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CHOLERA: ITS NATURE, DETECTION, AND PREVENTION.[a]

Prepared by direction of the Surgeon-General.

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Definition.—Asiatic cholera is an acute specific epidemic or endemic disease, due to the presence of the *Vibrio Choleræ Asiaticæ* and of its toxic products (Koch, 1883), presenting usually the symptoms of violent purging, vomiting, muscular cramps, suppression of urine, great fall of blood pressure, subnormal temperature, and collapse.

HISTORY.

It is considered probable by historical students that Asiatic cholera has existed as an endemic disease in the delta of the Ganges for centuries. From this endemic home the disease became epidemic in neighboring districts, and we have positive evidence of epidemics of Asiatic cholera in Goa (1543), Pondicherry (1768), Calcutta (1781), and other parts of India. In the nineteenth century the disease first assumed pandemic proportions and spread from India over Asia, Africa, Europe, and America.

In 1817 the disease spread over all of India and during the period from 1817 to 1837 had become a world disease and a world problem.

Since 1817 six distinct pandemics of cholera are distinguishable.

First pandemic	1817–1823
Second pandemic	1826–1837
Third pandemic	1846–1862
Fourth pandemic	1864–1875
Fifth pandemic	1883–1896
Sixth pandemic	1902–1910

[a] This article was prepared as a further aid in the surveillance over immigrants from cholera-infected countries at their points of destination in the United States. (See Public Health Reports, Oct. 28, 1910, p. 1521.) The prevention of an outbreak of cholera in a community depends primarily upon the prompt detection of the first cases and the methods employed in handling them. A concise description of methods necessary for bacteriologic diagnosis is therefore given, and a detailed account of those preventive measures which should be adopted if the suspected diagnosis is confirmed, or while it is being determined. The paper also makes clear that those associated closely with the bacillus carrier may develop the disease, while the carrier himself may have no symptoms of it.

In addition to bacteriologic studies in the Hygienic Laboratory, Passed Asst. Surg. A. J. McLaughlin had the opportunity of continuing his studies particularly with reference to diagnosis procedures in the Hygienic Institute, Hamburg, and the Institute for Infectious Diseases, Berlin. Subsequently, as acting director of health of the Philppine Islands, he had full charge of cholera suppressive measures during the epidemic of 1908. The experience thus had enables Doctor McLaughlin to present the subject in an authoritative manner.—EDITOR.

The first pandemic (1817 to 1823) spread slowly from the Ganges delta south and east, involving farther India, Java, Borneo, Mauritius, the Philippines, and China. In 1821 it spread north and west by land over the caravan routes to Persia, Mesopotamia, Arabia, Syria, and Astrakhan, and also to Alexandria, Egypt.

The second pandemic (1826 to 1837) had a wider spread. Europe became infected from Persia and Turkey, where infection was carried by returning pilgrims from Mecca. As has always been the case, the disease was carried by more or less sick individuals by land over nearly the whole of Europe, and by sea route to England, Canada, the United States, Cuba, and South America. This pandemic ceased in 1838, and the disease did not appear again until 1846.

The third pandemic of 1846–1862, history repeating itself, spread over the caravan routes from India, Afghanistan, Persia, and Arabia; from Arabia the pilgrims carried it to Turkey and Russia. During this pandemic the disease spread over practically the whole of Europe and North and South America, Central America, and the West Indies. It subsided in 1860.

The fourth great pandemic began in 1863. This pandemic spread more rapidly, due to improved methods of transportation by steamships and railroads. Egypt was infected by pilgrims from Arabia. Instead of the slow spread by pilgrims traveling primitively by caravan, infected individuals were now carried rapidly by steamers from Egypt to Spanish, French, and Italian ports, as well as to Constantinople and Malta. The disease spread rapidly over Italy, France, Spain, Roumania, Turkey, and Russia. In 1866 England and Germany became infected and later Canada, the United States, Central and South America, and the West Indies.

The fifth pandemic began in 1883, took the usual course through Persia and Arabia to Egypt, and from Egypt by sea route to the Mediterranean ports of Italy, France, and Spain. In 1885 it appeared in Japan, and in 1888 spread over the Philippines and Sunda Islands.

In 1892–1893 it spread over practically all of continental Europe. It is estimated that from 1892–1894 800,000 died in Russia of Asiatic cholera, and a terrific outbreak in Hamburg (1892) cost the lives of 8,600 persons. In 1893 the disease reached the port of New York in the person of immigrants from Europe, and a few cases occurred in Jersey City.

The sixth pandemic, which may be said to have persisted up to the present time, began in 1902, and spread through farther India and China to the Philippines. In 1903 it spread as usual by way of Afghanistan, Persia, and Arabia, to Egypt, Syria, Palestine, Asia Minor, and the Black Sea. In 1904 it followed the caravan routes from central Asia to Baku and the Lower Volga. During 1905 it spread over eastern and southern Russia and Poland, and in the same year it appeared in east Prussia, introduced from Russia by raftsmen on the River Vistula. No great spread of the disease has occurred in the German Empire, because of the constant vigilance exercised by the German sanitary authorities and because of the vigorous and thorough prophylaxis employed, although the continued persistence of the disease in Russia has furnished Germany new infection almost yearly. The presence and spread of cholera in Italy, a country from which we receive more immigrants than from any other country, makes the menace of cholera to the United States more direct and threatening than at any time since 1892–3.

The United States quarantine regulations require detention of all immigrants from infected or suspected territory for five days under observation prior to embarkation. These regulations are enforced at foreign ports by American consuls and medical officers of the Public Health and Marine-Hospital Service stationed abroad. Steamship doctors are required to take special precautions in the observation and inspection of immigrants en route to America. At our own ports there is a very rigid and thorough quarantine examination, and later a second examination made under our immigration laws which serves as a double safeguard against the entrance of a person infected with cholera or other dangerous disease.

These precautions would seem to furnish more than adequate protection, yet due to the fact that the infection of cholera may be carried by healthy individuals showing no signs of disease, it is possible for such an individual to enter the United States without detection. Therefore it behooves all health officers to be especially alert and to look with suspicion upon any intestinal disturbance, particularly in individuals recently arrived or associated in any way with newcomers.

The history of these various pandemics is singularly similar. From its endemic home in India by means of the pilgrims and the caravan routes the disease was carried to Afghanistan, Turkistan, Persia, and Arabia. Egypt was usually infected from Arabia. From Egypt, especially after the employment of steamships for sea travel, the infection was rapidly carried to Mediterranean ports of Turkey, Italy, Spain, and France. Pilgrims carried infection from Mecca to Syria, Palestine, Asia Minor, and Russian territory about the Black Sea. Russia also received infection direct from Central Asia over the great caravan routes from Persia, Afghanistan, and Samarcand to the lower Volga and Baku. Infection of Germany and Austria is traceable to Russian and Polish sources. The danger to the United States at present, as in the past, lies in the importation of the infective agent in the person of immigrants from the great European seaports.

ETIOLOGY.

In 1883 Robert Koch demonstrated that Asiatic cholera was an intestinal disease caused by a comma-shaped bacillus found in the contents or walls of the intestine. He demonstrated the connection between an infected cistern and a severe outbreak of cholera. His findings were doubted at first by some, but were soon verified in thousands of cases in later epidemics by other workers. The finding of vibrios in individuals who are not sick does not weaken the etiological significance of the cholera vibrio. It is well known that these bacillus carriers exist in many other diseases, and the development of the disease depends not only upon the presence of the etiological factor but also upon the susceptibility of the individual. Since the perfection of serum diagnosis, especially due to the classical work of Kolle, the degree of illness, the clinical picture, and the morphology and cultural characteristics of the vibrio are of secondary importance in diagnosis, and the application of serum diagnosis determines positively the existence of cholera infection in an individual whether he be very ill, slightly ill, or apparently healthy.

Morphology of the cholera vibrio.—In stained preparations the cholera vibrio is a short slightly curved rod about 1.5 microns in

length and 0.4 microns in width. By juxtaposition of two or more curved organisms, we find spirals, S-shaped, U-shaped, and other forms. Great variation is possible in different strains, of length, thickness, and degree of curvature; some forms having little curve and approaching the ovoid cocco-bacillus type. Great variation from type is more apt to be found in old cultures which have been kept on artificial media for long periods. In these, long threads or spirals are often found, and the curve may be entirely absent. Cultures not more than twenty-four hours old and freshly isolated from stools will be generally found to conform to the type described above.

The motility of the cholera vibrio is remarkable. In a hanging drop they shoot through the field with great rapidity. That the motility is due to a single flagellum has been demonstrated by Kolle and his coworkers; noncholera vibrios have frequently 2 to 6 flagella.

The cholera vibrio does not form spores, hence is easily killed. Forms which did not stain well and light staining spots have been shown by Kitasato, van Ermengem, and others to be sterile involution forms.

Single individuals of different cholera strains may differ greatly. Some individual vibrios are long and slim and very slightly curved, others are short and sharply curved, while some are short and have so little curve that they are almost of the cocco-bacillus type. These variations simply demonstrate that morphology can not be relied upon for diagnosis. All that one can say is that a vibrio is present; its exact identification will depend entirely upon biologic reactions.

Cultural characteristics of the cholera vibrio.—Cholera vibrios are easily cultivated upon the ordinary media, but for practical purposes only peptone and agar media need be considered. Gelatin has been discarded by practically all workers. It has no advantage over agar and its disadvantages are manifest. Upon peptone within from four to eighteen hours the cholera growth is evidenced by turbidity of the media and by a dense cloudy zone near the surface of the liquid. The intensity of this cloudiness depends upon the age of the culture. A distinct surface film forms, but it is delicate and not thick in pure culture, and scarcely perceptible before eighteen hours. Upon agar the cholera colonies are characteristic and easily differentiated with a little practice from *B. coli* and other common intestinal bacteria. Its cultural characteristics are shared, however, by many noncholera vibrios, and cultural characteristics, like morphology, fail to differentiate the cholera from many noncholera vibrios. The colonies of *B. coli* on ordinary agar are whitish and opaque, while the cholera colonies are pale semi-transparent disks which show by transmitted light an opalescent or iridescent quality, which is rarely shown except by vibrios.

Dieudonne's elective blood agar media has the advantage of inhibiting many of the common intestinal and air-borne organisms. Cholera and some other vibrios grow luxuriantly upon it and the colonies have a dirty gray appearance, the color of pus with a tinge of blood in it. Dieudonne's media is of very slight importance to the practiced worker in view of the fact that there is no difficulty in securing isolated cholera colonies on ordinary alkaline agar media with the methods now generally employed.

The "cholera red" reaction.—By adding 3 or 4 drops of concentrated chemically pure sulphuric acid to an eighteen hour peptone or bouillon culture of cholera, a color varying from rose pink to the color

of Burgundy wine is produced. This characteristic is valueless for exact diagnostic purposes because it is also exhibited by many other vibrios.

Failure to produce cholera red should not be charged to the vibrio until the peptone solution has been tested with organisms which are known to produce cholera red. It is said that the presence of glucose in the peptone is responsible for the failure of the reaction. The peptone of Chapoteau seems more reliable than that of Witte for peptone solution intended for the cholera red test.

PATHOLOGY.

The appearance of the cadaver in cholera is charactertistic. Cyanosis is marked. The skin is dry and the abdomen retracted; the eyes are sunken, half closed, and lusterless. Rigor mortis sets in early, and muscular movements especially of the fingers may occur for some hours after death. Upon opening the body the tissues are found to be dry and the serous cavities without fluid. The blood exuding from the organs on section is thick and tarry. The right heart and venous system are engorged with blood. The left heart and arterial system are empty. The skin of the fingers and toes is shriveled; the so-called "washerwoman's fingers." The injection of the small intestine gives it a pinkish color which is very striking by comparison with the large bowel or with normal intestines. Upon opening the peritoneum the intestines will be found to be without luster, resembling "ground glass" and covered with a peculiar sticky material which with the diffuse rosy color of the small intestines is pathognomonic of cholera.

There is usually a parenchymatous nephritis of varying intensity according to the stage of the disease. Parenchymatous changes in other organs may be slight or absent. The changes in the intestine depend upon the duration of the disease. The longer the disease has existed before death the greater the changes in the intestinal tissues. If death takes place in a few hours we have only the rosy flush shown by injection of the small intestine and the intestine filled with a clear fluid in which flakes of mucous and epithelial cells are suspended, or the fluid may be slightly blood tinged. Intestinal contents in cholera have been likened to sago water, rice water, and pea soup. These terms are self-explanatory and represent variations due to death occurring in different stages of the disease. When the disease has existed for some time before death the epithelial lining is denuded, the submucosa red and inflamed, especially around the solitary follicles and Peyer's patches. Section of the intestine shows microscopically the presence of vibrios in the mucosa and as deep as the submucosa. The vibrios will also be found beneath the epithelial lining of the gland ducts. More severe lesions, of a necrotic or diphtheritic character are found in cases of long duration (the so-called "cholera-typhoid"), but these changes are not common and are due to complication and mixed infection with other organisms.

SYMPTOMATOLOGY.

As in all other infections, the clinical picture varies, depending on the severity of the case. We have in Asiatic cholera every gradation from the severest fulminant case of cholera sicca, fatal in a few

hours, to the bacillus carrier who has absolutely no symptoms and whose infection is accidentally discovered. With such variety of types it seems futile to attempt description and classification, as with the exception of the classical type picture description of the other forms would not be a great aid to diagnosis. In typical cases, with vomiting, diarrhea of a rice water character, cramps in the abdomen, legs, and arms, subnormal temperature, loss of voice, failure of the pulse and collapse, the diagnosis is not difficult, and this symptom complex forms a picture once seen never forgotten.

In addition to typical cases, however, we have occasionally cases fatal in a few hours without diarrhea (cholera sicca) and very often atypical cases in which many if not all of the classical symptoms are absent.

These atypical cases are the more dangerous because they frequently end in recovery, and, being unrecognized, serve to spread the disease. They may have no symptom except a diarrhea, which may or may not be choleraic in character. In times of cholera danger the only safeguard is to examine the stools of all such diarrheas. If bacteriological examination of the stools is not feasible, the stools should be treated as infectious for the protection of the public.

Symptoms of typical cholera.—The so-called prodromal symptoms of cholera are too vague to be of any value in diagnosis. Writers speak of premonitory diarrhea, but this symptom, if present, would never suggest cholera, unless vibrios were present in the diarrheal discharge.

In the writer's experience cholera cases are either atypical from the beginning or begin suddenly without noticeable prodromes. Typical cholera begins with profuse watery stools. The fæcal character of the first stools is soon lost and the discharge assumes the appearance of thin rice water with flocculi or granules of mucus suspended therein. The first vomited material may contain food, but later the vomitus is thin and watery, resembling rice water. Muscular cramps in the abdomen and limbs cause great suffering and the spasmodic knotty contraction of muscles is characteristic of the disease. There is a very rapid shrinkage of the soft tissues of the body, due to the enormous loss of fluid, and evidenced by falling in of the cheeks, sunken eyes, shriveled fingers and toes, and general emaciation. There is usually complete suppression of urine and bile. Respirations are rapid and shallow. The body surface is cold and covered with a clammy sweat. The surface temperature falls 4° or 5° below normal, but the rectal temperature may show 38° to 40° C. The pulse becomes rapid, feeble, fluttering, and then imperceptible at the wrist. Cyanosis is marked; the face, and especially the fingers and toe nails, assuming a bluish tint. The voice is reduced to a whisper. These symptoms are sometimes followed by complete collapse and death. This may occur at any time before the expiration of twenty-four hours.

In other cases vomiting and purging cease by adequate treatment and sometimes spontaneously. The body heat returns, the pulse becomes perceptible, then strong again, the secretion of urine begins to be reestablished, and the patient is on the road to recovery. Other cases which do not die in collapse react slowly and pass into a condition which many writers have described as "cholera typhoid." In

this state there is some fever, the shrunken tissues fill out, and the urinary secretion returns. The stools assume a pea-soup character and are very offensive. The urinary secretion returns, but the urine is scanty, albuminous, and contains many casts. From this point the biliary secretion may return and the stools approach the normal type, the albumen and casts diminish, and the quantity of urine increase, the patient progressing to convalescence. On the other hand, from this point if the secretion of urine fails to improve, then any of the symptoms and conditions due to uræmia may be expected, including convulsions, coma, and death.

BACTERIOLOGICAL DIAGNOSIS OF CHOLERA.

In combating cholera, our sheet anchor is the exact bacteriologic diagnosis. Diagnosis by means of the agglutination reaction and Pfeiffer's phenomenon permits us to differentiate cholera from toxic gastro-enteritis, ptomaine poisoning, and other diseases resembling cholera. It further enables us to diagnose Asiatic cholera when the classical symptoms are absent or masked or in those cases in which the patient presents no symptoms whatever (bacillus carriers). In other words, this exact diagnosis obviates the necessity of fighting in the dark, and enables us to concentrate our efforts upon finding and rendering innocuous foci of infection.

The picture of so-called "Cholera nostras," which is probably not due to one, but to many different causes, and the picture of fish, meat, cheese, or ice cream poisoning, may be very like cholera with vomiting, diarrhea, subnormal temperature, loss of pulse, suppression of urine, and collapse. The symptoms given are common to the action of various toxic substances upon the human organism. To attempt differentiation by clinical symptoms alone is always uncertain and in some cases quite impossible. By the bacteriologic methods now in use we have a certain means of differentiation which gives us results within a few hours.

The material for the diagnosis of Asiatic cholera is obtained from the stools of the sick or suspected one, or from the intestinal contents of the dead. If a normal stool can not be obtained, as in the case of a healthy "contact" or person living in the house with a cholera patient, a cathartic such as sulphate of magnesia may be administered. Sometimes with a patient not seriously ill, but whose bowels have been moving freely, it is inadvisable to give cathartics, and yet an annoying delay may occur in waiting for a specimen. In such circumstances pass the largest size catheter or a stomach tube high up in the large bowel. Upon withdrawal the "eye" of the tube will be plugged with mucus scraped from the lining of the bowel, and this can be transferred to media by means of a platinum loop. It must be remembered that this method is only reliable when the patient's bowels have been moving freely just preceding the taking of the specimen. In fatal cases the specimen should be taken from the small intestine[a] at autopsy, or, if complete autopsy is not possible, an incision may be made in the abdomen, a loop of small intestine drawn out of the abdominal cavity, and a section 4 or 5

[a] It is best to cut out two sections of small intestine, one from the middle and the other from the lower portion of the ileum, just above the ileocecal valve.

inches in length should be cut out between ligatures, and brought or sent to the laboratory.

First smears should be made from the fecal material obtained. Flakes of mucus should be selected and smeared upon clean glass slides. After drying in the air and fixing by passing the slide rapidly three or four times through a gas flame, stain for a half minute with carbolfuchsin solution, diluted by the addition of nine times its bulk of water. In cases with typical symptoms, the presence in the stained preparation of a great predominance of vibrios over other organisms is very suggestive of cholera, and the practiced observer will often be willing to risk a diagnosis upon this alone. It is a risk, however, and an unnecessary risk, as verification by agglutination is not difficult and should be carried out in all cases.

It must be borne in mind that in normal and diarrheal feces fine spirilla are found, which, although they do not greatly resemble cholera organisms, being longer, narrower, and less curved, may cause confusion. There are also the so-called cholera-like vibrios, which are morphologically and culturally indistinguishable from cholera, their differentiation being possible only by the agglutination and other biologic tests. It is not known if these are common in America, but they are frequently met with in the Tropics, and the writer isolated twenty different strains of these in Manila from intestinal contents, shallow contaminated wells, and other sources.

Inoculation of cholera peptone media.—From three to six tubes of cholera peptone solution (see Appendix) should be inoculated each with a loopful of the fecal material, selecting a flake of mucus if possible from the most liquid part of the stool. Also add 1 c. c. of fecal material to a flask containing 50 c. c. of peptone solution. Place these tubes and flask in the incubator at 37° C, or, if no incubator is available, place in a warm room and try to maintain the temperature between 27° and 37° C. Examine the tubes after three, six, twelve, and twenty-four hours by making stained smears from the surface. If a thick pellicle forms in this time it is well to avoid it, as other organisms will probably predominate therein. By tilting the tube very carefully toward the horizontal, the pellicle moves away from the lower side of the tube, and a loopful may be secured, without touching the pellicle, from the intensely cloudy zone just below the surface of the liquid. If vibrios are scarce or absent in the smears from the peptone tubes they may be abundant in the 50 c. c. flask of peptone. If the three-hour examination is negative the tubes and flask should be replaced in the thermostat, to be examined again after a growth of six to twelve and twenty-four hours. It is to be remembered that the cholera peptone solution is an elective medium and favors the growth of vibrios, especially in the first eight hours of growth. If vibrios are few in the first peptone tubes after three hours it is wise to make a second series from the first, as well as to permit the original peptone tubes to incubate longer.

Agar plates.—The alkaline cholera agar (see appendix) should be used. For convenient use it should be melted and about 15 c. c. placed in each tube and allowed to solidify with the tube in a slanting position. The plates are made by pouring the contents of one tube, melted in a water bath, into each petri dish. The surface of the agar plates must be dry, and after solidification has taken place, this is best affected by placing them for five minutes in a warming oven

at 60° C., or remove the cover and place with agar surface downward in the thermostat at 37° C. for one hour.

Inoculation of the agar plates should be made direct from the fecal material and as a matter of course from the surface of any peptone tube, from which the stained specimen shows vibrios present. Inoculation of the plates may be made with a bent glass rod, a swab, or with the ordinary platinum loop.

The amount of material used should be one loopful, and three plates should be successively streaked with the same loop without renewing the infected material. In this way isolated colonies are usually obtained in the first plate and always in the second or third.

It is sometimes advisable in making plates direct from stools to add one loopful of the fecal material to 1 c. c. of peptone or bouillon and streak the agar plates from the dilution.

It will be noted that no mention is made of gelatin media or of the growth of vibrios thereon.

Gelatin occupies considerable space in text-books upon cholera, but has been abandoned by all practical workers, and now possesses little more than historic interest or value.

Dieudonne's elective blood agar media (see appendix) was tested by the writer with fresh cholera stools in Manila. It greatly inhibits the growth of colon and other intestinal bacteria, also of the common air-borne yeasts and molds. Cholera and some other vibrios grow luxuriantly thereon, and the colonies may attain microscopic size earlier than upon the ordinary media. At first glance it seems an ideal media, but its importance is lessened by the fact that there is no difficulty in isolating cholera in pure culture with the ordinary cholera peptone and agar now in use.

The agglutination test.—The agar plates are placed in the thermostat at 37°, or kept in a warm room as near that temperature as may be possible.

Within eighteen hours the cholera colonies appear easily distinguishable from those of colon-like organisms by the qualities described above. Given the vibrio colony, it is then only necessary to apply the serum-agglutination test to ascertain if the vibrio is a cholera vibrio or a nonspecific vibrio which resembles it. There may be many isolated colonies upon the plate, and there is always the possibility of cholera-vibrio and noncholera vibrios coexisting; therefore it is often necessary to test many colonies. For routine diagnostic work the following procedure will be found to save time and is the one employed in Manila.

A dilution of 1 to 200 of an agglutinating cholera serum (see appendix) having an agglutinating limit or titer of not less than 1 to 1,000 should be used. A drop of this dilution should be placed at each of three equidistant points upon a clean glass slide. These drops upon the slide are numbered 1, 2, and 3. A portion of colonies correspondingly numbered is transferred from the plate to the drops of diluted serum by means of a straight-pointed platinum wire. The diffuse cloudiness effected in the drops of serum remains permanent in the case of noncholera vibrios, but if the vibrio be cholera the familiar phenomenon of agglutination is macroscopically apparent. The diffuse cloudiness gives place within a few minutes to a clear fluid containing numerous floccules in suspension. The droplets soon dry in

the air and may be fixed and stained when the characteristic vibrios may be seen stained in clumps.

The agglutination phenomenon may be observed microscopically by the hanging drop method, inoculating a drop of diluted serum from a cholera colony in the same manner as described above. For diagnostic purposes, the macroscopic agglutination test is sufficient. Quantitative macroscopic agglutination tests may be made in the following manner:

In small test tubes (2 c. c.) one-half c. c. of dilution of serum varying from 1 to 10 to 1 to 4,000 or up to the limit of serum's agglutinating power. To this quantity of serum one-half c. c. of an emulsion of the vibrio to be tested is added, and the results noted after 1 hour in the thermostat at 37° C., and after an additional 2 hours at room temperature. A smooth emulsion is best prepared by adding to cultures 18 hours old on agar slants, 5 to 8 c. c. of sterile salt solution. With young cultures very little shaking is necessary, and it is never necessary to scrape off the culture, a procedure to be avoided. The test-tube racks should be painted black, to make the reading of results more easy. In the pipette work of delivering quantities (one-half c.c.) of virulent culture in each tube, it is advisable to use cotton plugs in the upper end of the pipettes and to employ a rubber nursing-bottle teat to furnish the necessary power of suction and expulsion. Of course, by adding the equal quantity of culture to the serum dilution, the amount of dilution is multiplied by 2. Thus 1 to 50 becomes 1 to 100, and 1 to 500 becomes 1 to 1,000. Some workers add a loopful of culture to 1 c. c. of the serum dilution, rubbing it up slowly on the side of the test tube. It takes more care and time to effect a smooth suspension in this way, but the readings are made without change in the dilution—1 to 50 remains 1 to 50, etc.

Other diagnostic tests.—For the description of the technique of the well-known Pfeiffer phenomenon the reader is referred to any standard work upon bacteriology. It is a very valuable corroborative procedure, but unnecessary for diagnostic purposes if the serum agglutination test can be applied. Its proper demonstration necessitates the use of a well-equipped laboratory.

Technique for the testing of the hæmotoxic or hæmolytic properties of vibrios and for making experiments with vibrios in the binding of complement are omitted. Scores of interesting experiments have been performed in these lines by Kolle, Meinicke, Schumacher, Mühlens and von Raven, Schütze, Weil, Markl, de Besche & Kon, Schottmüller, Kraus & Pribram, Ruffer, Göttschlich, and many others, but nothing to alter the demonstration of the absolute specificity of the agglutination reaction as first demonstrated beyond question by the classical work of Kolle. So that in spite of the interesting light thrown upon the biologic properties of vibrios, the discussion of these almost endless experiments is beyond the scope of a practical precis of this kind, and the interested reader may consult the original articles. Kolle and his coworkers proved the absolute specificity of agglutinating sera. He proved that serum prepared from a cholera vibrio agglutinated all cholera vibrios and had no more action on noncholera vibrios than normal serum in the same dilution. Also that an agglutinating serum prepared from a noncholera vibrio agglutinated that vibrio only, and had no effect whatever upon a true cholera vibrio. The writer was able in Manila to corroborate this

with a large number of freshly isolated cultures of both cholera and noncholera vibrios.

The use of the patients' serum tested against a known cholera organism for specific agglutinin or bacteriolysin is uncertain and unreliable as a means of diagnosis, consequently is not discussed here. The reader is referred to an interesting article by Svenson on this subject. (Zeitschrift für Hygiene, vol. 64, 1909.)

Discussion of the famous El Tor vibrio is avoided also. The literature on this one phase is enormous and the end is not yet. Suffice it to say that the consensus of opinion places the El Tor vibrios as true cholera vibrios, somewhat atypical in possessing toxic and haemolytic properties rarely found in cholera vibrios. However, Kolle, Meinicke, and others have shown that these properties are found occasionally in other cholera vibrios, and in view of the fact that these El Tor vibrios give the agglutination reaction and Pfeiffer's phenomenon with cholera sera they must be considered cholera vibrios. The persons carrying them without exhibiting any symptoms of cholera must be regarded as carriers or, as Pfeiffer has suggested, the vibrios for some reason may have lost their pathogenicity for man.

TREATMENT.

The treatment of Asiatic cholera may be considered under two heads, viz, treatment of collapse and treatment of uræmia.

Treatment of collapse.—The best treatment for collapse is the intravenous injection of salt solution. When feasible no other treatment for this condition is justifiable. The apparatus and technique are simple. Rogers recommended the use of hypertonic salt solution, on the ground that the use of this solution replaced not only fluid, but lost salts of the blood. The writer working with Dr. A. W. Sellards in Manila tested various salt solutions, including hypotonic and hypertonic solutions. The results showed equally beneficial effects from all in so far as judgment could be rendered from a series of about 100 cases.

The crying need of the patient is for fluid. This is needed primarily in the blood path. To inject into any other part of the body is a waste of very valuable time. Peritoneal or subcutaneous injections should only be employed when the number of patients, lack of time, or some other good reasons prevent intravenous injection.

Salt solution should be prepared and sterilized in 1 and 2 liter bottles. When needed it should be heated in a water bath to 43 to 45° C. A doubly perforated cork with one long glass tube to admit air and a short glass tube to which a sufficient length of rubber tubing is attached should be sterilized and kept in weak carbolic solution until needed. The following procedure is followed at San Lazaro Hospital in Manila:

The skin is cleansed over the internal saphenous vein above the internal malleolus, or one of the veins at the bend of the elbow. A small incision is made over the vein. The vein is dissected from the tissues and a grooved director passed under it. Two ligatures are placed one-half inch apart and the distal one tied. A small incision is made in the vein between the ligatures. A medium-sized canula is attached to the rubber tube of the transfusion apparatus and inserted into the vein after having allowed the fluid to flow through the canula

a few seconds. The bottle containing the salt solution described above should be reversed and hung about 4 feet above the bed, and the flow should not be too rapid, taking twenty to thirty minutes to inject 1,500 to 2,000 c. c. of fluid. The amount injected depends upon the condition of the patient. Usually 1,500 c. c. will be necessary and sometimes more to restore the fallen blood pressure and bring back the body heat. If collapse again supervenes within a few hours, the injection should be repeated, using one or the other ankle or forearm veins. Rogers very often leaves the canula tied in the vein for the use of a second injection. In Manila usually a different vein was used each time until both ankles and both elbows were bandaged. When a fifth injection is necessary the operation is similar to the first except that the incision is made one-half to 1 inch higher up, as described by Nichols and Andrews. After the operation the proximal ligature is tied and an antiseptic pad and bandage are applied.

The effect of intravenous injections in cholera is startling. It seems like resurrection, the body heat returns, the pulse becomes perceptible, then full and strong. If symptoms of collapse again appear, the operation must be repeated. Hot saline enemata have a good effect in washing out the lower bowel. The most important indication in the stage of collapse next to supplying the lost fluid is to conserve and maintain the body heat by hot bricks, hot-water bottles, blankets, etc. No nourishment should be given for the first thirty-six hours; nothing but cracked ice or small quantities of water. Rice-water broths or coffee may be given in small quantities after the second day. As convalescence begins, soft diet may be gradually introduced.

Treatment of the uræmia.—Treatment of the uræmia or the so-called cholera typhoid is the classical treatment of uræmia as described in any text-book. It has been suggested that this fatal complication was due to an acidosis, and on this theory the writer, with Dr. A. W. Sellards, of Manila, in December, 1909, substituted for the salt solution used intravenously a 2 per cent solution of sodium bicarbonate. The beneficial effects of fluid during cholera were apparently identical with those noted after the ordinary salt solutions, and in addition the incidence of uræmia following as a complication was reduced. The number of cases was not large enough to draw positive conclusions, and further experimentation is necessary.

PREVENTION OF CHOLERA.[a]

Before considering prophylactic measures it is necessary to consider how cholera is spread.

The infective agent in cholera is found only in the stools and vomit of persons who have in some way taken cholera organisms into their alimentary tract. The organisms may have been ingested directly into the stomach with food and drink, or at least the germs must have gained entrance to the mouth in some way.

Cholera is spread from place to place by individuals, carrying the cholera vibrios in their intestine and more or less sick with cholera.

[a] Prophylaxis of cholera by means of bacterial vaccines was first practiced by Ferran, developed by Haffkine, and improved by Kolle, Strong, and others. It seems to reduce the incidence of cases in a community. Its protection is not absolute and its sphere of usefulness is limited by popular dislike of inoculation procedures.

Where the distance between infected points is considerable the disease is probably carried by man, and by man alone.

Cholera is an absolutely preventable disease, and theoretically a case of cholera properly cared for should not result in further spread of the infection. The spread of cholera is primarily due to one of four factors:

1. Bacillus carriers.
2. Unrecognized light or atypical cases of cholera.
3. Failure to find or report cases early.
4. Carelessness in carrying out precautions, or failure to take such precautions.

The bacillus carrier.—The bacillus carrier is an individual carrying cholera vibrios in his intestine and yet who exhibits no signs of the disease.

The writer has never known a bacillus carrier to harbor cholera vibrios for longer than twenty days and the great majority lose their vibrios in less than ten days. However, many observers have found them present for longer periods, although all agree that the long-time carrier is the exception and not the rule. The following are the longest cited by Pfeiffer.[a]

Persistence of cholera vibrios in stools of convalescents, or bacillus carriers.

Name of observer.	Longest duration.	Name of observer.	Longest duration.
	Days.		*Days.*
Guttmann	10	Kolle	48
Lazarus and Pulicke	12	Donitz	49
Michailow	12	Abel and Clausen	15
Simonds	18	Pfeiffer	13
Rumpel	24	Bürgers[a]	69
Romanelaere	47		

[a] Hygienische Rundschau, February, 1910, Vol. XX, No. 4.

During times of epidemic bacillus carriers are numerous, and the writer found 6 to 7 per cent of carriers among healthy individuals living in the infected neighborhoods in Manila. When cases are few, the so-called sporadic cases, hundreds and even thousands of stools may be examined before the first carrier is found. The fact that the bacillus carrier may harbor the cholera vibrios as long as sixty-nine days illustrates how quarantines may be passed and an apparently inexplicable outbreak be explained. The danger from the bacillus carrier depends upon his habits and the sanitary conditions of the community in which he finds himself. If he deposits his stools in a modern flush closet in a city in which disposal of human excrement is properly effected and if he washes his hands frequently enough and at the proper time, he is harmless. His urine contains no vibrios. He may find himself, however, in a community with no proper system of disposal of excreta, or in spite of the existence of such system he may deposit his stool where flies or other insects have access thereto, or deposit it in a place from which a well or other source of water supply becomes infected. He may fail to wash his hands after defecation and with his dirty fingers infect the food or drink of others.

[a] Klinische Jahrbuch, 1908, vol. 19, p. 483.

In these ways the bacillus carrier is the greatest menace, and because of presenting no symptoms necessitates for our protection the safe disposal of the fæces of the entire population.

Mild or atypical cases.—Unrecognized, light, or atypical cases of cholera, or failure to carry out the necessary precautions, or carelessness in carrying out these precautions in recognized cases, are responsible for the spread of cholera, by permitting the infective material contained in the stools or vomit to get beyond control. Many writers speak of "latency" in cholera, "long incubation periods," etc., these terms indicating that an individual, for instance, a bacillus carrier, already carrying the vibrios in his intestine, may by reason of some factor which damages his intestinal mucosa or lowers his power of resistance, suddenly become ill after carrying the organisms for days beyond the ordinary period of incubation (one to five days). It is a very plausible theory, but lacks positive proof. I have seen cases which seemed to accord with this description, but was never able to exclude the possibility of infection from some unknown source (undiscovered bacillus carrier) within the ordinary incubation period.

A cholera stool improperly cared for may be deposited where flies and other insects may carry the vibrios to exposed food or drink. In communities without a safe water supply the stool may be deposited in or near a source of water supply. Milk may become contaminated either by flies or by washing the containers in infected water. Kitasato asserts that the vibrios will only live until the milk sours. There is some question about this, but in any event this duration of life would be quite long enough to permit milk to spread the disease.

Vegetables and fruits growing close to the ground are sometimes fertilized by human excrement. They may also be irrigated by infected water, and if eaten raw may thus be a means of spreading cholera.

In reviewing the manner in which cholera is spread, the prophylactic measures necessary are at once apparent. These will be discussed under two heads, viz: I, General preventive measures; II, Suppressive measures.

The first heading (General preventive measures) is intended to include those precautions which should be taken before the actual appearance of cholera in the community. Some of these, however, especially proper disposal of human excreta and the provision of a safe water supply, should be insisted upon by the health officer at any time on account of the constant danger of typhoid and other diseases, but especially when menaced by cholera.

GENERAL PREVENTIVE MEASURES.

1. Establishment of system of securing and recording information.
2. Organization of available personnel for sanitary work.
3. Enactment of necessary ordinances.
4. House to house inspection.
5. Safe disposal of feces of entire population.
6. Provision of a safe water supply.
7. Supervisory control of food and drink.
8. Campaign of education.

Securing, recording, and forwarding information.—Securing reliable information of the march of cholera is very necessary. The health

officer may obtain this information from the Surgeon-General, Public Health and Marine-Hospital Service, through the Public Health Reports, published weekly. Information of the entrance and spread of cholera within his State should be obtained from the state health officer and recorded carefully by the local health officer.

Information so received should be recorded upon maps of the State and municipality infected by means of flag-pins or pins with varicolored heads.

The local health officer should report daily to his state health officer the absence of cholera or if the disease be present, he should report the number of cases, and all pertinent information. Any suspicious diarrhea, especially in newly arrived persons, immigrants, or among those associating with such persons, should be treated with the same precautions as cholera and promptly reported to the state health officer and to the Surgeon-General of the Public Health and Marine-Hospital Service, Washington.

Organization of the sanitary personnel.—The sanitary personnel will necessarily depend upon the size of the municipality and the amount of money available. The health officer should at least have his plan of organization ready before the actual appearance of cholera. He should divide his municipality into districts. There should be a sanitary inspector for each district. The district should be of such size that the sanitary inspector could, if necessary, visit each house twice in a working day. He will need a fly-proof room for use as a morgue and should make provision for the possibility of having to isolate and care for cases of cholera or suspects. For disinfection he should have a unit of one disinfecting crew of two men with a wagon or cart. The number of crews will depend upon the size of the town and the number of cases of cholera. The local police may be used for inspection purposes and for the enforcement of health ordinances.

Enactment of ordinances.—Municipal ordinances should provide for the proper disposal of feces, the conservation of water supplies, prompt reporting of suspicious cases, collection and disposal of garbage, proper care of food and drink, and other sanitary necessities. If such ordinances are not in effect, it is the plain duty of the health officer to insist on their passage and to make sure that the penalties are adequate.

House to house inspections.—House to house inspection has a twofold object: (1) The finding of cases of suspicious illness; (2) to enforce sanitary maintenance of premises. This duty requires the maximum of courtesy and the minimum of words on the part of the inspector. A man without tact, courtesy, and patience must not be employed as a sanitary inspector. He should ascertain the number of persons in the house and leave a cholera circular upon his first visit. He should call attention to the necessity of protecting food and drink from flies or other sources of contamination. He should note the existence of garbage, refuse, filth, or any condition which favors the breeding or nourishment of flies. Cases of suspicious illness should be at once reported to the health officer, and at the end of the day a complete record of the number of premises inspected, insanitary conditions noted, etc. House to house inspection should be most carefully made in districts in which overcrowding or other insanitary conditions prevail and where arriving immigrants are apt to be found.

Disposal of feces and provision of a safe water supply.—Methods of disposal of feces and provision of a safe water supply will depend upon the size of the municipality and the funds available. Discussion of scientific and acceptable methods of disposal of feces and upon providing safe water supplies is beyond the scope of this precis. The health officer, from works upon hygiene and sanitary engineering, can select the systems best adapted for his municipality. If he is compelled to permit the more primitive methods from reasons of economy, he can at least insist upon protecting his shallow wells from pollution and upon making his primitive closets fly-proof.

Supervisory control of food and drink.—The health officer personally or through his sanitary inspectors should exercise the closest supervision over markets, stores, restaurants, hotels, and other places where food and drink are manufactured or exposed for sale. Unnecessary, careless, or uncleanly handling of foodstuffs should be prevented and all prepared foodstuffs protected from flies and other insects.

Campaign of education.—The success of cholera prophylaxis depends largely upon popular education. The health officer, through the schools, through popular meetings, and by means of circulars, should disseminate knowledge of cholera in simple language among the people, showing them how they may protect themselves from infection. A popular circular may be distributed based upon the following:

Cholera circular.

Cholera CAN BE INTRODUCED INTO THE SYSTEM ONLY THROUGH THE MOUTH. It is caused by organisms too minute to be seen except with a microscope. These organisms are readily killed by heat, and the disease may therefore be successfully combated by the proper use of fire and hot water, which are at the disposal of everyone.

To avoid cholera and prevent its spread observe the following precautions:

1. Boil all drinking water and place it while hot in covered vessels. Do not dip up the water when needed, but POUR it into drinking cups; otherwise cholera germs may get into the water from the hands.
2. Do not touch drinking water or food with the hands unless they have just been washed in water that has been boiled.
3. Eat only cooked food. Avoid all raw fruits and vegetables. Fruits may be made comparatively safe by dipping them a few seconds into boiling water.
4. Flies may carry cholera germs on their feet from human excreta to food; therefore, to protect it from flies, cover all food immediately after it is cooked.
5. Boil all water used for diluting milk.
6. Cook all meats and fish thoroughly so as to heat the same throughout.
7. Keep kitchen and table dishes thoroughly clean and scald them before using.
8. Keep the place in which you live, the ground under the house, and everything pertaining to it, clean.
9. Outhouses, closets, and vaults can be made safe by putting in lime or carbolic acid. When this can not be done dejecta may be buried or thoroughly covered with earth.
10. Isolate all the sick.
11. Filth or vomit and the dejecta of the sick should be promptly cleaned up with boiling water and buried.
12. Clothes and bedding used by sick persons must be boiled. Do not wash any clothes near wells or springs nor permit surface water to run into any well or spring.

SUPPRESSIVE MEASURES.

Under suppressive measures which are imperative after cholera has appeared in the municipality, must be considered the following: 1, Early discovery of cases; 2, isolation and care of patient; 3, disinfection; 4, observation of contacts and precautions to be taken with them.

Early discovery of cases.—Early discovery of cases is the measure of greatest importance in the suppression of a cholera outbreak.

Ordinances should exist requiring the prompt reporting of suspicious diarrheas, and placing the obligation for reporting such cases upon householders, hotel or boarding-house keepers, nearest relatives, and attending physicians. Much depends upon the attitude of the local profession and the alacrity or tardiness with which they respond to this duty.

Careful watch over death certificates and autopsies upon those dead under suspicious circumstances is essential. Sometimes, instead of complete autopsy an abdominal incision and removal of a portion of small intestine suffices, and consent therefor is obtained with less trouble. Special attention must be paid to the foreign quarters and newly arrived immigrants, if such exist.

Isolation of the patient.—A patient with cholera or suspected of having cholera should be isolated immediately. The room or ward should be rendered fly-proof by screening. In the room with the patient there should be a tub or other large vessel containing 5 per cent solution of carbolic acid crystals for the immediate reception of soiled linen.

The stools and vomit of the patient should be disinfected at once by adding an equal volume of 5 per cent carbolic acid solution, 5 per cent formaldehyde solution, or milk of lime. The mixture should be covered and allowed to stand for two hours before ultimate disposal. There should also be a washstand and basin just inside the door of the room and every person before leaving the room should be required to thoroughly wash and disinfect the hands with a 1 per cent solution of lysol or other good disinfectant.

Gowns should be put on upon entering the sick room and should be taken off just before disinfecting the hands and leaving the room. These gowns when soiled should be placed with other soiled linen in the tub of carbolic acid solution.

Disinfection.—There should be a thorough surface disinfection of *every room in the house* in which a case of cholera or suspected cholera is found.

The infection of cholera is not air-borne and is not likely to be found higher than a man can reach, so that this disinfection is effectively secured by mechanical cleansing of the walls and floor with disinfecting solution, (2½ per cent carbolic acid, 1 to 1,000 bichloride solution). This disinfection should not only be performed after the death or removal of a patient, but of course should be more or less continuously carried out in the sick room or hospital ward by mopping of the floor and washing or spraying the walls with the disinfectant solutions above described.

The cholera organism is easily killed by drying and by heat, and infected objects may either be immersed in 5 per cent formalin or 5 per cent carbolic acid solution, or disinfected by dry heat or boiling water.

It will be necessary sometimes to disinfect rooms containing objects and fabrics which would be ruined by immersion or boiling. These rooms should be disinfected by formaldehyde gas. Bichloride solution corrodes metals and such objects should be boiled or immersed in one of the other solutions. All remnants of food about a cholera house should be destroyed by burning. Drinking water or other beverages should be disinfected and disposed of. Cutlery, kitchen

utensils, crockery, etc., are best disinfected by boiling. Outside of the house where to disinfect is determined by the possibility of the object or place being infected with fecal material and the existence of moisture.

Observation of contacts and precautions to be taken with them.—After isolation of the patient and disinfection of the premises, the contacts or persons who have been in contact with the sick one must be cared for.

The hands of the contacts and such clothing as may have been exposed to infection must be disinfected, and the contact visited twice daily for a period of five days. During these five days there should be at least two examinations of the stools of each contact, one as soon as possible after discovery of the initial case and the other before discharge from observation. Should either of these examinations prove positive for cholera vibrios the contact must be isolated at once and the same precautions taken as in any other case of cholera. Until two vibrio-negative reports are received stools of contacts and their hands are to be disinfected precisely as in actual cholera cases.

Convalescents should have three vibrio-negative reports of stools examined on successive days and should never be discharged upon one single vibrio-negative report.

APPENDIX.

I. *Nutrient bouillon.*

One-half kilogram beef, free from fat, is cut in very small pieces and allowed to stand with 1 liter of water twenty-four hours in the ice chest or for one hour in the incubator at 37° C. Press through cheese cloth. Add water up to 1 liter, add 10 grams Witte's peptone and 5 grams salt. Cook for one-half hour. Make alkaline with solution of caustic soda. Heat again three-fourths hour and filter.

II. *Cholera agar.*

Take 1 liter of nutrient bouillon (No. I) and add 30 grams agar, dissolve by heat and alkalinize with caustic soda solution. To reach a desirable grade of alkalinity in cholera media, add 3 c.c. of a 10 per cent caustic soda solution to each 100 c.c. of media which is neutral to litmus. The agar should be sterilized in tubes containing 15 c.c. each.

III. *Cholera peptone solution.*

Peptone (Chapoteau or Witte)	10.0
Salt	10.0
Potassium nitrate	.1
Sodium carbonate	.2
Distilled water	1,000.0

Dissolve by heat, filter, and sterilize in tubes containing 15 c.c. and flasks containing 50 c.c. for use.

IV. *Alkaline blood agar medium of Dieudonne.*

Defibrinated ox blood	30
Normal solution of caustic potash	30
Cholera agar (No. II)	140

Add the caustic potash solution to the ox blood, and add the melted agar. Sterilize for one hour at 100° C., and use about 15 to 20 c.c. for each plate.

V. *To prepare an agglutinating cholera serum.*

Use eighteen-hour cultures of a known cholera vibrio upon agar and inject in the ear vein of a rabbit a suspension of the organism in salt solution which has been heated for one hour at 60° C.: First day, 1 loop; seventh day, 3 loops; fourteenth day, 5 loops; twenty-first day, 1 slant (about 8 loops).

The fourth injection may be given intraperitoneally and the rabbit is ready to bleed on the twenty-eighth day. This procedure usually gives a serum with a titer of 1 to 4,000.

MEASURES TO PREVENT INTRODUCTION OF CHOLERA INTO THE UNITED STATES.

EXCLUSION OF FOODSTUFFS FROM BAGGAGE.

Much importance being placed upon the necessity of the careful inspection of the baggage of emigrants from the cholera-infected districts with a view to the elimination from such baggage of foodstuffs, bottled water, and other articles possibly infected, the medical officers at the foreign ports of embarkation have been directed to arrange for a rigid inspection of the baggage of emigrants for this purpose prior to the detention of the emigrants at the port of embarkation. In addition to this the quarantine officers at the various United States ports have been instructed to carefully inspect the baggage of immigrants from cholera-infected districts to determine the presence of such food products and to destroy them when found. On account of negative information as to the thoroughness with which the inspection to determine the presence of foodstuffs in baggage is being conducted at the port of Antwerp, the special attention of United States quarantine officers has been directed to the necessity for the careful inspection upon arrival at United States ports of the baggage and hand luggage of persons from cholera-infected districts embarking at Antwerp. The health authorities of New York, Boston, and Galveston, under whose jurisdiction the quarantine stations at those ports are conducted, have been also requested to exercise this special form of surveillance.

SURVEILLANCE OVER IMMIGRANTS AT DESTINATION.

The plan adopted by the bureau to enable the state boards of health to keep surveillance over immigrants from cholera-infected countries at their points of destination in the United States, which plan was described in the Public Health Reports of October 28, 1910, on pages 1521 to 1523, has met with general approval, as evidenced from the many letters received by the bureau from the state health officers to this effect. The system is now under way at the ports of New York, Boston, Philadelphia, Baltimore, New Orleans, and Galveston, and if occasion warrants can be made to include all of the ports where immigrants arrive.

MEASURES AT FOREIGN PORTS.

The following are extracts from reports forwarded by Surgeon H. R. Carter:

ANTWERP.

At Antwerp all Italian emigration is excluded, and Russians are received only through the German control stations. The Russians are inspected immediately upon arrival at Antwerp and detained five days before embarkation. All boarding houses are under police and

sanitary control and are frequently inspected. The authorities at Antwerp are reported to be extremely cautious in their efforts to prevent the introduction of cholera into their midst, and their freedom from smallpox and other communicable diseases such as measles, diphtheria, scarlatina, and typhoid would indicate the effectiveness of their sanitary measures.

HAMBURG.

The facilities at the port of Hamburg and the methods adopted relating to the detention for five days of emigrants from cholera infected districts prior to their embarkation for United States ports are similar to those now obtaining in the port of Bremen, an account of which appeared in Public Health Reports for the week ended October 21, 1910.

ROTTERDAM.

Surgeon Carter pronounces Rotterdam a very safe port of emigration. He was most favorably impressed with the health administration in the city of Rotterdam, and especially with the measures adopted for the control of cholera bacillus carriers. He states that too much can not be said either for the management of the last cholera outbreak at Rotterdam during August and September, 1909, or for the measures since adopted to prevent reinfection. They are pronounced almost perfect as to their efficiency.

The sanitary management at Rotterdam of the emigrants from districts infected by cholera is also efficient. The bulk of the Russian emigrants come through the German control stations under the same restrictions as are imposed upon those emigrants coming to the United States via Hamburg and Bremen. Immediately upon the arrival of the emigrants at Rotterdam they are inspected, and while in the city awaiting departure are placed in quarters approved by the health department. They are under daily sanitary supervision and inspection, and the emigrants going by the Holland-American Line are housed in very convenient quarters adjacent to the wharves of this company.

The detention includes five full days of observation in Rotterdam; this in addition to the five days spent in the control stations.

The hand baggage of the emigrants is opened and inspected under the supervision of the consul-general, and undesirable foodstuffs are removed. All baggage of Russians and all soiled clothing not bearing a label showing that they have been disinfected are redisinfected by steam. This rule has resulted in the elimination from the baggage of emigrants of a great deal of soiled clothing.

UNITED STATES.

REPORTS TO THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PLAGUE-PREVENTION WORK.

Surgeon Blue reports:

INFECTED GROUND SQUIRREL.

During the week ended October 15, 1910, the finding of 1 plague-infected squirrel was reported. The squirrel was found October 5, 1910, in Santa Clara County, at C. M. & J. H. Weber ranch, 6 miles southeast of Coyote, Pueblo tract.

ANIMALS EXAMINED FOR PLAGUE INFECTION.

During the week ended October 15, 1910, there were examined at the federal laboratory at San Francisco and the branch laboratories at Oakland and Los Angeles, Cal., animals as follows: Squirrels 2,072, rabbits 9, gophers 2, wood rats 1, rats 1,958. The rats were identified as follows: *Mus norvegicus* 1,699, *Mus rattus* 126, *Mus alexandrinus* 94, *Mus musculus* 39.

The total number of animals examined was 4,042. One plague-infected squirrel was found.

DISTRIBUTION OF POISON.

In connection with the making of a squirrel-free zone around the cities on San Francisco Bay, 665 acres of land in Contra Costa County, 4 in Merced County, and 205 in San Mateo County were covered with poison during the week ended October 15, 1910.

SEATTLE, WASH.

Assistant Surgeon Chapin reports:

During the week ended October 15, 1910, 960 rats were collected. Of these 833 were necropsied and examined for plague infection. No plague-infected rats were found.

Record of Plague Infection.

Place.	Date of last case of human plague.	Date of last case of rodent plague.	Total number of rodents found infected since May, 1907.
California:			
Cities—			
San Francisco	Jan. 30, 1908	Oct. 23, 1908	398 rats.
Oakland	Oct. 26, 1909	Dec. 1, 1908	126 rats.
Berkeley	Aug. 28, 1907	None recorded.	
Los Angeles	Aug. 11, 1908	Aug. 21, 1908	1 squirrel.
Counties:			
Alameda (exclusive of the city of Oakland)	Sept. 26, 1909	May 30, 1910	88 squirrels, 1 wood rat.
Contra Costa	July 21, 1908	Sept. 10, 1910	247 squirrels.

Record of plague infection—Continued.

Place.	Date of last case of human plague.	Date of last case of rodent plague.	Total number of rodents found infected since May, 1907
California—Continued.			
Counties—Continued.			
Merced	None recorded.	June 6, 1910	2 squirrels.
Monterey	...do...	...do...	4 squirrels.
San Benito	June 5, 1910	July 11, 1910	20 squirrels.
San Joaquin	None recorded.	Aug. 19, 1910	6 squirrels.
San Luis Obispo	...do...	Jan. 29, 1910	1 squirrel.
Santa Clara	Sept. 5, 1910	Oct. 5, 1910	23 squirrels.
Santa Cruz	None recorded.	May 17, 1910	3 squirrels.
Stanislaus	...do...	May 21, 1910	5 squirrels.
Washington:			
Seattle	Oct. 30, 1907	Feb. 8, 1910	22 rats.

Rats Collected and Examined for Plague Infection.

Place.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Berkeley	Oct. 15	.....	[a] 156	156	.....
Oakland	...do...	20	[b] 679	566	.....
San Francisco	...do...	45	[c] 1,807	1,236	.....
Washington:					
Seattle	...do...	.....	960	833	.....
Total	.....	65	3,602	2,791	.....

[a] Identified, *Mus norvegicus* 117, *Mus musculus* 39.
[b] Identified, *Mus norvegicus* 564, *Mus alexandrinus* 2, *Mus musculus* 113.
[c] Identified, *Mus norvegicus* 1,271, *Mus ratus* 126, *Mus musculus* 318, *Mus alexandrinus* 92.

Squirrels Collected and Examined for Plague Infection.

Place.	Week ended—	Trapped and shot.	Found dead.	Examined.	Found infected.
California:					
Cities—					
San Francisco	Oct. 15	8	.....	8	.....
Counties—					
Calaveras	...do...	38	.....	38	.....
Contra Costa	...do...	127	5	132	.....
Fresno	...do...	83	.....	83	.....
Los Angeles	...do...	109	.....	109	.....
Merced	...do...	94	16	110	.....
Monterey	...do...	226	.....	217	.....
Sacramento	...do...	110	.....	106	.....
San Joaquin	...do...	271	.....	263	.....
San Luis Obispo	...do...	765	.....	752	.....
San Mateo	...do...	31	13	44	.....
Santa Clara	...do...	45	.....	45	1
Solano	...do...	96	.....	96	.....
Tuolumne	...do...	69	.....	69	.....
Total	.....	2,072	34	2,072	1

Other Animals Collected and Examined.

Place.	Week ended—	Animals collected.	Examined.	Found infected.
California:				
Cities—				
San Francisco	Oct. 15	2 gophers	2	.....
Counties—				
Los Angeles	...do...	1 wood rat	1	.....
San Luis Obispo	...do...	3 rabbits	3	.....
Santa Clara	...do...	1 rabbit	1	.....
Solano	...do...	2 rabbits	2	.....
Tuolumne	...do...	3 rabbits	3	.....
Total	.....	.....	12	.....

SMALLPOX IN THE UNITED STATES.

In the following tables the States indicated by an asterisk are those from which reports of smallpox are received only from certain city. and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the state boards of health and include all cases reported throughout the State.

Reports Received During Week Ended November 4, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
California, entire State	Sept. 1-30			No cases reported.
Florida:				
Gadsden County	Oct. 16-22	1		
Kansas:				
Allen County	Aug. 1-31	2		
Crawford County	Aug. 1-31			
Pittsburg	Aug. 1-31	1		
Decatur County	Aug. 1-31	1		
Edwards County	Aug. 1-31	3		
Lyon County	Aug. 1-31	2		
Marshall County	Aug. 1-31	1	1	
Montgomery County	Aug. 1-31	1		
Norton County		6		
Saline County	Aug. 1-31	1		
Wyandotte County—				
Kansas City	Aug. 1-31	2		
*Louisiana:				
New Orleans	Oct. 16-22	5		
Montana:				
Beaverhead County	Sept. 1-30	1		
Silver Bow County	Sept. 1-30	5		
Butte	Sept. 1-30	8		
Utah:				
Salt Lake County	Sept. 1-30	2		
Utah County	Sept. 1-30	39		
Weber County	Sept. 1-30	1		

Reports Received from June 25 to October 28, 1910.

[For reports received from January 1, 1910, to June 24, 1910, see Public Health Reports for June 24, 1910. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

Place.	Date.	Cases.	Deaths.	Remarks.
* Alabama:				
Birmingham	June 12-Aug. 6	11		
Mobile	June 12-Oct. 8	20		
Montgomery	June 12-25	6		
Total for State		37		
* Arkansas:				
Fort Smith	June 19-25	1		
California, general	May 1-June 30	27		
Amador County	July 1-Aug. 31	2		
Hamlet County	Aug. 1-31	2		
Los Angeles County	July 1-31	1		
Sacramento County	Aug. 1-31	1		
San Francisco County	July 1-Aug. 31	2		
San Joaquin County	July 1-Aug. 31	4		
Santa Clara County	July 1-31	2		
Total for State		41		
Colorado:				
Conejos County	Apr. 1-30		1	Received out of date.
Las Animas County	Mar. 1-Apr. 30		2	
Logan County	May 1-31		1	
Montrose County	Apr. 1-30		1	
Adams County	July 1-31	3		
Archuleta County	June 1-Sept. 30	18		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Colorado—Continued.				
Chaffee County	July 1-Aug. 31	3		
Clear Creek County	Aug. 1-31	1		
Conejos County	June 1-Aug. 31	4		
Delta County	June 1-30	2		
Denver County	June 1-Sept. 30	51		
El Paso County	July 1-Aug. 31	3		
Huerfano County	June 1-Sept. 30	19		
Kit-Carson County	June 1-30	4		
Larimer County	June 1-30	1		
Las Animas County	June 1-Aug. 31	7		
Logan County	June 1-30	1		
Mesa County	June 1-30	1		
Montezuma County	Sept. 1-30	1		
Montrose County	June 1-30	5		
Otero County	June 1-Sept. 30	5		
Prowers County	June 1-Sept. 30	17		
Pueblo County	July 1-31	1		
Rio Grande County	June 1-30	4		
Saguache County	June 1-July 31	13		
San Miguel County	June 1-30	1	1	
Teller County	June 1-Sept. 30	6		
Weld County	June 1-30	5		
Total for State		183	6	
District of Columbia	July 3-Sept. 17	15		
Total for District		15		
Florida:				
Brevard County	Aug. 7-13	1		
Duval County	June 19-25	2		
Gadsden County	July 3-Aug. 13	11		
Hillsboro County	July 17-Aug. 6	2		
Jackson County	June 19-Aug. 6	3		
Jefferson County	July 10-Aug. 6	4		
Leon County	Mar. 1-31		1	
Liberty County	July 17-23	14		
Santa Rosa County	July 31-Aug. 6	2		
Taylor County	July 3-9	1		
Walton County	June 12-18	1		
Total for State		41	1	
*Georgia:				
Columbus	July 3-9	6		
Macon	Apr. 1-June 30	8		
Total for State		14		
Illinois:				
Adams County	June 1-30	2		
Clay County	June 1-30	1		
Coles County	June 1-Aug. 31	30		
Cook County	June 1-30	1		
Chicago	June 1-Aug. 31	3		
Edgar County	June 1-30	2		
Franklin County	June 1-30	1		
Henry County	July 1-31	3		
Iroquois County	June 1-30	1		
Jo Daviess County	June 1-July 31	9		
Kendall County	June 1-July 31	2		
Knox County	June 1-July 31	6		
Madison County	June 1-Aug. 31	23		
Marion County	June 1-30	3		
Montgomery County	June 1-30	6		
Peoria County	June 1-Aug. 31	6		
Perry County	June 1-30	1		
Pulaski County	June 1-30	1		
Randolph County	June 1-30	1		
Richland County	June 1-Aug. 31	9		
Rock Island County	June 1-Aug. 31	8		
St. Clair County	June 1-30	1		
Sangamon County	June 1-30	1		
Tazewell County	June 1-30	2		
Union County	June 1-30	4		
Wayne County	June 1-30	3		
Williamson County	June 1-30	2		
Total for State		132		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Indiana, general	Aug. 1-31	6		
Allen County	May 1-June 30	8		
Carroll County	June 1-30	1		
Clay County	June 1-30	2		
Clinton County	May 1-31	1		
Dekalb County	June 1-30	1		
Delaware County	May 1-31	4		
Elkhart County	May 1-31	1		
Gibson County	May 1-31	1		
Grant County	May 1-June 30	13		
Greene County	May 1-31	9		
Howard County	May 1-June 30	21		
Lake County	June 1-30	1		
Madison County	June 1-30	6		
Marion County	May 1-June 30	6		
Marshall County	June 1-30	1		
Martin County	June 1-30	4		
Miami County	June 1-30	6		
Montgomery County	June 1-30	6		
Orange County	May 1-31	18		
Owen County	May 1-June 30	23		
Putnam County	June 1-30	1		
St. Joseph County	May 1-June 30	10		
Tipton County	May 1-31	1		
Vigo County	May 1-June 30	28		
Warren County	June 1-30	1		
Wayne County	June 1-30	6		
Total for State		186		
Iowa:				
Benton County	June 1-July 31	4		
Buchanan County	June 1-30	2		
Cedar County	July 1-31	1		
Clayton County	June 1-30	1		
Dallas County	June 1-30	1		
Delaware County	June 1-30	10		
Dubuque County	June 1-30	1		
Linn County	June 1-Sept. 30	42		
Plymouth County	Aug. 1-31	1		
Polk County	June 1-Sept. 30	20		
Pottawattamie County	June 1-Aug. 31	21		
Scott County	June 1-July 31	4		
Warren County	Aug. 1-Sept. 30	14		
Webster County	July 1-31	1		
Winneshiek County	June 1-30	1		
Woodbury County	June 1-30	1		
Total for State		125		
Kansas:				
Allen County	May 1-July 31	39		
Atchison County—				
Atchison	Apr. 1-May 31	7		
Barton County	June 1-July 31	7		
Butler County	Apr. 1-June 30	8		
Cherokee County	June 1-30	4		
Clay County	July 1-31	1		
Coffey County	July 1-31	1		
Cowley County	Apr. 1-July 31	12		
Crawford County	June 1-30	4	1	
Decatur County	Apr. 1-July 31	37		
Dickinson County	May 1-June 30	10		
Doniphan County	Apr. 1-30	10		
Edwards County	Apr. 1-June 30	4		
Elk County	May 1-July 31	6		
Ellis County	July 1-31	3		
Ellsworth County	Apr. 1-30	1		
Finney County	Apr. 1-30	2		
Ford County	June 1-30	1		
Graham County	Apr. 1-May 31	6		
Greenwood County	Apr. 1-June 30	56		
Harper County	May 1-June 30	3		
Harvey County	Apr. 1-June 30	22		
Hodgeman County	July 1-31	1		
Jewell County	May 1-June 30	21		
Kearny County	Apr. 1-May 31	5		
Kingman County	Apr. 1-June 30	4		
Labette County—				
Parsons	Apr. 1-July 31	12		
Lane County	May 1-31	2		
Leavenworth County	Apr. 1-May 31	8		
Leavenworth	May 1-June 30	2		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Kansas—Continued.				
Lyon County	June 1-30	11		
Marion County	July 1-31	1		
McPherson County	May 1-June 30	14		
Miami County	Apr. 1-May 31	2		
Montgomery County	Apr. 1-July 31	63	2	
Coffeyville	Apr. 1-June 30	12		
Nehama County	July 1-31	2		
Neosho County	May 1-July 31	38		
Norton County	Apr. 1-June 30	50		
Osage County	Apr. 1-May 31	6		
Osborne County	Apr. 1-June 30	33		
Pawnee County	Apr. 1-30	3		
Phillips County	May 1-31	6		
Pratt County	June 1-July 31	2		
Rawlins County	June 1-30	1		
Reno County	Apr. 1-June 30	23	3	
Riley County	Apr. 1-May 31	5		
Rush County	Apr. 1-30	3		
Saline County	Apr. 1-June 30	21		
Scott County	Apr. 1-May 31	5		
Sedgwick County	Apr. 1-May 31	7		
Wichita	Apr. 1-July 31	52		
Seward County	May 1-31	2		
Shawnee County	June 1-30	1		
Topeka	July 1-31	7		
Sheridan County	Apr. 1-30	1		
Sherman County	May 1-31	1		
Stafford County	June 1-July 31	4		
Sumner County	May 1-31	4		
Thomas County	Apr. 1-May 31	2	1	
Trego County	June 1-30	1		
Wallace County	June 1-30	1		
Wyandotte County	Apr. 1-30	4		
Kansas City	Apr. 1-June 30	57		
Total for State		744	7	
*Kentucky:				
Covington	June 26-July 2	1		
Total for State		1		
Louisiana:				
Avoyelles Parish	June 1-30	12		The last report received from the Louisiana State Board of Health was for the month of June.
Calcasieu Parish	June 1-30	2		
Iberia Parish	June 1-30	19		
Orleans Parish	June 1-30			
New Orleans	June 12-Oct. 8	84		
St. John Parish	June 1-30	10		
St. Tammany Parish	June 1-30	2		
Tangipahoa Parish	June 1-30	25		
Vermilion Parish	June 1-30	30		
Total for State		204		
*Maine:				
Biddeford	May 1-31	1		
Total for State		1		
Maryland:				
Allegany County—				
Cumberland	May 1-July 31	2		
Total for State		2		
Massachusetts:				
Middlesex County	July 1-31	1		
Suffolk County	June 1-July 31	8		
Total for State		9		
Michigan:				
St. Clair County	May 1-31	43		Reported out of date.
Alcona County	June 1-30	1		
Arenac County	June 1-30	2		
Baraga County	Aug. 1-31	5		
Bay County	June 1-Sept. 30	10	2	
Benzie County	Sept. 1-30	1		
Berrien County	July 1-Aug. 31	2		
Cheboygan County	June 1-Sept. 30	34		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Michigan—Continued.				
Clare County	June 1-July 31	12		
Emmet County	Aug. 1-Sept. 30	7		
Eaton County	June 1-30	7		
Genesee County	June 1-Sept. 30	52		
Grand Traverse County	July 1-Aug. 31	6		
Gratiot County	June 1-Sept. 30	12		
Houghton County	June 1-30	3		
Huron County	June 1-July 31	12		
Ingham County	June 1-Aug. 31	10		
Ionia County	June 1-Aug. 31	7		
Isabella County	June 1-July 31	4		
Kalamazoo County	June 1-July 31	8		
Kent County	June 1-30	17		
Keweenaw County	July 1-31	1		
Lapeer County	June 1-July 31	16		
Livingstone County	June 1-30	17		
Manistee County	June 1-Sept. 30	13	1	
Marquette County	June 1-30	1		
Mason County	June 1-Aug. 31	11		
Mecosta County	June 1-Aug. 31	7		
Midland County	June 1-July 31	11		
Missaukee County	June 1-Sept. 30	15		
Monroe County	June 1-30	2		
Montcalm County	July 1-31	1		
Muskegon County	June 1-30	2		
Newaygo County	June 1-30	2		
Osceola County	June 1-Sept. 30	7		
Ottawa County	June 1-30	1		
Roscommon County	June 1-30	4		
Saginaw County	June 1-Aug. 31	40		
St. Clair County	June 1-Aug. 31	55		
Sanilac County	June 1-July 31	3		
Shiawassee County	June 1-Aug. 31	54		
Tuscola County	June 1-Aug. 31	23		
Wayne County	June 1-Aug. 31	19		
Total for State		560	3	
Minnesota:				
Pope County	Apr. 1-30		1	Received out of date.
Rice County	Mar. 1-31		1	
Beltrami County	May 26-June 5	4		
Blue Earth County	June 6-12	1		
Brown County	Aug. 1-7	1		
Carver County	June 13-July 10	2		
Faribault County	May 26-Aug. 14	3		
Hennepin County	May 26-Sept. 4	64		
Kittson County	June 6-19	2		
Koochiching County	May 26-June 5	6		
Lesueur County	June 13-19	32		
Meeker County	June 6-12	1		
Mower County	July 11-Aug. 7	5		
Nicollet County	Aug. 12-18	1		
Ramsey County	June 13-Sept. 18	31		
Renville County	June 6-12	1		
Rice County	May 26-July 10	2		
St. Louis County	May 26-Aug. 28	13	1	
Stearns County	June 20-26	1		
Steele County	June 6-19	2		
Wabasha County	June 13-26	2		
Washington County	Sept. 11	1		
Watonwan County	Sept. 5-11	1		
Wright County	July 4-31	2		
Total		178	3	
***Mississippi:**				
Marshall County	Sept. 25-Oct. 1	1		
Natchez	July 24-30	5		
Yazoo City	Sept. 25-Oct. 1	1		
Total for State		7		
***Missouri:**				
Andrew County	June 26-Oct. 8	11		
Kansas City	May 15-Aug. 20	36		
St. Louis	June 12-July 16	9		
Total for State		56		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Montana:				
Beaverhead County	June 1-30	1		
Cascade County	June 1-30	1		
Custer County	Apr. 1-30		1	
Dawson County	June 1-Aug. 31	14		
Fergus County	June 1-July 31	8		
Flathead County	June 1-30	1		
Meagher County	June 1-30	1		
Park County	June 1-Aug. 31	2		
Rosebud County	June 1-Aug. 31	4		
Silver Bow County	June 1-Aug. 31	12		
Butte	June 1-Aug. 31	43		
Teton County	July 1-31	2		
Yellowstone County	June 1-30	2		
Total for State		91	1	
*Nebraska:				
Lincoln	Apr. 1-July 31	31		
South Omaha	June 1-30	3		
Total for State		34		
New Jersey:				
Cumberland County	June 1-Aug. 31	7		
Total for State		7		
New York, general	June 1-Aug. 31	62	3	
Erie County—				
Buffalo	May 1-31	1		
Tonawanda Township	May 1-31	2		
Niagara County—				
Niagara Falls	May 1-31	1		
North Tonawanda	May 1-31	1		
St. Lawrence County	May 1-31	19		
Schenectady County	May 1-31	2		
Total for State		88	3	
North Carolina:				
Forsyth County	Feb. 1-28		1	Received out of date.
Rowan County	Feb. 1-28		1	Received out of date.
Alamance County	Mar. 1-July 31	42		
Alexander County	Mar. 1-June 30	75		
Anson County	Apr. 1-July 31	11		
Ashe County	Mar. 1-31	12		
Beaufort County	Mar. 1-Sept. 30	7		
Bladen County	Apr. 1-July 31	29		
Brunswick County	July 1-31	2		
Buncombe County	June 1-July 31	2		
Cabarrus County	Mar. 1-July 31	16		
Caldwell County	Mar. 1-Sept. 30	14	1	
Catawba County	Mar. 1-June 30	42		
Chatham County	Mar. 1-July 31	19		
Chowan County	Mar. 1-31	3		
Cleveland County	June 1-30			Few cases.
Columbus County	Apr. 1-Aug. 31	25		
Craven County	Mar. 1-31	1		
Cumberland County	Sept. 1-30	3		
Currituck County	Mar. 1-June 30	23		
Davidson County	Mar. 1-July 31	15		
Davie County	Mar. 1-31	8		
Durham County	Mar. 1-Sept. 30	34		
Edgecombe County	June 1-30	1		
Forsyth County	Mar. 1-Aug. 31	29		
Franklin County	Mar. 1-Sept. 30	17		
Gaston County	Mar. 1-July 31	14	2	
Graham County	Mar. 1-Apr. 30	8		
Greene County	Mar. 1-June 30	20		
Guilford County	Mar. 1-Aug. 31	69		
Halifax County	Mar. 1-31	40		
Haywood County	July 1-Aug. 31	10		
Henderson County	May 1-June 30	6		
Hertford County	Mar. 1-31	1		
Iredell County	June 1-July 31	26		Several cases in May.
Johnson County	Apr. 1-May 31	4		Several cases in March
Jones County	Mar. 1-31	1		
Lee County	Mar. 1-June 30	6		
Lenoir County	Mar. 1-June 30	19		
Lincoln County	Mar. 1-July 31	4		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Madison County	Apr. 1–30	5		
Martin County	Apr. 1–Sept. 30	7		
Mecklenburg County	Mar. 1–Aug. 31	36		
Mitchell County	Aug. 1–Sept. 30			Present.
Montgomery County	Mar. 1–Aug. 31	54		
Nash County	Mar. 1–Aug. 31	56		
New Hanover County	Mar. 1–Aug. 31	48		
Onslow County	Mar. 1–May 31	5		
Orange County	Mar. 1–July 31	51		
Pamlico County	Mar. 1–Aug. 31	6		
Pender County	Aug. 1–Sept. 30	8		
Perquimans County	May 1–31	1		
Person County	May 1–July 31	7		
Pitt County	Mar. 1–Sept. 30	36		
Polk County	Mar. 1–31	7		
Richmond County	Apr. 1–30	2		
Robeson County	Apr. 1–Sept. 30	45		
Rockingham County	Mar. 1–31	48		
Rowan County	Mar. 1–July 31	45	1	
Sampson County	May 1–Sept. 30	4		
Scotland County	May 1–Sept. 30	6		
Stanly County	Apr. 1–July 31	35		
Stokes County	Mar. 1–31	64		
Surry County	Mar. 1–31	4		
Union County	Mar. 1–Sept. 30	40		
Vance County	Apr. 1–30	4		
Wake County	Apr. 1–May 31	22		
Warren County	Apr. 1–Aug. 31	28		
Washington County	Mar. 1–Apr. 30	4		
Wautauga County	Apr. 1–Aug. 31	36		
Wayne County	Apr. 1–May 31	6		Few cases in June.
Wilkes County	Mar. 1–July 31	39		
Wilson County	Mar. 1–June 30	25	1	
Yancey County	Mar. 1–31	26		
Total for State		1,468	7	
North Dakota:				
Bowman County	Aug. 1–31	37		
Cass County	June 1–Sept 30	4		
Cavalier County	June 1–30	1		
Grand Forks County	June 1–10	4		
Logan County	June 1–30	1		
McKenzie County	June 1–30	1		
Morton County	July 1–31	4		
Pierce County	June 1–30	1		
Stark County	July 1–31	1		
Steele County	Sept. 1–30	1		
Stutsman County	Aug. 1–31	1		
Traill County	June 1–30	6		
Ward County	June 1–30	4		
Total for State		66		
Oklahoma, general	Jan. 1–31		1	Reported out of date.
Canadian County	Apr. 1–30		1	
Comanche County	Apr. 1–30		3	
Grady County	Apr. 1–30		1	
Oklahoma County	Apr. 1–30		4	
Pottawatomie County	Apr. 1–30		2	
Atoka County	May 1–31	20		
Beckham County	May 1–31	2		
Blaine County	May 1–31	8		
Bryan County	Aug. 1–31	25		
Caddo County	May 1–Aug. 31	6		
Canadian County	May 1–Aug. 31	18	1	
Choctaw County	May 1–31	1		
Coal County	May 1–31	5		
Comanche County	May 1–31	4	1	
Custer County	May 1–31	9		
Garvin County	May 1–31	1		
Grady County	May 1–Aug. 31	13	7	
Haskell County	May 1–31	7		
Hughes County	May 1–31	42		
Jefferson County	May 1–31	3		
Kiowa County	May 1–31	1		
Lincoln County	May 1–31	4		
McLain County	May 1–31	9		
McIntosh County	May 1–31	11		
Murray County	May 1–31	1		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Oklahoma—Continued.				
Muskogee County	May 1-31	5		
Noble County	May 1-31	8		
Nowata County	May 1-Aug. 31	9		
Okfuskee County	May 1-31	1		
Oklahoma County	May 1-Aug. 31	3	1	
Okmulgee County	May 1-31	2		
Pawnee County	May 1-31	4		
Payne County	May 1-31	10		
Pittsburg County	May 1-Aug. 31	6	2	
Pontotoc County	May 1-31	12		
Seminole County	May 1-Aug. 31	3		
Sequoyah County	Aug. 1-31	1		
Texas County	May 1-31	4		
Tillman County	May 1-Aug. 31	3		
Tulsa County	May 1-Aug. 31	3	1	
Washita County	May 1-31	1		
Total for State		265	25	
Ohio:				
Allen County	June 1-30	3		
Athens County	July 1-31	1		
Butler County	June 1-July 31	4		
Clarke County	July 1-31	3		
Clinton County	June 1-30	10		
Columbiana County	June 1-July 31	6		
Cuyahoga County	June 1-July 31	16		
Fairfield County	June 1-30	1		
Franklin County	June 1-Sept. 30	12		
Hamilton County	June 1-Sept. 30	2		
Hancock County	July 1-31	4		
Hocking County	June 1-July 31	26		
Jackson County	Sept. 1-30	3		
Jefferson County	July 1-31	1		
Lucas County	June 1-Sept. 30	8		
Mahoning County	July 1-31	1		
Marion County	July 1-31	1		
Perry County	June 1-30	1		
Pickaway County	June 1-30	1		
Portage County	June 1-30	7		
Ross County	June 1-Sept. 30	74		
Seneca County	July 1-31	1		
Scioto County	June 1-30	2		
Stark County	June 1-July 31	29		
Summit County	July 1-31	5		
Wayne County	June 1-30	2		
Wood County	June 1-30	2		
Total for State		226	1	
Oregon:				
Baker County	May 1-31	1		
Benton County	May 1-31	2		
Linn County	June 1-30	2		
Multnomah County	Apr. 1-May 31	10		
Umatilla County	May 1-31	1		
Union County	May 1-31	2		
Wasco County	Apr. 1-30	2		
Washington County	Apr. 1-June 30	3		
Yamhill County	Apr. 1-June 30	15		
Total for State		38		
Pennsylvania, general	Apr. 1-30		2	
	May 1-Aug. 31	56	4	
Total for State		56	6	
*South Carolina:				
Charleston	June 1-July 31	28		
Total for State		28		
*Tennessee:				
Benton County—				
Camden	July 1-7	2		
Davidson County—				
Nashville	June 12-July 9	2		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
Tennessee—Continued.				
Hamilton County—				
Chattanooga	June 12–Oct. 8	5		
Knox County—				
Knoxville	June 12–July 16	8		
Shelby County	May 1–Sept. 30	45		
Memphis	June 12–Oct. 15	9		
Total for State		71		
Texas, general	Apr. 1–July 31	881	27	
Total for State		881	27	
Utah, general	Mar. 1–31	112		Report received out of date.
Boxelder County	May 1–31	1		
Cache County	May 1–31	6		
Davis County	May 1–July 31	43		
Juab County	June 1–July 31	3		
Salt Lake County	May 1–Aug. 31	34	1	
Utah County	May 1–Aug. 31	10		
Wasatch County	Aug. 1–31	1		
Weber County	May 1–July 31	25		
Total for State		235	1	
*Virginia:				
Alexandria	Aug. 25			One case from the schooner Persis A. Colwell, from Gaspe, Quebec.
Lynchburg	June 12–18	1		
Total for State		1		
Washington, general	Feb. 1–Mar. 31		4	Reports for April and May not yet received.
Adams County	June 1–30	1		
Chehalis County	June 1–30	3		
Chelan County	June 1–30	1		
Pierce County—				
Tacoma	June 1–July 31	2		
Skagit County	July 1–31	2		
Everett	June 1–30	5		
Spokane County	July 1–31	2		
Spokane	June 1–Aug. 3	21		
Thurston County	Aug. 1–31	1		
Whitman County	June 1–July 31	13		
Yakima County	July 1–Aug. 31	4	1	
Total for State		55	5	
Wisconsin:				
Ashland County	June 1–Aug. 31	17		
Barron County	June 1–30	1		
Brown County	July 1–31	5		
Douglas County	June 1–July 31	3		
Dunn County	July 1–31	1		
Eau Claire County	June 1–July 31	4		
Florence County	June 1–30	4		
Fond du Lac County	July 1–31	1		
Grant County	Sept. 1–30	1		
Greene County	Sept. 1–30	2		
Iowa County	Sept. 1–30	3		
Kenosha County	July 1–31	1		
Lafayette County	June 1–30	1		
La Crosse County	June 1–30	2		
Milwaukee County	July 1–Sept. 30	15		
Pierce County	July 1–31	1		
Polk County	July 1–Aug. 31	6		
Rush County	June 1–30	1		
St. Croix County	July 1–31	5		
Sawyer County	June 1–Sept. 30	11		
Waupaca County	June 1–Sept. 30	5		
Winnebago County	July 1–31	1		
Total for State		91		
Grand total for the United States		6,238	96	

CHOLERA IN THE UNITED STATES.

Place.	Date.	Cases.	Deaths.	Remarks.
New York:				
New York	Sept. 26-29	1	1	Case in immigrant removed at quarantine from s. s. Germania, from Marseille and Naples.

PLAGUE IN THE UNITED STATES.

Reports Received from June 25 to October 28, 1910.

Place.	Date.	Cases.	Deaths.	Remarks.
California:				
San Benito County—				
Hollister	June 5-11	1	1	
Santa Clara County—				
San Jose	Sept. 5	1		

MORBIDITY AND MORTALITY.

WEEKLY MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED OCTOBER 8.

[For smallpox and plague see special tables.]

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Altoona, Pa	10	1	1	1	....	....	....	3	1	....	....	....	....
Ann Arbor, Mich	4	....	....	....	....	....	....	....	....	....	....	....	....
Aurora, Ill	8	....	....	....	....	2	....	....	....	....	....	....	....
Baltimore, Md	176	47	23	84	7	21	....	19	2	6	....	3	1
Bayonne, N. J	....	....	....	....	....	....	....	8	1	....	....	....	....
Beaver Falls, Pa	....	....	....	2	....	....	....	2	....	....	....	....	....
Bedford, Ind	1	....	....	6	1	1	....	....	....	....	....	....	....
Berkeley, Cal	7	1	....	3	1	....	....	1	....	1	....	....	....
Biddeford, Me	4	....	....	....	1	....	....	1	....	....	....	....	....
Binghampton, N. Y	12	2	....	3	....	....	....	3	....	1	....	....	....
Boston, Mass	220	61	22	32	3	29	1	32	6	10	....	8	2
Braddock, Pa	13	....	....	....	....	....	....	10	....	....	....	....	....
Bridgeport, Conn	21	3	1	1	1	....	....	7	1	....	....	....	....
Brockton, Mass	16	4	....	3	....	2	....	....	....	1	....	....	....
Butler, Pa	7	....	....	3	....	1	1	....	....	....	....	1	....
Cambridge, Mass	27	11	6	3	....	5	....	4	1	....	....	....	1
Cambridge, Ohio	2	....	....	6	....	3	....	....	....	....	....	1	....
Camden, N. J	....	1	....	1	....	....	....	6	....	2	....	....	....
Camden, S. C	1	....	....	2	....	....	....	....	....	....	....	....	....
Canton, Ohio	13	....	....	1	1	....	....	2	1	....	....	....	....
Carbondale, Pa	3	....	....	3	....	....	....	1	....	....	....	....	....
Charlotte, N. C	8	....	....	4	1	1	....	1	....	....	....	....	....
Chattanooga, Tenn	....	1	....	....	....	....	....	1	....	....	....	....	....
Chelsea, Mass	14	5	1	1	1	1	....	1	....	1	....	2	....
Chicago, Ill	563	100	59	107	10	58	3	159	20	20	1	5	1
Chicopee, Mass	8	3	3	1	....	1	....	....	....	....	....	1	....
Cincinnati, Ohio	89	27	14	10	....	19	....	9	....	2	....	....	....
Cleveland, Ohio	126	20	11	11	3	18	1	30	5	1	....	4	1
Clinton, Mass	3	....	....	....	....	....	....	2	....	....	....	....	....
Coffeyville, Kans	4	1	....	3	....	....	....	1	....	....	....	....	....
Columbus, Ga	2	....	....	....	....	....	....	....	....	....	....	....	....
Columbus, Ohio	49	5	6	8	....	....	....	7	....	1	1	1	....
Concord, N. H	14	....	2	....	....	....	....	....	....	....	....	....	....
Council Bluffs, Iowa	11	....	....	6	....	3	....	6	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended October 8—Continued.

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Covington, Ky	17	1	2	3	1	1	....	4	....	....	....	....	....
Cumberland, Md	11	....	1	21	3	....	....	....	....	....	....	....	....
Danville, Ill	6	2	2	1	1	....	....	1	....	....	....	....	....
Dayton, Ohio	40	....	1	4	2	1	....	....	1	....	....	....	....
Detroit, Mich	131	....	....	....	....	21	....	26	2	....	....	....	....
Dubuque, Iowa	....	....	....	....	....	....	....	2	....	....	....	....	....
Duluth, Minn	26	....	1	13	1	4	....	7	....	4	....	3	....
Dunkirk, N. Y	7	....	....	2	....	....	....	....	....	....	....	....	....
Elizabeth, N. J	22	....	4	1	1	3	....	8	1	....	....	....	....
Elmira, N. Y	5	9	....	3	....	....	....	....	....	....	....	....	....
El Paso, Tex	12	1	3	3	....	....	....	....	....	....	....	....	....
Elyria, Ohio	2	....	....	....	....	3	....	....	....	....	....	....	....
Erie, Pa	10	3	....	3	1	4	....	3	....	2	....	4	....
Evansville, Ind	22	1	2	3	....	....	....	3	....	....	....	2	....
Everett, Mass	8	2	....	1	1	3	....	3	1	....	....	....	....
Fall River, Mass	46	2	2	24	....	10	....	4	....	....	1	....	1
Fort Wayne, Ind	14	....	3	5	....	2	....	....	....	....	....	....	....
Freeport, Ill	5	....	....	1	....	....	....	....	....	....	....	....	....
Galesburg, Ill	6	....	....	....	....	....	....	....	....	....	....	....	....
Gloucester, Mass	7	....	....	....	....	....	....	....	1	....	....	....	....
Grand Rapids, Mich	26	4	4	11	1	1	....	2	....	2	....	2	....
Greensboro, N. C	9	....	....	1	2	....	....	1	....	....	....	....	....
Harrison, N J	5	....	....	....	....	....	....	3	1	....	....	....	....
Hartford, Conn	31	2	2	6	2	4	1	16	....	....	....	....	....
Haverhill, Mass	13	3	2	7	1	3	....	2	....	....	....	1	....
Hoboken, N. J	....	....	....	....	....	....	....	5	....	....	....	....	....
Homestead, Pa	6	1	....	2	....	9	1	....	....	....	....	....	....
Hyde Park, Mass	4	2	....	2	....	....	....	....	....	1	....	....	....
Jacksonville, Fla	18	1	1	2	1	....	....	....	....	....	....	....	....
Johnstown, Pa	18	....	2	12	....	1	1	5	....	....	....	....	....
Kalamazoo, Mich	19	1	....	6	....	2	....	1	....	1	....	....	....
Kansas City, Kans	32	1	3	13	4	2	....	1	2	1	....	....	....
Kearny, N. J	4	....	....	....	....	....	....	1	....	....	....	....	....
Kingston, N. Y	11	....	....	....	....	....	....	1	....	1	....	....	....
Knoxville, Tenn	9	....	1	1	1	2	....	4	....	4	....	....	....
La Crosse, Wis	10	....	1	2	....	3	1	1	1	....	....	....	....
Lafayette, Ind	3	....	....	1	....	2	....	....	....	....	....	....	....
Lancaster, Pa	10	1	2	....	....	....	....	1	....	....	....	5	1
Lawrence, Mass	23	3	2	3	....	5	....	2	....	....	....	....	....
Lebanon, Pa	8	....	1	3	....	....	....	....	....	....	....	....	....
Lexington, Ky	14	....	2	1	....	....	....	2	....	1	....	....	....
Los Angeles, Cal	....	20	17	3	....	6	....	6	....	....	....	2	....
Lowell, Mass	42	5	2	2	1	5	....	2	....	....	....	....	1
Lynchburg, Va	....	....	....	4	....	....	....	9	....	....	....	....	....
Lynn, Mass	23	2	....	5	....	....	....	3	1	1	....	....	....
Malden, Mass	9	....	1	4	....	2	....	1	....	3	....	....	....
Manchester, N. H	34	2	2	....	....	....	....	2	....	....	....	....	....
Manistee, Mich	....	....	....	1	....	....	....	....	....	....	....	....	....
Manitowoc, Wis	3	....	....	....	....	....	....	....	....	....	....	....	....
Marinette, Wis	2	1	1	....	....	1	....	....	....	....	....	....	....
Marlboro, Mass	5	1	1	1	....	....	....	....	....	....	....	....	....
Massillon, Ohio	3	....	....	....	....	....	....	....	....	....	....	....	....
Medford, Mass	10	1	....	2	....	....	....	2	....	....	....	....	....
Melrose, Mass	3	....	....	....	....	....	....	1	....	....	....	....	....
Memphis, Tenn	42	7	7	5	1	1	....	15	1	....	....	....	....
Milwaukee, Wis	80	10	7	26	2	30	....	31	5	....	....	3	....
Mobile, Ala	12	....	1	1	....	1	....	....	....	....	....	....	....
Moline, Ill	8	....	....	1	....	....	....	8	....	....	....	....	....
Montclair, N. J	2	2	....	1	....	4	....	1	....	....	....	....	....
Montgomery, Ala	11	4	1	2	1	....	....	....	....	....	....	....	....
Morristown, N. J	9	....	....	1	....	3	1	1	....	....	....	....	....
Mount Vernon, N. Y	6	....	1	1	....	....	....	2	....	1	....	....	....
Nanticoke, Pa	5	7	....	1	....	4	....	3	1	....	....	....	....
Nashville, Tenn	38	2	4	5	2	5	....	3	....	1	....	....	....
Natchez, Miss	1	3	....	....	....	2	....	5	....	....	....	....	....
Newark, N. J	91	19	9	5	2	5	....	36	5	....	....	....	....
New Bedford, Mass	44	5	6	2	1	4	....	4	1	....	1	....	....
Newburyport, Mass	6	....	....	....	....	....	....	1	....	....	....	....	....
New Orleans, La	108	20	17	7	4	5	....	6	....	3	....	....	....
Newport, Ky	6	....	2	....	....	....	....	1	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended October 8—Continued.

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Newton, Mass.	4	....	....	2	....	....	....	2	....	....	....	....	....
New York, N. Y.	1,333	511	155	143	17	75	4	194	20	53	3	32	5
Niagara Falls, N. Y.	7	....	....	1	....	....	....	2	....	....	....	....	....
Norristown, Pa.	6	4	....	2	....	....	....	2	....	....	....	....	....
North Adams, Mass.	16	....	....	....	....	5	2	1	1	....	....	....	....
Northampton, Mass.	8	1	4	....	....	....	....	....	....	....	....	....	....
Oakland, Cal.	40	2	4	3	1	1	....	4	....	....	....	....	....
Orange, N. J.	10	3	3	....	....	3	....	1	....	....	....	....	....
Ottumwa, Iowa.	1	....	....	....	....	....	....	....	....	....	....	....	....
Peekskill, N. Y.	4	1	1	....	....	1	....	....	....	....	....	....	....
Philadelphia, Pa.	....	87	39	69	7	30	....	63	7	16	1	18	....
Pittsburg, Pa.	157	15	11	14	5	25	1	20	....	8	....	10	3
Pittsfield, Mass.	14	1	1	1	....	4	....	3	1	....	....	....	....
Plainfield, N. J.	8	2	1	1	....	....	....	3	....	....	....	....	....
Portsmouth, N. H.	....	....	....	2	....	....	....	2	....	....	....	....	....
Portsmouth, Va.	15	....	....	....	....	1	....	....	....	....	....	....	....
Pottstown, Pa.	7	....	....	1	....	....	....	....	....	....	....	....	....
Providence, R. I.	62	8	....	5	1	6	....	8	....	....	....	1	....
Racine, Wis.	12	....	2	1	....	....	....	1	....	....	....	....	....
Reading, Pa.	25	5	1	4	....	....	....	3	....	1	....	10	1
Rock Island, Ill.	4	2	1	2	....	....	....	3	1	....	....	....	....
Rutland, Vt.	....	....	....	1	....	....	....	....	....	....	....	....	....
Sacramento, Cal.	16	....	2	3	1	....	....	....	....	....	....	....	....
St. Louis, Mo.	204	19	14	19	4	17	4	38	3	15	....	9	....
San Antonio, Tex.	8	....	8	5	....	1	....	....	....	....	....	....	....
San Francisco, Cal.	157	25	17	6	1	3	....	9	1	2	....	3	....
Saratoga Springs, N. Y.	7	....	1	1	....	....	....	....	....	....	....	....	....
Schenectady, N. Y.	27	1	1	3	....	....	....	1	....	....	....	3	....
Seattle, Wash.	47	6	3	10	....	7	....	....	1	11	....	4	1
Somerville, Mass.	12	7	2	....	....	2	....	1	....	....	....	....	....
South Bend, Ind.	17	....	1	4	....	1	....	2	....	....	....	....	....
South Bethlehem, Pa.	6	2	....	....	....	....	....	3	1	....	....	....	....
Spokane, Wash.	22	....	....	5	3	7	1	2	1	1	....	....	....
Springfield, Mass.	33	....	1	3	....	3	....	6	1	....	....	1	1
Steelton, Pa.	7	2	1	....	....	3	1	7	....	1	....	1	....
Superior, Wis.	5	....	....	....	....	1	....	4	1	....	....	....	....
Tacoma, Wash.	24	....	....	2	....	5	....	2	....	....	....	....	....
Taunton, Mass.	22	....	1	1	1	....	....	5	1	....	....	....	....
Terre Haute, Ind.	12	....	....	1	....	7	1	1	....	....	....	....	....
Toledo, Ohio.	48	5	3	12	2	3	....	14	2	2	....	....	....
Trenton, N. J.	5	2	4	6	1	3	....	5	....	....	....	....	....
Waltham, Mass.	5	....	....	....	1	....	....	....	....	....	....	....	....
Warren, Ohio.	2	....	....	3	1	....	....	....	....	....	....	....	....
Warren, Pa.	1	....	....	....	....	....	....	....	....	....	....	....	....
Washington, D. C.	112	23	15	31	3	7	....	12	....	....	....	3	....
Weymouth, Mass.	6	....	....	....	....	....	....	1	....	....	....	....	....
Wheeling, W. Va.	11	1	....	....	....	....	....	2	....	....	....	....	....
Wichita, Kans.	11	....	....	2	1	1	....	....	1	....	....	....	....
Wilkes-Barre, Pa.	6	6	....	7	....	....	....	3	....	....	....	1	....
Wilkinsburg, Pa.	6	5	....	....	....	....	....	1	....	....	....	....	....
Woburn, Mass.	5	....	....	....	....	1	1	1	....	3	....	....	....
Worcester, Mass.	43	7	1	8	....	....	....	13	2	....	....	1	1
Yonkers, N. Y.	16	4	1	2	1	1	....	....	....	....	....	....	....
York, Pa.	....	2	....	1	....	1	....	3	....	....	....	....	....
Zanesville, Ohio.	13	....	2	3	....	1	....	....	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

WEEKLY MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED OCTOBER 15.

[For smallpox and plague see special tables.]

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Altoona, Pa.	13	....	1	2	....	3	....	2	....	....	....	....	....
Ann Arbor, Mich.	5	2	1	....	....	....	....	20	....	....	....	....	....
Auburn, N. Y.	10	1	1	....	....	....	....	....	....	2	....	....	....
Aurora, Ill.	4	....	....	....	....	....	....	....	....	....	....	....	....
Baltimore, Md.	183	48	18	86	5	13	....	17	1	7	....	5	....
Bayonne, N. J.	....	....	....	....	....	1	....	2	....	1	....	....	....
Beaver Falls, Pa.	0	....	....	1	....	....	....	4	....	....	....	....	....
Berkeley, Cal.	6	....	1	....	....	....	....	....	....	....	....	....	....
Biddeford, Me.	27	....	3	....	....	4	....	....	....	....	....	....	....
Binghamton, N. Y.	16	99	2	1	1	....	....	2	1	....	....	....	....
Boston, Mass.	205	42	22	30	2	9	....	33	3	4	....	15	2
Braddock, Pa.	10	....	....	....	1	....	....	16	2	....	....	....	....
Brockton, Mass.	11	2	2	4	....	....	....	1	....	....	....	....	....
Cambridge, Mass.	31	6	6	5	....	2	....	2	....	....	....	....	....
Cambridge, Ohio.	6	....	....	....	....	2	....	....	....	....	....	....	....
Camden, N. J.	....	1	....	....	....	1	....	4	2	....	....	....	....
Camden, S. C.	4	....	....	....	....	....	....	....	....	....	....	....	....
Canton, Ohio.	13	....	1	....	1	....	....	2	....	....	....	....	....
Carbondale, Pa.	6	....	....	....	....	1	....	....	....	....	....	....	....
Charlotte, N. C.	10	....	1	1	1	....	....	....	....	1	....	....	....
Chattanooga, Tenn.	....	1	....	....	....	2	....	2	....	....	....	....	....
Chelsea, Mass.	11	....	2	4	....	1	....	1	....	....	....	....	....
Chicopee, Mass.	8	....	....	1	....	2	....	....	....	....	....	....	....
Cincinnati, Ohio.	106	30	14	5	1	16	1	14	....	4	....	1	....
Cleveland, Ohio.	119	16	13	11	2	22	2	40	1	2	....	3	....
Clinton, Mass.	1	....	....	....	....	....	....	6	....	....	....	....	....
Coffeyville, Kans.	4	2	....	4	....	....	....	....	....	....	....	....	....
Columbus, Ga.	5	....	....	....	....	....	....	....	....	....	....	....	....
Columbus, Ind.	2	....	1	....	....	....	....	....	....	....	....	....	....
Columbus, Ohio.	48	10	4	10	2	2	....	3	....	....	....	....	....
Concord, N. H.	6	....	....	....	....	....	....	....	....	....	....	....	....
Covington, Ky.	11	....	....	....	....	....	....	2	....	....	....	....	....
Council Bluffs, Iowa.	7	....	....	8	....	1	1	2	....	....	....	....	....
Cumberland, Md.	10	....	....	16	....	....	....	1	....	....	....	....	....
Danville, Ill.	9	1	1	2	....	1	....	....	....	....	....	....	....
Dayton, Ohio.	38	1	4	1	1	....	....	3	....	....	....	....	....
Detroit, Mich.	163	....	....	....	....	19	1	39	3	....	....	....	....
Dubuque, Iowa.	....	....	....	....	....	1	....	3	....	....	....	....	....
Duluth, Minn.	20	2	1	13	5	3	....	4	....	10	....	....	....
Dunkirk, N. Y.	3	1	....	1	....	2	....	2	....	1	....	....	....
Elizabeth, N. J.	13	....	....	....	1	2	....	10	....	....	....	....	....
Elmira, N. Y.	8	1	....	1	....	2	....	1	....	....	....	....	....
El Paso, Tex.	18	1	1	1	1	....	....	....	....	....	....	....	....
Erie, Pa.	20	1	1	10	1	7	....	....	....	1	....	....	....
Evansville, Ind.	15	....	....	7	1	1	....	4	....	....	....	4	....
Everett, Mass.	9	3	....	1	....	1	....	....	....	....	....	....	....
Fall River, Mass.	30	....	4	9	....	2	....	3	1	1	1	6	....
Fort Wayne, Ind.	6	....	....	5	....	4	....	3	....	....	....	....	....
Freeport, Ill.	3	....	....	....	....	1	....	....	....	....	....	....	....
Galesburg, Ill.	3	....	....	....	....	1	....	....	....	....	....	....	....
Gloucester, Mass.	4	....	....	....	....	....	....	....	1	....	....	....	....
Grand Rapids, Mich.	34	1	1	5	2	2	....	6	2	21	....	3	....
Greensboro, N. C.	6	....	....	....	....	2	....	2	....	....	....	....	....
Harrison, N. J.	3	....	....	....	....	....	....	1	1	....	....	....	....
Hartford, Conn.	43	2	2	5	....	4	....	4	1	....	....	....	1
Haverhill, Mass.	12	....	1	4	....	....	....	3	....	....	....	2	....
Hoboken, N. J.	....	1	....	....	....	....	....	1	....	....	....	....	....
Hyde Park, Mass.	7	1	....	19	2	....	....	....	....	1	....	....	....
Jacksonville, Fla.	31	....	7	5	1	....	....	2	....	1	....	....	....
Johnstown, Pa.	23	....	....	7	1	3	....	1	....	....	....	1	....
Kalamazoo, Mich.	16	....	....	7	1	4	....	....	....	2	....	....	....
Kansas City, Kans.	24	....	5	8	3	2	....	8	1	....	....	....	....
Kearney, N. J.	6	2	2	....	....	....	....	3	....	4	....	....	....
Kingston, N. Y.	10	....	1	....	....	....	....	....	....	2	....	....	....
Knoxville, Tenn.	17	....	3	....	....	....	....	3	1	....	....	....	....
La Crosse, Wis.	5	....	....	2	....	3	....	....	....	....	....	....	....
La Fayette, Ind.	6	....	1	2	2	....	....	....	....	....	....	....	....
Lancaster, Pa.	10	4	....	3	....	2	....	1	....	....	....	....	....
Lexington, Ky.	7	....	....	3	....	....	....	3	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended October 15—Continued.

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Los Angeles, Cal.	80	6	15	5	1	6	....	4	....	....	....	....	....
Lowell, Mass.	40	4	2	6	....	4	....	6	....	....	....	....	....
Lynchburg, Va.	....	....	....	2	....	....	....	5	....	....	....	....	....
Lynn, Mass.	20	3	2	3	....	2	....	2	....	2	....	....	1
Malden, Mass.	5	....	....	1	....	3	....	2	....	3	....	....	....
Manchester, N. H.	19	....	....	....	....	....	....	9	1	1	....	1	1
Manistee, Mich.	0	....	....	2	....	....	....	....	....	....	....	....	....
Manitowoc, Wis.	5	1	1	....	....	....	....	....	....	....	....	....	....
Marinette, Wis.	2	....	....	....	....	....	....	1	....	....	....	....	....
Marlboro, Mass.	2	....	....	1	....	....	....	1	....	....	....	....	....
Massillon, Ohio.	2	....	....	....	....	....	....	1	....	....	....	....	....
Medford, Mass.	3	1	....	....	....	....	....	1	....	....	....	1	....
Melrose, Mass.	2	....	....	1	....	....	....	2	....	....	....	....	....
Memphis, Tenn.	53	3	5	6	2	1	....	4	3	....	....	....	....
Milwaukee, Wis.	94	10	11	16	3	21	1	33	3	2	....	1	....
Mobile Ala.	20	....	3	....	....	1	....	....	....	....	....	....	....
Moline, Ill.	8	....	....	....	1	....	....	1	....	....	....	1	1
Montclair, N. J.	5	1	....	....	....	....	....	....	....	....	....	....	....
Montgomery, Ala.	23	3	3	1	1	2	....	3	....	....	....	....	....
Morristown, N. J.	2	1	....	....	....	....	....	8	....	....	....	....	....
Mount Vernon, N. Y.	6	....	....	....	....	....	....	3	....	....	....	....	....
Muskegon, Mich.	....	....	....	7	1	....	....	....	....	....	....	....	....
Nanticoke, Pa.	4	....	....	....	....	....	....	2	....	....	....	....	....
Nashville, Tenn.	29	5	1	11	....	1	....	6	....	6	....	1	....
Newark, N. J.	97	13	10	9	2	12	....	16	2	....	....	....	....
New Bedford, Mass.	27	5	....	3	....	4	....	3	1	....	....	....	....
Newburyport, Mass.	5	1	....	1	....	1	....	2	....	....	....	....	....
New Orleans, La.	131	34	23	11	....	10	....	5	....	3	....	....	1
Newport, Ky.	7	1	1	....	....	....	....	....	....	....	....	....	....
Newton, Mass.	7	1	....	2	....	....	....	....	....	....	....	....	....
New York, N. Y.	1,291	492	153	151	20	88	1	216	10	67	2	18	5
Niagara Falls, N. Y.	5	....	2	1	....	4	....	2	....	....	....	....	....
Norristown, Pa.	5	....	1	2	....	....	....	2	....	....	....	....	....
North Adams, Mass.	6	....	1	....	....	....	....	....	....	6	....	....	....
Northampton, Mass.	4	1	2	....	....	....	....	....	....	....	....	....	....
Oakland, Cal.	27	2	1	3	....	1	....	....	....	....	....	....	....
Orange, N. J.	10	....	....	....	....	1	....	2	....	....	....	....	....
Ottumwa, Iowa.	4	....	1	....	....	....	....	....	....	....	....	....	....
Palmer, Mass.	4	....	1	....	1	....	....	1	....	....	....	....	....
Peekskill, N. Y.	5	....	....	....	....	1	....	....	....	....	....	....	....
Philadelphia, Pa.	....	96	46	53	12	29	3	57	5	14	....	4	8
Pittsburg, Pa.	178	25	5	26	3	19	5	31	4	5	1	9	....
Pittsfield, Mass.	12	3	2	4	....	4	....	1	....	3	....	....	....
Plainfield, N. J.	8	2	....	1	....	....	....	1	....	....	....	....	....
Portsmouth, N. H.	....	....	....	1	....	....	....	2	....	....	....	....	....
Portsmouth, Va.	7	....	....	....	....	....	....	1	....	1	....	....	....
Pottstown, Pa.	6	....	1	1	1	....	....	....	....	....	....	1	....
Providence, R. I.	57	9	6	3	1	4	....	20	2	....	....	....	....
Reading, Pa.	27	1	....	10	4	2	....	6	....	1	....	4	1
Rock Island, Ill.	6	....	....	3	....	1	....	10	1	....	....	....	....
Rutland, Vt.	....	....	....	2	....	....	....	....	....	....	....	....	....
St. Louis, Mo.	188	44	22	13	3	20	1	34	2	18	....	15	1
San Francisco, Cal.	130	39	19	5	2	4	....	3	2	14	....	5	....
Schenectady, N. Y.	17	....	....	9	1	1	....	....	....	1	....	5	....
Seattle, Wash.	35	3	4	14	....	2	....	2	....	20	....	1	....
Somerville, Mass.	9	....	1	3	....	7	....	2	....	....	....	....	....
South Bend, Ind.	18	....	1	1	2	....	....	1	....	....	....	....	....
South Bethlehem, Pa.	2	....	....	4	....	....	....	1	1	....	....	....	....
Spokane, Wash.	22	....	1	4	4	10	....	4	....	2	....	....	....
Springfield, Mass.	29	4	3	4	1	1	....	7	1	1	....	....	....
Steelton, Pa.	3	5	....	1	....	4	....	2	....	....	....	....	....
Superior, Wis.	7	....	....	....	....	1	....	5	....	....	....	....	....
Tacoma, Wash.	18	....	....	11	....	4	....	2	....	....	....	....	....
Taunton, Mass.	13	....	2	2	....	....	....	2	3	....	....	....	....
Terre Haute, Ind.	14	....	2	2	1	4	1	5	....	....	....	....	....
Toledo, Ohio.	59	....	5	36	6	2	....	19	1	1	....	....	....
Topeka, Kans.	5	2	2	....	....	3	....	....	....	....	....	....	....
Trenton, N. J.	....	2	1	5	....	2	....	4	....	....	....	....	....
Waltham, Mass.	6	....	....	....	....	....	....	1	....	....	....	....	....
Warren, Ohio.	2	....	....	4	2	....	....	....	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended October 15—Continued.

Cities.	Total deaths from all causes.	Tuberculosis.		Typhoid fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Washington, D. C.	104	17	12	23	1	9	....	12	....	....	....	8	....
Wichita, Kans.	14	....	....	5	1	....	....	10	4	....	....	....	....
Wilkes-Barre, Pa.	14	2	1	6	1	1	....	8	1	1	....	2	....
Wilkinsburg, Pa.	4	2	....	1	....	....	....	2	....	....	....	....	....
Williamsport, Pa.	4	....	....	5	....	....	....	....	....	....	....	....	....
Wilmington, Del.	31	....	1	....	2	....	....	....	....	....	....	....	1
Woburn, Mass.	3	....	....	....	....	2	....	....	....	5	....	....	....
Worcester, Mass.	43	5	4	9	1	2	....	8	1	2	....	3	1
Yonkers, N. Y.	25	1	2	1	....	2	....	1	....	....	....	....	....
York, Pa.	....	3	....	2	....	....	....	3	....	....	....	....	....
Zanesville, Pa.	10	....	....	....	....	5	....	1	....	....	....	....	....

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES AND CITIES OF THE UNITED STATES (untabulated).

CALIFORNIA.—Month of August, 1910. Population, 2,037,929. Total number of deaths from all causes, 2,549, including typhoid fever 51, measles 4, diphtheria 18, tuberculosis 369.

San Diego.—Month of September, 1910. Population, 45,000. Total number of deaths from all causes, 46, including diphtheria 2, tuberculosis 5. Cases reported: Typhoid fever 5, measles 2, scarlet fever 8, diphtheria 2, tuberculosis 1.

FLORIDA.—Week ended October 15, 1910. Reports from the state board of health show typhoid fever present in 4 localities with 10 cases, diphtheria in 2 localities (Pensacola and Jacksonville) with 4 cases, malaria in 9 localities with 22 cases, tuberculosis in 3 localities with 8 cases.

IOWA.—Month of September, 1910. Population, 2,192,608. Total number of deaths from all causes, 1,768, including typhoid fever 54, measles 2, scarlet fever 3, diphtheria 14, tuberculosis 102.

MASSACHUSETTS.—*Mortality.*—Week ended August 6, 1910. Population of reporting towns, 2,390,577. Total number of deaths from all causes 805, including typhoid fever 3, measles 5, scarlet fever 4, diphtheria 7, tuberculosis 73. Week ended August 13, 1910. Population, 2,377,901. Total number of deaths 748, including typhoid fever 6, measles 1, scarlet fever 4, diphtheria 2, tuberculosis 60. Week ended August 20, 1910. Population, 2,378,779. Total number of deaths 850, including typhoid fever 8, measles 3, diphtheria 2, tuberculosis 72. Week ended August 27, 1910. Population, 2,380,057. Total number of deaths 779, including typhoid fever 10, measles 4, scarlet fever 2, diphtheria 10, tuberculosis 63.

Morbidity.—During the month of August, 1910, cases of infectious diseases were reported as follows: Typhoid fever 728, measles 204, scarlet fever 224, diphtheria 377, tuberculosis (pulmonary) 543, other forms 3.

MINNESOTA—*St. Paul.*—Month of August, 1910. Population, 235,000. Total number of deaths from all causes 217, including typhoid fever 5, diphtheria 12, tuberculosis 22. Cases reported: Smallpox 3, measles 6, scarlet fever 19, diphtheria 84.

NEBRASKA—*Lincoln.*—Month of September, 1910. Population, 50,000. Total number of deaths from all causes 41, including typhoid fever 3, tuberculosis 4. Cases reported: Scarlet fever 2, diphtheria 2.

NEW YORK.—Month of August, 1910. Population, 8,871,720. Total number of deaths from all causes 11,998, including typhoid fever 134, measles 47, scarlet fever 36, diphtheria 130, tuberculosis 1,238. Cases reported: Typhoid fever 1,023, smallpox 9, measles 883, scarlet fever 688, diphtheria 1,363, tuberculosis 3,375.

Troy.—Month of September, 1910. Population, 77,650. Total number of deaths from all causes 114, including typhoid fever 3, measles 4, diphtheria 1, tuberculosis 14. Cases reported: Typhoid fever 13, measles 8, diphtheria 13, tuberculosis 10.

UTAH—*Salt Lake City.*—Month of September, 1910. Population, 85,000. Total number of deaths from all causes 81, including typhoid fever 4, scarlet fever 2, diphtheria 2, tuberculosis 5. Cases reported: Typhoid fever 92 (outside cases not included), smallpox 1, measles 2 scarlet fever 13, diphtheria 15.

FOREIGN AND INSULAR.

AUSTRIA-HUNGARY.

Cholera-infected localities.

Consul Slocum at Fiume reports, October 16:

On October 12 there were 49 localities in Austria-Hungary reported cholera infected and 3 reinfected.

BRAZIL.

Cholera on steamship at Pernambuco.

The American consul at Para reported October 22 to the Department of State:

The steamship *Manaos* arrived at Pernambuco October 20 with cholera on board. The vessel was quarantined and ordered to Rio de Janeiro with all passengers.

ECUADOR.

GUAYAQUIL—Plague and Yellow Fever.

Passed Assistant Surgeon Parker reports, October 5:

Plague at Guayaquil reached a low ebb in May and June, but a recrudescence began in July and the disease is gradually assuming epidemic form. During the month of September 87 cases with 36 deaths were reported. These cases appeared in a gradually spreading center of infection. Cases are now occurring in practically all parts of the city.

Rat plague is general throughout the city, attended by considerable mortality. Fleas are present in great numbers.

During the month of September 3 cases of yellow fever with 2 deaths occurred in Guayaquil. The disease has also appeared in Milagro, Duran, and Babahoyo with a few cases.

FRANCE.

MARSEILLE—Cholera.

Consul Gaulin reports, October 10:

The third case of cholera reported October 5 ended fatally October 6. The patient was an employee in the lodging house which received the group of emigrants from the *Bosphore*, among whom 2 fatal cases of cholera occurred.[a]

HAWAII.

Last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

[a] Public Health Reports, October 28, 1910, page 1543.

At Hilo the last case of human plague occurred March 23, 1910.

The last plague-infected rat was found at Piihuona, 4 miles from Hilo, April 9, 1910.

Passed Assistant Surgeon Ramus reports, October 10:

HONOLULU.

Week ended October 8, 1910.

Total rats and mongoose taken	656
Rats trapped	631
Mongoose trapped	11
Rats found dead	0
Rats shot from trees	14
Examined bacteriologically	573
Plague rats	0
Classification of rats trapped:	
Mus alexandrinus	104
Mus musculus	195
Mus norvegicus	73
Mus rattus	259
Classification of rats shot from trees:	
Mus alexandrinus	4
Mus rattus	6
Average number of traps set daily	1,720

INDIA.

CALCUTTA—Cholera, Plague, and Smallpox.

Acting Assistant Surgeon Allan reports, September 29 and October 8:

During the week ended September 10 there were 12 deaths from cholera and 5 from plague in Calcutta; in all Bengal, 130 cases of plague with 96 deaths; in all India, 2,839 cases of plague with 2,057 deaths.

In Calcutta during the week ended September 17 there were 15 deaths from cholera and 8 from plague and 1 death from smallpox; in all Bengal, 103 cases of plague with 81 deaths; in all India, 3,530 cases of plague with 2,523 deaths.

ITALY.

Status of Cholera.

Surgeon Geddings at Naples reports, October 17:

During the week ended October 15 cholera was reported in Italy as follows:

	Cases.	Deaths.
Naples city	68	29
Province of Naples.		
Afragola	7	1
Arzano	6	0
Casoria	3	0
Barra	4	1
Castellamare di Stabia	11	2
Cardito	2	0
Chiaiano	1	0
Crispano	1	0
Fratta Maggiore	3	1
Giugliano	2	0
Monte di Procida	2	0
Mugnano di Napoli	1	0
Piano di Sorrento	1	0

	Cases.	Deaths.
Province of Naples—Continued.		
Ponticelli	1	1
Resina	1	1
San Antimo	2	0
Secondigliano	1	2
San Giovanni di Teduccio	6	0
Torre del Greco	1	0
Vico Equense	1	0
Puzzuoli	10	4
	67	13
Province of Avellino.		
Monteforte Irprino	1	0
Forino	1	1
	2	1
Province of Bari.		
Ceglie	1	0
Molfetta	7	1
	8	1
Province of Caserta.		
Caserta	2	0
Acerra	2	2
Arienzo	1	0
Aversa	37	18
Camposano	1	0
Formia	1	1
Grazanise	2	1
Maddaloni	27	7
Marigliano	3	0
	76	29
Province of Campobano.		
Isernia	3	1
Province of Foggia.		
Cerignola	1	4
Province of Salerno.		
Salerno	7	2
Mercato San Severino	4	2
Nocera Superiore	1	1
Pagani	1	0
Pellezzano	1	0
	14	5
Province of Rome.		
City of Rome	4	0

In general it may be said that the conditions have remained about stationary in Italy as a whole since the last report. The infection of the original foci in Apulia has disappeared except in the towns of Ceglie, Molfetta, and Cerignola, with an increase in Molfetta. The diffusion of the disease in other provinces is probably rather apparent than real, and is due to increased activity on the part of the local officials.

Conditions in Naples.—In general this may be said to have improved, though from time to time there are slight increases in the number of cases and deaths, which can generally be traced to excesses of eating and drinking on feast days and holidays. The declination of virulence is marked, and there is every ground for the hope and belief that in the next two weeks there will be a practical disappearance of the infection.

A very large proportion of the cases reported in Naples can now be traced to the Vicaria, a section notably insanitary, and which is not always supplied with the excellent Serino water distributed to the remainder of the city, but which in spite of warnings and protests receives most of its water for industrial and economic uses from the Bolla Aqueduct, a source suspected of infection and intended to be used for industrial purposes only. This is another practical demonstration of the danger of a dual water supply, especially in the hands of an ignorant and indifferent population. The establishment of economic and free kitchens has also notably diminished the spread of the infection, and has gone far to relieving the distress among the lower classes, among whom the condition was becoming acute at the date of my last report.

On October 31 no cases of, nor deaths from, cholera had been reported in Naples for 5 days.

Doctor Geddings further reported:

October 25 to 30, 36 cases of cholera, with 14 deaths, were reported in localities of Italy outside of Naples.

Smallpox in Italy.

During the week ended October 16, 4 cases of smallpox were reported from the city of Palermo, and 1 case at Provaglio di Isco, Province of Brescia. From August 30 to October 8, 39 cases of smallpox have been reported at Lungro, Province of Cosenza.

NAPLES—Examination of Emigrants.

Doctor Geddings reported:

Vessels inspected at Naples and Palermo week ended October 15.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Oct. 11	Taormina	Philadelphia	989		1,272
15	Mongibello	New York			

PALERMO.

Oct. 15	Prinzess Irene	New York	185	150	75

Rejections recommended.

NAPLES.

Date.	Name of ship.	Trachoma.	Favus.	Suspected trachoma.	Measles.	Other causes.	Total.
Oct. 11	Taormina	25	2	8	1	3	39
15	Mongibello						

PALERMO.

Oct. 15	Prinzess Irene	8		5		6	19

JAPAN.

Cholera and Typhoid Fever.

Acting Assistant Surgeon Moore at Kobe reports, September 29: Since September 12 there have been reported 103 cases of cholera at Kobe. The principal focus of infection appears to be in the harbor, but many foci of infection have been discovered in widely separated parts of the city. Strict precautions are observed to prevent cholera infection from being conveyed to vessels bound for United States ports.

In Osaka epidemic cholera is spreading rapidly, more than 50 cases having been reported to date.

Surgeon Irwin at Yokohama reports, October 3:

Typhoid fever is epidemic in the prefecture of Nagano. To date 961 cases have been reported.

MEXICO.

Yellow Fever in Campeche.

The following information, dated October 24, was received from the president of the superior board of health:

During the week ended October 22 there were reported in Campeche 3 deaths from yellow fever, occurring October 17, 19, and 20. No new cases were reported.

PERU.

Plague.

Acting Assistant Surgeon Castro-Gutierrez, at Callao, reports, September 30:

Plague was reported present at Mollendo September 7. Bills of health from Chilean ports show as follows: Valparaiso (August 31), 60 cases of smallpox in preceding two weeks; Iquique (September 4), 1 case of plague, with 1 death.

RUSSIA.

Status of Cholera.

Acting Assistant Surgeon De Forest, at Libau, reports, October 9 and 17:

During the week ended October 7 there were reported in St. Petersburg and suburbs 123 cases of cholera, with 37 deaths; in all Russia during the same period 2,658 cases, with 1,330 deaths.

During the week ended October 14 there were reported in St. Petersburg and suburbs 57 cases of cholera, with 24 deaths; in all Russia exclusive of St. Petersburg 2,032 cases, with 1,047 deaths.

LIBAU—Smallpox—Examination of Emigrants.

Doctor De Forest further reports:

During the week ended October 1 there was reported 1 case of smallpox at Libau.

For steamship *Birma*, sailing October 15, there have been examined 384 passengers. Passengers from Odessa are held seven days and their baggage is disinfected with sulphur dioxide and formaldehyde. Ships lying in harbor at Libau are being disinfected previous to taking cargo. Foodstuffs are not allowed to be brought by emigrants from

the interior to the emigrant lodging houses. All food brought by them is at once taken from them and destroyed.

For steamship *Birma* there have been examined, October 10, 732 new passengers and 30 old, the latter having been held from last steamship on account of coming from Odessa and not having been in Libau the seven-day period required, making in all 762 examined. Baggage is examined for food on boarding the vessel and the food is removed when found. The sale of food in Libau is controlled strictly by sanitary officials.

ODESSA—Cholera and Plague.

Consul Grout reports, October 10:

During the week ended October 8 there were reported 3 cases of cholera, with 3 deaths. At the close of the week there were 7 cases in hospital. The total number of cases from the outbreak of the epidemic to date is 597, with 335 deaths.

During the week ended October 8 there were reported 3 cases of plague, with 2 deaths, and at the close of the week 30 cases in hospital. The total number of cases to date is 124, with 35 deaths.

TRIPOLI.

TRIPOLI—Cholera.

Vice-Consul Saunders reports, October 8:

Three deaths from cholera have been reported. Two of these occurred October 4 and 1 October 8, and all occurred in the same house.

In view of the possibility of the disease having been imported from Italy vessels from Italian ports are refused pratique and passengers arriving from Italy are held under observation in the lazaretto.

Five days' quarantine has been imposed against Tripoli and importation of merchandise from Tripoli has been prohibited by Tunis.

VENEZUELA.

CARACAS—Plague.

The American chargé d'affaires reported October 25 to the Department of State that 4 more deaths in Caracas from plague were officially reported.

ZANZIBAR.

ZANZIBAR—Smallpox—Examination of Rats.

Consul Weddell reports, September 21:

From June 8 to September 18 there were reported 144 cases of smallpox with 67 deaths. The last case occurred September 17. The total number of persons vaccinated from the outbreak to September 18 was 20,009.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended November 4, 1910.

[These tables include cases and deaths recorded in reports received by the Surgeon-General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Maskat	Sept. 25-Oct. 2	8	6	Including Matrah.
Borneo:				
Pamangkjat	July 22-31	[a] 20	20	In the western part.
Brazil:				
Pernambuco	Oct. 20	1	.....	On s. s. Manaos.
France:				
Marseille	Oct. 6	.....	1	
India:				
Bombay	Sept. 21-Oct. 4	.....	5	
Calcutta	Sept. 4-17	.....	27	
Kurrachee	Sept. 18-Oct. 1	35	29	
Madras	Sept. 17-30	.....	40	
Negapatam	Sept. 17-30	.....	21	
Rangoon	Sept. 18-24	.....	1	
Indo-China:				
Saigon	Aug. 29-Sept. 18	4	4	
Italy, general	Oct. 23-30	53	24	
Naples	Oct. 23-24	7	3	
Provinces—				
Avellino	Oct. 9-15	2	1	
Bari	Oct. 9-15	2	1	
Campobano	Oct. 9-15	3	1	
Caserta	Oct. 9-15	76	29	
Foggia	Oct. 9-15	1	4	
Naples	Oct. 9-15	67	13	
Salerno	Oct. 9-15	14	5	
Japan:				Present.
Kobe	Sept. 26-Oct. 2	58	33	Do.
Ehime	Oct. 1	.....	.....	
Hieroshima	Oct. 1	.....	.....	
Osaka	Sept. 19-24	40	.....	
Java:				
Batavia	Sept. 11-17	10	6	
Roumania:				
Tulcea	Oct. 5	[a] 1	1	
Russia:				
Odessa	Sept. 30-Oct. 7	3	2	
Riga	Oct. 8	1	.....	
Siam:				
Bangkok	Aug. 14-Sept. 10	95	95	
Straits Settlements:				
Singapore	Sept. 4-10	3	6	
Tripoli:				
Tripoli	Oct. 4-7	3	3	
Turkey:				
Constantinople	Sept. 27-Oct. 10	62	37	
Turkey in Asia:				
Erzerum, vilayet	Sept. 23-Oct. 6	206	139	
Trebizond	Oct. 1-9	130	70	

YELLOW FEVER.

Brazil:				
Manaos	Sept. 25-Oct. 1	6	6	
Para	Sept. 18-Oct. 8	39	24	
Mexico:				
Campeche	Oct. 16-22	.....	3	

[a] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Oct. 12, 1910.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received During Week Ended November 4, 1910.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Sept. 4	1	1	
Egypt:				
Alexandria	Sept. 7–29	5	4	
Port Said	Aug. 28–Sept. 24	2	2	
Provinces—				
Assiout	Sept. 8–Oct. 6	8	2	
Galioubeeh	July 30–Sept. 9	1	1	
Garbieh	Aug. 28–Oct. 5	21	6	
Menouf	July 23–Oct. 3	1	1	
Minieh	Aug. 20–Sept. 12	3	2	
India:				
Bombay	Sept. 21–Oct. 4	.....	29	
Calcutta	Sept. 4–17	.....	13	
Kurrachee	Sept. 18–Oct. 1	14	14	
Rangoon	Sept. 11–24	.....	12	
Indo-China:				
Saigon	Aug. 19–Sept. 18	3	1	
Peru:				
Mollendo	Sept. 7	.....	.....	Present.
Russia:				
Odessa	Oct. 1–8	3	2	
Siam:				
Bangkok	Aug. 14–Sept. 10	4	4	

SMALLPOX.

Arabia:				
Aden	Sept. 19–26	.....	1	
Argentina:				
Buenos Aires	July 1–31	.....	46	
Brazil:				
Para	Sept. 18–Oct. 8	19	3	
Rio de Janeiro	Sept. 12–25	14	.....	
Santos	Aug. 3–16	1	1	
Ceylon:				
Colombo	Sept. 11–17	1	1	
Chile:				
Valparaiso	Sept. 11–24	80	.....	
China:				
Shanghai	Sept. 19–25	.....	1	
France:				
Paris	Sept. 25–Oct. 1	2	.....	
Germany, general	Oct. 9–15	1	.....	
Gibraltar	Oct. 2–9	1	.....	
Great Britain:				
West Hartlepool	Oct. 2–8	1	.....	
India:				
Bombay	Sept. 22–Oct. 2	.....	3	
Madras	Sept. 17–30	.....	6	
Indo-China:				
Saigon	Aug. 28–Sept. 18	21	7	
Italy:				
Cosenza	Aug. 30–Oct. 8	39	.....	
Palermo	Sept. 25–Oct. 1	1	.....	
Provaglio di Isco	Oct. 9–16	1	.....	
Portugal:				
Lisbon	Sept. 25–Oct. 8	64	.....	
Russia:				
Riga	Oct. 2–8	9	.....	
Spain:				
Madrid	Sept. 1–30	.....	6	
Siam:				
Bangkok	Aug. 4–Sept. 10	1	1	
Straits Settlements:				
Penang	Aug. 27–Sept. 3	19	4	
Singapore	Sept. 4–10	22	4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

[For reports received from January 1, 1910, to June 24, 1910, see PUBLIC HEALTH REPORTS for June 24, 1910. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Maskat	Sept. 18–24	17	13	
Matrah	Sept. 29			Present.
Austria-Hungary, general	Sept. 23–Oct. 5	12	5	
Hungary, general	Sept. 17—Oct. 5	84	40	
Budapest	Sept. 8–Oct. 1	8	5	
Galicia—				
Padwoloczyska	June 20	1	1	From Russia.
Gonoyo	Sept. 3–6	1	1	
Kalocsa	Sept. 23			Present.
Mohacs	Aug. 25–Sept. 24	22	10	
Nagybajcs	Sept. 7	1	1	
Neusatz	Sept. 23			Present.
Pressburg	Aug. 24–30	1	1	From the steamer Rogensburg.
Trieste	Oct. 16	1		
Vienna	Aug. 21–Sept. 24	9	2	
Vorosmarton	Aug. 19–30	1	1	
China:				
Amoy	July 17–Sept. 3	6	5	
Fatshan	July 1			Epidemic.
Hankow	Aug. 7–13	2	1	
Hongkong	July 10–16	9	6	Imported.
Swatow	May 10–June 6		254	From 3,000 to 4,000 deaths in vicinity.
Colombo:				
Ceylon	July 3–9	1		
Denmark:				
Copenhagen	Sept. 27	1		On a steamer from Holland.
France:				
Marseille	Oct. 4–5	3	2	From s. s. Bosphore from Piraeus.
Germany:				
Freiburg	Sept. 9–13	2		
Kalthoff	Sept. 14	10	6	Suburb of Marienburg.
Marienburg	Sept. 13–Oct. 2	10	4	
Ruhleben (near Berlin)	June 23–27	2	2	Among Russian emigrants.
Sommerau	Sept. 22	1	1	
Spandau (near Berlin)	Aug. 29	2	1	
India:				
Bombay	June 8–Sept. 20		30	
Calcutta	May 1–Sept. 21		472	
Kurrachee	July 24–Aug. 26	5	5	
Madras	May 21–Sept. 16		55	Madras Presidency Oct. 1–Dec. 31, 1909, cases 5,579, deaths 3,264; Jan. 1–Aug. 31, 1910, cases 23,101, deaths 14,671.
Moulmine	May 1–7	1	1	
Negapatam	Apr. 16–Aug. 19		208	
Rangoon	May 8–Aug. 20		15	
Indo-China:				
Saigon	Jan. 1–Aug. 28	71	45	
Italy (outside of Naples)	Oct. 2–22	367	176	
Naples	Sept. 25–Oct. 22	320	130	
Rome	Sept. 25–Oct. 1	5	1	
Province of Bari—				
Andria	Aug. 17–Oct. 1	36	26	
Barletta	Aug. 17–Sept. 24	167	102	
Bisceglie	Aug. 17–20	2	2	
Bitonto	Aug. 17–Sept. 4	3	1	
Canosa	Aug. 17–Sept. 10	10	2	
Grumo Appula	Aug. 17–27	1		
Molfetta	Aug. 17–Oct. 1	70	27	
Ruvo	Aug. 17–Oct. 1	4	1	
Spinazzola	Aug. 17–Sept. 4	15	8	
Terlizzi	Oct. 1	1		
Trani	Aug. 17–Sept. 10	93	71	
Triggiano	Sept. 18–24	1		
Caserta province, Acerra	Oct. 1	2		
Province of Foggia—				
Cerignola	Aug. 17–Oct. 1	35	24	
Margherita di Savoia	Aug. 17–Sept. 10	24	24	
Ortanova	Aug. 17–Sept. 10	4	2	
San Ferdinando	Aug. 17–Sept. 10	15	15	
Trinitapoli	Aug. 17–Oct. 1	55	30	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Italy—Continued.				
Province of Potenza—				
Genzano	Aug. 17–27	2	1	
Palazzo San Gervaso	Aug. 17–27	1	1	
Salerno, province Auletta	Oct. 1	1	1	
Sicily, province—				
Girgenti	Oct. 21	1	.....	
Monreale	Oct. 1	1	.....	
Palermo	Oct. 1	4	.....	
Trapani	Oct. 21	1	.....	
Sardinia	Oct. 3	4	1	
Japan:				
Awaji Island	July 22–28	3	.....	
Ibogun	Aug. 5	3	1	
Kobe	Sept. 12–21	44	26	Sept. 12, first case from s. s. Amakusa Maru, from Dalny.
Moji	Aug. 13	1	.....	On s. s. Helios.
Nagasaki	Aug. 15	1	.....	On s. s. Kasuga Maru, from Shanghai.
Osaka	Aug. 6–Sept. 17	10	7	
Yokohama	Aug. 22	1	.....	On s. s. Siberia, from Shanghai.
Java	.....	.....	.....	June 18, present in extreme eastern part.
Batavia	May 8–Sept. 10	359	241	Mainly among natives.
Samarang	May 8–July 31	323	266	
Soerabaya	May 8–Aug. 20	125	70	
Korea:				
Chinampo	Aug. 26–27	2	1	From steamship Suma Maru.
Manchuria:				
Dalny	Aug. 21–Sept. 10	4	1	
Morocco, general	Sept. 27–Oct. 7	.....	5	Between Rabat and Casablanca, among troops.
Netherlands:				
Rotterdam	July 23–29	1	.....	From a vessel from Russia.
Persia:				
Ardabil	July 1–Aug. 21	70	56	
Chudja	Sept. 4	2	1	
Enzeli	Aug. 20	3	3	
Hassan Branch	July 11–13	6	2	
Khorassan Province—				
Badjuirian	Aug. 1–Sept. 4	2	1	
Nir	Sept. 4	.....	.....	Present.
Serab	Aug. 4–27	.....	.....	Do.
Philippine Islands:				
Manila	May 22–Sept. 10	394	257	July 29, 1 fatal case from s. s. Batangueno. First quarter, 1910—cases, 56; deaths, 45. Second quarter, 1910—cases, 37; deaths, 27.
Provinces	.....	.....	.....	First quarter, 1910—cases, 578; deaths, 432. Second quarter, 1910—cases, 2,324; deaths, 1,692.
Albay	Sept. 4–10	3	2	
Batangas	May 1–Sept. 10	862	547	
Bulacan	May 1–Sept. 10	789	557	
Cavite	June 12–30	3	2	
Ilocos Sur	Aug. 14–Sept. 10	29	25	
Mindoro	Aug. 21–27	3	2	
Mountain Province	Jun 26–Aug. 20	5	4	
Nueva Ecija	June 26–Sept. 10	562	333	
Pampanga	Apr. 24–Sept. 10	282	260	
Pangasinan	Apr. 24–Sept. 10	3,894	3,004	
Rizal	June 12–Sept. 10	242	161	
Tarlac	May 8–Sept. 10	245	184	
Union	May 1–July 30	3	1	
Roumania:				
Galatz	Sept. 16	1	1	An Italian seaman.
Russia (total for all Russia)	.....	.....	.....	May 8 to Oct. 14—cases 203,116; deaths, 94,767.
Amolinsk, territory	Aug. 7–Sept. 10	552	348	
Archangel, government—				
Archangel	July 17–23	1	.....	
Astrakhan, government	July 3–Sept. 10	1,734	765	
Baku, governemnt	May 29–Sept. 10	1,023	539	
Baku	July 3–Sept. 10	933	385	
Batum, territory	Aug. 28–Sept. 10	13	6	
Bessarabia	June 5–Sept. 10	84	33	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Black Sea, province	July 3-Sept. 10	494	161	
Cronstadt	July 17-Sept. 10	203	107	
Daghestan, territory	July 17-Sept. 10	1,287	435	
Don, territory	May 29-Sept. 10	20,511	2,033	
Rostov on the Don	June 19-Sept. 10	3,079	1,029	
Erivan, government	July 24-Sept. 10	902	444	
Esthonia, government—				
Reval	July 24-30	1	.....	
Finland	Aug. 6	2	.....	
Kaluga, government	July 17-Aug. 6	21	3	
Kars, territory	Aug. 7-Sept. 10	572	247	
Kharkov, government	May 29-Sept. 10	2,580	1,090	
Khazan	June 26-Sept. 10	1,877	811	
Kherson, government	May 29-Sept. 10	8,784	4,744	
Odessa	May 29-Oct. 7	597	335	June 18-20: Fatal case on s. s Colenzo.
Kief, government	May 20-Sept. 10	2,120	810	
Kostroma, government	May 29-Sept. 10	1,818	736	
Koutais, government	Aug. 7-Sept. 10	368	260	
Kuban, government	May 29-Sept. 10	19,373	10,154	
Kursk, government	June 26-Sept. 10	5,188	2,033	
Livonia, government	Aug. 28	9	4	
Riga	Aug. 1-Sept. 24	27	.....	
Minsk, government	May 29-Sept. 10	459	152	
Mohilev, government	May 15-Sept. 10	180	76	
Moscow, government	July 24-Sept. 10	162	72	
Moscow	July 10-30	10	5	
Nikolajev	Aug. 28-Sept. 10	37	19	
Nizhni Novgorod, government	July 3-Sept. 10	1,724	740	
Novgorod, government	July 17-Sept. 10	293	130	
Olonetz, government	Aug. 14-Sept. 10	10	5	
Orel, government	Mar. 30-Sept. 10	417	162	
Orenburg, government	July 17-Sept. 10	2,091	1,036	
Orlov	July 3-9	22	8	
Perm, government	July 17-30	55	19	
Podolia, government	July 3-Sept. 10	733	284	
Pensa, government	July 10-Aug. 13	401	138	
Perm, government	July 17-Sept. 10	601	204	
Poltava, government	May 29-Sept. 10	2,889	1,164	
Pskov, government	Aug. 14-Sept. 10	5	1	
Rjasan, government	July 3-Sept. 10	1,925	805	
St. Petersburg, government	July 10-Sept. 10	420	217	
St. Petersburg	June 19-Sept. 10	3,137	1,297	
Samara, government	June 19-Sept. 10	8,215	3,656	
Sarapul, government	July 17-Aug. 27	1,010	539	
Saratov, government	June 19-Sept. 10	5,228	2,134	
Semipatinsk, territory	Sept. 4-10	11	4	
Simbirsk, government	June 19-Sept. 10	2,959	1,370	
Smolensk	July 24-Sept. 10	69	31	
Stavropol, government	June 26-Sept. 10	3,861	1,862	
Syr Darya	July 24-Sept. 10	61	35	
Tambov, government	June 19-Sept. 10	3,688	1,755	
Transbaikal, territory	Sept. 4-10	15	8	
Taurida, government	May 29-Sept. 10	4,014	1,969	
Kertsch	May 29-Sept. 10	482	217	
Sebastopol	June 19-Sept. 10	44	24	
Theodosia	June 19-25	.....	.....	Present.
Terek, territory	June 19-Sept. 10	1,197	633	
Tiflis, government	July 17-Sept. 10	1,495	550	
Tiflis	June 19-July 16	113	41	
Tchernigov	May 29-Sept. 10	1,149	423	
Tobolsk	Aug. 7-Sept. 10	117	42	
Tomsk, government	Aug. 14-Sept. 10	200	62	
Trans-Caspian, territory	July 3-Sept. 10	62	27	
Trans-Caucasia—				
Tschernomorsk, district—				
Novorossysk	June 19-July 3	7	6	
Tula, government	July 10-Aug. 27	34	10	
Turgai, territory	July 24-Sept. 10	59	36	
Tver, government	July 24-Sept. 10	16	1	
Ufa, government	July 10-Sept. 10	588	361	
Ural, territory	Aug. 14-Sept. 10	122	73	
Vitebsk, government	May 29-Sept. 10	82	30	
Veronesch, government	May 29-Sept. 10	4,130	1,958	
Viatka	July 24-Sept. 10	275	146	
Vladimir, government	July 24-Aug. 30	7	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Tiflis government—Continued.				
Volhynia, government	July 3-Sept. 10	47	25	
Vologda, government	Aug. 14-Sept. 10	188	109	
Warsaw, district	Aug. 25-Sept. 2	25	28	Sept. 22, still present.
Yaroslav, government	July 24-Sept. 10	1,088	578	
Yaroslav	July 10-23	25	13	
Yekaterinislav, government.	May 29-Sept. 10	14,504	6,670	
Yelisavetpol	Aug. 7-Sept. 10	54	44	
Servia:				
Belgrade	Oct. 8	1	.....	
Siam:				
Bangkok	May 4-Aug. 13	711	704	
Straits Settlements:				
Singapore	May 8-Sept. 3	109	104	
Turkey:				
Constantinople	Sept. 13-Oct. 10	84	46	
Turkey in Asia:				
Bagdad	Oct. 24	.....	.....	Present.
Erzerum, vilayet	Aug. 22-Oct. 6	530	352	
Irakil	Sept. 25-Oct. 1	1	1	
Samsoun	Sept. 18-24	1	.....	
Tisirk	Sept. 18-24	1	.....	
Trebizond	Sept. 10-Oct. 9	280	202	

YELLOW FEVER.

Brazil:				
Bahia	Apr. 30-Aug. 26	16	12	
Manaos	May 30-Sept. 24	40	40	
Para	May 30-Sept. 17	110	76	July 25: One death on steamship Augustine, en route from Para to Lisbon, 2 days previous to arrival at Madeira.
Pernambuco	May 16	21	1	
Costa Rica:				
Limon	July 9-14	1	1	
San Jose	May 28-July 9	3	2	Fatal case May 28 from Barranquilla; case June 29 from Siquires; fatal case July 9 from Tivives.
Siquires	July 31	1	1	
Ecuador:				
Babahoyo	Sept. 1-15	1	.....	
Duran	Aug. 16-Sept. 30	2	.....	
Guayaquil	May 16-Sept. 30	67	29	
Milagro	Aug. 16-31	2	1	Present Sept. 19.
Gold Coast:				
Sekondi	May 1-27	8	8	
Mexico:				
Campeche	Sept. 25-Oct. 15	7	3	
Sierra Leone:				
Freetown	May 1-Aug. 1	7	7	
Sherboro	May 20	.....	.....	Present.
Venezuela:				
Caracas	Sept. 17	.....	.....	Do.
La Guaira	June 16-30	.....	1	
Puerta Cabello	Oct. 12	.....	.....	Do.

PLAGUE.

Argentina:				
Rosario	Feb. 1-28	1	1	
Tucuman	Feb. 26-May 31	37	16	
Brazil:				
Bahia	Apr. 30-Aug. 26	12	12	
Para	Sept. 19	1	.....	
Pernambuco	Apr. 1-June 30	.....	2	
Rio de Janeiro	June 5-Aug. 31	2	1	
Chile, general	Jan. 1-May 31	104	35	
Iquique	May 8-Sept. 4	38	13	
Mejillones	Apr. 27	.....	.....	Present.
Pisagua	Apr. 1-May 31	14	4	
Taltal	Apr. 1-27	12	.....	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	July 3-Aug. 20		10	May 8-June 11, 8 to 12 deaths daily. Aug. 6, present in vicinity.
Kulangsu, international city.	June 5-11		1	
Canton	July 13-Aug. 6	43	31	
Chao Yang district	May 5-19		3,000	Mainly at Ho Peng. Present also at Chelin, Feng-chow-so, Taipushien, and Tsai-tang-shi.
Chang-pu district	June 11			Epidemic.
Ching-chew district	June 11			Do.
Hankow	May 15-28	5	3	
Hongkong	May 8-Aug. 27	20	18	
Swatow	June 1-July 11			Present in vicinity.
Ecuador:				
Babahoyo	Sept. 1-30	5	1	
Duran	Sept. 16-30	1		
Guayaquil	May 16-Sept. 30	130	45	
Matilde, plantation	Sept. 1-15	1		
Rocafuerte	Aug. 16-31	1		Sept. 15—1 case in hospital.
Egypt:				
Alexandria	May 24-Sept. 29	28	17	
Ismailia	June 19	1	1	
Port Said	June 14-Sept. 24	29	13	
Provinces—				
Assiout	May 26-Sept. 7	18	9	
Assouan	Apr. 30-June 8	2	2	
Beni Souef	May 27-June 29	8	5	
Dakalyieh	Aug. 16-26	3	2	
Galioobeeh	May 21-July 29	8	1	
Garbich	May 14-Aug. 27	25	11	
Fayoum	May 28-July 11	20	14	
Kena	May 27-June 18	24	22	
Menouf	May 24-July 22	117	22	
Minieh	May 31-Aug. 19	24	9	
Great Britain:				
London	Oct. 18-19	2	1	Case Oct. 18 from s. s. Oceana from Bombay; case Oct. 19 from s. s. Hindle from Bombay.
Hawaii:				
Honolulu	July 5-12	2	2	
Indo-China:				
Saigon	Jan. 1-Aug. 28	95	38	
India:				
Bombay	May 18-Sept. 20		883	
Calcutta	May 1-Aug. 27		525	
Kurrachee	May 15-Sept. 17	344	341	
Madras	June 25-July 1		1	
Rangoon	May 8-Sept. 10		431	
Bombay, Presidency and Sind.	May 1-Aug. 27	6,085	4,477	
Madras Presidency	May 1-Aug. 27	616	486	
Bengal	May 1-Aug. 27	1,548	1,371	
United provinces	May 1-Aug. 27	6,070	6,039	
Punjab	May 1-Aug. 27	43,958	38,304	
Burma	May 1-Aug. 27	1,675	1,586	
Eastern Bengal and Assam	June 12-July 9	48	45	
Central provinces, including Berar.	May 1-Aug. 27	1,278	719	
Mysore State	May 1-Aug. 27	882	614	
Hyderabad State	May 1-Aug. 27	704	619	
Central India	May 1-Aug. 27	231	123	
Rajputana and Ajmer-Merwara.	May 1-Aug. 27	8,246	7,254	
Kashmir	May 1-June 11	58	49	
North West Province	June 12-18	3	3	
Grand total		72,002	61,689	
Japan:				
Formosa	May 8-June 18	16	12	
Osaka	May 1-June 25	9	9	
Yokohama	Aug. 31	1	1	On steamship Manchuria from Hongkong.
Malta:				
Valetta	July 16	1		In quarantine station on Comino Island, from s. s. North Wales.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 29, 1910.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mauritius	Apr. 1-July 29	22	10	
New Zealand:				
Auckland	May 23	1		
Persia:				
Bouchir	Apr. 29-June 25	51	40	
Peru:				
Arequipa Department	Mar. 1-31	16	8	
Mollendo	May 16-Aug. 23	2	1	Sept. 12, present.
Callao Department	Mar. 1-31	2		
Callao	May 12-Sept. 3	4		Case May 12 from s. s. Victoria; case May 19 from s. s. Nicaria.
Lambayeque Department	Mar. 1-July 31	40	20	
Libertad Department	Mar. 1-Aug. 31	76	40	
Lima Department	Mar. 1-July 31	20	12	
Piura Department	Mar. 1-July 31	6	3	
Rhodes:				
Aplakia	May 22-28			Present.
Russia:				
Astrakhan government—				
Khirgiz Steppe	June 26-July 7	13	12	In Kalmuk and Narinsk.
Moscow	Aug. 14-Sept. 3	2	1	
Odessa	July 18-Oct. 8	124	35	
St. Petersburg	May 6-28	3	3	
Siam:				
Bangkok	Apr. 25-Aug. 13	26	23	
Straits Settlements:				
Singapore	May 8-28	3	3	
Trinidad:				
Port of Spain	May 15-July 14	2	2	
Tunis:				
Tunis	June 30	5	3	
Turkey in Asia:				
Basra	June 12-Aug. 13	5	4	
Lobeia	May 1-24	25	27	And vicinity.
Venezuela:				
Caracas	July 30-Oct. 25	7	7	
Zanzibar:				
Zanzibar	Sept. 10-14	1	1	

SMALLPOX.

Abyssinia:				
Adis Ababa	May 16-Sept. 10			Present.
Argentina:				
Buenos Aires	Feb. 1-June 30		362	
Mendoza, province	July 27			Epidemic.
Rosario	Feb. 1-July 31	6	6	Report for February received out of date.
San Juan, province	July 27			Epidemic.
Algeria:				
Bona	May 1-31	1	1	
Arabia:				
Maskat	July 19-23	1		
Australia:				
Victoria, general	Apr. 3-19	1	1	
Austria-Hungary:				
Bukowina	July 10-16	1		
Galicia	May 29-July 23	5		
Barbados	Aug. 16	1		From steamship Byron.
Belgium:				
Antwerp	July 24-Oct. 1	2	1	
Ghent	July 24-Sept. 10		2	
Brazil:				
Bahia	Apr. 30-Aug. 19	306	233	
Campinas	July 17-23		1	
Manaos	Aug. 6-Sept. 3			Present.
Para	May 29-Sept. 17	53	18	
Pernambuco	Mar. 16-June 30		331	
Rio de Janeiro	Apr. 18-Sept. 4	13		
Santos	May 22-July 16		11	
Sao Paulo	June 12-25		4	
Canada:				
British Columbia—				
Fernie	June 12-25	4		
Vancouver	May 1-31	2		
Victoria	Aug. 21-Oct. 8	5		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Manitoba—				
Dauphin	Sept. 15			Present.
Winnipeg	June 19–25	1		
Nova Scotia—				
Halifax	June 14–Oct. 15	17		
Pictou	June 12–July 23	9	1	
Sydney	July 3–16	20		
Ontario—				
Kingston	Oct. 3			Present in vicinity.
Toronto	June 5–Sept. 17	13		
Ceylon:				
Colombo	June 26–Sept. 10	12	5	
Chile:				
Antofagasta	July 3–9	4		
Chilean	May 14			Epidemic.
Santiago	June 19–25			Present.
Valparaiso	May 19–Sept. 10	232		Deaths not reported.
Victoria	May 14			Present.
China:				
Canton	May 8–28	9		
Chefoo	June 18–July 2	1	1	June 5—Present. July 2—One case from a vessel.
Chungking	Aug. 27			Present.
Hongkong	May 8–July 30	6	3	
Nanking	May 7–Sept. 24			Present.
Shanghai	May 22–Sept. 11	5	49	Cases among foreigners, deaths among natives. June 9—Three cases from U. S. cruiser New Orleans from Nanking.
Swatow	June 6–July 17			Present.
Tsingtau	June 12–18	2		
Cuba:				
Habana	Sept. 17	1		On s. s. Corcovado, from Corunna.
Egypt, general	Apr. 30–June 17	415	85	
Alexandria	May 1–Aug. 31		13	
Cairo	May 21–Sept. 23	11	5	
Suez	May 21–27	1		
France:				
Paris	May 29–Sept. 3	34		
Germany, general	May 29–Oct. 1	20		
Hamburg	June 5–11	1		
Gibraltar	June 20–Sept. 25	6	2	
Great Britain:				
Liverpool	July 17–Sept. 24	3		
London	June 19–Aug. 6	6		
South Shields	May 22–June 4	4	1	
Hawaii:				
Hilo	Sept. 10	1		Case on s. s. Wilhelmina, from San Francisco via Honolulu.
Indo China:				
Saigon	Jan. 1–Aug. 28	156	82	
India:				
Bombay	May 18–Sept. 13		118	
Calcutta	July 10–Sept. 17		3	
Kurrachee	May 15–July 16	12	3	
Madras	May 14–Sept. 16		35	
Rangoon	May 8–Aug. 27		38	
Italy, general	May 30–Aug. 7	66		
Genoa	June 16–30	1		
Naples	May 30–Aug. 21	88	17	June 26—One case from s. s. San Giovanni. One case, July 3, on s. s. Pannonia.
Japan:				
Formosa	May 22–Sept. 25		5	
Java:				
Batavia	May 22–Aug. 27	5		
Korea:				
Fusan	May 1–7	1		
Seoul	May 26–July 2	3	4	
Malta	May 22–July 30	18	2	
Mexico:				
Aguascalientes	June 5–Oct. 8		40	
Guadalajara	June 11–July 2		6	
Mexico	May 15–Sept. 24		37	
San Luis Potosi	May 29–Oct. 8	13	9	
Veracruz	July 3–9	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from June 25 to October 28, 1910.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Netherlands:				
Rotterdam	Sept. 4–17		1	
Persia:				
Kerman	July 2			Present.
Teheran	May 1–Oct. 24		158	
Philippine Islands		71		First quarter, 1910.
		56		Second quarter, 1910.
Portugal:				
Lisbon	May 29–Sept. 24	751		Jan. 1–Aug. 27, deaths 181.
Russia:				
Libau	May 30–Oct. 1	144	9	
Moscow	May 22–Sept. 17	180	68	
Odessa	May 22–Sept. 10	51	12	
Riga	May 29–Oct. 1	419		Apr. 1–July 31, deaths 144.
St. Petersburg	May 8–Oct. 24	440	170	
Warsaw	Mar. 6–Aug. 27		186	
Siam:				
Bangkok	Apr. 25–June 18	3	3	
Siberia:				
Vladivostok	Apr. 22–Aug. 13	9	1	
Spain:				
Almeria	June 1–Aug. 31		3	
Barcelona	May 31–Oct. 9		19	
Cadiz	May 1–31		1	
Madrid	May 1–Aug. 31		8	
Seville	May 1–Sept. 30		6	
Valencia	June 19–July 23	6		
Vigo	June 12–Sept. 24		9	
Straits Settlements:				
Penang	May 29–Sept. 10	25	12	
Singapore	May 8–Sept. 3	199	63	
Switzerland:				
Thurgau, Canton	July 10–16	1		
Zurich, Canton	June 19–Oct. 1	10		
Tripoli:				
Tripoli	June 12–18	1		
Turkey:				
Constantinople	Aug. 22–28		1	
Turkey in Asia:				
Basra	June 5–Aug. 13			Present.
Uruguay:				
Montevideo	Apr. 1–July 31	744	316	
San Jose	July 7			Do.
Zanzibar:				
Zanzibar	June 1–Sept. 18	144	67	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Amsterdam	Oct. 15	573,246	136	24	....	....	....	....	....	3	....	....	....	....
Asuncion	Sept. 10	72,000	23	1	....	....	....	....	....	....	....	1	....	....
Barcelona	Oct. 9	591,272	285	24	....	....	....	1	....	10	....	....	1	....
Barranquilla	Oct. 1	40,000	22	1	....	....	....	....	....	2	....	....	....	....
Batavia	Sept. 17	217,630	.....	....	....	6	....	....	....	....	....	....	....	....
Belfast	Oct. 8	319,167	94	12	....	....	....	....	....	....	....	....	1	1
Belgrade	...do....	80,000	43	....	....	....	....	....	....	....	1	1	....	....
Bombay	Sept. 27	977,822	569	52	16	2	....	1	....	1	....	....	1	....
Bordeaux	Sept. 24	253,000	81	24	....	....	....	....	....	3	....	....	....	....
Bristol	Oct. 15	382,550	86	7	....	....	....	....	....	....	....	1	....	....
Brussels	Oct. 28	562,895	178	11	....	....	....	....	....	5	....	1	....	....
Calcutta	Sept. 10	847,796	387	13	5	12	....	....	....	....	....	....	....	....
Campeche	Oct. 8	17,665	6	....	....	....	1	....	....	....	....	....	....	....
Canton	Sept. 10	1,000,000	150	11	....	....	....	....	....	3	....	1	....	....
Do	Sept. 17	1,000,000	175	10	....	....	....	....	....	5	....	....	....	....
Chihuahua	Oct. 16	37,000	15	1	....	....	....	....	....	....	....	2	....	....
Christiana	Oct. 8	250,000	49	6	....	....	....	....	....	....	....	1	1	....
Colombo	Sept. 17	187,550	122	12	....	....	....	1	....	10	....	....	....	....
Constantinople	Oct. 9	1,000,000	235	48	....	16	....	....	....	6	3	....	1	....
Dublin	Oct. 1	402,928	164	29	....	....	....	....	....	....	....	2	....	2
Do	Oct. 8	402,928	160	29	....	....	....	....	....	3	1	2	1	2
Edinburgh	...do....	360,276	96	5	....	....	....	....	....	....	....	4	....	....
Glasgow	Oct. 14	884,520	252	....	....	....	....	....	....	1	3	8	....	4
Gothenburg	Oct. 8	164,000	28	3	....	....	....	....	....	....	....	1	1	....
Halifax	Oct. 15	50,000	17	1	....	....	....	....	....	....	....	....	....	....
Havre	Oct. 8	132,430	60	9	....	....	....	....	....	1	....	....	....	1
Hull	...do....	280,006	90	....	....	....	....	....	....	3	....	2	....	1
Kobe	Oct. 2	400,147	229	....	....	33	....	....	....	5	....	....	....	....
Kurrachee	Sept. 24	130,000	101	....	6	7	....	....	....	....	....	....	....	....
Liege	Oct. 1	176,723	48	5	....	....	....	....	....	1	1	....	....	1
Liverpool	Oct. 15	767,606	268	24	....	....	....	....	....	....	5	3	5	4
London	Oct. 8	7,537,196	1,631	....	....	....	....	....	....	9	4	16	19	15
Lyons	Sept. 17	500,000	130	26	....	....	....	....	....	2	....	1	....	....
Do	Sept. 24	.....	137	17	....	....	....	....	....	1	....	1	....	2
Madras	Sept. 23	550,000	517	....	....	28	....	2	....	....	....	....	2	....
Magdeburg	Oct. 1	279,988	89	9	....	....	....	....	....	....	....	6	....	....
Manchester	Oct. 8	631,533	193	....	....	....	....	....	....	....	....	....	3	7
Manaos	Oct. 1	50,000	35	....	....	....	6	....	....	....	....	....	....	....
Maskat	Sept. 24	10,000	.....	....	....	13	....	....	....	....	....	....	....	....
Moncton	Oct. 22	13,500	3	....	....	....	....	....	....	1	....	....	....	....
Montreal	...do....	450,000	147	14	....	....	....	....	....	1	....	3	1	3
Moscow	Oct. 1	1,500,000	665	83	....	....	....	....	13	7	18	26	3	3
Nuevo Laredo	Oct. 22	9,000	10	1	....	....	....	....	....	1	....	....	....	....
Munich	Oct. 1	576,000	163	17	....	....	....	....	....	....	....	....	4	....
Paris	Oct. 8	2,776,344	679	171	....	....	....	....	....	5	....	2	4	3
Newcastle-on-Tyne	...do....	285,891	81	....	....	....	....	....	....	....	....	1	2	1
Nottingham	...do....	263,000	65	....	....	....	....	....	....	....	....	....	2	1
Palermo	Oct. 1	340,000	112	5	....	1	....	....	2	....	....	....	....	....
Do	Oct. 8	.....	111	7	....	....	....	....	....	....	....	....	1	....
Para	Sept. 24	185,000	76	4	....	....	7	1	....	....	....	....	2	....
Do	Oct. 1	.....	72	7	....	....	11	1	....	....	....	....	2	....
Do	Oct. 8	.....	87	15	....	....	6	1	....	....	....	....	1	....
Penang	Aug. 27	103,582	47	9	....	....	....	1	....	....	....	....	....	....
Do	Sept. 3	.....	82	22	....	....	....	4	....	....	....	....	....	....
Rangoon	Sept. 17	252,155	151	9	3	1	....	....	....	....	....	....	....	....
Rotterdam	Oct. 8	423,677	92	....	....	....	....	....	....	....	1	2	....	....
Saigon	Sept. 4	206,000	.....	....	1	....	....	1	....	....	....	....	....	....
Do	Sept. 11	.....	.....	....	....	2	....	3	....	....	....	....	....	....
Do	Sept. 18	.....	.....	....	1	2	....	3	....	....	....	....	....	....
Santa Cruz	Oct. 8	46,000	21	1	....	....	....	....	....	....	1	....	....	....
Santos	Aug. 13	85,000	36	5	....	....	....	1	....	....	....	....	1	....
Shanghai	Sept. 25	565,000	209	18	....	....	....	1	....	....	....	....	....	....
Singapore	Sept. 10	271,060	264	32	....	6	....	4	....	....	....	....	....	....
Southampton	Oct. 8	127,157	29	4	....	....	....	....	....	1	....	1	....	....
Do	Oct. 15	.....	34	....	....	....	....	....	....	1	....	....	2	....
Valencia	Oct. 8	240,000	81	7	....	....	....	....	....	1	....	....	....	....
Valparaiso	Sept. 17	196,596	.....	....	....	....	....	4	....	....	....	....	....	....
Do	Sept. 24	.....	.....	....	....	....	....	4	....	....	....	....	....	....
Vienna	Oct. 1	2,107,891	579	80	....	....	....	....	....	2	3	5	2	3
Warsaw	{Aug. 20 / Aug. 27}	781,179	{261 / 288}	24 / 26	....	....	....	1 / 4	....	.... / 1	9 / 27	6 / 2	4 / 3	6 / 5
West Hartlepool	Oct. 8	66,750	14	....	....	....	....	....	....	....	....	....	....	....
Yarmouth	Oct. 22	6,700	.....	....	....	....	....	....	....	....	....	1	....	....

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

ALGERIA—*Algiers.*—Month of September, 1910. Population, 157,000. Total number of deaths from all causes 264, including typhoid fever 3, diphtheria 1, tuberculosis 39.

Bona.—Month of September, 1910. Population, 42,000. Total number of deaths from all causes 69, including typhus fever 1, typhoid fever 3, scarlet fever 1, tuberculosis 10.

ARGENTINA—*Buenos Aires.*—Month of July, 1910. Population, 1,272,124. Total number of deaths from all causes 1,801, including typhoid fever 12, smallpox 46, measles 8, scarlet fever 2, diphtheria 18, tuberculosis 187.

BAVARIA—*Munich.*—Month of July, 1910. Population, 576,000. Total number of deaths from all causes 730, including measles 14, scarlet fever 3, diphtheria 3, tuberculosis 106. Month of August, 1910. Total number of deaths 769, including typhoid fever 1, measles 8, scarlet fever 4, diphtheria 5, tuberculosis 115.

BERMUDA—*Hamilton.*—Two weeks ended October 10, 1910. Population, 20,216. Total number of deaths from all causes 8. No deaths from contagious diseases.

CANADA—*Vancouver.*—Month of September, 1910. Population, 78,900. Total number of deaths from all causes 86, including typhoid fever 6, diphtheria 1, tuberculosis 7.

FRANCE—*Marseille.*—Month of September, 1910. Population, 517,498. Total number of deaths from all causes 708, including typhoid fever 43, measles 3, scarlet fever 1, tuberculosis 107, cholera, imported, 1.

St. Etienne.—Two weeks ended September 30, 1910. Population, 150,000. Total number of deaths from all causes 90, including typhoid fever 1, tuberculosis 14.

GREAT BRITAIN.—Week ended September 10, 1910.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 11.7 per 1,000 of the population, which is estimated at 16,940,895.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 15.1 per 1,000 of the population, which is estimated at 1,151,790. The lowest rate was recorded at Clonmel, viz, 5.1, and the highest at Dundalk, viz, 27.9 per 1,000.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 13 per 1,000 of the population, which is estimated at 1,865,571. The lowest rate was recorded at Leith, viz, 12, and the highest at Dundee, viz, 15.3 per 1,000. The total number of deaths from all causes was 473, including typhoid fever 1, measles 1, scarlet fever 3, diphtheria 5.

GREECE—*Patras.*—Two weeks ended September 30, 1910. Population, 40,000. Total number of deaths from all causes, 18; including typhoid fever 2, tuberculosis 3.

ITALY—*Genoa.*—Two weeks ended September 30, 1910. Population, 279,163. Total number of deaths from all causes 154, including typhoid fever 7, measles 3, tuberculosis 40.

JAMAICA—*Kingston.*—Month of September, 1910. Population, 53,053. Total number of deaths from all causes 124, including tuberculosis, pulmonary, 14.

MALTA.—Two weeks ended September 24, 1910. Population, 215,879. Total number of deaths from all causes, 190, including typhoid fever 3, diphtheria 1, tuberculosis 7.

RUSSIA—*Riga.*—Month of July, 1910. Population, 350,000. Total number of deaths from all causes 766, including typhus fever 4, typhoid fever 8, smallpox 56, measles 3, scarlet fever 47, diphtheria 16, cholera 1.

SOUTH AFRICA—*Johannesburg.*—Four weeks ended September 17, 1910. Population, 180,687. Total number of deaths from all causes 401, including typhoid fever 13, measles 24, scarlet fever 2, diphtheria 3, tuberculosis 48.

SPAIN—*Almeria.*—Month of September, 1910. Population, 50,910. Total number of deaths from all causes 82, including typhoid fever 1, measles 2, tuberculosis 7.

Huelva.—Month of August, 1910. Population, 24,000. Total number of deaths from all causes 59, including typhoid fever 1, diphtheria 1, tuberculosis 6.

Seville.—Month of September, 1910. Population, 154,315. Total number of deaths from all causes 360, including typhoid fever 7, smallpox 1, scarlet fever 5, diphtheria 6, tuberculosis 69.

TASMANIA—*Hobart.*—Month of August, 1910. Population, 183,387. Total number of deaths from all causes 202, including diphtheria 3.

By authority of the Secretary of the Treasury:

WALTER WYMAN,
Surgeon-General,
United States Public Health and Marine-Hospital Service.