkouk the epidemic showed itself September 7, carrying away 385 persons in the short space of eighteen days. Thence it was reported at Terdjil, Zenghiné, Laouk, in the stations of Laerz-Khourmati, Yenidge-Altin, Keupru, Tchmetchémal, and, finally, September 16, in the environs of Rechvan, on the Great Zab, a little way to the east of Mossoul, and, on September 20, at Suleïmanieh, an important center, for the protection of which all the means indicated had been employed.

(5) In the Chat-el-Arab, the lower Tigris, from Kourna to Bagdad and the basin of the Diala, cholera still shows itself, but it has considerably abated. The only localities where it continues are Kiazi-mieh, on the frontier, where, from August 23 to September 26, 218 deaths were counted, and Amara, on the Tigris, which, in the space of twenty-four days (September 2 to 25), lost 230 inhabitants. At Nazriéh and at Bassora, isolated cases. At Chatra, the primitive focus, the epidemic seems to have ceased completely after August 16.

To sum up, this is the situation at the present time. Considerable amelioration in the basins of the Chat-el-Arab, the lower Tigris, and the Diala. Bagdad doing well. Two foci in full activity: (1) The group of towns to the west of the lower Euphrates, from Samava to Musseyeb, and (2) the basin of the Adhim and the Little Zab, on the side of the frontier, with Kerkouk as chief nucleus. Cholera has broken out, also, at Suleïmanieh and in the environs of Rechvan.

The number of choleraic deaths registered from the beginning of the epidemic to September 26 reached 6,173.

With regard to measures of defense, the cordons cited at the commencement of this article, and another cordon established by Altin-Keupru, Bubau, Kafar, Ali Tchémetchémal, and the frontier, for the protection of Suleïmanieh, have been suppressed. At the present time an attempt is being made to restrict the cholera by a very extended cordon, passing by Deir on the Euphrates, Chedadieh on the Kabour, Tel-Kavkoub, Sindjar, Tel-Afar, in the plain of upper Mesopotamia, Ali Hamman on the Tigris, Kelek, Herir, and the course of the Great Zab. Stations have been established also at Amadiéh and Zakko, to the north of Mossoul, and a third and last arrests the circulation at Djéziret, Midiat, and Mardin. The object of these measures is to protect Mossoul, and, in event of failure, Diarbekir.

Outside of Mesopotamia cholera manifested itself at Kouthe, a port on the Arabic coast of Nedjid, on the Persian Gulf. It has also been observed at many points in Persia; in the basin of the Karoum, an affluent of the Chat-el-Arab, from Mohamara to Ahvaz and Chouchter; in the district of Haouizieh, near the Ottoman frontier, towards Amara; and, finally, in a series of villages comprised between Kermanchah and the frontier on the side of Hanéguine.

In concluding our second article on cholera, we are pleased to acknowledge the zealous efforts displayed on all sides to arrest the progress of the epidemic. The authorities and functionaries rivaled each other in their obedience to supreme commands. We must specially cite the efforts of the superior council of health and the sanitary administration, under the intelligent direction of which protective measures were taken. The conduct of the sanitary physicians is worthy of the highest eulogium. We hope that our next article, a month hence, will give our readers better tidings.

We repeat here what we said in our preceding article, that the numbers given in the following table are approximate, and that, in order to be correct, they should be increased.

Recapitulatory table of cholera mortality in Mesopotamia, from July 27 to September 26, 1889.

Place.	Date.		Deaths.
	From—	To—	
Chatra.....	July 27.....	August 16.....	345
Nazriéh.....	August 1.....	September 15.....	486
Bassora.....	August 6.....	September 23.....	450
Réméyta.....	August 8.....	August 18.....	82
Chouq-el-Chouq.....	August 12.....	August 31.....	93
Hamar.....	August 13.....	September 17.....	7
Kourna.....	August 13.....	.....	3
Bagdad.....	August 14.....	September 26.....	924
Fâo.....	August 18.....	August 29.....	5
Musseyeb.....	August 20.....	September 6.....	28
Beida.....	August 20.....	.....	15
Kut-el-Amara.....	August 21.....	September 2.....	3
Samava.....	August 21.....	September 25.....	76
Hai.....	August 22.....	August 23.....	5
Kiazimieh.....	August 23.....	September 25.....	218
Touradjé.....	August 23.....	.....	8
Hanégouine.....	August 23.....	September 26.....	53
Kizilrobad.....	August 23.....	September 14.....	9
Midhatié.....	August 23.....	.....	1
Chamié (tribes and city).....	August 23.....	September 23.....	381
Djehora.....	August 24.....	September 13.....	325
Bacouba.....	August 24.....	September 26.....	23
Mendéli.....	August 26.....	September 24.....	99
Between Samava and Divanié (tribes).....	August 26.....	September 10.....	400
Saklavieh-Felaudja.....	August 28.....	.....	10
Imam-Azam.....	August 29.....	September 6.....	20
Kerbela.....	August 31.....	September 26.....	343
Ali-Garbi.....	September 2.....	September 6.....	40
Hindieh.....	September 2.....	September 6.....	8
Amara.....	September 2.....	September 25.....	230
Tissgine.....	September 2.....	September 14.....	56
Horelduhn.....	September 2.....	September 16.....	78
Madéker-Kébir.....	September 2.....	September 10.....	217
Selahieh (Kifri).....	September 4.....	September 24.....	143
Koufa.....	September 4.....	.....	3
Djezan.....	September 6.....	.....	6
Chénafieh.....	September 6.....	September 13.....	41
Melha.....	September 7.....	September 15.....	16
Hillah.....	September 7.....	September 26.....	106
Ramádi.....	September 7.....	.....	2
Nedjef.....	September 7.....	September 18.....	68
Kerkauk.....	September 7.....	September 26.....	385
Zenghiné.....	September 9.....	.....	1
Terdjel.....	September 10.....	.....	2
Tchehala (moukata).....	September 10.....	September 19.....	237
Iskendérié.....	September 11.....	.....	7
Djerboïa.....	September 12.....	.....	14
Chafé.....	September 12.....	.....	9
Tauz Khourmati.....	September 12.....	September 19.....	8
Yénidjé.....	September 12.....	September 23.....	14
Medjer-Sgair.....	September 14.....	.....	10
Tekrit.....	September 16.....	.....	2
Tadjarik.....	September 16.....	.....	6
Altin-Keupru.....	September 16.....	September 25.....	2
Rehvan (environs).....	September 16.....	.....	4
Taouk.....	September 17.....	September 18.....	7
Gailan.....	September 17.....	September 19.....	9
Tchemtchémal.....	September 20.....	.....	2
Suleïmanieh.....	September 20.....	September 26.....	17
Maté, near Melha.....	September 23.....	.....	6
Bédra.....	September 23.....	.....	3
Zorbatia.....	September 23.....	.....	2
Zobeir.....	September 25.....	.....	5
Total.....	.....	.....	6,173

[From the *Journal d'Hygiene*, October 24, 1889—Translation.]

CHOLERA IN MESOPOTAMIA AND IN PERSIA.

[Letter from Dr. Gabuzzi, dated Constantinople, October 16, 1889.]

The decadence of cholera in Mesopotamia is affirmed. The bulletins of the week report 148 deaths, while no new locality has been infected outside of the epidemic zone.

The news which reaches us from Persia is alarming. There is a great panic at Kermanshah, where the frightened population abandoned the city *en masse*; and since the 30th of September there have been registered 290 deaths. To add to their calamities, a fatal bovine epizooty is announced at Terpoul; a defensive cordon is established at Bana, Sacchis, and Murivan. It seems established that the cholera in Persia was transported from Bassora to Bouchir.

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.....	Oct. 19.	5,642,015	1,728					11	30	50	24		
Paris.....	Oct. 19.	2,260,945	867			1		13	2	25	3		8
Glasgow.....	Oct. 19.	545,678	235				4			4			
Warsaw.....	Oct. 12.	445,770	296			52				14	12		
Calcutta.....	Sept. 21.	433,219	219	5									
Amsterdam.....	Oct. 19.	399,051	157					1		7			
Rome.....	Aug. 31.	300,467	155			2		4					
Rome.....	Sept. 7.	300,467	181			1				10			
Munich.....	Sept. 21.	281,000	155						4				
Munich.....	Sept. 28.	281,000	137										
Munich.....	Oct. 5.	281,000						1	3	3			
Munich.....	Oct. 12.	281,000	131					1	2	7			
Palermo.....	Oct. 19.	250,000	79						2				
Belfast.....	Oct. 19.	229,622	118					5	1				
Bristol.....	Oct. 19.	229,361	91						1				
Genoa.....	Oct. 19.	180,371	77				1			1			
Toronto.....	Oct. 26.	175,000	49					3					
Maceio.....	Sept. 30.	170,000	55			15							
Trieste.....	Oct. 12.	154,500	77			1				1			
Rotterdam.....	Oct. 21.	148,102	67										
Stuttgart.....	Oct. 19.	125,510	40							2			
Pernambuco.....	Oct. 1.	120,000	83				1	2	1				
Pernambuco.....	Oct. 8.	120,000	74						1				
Barmen.....	Oct. 12.	109,000	38				1			1			
Rheims.....	Oct. 19.	98,083	42										
Leghorn.....	Oct. 20.	94,423	41					1					
Cadiz.....	Oct. 20.	57,157	36										
Georgetown, Dem.....	Oct. 2.	56,000											
Georgetown, Dem.....	Oct. 9.	56,000											
Merida.....	Oct. 14.	47,448	51								1		
Merida.....	Oct. 21.	47,448	41							1			
Cienfuegos.....	Oct. 14.	40,655	15										
Vera Cruz.....	Oct. 24.	23,800	29										
Kingston, Can.....	Oct. 25.	18,284	39										
St. Thomas.....	Sept. 20.	15,000	6										
St. Thomas.....	Sept. 27.	15,000	4										
St. Thomas.....	Oct. 4.	15,000	6										
St. Thomas.....	Oct. 11.	15,000	6										
St. Thomas.....	Oct. 18.	15,000	6										
Laguayra.....	Oct. 12.	7,428	5										
Laguayra.....	Oct. 19.	7,428	9										

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