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UNITED STATES.

EXPERIMENTAL PNEUMONIC PLAGUE.

[By Dr. Batzaroff—Translated by P. A. Surg. H. D. Geddings from the Annals of the Pasteur Institute, May, 1899.]

If we review the history of the epidemics of plague which have prevailed for centuries in different parts of the Old World, and to which we have given the name of plague, we see that respiratory troubles have been always mentioned as among the symptoms which frequently accompany this disease. Moreover in some epidemics, and especially in those which have been justly regarded as the most terrible, we find the lungs almost exclusively involved.

The epidemic which decimated Europe and Asia under Marcus Aurelius and that of the years 255–265 B. C., of which St. Cyprien has given us a faithful description, the great plague of Justinian in 542 and the terrible "black death" or "black plague" of the fourteenth century which carried off a quarter of the population of Europe must be included in this category.

In fact in all these epidemics the bubonic cases were relatively rare or were entirely wanting, which led certain historians to believe that they were dealing with a disease different from ordinary plague (they used to speak of malignant epidemic fever), for the bubo was always considered most characteristic of the plague and even up to recent times

they maintained "that there was no plague without buboes," hence the current name of "bubonic plague."

Without being able to prove it in any very definite manner, it is probable, however, that the great epidemics which we have just mentioned, were epidemics of plague, but of pulmonic plague. In fact the existence of a pneumonic form of plague could not very long escape careful observers. At first they used to speak of "pulmonary complications" which were produced during the course of a plague infection, and which were generally attributed to a secondary infection; but, dating from the little epidemic of Wetljanka in 1878–1879 the name "epidemic pneumonia" came into current use, but at the time we could go no further, for in spite of all our assumptions that the disease might be entirely confined to the lungs, further proof of it was impossible at that period. It was only after the discovery of the specific agent of plague by Yersin and Kitasato that we could furnish this proof.

In December, 1896, Childe, professor of pathological anatomy at Bombay, basing his conclusions on the examination of the sputum during the disease and upon the necropsic findings in a certain number of plague cadavers, demonstrated the existence of a primary pneumonic plague.

Two members of the Russian commission to Bombay, Wissokowitz and Zabolotny, observed in 1897 several cases of plague pneumonia, and were able to reproduce the disease experimentally in the monkey. Since that time the fact established by Childe has been confirmed by all those who have had an opportunity to study the plague in patients during the late epidemics in Asia.

At the present time it is actually established that coincidently with the bubonic form of the disease, which is but a mild form of the plague among human beings, there exists "a plague without buboes," which takes the clinical course of a pneumonia. Very frequent in some epidemics of plague, less so in others, pneumonic plague is one of the most dreadful forms of the disease. Hence the indication to seek experimentally the track by which the plague virus enters the economy, what is the course of the disease, and what are the prophylactic measures which can be taken to prevent or cure. This is the subject of this work.

Primary pneumonic plague.

In animals, as in man, we meet two different forms of pneumonia—that is to say, primary pneumonic plague and secondary pneumonic plague. Let us commence with the consideration of the first.

As we have just said, immediately after the proof of the existence of pneumonic plague among men by Childe, Wyssokowitz and Zabolotny tried successfully to produce the disease in monkeys by introducing the plague bacillus into the trachea of the animal by means of a sound, under chloroform anæsthesia. This procedure, though ingenious, is

very inconvenient above all when it deals with small animals as rats and mice. Hence they endeavored to find another more closely approaching the mode of natural infection.

(*a*) If we deposit on the nasal mucous membrane of an animal, without excoriating it, a little pest virus, we give that animal a pneumonic plague with great certainty. In the guinea pig, which is the animal we preferably use in our experiments, as in the rabbit and the monkey, this little operation may be very easily performed by means of a fine glass rod, previously sterilized, whose extremity is wrapped in cotton to avoid all chance of wounds. But in rats and mice the operation is more difficult to perform on account of the narrowness of their nasal passages; hence we have usually been satisfied with spreading a little of the virus on their nostrils. In these little rodents the infection does not as invariably ensue as in monkeys, rabbits, and guinea pigs, but if we operate on 10 mice we will always have at least 5 or 6 which will contract the disease and die of it.

The virus introduced into the nostrils consists of a small quantity of an agar culture of the B. pestis, or bacilli in the spleen of a plague-stricken animal. Bouillon cultures are not suitable for this species of inoculation, for they are soon expelled by the sneezing of the animal or the slight secretion which follows the introduction of the virus.

When the virus is virulent the disease always presents a regular course. During the first twelve hours we often find a lowering of the temperature of the body, which falls to 37° C., and sometimes lower. This is probably a reflex effect of the irritation of the sensory nerves of the mucous membrane. Then the temperature slowly ascends and remains within normal limits until about thirty hours after the inoculation. During this time the animal eats and appears well, so that nothing in his general condition shows the gravity of the disease with which he is threatened. Bacteriological examination alone at this time permits of a diagnosis, for a trace of the nasal mucus, taken from the inoculated side, and examined under the microscope, shows a quantity of plague bacilli in rapid proliferation, as evidenced by the small size of the elements which make up the culture.

But the picture soon changes; the temperature mounts rapidly to 40.5° to 41° C., and in some cases to 42° C., and is maintained at this figure; the animal becomes sick, ceases to eat, his hair becomes roughened up, his respiration quickened. This condition of illness goes on increasing, failure is rapid, the respiration becomes more and more rapid and painful, and is at the same time strident and puffing. The animal commences to cough and to throw off a small quantity of foamy reddish fluid. The nasal secretion increases, and the liquid of which it is formed dries in small yellowish crusts around the nostrils. Through the naso-lachrymal duct the inflammation extends to the conjunctiva, and the conjunctivitis, which follows, attacks first the eye corresponding

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a This fact was mentioned by Professor Roux in a preliminary note in 1898.

to the side of inoculation. The febrile condition lasts generally twenty-four to thirty-six hours; then the temperature commences to fall and the guinea pig dies at the end of the third or the commencement of the fourth day, after having presented a tremendous dyspnœa and hypothermia. If the disease is prolonged there is often produced a muscular paralysis of the stomach and intestines; the abdomen is distended, swollen, and the displacement of the diaphragm toward the thoracic cavity, consequent upon the enormous dilatation of the stomach, also contributes to the suffocation.

On necropsy we find the lymphatic glands increased in size and forming secondary buboes; occasionally we see true primary buboes formed usually by the deep lymphatics of the neck. Once only have I seen an axillary bubo on the side of inoculation; the tumor which had the form and color of a bean was bloody, of a soft consistency, and contained a great number of specific organisms.

When we open the thoracic cavity we note that the lungs which are greatly dilated do not retract. In a certain number of cases they are much congested, in other cases the congestion is less marked, and here we see the lesions best. These are, first of all, small miliary hemorrhages on the visceral pleura, then pulmonary infarcts more or less extensive, multiple areas of infiltration, which are sometimes limited and sometimes diffused, or separated by normal lung tissue; sometimes, on the contrary, the contiguous areas unite and may occupy an entire lobe. In cases further advanced we may see areas of true hepatization. All these pulmonary lesions are more pronounced on the side of inoculation than on the opposite side, when we have made a unilateral inoculation.

Both lungs are œdematous. When we cut the diseased parts a bloody liquid containing plague bacilli even in pure culture exudes, though there may be an association with other organisms. In the pleural cavity and in the pericardium we often find a small quantity of exudate, clear, straw colored, or opalescent and of the color of the juice of gooseberries, in which microscopic and cultural examination will show the presence of the plague organism. The heart itself is greatly dilated, especially the right heart. The epicardium sometimes shows small multiple hemorrhages. These hemorrhages can often be recognized on the peritoneal surface. The abdominal cavity contains a little exudate. The spleen is large, of a deep red color, of medium consistency, and its granular surface is covered with a great number of small white points. This "punctate" spleen which is very characteristic of the disease contains an innumerable quantity of plague bacilli. The stomach, as we have before said, is much dilated. In the cases where the muscular layer has been paralyzed it presents numerous small hemorrhages, situated especially on the great curvature. These hemorrhages which involve the gastric mucous membrane, appear from the serous side as small, regular, round, blackish points, surrounded by an area of pale gray. The paralysis extends to the duodenum and the adjacent parts of the small

intestine. The liver is large and granular, the cystic duct obstructed, and the gall bladder much dilated. The kidneys and the suprarenal capsules are congested and often streaked and marked with hemorrhagic points.

The heart blood, taken after death, and planted gives a pure culture of plague bacillus.

Microscopic examination of sections shows a general congestion of the pulmonary tissue, a tumefaction of the bronchial mucous membrane, and a catarrhal exudate. Numerous areas of broncho-pneumonia exist; in these areas the alveoli are found filled with an exudate consisting of desquamated cells of the alveolar walls, mono-nucleated leucocytes, red blood cells and numerous plague bacilli.

The sum of this brief résumé of the clinical course of the disease is that the pneumonia which follows the introduction of plague virus into the nose of a susceptible animal is a broncho-pneumonia, but that the virus passes out of the lungs and generalizes itself, and that the animal succumbs to a septicæmia accompanied by an alveolar œdema of the lungs.

Contagiousness of pneumonic plague.

The mortality of this form of pneumonia among animals is 100 per cent. Is this pneumonia contagious; can it be transmitted from animal to animal by contact? The experiments made in this line permit us to give an affirmative reply. They have shown, first, that all the secretions and excretions of the sick animal—above all the liquid which flows from the nose, that secreted by the conjunctiva when that membrane is affected, the matter thrown off from the mouth during an access of coughing—when conveyed into the nose of a healthy animal give to it the plague. But the disease is permissible also by propinquity. On several occasions we have placed animals in the cages which held those inoculated through the nasal passages. In a majority of instances these animals have contracted the plague, and at the necropsy the absence of all buboes and existence of the pulmonary lesions proved in a certain manner that it was through the respiratory tract that the infection had been produced. Contagion is easily produced if the animals are fed on carrots or beets, because healthy guinea pigs may easily soil their noses in nibbling at food contaminated by a sick animal.

The quantity of virus which suffices to give pneumonia to a susceptible animal is very small, and it is not even necessary that it should be virulent in order that the infection may occur. In our old culture from various sources we have chosen one which had lost all virulence. In the course of our preliminary researches we have found that the plague bacillus did not always preserve its characteristics; in other words, that there exist varieties of the organism. In general we may say that it is an error to consider the organism of human bubonic plague as a very weak one, for if there are some species of it which very quickly

become attenuated, and die outside of the human body in a relatively short time, there are others which under the same conditions preserve their vitality for a long time, and grow on artificial media for months and even for years without any noticeable loss of virulence. We have seen that some of our cultures kept in the laboratory without any special precautions, exposed to light for three and a half months, killed animals by hypodermatic injection with only a slight delay, and replanted three or four times showed themselves as virulent as they were in the beginning. The attenuation of a plague culture, then, is not always easy to arrive at, and requires a combination of circumstances and considerable time.

Several months ago we received three new specimens, all plague cultures, all authentic in their origin and morphological characteristics, yet which had lost their virulence completely. They were purely saprophytic for the animal economy, for inoculated in large doses into mice and rats they made them scarcely sick, and guinea pigs did not suffer any inconvenience.

We introduced into the nose of a guinea pig one of these cultures of human origin, and grown for twenty-four hours on agar. The first passage was lethal, the incubation was eight days, and on the eighth day the animal succumbed with a typical pneumonia. With the spleen of this first guinea pig we inoculated a second, then a third, and so on in series; at each passage the duration of the disease diminished, the period of incubation became shorter so that at the end of these successive passages the animals died as quickly as those inoculated with our ordinary virulent virus.

But the fact which we have just mentioned seems to us important, especially from its bearing on the epidemiology of plague. In fact, Yersin, after his notable discovery of the plague bacillus, in examining the soil of a native dwelling place, found at the depth of 4 to 5 centimeters a microbe similar to that of plague, but nonvirulent for laboratory animals. It was probably a plague bacillus attenuated. After what we have just proved for our bacillus, which was quasisaprophytic, may we not admit that this attenuated virus might at any moment, under certain favorable conditions, penetrate through the nasal passages into a susceptible animal, such as a rat or a mouse, and after several such successive passages, regain all its virulence.

Certainly this is not a mere hypothesis; it appears very probable to us and merits close investigation by all those who have opportunity to study plague on the spot; in this connection it would be very interesting to know what are the lesions observed in animals dead of spontaneous plague, and if they always present the primary bubo.

Moreover we have been enabled to prove that even in a dry condition the plague virus remains for a long time living and virulent. For this, organs taken from animals dead of plague, as well as plague cultures mixed with infusorial earth, were submitted to drying in vacuo at

room temperature. From time to time we took out a little of the material, broke it up in a sterilized glass, and the powder thus obtained was introduced in small quantity into the nose of an animal. The results of these experiments, which are shown in the adjoined table, demonstrate that the plague virus bears very well a prolonged drying, when it is in albuminous media, such as spleen pulp or that of any other organ. Under these conditions it is attenuated very slowly, so that in the first three or four weeks the attenuation is insignificant. When, on the contrary, it is not so protected, as is the case with the culture dried in infusorial earth, its virulence is rapidly lowered in the first few days, and at the end of three weeks nasal inoculation no longer produces any morbid effect.

Plague-pneumonia produced by inoculation (nasal) of dry virus.

Splenic pulp.		Splenic pulp.		Cultures dried on infusorial earth.	
Duration of drying.	Duration of disease.	Duration of drying.	Duration of disease.	Duration of drying.	Duration of disease.
Days.	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*
5	4½	26	4½	2	7
8	4	30	6½	5	6½
12	4½	33	6½	7	(*a*)
14	5	38	6½	19	12
20	4½	44	(*b*)	37	(*b*)

a Resisted. *b* Resists.

In the presence of these experimental facts, it seems to us that we have every right to maintain that the sputum of plague patients, whether pneumonic or otherwise, the bodies of animals dead of plague, and every other organic albuminous substance containing the virus of plague, whether in a fresh state or whether dried, play an important rôle in the propagation of human plague in general and the pneumonic form in particular.

The nasal mucous membrane is not the only one which lends itself to the penetration of the plague virus into the economy of animals. All the accessible mucous membranes enjoy this property to a greater or less extent. Without further insisting on this point, very interesting inasmuch as it concerns the pathogenesis of the disease, we will limit ourselves here to recording the fact "that in point of view of facility of infection the various mucous membranes may be classed in the following order: Nasal, conjunctival, buccal, intestinal, and last, vaginal." In fact, the disease produced by the deposit of virus on the vaginal mucous membrane usually has a subacute character. We sometimes meet animals which do not contract plague by this route. It is very probable that in these cases the vaginal mucus does not suit the plague bacillus; in the liquid which flows we sometimes find plague organisms mixed with many other species.

To every mucous membrane there is a corresponding form of the disease and a special category of symptoms which would be too long to

enumerate here. Let us simply note that in the case of intestinal plague, caused by the injection of substances containing the plague bacilli, the mesenteric glands, which represent the primary buboes, may attain the size of hazelnuts. In the case of rectal infection we observe large inguinal buboes on both sides, and a swelling of the lymphatic glands of the mesentery. Finally, when the vagina is the point of departure of the disease we find quite a chain of glands which ascends along the spinal column. It is very evident that inoculation with plague is an excellent method for studying the distribution and anastomoses of the various lymphatic vessels, as well as their relation with the glands of the affected region.

II.

Secondary pneumonic plague—Pathology.

The second form of pneumonic plague which is to be mentioned is not a specific disease like the first; it is secondary pneumonic plague, a complication which we meet frequently in animals stricken with bubonic plague, but which may be developed quite as well in the course of any plague infection, regardless of the avenue of entrance of the infection, provided that the economy opposes a certain resistance to the invading bacillus. This resistance is sometimes natural, sometimes acquired in consequence of the introduction into the body of some vaccinating substance, such as plague organisms killed by heat, or antipest serum, in insufficient quantity to render the animal quite refractory to the disease, but sufficient to stimulate the economy to defense in the struggle which is waged between it and the morbific agent, and to ward off in this way a fatal issue.

The special characteristics of secondary plague pneumonia is the formation in the lungs, in greater or less number, of lesions which present to the eye such a resemblance to true tubercles, that seeing them for the first time we may think that we have to deal with a tuberculous affection. These pseudo-tubercles, for we will see that they have nothing in common with true tubercle beyond their external appearance, have their seat of election in the superficial part of the lungs. In the beginning of their formation we see appearing under the visceral pleura, numerous whitish points, of variable size surrounded by a reddish zone of reaction, which increase in volume. The pseudo-tubercles already formed are shown under the form of round or slightly elongated bodies, white or dirty gray in color, whose convex surface showing below the pleura, gives the lung a granular appearance.

These formations are sometimes very numerous, scattered over the entire pulmonary surface, and then they are small like grains of millet or lentils; sometimes their number is limited, but as if in compensation for this they may attain the size of a pea. In quite exceptional cases we have observed true tumors as large as hazelnuts. Sometimes we see

that by the aggregation of several tubercles a part of the lung undergoes a transformation into compact tissue, completely deprived of air, which sinks to the bottom in water. We would say that the lung was in a state of grey hepatization. To the touch the pseudo-tubercles give the impression of hard bodies, and when we press them between forceps, there exudes from the cut surfaces a turbid grayish fluid, containing besides enormous numbers of plague microbes, a certain number of cells, the greater part of which are mononucleated leucocytes.

The lungs containing pseudo-tubercles are in general enlarged and highly congested. On microscopic sections, stained with thionin, we see that the vessels are very dilated and filled with blood, but there is a lack of perivascular reaction. Small hemorrhages soak the pulmonary tissue in different localities. The lung structure is in its entirety seriously altered, so that in certain foci it is impossible to recognize it. Where it is still recognizable, we note an enormous thickening of the septa which limit the alveolar walls and the pulmonary lobules, due to a marked leucocytic infiltration.

Between the leucocytes we see an enormous number of plague bacilli, and sometimes, though not often, we even find them in the interior of the leucocytes. The elements which compose this infiltration are in the beginning quite well preserved, but in a more advanced stage these elements are destroyed and we only see large tracts of amorphous masses, composed of cellular detritus. The greater part of the alveoli, equally dilated, are filled with an exudate formed of desquamated epithelial cells, leucocytes, and red globules; in the midst of the cells we find a greater or less number of bacilli. The elements which go to make up this exudate are sometimes well marked, in others they are deeply altered and in process of destruction. Then the alveolus is seen to be filled with a granular amorphous substance, streaked here and there with small colored areas, the residue of destroyed nuclei, of some elements which we recognize by their nuclei in spite of their great alteration and great numbers of microbes; they are veritable necrotic areas.

In the areas corresponding to the pseudo-tubercles, of which we have just given a lengthy microscopic description, the pulmonary structure is irrecognizable. Situated in the periphery of the lung under the pleura, these tubercles are formed of an enormous aggregation of round cells, especially of leucocytes, the greater part of which present great alterations in their plasma and nuclei, some remains of a stroma of connective tissue and almost a pure culture of the plague bacillus; the whole is surrounded by a zone of very great vascular reaction and small disseminated hemorrhages around the periphery of the pseudo-tubercles. According to this microscopic picture we see a total lack of the elements which go to make up true tubercles, viz, the giant and epithelioid cells.

As produced experimentally.

This form of experimental secondary plague-pneumonia does not resemble any other form of pneumonia which we are likely to encounter. We can now only say with certainty that it is not of embolic origin, but that its point of departure is in the lymphatic system of the lung.

The secondary plague-pneumonia, such as we have just described, is an evidence in animals of an insufficient defense against microbial invasion. To provoke it experimentally we have two methods at our disposal: (1) To employ an attenuated virus; (2) to introduce into the animal economy a small quantity of a vaccinal substance. In fact, when the virus is very active and death supervenes in three or four days, the lungs only present a simple congestion; the principal lesions are found in the spleen, which is large and covered with white points. If, on the contrary, we use a virus which kills the animal in seven to nine days, we may often obtain, though it is not the rule, the formation of typical pseudo-tubercles, but in these cases the other lesions are also present but are not so pronounced. The small points in the spleen are transformed into small miliary abscesses, and we see similar abscesses on the surface of the liver and kidneys.

The second method is much more certain and convenient, that is, the injection of a vaccinal substance. In making these experiments, and by employing more or less powerful doses of the prophylactic substances, we succeeded easily in producing the whole gamut of lesions, and arrived at the singular conclusion that in proportion as the lesions of other organs diminished those of the lungs increased, so that at a given moment, when the animal was at a point of absolute immunity, the pulmonary lesions were the only ones to be discovered at the necropsy; all the other organs, notably the spleen and the liver, preserved their normal appearances, and the plague virus only existed in the lungs and the pseudo-tubercles.

The property of producing a pneumonia with pseudo-tubercles in the guinea pig does not belong exclusively to the plague bacillus. The same lesions have been noted in certain septicæmic diseases, among others, in those due to the microbe of hog cholera, described by DeSchweinitz and Theobald Smith. It is one fact the more which pleads for a common origin, already so striking, of the plague bacillus and other hemorrhagic septicæmias.

But the experiments related above present in our judgment even a more general interest from the point of view of immunity. It appears in fact that each organ has an immunity proper to it, and that general immunity is only acquired when all the organs are immunized. In this respect all the organs do not deport themselves in the same manner, for the result of our experiments shows that the spleen and the liver, for example, are early vaccinated against the plague, while the lung only comes in at the last moment. What is the cause of this inferiority of

the lung? Does it depend on the question of aëration which facilitates the growth of the microbe? Is it due to the poverty of these organs in phagocytic elements, or are there several factors which come into play? It is evident that this is a question which necessitates special and deep study for its solution. Let us for the present be content with noting the fact without seeking to draw any conclusions.

III.

Immunization with antipest serum.

After having produced in the guinea pig the two forms of plague pneumonia, we tried also the prevention and cure of primary pneumonic plague by means of antipest serum, but before reporting the results of these experiments it appears to us useful to say a few words on the subject of the preparation of the serum itself. The sero-therapy of plague was inaugurated in 1895, when, under Roux' direction, Yersin, Chalmette and Borrel undertook the immunization of small laboratory animals by first injecting them with cultures killed by heat, then with live germs. A horse which had received injections composed of living and virulent cultures furnished a serum which immunized mice in a dose of 1/10 c. c., twelve hours before the injection of the virus; in the dose of 1.5 c. c. it cured mice inoculated twelve hours before with a platinum loopful of plague virus. This first serum used by Yersin in 1896 in the treatment of certain cases of bubonic plague in Canton and Amoy gave excellent results.

In spite of its efficacy this method of preparation of antipest serum by means of living cultures presents many dangers. Therefore it has been endeavored to immunize large animals in a less dangerous manner by injecting them either with cultures killed by heat or by means of substances extracted from the bodies of the microbes; these methods do not furnish a sufficiently active serum.

Departing from the idea that a serum curative for the plague should be essentially antitoxic, some people have endeavored to imitate the current process for the manufacture of antidiphtheritic and antitetanic serums, by employing for the immunization of animals not the microbial bodies, but the soluble products elaborated by the microbes when cultivated in liquid media. Now the efforts made in this direction have not given a satisfactory result, perhaps because one has not yet succeeded in preparing outside of the body a sufficiently strong toxin. Roux was the first to prove the existence of soluble toxic products in the culture media of plague. By using a virus the virulence of which had been much increased by successive passages through animals in small collodion placed in the peritoneal cavity, Roux was enabled to obtain a virus which killed mice in a dose of 1/70 c. c. in twelve hours; but these same toxins showed little activity for rabbits and especially for guinea pigs. Later on Markl pretends to have prepared a toxin

fatal to mice in doses of 1/200 c. c. and which kills a guinea pig in eight days in the dose of 0.5–5 c. c., but he gives none of the procedure which he has employed in his experiments; but even Markl has demonstrated that with a toxin as active as his we can not confer on an animal an immunity active, absolute, and durable against a virulent inoculation, and that we can not obtain a serum which responds to all requirements.

In the presence of all these facts we must ask if we find in bouillon culture medium the true plague poison, that is to say, the same poison which the microbe secretes in the animal economy. It is certain that this poison is not formed at a low temperature, and that once formed it is unstable, for it is rapidly destroyed under the influence of heat, oxygen, air, and light.

The combined method upon which Markl depends for the production of an efficient antipest serum, and which consists in the simultaneous employment of soluble toxins and dead microbial bodies is not new. It has long ago been tried at the Pasteur Institute, but has been proved to possess no advantage in the quality of the serum produced. Immunization with living virulent bacteria has up to the present time given the incontestably best results. It should be carried on for a long time and with prudence, for if we act rashly we run the risk of losing our animals; moreover, all horses immunized under the same conditions do not give an equally good serum. We must, therefore, treat several animals at the same time in order to select the best. The serum thus obtained, as Roux has demonstrated, is at the same time both curative and preventive. One-twentieth c. c. of the serum thus obtained preserves mice against a virus which kills in three days, and 1/4 c. c. cured when injected twelve hours after a virulent inoculation. If we use a virus which kills in thirty-six hours, the doses of serum necessary to preserve and cure mice are $\frac{1}{10}$ and $\frac{1}{2}$ c. c., respectively. The guinea pig is a very susceptible animal to plague, and it is difficult to render it immune to the disease; this is a fact recognized among all experimenters. Nevertheless, with a good serum we can immunize this animal against the disease and arrest it when it has already commenced. Thus, 1 c. c. of serum mixed with a surely fatal dose of plague culture, renders the latter innocuous to the guinea pig. The guinea pig which has received 1–2 c. c. of the serum twelve hours before the virulent inoculation does not acquire the disease. We may even cure the guinea pig by injecting 3–5 c. c. of the serum twenty-four hours after the subcutaneous inoculation of the virus. Finally, 3 c. c. of serum, injected under the skin of a guinea pig, protects it against the intraperitoneal inoculation of a dose of plague virus which kills the control in forty-eight hours. All these experiments have been made with animals weighing from 500 to 700 grams.

It is with this serum that we have tried the sero-therapy of the primary plague-pneumonia of the guinea pig. Numerous experiments made to this end have shown that 1 c. c. of the serum injected twelve hours before the nasal infection is sufficient to preserve the animal when

the virus was derived from agar culture, but if we use splenic pulp for the inoculation, the dose of the serum necessary to prevent the disease must be at least 2 c. c.

The efforts to cure plague-pneumonia by means of antipest serum have given less favorable results, as shown in the following table:

Nasal inoculation with splenic pulp.		Result of disease.		Nasal inoculation with splenic pulp.		Result of disease.	
Quantity of serum injected.	Time of administration immediately after inoculation.	Cure.	Death.	Quantity of serum injected.	Time of administration immediately after inoculation.	Cure.	Death.
Cubic centimeters.	*Hours.*	*Days.*	*Death.*	*Cubic centimeters.*	*Hours.*	*Days.*	*Death.*
3	1½	6½	Do.	5	24	7½	Do.
3	4	9½	Do.	5	40	5	Do.
3	7	9½	Do.	5	.....	4½	Do.
5	15	8½	Do.	Control.			

This picture is very instructive. It shows us that 3 c. c. of serum injected at the moment of inoculation may prevent the development of the pneumonia, but that even one-half hour later this same quantity only serves to prolong the disease. If we wish to obtain this result seven hours after the inoculation a much larger quantity of the serum is necessary, and finally there comes a time when, despite the injection of serum, the animals die in practically the same time as the controls.

It is then much easier to prevent than to cure plague-pneumonia (primary) with antipest serum, and this is easily explained when we remember what we have said above about secondary plague-pneumonia, that is that in the lung, the microbe finds extremely favorable conditions for its development, and that in this situation it is very inaccessible to the protective cells of the economy. We must also remark that among many animals dead, in spite of the administration of the serum, we find at the necropsy not only the plague bacillus, but many other foreign organisms; consequently these animals have succumbed to secondary infections, the soil for which has been prepared by the plague baccillus, primarily.

The picture of which we have just spoken leads us to certain general reflections. Thus we see that not only is it necessary to have a good serum, but that it is necessary to use it at the right time. This is above all important when we have to deal with a septicæmic disease like plague, where we must count on a rapid and enormous multiplication of the microbe. It is a well established fact at present that the serum does not act through its own power (the bacillus grows in the serum itself), but through the intermediary of certain cells of the organism whose activity is excited by it. Now the number of these cells is always limited, while that of the microbe which multiplies itself by certain fixed rules and by geometrical progression, increases in fantastic proportions, so that after a certain time all hope of intervention becomes

illusory. In practice, account is not generally taken of this fact, and we often require more of serum than it is possible for the latter to give.

In plague, especially, it should be always a rule to pay attention to the form of the disease and the time which has elapsed since infection when we use the serum. Primary plague-pneumonia is a form of the disease which is difficult to cure with antipest serum; this is demonstrated by our experiments.

CONCLUSIONS.

An animal may contract the two forms of plague-pneumonia which are observed among mankind, viz, primary plague-pneumonia and secondary pneumonia.

2. Experimental primary plague-pneumonia is a lobular or confluent broncho-pneumonia, which ends generally in a septicæmia. It can be produced in all laboratory animals by depositing upon their nasal mucous membrane without excoriating it a little plague virus taken either from an agar culture, or, better still, from the spleen of a plague-stricken animal.

3. Plague-pneumonia is transmissible from animal to animal by contact. The secretions of the sick animal, especially the tears, nasal and bronchial mucus, placed or carried into the nose of a healthy animal, give it the disease.

4. A plague virus which does not kill by inoculation gives the pneumonia to an animal when it is introduced into its respiratory passages; after several successive passages through the nose the attenuated virus regains all its virulence.

5. Dried plague virus in albuminous materials is capable of inducing plague-pneumonia in an animal by nasal inoculation, after several weeks drying.

6. Secondary plague-pneumonia is developed in the guinea pig during the course of any plague infection, regardless of the avenue of entrance, as a consequence of a natural resistance acquired by the animal against the virus. In anatomical form it is a singular pneumonia leading to the formation of pseudo-tubercles on the surface of the lungs.

7. With antipest serum we can very often prevent the occurrence of plague-pneumonia (primary) but it is difficult to cure it when once it has commenced.

8. All the accessible mucous membranes of the body lend themselves more or less readily to penetration by plague virus. According to their degree of sensibility they may be classified as follows: Nasal mucous membrane, conjunctiva, mucous membrane of the mouth, of the intestine, and lastly that of the vagina.

Amendments to the quarantine regulations regarding rags imported into the United States.

[Department Circular No. 18.]

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING SURGEON-GENERAL
MARINE-HOSPITAL SERVICE,
Washington, D. C., February 14, 1900.

To officers of the Treasury Department, State and local quarantine officers, and others concerned:

The following amendments to the regulations regarding rags and similar articles imported into the United States are hereby promulgated:

QUARANTINE REGULATIONS TO BE OBSERVED AT FOREIGN PORTS AND AT SEA.

Article IV, paragraph 6, Quarantine Regulations to be observed at Foreign Ports and at Sea, is amended to read as follows:

All rags and textile fabrics used in the manufacture of paper and for other purposes, which are collected, packed or handled in any foreign port or place, with the exceptions as hereinafter specified, shall, prior to shipment to the United States, be subjected to disinfection by one of the prescribed methods. (Old jute bags, old cotton bags, old rope, new cotton or linen cuttings from factories, not included.)

The disinfection of the articles mentioned herein shall be performed under the supervision of a United States consul or a medical officer of the United States, and a certificate in duplicate, signed by said consul, or medical officer, shall be issued with each consignment of same, which certificate shall identify the articles, and state that they have been disinfected in accordance with the United States quarantine regulations. The original certificate of disinfection shall be attached to the consignee's invoice, and, where the articles are carried by sea, the duplicate certificate of disinfection shall be attached to the bill of health issued to the vessel conveying same.

Exception.

Such articles shipped from the Dominion of Canada directly to the United States shall be exempt from this requirement if accompanied by affidavits demonstrating to the satisfaction of the collector of customs at the port of arrival that they have actually originated in Canada and have not been shipped from a foreign country to Canada, and thence shipped to the United States; and further, that the port or place where collected or handled has been free from quarantinable disease for thirty days prior to shipment.

QUARANTINE REGULATIONS TO BE OBSERVED AT PORTS AND ON THE FRONTIERS OF THE UNITED STATES.

Article 1, paragraph 3, Quarantine Regulations to be observed at ports and on the frontiers of the United States is amended to read as

follows: In making the inspection of a vessel, the bill of health and clinical record of all cases treated during the voyage, crew and passengers' lists and manifests, and when necessary, the ships' log shall be examined. The crew and passengers shall be mustered and examined and compared with the lists and manifests, and any discrepancies investigated. When a freight manifest shows that rags and other articles of this class are carried by the vessel, a certificate of disinfection, signed by a United States consul or a medical officer of the United States, shall be exhibited and compared with same.

If no certificate of disinfection is produced, the collector of customs at the port of entry shall be notified of same by the quarantine officer. The collector of customs shall then hold such consignment in a designated place separate from other freight pending the arrival of the certificate of disinfection; and in the event of its nonarrival, the articles shall be disinfected as hereinbefore prescribed, or shall be returned by the common carrier conveying same.

ARTICLE XII—*Canadian and Mexican frontiers.*

The following paragraph is hereby added to Article XII, relating to rags arriving at ports on the Canadian frontier:

Paragraph 12. Rags gathered and baled in Canada, accompanied by affidavits that the ports or places where collected or handled were free from quarantinable disease for thirty days prior to shipment, may be admitted to entry; but rags from foreign ports shipped through Canada shall not be admitted to entry, unless they are accompanied by a certificate of a United States consul or medical officer of the United States that they have been disinfected in accordance with the United States quarantine regulations.

Foreign rags, not originating in Canada, but shipped through Canada to ports in the United States, will not be admitted to entry by collectors of customs unless accompanied by the above-named certificate, or until after they have been unbailed and disinfected as required by the United States quarantine regulations.

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

Approved:
O. L. SPAULDING, *Acting Secretary.*

Plague on the island of Cozumel, Mexico.

FEBRUARY 28, 1900.

Sometime ago the Surgeon-General of the Marine-Hospital Service addressed letters to certain quarantine officers directing them to ascertain what possible danger there might be of infection of bubonic plague reaching the United States through Mexico. To-day he received information that the plague exists, and has existed probably for several weeks in the Island of Cozumel, which is off the east coast of Yucatan,

Mexico. He has cabled for further information, and has meantime notified all the quarantine officers in the United States, Cuba, and Porto Rico. Number of cases not stated. It is stated that the disease was brought to Cozumel from Brazil. More definite information is being sought.

Precautions against plague—(Continued from last issue).

LETTERS URGING FREE USE OF ANTIPEST SERUM.

FEBRUARY 24, 1900.

SIR: The Bureau is in receipt of certain newspaper clippings relative to the illness and death by plague of a Mr. Robertson and his treatment by antipest serum. This treatment, it would seem by the published accounts, was limited to the subcutaneous administration of two bottles or 40 c. c. of the serum.

Your attention is invited to Bureau letter of January 27, 1900 (M. J. R.), detailing the results of the experiences of Chalmette and Salimbini in the Oporto epidemic of plague, in which it is stated that much larger doses of the serum must be used than have heretofore been considered necessary; that from 160 to 200 c. c. may with advantage be used in the first forty-eight hours of the disease, and that from 20 to 40 c. c. of this amount should be given intravenously, etc.

You are requested to urge the authorities to follow these indications in the future use of the serum, as the Bureau is fully impressed with the value of the remedy as a curative agent, and is convinced of the innocuousness of the plan of treatment suggested.

Respectfully,

WALTER WYMAN,
Surgeon-General U. S. M. H. S.

Surg. D. A. CARMICHAEL,
U. S. Marine-Hospital Service, Honolulu, Hawaii.

WASHINGTON, D. C., *March, 1, 1900.*

SIR: You are hereby informed that there has been sent you to-day a box containing 250 vials of 20 c. c. each of antipest serum, the product of the Pasteur Institute in Paris.

You are informed that of this shipment 50 vials are to be considered as for your personal use, and that 200 should be placed at the service of the health authorities for use where it may seem most needed.

* * * * * * *

In regard to the use of this preventive and curative agent, your attention is particularly invited to the plague article and other publications made by the Bureau from time to time on the subject in the PUBLIC HEALTH REPORTS of the Service. Information recently received gives assurance that in Japan two outbreaks at least have recently been suppressed principally by the use of the serum. It should be employed in large doses for the treatment of actual cases of the disease, and the earlier the treatment is inaugurated the more favorable is the outlook for recovery.

In addition, it can be employed in doses of from 5 to 10 c. c. for immunizing all who have been directly exposed to the infection, which immunity will be conferred at once, and will probably endure for a period of at least fifteen days, during which time active sanitary measures can, of course, be taken looking to the improvement of sanitary and local conditions in the focus of the outbreak.

In this matter of preventive inoculation against plague the Bureau feels that it can not more forcefully express its views on the efficacy of the procedure than by reference to page 23, line 1, of the recent article on plague published by the Bureau: "It is believed that it will be perfectly rational to lay down as a general scientific principal that it will in the future be just as rational and scientific to practice preventive inoculation against the plague as it is now customary to vaccinate those exposed to the infection of smallpox with a view of preventing the spread of the disease."

Respectfully,

WALTER WYMAN,
Surgeon-General U. S. M. H. S.

Surg. D. A. CARMICHAEL,
U. S. Marine-Hospital Service, Honolulu, Hawaii.

[Reports to the Surgeon-General United States Marine-Hospital Service.]

Regulations of the Louisiana State board of health against vessels from plague-infected ports.

NEW ORLEANS, *February 14, 1900.*

SIR: Inclosed please find copy of regulations for the treatment of vessels from plague ports adopted by the Louisiana State board of health, at its regular meeting yesterday, February 13.

Respectfully,

EDMOND SOUCHON, M. D.,
President Louisiana State Board of Health.

[Inclosure.]

Regulations governing vessels without plague on board from ports where plague is in existence, or which sailed from such ports within thirty days of the report of the death or recovery of the last reported case of plague:

First. Disinfection in midstream on arrival at the Mississippi River Quarantine Station, following Treasury and board regulations.

Second. Detention of fifteen days.

Third. Redisinfection on eighth day.

Fourth. Dispensing with lighters and airing.

Fifth. Letting vessel come up to the city and anchor in midstream.

Sixth. Keep men on vessels near holds with shotguns to watch for rats while unloading and during disinfection of holds.

Seventh. Also keep men with shotguns in skiffs on each side of the vessel to watch for rats while unloading and disinfection of holds.

Eighth. Unloading on lighters, which will be towed to the wharf as soon as loaded.

Ninth. (*a*) Lighters shall be open. (*b*) The tug shall back away from the lighters as soon as the lighters have reached the vessel.

Tenth. Burning of sulphur in pots during night in holds while unloading on lighters.

Eleventh. Should rats escape on a lighter, it shall be unloaded at once on another, and the rats found and killed.

Twelfth. Lighters are not to remain alongside of the vessel after sundown.

Thirteenth. Disinfection of hold after unloading with bichloride and sulphur.

Fourteenth. All to the satisfaction of the shipping inspector of State board.

Fifteenth. All expenses shall be borne by the vessel.

EDMOND SOUCHON, M. D.,
President Louisiana State Board of Health.

The board also adopted the following general regulations:

Regulations governing vessels without plague on board from ports where plague has existed, and which sail from such ports after thirty days of the report of the death or recovery of the last reported case of plague:

First. Disinfection in midstream on arrival at Mississippi River Quarantine Station, following Treasury and board regulations.

Second. Dispensing with lighters and airing.

Third. Letting vessel unload then at wharf.

Fourth. Keep men near holds with shotguns to watch for rats while unloading and during disinfection of holds.

Fifth. Burning sulphur in pots during the night in holds while unloading at wharves.

Sixth. Disinfection of hold after unloading with bichloride and sulphur.

Seventh. All to the satisfaction of the shipping inspector of the State board.

Eighth. All expenses shall be paid by the vessel.

EDMOND SOUCHON, M. D.,
President Louisiana State Board of Health.

NEW ORLEANS, *February 15, 1900.*

President and members of the Louisiana State board of health:

GENTLEMEN: Your committee on quarantine respectfully submit the following resolution and accompanying text of annual proclamation of quarantine to be recommended to the governor:

Resolved, That his excellency, the governor of Louisiana, be and hereby is requested to issue his proclamation of quarantine, to take effect on April 1, 1900, according to the following schedule:

That all vessels arriving at the several quarantine stations of Louisiana, together with their cargoes, crews, passengers and baggage, shall be subjected to inspection and sanitation according to the following schedule:

"First class. All vessels not included in the three following classes:

"Second class. Vessels arriving from suspected ports (intertropical American and West Indian and Brazilian ports, which, in the absence of satisfactory evidence to the contrary, are considered suspicious, and other ports which may be declared suspicious by the board of health).

"Third class. Vessels arriving from ports known to be infected.

"Fourth class. Vessels which, without regard to port of departure, are infected; that is to say, vessels which have yellow fever, cholera, or other contagious or infectious disease on board at the time of arrival, or have had same on voyage.

"Vessels of the first class to be subjected to necessary maritime sanitation without detention of either vessel or persons longer than may be necessary to place such vessels in good sanitary condition.

"Vessels of the second class to undergo the same treatment as those of the first class until May 1, 1900, on and after which date vessels of the second class shall be subjected to full sanitation at the Mississippi River Quarantine Station, together with detention of vessels and persons, for such length of time as the board of health may determine.

"Vessels of the third class, without passengers, to be subjected to full sanitation at the Mississippi River Quarantine Station, without detention of either vessels or persons after disinfection, until May 1, 1900, on and after which date vessels of this class shall be detained for observation, together with their crews, cargoes, and passengers, for such length of time after completion of disinfection as the board of health may determine.

"Vessels of the third class, with passengers, to be subjected to full sanitation with detention thereafter for such length of time as the board of health may determine.

"Vessels of the fourth class, arriving at Port Eads with sickness on board, shall proceed to the Mississippi River Quarantine Station, there to undergo thorough disinfection. The sick, with contagious diseases, to be thence conveyed to the lazaretto. All vessels of the fourth class, after completion of disinfection, shall be detained for such length of time as the board of health may determine.

"All vessels arriving from ports known or suspected to be infected with cholera or bubonic plague shall be subjected to maritime sanitation and such detention as the board of health may determine.

"Vessels arriving from ports and places belonging to the second, third and fourth classes, as set forth in the above schedule, shall not be allowed to pass the Rigolets, the Atchafalaya or Lake Charles quarantine stations, or other quarantine stations which may be hereafter established, without having undergone proper maritime sanitation at the Mississippi River Quarantine Station.

"Vessels engaged in the tropical fruit trade, whose sanitary condition and health record are satisfactory, may be allowed to pass the Mississippi River Quarantine Station after inspection, subject, however, to such regulations and sanitary treatment as the board of health may prescribe.

"Quarantine officers at the several stations in this State are especially charged and required to strictly enforce the execution of this proclamation, and the State board of health is requested to prosecute vigorously all violators of the same, as well as of the quarantine laws and regulations of this State."

Resolved, That for the year 1900 vessels subject to detention at the Mississippi River

Quarantine Station, under the terms of the governor's proclamation, shall be held for observation, with their crews, passengers, and cargoes, not less than five full days after completion of disinfection.

Such vessels as have been disinfected at the port of departure in a manner satisfactory to this board will be again disinfected at the Mississippi River Quarantine Station, and the time of detention will be five days counting from the first disinfection at port of departure.

A true copy: G. FARRAR PATTON, M. D.,
Secretary.

West coast of Mexico—Relation to the United States as regards plague, smallpox, and yellow fever.

SAN DIEGO QUARANTINE STATION,
San Diego, Cal., February 3, 1900.

SIR: Replying to Bureau letter (F. L. G.) of date January 24, as to possibility of bubonic plague gaining entrance to the United States through Mexico, I have the honor to state that there are no lines of vessels plying between the Orient and Honolulu and the Pacific coast of Mexico. All the passenger traffic from the Orient and Honolulu to Mexico passes through San Francisco and San Diego. Relative to immigrants entering the United States through Mexico, in order to evade any of the quarantine or immigration laws and regulations, I have to state that careful inquiry reveals the fact that they do not.

On account of its isolated position, being separated from the mainland by the Gulf of California, the population of lower California is sparse, consisting only of a few miners and ranchmen. Ensenada, the principal and only town, being the capital, and having about 2,000 inhabitants, has connection north with San Francisco and San Diego by steamer, and south as far as Mazatlan.

The number of passengers carried by vessels from Ensenada to San Diego during the past twelve months was 1,428; the remainder of passenger travel both ways being about equal and the travel being purely local, it would appear that there is no danger of the introduction of plague from this source.

There is, however, great danger from smallpox or yellow fever when such diseases are prevalent in Mazatlan, Mexico, a large and very unsanitary town on the Gulf coast. In the event of such disease reaching Ensenada, it would seem necessary to place a sanitary inspector and guards at Tia Juana, on the Mexican line, to prevent the entrance of infected persons overland from Ensenada. At Tia Juana, the American and Mexican customs officers are stationed, that being a small town of 200 or 300 inhabitants and visited by many tourists. The country on the American side is tolerably well settled up to the line; the Mexican side is only a stock range.

The Cosmos Line steamers run from Hamburg to San Francisco by way of all South American, Central American, Mexican coast ports, and San Diego, this being the first United States port they enter. The steamers are large fine vessels; there is one each month and it is thought the line is a permanent one, as all passengers and freight from the South destined for interior and for Eastern points come off here to go over the Santa Fe Route, thereby saving three days time over the route via San Francisco.

Respectfully, W. W. MCKAY,
Acting Assistant Surgeon, U. S. M. H. S.

Law for compulsory vaccination in Mississippi.

JACKSON, MISS., *February 16, 1900.*

SIR: I have the honor to acknowledge the receipt of a copy of a letter written to you by Mr. J. B. Wilson, of Yazoo City, under date of February 6. It is true that smallpox has prevailed in Anding, Miss., for some time, and it is of a most virulent type, and I think there have been about 50 deaths, as stated by Mr. Wilson.

Dr. J. A. Crisler, county health officer, has had the matter in charge and has done a great deal of vaccinating. Smallpox is epidemic in the United States, a fact that I know you are well aware of, so that it is impossible for us to do more than resort to general vaccination and fumigation of all houses in which it occurs. It is impossible for us to establish pesthouses and care for the sick. In fact, it would be very impracticable for us to try this method.

I inclose you a copy of the bill that has just passed our legislature empowering boards of supervisors to compel vaccination.

* * * * * * *

Our board two years ago four times publicly announced to the people of the State of Mississippi that smallpox would become epidemic in this State unless general vaccination was resorted to, so it can not be said that they were not well informed in regard to the matter. We have done all in our power to educate the public in this direction and are still doing all that is possible to stamp out this dreadful disease. Thanking you for the information contained in your letter, I am,

Respectfully, J. F. HUNTER.

[Inclosure.]

An Act to provide for compulsory vaccination, and to provide a penalty for enforcing same.

Section 1. *Be it enacted by the legislature of the State of Mississippi,* That the board of supervisors in the counties in which smallpox exists, are hereby empowered to pass ordinances for providing for compulsory vaccination, to enforce same as hereinafter provided.

Sec. 2. The president or clerk of the board of supervisors shall make application to the secretary of the State board of health for a sufficient quantity of bovine virus to do the necessary vaccinating, and the cost of said virus shall be borne by the county so ordering.

Sec. 3. The board of supervisors may make contracts with any reputable physician or physicians to do the vaccinating and pay for same.

Sec. 4. Any person refusing to be vaccinated when requested by the authorized representatives of the board of supervisors, shall be punished as for a misdemeanor. Provided, however, satisfactory evidence of successful vaccination within the preceding five years shall constitute a sufficient defense to any prosecution under this act.

Sec. 5. That all acts in conflict with this act be and are hereby repealed.

Sec. 6. That this act take effect and be in force from and after its passage.

Approved February 8, 1900.

A true copy.

J. L. POWER,
Secretary of State.

No smallpox in District of Columbia.

WASHINGTON, D. C., *February 21, 1900.*

SIR: I have the honor to report that 1 patient was discharged from the smallpox hospital on the 20th instant, cured. The District of Columbia is now free from smallpox.

Respectfully, H. C. MCLEAN,
Deputy Health Officer.

REPORTS FROM THE MEXICAN BORDER.

El Paso, Tex., February, 17, 1900.—I have the honor to report the summary of the following work during the week ended February 17, 1900: Inspection Mexican Central Railroad passengers, 213; inspection Mexican Central Railroad freight crew, 37; inspection Sierra Madre and Pacific Railway (from Mexico) passengers, 39; inspection of immigrants, 46; vaccination of immigrants and their children, 16; disinfection of baggage, blankets, and household goods, 15; disinfection of soiled linen for laundry of El Paso, Tex., 315 pieces.

Respectfully, E. ALEXANDER,
Acting Assistant Surgeon, U. S. M. H. S.

El Paso, Tex., February 10, 1900.—I have the honor to report the following work for the week ended February 10, 1900: Inspection of Mexican Central Railway train passengers, 192; inspection of Sierra Madre and Pacific Railway passengers, 28; inspection of international bridge (including passengers, bullfight visitors), 314; inspection of excursion train from Mexico, 60; inspection of immigrants, 25; disinfection of baggage, household goods, blankets, etc., 14; disinfection of soiled linen imported for El Paso laundry, 317; vaccination of immigrants, children, and other destitutes, 14.

February 9, 1900, detained 1 man having had smallpox, with scabs still on his face, and no certificate of disinfection. Will keep him until March 1. Let him have a bath of 1–2000 bichloride of mercury, and disinfect his baggage.

El Paso, Tex., January 30, 1900.—I have the honor to acknowledge receipt of communication (Int. F. L. G.) dated January 24, 1900, and beg leave to inform you that the port of Tampico is only about twenty-four hours from El Paso, Tex.

I am informed that ships sometimes arrive from Brazilian and Asiatic to ports, and I understand the Mexican Government promulgated orders prevent entrance to such vessels, but for all that I have for several weeks past scrupulously watched passengers from Tampico and Vera Cruz, Mexico, I know of no presence of bubonic plague thus far in Mexico—but I keep my eye on the Chinese settlement at Juarez, Mexico.

Most of the Chinese entering Mexico originate in the United States. They are brought in bond from San Francisco, Cal. Lately, the Mexican Government entered into some kind of "Treaty" to permit Chinese free to come in any number, and it is possible that they arrive direct at Acapulco, Vera Cruz, or Tampico, and from there try to smuggle themselves into the United States. Of such, however, there is not much danger of the possibility of the entrance of bubonic plague into the United States.

This morning I received your monograph on bubonic plague. Will study it carefully, and be guided accordingly.

Respectfully, E. ALEXANDER,
Sanitary Inspector, U. S. M. H. S.

Laredo, Tex., February 18, 1900.—I have the honor to submit the following inspection report for week ended February 17, 1900: Persons on Mexican National Railroad passenger train, 358; inspected immigrants and allowed entry, 48; immigrants vaccinated, 12.

Laredo, Tex., February 16, 1900.—On account of the smallpox prevailing at the City of Mexico, all Pullman coaches upon arrival here are disinfected with formaldehyd. At present it is done by the Pullman Company's

employees, by hanging sheets on bell cord, opening all berths, and spreading out blankets, etc., then soaking the sheets with formalin. This method I believe sufficient unless there should be a case of smallpox on a Pullman; then I will use an autoclave. The Pullman linen is disinfected by the sprinkling method. I instructed the manager for the Pullman Company how to do it. The Pullman Company have their own formalin and formalin sprinkler. I have examined all their employees running into Mexico as to the necessity of vaccination or revaccination; also their car cleaners here. In fact, the company requires a certificate as to vaccination from each employee running into Mexico and at Laredo, Tex. I am not informed about the employees running north from here into the United States, but I suppose they work under the same ruling.

The Pullman coaches on regular run between here and the City of Mexico remain here thirty-four hours, and they are closed tight for disinfection from eighteen to twenty-four hours.

Respectfully,

H. J. HAMILTON,
Acting Assistant Surgeon, U. S. M. H. S.

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1899, to March 2, 1900.

[For reports received from June 30, to December 29, 1899, see PUBLIC HEALTH REPORTS for December 29.]

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Jefferson County	Jan. 1–Feb. 5	86		
Mobile	Jan. 2–Feb. 17	23	1	
Whistler	Jan. 1–Feb. 3	2		
Total for State		111	1	
Total for State, same period, 1899.		120	2	
Arkansas:				
Arkansas County	Feb. 2			Smallpox reported.
Benton County	do			Do.
Columbia County	do			Do.
Conway County	do			Do.
Crittenden County	do			Do.
Drew County	do			Do.
Faulkner County	do			Do.
Fulton County	do			Do.
Green County	do			Do.
Independence County	do			Do.
Jackson County	do			Do.
Jefferson County	do			Do.
Lawrence County	do			Do.
Lincoln County	do			Do.
Logan County	do			Do.
Perry County	do			Do.
Phillips County	do			Do.
Prairie County	do			Do.
Pulaski County (Little Rock)	Oct. 1–Feb. 2	60	8	
Saline County	Feb. 2			Do.
Scott County	do			Do.
White County	do			Do.
Woodruff County	do			Do.
Total for State		60	8	
Total for State, same period, 1899.		7	1	
California:				
Los Angeles	Jan. 18	3		
Total for State, same period, 1899.		39	8	
Colorado:				
Arapahoe County	Jan. 7–Feb. 8	7		
Huerfano County	Dec. 29–Jan. 26	6		
Lake County	Jan. 17	1		
Las Animas County	Feb. 4	1		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Colorado—*Continued.*				
Lincoln County	Dec. 15–Jan. 1	2		
Sagnache County	Dec. 28	1		
Total for State		18		
Total for State, same period, 1899.		121	6	
Delaware:				
Wilmington	Jan. 7–Jan. 13		1	
Total for State, same period, 1899.		0	0	
District of Columbia:				
Washington	Jan. 12–Jan. 29	5		
Total for State, same period, 1899.		34		
Florida:				
Jacksonville	Jan. 7–Feb. 17	14		
Pensacola	Jan. 16–Feb. 9	2		
Total for State		16		
Total for State, same period, 1899.		5		
Georgia:				
Appling County	Jan. 20	1		
Blackshear	Jan. 11	16		
Brunswick	Jan. 4–Feb. 5	66		
Darien	Jan. 17	2		
Jesup	Jan. 20	2		
Liberty	do	8		
McIntosh County	do			Several cases.
Savannah	do	1		
Wayne County	do	3		
Waycross	Jan. 1–Feb. 18	23		
Total for State		122		
Total for State, same period, 1899.		301		
Illinois:				
Aurora	Feb. 11–Feb. 17	6		
Cairo	Dec. 24–Feb. 18	44	4	
Chicago	Dec. 27–Jan. 13	8		
Danville	Feb. 4–Feb. 10	1		
Springfield	Jan. 21–Jan. 27	1		
Total for State		60	4	
Total for State, same period, 1899.		16		
Indian Territory:				
Choctaw Nation	Dec. 18	75		
Total for same period, 1899		0		
Indiana:				
Adams County	Dec. 1–Dec. 31	1		
Clay County	Jan. 17			Many cases.
Dearborn County	Dec. 1–Dec. 31	1		
Evansville	Dec. 24–Feb. 17	35		
Indianapolis	Jan. 15–Jan. 21	1		
Jennings County	Dec. 1–Dec. 31	4		
Madison County	do	14		
Posey County	do	26		
Total for State		82		
Total for State, same period, 1899.		16		
Iowa:				
Polk County	Feb. 8	16	0	
Total for same period, 1899		8	1	
Kansas:				
Anthony	Jan. 1–Jan. 31	2		
Arkansas City	do	9	1	
Atchison	Jan. 29–Feb. 10	8		
Burns, Marion County	Jan. 1–Jan. 31	1		
Centralia	do	1		
Emporia	do	10		
Galena and Cherokee County	do	31		
Grantville	do	1		
Harvey County	do	8		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Kansas—*Continued.*				
Holliday	Jan. 1–Jan. 31	1		
Junction City	do	8		
Kansas City	do	35		
Kingman County	do	4		
Lawrence	do	34		
Osawatomie	do	2		
Osage City	do			Number not reported.
Oswego, Labette County	Nov. 5–Feb. 8	17	0	
Paola	Jan. 1–Jan. 31	1		
Reno County	do	1		
Shawnee County	do	7		
Sumner County	do	21		
Tonganoxie	do	1		
Topeka	do			Do.
White Water, Butler County	do	1		
Wabaunsee County	do	22		
Wichita	do	6		
Woodson County	do	2		
Wyandotte County (outside Kansas City).	do	29		
Total for State		263	1	
Total for State, same period, 1899.		61	7	
Kentucky:				
Covington	Jan. 14–Jan. 20	4		
Louisville	Jan. 12–Feb. 15	6		
Paducah	Jan. 21	18		
Total for State		28		
Total for State, same period, 1899.		143		
Louisiana:				
Ascension	Jan. 29–Feb. 3	5		
Assumption	do	8	4	
Avoyelles	Jan. 21–Jan. 27	7		
Caddo	Jan. 21–Feb. 17	123	19	
Calcasieu	Jan. 7–Feb. 3	16	1	
Concordia	Jan. 29–Feb. 3			Several cases.
De Soto	Jan. 14–Jan. 20	1		
E. Baton Rogue	Jan. 29–Feb. 3	5		
East Carroll Parish	Feb. 4–Feb. 10	1		
East Feliciana	Jan. 13	50		
Iberia	Dec. 20–Jan. 27	9		
Iberville	Dec. 31–Feb. 3	26	2	
Lafayette	do	130	1	
Lincoln	Jan. 21–Jan. 27	1		
Livingston	Jan. 13			Do.
Madison	Jan. 29–Feb. 3	3	1	
New Orleans	Dec. 31–Feb. 17	384	107	
Ouachita	Jan. 29–Feb. 3	1		
Plaquemine	Jan. 21–Jan. 27	1		
Point Coupée	Dec. 31–Feb. 3	7		
Rapides	Jan. 21–Jan. 27	5		
Richland	Feb. 11–Feb. 17	5		
Shreveport	Dec. 24–Feb. 17	117	9	
St. Charles	Jan. 29–Feb. 3	3		
St. James	Dec. 24–Jan. 27	21		
St. John	Jan. 29–Feb. 17	2		
St. Mary Parish	Apr. 1–Feb. 6	50		
St. Landry Parish	Sept. 1–Feb. 6	782	27	
Tangipahoa	Jan. 14–Jan. 20	1		
Tensas	Jan. 29–Feb. 3	35		
Vermillion	Jan. 21–Feb. 3	16		
Total for State		1,810	171	
Total for State, same period, 1899.		7		
Massachusetts:				
Boston	Dec. 30–Feb. 3	3		
Chelsea	Dec. 25–Dec. 31		1	
Lawrence	Jan. 28–Feb. 3	1		
Lowell	Dec. 24–Dec. 30		1	
Malden	Jan. 14–Jan. 27	3		
Total for State		7	2	

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Minnesota:				
Duluth	Jan. 26-Feb. 5...	3	.....	
Minneapolis	Jan. 21-Feb. 17...	57	.....	
Total for State	.....	60	.....	
Total for State, same period, 1899.	.....	1	.....	
Mississippi:				
Greenwood	Jan. 21-Feb. 17...	303	9	
Total for same period, 1889..	.....	17	.....	
Missouri:				
Paris	Sept. 3-Feb. 5...	37	4	
St. Louis	Dec. 19-Feb. 18...	32	0	
Total for State	.....	69	4	
Total for State, same period, 1899.	.....	48	7	
Montana:				
Butte	Feb. 7.....	100	.....	
Total for same period, 1899..	.....	6	.....	
Nebraska:				
Dubois	Dec. 1-Feb. 15...	2	2	
Guide Rock	.....do	7	0	
Liberty	.....do	13	0	
Omaha	.....do	17	0	
Total for State	.....	39	2	
Total for State, same period, 1899	.....	366	3	
New York:				
Amsterdam	Dec. 25-Dec. 30...	1	.....	
New York City	Jan. 7-Feb. 17...	8	.....	
Total for State	.....	9	.....	
Total for State, same period, 1899.	.....	8	1	
North Carolina:				
Beaufort	Dec. 27.....	1	.....	
Cabarrus County	Dec. 1-Dec. 31...	5	.....	
Cartaret County	.....do	1	.....	
Charlotte	Dec. 1-Jan. 31...	7	0	
Chatham County	Nov. 1-Dec. 31...	24	.....	
Currituck County	Dec. 1-Dec. 31...	1	.....	
Davidson County	.....do	.....	.....	A few cases.
Greensboro	Jan. 15.....	.....	.....	Numerous cases.
Guilford County	Jan. 15-Dec. 31...	83	.....	
Halifax County	.....do	67	.....	
Hertford County	Dec. 1-Dec. 31...	1	.....	
Mecklenburg County	.....do	3	.....	
Nash County	.....do	4	.....	
Northampton County	Jan. 15-Dec. 31...	10	.....	
Randolph County	Dec. 1-Dec. 31...	1	.....	
Rowan County	Jan. 15-Dec. 31...	46	.....	
Surry County	Dec. 1-Dec. 31...	14	.....	
Union County	.....do	3	.....	
Vance County	Jan. 15-Dec. 31...	1	.....	
Wilmington	Jan. 25.....	2	.....	
Total for State	.....	274	.....	
Total for State, same period, 1899.	.....	30	.....	
Ohio:				
Cincinnati	Dec. 23-Feb. 16...	13	.....	
Cleveland	Dec. 24-Feb. 17...	160	.....	
Hamilton	Dec. 31-Jan. 6...	2	.....	
Youngstown	Dec. 21-Feb. 17...	9	0	
Total for State	.....	184	.....	
Total for State, same period, 1899.	.....	81	1	

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Oklahoma Territory:				
Beaver County	Jan. 10			Smallpox reported.
Blaine County	do	1		
El Reno	Dec. 27	7	0	
Enid	do	4	0	
Kay County	do			Smallpox epidemic.
Logan County	do	10	0	
Noble County	Jan. 10			Smallpox reported.
Oklahoma City	Dec. 27	14	0	No cases at present.
Pawnee County	Jan. 10			Smallpox reported.
Shawnee	do	12	0	No cases at present.
Watonga	do	1	0	
Yukon	do	6	0	Do.
Total for Territory		55		
Total for Territory, same period, 1899.		5	3	
Oregon:				
Astoria	Feb. 12	1		
Portland	Jan. 23–Feb. 3	3		
Total for State		4		
Total for State, same period, 1899.		0	0	
Pennsylvania:				
Allegheny County	Dec. 17–Jan. 20	5		
Beaver County	Jan. 1–Dec. 31	1		
Philadelphia	Dec. 24–Feb. 17	11		
Total for State		17		
Total for State, same period, 1899.		69		
South Carolina:				
Greenville	Dec. 24–Feb. 10	7		
Same period, 1899		0		
Tennessee:				
Chattanooga	Jan. 22	9		
Columbia	Jan. 6	24		
Memphis	Nov. 4–Feb. 17	335		
Mount Pleasant	Jan. 6	8		
Nashville	Dec. 24–Feb. 17	23		
Total for State		399		
Total for State, same period, 1899.		16		
Texas:				
Aline	Feb. 7–Feb. 13	1		
Angelina County	Jan. 17–Jan. 23	1		
Austin	Jan. 1–Jan. 16	10		
Bastrop County	Jan. 17–Jan. 23	19		
Beaumont	Jan. 1–Jan. 30	3		
Belleville County	Jan. 17–Jan. 23	2		Smallpox reported.
Boggy Fork	Feb. 7–Feb. 13	8		
Bonham	Jan. 1–Jan. 16			
Bowie County	do	2		
Brenham	Jan. 24–Jan. 30	5	1	
Brookshire	do	1		
Caddo Mills	Jan. 17–Jan. 23	1		
Carmine	Jan. 24–Jan. 30	10		
Cass County	Jan. 1–Jan. 16	1		
Chappel Hill	Feb. 7–Feb. 13	1		
Colmesneil	do	1		
Corsicana	do	3		
Dallas	do	7		
Denison	Jan. 1–Jan. 16			Several cases.
Direct	Jan. 17–Jan. 23	6		
El Paso	Feb. 4	1		
Farmersville	do	25		
Fannin County	do			Do.
Floydada	Jan. 1–Jan. 16	1		
Fort Stockton	do	4		
Gainesville	Feb. 7–Feb. 13	8		
Galveston	Feb. 10	2		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Texas—*Continued.*				
Garrett	Feb. 7–Feb. 13	7		
Greenville	do	1		
Grimes County	Jan. 1–Jan. 23	15		
Honey Grove	do	30		
Houston	Dec. 31–Jan. 27	12		
Hunt County	Feb. 7–Feb. 13	1		
Index	Jan. 1–Jan. 16	30		
Joaquin	Feb. 7–Feb. 13	3		
Meadow	Jan. 17–Jan. 23	9		
Meridian	do	2		
Milano	Jan. 17–Jan. 30	8		
Navarro County	Jan. 1–Jan. 16	3		
Palistine	Feb. 7–Feb. 13	4		
Paris	Jan. 17–Jan. 30	6		
Prairie Dell	Jan. 24–Jan. 30	13		
Port Sullivan	do	3		
San Antonio	Dec. 1–Jan. 30	4		
Sealey	Jan. 24–Jan. 30	2		
Seguin	Jan. 1–Jan. 30	3	1	
Smithville	Jan. 11–Jan. 30	14		
Temple	Jan. 11–Feb. 17	9	1	
Tyler	Jan. 11–Jan. 30	1		
Village Mills	Feb. 7–Feb. 13	1		
Wolfe City	Jan. 17–Jan. 23	3		
Total for State		297	3	
Total for State, same period, 1899.		291	72	
Utah:				
Salt Lake City	Dec. 24–Feb. 17	16		
Total for State, same period, 1899.		0	0	
Virginia:				
Alexandria	Feb. 14	1		
Norfolk	Jan. 20	1		
Petersburg	Dec. 1–Dec. 26	4		
Portsmouth	Dec. 24–Feb. 17	74	15	
Richmond	Jan. 1–Jan. 31	21	0	
Roanoke	do	12	0	
Total for State		113	15	
Total for State, same period, 1899.		790	4	
Washington:				
Pierce County	Feb. 7	1		
Seattle	Feb. 15	1		
Spokane	Jan. 1–Feb. 17	161	2	
Tacoma	Feb. 12–Feb. 17	9		
Total for State		172	2	
Total for State, same period, 1899.		0	0	
West Virginia:				
Calhoun County	Jan. 31			Cases reported.
Fayette County	Jan. 26	18		
Gilmer County	Jan. 31			Do.
Harrison County	do	5		
Lewis County	Jan. 31–Feb. 8	20		
McDowell County	Jan. 31	1		
Mingo County	do			Do.
Monongalia County	Jan. 26	1		
Upshur County	Jan. 31			Do.
Webster County	Feb 8	10		
Total for State		55		
Total for State, same period, 1899.		0	0	
Wisconsin:				
Lafayette County	Feb. 3	1		
Lemonweir	Jan. 24–Feb. 3	5	1	
Mauston	Jan. 24	1		
Total for State		7	1	
Total for State, same period, 1899.		10		

Report of immigration at Boston for the week ended February 17, 1900.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Boston, February 18, 1900.

Number of alien immigrants who arrived at this port during the week ended February 17, 1900; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
Feb. 11	Steamship Prince George	Yarmouth, Nova Scotia	46
Do	Steamship Boston	do	36
Do	Steamship Sarmation	Glasgow, Scotland	15
Feb. 12	Steamship Admiral Dewey	Port Morant, Jamaica	3
Do	Steamship Barnsmore	London, England	4
Feb. 13	Steamship Turcoman	Liverpool, England	4
Feb. 14	Steamship Columbian	London, England	22
Do	Steamship Cestrian	Cape Town, South Africa	3
Feb. 15	Steamship Degama	Avonmouth, England	14
Do	Steamship Boston	Yarmouth, Nova Scotia	29
Do	Steamship Prince George	do	31
Do	Steamship Halifax	Halifax, Nova Scotia	24
Feb. 16	Steamship Hindoo	Hull, England	1
	Total		232

GEORGE B. BILLINGS,
Commissioner.

Report of immigration at New York for the week ended February 17, 1900.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of New York, February 17, 1900.

Number of alien immigrants who arrived at this port during the week ended February 17, 1900; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
Feb. 11	Steamship Graf Waldersee	Hamburg	736
Do	Steamship New York	Southampton	173
Feb. 12	Steamship Columbia	Ghnoa	54
Do	Steamship La Gascogne	Havre	317
Feb. 13	Steamship Werkendam	Rotterdam	206
Feb. 14	Steamship Oceanic	Liverpool and Queenstown	404
Do	Steamship Noordland	Antwerp	458
Do	Steamship Wardsworth	Rio de Janeiro	24
Feb. 15	Steamship Darmstadt	Bremen	423
Do	Steamship Bolivia	Naples	200
Do	Steamship Lahan	Bremen	408
Feb. 16	Steamship Italia	Hamburg	342
Do	Steamship Archimede	Genoa and Naples	753
Feb. 17	Steamship Campania	Queenstown and Liverpool	443
Do	Steamship Neustria	Marseilles and Naples	206
	Total		5,147

THOMAS FITCHIE,
Commissioner.

Report of immigration at Philadelphia for the week ended February 24, 1900.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Philadelphia, February 24, 1900.

Number of alien immigrants who arrived at this port during the week ended February 24, 1900; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
Feb. 16	Steamship Assyrian	Glasgow	1
Feb. 19	Steamship Belgenland	Liverpool and Queenstown	150
	Total		151

J. L. HUGHES,
Acting Commissioner.

Arrival of alien steerage passengers at Cienfuegos during the week ended February 17, 1900.

CIENFUEGOS, CUBA, *February 19, 1900.*

SIR: I herewith submit report of alien steerage passengers at this port during the week ended February 17, 1900: February 14, steamship *Bernard Hall* from Liverpool and West Indies with 1 immigrant.

Respectfully, J. M. LINDSLEY,
Acting Assistant Surgeon, U. S. M. H. S.

Arrival of alien steerage passengers at Havana, Cuba, during the week ended February 17, 1900.

HAVANA, CUBA, *February 17, 1900.*

SIR: I herewith submit report of alien steerage passengers at this port during the week ended February 17, 1900:

Date.	Vessel.	Where from.	No. of immigrants.
Feb. 12	Steamship Vigilancia	Campeche, Vera Cruz y Progreso	18
Feb. 16	Steamship Montserrat	Barcelona, Malaga, Palmas, Cadiz y San Juan, Porto Rico.	165
Feb. 17	Steamship R. Maria Cristina	Vera Cruz	21
	Total		204

Respectfully,

G. M. GUITÉRAS,
Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Report of alien immigrants arriving at San Juan, Porto Rico, during the week ended February 3, 1900.

Date.	Vessels.	Where from.	Number inspected.
Jan. 28	Steamship Syria	Hamburg, Havre, St. Thomas	4
Jan. 31	Steamship San Agustin	Barbcelona, Malaga, Cadiz, Las Palmas, Tenerife, La Palma	8
Feb. 3	Steamship Catalunna	Vera Cruz, Progreso, Havana	7
Do	Steamship Olin de Rodrigues	Havre, St. Thomas	10
	Total		29

C. H. LAVINDER,
Assistant Surgeon, U. S. M. H. S., In Command.

REPORTS FROM NATIONAL QUARANTINE

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure
	UNITED STATES:				
1	Alexandria, Va.	Feb. 24			
2	Beaufort, N. C.	...do...			
3	Brunswick, Ga.	Feb. 17	Br. bk. Auriga (a)	Feb. 5	Para
			Am. brig Motley	Feb. 13	...do
		Feb. 24	Sp. bk. Maria Louisa	Feb. 21	Matanzas
			Sp. bk. Asuncion	...do...	Havana
4	Cape Charles, Va	...do...			
5	Cape Fear, N. C.	...do...			
6	Columbia River, Oreg.	Feb. 17	Br. bk. Kinfauns	Feb. 17	Honolulu
7	Delaware Breakwater Quarantine, Lewes, Del.	Feb. 24			
8	Eureka, Cal.	Feb. 10	Am. sc. Allen A	Feb. 6	Honolulu
			Br. bk. Cardigan Castle	Jan. 20	...do
		Feb. 17	Br. bk. Cardigan Castle (a)	...do...	...do
9	Grays Harbor, Wash.	...do...			
10	Gulf Quarantine, Ship Island, Miss.	...do...			
11	Newbern, N. C.	Feb. 24			
12	Pascagoula, Miss.	...do...			
13	Port Townsend, Wash.	Feb. 17	Jap. ss. Nanyo Maru (a)	Jan. 31	Kobe via Honolulu.
			Am. ship Sintram	Feb. 11	Honolulu
			Am. sc. Wm. H. Smith	...do...	...do
			Am. sc. Bendixon	Feb. 12	...do
			Br. ss. Bloomfontein	Feb. 13	...do
14	Reedy Island, Del	Feb. 24			
15	San Diego, Cal.	Feb. 17			
16	San Francisco, Cal.	...do...	Am. ss. Columbia (a)	Feb. 10	Manila
			Aust. str. Siam	...do...	...do
			Am. naval ss. Nero	Feb. 11	Guam
			Haw. str. Kinan	Feb. 14	Honolulu
			Rus. str. Dalny Vostock	...do...	Manila
17	San Pedro, Cal.	Feb. 17			
18	Savannah, Ga.	...do...	Nor. bk. Eugenie (a)	Feb. 9	Para
			Am. bk. Silicon	Feb. 13	Daiquiri
		Feb. 24	...do...	...do...	...do
19	South Atlantic Quarantine, Blackbeard Island, Ga.	Feb. 17			
20	Tortugas Quarantine, Key West, Fla.	Feb. 24			
21	Washington, N. C	...do...			
	CUBA:				
22	Caibarien	Feb. 17			
23	Cardenas	...do...			
24	Cienfuegos	...do...			
25	Daiquiri	Feb. 10			
26	Gibara	Jan. 21			
27	Guantanamo	Feb. 3			
28	Havana	Feb. 17			
29	Isabela de Sagua	...do...			
30	Manzanillo	Feb. 10			
31	Matanzas	Feb. 17			
32	Nuevitas	...do...			
33	Santiago de Cuba	Feb. 10	U. S. A. transport Wright (a).	Feb. 8	Manzanillo
			U. S. A. transport Burnside.	Feb. 10	San Juan

a Previously reported.

AND INSPECTION STATIONS.

Number.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
1	.....	.....	.....	No transactions.....	.....
2	.....	.....	.....	No report.....	.....
3	St. Simons.....	Ballast discharged.....	Feb. 13	.....	5
.....	Brunswick.....	.....do.....	Feb. 15	.....	.....
.....	.....do.....	.....do.....	Feb. 24	.....	2
.....	.....do.....	Discharging ballast.....	.....	.....	.....
4	.....	.....	.....	.....	8
5	.....	.....	.....	No transactions.....	.....
6	Portland.....	Held for fumigation to destroy rats.	.....	.....	.....
7	.....	.....	.....	No report.....	.....
8	Eureka.....	Disinfected.....	Feb. 10	.....	.....
.....	.....do.....	.....do.....	.....	.....	.....
.....	.....do.....	.....do.....	Feb. 13	.....	1
9	.....	.....	.....	No transactions.....	.....
10	.....	.....	.....	.....	3
11	.....	.....	.....	No transactions.....	.....
12	.....	.....	.....	.....do.....	.....
31	Seattle.....	Disinfected and held.....	.....	12 cases and 3 deaths at quarantine diagnosed as beriberi. Plague suspected in 1 fatal case.	6
.....	Tacoma.....	Disinfected.....	Feb. 14	Crew bathed.....	.....
.....	Port Townsend.....	.....do.....	Feb. 13	.....do.....	.....
.....	.....do.....	.....do.....	Feb. 14	.....do.....	.....
.....	Seattle.....	Disinfected and held to complete period.	.....do.....	Crew bathed; clothing of 4 Japanese on Br. bk. Allegiance from Nagasaki disinfected.	.....
14	.....	.....	.....	.....	16
15	.....	.....	.....	.....	1
16	San Francisco.....	Disinfected to kill vermin..	Feb. 11	.....	9
.....	.....do.....	Partial disinfection.....	Feb. 12	.....	.....
.....	.....do.....	Passed on medical officer's certificate.	Feb. 11	1 case of enteric fever on ss. Coptic from Hongkong. 186 steerage passengers and 99 Oriental crew bathed and baggage disinfected.	.....
.....	.....do.....	Disinfected to kill vermin...	Feb. 15	.....	.....
.....	.....do.....	.....do.....	Feb. 16	.....	.....
17	.....	.....	.....	No report.....	.....
18	Savannah.....	Disinfected.....	Feb. 16	.....	6
.....	.....do.....	Held for disinfection.....	.....	6 cases malarial fever on arrival.	.....
.....	.....do.....	Disinfected.....	Feb. 22	.....	3
19	.....	.....	.....	.....	1
20	.....	.....	.....	No report.....	.....
21	.....	.....	.....	No transactions.....	.....
22	.....	.....	.....	.....	3
23	.....	.....	.....	.....	11
24	.....	.....	.....	.....	10
25	.....	.....	.....	.....	3
26	.....	.....	.....	No report.....	.....
27	.....	.....	.....	.....do.....	.....
28	.....	.....	.....	.....	13
29	.....	.....	.....	No report.....	.....
30	.....	.....	.....	1 case of malarial fever on transport Wright.	7
31	.....	.....	.....	.....	8
32	.....	.....	.....	.....	5
33	Santiago.....	Boarded and passed.....	Feb. 8	.....	14
.....	New York.....	.....do.....	Feb. 10	.....	.....

REPORTS FROM NATIONAL QUARANTINE

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.
	PORTO RICO:				
34	Ponce	Feb. 17			
35	San Juan	Feb. 10			
	Subports—				
36	Aguadilla	Feb. 3			
37	Arecibo	do			
38	Arroyo	do			
39	Humacao	do			
40	Jobos	do			
41	Mayaguez	do			

REPORTS FROM STATE AND

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.
1	Anclote, Fla	Feb. 24			
2	Baltimore, Md	do			
3	Bangor, Me	do			
4	Boston, Mass	do			
5	Carrabelle, Fla	do			
6	Cedar Keys, Fla	do			
7	Charleston, S. C	do			
8	Charlotte Harbor, Fla	do			
9	Elizabeth River, Va	do	Sloop Mary Pace	Feb. 17	Western Branch
10	Galveston, Tex	do			
11	Gardiner, Oreg	Feb. 17			
12	Key West, Fla	Feb. 24			
13	Los Angeles, Cal	Feb. 17			
14	Mayport, Fla	Feb. 24			
15	Mobile Bay, Ala	Feb. 17			
16	New Bedford, Mass	Feb. 24			
17	New Orleans, La	do			
18	Newport News, Va	do			
19	Newport, R. I	do			
20	New York, N. Y	do			
21	Pass Cavallo, Tex	do			
22	Pensacola, Fla	Feb. 17			
23	Port Royal, S. C	do			
24	Providence, R. I	Feb. 24			
25	Quintana, Tex	do			
26	St. Helena Entrance, S. C	do			
27	Tampa Bay, Fla	do			

AND INSPECTION STATIONS—Continued.

Number.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
34				No report	
35					13
36					2
37				No transactions	
38				do	
39					2
40				No transactions	
41					4

MUNICIPAL QUARANTINE STATIONS.

Number.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
1				No report	
2				do	
3				do	
4				do	
5				do	
6				do	
7				do	1
8				No report	
9	Norfolk	Disinfected and fumigated	Feb. 19	1 case of smallpox; sent to pesthouse, Portsmouth, Va.	5
10				No report	
11				do	
12					5
13				No report	
14				do	
15					27
16				No report	
17				do	
18				do	
19				do	
20				do	
21				do	
22				do	
23					
24				No transactions	
25				No report	
26				do	
27				do	

Reports of States and yearly and monthly reports of cities of the United States.

COLORADO—*Denver.*—Month of January, 1900. Estimated population, 170,000. Total number of deaths, 218, including diphtheria, 3; enteric fever, 1; measles, 7; scarlet fever, 2, and 55 from tuberculosis.

MARYLAND—*Baltimore.*—Month of December, 1899. Estimated population, 541,000—white, 463,000; colored, 78,000. Total number of deaths, 769—white, 598; colored, 191, including diphtheria, 50; enteric fever, 13; scarlet fever, 1, and 83 from phthisis pulmonalis.

MASSACHUSETTS—*Lawrence.*—Month of January, 1900. Estimated population, 59,072. Total number of deaths, 99, including enteric fever, 1; whooping cough, 1, and 10 from phthisis pulmonalis.

MICHIGAN.—Reports to the State board of health, Lansing, for the week ended February 17, 1900, from 67 observers, indicate that intermittent fever, pleuritis, and pneumonia increased and scarlet fever decreased in area of prevalence. Phthisis pulmonalis was reported present at 173, measles at 91, scarlet fever at 73, enteric fever at 33, whooping cough at 27, diphtheria at 20, cerebro-spinal meningitis at 4, and smallpox at 3 places.

MINNESOTA—*Stillwater.*—Month of January, 1900. Estimated population, 14,000. Total number of deaths, 15, including enteric fever, 1, scarlet fever, 1, and 2 from phthisis pulmonalis.

NEW YORK—*Jamestown.*—Year ended March 31, 1899. Census population, 16,038. Total number of deaths, 298, including diphtheria, 4, enteric fever, 5, and 1 from scarlet fever.

Rochester.—Month of January, 1900. Estimated population, 180,000. Total number of deaths, 173, including diphtheria, 4; enteric fever, 4; scarlet fever, 2, and 19 from phthisis pulmonalis.

OHIO.—Reports to the State board of health for the five weeks ended December 2, 1899, from 68 localities, having an aggregate estimated population of 1,301,773, show 43 deaths from diphtheria, 40 from enteric fever, scarlet fever, 15, and 6 from whooping cough.

Cleveland.—Month of January, 1900. Estimated population, 395,000. Total number of deaths, 466, including diphtheria, 25; enteric fever, 7; scarlet fever, 2; smallpox, 1; whooping cough, 1, and 11 from phthisis pulmonalis.

PENNSYLVANIA—*Erie.*—Year ended December 31, 1899. Census population, 40,634. Total number of deaths, 730, including diphtheria, 16; enteric fever, 18; measles, 19; scarlet fever, 9; whooping cough, 3, and 80 from tuberculosis.

Oil City.—Month of January, 1900. Estimated population, 17,482. Total number of deaths, 17, including enteric fever 2, and 2 from tuberculosis.

VIRGINIA—*Richmond.*—Month of January, 1900. Estimated population, 101,560. Total number of deaths, 141, including diphtheria, 1; enteric fever, 2, and 3 from tuberculosis.

WASHINGTON—*Seattle.*—Month of January, 1900. Estimated population, 90,000. Total number of deaths, 62, including enteric fever, 4; scarlet fever, 1, and 4 from tuberculosis.

WISCONSIN—*La Crosse.*—Two weeks ended February 17, 1900. Estimated population, 30,000. Total number of deaths, 20. No deaths from contagious diseases.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Population, U. S. Census of 1890.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Yellow fever.	Smallpox.	Varioloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aurora, Ill	Feb. 17	19,688	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baltimore, Md	Feb. 24	434,439	225	22	.....	.....	.....	.....	.....	1	1	11	1	.....
Bay City, Mich	Feb. 17	27,839	6	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Binghamton, N. Y	Feb. 24	35,005	21	1	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
Boston, Mass	.....do.....	448,477	227	22	.....	.....	.....	.....	.....	..	5	9	1	4
Brocton, Mass	Feb. 17	27,294	8	.....	.....	.....	.....	.....	.....	1	.....	1	.....	1
Butler, Pa	Feb. 6	8,734	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 13	8,734	3	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Do	Feb. 20	8,734	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass	Feb. 24	70,028	40	8	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Carbondale, Pa	Feb. 21	10,832	11	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Charleston, S. C	Feb. 17	a 54,955	b 35	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Chelsea, Mass	.....do.....	27,909	14	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Chicago, Ill	Feb. 24	1,099,850	536	62	.....	.....	.....	.....	.....	5	11	20	10	3
Chicopee, Mass	....do.....	14,050	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ohio	Feb. 16	296,908	.....	9	.....	.....	.....	.....	.....	2	2	4	.....	3
Cleveland, Ohio	Feb. 24	261,353	102	2	.....	.....	.....	.....	.....	2	.....	1	.....	2
Clinton, Mass	.....do.....	10,424	5	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Concord, N. H	.....do.....	17,044	15	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Danville, Ill	.....do.....	11,491	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dover, N. H	Feb. 17	12,790	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkirk, N. Y	.....do.....	9,416	6	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....
Elmira, N. Y	.....do.....	29,708	6	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Evansville, Ind	Feb. 24	50,756	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Everett, Mass	Feb. 17	11,068	7	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Fall River, Mass	Feb. 24	74,398	51	3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Fitchburg, Mass	Feb. 17	22,037	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester, Mass	.....do.....	24,651	11	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Do	Feb. 24	24,651	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids, Mich	.....do.....	60,278	31	4	.....	.....	.....	.....	.....	.....	.....	1	2	.....
Green Bay, Wis	Feb. 18	9,069	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greenville, S. C	Feb. 17	8,607	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greenwood, Miss	.....do.....	1,055	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hamilton, Ohio	.....do.....	19,565	11	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass	Feb. 24	27,412	10	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Holyoke, Mass	.....do.....	35,637	11	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Honolulu, H. I	Feb. 3	35,000	c 28	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Huntington, W. Va	Feb. 19	10,108	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hyde Park, Mass	Feb. 17	10,193	3	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Indianapolis, Ind	.....do	105,436	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich	Feb. 24	20,795	9	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jacksonville, Fla	Feb. 17	17,201	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Janesville, Wis	.....do	10,836	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jersey City, N. J	Feb. 18	163,003	85	4	.....	.....	.....	.....	.....	.....	2	2	.....	2
Johnstown, Pa	Feb. 24	21,805	19	1	.....	.....	.....	.....	.....	1	.....	1	.....	.....
La Crosse, Wis	.....do	25,090	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster, Pa	.....do	32,011	21	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lansingburg, N. Y	Feb. 4	10,550	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 11	10,550	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 18	10,550	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lawrence, Mass	Feb. 17	44,654	20	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Lebanon, Pa	Feb. 24	14,664	9	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Los Angeles, Cal	Feb. 3	50,395	35	7	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Do	Feb. 17	50,395	26	8	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Louisville, Ky	Feb. 22	161,129	83	4	.....	.....	.....	.....	.....	7	.....	1	.....	.....
Lowell, Mass	Feb. 24	77,696	34	3	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Lynchburg, Va	.....do.....	19,709	12	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McKeesport, Pa	Feb. 17	20,741	16	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mahanoy City, Pa	Feb. 24	11,286	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malden, Mass	Feb. 17	23,031	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Manchester, N. H	.....do.....	44,126	20	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Massillon, Ohio	Feb. 10	10,092	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 17	10,092	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford, Mass	Feb. 24	11,079	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Melrose, Mass	Feb. 17	8,519	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis	.....do.....	204,468	85	10	.....	.....	.....	.....	.....	.....	6	4	3	1
Minneapolis, Minn	.....do.....	164,738	39	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala	Feb. 24	31,076	14	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashville, Tenn	.....do.....	76,168	34	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Newark, N. J	Feb. 17	181,830	97	8	.....	.....	.....	.....	.....	1	28	34	3	1
New Bedford, Mass	Feb. 24	40,733	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newburyport, Mass	Feb. 17	13,947	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Orleans, La	.....do.....	242,039	182	22	.....	31	.....	.....	.....	2	.....	.....	1	.....

a Estimated population, 65,165—white, 28,870; colored, 36,295. b White, 11; colored, 24.
c Plague, 2.

MORTALITY TABLE, CITIES OF THE UNITED STATES—Continued.

Cities.	Week ended.	Population U. S. census of 1890.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Yellow fever.	Smallpox.	Varioloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Newton, Mass.	Feb. 24	24,370	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York, N. Y.	....do....	a 3,654,594	1,671	176	.....	.....	.....	.....	.....	10	17	50	60	16
Norristown, Pa.	....do....	19,791	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Adams, Mass.	....do....	16,074	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Omaha, Nebr.	Feb. 17	140,452	25	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Oneonta, N. Y.	Feb. 24	6,272	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palmer, Mass.	....do....	6,520	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peoria, Ill.	Feb. 11	41,024	18	3	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Philadelphia, Pa.	Feb. 24	1,046,964	445	42	.....	.....	.....	.....	.....	15	.....	19	12	5
Pittsburg, Pa.	Feb. 17	238,617	115	12	.....	.....	.....	.....	.....	12	1	4	2	1
Pittston, Pa.	Feb. 24	10,302	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plainfield, N. J.	....do....	11,267	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Portsmouth, Ohio.	....do....	12,394	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portsmouth, Va.	....do....	13,268	3	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Poughkeepsie, N. Y.	Feb. 17	22,206	10	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....
Providence, R. I.	Feb. 24	132,146	77	8	.....	.....	.....	.....	.....	.....	1	.....	10	1
Rockford, Ill.	Feb. 3	23,584	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.	Feb. 10	23,584	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.	Feb. 17	23,584	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem, Mass.	....do....	30,801	18	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salt Lake City, Utah.	....do....	44,843	12	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
San Diego, Cal.	....do....	16,159	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santa Barbara, Cal.	....do....	5,864	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San José, Cal.	....do....	18,060	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scranton, Pa.	Feb. 24	75,215	51	.....	.....	.....	.....	.....	.....	1	3	2	.....	.....
Sheboygan, Wis.	Feb. 17	16,359	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shreveport, La.	....do....	11,979	11	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerville, Mass.	Feb. 24	40,152	18	4	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Spokane, Wash.	Feb. 17	19,922	10	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Springfield, Mass.	Feb. 24	44,179	25	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Steelton, Pa.	....do....	9,250	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tacoma, Wash.	Feb. 17	36,006	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waltham, Mass.	....do....	18,707	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington, D. C.	....do....	230,392	98	12	.....	.....	.....	.....	.....	2	1	3	1	1
Williamsport, Pa.	Feb. 24	27,132	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Wilmington, Del.	....do....	61,431	33	4	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Winona, Minn.	Feb. 17	18,208	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Worcester, Mass.	Feb. 2	84,655	39	7	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Do.	Feb. 9	84,655	50	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Do.	Feb. 16	84,655	50	1	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Youngstown, Ohio.	Feb. 24	33,220	7	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....

a Estimated.

Table of temperature and rainfall, week ended February 19, 1900.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	a Excess.	a Defic'ncy.	Normal.	Excess.	Deficiency.
Atlantic Coast:						
Eastport, Me	23	1		.91	1.00	
Portland, Me	26	1		.89	2.59	
Northfield, Vt	17	2		.52	1.80	
Boston, Mass	30	1		.84	1.14	
Vineyard Haven, Mass	33		3	.84		.04
Nantucket, Mass	32	2		.70	1.40	
Woods Hole, Mass	30	2		.91	1.41	
Block Island, R. I	33		1	1.12		.08
New Haven, Conn	30	2		1.05	2 02	
Albany, N. Y	26	3		.65	.31	
New York, N. Y	32	2		.95	1.61	
Harrisburg, Pa	33		2	.70	.63	
Philadelphia, Pa	35		2	.83	1.07	
New Brunswick, N. J	34		1	.91	1.68	
Atlantic City, N. J	35		2	.81	.61	
Baltimore, Md	37		2	.89	.95	
Washington, D. C	37		3	.84	1.50	
Lynchburg, Va	41		7	.89	.84	
Cape Henry, Va	44		2	.86	.95	
Norfolk, Va	43		3	.98	.31	
Charlotte, N. C	46		9	1.12	.04	
Raleigh, N. C	45		7	.92	.41	
Kittyhawk, N. C	47		0	.91	.49	
Hatteras, N. C	48		2	1.05		.57
Wilmington, N. C	50		4	.77		.70
Columbia, S. C	50		6	1.05	.18	
Charleston, S. C	53		3	.80		.28
Augusta, Ga	51		6	.98	.52	
Savannah, Ga	55		5	.77		.47
Jacksonville, Fla	59		4	.77		.32
Jupiter, Fla	67		3	.63	.47	
Key West, Fla	72		2	.42	.09	
Gulf States:						
Atlanta, Ga	49		12	1.08		1.08
Tampa, Fla	66		8	.70	.36	
Pensacola, Fla	57		10	.93		.52
Mobile, Ala	55		9	1.14		.10
Montgomery, Ala	53		9	1.33	.21	
Vicksburg, Miss	53		13	1.15		.88
New Orleans, La	59		6	1.12	.85	
Shreveport, La	52		12	1.05		.95
Fort Smith, Ark	42		11	1.01		1.01
Little Rock, Ark	46		13	1.40		1.38
Palestine, Tex	52		14	.87		.87
Galveston, Tex	57		11	.77		.74
San Antonio, Tex	56		11	.49		.47
Corpus Christi, Tex	59		11	.62		.62
Ohio Valley and Tennessee:						
Memphis, Tenn	45		11	1.33		.95
Nashville, Tenn	44		14	1.33		.65
Chattanooga, Tenn	46		12	1.30	.63	
Knoxville, Tenn	43		10	1.33	.91	
Louisville, Ky	39		14	1.12		.54
Indianapolis, Ind	33		14	.91		.38
Cincinnati, Ohio	37		12	.94		.59
Columbus, Ohio	33		10	.98		.32
Parkersburg, W. Va	36		9	.77	.24	
Pittsburg, Pa	34		7	.70		.25
Lake Region:						
Oswego, N. Y	26		2	.63	.77	
Rochester, N. Y	25		2	.70	.58	
Buffalo, N. Y	25		5	.70	.79	
Erie, Pa	28		6	.90		.40
Cleveland, Ohio	29		8	.74	.56	
Sandusky, Ohio	30		10	.77	.20	
Toledo, Ohio	29		10	.56	.14	
Detroit, Mich	27		10	.63	.24	
Lansing, Mich	26		12	.53	.23	
Port Huron, Mich	24		8	.63		.14
Alpena, Mich	19		6	.49		.12
Sault Ste. Marie, Mich	14		5	.34		.21
Marquette, Mich	18		11	.42		.34
Green Bay, Wis	19		11	.56		.46
Grand Haven, Mich	26		10	.56	.19	
Milwaukee, Wis	24		13	.49		.13
Chicago, Ill	28		15	.58	.04	
Duluth, Minn	15		13	.28		.28

a The figures in this column represent the average daily departure.

Table of temperature and rainfall, week ended February 19, 1900—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	a Excess.	a Defic'ncy	Normal.	Excess.	Deficiency.
Upper Mississippi Valley:						
St. Paul, Minn	17	.....	15	.21	.....	.21
La Crosse, Wis	21	.....	16	.28	.....	.28
Dubuque, Iowa	23	.....	16	.35	.....	.20
Davenport, Iowa	26	.....	18	.42	.....	.19
Des Moines, Iowa	24	.....	15	.35	.....	.27
Keokuk, Iowa	29	.....	16	.42	.....	.32
Springfield, Ill	31	.....	15	.95	.....	.68
Cairo, Ill	41	.....	14	1.01	.....	.18
St. Louis, Mo	35	.....	14	.70	.....	.58
Missouri Valley:						
Columbia, Mo	34	.....	20	.68	.....	.41
Springfield, Mo	36	.....	16	.91	.....	.68
Kansas City, Mo	31	.....	17	.49	.....	.25
Topeka, Kans	31	.....	16	.35	.....	.11
Wichita, Kans	32	.....	12	.28	.....	.18
Concordia, Kans	29	.....	16	.22	.....	.17
Lincoln, Nebr	24	.....	15	.25	.14	.....
Omaha, Nebr	26	.....	18	.21	.09	.....
Sioux City, Iowa	20	.....	16	.14	.....	.04
Yankton, S. Dak	19	.....	11	.21	.....	.13
Valentine, Nebr	21	.....	13	.21	.....	.11
Huron, S. Dak	11	.....	8	.14	.....	.14
Pierre, S. Dak	15	.....	9	.08	.....	.04
Moorhead, Minn	3	.....	7	.21	.....	.11
Bismarck, N. Dak	8	.....	12	.14	.....	.13
Williston, N. Dak	3	.....	9	.07	.....	.07
Rocky Mountain and Plateau Region:						
Havre, Mont	8	.....	10	.14	.....	.14
Helena, Mont	19	.....	19	.21	.....	.12
Miles City, Mont	16	.....	14	.14	.....	.13
Rapid City, S. Dak	20	.....	13	.14	.....	.12
Spokane, Wash	28	.....	6	.49	.....	.22
Walla Walla, Wash	36	.....	14	.30	.00	.....
Baker City, Oreg	26	.....	5	.42	.....	.32
Winnemucca, Nev	32	7	.....	.21	.04	.....
Boise, Idaho	33	.....	4	.37	.....	.18
Salt Lake City, Utah	32	.....	5	.35	.23	.....
Lander, Wyo	22	.....	25	.14	.....	.14
Cheyenne, Wyo	27	.....	11	.10	.21	.....
North Platte, Nebr	25	.....	13	.12	.06	.....
Denver, Colo	32	.....	17	.14	.06	.....
Pueblo, Colo	31	.....	15	.14	.20	.....
Dodge City, Kans	31	.....	12	.14	.03	.....
Oklahoma, Okla	41	.....	15	.18	.....	.18
Amarillo, Tex	35	.....	9	.39	.....	.38
Abilene, Tex	47	.....	12	.35	.....	.35
Santa Fe, N. Mex	32	3	.....	.21	.....	.21
El Paso, Tex	48	.....	0	.09	.....	.09
Phœnix, Ariz	55	3	.....	.28	.....	.28
Pacific Coast:						
Seattle, Wash	40	.....	6	1.12	.14	.....
Tacoma, Wash	39	.....	5	1.33	.....	.43
Portland, Oreg	41	.....	10	1.54	.....	.51
Roseburg, Oreg	41	.....	0	1.22	.....	.78
Eureka, Cal	46	2	.....	1.48	.....	.89
Red Bluff, Cal	48	4	.....	.91	.....	.63
Carson City, Nev	36	7	.....	.35	.....	.30
Sacramento, Cal	49	4	.....	.77	.....	.77
San Francisco, Cal	50	2	.....	.92	.....	.90
Fresno, Cal	49	5	.....	.28	.....	.24
San Luis Obispo, Cal	55	1	.....	.96	.....	.80
Los Angeles, Cal	54	4	.....	.88	.....	.88
San Diego, Cal	55	3	.....	.63	.....	.63
Yuma, Ariz	59	3	.....	.14	.....	.14

a The figures in this column represent the average daily departure.

FOREIGN AND INSULAR.

[Reports received from United States consuls through the Department of State and from other sources.]

Cholera, yellow fever, plague, and smallpox as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1899, to March 2, 1900.

[For reports received from June 30 to December 29, 1899, see PUBLIC HEALTH REPORTS or December 29.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 22-Jan. 23...	.....	22	
Calcutta	Nov. 5-Jan. 13...	.....	247	

YELLOW FEVER.

Argentine:				
Buenos Ayres	Nov. 1-Nov. 30...	.....	1	
Brazil:				
Rio de Janeiro	Nov. 4-Jan. 12...	.....	67	
Santos	Jan. 16-Jan. 24...	10	2	
Colombia:				
Barranquilla	Dec. 24-Dec. 30...	.....	1	
Panama	Dec. 20-Dec. 26...	.....	1	
Cuba:				
Cienfuegos	Feb. 10.....	7	.....	On training ship Lanthorne in quarantine.
Havana	Dec. 1-Dec. 31...	70	22	
	Jan. 1-Feb. 10...	19	8	
Matanzas	Dec. 29.....	.....	1	
	Feb. 15.....	1	.....	
Santiago	Dec. 10-Dec. 30...	.....	3	
Mexico:				
Vera Cruz	Dec. 22-Jan. 27...	.....	6	
	Feb. 11-Feb. 17...	.....	2	
West Indies:				
Curaçoa	Feb. 4-Feb. 10...	1	.....	

PLAGUE.

Arabia:				
Aden	Feb. 24.....	.....	.....	Plague reported.
Beni-Shekir, Yemen	Dec. 7.....	.....	15	
Brazil:				
Conceicao dos Guarulhos	Dec. 31.....	3	.....	
Rio de Janeiro	Jan. 6-Jan. 12...	2	1	
Santos	Oct. 13-Jan. 13...	39	15	
Sao Paulo	Dec. 15-Dec. 31...	4	3	
China:				
Hongkong	Nov. 12-Dec. 30...	11	10	
Formosa:				
Tamsui	Oct. 1-Dec. 12...	46	25	
Hawaiian Islands:				
Hilo	Feb. 13.....	1	.....	
Kahului	Jan. 30-Feb. 10...	7	.....	
Honolulu	Dec. 11-Feb. 13...	64	50	
India:				
Bombay Presidency and Sind:				
Ahmedabad District	Nov. 19-Jan. 6...	.....	16	
Ahmednagar District	Nov. 19-Jan. 20...	.....	120	
Akalkot State	...do.....	.....	9	
Aundh State	...do.....	.....	39	
Baroda State	...do.....	.....	6	
Belgaum District	...do.....	.....	825	
Bhor State	...do.....	.....	106	
Bijapur District	...do.....	.....	429	
Bombay City	...do.....	.....	1,931	
Broach District	...do.....	.....	0	
Cutch State	...do.....	.....	8	
Dharwar District	...do.....	.....	1,186	

Cholera, yellow fever, plague, and smallpox, etc.—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—*Continued.*				
Bombay Presidency and Sind—*Continued.*				
Hyderabad (Sind) District	Nov. 19–Jan. 20..		44	
Janjira State	do		7	
Kaira District	do		1	
Kanara District	do		13	
Kurrachee City	do		20	
Kurrachee District	do		23	
Kathiawar State	do		0	
Khandesh District	do		0	
Kolaba District	do		59	
Kolhapur State	Nov. 19–Jan. 20...		1,286	
Mahi Kantha State	Nov. 19–Jan. 6...		0	
Nasik District	Nov. 19–Jan. 20...		50	
Palanpur State	do			
Panch Mahals District	do		0	
Poona City	do		10	
Poona District	do		415	
Ratnagiri District	do		130	
Rewakantha State	do		0	
Sachin State	Dec. 3–Jan. 20...		8	
Satara District	Nov. 19–Jan. 20...		440	
Savantvadi State	do		1	
Savanur State	do		18	
Shikarpur District	do		0	
Sholapur District	do		963	
Surat District	do		102	
Thana District	do		163	
Upper Sind Frontier	do			
Outside Bombay Presidency and Sind:				
Madras Presidency—				
Anantapur District	do			
Bellary District	do		10	
Chingleput District	do			
Kurnool District	do			
Madras City District	do			
North Arcot District	do		2	
Salem District	do		149	
Nellore District	do			
Trichinopoly District	do			
Coimbatore District	do		24	
Mysore State—				
Bangalore City	Jan. 6–Jan. 20...		159	
Bangalore Civil and Military Station	do		82	
Bangalore District	do		381	
Kolar District	do		7	
Kolar Gold Fields	do		47	
Mysore City	do		93	
Mysore District	do		114	
Tumkur District	do		110	
Chitaldrug District	do		56	
Hyderabad State—				
Gulburga District	Dec. 31–Jan. 13...		102	
Lingsugur District	do		352	
Naldrug District	do		215	
Bidar District	do		3	
Arangabad District	do			
Central Provinces—				
Wardha District	Nov. 19–Jan. 20...		10	
Nagpur City	do		83	
Nagpur District	do		48	
Nimar District	do			
Punjab—				
Jullundur District	do		18	
Hoshiarpur District	do			
Rawal Pindi District	do			
Bengal—				
Calcutta	do		408	
Howrah District	do		1	
Hooghly District	do		1	
24-Parganas District	do			
Nadia District	do			
Khulana District	do			
Dacca District	do			
Darbhanga District	do			

Cholera, yellow fever, plague, and smallpox, etc.—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—*Continued.*				
Outside Bombay Presidency and Sind—*Cont'd.*				
Bengal—*Continued*				
Rangoon District	Nov. 19–Jan. 20...	.....	1	Imported.
Batna	....do	.....	52	
Saran District	....do	.....	19	
Shahabad District	....do	.....	.....	
Tipperah District	....do	.....	.....	
Singbhoom District	....do	.....	.....	
Balasore District	....do	.....	1	Imported and suspected.
Rajputana	....do	.....	1	Do.
N. W. Provinces—				
Allahabad District	Jan. 1–Jan. 20...	.....	3	
Japan:				
Osaka and Hiogo	Nov. 5–Jan. 26...	.....	52	
Hiroshima	Nov. 5–Dec. 4...	10	8	
Nagasaki	Dec. 9.....	1	1	
Kobe	Nov. 11–Jan. 26...	20	19	
Fukuoka Ken	Nov. 5–Dec. 21...	.....	1	
Shidzuoka Ken	....do	.....	1	
Wakayama Ken	....do	.....	1	
Madagascar:				
Tamatave	Sept. 10–Dec. 16...	51	42	
New Caledonia:				
Noumea	Dec. 1–Jan. 1...	37	21	
	August–Nov. 24...	100	46	
Paraguay:				
Asuncion	Nov. 1–Nov. 21...	.....	9	
Philippine Islands:				
Manila	Jan. 16	11	6	
Portugal:				
Lisbon	Jan. 16.....	1	.....	
Masan	Dec. 25.....	9	7	
Oporto	Aug. 16–Jan. 6...	287	108	
Villa Nova de Gaya	Nov. 15.....	1	.....	

SMALLPOX.

Argentina:				
Buenos Ayres	Oct. 1–Oct. 31...	.....	3	
Austria:				
Prague	Dec. 30–Jan. 27...	69	1	
Belgium:				
Antwerp	Dec. 3–Feb. 3...	49	19	
Ghent	Jan. 14–Feb. 3...	.....	2	
Brazil:				
Pernambuco	Dec. 1–Dec. 15...	.....	5	
Rio de Janeiro	Nov. 4–Jan. 12...	.....	387	
China:				
Hongkong	Dec. 17–Dec. 23...	1	1	
Colombia:				
Barranquilla	Jan. 21–Jan. 27...	1	1	
Cuba:				
Casilda	Jan. 2–Jan. 22...	34	0	
Havana	Jan. 15.....	2	.....	On ss. Santanderino.
Egypt:				
Cairo	Nov. 19–Jan. 20...	.....	11	
England:				
Leeds	Jan. 29–Feb. 3...	1	.....	
Liverpool	Jan. 7–Jan. 27...	2	1	
London	Dec. 10–Feb. 3...	105	1	
Southampton	Jan. 1–Jan. 27...	3	.....	
Formosa:				
Tamsui	Oct. 1–Nov. 30...	6	.....	
France:				
Lyons	Dec. 17–Jan. 27...	.....	8	
Marseilles	Nov. 1–Jan. 27...	200	17	
Nice	Dec. 19–Feb. 7...	8	4	
Paris	Jan. 14–Feb. 3...	.....	4	
Germany:				
Hamburg	Jan. 1–Jan. 13...	4	1	
Königsberg	Dec. 17–Feb. 1...	8	3	
Gibraltar	Dec. 4–Jan. 28...	6	1	

Cholera, yellow fever, plague, and smallpox, etc.—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Greece:				
Athens	Dec. 3-Feb. 3...	32	7	
Hungary:				
Budapesth	Dec. 18-Dec. 24...	1	.....	
India:				
Bombay	Nov. 15-Jan. 23...	.....	615	
Calcutta	Nov. 26-Jan. 13...	.....	36	
Ceylon	Dec. 10-Dec. 16...	.....	1	
Madras	Jan. 13-Jan. 19...	.....	1	
Kurrachee	Jan. 15-Jan. 21...	12	1	
Italy:				
Milan	Dec. 17-Jan. 13...	3	.....	
Japan:				
Nagasaki	Jan. 1-Jan. 10...	1	.....	
Yokohama	Nov. 19-Nov. 25...	1	.....	
Mexico:				
Chihuahua	Dec. 24-Feb. 3...	.....	38	
City of Mexico	Dec. 18-Feb. 11...	83	48	
C. Porfirio Diaz	Feb. 11-Feb. 17...	5	2	
Nuevo Laredo	Jan. 1-Dec. 31...	.....	16	
Vera Cruz	Dec. 22-Feb. 17 ..	.....	11	
New Brunswick:				
Campbellton	Jan. 22-Feb. 3...	45	0	
Gloucester County	Jan. 25-Feb. 15...	39	0	
Moncton	Jan. 19.....	.....	.....	Cases reported.
Northumberland County	Feb. 1-Feb. 15...	1	0	
Restigouche County	Jan. 16-Feb. 15...	73	0	
Westmoreland County	Jan. 18-Feb. 15...	3	0	
Ontario:				
Amherstberg	Feb. 11-Feb. 17...	1	.....	
Essex County	Oct. 30-Jan. 14...	238	0	
Kent County	Nov. 28-Jan. 14...	2	0	
Lambton County	Dec. 30-Jan. 14...	2	0	
Middlesex County	Dec. 6-Jan. 14...	1	0	
Quebec:				
Bonaventura County	Jan. 16-Feb. 5...	20	0	
Gaspé Basin	Jan. 26-Feb. 15...	12	.....	
Kamouraska County	Aug. 18-Feb. 5...	273	0	
Matane County	Dec. 16-Feb. 5...	3	0	
Russia:				
Moscow	Nov. 26-Jan. 27...	21	2	
Odessa	Dec. 3-Feb. 3...	65	16	
Riga	Nov. 1-Nov. 30...	.....	15	
St. Petersburg	Dec. 3-Jan. 27...	126	33	
Vladivostock	Nov. 1-Nov. 30...	3	.....	
Warsaw	Nov. 26-Feb. 1...	.....	45	
Scotland:				
Edinburgh	Jan. 14-Jan. 20...	1	.....	
Leith	Jan. 1-Jan. 6...	1	.....	
Spain:				
Cadiz	Oct. 1-Oct. 31...	.....	5	
Corunna	Dec. 3-Feb. 3...	.....	12	
Madrid	Dec. 3-Jan. 20...	.....	67	
Straits Settlements:				
Singapore	Nov. 5-Jan. 6...	.....	1[illegible]	
Switzerland:				
Geneva	Jan. 7-Jan. 28...	7	.....	
Zurich	Jan. 7-Jan. 27...	2	1	
Turkey:				
Constantinople	Dec. 19-Dec. 25...	.....	1	
Smyrna	Dec. 4-Feb. 4...	.....	11	
Uruguay:				
Montevideo	Nov. 26-Dec. 2...	1	.....	

CURRENT QUARANTINE MEASURES.

[Translated in this Bureau from the "Veröffentlichungen des Kaiserlichen Gesundheitsamtes," Berlin, February 7, 1900.]

ITALY.—By maritime sanitary order of January, 1900, the importation of animal hair from plague-suspect countries is forbidden.

SWEDEN.—By proclamations of January 15 and 20, 1900, the Government has declared Honolulu and New Caledonia plague infected.

BULGARIA.—Under date of January 12, 1900, all Egypt is declared free of plague, and the quarantine regulations put in force in May of 1898 against Egypt are suspended. The prohibition against the importation of rags, animal refuse, unclean clothing, utensils in use, old sacking in use, coverings, and waste paper from Egypt remains in force.

PORTUGAL.—By official proclamation of January 19, the measures ordered April 14, 1897, for protection against importation of plague are made to apply to arrivals from Paraguay, Kobe, Honolulu, the Philippines, Rio de Janiero, Sao Paulo, and New Caledonia.

JAPAN.—According to an order of the ministry of the interior, dated December 5, 1898, the quarantine period for a case of plague is extended from seven to ten days.

EPIDEMIC NOTES.

[Translated in this Bureau from the "Veröffentlichungen des Kaiserlichen Gesundheitsamtes," Berlin, February 7, 1900.]

Plague.

BRITISH EAST INDIES.—Comparison of the number of deaths in the city of Bombay for the two weeks ended January 2, 1900, with the corresponding numbers in the preceding year shows the following:

Week ended—	Totals for—				Average.	Plague deaths.			
	1900.	1899.	1898.	1897.	1891–1895.	1900.	1899.	1898.	1897.
December 26	.....	1,601	715	949	446	.....	301	119	200
January 2	1,600	859	1,040	.....	442	244	154	302	.....

BRAZIL.—Of the 10 plague cases reported in Sao Paulo, 5 occurred in December, 2 each on January 1 and 5, the latter in the person of a patient admitted to isolation hospital January 4. The ports of Rio de Janeiro and Santos are, according to advices of January 29 and 30, respectively, declared free of plague.

PARAGUAY.—According to announcements of the national board of health at Asuncion, 4 plague deaths occurred from December 9 to 21, and no further plague cases are reported.

The number of plague cases during the weeks named was 415 and 397, respectively.

JAPAN.—According to official advices of December 12, 1899, a plague death occurred on December 4 at Urukami near Nagasaki in the person of a Japanese. The case was not followed by others.

ARGENTINA.—On January 27 the outbreak of plague at Rosario was officially stated and the port was closed. Of the 7 plague-suspect cases 2 were reported fatal January 28.

NEW SOUTH WALES—*Sydney.*—According to advices of January 29, a case of plague is officially reported in Sydney.

NEW CALEDONIA—*Nouméa.*—From January 5 to 16, 11 cases and 7 plague deaths were reported.

Cholera.

BRITISH EAST INDIES—*Calcutta.*—During the week ended January 6 there were 15 cholera deaths.

ARABIA.

Plague in Aden.

WASHINGTON, D. C., *February 26, 1900.*

SIR: I have the honor, by direction of the Secretary of State, to inform you that a telegram of the 24th instant has been received from the consul at Aden, which reads as follows, viz, "Plague isolated."

Respectfully, THOS. W. CRIDLER,
Third Assistant Secretary.

Hon. SECRETARY OF TREASURY.

BELGIUM.

Report from Antwerp.

ANTWERP, BELGIUM, *February 13, 1900.*

SIR: I have the honor to report that the data regularly transmitted in the abstract of bills of health issued weekly and in the consular sanitary report represent in brief the sanitary conditions at this port. The death rate is about 100 per week among a population of 287,000, and about 30 per cent of these deaths are due to diseases of the respiratory tract. Smallpox and typhoid fever are constantly present, but the cases are so few that it can not be said that an epidemic of either disease at present exists. What has been said of these two diseases is also true of influenza.

Respectfully, E. K. SPRAGUE,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

BRAZIL.

Report from Santos—Plague and yellow fever.

SANTOS, BRAZIL, *January 24, 1900.*

SIR: I have the honor to report that in compliance with telegraphic orders, dated Washington, December 18, 1899, I left New Orleans on the Louisville and Nashville Railroad the evening of the same day, arriving at Jersey City on the 20th ultimo, where I was transferred by Surgeon Williams to the steamship *Wordsworth*, which cleared for Rio de Janeiro soon afterwards.

I arrived at Rio de Janeiro in the morning of January 11, 1900, and there, in conformity with your cablegram, was inoculated the same day with the Haffkine antitoxin serum by Dr. Cerni, bacteriologist of the University of Messina, Italy.

Its action was vigorously manifested in the course of a few hours as evidenced by rise of temperature and general malaise, which persisted for about twenty-four hours.

On invitation of Consul-General Seeger I passed a few days at the United States legation at Petropolis, where I was most hospitably entertained by Mr. Thomas C. Dawson, chargé d'affaires.

Returning to Rio de Janeiro on the 17th instant, I took passage on the German steamship *Itaparica*, which left on the same day direct for

Santos, thus obviating quarantine detention between Rio de Janeiro and Santos on account of a case of plague being discovered at Rio de Janeiro the day before.

I eventually arrived at Santos, after a detention and disinfection of the ship for nearly forty-eight hours at Ilha Grande, the quarantine station between Rio de Janeiro and Santos, reaching Santos in the morning of January 20.

The courtesies extended by Dr. Luiz de Faria, health officer of the port of Santos, may be here acknowledged.

From official sources I have to report that the total number of cases of plague admitted to the Hospital Isolamento from October 18, 1899, to January 23, 1900, amount to 39, of whom 15 died, 23 were discharged and 1 remains in said hospital. This case remaining, above referred to, was admitted on November 17, 1899, and has been in the convalescent stage since January 13, and has had no fever since that date; this case assumed a septicæmic form and the bubonic feature was never prominent. The erruption appeared three days after attack and was petechial in its character. Dr. Cerni found the plague bacilli in this case up to December 23. A relapse followed on January 2, and it was not until January 13 that convalescence was firmly established. It is expected that this patient will be discharged in a few days. It is the only known case of the disease in or about Santos.

I may add that it is generally asserted that no new case of plague has appeared at Sao Paulo, which is about 80 miles from Santos, for a period of twenty-two days.

I have also to report that yellow fever has made its appearance in Santos, the first case appearing on the 16th instant, and up to date numbers 10 cases, 2 of which have been fatal, 1 death occurring on the 17th instant and 1 on the 21st instant.

The British steamship *Asiatic Prince*, Woodhouse, which clears from Santos, Brazil, with a cargo of coffee, January 24, 1900, has a crew, all told, of 25, no passengers; were mustered and inspected just prior to departure, and all passed satisfactorily.

Respectfully,

WM. H. CARSON,
Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Date of last case and last death from plague.

WASHINGTON, D. C., *February 27, 1900.*

CARSON, *American Consulate, Santos, Brazil:*

Cable date last case, last death plague, and if disappeared among rats.

WYMAN,
Surgeon-General U. S. M. H. S.

FEBRUARY 28, 1900.

Last discharge February 10, last death January 2, evidence wanting to prove pest existed among rats.

CARSON,
Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

CUBA.

Report from Cienfuegos.

CIENFUEGOS, CUBA, *February 19, 1900.*

SIR: I have the honor to report that during the week ended February 17, 1900, 25 deaths have occurred in this city, 7 of which were in the civil hospital, 3 from malaria, 3 from intestinal diseases, and 4 from tuberculosis. Death rate for the week is 32.58. Ten foreign vessels entered this port and 8 cleared for foreign ports during the week.

United States revenue cutter *Viking* arrived here February 15 from Havana. Training ship *Lancaster* arrived at this port February 17, 435 crew, with 6 cases of yellow fever on board, 1 case developing since. The vessel put in quarantine, and everything is being done to prevent spread of the disease in this port. I will make report on same in few days.

Casilda.—Dr. Alejandro Cantero, reports 4 deaths in the city of Trinidad; no contagious diseases exist in the vicinity. Inspected 1 foreign vessel during the week.

Santa Cruz del Sur.—Dr. Juan R. Xiques reports no deaths during the week and no contagious diseases. Inspected 2 foreign vessels during the week.

Respectfully,

J. M. LINDSLEY,
Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Reports from Matanzas, Cardenas, Isabela de Sagua, and Caibarien.

MATANZAS, CUBA, *February 14, 1900.*

SIR: I have the honor to submit herewith report of the quarantine district under my command for the week ended February 10, 1900:

Matanzas.—Fourteen deaths occurred in the city of Matanzas during the period covered by this report, showing a mortality of 18.27 per thousand. The principal causes of deaths were as follows: Tuberculosis, 4; broncho-pneumonia, 2; enteritis, 2; malaria, 2; other causes, 4. The following cases of an infectious character were reported: Diphtheria, 4; measels, 2. Five foreign vessels were inspected on arrival. Six bills of health were issued to foreign vessels. Eleven health certificates were issued to persons leaving the island, 1 of these by way of Havana. Ten pieces of baggage were disinfected and 4 were inspected and passed.

Cardenas.—Acting Asst. Surg. Enrique Saez reports 10 deaths occurred in Cardenas during the week. The principal causes were as follows: Broncho-pneumonia, 1; tuberculosis, 1; enteritis, 1; other causes, 4. No cases of a particularly infectious or contagious character were reported. Seven vessels were inspected on arrival; 3 of these were foreign vessels and 4 coasting vessels. Four bills of health were issued to foreign vessels.

Isabela de Sagua.—Acting Asst. Surg. Pedro Garcia Riera reports that 2 foreign vessels were inspected on arrival and 2 bills of health were issued to foreign vessels.

Caibarien.—Acting Asst. Surg. Bernardo Escobar reports that 3 deaths occurred in Caibarien during the week. No cases of a particularly infectious or contagious character were reported. Two foreign vessels and 1 coasting vessel were inspected on arrival. Two bills of health

were issued to foreign vessels and 1 certificate of inspection to a coasting vessel.

Respectfully,

FELIX GARCIA,
Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

DOMINION OF CANADA.

Smallpox in New Brunswick.

AUGUSTA, ME., *February 17, 1900.*

SIR: I have just received a report from Dr. G. E. Coulthard, secretary of the provincial board of health of New Brunswick, in which he tells me that there were at the date of his writing, February 15, 68 cases of smallpox in the province in 11 different places. He does not report cases in St. John, New Brunswick. The outbreaks in nearly all the places originated from a tramp, who wound up his trip, as the secretary reports, by infecting 1 of the cars of the Inter-Colonial Railway. I inclose a copy of the tabulation received from Dr. Coulthard.

Respectfully,

A. G. YOUNG,
Secretary.

[Inclosure.]

Cases of smallpox reported in New Brunswick, February 15, 1900.

Parish.	County.	Date of outbreak.	Cases.				Remarks.			
			Total.	Still sick.	Died.	Recovered.	Houses infected.	Houses at present infected.	Isolated in hospitals.	Isolated in private houses.
Town Campbellton	Restegouche	Jan. 16	27	27	0	.....	25	11	26	1
Addington	do	Jan. 19	5	1	0	4	.....	.....	.....	5
Dalhousie	do	Jan. 24–Feb. 3	24	12	0	12	4	4	.....	24
Balmorel	do	Jan. 24	1	1	0	.....	1	1	.....	1
Colburn	do	Jan. 19	10	5	0	5	2	2	.....	10
Durham	do	Jan. 20	6	2	0	4	1	1	.....	6
New Brandon	Gloucester	Jan. 25	1	1	0	.....	1	1	.....	1
Bathurst	do	do	1	1	0	.....	1	1	.....	1
Beresford	do	Jan. 18–Feb. 8	37	25	0	12	7	4	3	34
Newcastle	Northumberland	Feb. 1	1	1	0	.....	.....	1	1	.....
Moncton	Westmoreland	Jan. 18–Feb. 3	3	2	0	1	1	1	3	.....
Total	.....	.....	116	78	0	38	43	27	33	83

ENGLAND.

Report from Liverpool.

LONDON, ENGLAND, *February 12, 1900.*

SIR: I have the honor to make the following report concerning the transactions of the Service at this port during the week ended February 10, 1900: The health of Liverpool remains good, no cases of quarantinable disease being reported for the week ended the 8th instant. Twelve vessels cleared during the week for United States ports. Of these, 2 were not inspected. Of 904 emigrants inspected and passed, the effects of 88 were disinfected and labeled.

I inclose herewith a certificate of disinfection from the German control station at Prostken. Cross examination of Russian emigrants presenting these certificates would lead me to believe that the process of disinfection

employed at these stations is thorough and effectual. The fact that Russians are shipped by way of Hango in Finland to avoid disinfection at the German frontier is also contributory evidence of value.

There is nothing new in the freight situation at this port.

Respectfully, H. S. MATHEWSON,
Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Report from Southampton.

SOUTHAMPTON, ENGLAND, *February 12, 1900.*

SIR: I have the honor to report that the following vessels were inspected at this port during the week ended February 10: Wednesday, February 7, steamship *Lahn*, of the North German Lloyd Line, bound for New York with passengers and cargo. There were inspected and passed 34 first and 1 second cabin passengers, and no luggage. As directed I procured the surgeon's certificate that no disease, infectious or contagious, had occurred on board since leaving port. Saturday, February 10, steamship *Saint Paul*, of the American Line, bound for New York with passengers and cargo. There were inspected and passed 128 second-cabin and 191 steerage passengers and 67 pieces of large and 228 pieces of small luggage. Five steerage passengers were rejected, 1 for favus, 4 for trachoma. Ten pieces of large luggage were disinfected, composed of bedding.

Respectfully, W. C. HOBDY,
Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

GERMANY.

Report from Bremen.

BREMEN, *February 12, 1900.*

SIR: I have the honor to inclose herewith a copy of the abstract of bills of health issued at the port of Bremen during the past week. This vicinity remains free from quarantinable diseases, and the slight epidemic of smallpox at Königsberg is reported as almost at an end. Only 1 case appeared during the past week. An epidemic of influenza is prevailing in Bremen, but as this is a disease for which no official report is required by the city health authorities, I am unable to give the number of cases and the mortality. An examination, however, of the weekly mortality reports for the last few months shows only a slight increase in the death rate, so it is likely that the epidemic is prevailing in a mild form.

Respectfully, JOSEPH B. GREENE,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Report from Hamburg—Influenza prevalent.

HAMBURG, *February 12, 1900.*

SIR: I have the honor to report for the week ended February 19, 1900: The steamship *Phœnicia*, of the Hamburg-American line, sailed

on Sunday, the 4th, carrying 766 steerage passengers. For these passengers 381 pieces of baggage were inspected and 126 were disinfected. The steamship *Pennsylvania* was inspected with reference to steerage accommodations on Friday, the 9th, preparatory to her sailing the following Sunday. Bills of health were issued during the week to 14 vessels, of which 12 carried cargo. The health of the port remains good, except for the increase in the prevalence of influenza, of which disease 595 cases were officially reported for the week ended February 3. There is some increase in the number of deaths from diseases of the respiratory organs, but the deaths directly ascribed to influenza are not reported. P. A. Surg. J. B. Greene visited me on the 8th instant for a conference on the subject of our work.

Respectfully, A. C. SMITH,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Smallpox in Königsberg.

STETTIN, *February 1, 1900.*

SIR: I beg to state that advice from our agent at Königsberg reports 8 cases, of which 3 proved fatal. Every precuation to prevent an epidemic is being put to use. Should it become epidemic, paragraphs 6 and 7 of article 4, Quarantine Regulations, will be put into force by refusing to certify to invoices for shipment of rags, etc. There is no direct steamship connection between Königsberg and the United States.

Respectfully, JOHN E. KEHL,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

HAITI.

Dysentery prevalent in Nippes.

CAPE HAITIEN, *January 19, 1900.*

SIR: I beg leave to hand you inclosed a translation of a medical report addressed to the Haitien Government by 2 doctors who were sent to the arrondissement of Nippes in the south of Haiti to investigate and report on a sickness that broke out in these localities in epidemic form some six months ago, and it seems is still spreading over other localities. No exact name is given to this malady, but thinking it important for the United States medical authorities to know about it at earliest opportunity, and not knowing whether the legation in Port au Prince had already the time to forward said report, I think I have acted to the Department's satisfaction in forwarding the report and its translation to-day.

Under separate cover I send the Official Gazette, which contains this report.

Respectfully, T. BEHRMANN.

Hon. ASSISTANT SECRETARY OF STATE.

[Inclosure.]

PORT AU PRINCE, *January 5, 1900.*

SIR: Appointed by your Government to go and study the epidemic, raging in the plains of the arrondissement of Nippes, in order to determine its nature, we made haste to depart on the steamer *Nouvelle Voldrogue*, and were at the place on December 19, 1899.

On our arrival at Anse-a-Veau, we at once put ourselves in communication with the local authorities.

The commander of the arrondissement, the commander of the districts, and the magistrate were unanimous in informing us that the populations of the plains had been for the past six months decimated by the epidemic, to the extent that in certain sections you would find the doors of houses closed on the right and left, the inhabitants having succumbed to the fatal malady which was at the moment raging in the districts of Petit Trou de Nippes and Baraderes. In order to better fulfill our mission, we at once decided to visit the above-mentioned districts.

The next day, with the good assistance of the commander of the arrondissement, we left for Petit Trou de Nippes, where the opportunity was afforded us to witness many cases where the appearances were so striking that we were thereafter determined on the diagnosis. Following is a brief description of the cases we have had under our notice:

An individual, in apparent perfect health, or after one or two days of malaise or blues, is taken by severe colics, followed sometimes by fever and vomiting, but always by incessant diarrhea. Soon the discharged matters change their nature; from bilious looking, as they were, they become totally sanguineous, characterized then by their incessant frequency, a painful expulsion, and their more or less insignificant quantities. The pains during these periods augment; they terminate invariably in false desires to go to the stool, which weaken the patient, who exhausts himself in fruitless efforts. This state reduces him to extreme prostration and finally to death. Thus ends, as a rule, the scene with all those attacked by the epidemic. Sometimes the stronger ones traverse this dangerous period, only to remain totally cachectic, with unfiltrated members and cadaverous faces, left thus by the diarrhea.

These are certainly classical signs of acute dysentery. There was no possible doubt, but to better establish our conviction we left on the early morning of December 22 for Baraderes. We will not relate to you all the dangers to which the infuriated north winds exposed our frail vessel, nor of the uncomfortableness experienced during the voyage. We content ourselves to tell you that at 1 o'clock we were at our destination, Baraderes. There the epidemic is making havoc. It would be useless repetition to retrace the symptoms, as they are the same as we have already described. It suffices only to add that from Baraderes to the Petit Trou de Nippes, as centers, the epidemic ranges far and is spreading in the plains, causing great disaster.

What can be the cause of this disease that is making so many victims? You must first know, that in our country, and in the tropics in general, there reigns an endemic state, that, to pass to the epidemic, certain conditions are necessary to be known: Poverty, the use of impure water, constipation, overwork, bad alimentation, the total absence of hygiene, and as meteorologic conditions--the season of great heat, dampness, the sudden falls of temperature, etc.

Following up the conscientious observations that we have gleaned, we think that the bad alimentation, the water, poverty, constipation, and lastly, the meteorologic conditions (the disease having made its appearance toward the month of June, in the height of summer) are the provoking causes of this epidemic. Thus, at Petit Trou de Nippes, the disease is making havoc among the poorer class, striking principally the population of mariners who inhabit the seashore; while at Baraderes, the permanent dampness of the earth, occasioned by the frequent overflow of the river which encircles the town, the use of this bad water, the agglomeration of a heterogeneous population, as the commerce of that district is called, contribute to the progress of the disease. You know how the causes unite and combine in our plains, and how the many deaths of which we have been informed can be accounted for.

To arrest the development of so great a plague, there is not, unfortunately, any univocal medication. Hygiene holds the highest place, and among the medicines in use we have had to choose the less expensive and most efficacious.

Here is the medication which we have adopted, and of which we have prescribed the common use to the commander of the arrondissement de Nippes: Hygiene and prophylaxis. Avoid all excesses; alcohol, indigestible food, excessive fatigue, constipation, the use of impure water, lying on the damp ground. Guard against the sudden changes of temperature, take care to disinfect the contents of the stools of the sick by burning them in a pit dug for that purpose.

Avoid as much as possible contact with the sick, clean the bed linen carefully, and drink boiled water, filtered, if possible.

The disease once installed, place the patient immediately on a milk diet exclusively, and absolute rest in bed. Take, at the very first appearance of the disease, a purgative of salts, after which take as a tisane an infusion of 8 grammes of ipecac root in a pint bottle of water; renewing the tisane for three days with the same roots.

Let the patient take warm baths, generally from fifteen to twenty minutes, apply

to the abdomen laudanum emollient cataplasms. For infants abstain from using laudanum. To calm the straining, give warm emollient baths, adding 20 drops of laudanum. During convalescence, while continuing the diet of milk, restore the alimentation by beginning with eggs, raw beef (minced), brains, fresh fish (broiled), etc., but abstain from eating fat.

As tonic take a wineglass of maceration of quinquina before each meal. The above are the measures we have adopted, and it seems to us they should render valuable services if well executed. It is to be hoped that the Government, taking into consideration the fate of the country people, will put within their reach the means of being benefited by this treatment, through the magistrates of the different districts, by establishing a free service of the proper medicines. It would be advisable, also, that two physicians, at least, should officiate in the communities visited by the epidemic until its total extinction.

We will not close this report without paying a just homage and addressing our warmest thanks to Gen. Larrieux Jeune, commander of the arrondissement of Nippes, who gave us most cordial hospitality, and also to his aides, Generals Marmontel St. Louis, and Esope Milfort, commanders of the districts of Petit-Trou and Baraderes, whose sympathetic reception rendered easy our task. The remarkable zeal of the magistrates of the towns we visited, deserves mention also.

Accept, Mr. Secretary, the assurance of our distinguished sentiments.

DR. PAUL SALOMON,
DR. LELIO HUDICOURT.

Hon. SECRETARY OF THE INTERIOR.

HAWAIIAN ISLANDS.

Report from Honolulu.

HONOLULU, H. I., *February 2, 1900.*

SIR: I append on the overleaf a copy of my telegram of this date relative to the number of deaths by plague at this place since my last report of January 23.

The situation has changed wonderfully for the good since January 23. Two deaths occurred on January 24. Both of these were Chinese and outside of the detention camps; and one each on the 26th, 28th, and 31st. No new cases have been found since the 23d, with the exception of 1 at the Kalihi Detention Camp.

When the whole of Chinatown burned down on January 20, about 4,500 Chinese, Japanese, and natives were left homeless. This large number from the quarantined district had to be crowded into the detention camp, which had to be established to house those taken out of houses where deaths had occurred. It was thought that the number of cases would be large for a time because of the crowded condition, but only 1 case has developed since the 25th.

The camp now contains about 6,000 persons. At first they were not separated, so that as 1 case developed it made it necessary to begin the quarantine period over again. Now they are dividing the camp into sections, keeping up a perfect segregation, so that as soon as one section goes through the required period they may be allowed to go.

Yesterday the president of the board of health took Dr. Carmichael and myself through the Kalihi Camp. The intelligent work which has been done there in such a short time is something wonderful. The new arrivals are brought into a disrobing room, and from there taken to well-appointed bathrooms where they are bathed, and then taken to an uncontaminated room where new clothes are given them. From there they go to new houses which have been made aseptically clean. The clothes worn by the new arrivals are hung up in a hermetically sealed house and fumigated with sulphur fumes and then taken in clean covered carts to the camps.

The houses are detached, not more than 4 families being in the same

building. Back of each row of houses is a flume filled with a rapid stream of water running through it constantly. Over this flume, houses are built for closets and places for washing clothes and bathing. A heavy hammer dropped into the stream will be carried out to sea. The place is always sweet and clean. The camp is located about one mile and a half from the city and is probably to-day the most sanitary place in the city.

The precautions taken with the sugar cargoes to prevent contamination are equally good. No vessel is allowed to have any communication with the shore after she is fumigated, and most of them are discharged away from the docks. No sugar is allowed aboard which has been exposed.

I have no hesitation in saying, with the precautions now being taken, commerce between the islands and San Francisco is much safer than that between Hongkong and the coast for the past three years.

Respectfully, WM. HAYWOOD,
United States Consul-General.

Hon. ASSISTANT SECRETARY OF STATE.

[Telegram.]

HONOLULU, H. I., *February 2, 1900.*

Hon. SECRETARY OF STATE, *Washington, D. C.:*

Situation much improved. Since 23d, 5 deaths. Mostly old cases. Only 1 new case since 25th, and that in detention camp. Eight days without new case. HAYWOOD.

Report from Honolulu.

HONOLULU, H. I., *February 8, 1900.*

SIR: I have the honor to inform you that since my last report on the 2d instant the situation here relative to the plague has not improved.

Two new foci of infection have been found in the business part of the city adjoining Chinatown, which seem to point strongly to the fact that the infection has been spread by rats or other vermin driven from Chinatown.

J. W. Robertson, an American and an employee of the Waterhouse Grocery Company on Bethel street, was taken ill on January 31. He was attended by his family physician, but the case was not considered suspicious until late on February 2, after my report had been mailed, when the board of health was notified and the case diagnosed as plague and removed to the plague hospital at Kakoako. Mr. Robertson resided on Nuuana street between School and Vineyard in what was considered a healthy part of the city.

This was the first case in which the antiplague serum was used and the first case reported in the city since January 25. Forty cubic centimeters of the serum were injected into the scapular region and repeated in a few hours. Improvement in the bubonic symptoms followed but the temperature rose to 105° F. and over.

The temperature fell after a few hours and improvement was noted up to noon of the 4th instant. A change for the worse then took place and the patient died at 4 p. m. that day. The temperature before death was 106.40° F. I was present at the necropsy held by Dr. Garvin, which was attended by Dr. C. B. Wood, president of the board of health; Drs. Herbert, Emerson, Jobe, Petersen, and Stansfield. A characteristic bubo was found in the right groin and the gross post-mortem

appearances seen in the other cases were present. The diagnosis was subsequently confirmed by bacteriological examination. Infection in this case has not been clearly traced up to the present time of writing.

The other center of infection is in block 19, north and east of block 20 at the Pantheon livery stables and saloon. From this place 3 cases in all have been traced, 2 Chinese and 1 white American. The 2 Chinamen are dead, and the white man is improving at the pest hospital. The case of 1 of the Chinamen was not diagnosed until some time after death, or until cultures taken from him had developed. The other Chinaman died before the arrival of the antiplague serum. The first Chinaman had the pneumonic type of plague. The white man, Hartman, was removed from the Pantheon stables on February 5, to the pest hospital and given an injection of 20 c. c. of the antipest serum. He has improved since that time and the injection has not been repeated.

I was told to-day that his temperature is normal and his chances for recovery are good. The development of the bubo in this case was apparently arrested.

The Pantheon livery stables and saloon were burned by order of Dr. C. B. Wood, president of the board of health, yesterday morning.

The following cases of plague have been recorded since my last report: February 2, 1 case, no deaths; February 4, 1 case, 2 deaths; February 5, 2 cases, no deaths; February 6, no cases, 1 death; February 7, no cases, no deaths.

Sixty-three cases of plague and 50 deaths from that disease have been recorded from December 12 to date. The detention camps at Kalihi, the drill shed, and Kakoako are still in operation. A number of people held at the latter have been released from quarantine, and a number of those who have completed their time of detention, but are homeless, have been allowed to remain at the camp for the time being.

The morgue, near the board of health offices, was burned by official order to-day, and a new morgue will be occupied near the plague hospital.

I have every hope that energetic measures will soon be adopted by the city authorities to exterminate rats and other vermin, but as rats abound in these islands, the task seems herculean.

* * * * * * *

Sugar is still shipped from here to San Francisco under the precautions noted in former letters and all vessels and effects of those on board are fumigated before departure for United States ports. But few rats have been found in the vessels after fumigation and they do not seem to be so numerous about the docks and shipping as in former times. The antiplague serum has been used by the board of health in 3 cases up to date, but owing to the press of work, I have been unable to obtain the clinical histories of the cases from the board of health.

Respectfully,

D. A. CARMICHAEL,
Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

NOTE.—Referring to the above letter and the treatment of Mr. Robertson by the antiplague serum, the Surgeon-General has written to Dr. Carmichael calling his attention to previous communications, and particularly to the results of the experiments of Chalmette and Salimbini in the Oporto epidemic of plague, in which it is stated that much larger doses of the serum must be used than have heretofore been considered necessary; that 160 to 200 c. c. may with advantage be used in the first forty-eight hours of the disease and that 20 to 40 c. c. of this amount should be given intravenously. The Bureau is fully impressed with the value of the serum as a curative agent if used in proper quantity and also of its innocuousness with the plan of treatment suggested.

Three deaths from plague February 19.

HONOLULU, H. I., *February 20,*
Via San Francisco, February 27, 1900.

SIR: There have been 3 deaths from plague February 19, first since February 6.

CARMICHAEL,
Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

JAPAN.

No plague for fifteen days—Detention of steerage passengers discontinued.

YOKOHAMA, JAPAN, *January 28, 1900.*

SIR: I have the honor to forward herewith a copy of circular issued to-day to shipping companies discontinuing the detention of fifteen days, which has for some time been enforced, in view of the fact that the last case of plague in Kobe or Osaka occurred fifteen days ago.

I have, however, deemed it wise to continue disinfection of persons, clothing, and bedding for the present.

Respectfully, STUART ELDRIDGE, M. D.,
Acting Assistant Surgeon, U. S. M. H. S., Sanitary Inspector.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure—Circular.]

YOKOHAMA, JAPAN, *January 28, 1900.*

No plague having occurred at Kobe since December 23, or at Osaka since January 13, a period of fifteen days since the last case, the detention of fifteen days recently enforced upon all steerage passengers for points in United States territory, including Hawaii, the Philippine Islands, and Guam, who have come from, or passed through, Hiogo Ken or Osaka Fu, is discontinued.

In view, however, of the persistence of plague germs in clothing, bedding, etc., disinfection will still be enforced as regards the persons and baggage of the above class of passengers, unless such disinfection has already been carried out by the sanitary inspector of the United States or Hawaii at Kobe.

STUART ELDRIDGE, M. D.,
Sanitary Inspector, U. S. M. H. S.

Approved:
JOHN F. GOWEY,
Consul-General of the United States.

YOKOHAMA, JAPAN, *January 30, 1900.*

SIR: I have the honor to report that no case of plague has been detected in Japan (with the exception of Formosa) since January 13.

In my report of the 26th instant I remarked upon the very active measures taken by the Government in combatting the epidemic. I have since learned that the official work was most energetically seconded by contributions and labor on the part of private individuals and firms. One large factory, in Kobe, alone expended 20,000 yen in sanitary measures connected with its buildings and employees.

No other infectious disease of quarantinable nature is reported from any part of this Empire.

Respectfully, STUART ELDRIDGE, M. D.,
Acting Assistant Surgeon, U. S. M. H. S., Sanitary Inspector.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

No further cases of plague in Osaka and Kobe.

KOBE, JAPAN, *January 29, 1900.*

SIR: I have the honor to inform you of the receipt of your communication dated December 22, 1899. I have complied with Dr. Carmichael's request and furnished him with the information he asked for. There have been no further cases of plague here or in Osaka—making Kobe clear for thirty-six days and Osaka clear for fifteen days.

Respectfully, J. BUCKWILL FOWLER,
Sanitary Inspector, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

NETHERLANDS.

Reports from Rotterdam.

ROTTERDAM, NETHERLANDS, *February 9, 1900.*

SIR: I have the honor to forward herewith a copy of a letter received by the United States consul at this port from the burgomeester of the city of Rotterdam in reply to inquiries made at my request regarding quarantine at this port. I have learned from other sources that barracks have been prepared at Maassluis for the reception of suspects and the sick, but that up to the present time it has not been necessary to use these buildings on account of plague.

Respectfully, A. R. THOMAS,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure.]

ROTTERDAM, *February 8, 1900.*

SIR: In answer to your letter, February 5, I have the honor to inform you that in affairs of quarantine the rules of the Venetian convention (March 19, 1897) are followed. The sanitary inspection by Government officers is made at Maassluis.

At Rotterdam the captain of the harbor and the chief commissioner of police are charged with the application of the regulations.

As infected at present, are considered: Calcutta, Alexandria, Oporto, Santos, Lorenzo Marquez, Rio de Janeiro, Rosario (Argentine Republic), Portugal, and Paraguay. However, it may be remarked that the period of incubation is reckoned to be twelve days, and that, as to the application of real quarantine, which eventually is held near Maassluis, the time since the departure from the infected harbor or since the last case of sickness on board is always taken in consideration.

S. JACOB,
The Burgemeester von Rotterdam.

ROTTERDAM, NETHERLANDS, *February 12, 1900.*

SIR: I have the honor to make the following report for this station for the week ended February 12, 1900:

During the week 4 vessels were inspected and received bills of health. The Holland-Amerika Line steamship *Spaarndam* sailed for New York February 7 with freight and passengers. She carried 11 cabin and 133 steerage passengers. Forty-one pieces of baggage were inspected and labeled and 34 pieces were disinfected and labeled.

The steamship *Hanseat*, sailing from this port the 7th instant for Philadelphia, had 1 case of typhoid fever aboard, in the person of the captain's son. He declined to send him to the hospital, and the fact was

noted on the bill of health. All freight shipped from this port during the week has been satisfactory.

Respectfully,

A. R. THOMAS,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

PORTO RICO.

Report from Ponce.

PONCE, PORTO RICO, *February 12, 1900.*

SIR: I have the honor to transmit herewith the weekly quarantine and abstract of bills of health reports and mortality statistics for past two weeks. The disinfecting room has been completed and is now ready for use. With this addition to the station equipment we can efficiently disinfect clothing, baggage, bedding, etc. I am having a copy of the plan and specifications made which I will forward to the Bureau when completed. Nothing of special interest has occurred in the shipping at this port.

Respectfully,

W. W. KING,
Assistant Surgeon, U. S. M. H. S.

[Inclosure.]

Number of deaths in Ponce jurisdiction (city, playa, and surrounding country) during the two weeks ended February 10, 1900.

Infectious diseases—	
Tuberculosis	7
Malarial fever	4
Tetanus	4
Septicæmia	2
Diseases of the digestive apparatus	46
Diseases of the circulatory system	6
Diseases of the respiratory system	5
Diseases of the nervous system	1
Other diseases (anæmia, inanition, etc.)	27
Total	102
Births in the same period	62

Monthly report from San Juan and subports.

SAN JUAN, PORTO RICO, *February 12, 1900.*

SIR: I have the honor to submit consolidated report for the month of January, 1900, for this station and the 5 subports:

Eighty-eight births and 93 deaths were reported during the month in the San Juan jurisdiction. Forty-two vessels were inspected against 38 during the same month of 1899.

The Spanish steamer *Montserrat*, which arrived from Havana on January 3, was not admitted to pratique, but transacted her business in quarantine. She brought 12 nonimmune passengers for this port, and they were held in observation quarantine at the Miraflores Station to complete the five-day period.

All baggage was disinfected in Havana except 3 pieces which were marked "To be disinfected," and these, together with the hand baggage which had been opened and used aboard ship during the voyage, 17 pieces in all, were disinfected at this port.

Vaccination certificates are still being issued to all persons leaving on the United States transports. The inspection of all baggage from Spanish ports has been instituted and will be rigidly enforced.

The health of this city continues fair. A report was current some days ago that there were several cases of smallpox in the city, but I investigated the matter and found that the cases were chicken pox.

The weather during the month has been pleasant, with frequent rains, the total precipitation being 3.93 inches.

The subports report that their respective localities are free from infectious or quarantinable diseases and that there was nothing unusual in their quarantine work. During the month 12 vessels were inspected at Mayaguez, 9 at Humacao, 4 at Arecibo, 3 at Aguadilla, and 2 at Arroyo.

The number of deaths reported for the month was as follows: Mayaguez, 148; Humacao, 73; Arecibo, 100; Aguadilla, 36, and Arroyo, 11.

The usual list of the causes of deaths at San Juan is inclosed.

Respectfully,

C. H. LAVINDER,
Assistant Surgeon, U. S. M. H. S., In Command.

[Inclosure.]

Vital statistics of San Juan, Porto Rico, for January, 1900.

Malaric cachexia	1
Hepatic abscess	1
Internal hemorrhage (traumatic)	2
Eclampsia	2
Chronic metritis	1
Alcoholism	1
Aneurism of sub-clavia	1
Paralysis	1
Flegmasia alba-dolens	1
Athrepsia	2
Endo-carditis	1
Entero-colitis	6
Cancer of stomach	1
Tetanus infantum	2
Enteritis	18
Diphtheria	1
Meningitis	1
Cardiac lesion	1
Cirrhosis of the liver	4
Acute bronchitis	2
Pulmonary tuberculosis	10
Cerebral congestion	4
Anæmia	4
Old age	1
Dysentery	1
Mitral insufficiency	5
Rachitis	6
Pyæmia	1
Osteo-periostitis	1
Aortic stenosis	1
Stillborn	9
Total	93
January, 1899—	
Births	41
Deaths	81
January, 1900—	
Births	88
Deaths	93

Medical inspection of alien immigrants.

SAN JUAN, PORTO RICO, *February 12, 1900.*

SIR: Referring to your letter of January 27, 1900 (F. L. G.) directing me to establish medical inspections of alien immigrants arriving in this island, under the authority of an order from the War Department, a copy of which was transmitted to me by Governor-General Davis, I have the honor to inclose herewith, for your information, a copy of my instructions sent to the 5 subports with forms for reports and letters, as well as copies of all correspondence referring to the matter. As soon as the printed forms for reports are received a supply will be sent to the subports and to Ponce.

In this connection I respectfully request information as to the detention of unmarried pregnant females (immigrants), which is done in New York, I think. If they are to be detained, I think the subports should be informed of it, or else they will probably not do so.

Furthermore, I request that sufficient copies of the Immigration Laws of the United States be forwarded me for distribution to the subports, as the copies of the immigration regulations for Porto Rico sent me contain practically no information concerning medical inspection of immigrants.

Respectfully,

C. H. LAVINDER,
Assistant Surgeon, U. S. M. H. S., In Command.

[Inclosure No. 1.]

SAN JUAN, PORTO RICO, *February 9, 1900.*

SIR: Under the authority of the War Department order of January 20, assigning the medical inspection of alien immigrants arriving in this island to medical officers of the Marine-Hospital Service, a copy of which was furnished me from headquarters, the Surgeon-General has directed me to assume the duty of inaugurating these inspections both here and at the subports of the island.

I have therefore prepared the inclosed circular letter, which is to be translated into Spanish, and which is nothing more than an explanation of the law and the methods usually employed under the law, to be sent to the various subports. Printed forms for reports, as well as copies of the Immigration Laws of the United States, will be sent as soon as they are received.

This is reported to you by direction of the Surgeon-General of this Service.

Respectfully,

C. H. LAVINDER,
Assistant Surgeon, U. S. M. H. S.

The ADJUTANT-GENERAL,
Department of Porto Rico, San Juan, Porto Rico.

[Inclosure No. 2—Circular.]

SAN JUAN, PORTO RICO, *February 9, 1900.*

Dr. ——— ———,
Sanitary Inspector, U. S. M. H. S.,
Port of ——— ———, Porto Rico.

SIR: By virtue of an order issued from the War Department (January 20, 1900), and in compliance with the instructions of the Surgeon-General of the Marine-Hospital Service, the medical inspection of all alien immigrants arriving in this island will in future be made by medical officers of this Service.

You are, therefore, directed upon the receipt of this letter to inaugurate medical inspections of all alien immigrants arriving at your port; making reports of all persons rejected by you to the collector of customs at your port in a letter similar to the one inclosed as a model (A), and rendering weekly reports to this office similar to the model inclosed (B).

For your guidance in this work I mail you to-day, under separate cover, a copy of the Immigration Regulations of Porto Rico.

Succinctly stated, your duty in these inspections is to prevent the landing of any alien immigrant of any one of the following classes: "All idiots, insane persons, * * * or persons likely to become a public charge" (by physical disability), and

"all persons suffering from a loathsome or dangerous contagious disease." But it must be borne in mind that your inspections are purely *medical* in their nature, and that your duty in preventing the landing of alien immigrants is ended when you have reported any medical disabilities discovered by you to the collector of customs. You have no further concern as to the disposition of persons reported disabled by yourself except to inform yourself of such disposition and embody it in your reports.

In conclusion I wish to point out that these inspections are entirely independent of your quarantine duties. If a vessel arrives carrying immigrants for your port, you, as quarantine officer, are to proceed as with all other vessels, and not to make your inspection of immigrants until you have completed your duties as quarantine officer.

Respectfully, C. H. LAVINDER,
Assistant Surgeon, U. S. M. H. S., In Command.

PHILIPPINE ISLANDS.

P. A. Surg. J. C. Perry reports his arrival at Manila.

MANILA, P. I., *January 13, 1900.*

SIR: I have the honor to inform you that I sailed on the first steamer leaving Hongkong after the receipt of orders and arrived here on the 12th instant.

I reported to Major-General Otis, and was placed on quarantine duty pending the arrival of Surgeon Carmichael. The quarantine station and work will be transferred to him upon arrival.

The old Spanish quarantine station, which will be transferred to the United States Marine-Hospital Service, is situated at the mouth of Manila Bay, opposite Corregidor Island, and is 40 miles below the city. During the Spanish occupation, this station (Marevallis) was quite well equipped with buildings, but there was no wharf or disinfecting plant.

Little is known of the present condition of the property, as that district has, until the past few days, been in the hands of the insurgents. In fact, it is not yet safe to be there without a guard.

The army is now sending a larger force to Subig, and from that point one company of troops will be sent to Marevallis to act as guard, so that in a week or ten days affairs will be in such a condition as to permit of an examination of the property.

The disinfecting plant shipped through the Quarantine Department has not yet been received.

Respectfully, J. C. PERRY,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Plague in Manila.

MANILA, P. I., *January 15, 1900.*

SIR: Relative to the plague situation in this city, I have the honor to hereby inform you that to date there have been 3 cases and 6 deaths, and 3 centers of infection have been found.

The attention of the board of health, composed of army medical officers, was attracted by the report of 2 deaths from enteric fever occurring in the same house in a few days. Upon examination it was found that death had resulted from plague, and a third case was found in the immediate vicinity.

The army officials are working energetically; have established a hospital for detention of sick, instituted house-to-house inspection, organized a disinfection corps, and their plan of work is as effective as it can be when dealing with Asiatic races.

So far the disease has been principally among the Filipinos, although 2 Chinese cases have been reported. The death rate of the city does not show an increase, and it is fair to presume that there have not been many cases of plague. It is too early to speak much on the situation, but at the time of writing the situation is not alarming.

Respectfully, J. C. PERRY,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

FOREIGN STATISTICAL REPORTS.

BRITISH COLUMBIA—Month of January, 1900. Estimated population, 30,000. Total number of deaths, 21. No deaths from contagious diseases reported.

BRITISH HONDURAS—*Belize.*—Month of December, 1899. Estimated population, 30,000. Total number of deaths, 83, including whooping cough, 13, and 9 from phthisis pulmonalis.

FRANCE—*Nantes.*—Month of January, 1900. Estimated population, 130,000. Total number of deaths, 393, including diphtheria, 1; enteric fever, 7; measles, 9, and 1 from whooping cough.

Nice.—Month of January, 1900. Estimated population, 108,227. Total number of deaths, 340, including diphtheria, 5; enteric fever, 3; whooping cough, 1; smallpox, 5, and 33 from tuberculosis.

Roubaix.—Month of January, 1900. Estimated population, 127,178. Total number of deaths, 256, including enteric fever, 1; measles, 15, and 1 from whooping cough.

GREAT BRITAIN—*England and Wales.*—The deaths registered in 33 great towns in England and Wales during the week ended February 3, 1900, correspond to an annual rate of 21.2 a thousand of the aggregate population, which is estimated at 11,610,296. The highest rate was recorded in Sunderland, viz, 35.4, and the lowest in Derby, viz, 12.6.

London.—One thousand seven hundred and twenty-two deaths were registered during the week, including measles, 27; scarlet fever, 10; diphtheria, 46; whooping cough, 45; enteric fever, 17, and diarrhea and dysentery, 14. The deaths from all causes correspond to an annual rate of 19.6 a thousand. In Greater London 2,263 deaths were registered, corresponding to an annual rate of 17.7 a thousand of the population. In the "outer ring" the deaths included 14 from diphtheria, 3 from measles, 5 from scarlet fever, and 7 from whooping cough.

Bradford—Two weeks ended January 27, 1900. Estimated population, 291,535. Total number of deaths, 286, including diphtheria, 3; enteric fever, 1; measles, 11; scarlet fever, 7, and 2 from whooping cough.

Sunderland—Two weeks ended February 3, 1900. Estimated population, 147,398. Total number of deaths, 188, including diphtheria, 1; measles, 1, and 1 from scarlet fever.

Ireland.—The average annual death rate represented by the deaths registered during the week ended February 3, 1900, in the 22 principal town districts of Ireland was 28.8 a thousand of the population, which is estimated at 1,062,188. The lowest rate was recorded in Drogheda, viz, 11.4, and the highest in Tralee, viz, 67.2 a thousand. In Dublin and suburbs 238 deaths were registered, including diphtheria, 3; enteric fever, 2, and 1 from scarlet fever.

Scotland.—The deaths registered in 8 principal towns during the week

ended February 3, 1900, correspond to an annual rate of 23.7 a thousand of the population, which is estimated at 1,606,935. The lowest mortality was recorded in Paisley, viz, 16.6, and the highest in Perth, viz, 40.5 a thousand. The aggregate number of deaths registered from all causes was 733, including diphtheria, 9; measles, 25; scarlet fever, 11, and 8 from whooping cough.

SIBERIA—*Vladivostock.*—Month of September, 1899. Estimated population, 30,000. Total number of deaths not reported. Two deaths from typhus and 1 from enteric fever.

Month of October, 1899. One death from enteric fever.

Month of November, 1899. One death from typhus and 1 from enteric fever.

ITALY—*Genoa.*—Month of December, 1899. Estimated population, 221,589. Total number of deaths, 260, including diphtheria, 3; enteric fever, 6; measles, 3, and 45 from phthisis pulmonalis.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Acapulco	Feb. 10	6,000	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alexandretta	Feb. 3	8,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Amherstburg	Feb. 17	2,300	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Amsterdam	Feb. 10	523,743	173	.....	....	.....	.....	.....	.....	2	.....	.....	1	1
Antwerp	Feb. 3	287,462	100	.....	.....	.....	.....	.....	.....	1	.....	3	.....	5
Athens	....do....	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barranquilla	....do....	40,000	19	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belize	Feb. 15	13,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Birmingham	Feb. 10	519,610	217	.....	.....	.....	.....	.....	.....	2	1	2	2	8
Brussels	Feb. 3	551,611	167	.....	.....	.....	.....	.....	.....	1	1	5	.....	2
Budapest	Feb. 5	640,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	.....
Cairo	Jan. 21	570,000	435	.....	.....	.....	.....	4	.....	2	.....	6	.....	.....
Calcutta	Jan. 13	681,560	587	.....	45	30	.....	9	.....	1	.....	.....	.....	.....
Callao	Jan. 21	25,000	14	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 30	25,000	33	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cartagena	Jan. 20	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 27	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 3	25,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Catania	Feb. 8	124,000	80	2	.....	.....	.....	.....	2	.....	3	.....	.....	.....
Ciudad Porfirio Diaz	Feb. 17	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colombo	Jan. 5	130,000	36	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Do	Jan. 13	130,000	96	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colon	Feb. 7	8,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 14	8,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Constantinople	Feb. 4	875,000	283	.....	.....	.....	.....	.....	.....	11	.....	.....	2	.....
Corunna	Jan. 13	38,400	31	.....	.....	.....	.....	3	.....	1	.....	.....	.....	.....
Do	Jan. 27	38,400	19	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Do	Feb. 3	38,400	35	.....	.....	.....	.....	2	1	3	.....	.....	.....	.....
Curaçao	.....do.....	29,718	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 10	29,718	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dusseldorf	Feb. 3	203,400	73	.....	.....	.....	.....	.....	.....	.....	1	2	3	.....
Frankfort-on-the-Main	..... do.....	257,000	96	.....	.....	.....	.....	.....	.....	.....	1	2	2	.....
Funchal	Feb. 4	36,982	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gaspé Basin	Feb. 15	47,710	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Geneva	Jan. 20	95,348	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
Do	Jan. 28	95,348	35	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Gibraltar	.....do	25,900	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 4	25,900	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Girgenti	Feb. 3	24,428	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax	Feb. 17	45,000	33	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	6
Hamilton, Bermuda	Feb. 13	16,000	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Havre	Jan. 27	119,470	81	11	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Do	Feb. 3	119,470	73	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kurrachee	Jan. 21	98,195	136	.....	13	.....	.....	1	.....	.....	.....	.....	.....	.....
Kingston, Canada	Feb. 16	18,300	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leeds	Feb. 10	423,889	235	.....	.....	.....	.....	1	.....	1	.....	9	2	6
Leipsic	Feb. 3	439,200	127	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Licata	..... do.....	20,000	14	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....

MORTALITY TABLE, FOREIGN CITIES—Continued.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Lyons	Jan. 27	466,028	219	.....	.....	.....	.....	1	.....	2	.....	4	.....	1
Madras	Jan. 17	452,518	408	.....	.....	.....	.....	1	.....	.....	.....	.....	11	.....
Matamoras	Feb. 4	16,604	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexico	Feb. 11	344,377	409	.....	.....	.....	.....	7	9	.....	.....	.....	.....	1
Monrovia	Jan. 13	2,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monte Cristi	Feb. 10	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monterey	Feb. 15	25,000	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montevideo	Dec. 16	215,061	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Do	Dec. 23	215,061	79	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Do	Jan. 6	215,061	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nice	Feb. 7	108,227	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nuevo Laredo	Feb. 3	6,000	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 10	6,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 17	6,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nuremburg	Jan. 27	240,673	98	.....	.....	.....	.....	.....	.....	.....	.....	1	2	1
Odessa	Feb. 3	434,600	164	.....	.....	.....	.....	2	.....	1	5	2	.....	.....
Palermo	....do....	300,000	135	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Panama	Feb. 13	16,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Limon	Feb. 10	3,500	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prague	Feb. 3	190,260	119	.....	.....	.....	.....	.....	.....	.....	2	1	.....	2
Quebec	Feb. 17	73,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rio de Janeiro	Dec. 22	768,000	267	52	.....	.....	5	28	.....	1	.....	.....	.....	.....
Do	Dec. 29	768,000	321	44	.....	.....	5	35	.....	.....	.....	1	1	.....
Do	Jan. 5	768,000	322	62	.....	.....	13	16	.....	.....	.....	.....	1	.....
Do	Jan. 12	768,000	301	43	1	.....	7	23	.....	.....	.....	.....	2	.....
Rome	Jan. 6	512,423	7	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....
Do	Jan. 13	512,423	2	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
St. Georges, Bermuda	Feb. 10	2,150	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. John, New Brunswick.	Feb. 17	45,000	21	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. John, West Indies	Feb. 3	15,000	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 10	15,000	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Petersburg	Jan. 27	1,267,023	698	.....	.....	.....	.....	6	.....	17	22	30	18	8
St. Stephen, New Brunswick.	Feb. 17	3,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Thomas, West Indies	Jan. 19	12,017	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Singapore	Jan. 6	97,111	172	32	.....	.....	1	.....	.....	.....	3	.....	.....	.....
Smyrna	Jan. 28	300,000	45	9	.....	.....	.....	.....	.....	4	.....	.....	.....	.....
Do	Feb. 4	300,000	48	7	.....	.....	.....	1	.....	3	.....	.....	.....	.....
Southampton	Feb. 3	105,831	43	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Stettin	.....do.....	153,000	65	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Stuttgart	Feb. 8	162,934	68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tampico	Feb. 4	14,000	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 11	14,000	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tegucigalpa	Dec. 30	12,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 6	12,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 13	12,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 20	12,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Jan. 27	12,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 3	12,000	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trapani	Feb. 5	45,095	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trieste	Jan. 27	166,499	123	.....	.....	.....	.....	.....	.....	2	1	2	3	.....
Do	Feb. 3	166,499	106	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Tuxpan	Feb. 5	10,000	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 12	10,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utilla	Feb. 3	800	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Feb. 10	800	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vera Cruz	Feb. 17	25,000	38	8	.....	.....	2	2	.....	.....	.....	.....	.....	.....
Vienna	Jan. 26	1,639,811	32	.....	.....	.....	.....	.....	.....	1	2	9	18	2
Warsaw	Feb. 1	645,848	283	.....	.....	.....	.....	5	1	.....	3	7	3	5
Yokohama	Jan. 13	189,455	.....	.....	.....	.....	.....	.....	.....	1	.....	4	.....	.....
Do	Jan. 20	189,455	.....	.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....
Zurich	Feb. 3	164,149	74	.....	.....	.....	.....	.....	.....	.....	1	.....	7	.....

By authority of the Secretary of the Treasury:

WALTER WYMAN,

Surgeon-General U. S. Marine-Hospital Service.