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UNITED STATES.

PRELIMINARY NOTE ON THE VIABILITY OF THE BACILLUS PESTIS.

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There seem to be three factors that influence the life of the bacillus pestis in the outer world, viz, light, moisture, and temperature. The bacillus withstands quick drying very badly, as all the experiments in this direction indicate. It can not live long in the sunshine. High temperatures are invariably fatal.

That it always and under all circumstances dies in so short a time as five days, as the work of Kitasato and Wilm first indicated, must now be doubted in view of the experience of Abel, Ficker, Batzaroff, Hankin, The German Plague Commission, Germano, Giaxa, and myself.

The bacillus of plague does not exist in nature on glass cover slips, nor yet in the desiccator over concentrated sulphuric acid. With us it certainly would not be exposed to drying in our houses, and on fabrics at temperatures of 30° and 37° C., conditions under which many of the tests to determine the viability of the organism were made.

We ought, therefore, not to apply the experience of the laboratory too literally to the life history of the plague bacillus in nature, for we can not imitate all the conditions under which the organism may exist. We may determine with fair certainty the length of time the plague

bacillus may live under given conditions; and in general terms we can state whether it is a hardy organism, resistant to influences usually detrimental to bacterial life, or one that loses its virulence and dies quickly when removed from its natural habitat.

In this laboratory we have worked with the organism from 5 sources, 1 from Djiddah, 1 from Oporto, 1 from Rio de Janeiro, 1 from Bombay, and 1 from the New York quarantine case. We find that all these 5 races thrive well under the usual laboratory conditions, on the ordinary media.

They can in no sense be considered tender organisms as was at first supposed. They are much easier to cultivate than the lanceolate coccus of pneumonia or the streptococci. In fact they resemble more closely the hardier of the hemorrhagic septicaemic group.

In this connection, Batzaroff (*a*) states: "It may be said that it is a mistake to consider the microbe of human pest to be very frail. There undoubtedly exist varieties that attenuate very quickly, and die outside the living body in a relatively short time. There are other varieties that retain their viability under similar conditions a long time, and continue to live in artificial media for months and even years without notably losing virulence. We have seen that certain of our cultures which have been kept in the laboratory without any precautions and exposed to the light for three and one-half months, still kill animals when injected hypodermatically with but slight retardation; and that regenerated 2 or 3 times they almost regain the virulence they first possessed. It is not always easy to obtain an attenuated culture of pest. It requires much time and a combination of various artifices."

On first glance over the literature on the viability of the organism there appears to be an irreconcilable difference between the various observers as to the length of time the organism will live and maintain its virulence outside the body, but on closer study it becomes apparent that these differences are due to different conditions under which the experiments were carried out, especially differences in temperature. We must not lose sight of the fact that some races of the organism are more hardy than others.

It is the experience of all observers that the bacillus can not live long outside the body when dried at a temperature of 30° C. or over, but at a temperature lower than this and under 20° C., it has been kept alive sixty and seventy-five days.

The German Plague Commission (*b*) found that the organism always lost its power of infection when dried, within eight days, in India, but after returning to Germany could be kept alive after drying twenty-eight days, at 15° to 18° C.

My own experience indicates that the organisms, when dried, will

a Batzaroff. La Pneumonie pesteuse Experimentale. Annales de l'Institut Pasteur, May, 1899, page 391.

b Kaiserliche Gesundheitsamte, Bd. 16, Berlin 1899, page 274, *et seq.*

die quickly if the temperature reaches 27° C. but that at 23° C. and under it may live a long time.

A series of experiments has been undertaken in this laboratory and a few of the results are given in advance showing how long the organism may live and retain its virulence when dried under various conditions.

ALBUMIN-GELATIN BALLS INFECTED WITH PLAGUE CULTURE.

A little ball of sterile absorbent cotton about the size of a pea is soaked with a few drops of a gelatin culture of plague (Djiddah) mixed with egg albumin, and exposed in a Petri dish in the photographic dark room (20° to 23° C.) and the cool chamber (17° to 19° C.).

The little balls soon dry and the gelatin-albumin shrinks to a flaky, dry, hard mass.

From time to time one of the dried balls is taken out, planted in bouillon, and incubated. In case a growth appears the organism is tested on all the media, and on mice.

It was found that the organism lived and remained virulent for mice under these conditions for seventy-five days in the dark room at about 20° to 23° C. and for seventy-five days in the cool chamber at 17° to 19° C. Whether it may live longer will be determined from time to time and reported later on.

CRASH INFECTED WITH PLAGUE CULTURE.

In another series of experiments little squares of fabric (crash) were sterilized and inoculated with a three-day-old bouillon culture of the bacillus pestis. One set of these was allowed to dry out in Petri dishes in a dark corner of the laboratory where the temperature ranges from about 20° to 27° C., another set in the cool chamber (17° to 19° C.), and another set in the photographic dark room (20° to 23° C.). The squares were removed at intervals and planted in bouillon and in case a growth appeared it was studied for purity and pathogenicity in media and mice.

The following are some of the results :

Bouillon culture on crash.

Time.	Laboratory 20° to 27° C.,	Cool chamber, 17° to 19° C.	Dark room, 20° to 23° C.
4 days.....	x	x	x
8 days.....	—	x	x
11 days.....	x	—	—
13 days.....	x	x	x
15 days.....	—	—	x
21 days.....	—	x Killed mouse in two days.	x Killed mouse in two days.
26 days.....	—	—	x Killed mouse in three days.
35 days.....	—	x	x
48 days.....	—	x Killed mouse in three days.	x Killed mouse in two days.

NOTE.—x indicates growth. — indicates no growth.

From this table it appears that the organism died after thirteen days when kept at a temperature which occasionally rose to 27° C.

At a somewhat lower temperature it remained alive and virulent forty-eight days. Whether longer, will be reported upon the completion of the work. This table indicates plainly how sensitive this particular organism is to a very slight difference of temperature.

PINE WOOD INFECTED WITH PLAGUE CULTURE.

Another series of tests was made with splinters of pine wood about the size of a match stick. They were sterilized and soaked in a three-day-old bouillon culture of plague and then placed in Petri dishes which were kept in the laboratory (20° to 27° C.), cool chamber (17° to 19° C.), and the dark room (20° to 23° C.), with the following results :

Pieces of pine wood inoculated with bouillon culture of bacillus pestis.

Time.	Laboratory.	Cool chamber.	Dark room.	Time.	Laboratory.	Cool chamber.	Dark room.
4 days.....	x	x	x	13 days.....	—	—	—
8 days.....	—	x	x	18 days.....	—	—	—
11 days.....	—	—	x	21 days.....	—	—	—

NOTE.—x indicates growth. — indicates no growth.

The same culture was used to impregnate the pieces of pine wood as was used for the squares of crash in the preceding table, and these two objects thus infected were exposed to precisely the same conditions. It may therefore be assumed that the organism lives a shorter time on the one than on the other.

PAPER INFECTED WITH PLAGUE CULTURE.

Another series of tests was made with pieces of filter paper and pieces of glazed (sized) paper. This paper is cut into little squares and sterilized and impregnated in the usual way with a three-day-old bouillon culture of the organism. These pieces were placed in Petri dishes and kept in the desk in my office where the temperature ranges from 20° to 27° C. The results follow :

Plague culture dried on paper.

Time.	Filter paper.	Glazed paper.	Time.	Filter paper.	Glazed paper.
4 days.....	x	x	13 days.....	—	—
8 days.....	x	x	18 days.....	—	—
11 days.....	—	—			

NOTE.—x indicates growth. — indicates no growth.

On account of the importance of this subject, a summary of the literature follows :

KITASATO (a) found the organism alive after four days when dried on a glass cover slip and kept at 28° to 30° C. It grew after one to thirty-six hours, but not after four days. He used the pus of buboes from

a Preliminary notice of the bacillus of bubonic plague, Hongkong, July 7, 1894.

man. His experiments with serum cultures gave similar results. He was the first to study this question.

WILM (*a*) found the organism alive after four and one-half days on a glass slip. He exposed pure cultures at a temperature of 29° to 31° C. He could obtain no growth in bouillon after an exposure of four and one-half days. In vacuo, the bacilli were killed after an exposure of three hours.

R. ABEL (*b*) used pure cultures from bouillon, agar-agar and blood serum, or pus from the peritoneal cavity of guinea pigs, containing the bacillus pestis. These were planted on various objects—glass cover slips, silk, wool, woolen cloth, linen, and pieces of ox skin, and in sterile earth. Also pieces of the organs, liver, and spleen of animals dead of plague were dried. Approximately similar sizes were taken every day from each object. The result of these experiments showed that the manner of drying influenced the viability of the pest bacillus. No matter on what material, the result of drying at the temperature of 35° C. in the incubator, or 20° C. in vacuo over sulphuric acids, the bacillus was always found dead in two, or at most, four days. If the drying was permitted at the room temperature, 16° to 20° C. in a dark place, the bacilli remained alive much longer and the material in which they were dried markedly influenced the result.

On cover slips they remained alive six to nine days, from pus and cultures. Only once in four tests were the bacilli found alive a longer time—fourteen days—but not longer than this.

On threads of various sorts, on linen, and in pieces of organs, the bacilli were found alive after thirty days; if longer, it could not be determined, because the work was interrupted. In the longer exposures the threads planted in bouillon and kept undisturbed showed the outgrowth of isolated colonies here and there, indicating that many of the bacilli had lost their power of multiplication.

He, therefore, concluded that forced drying at a temperature over 30° C. or by substances that have a high affinity for water such as concentrated sulphuric acid, the bacillus pestis dies quickly. Slower drying at lower temperature is less harmful. However, even at room temperature the quicker drying, such as on a cover glass, is more harmful to the bacillus than the slower drying on pieces of cloth or in pieces of tissue.

“The fact that the bacillus remains alive longer when dried at 16° to 20° C. than was at first announced, teaches that in our climate (Hamburg) at least, we can not expect the organism to quickly disappear in clothing, etc.”

On fresh skin the bacillus was found alive after ten days. These tests

a Uber die Pestepidemie in Hongkong im Jahre, 1896. Hygienische Rundschau, 1897, Bd. VII, page 290.

b Zur Kenntnis des Pestbacillus. Centralblatt für Bakteriologie und Parasitenkunde, etc., Bd. XXI, 1897, page 497.

were not altogether satisfactory because the sterilizing of the skin before infecting it with pest was not successful after washing, and eight days' immersion in ether and alcohol. It is possible that the bacilli are alive after ten days, though not demonstrable on account of the growth of other organisms.

Further tests are being made with cultures, and the bacillus in blood and organs placed on various objects, and kept under various conditions, report on which will be submitted later.

MARTIN FICKER (*a*) tested the effect of drying and moisture alternately applied on the viability of the plague bacillus and found it to be more harmful than simple drying. He found that changing the conditions from dryness to moisture caused the death of the organism in twenty to twenty-eight hours, while the same in the desiccator lived eight or nine days.

He used twenty-four hour old cultures from agar-agar plates and made thin spreads on cover glasses by means of the platinum cæse. Moisture was added twice daily. The cover glass was planted in bouillon and in case growth appeared this was plated out on gelatin.

	Alternate moisture.		Desiccator.	
	†	0	x	0
	Hours.	Hours.	Days.	Days.
Culture 24 hours.....	20	28	8	9
Do	24	36	9	11
Culture 36 hours.....	36	48	11	12

This demonstrates that cultures die more rapidly in drying when moisture and dryness are alternated.

BATZAROFF (*b*) has been able to demonstrate that even in the dry state the pest organism remains living and virulent a long time. The organs of an animal dead of pest, as well as cultures mixed with infusorial earth, are subjected to desiccation in vacuo at "room temperature."

From time to time a piece of the dried substance is tested by grinding in a sterilized mortar, and the powder thus obtained is introduced in small amounts into the nose of an animal. The results of these experiments, which are indicated in the subjoined table, show that the virus of pest supports desiccation for a long time very well when it is in an albuminous medium, as the pulp of the spleen or any other organ. Under such conditions it attenuates very slowly; in fact, in the first two or three weeks scarcely at all. On the other hand, if it is not protected, as in the case of dried cultures in infusorial earth, its virulence diminishes rapidly, so that in three weeks, inoculated into the nose of animals, the dried cultures produced no morbid effect.

a Zeitschrift fur Hygiene, Bd. XXXIX, 1898, page 25.

b La Pneumonie Pesteuse Experimentale. Annales de l'Institut Pasteur, May, 1899, page 392.

Plague-pneumonia produced by nasal inoculations of dried virus.

Splenic pulp.		Dried cultures in infusorial earth.	
Duration of desiccation.	Duration of sickness.	Duration of desiccation.	Duration of sickness.
	<i>Days.</i>		<i>Days.</i>
5 days.....	4½	2 days.....	7
8 days.....	4	5 days.....	6½
12 days.....	4½	7 days.....	(a)
14 days.....	5	19 days.....	12
20 days.....	4½	31 days.....	(a)
26 days.....	4½		
30 days.....	6½		
33 days.....	6½		
38 days.....	6½		
44 days.....	(a)		

a Resisted.

HANKIN (b) states that as far as his researches go they tend to show that the bubonic microbe, whether derived from cultures or the organs of deceased animals, and whether placed in cotton, or sheep's wool, or gunny cloth, uniformly die out in six days. He states, however, that owing to the fact that epidemiological evidence tends to show that clothing may in rare cases convey the infection he is unwilling to draw any definite conclusions from his researches at present.

THE GERMAN PLAGUE COMMISSION (c), (Gaffky, Sticker, Pfeiffer, Dieudonné) used the organism from agar-agar, and bouillon cultures; also sputum from plague-pneumonia, peritoneal exudate from guinea pigs, etc. This infectious material was placed on various objects, as glass, silk threads, filter paper, fabrics, earth, etc., and permitted to dry. The plague-infected objects were placed in Petri dishes and put in a dark corner of the laboratory to dry out. As a rule, the infected pieces were turned over from time to time to hasten the drying.

The temperature of the laboratory during these experiments was about 29° to 31° C. The objects were well protected from the light. Some were kept in an improvised ice box, in which the temperature was about 22° C. and the air saturated with moisture. The proof that the organism was still alive could, unfortunately, only be made by inoculation of mice and not by means of cultures. Small pieces of the infected objects were taken from time to time and placed under the skin of a mouse. The following are the results:

b The plague in India, 1896, 1897, Vol. II, appendices I to T, page 10, *et seq.*

c Deutsche Pestkommission. Kaiserlichen Gesundheitsamtes, Bd. 16. Berlin, 1899, page 274, *et seq.*

Infected with pure culture.

Object.	Temperature.	Longest time in days the organism lived.
Glass	30° to 32° C.	3
Glass in desiccator.....	do	1
Filter paper.....	do	3
Filter paper in desiccator.....	do	1
Silk thread.....	do	5
Silk thread in desiccator	do	1
Piece of silk.....	do	6
Piece of silk in desiccator.....	do	1
Piece of wool.....	do	6
Piece of wool in desiccator.....	do	2
Large piece of linen.....	do	7

Infected with plague organs.

Glass.....	30° to 32° C.	2
	22° to 24° C.	
Filter paper.....	30° to 32° C.	2
	22° to 24° C.	
Silk thread.....	30° to 32° C.	2
	22° to 24° C.	
Piece of wool	30° to 32° C.	6
	22° to 24° C.	
Large piece of gauze.....	30° to 32° C.	6
	22° to 24° C.	
Large piece of linen.....	30° to 32° C.	6
	22° to 24° C.	

Sputum from plague-pneumonia.

Glass.....	30° to 32° C.	1
Silk thread.....	do	3
Piece of wool.....	do	6

Pus from bubo.

Glass.....	30° to 32° C.	6
Silk thread.....	do	1
Piece of wool.....	do	1

Peritoneal exudate from plague-infected guinea pig.

Silk thread.....	29° to 31° C.	
Filter paper	do	
Piece of silk.....	do	(a)
Piece of wool.....	do	
Glass tube.....	do	(b)

a Still virulent on the second day.
 b Dead on the seventh day.

The longest observation made by the commission on the viability of the plague bacillus was therefore eight days.

It made no difference whether cultures one to two days' old, or eight-day-old cultures were used, as far as the resistance to drying was concerned.

Pieces of the skin of mice dead of plague were also kept and it was found that they had lost their infecting power after four and six days. In dry organs the pest bacillus soon died. The longest time observed

was in pieces of liver kept in sealed glass tubes. Here they lived seven days; after seven days no result was obtained.

Sterilized feces were inoculated with a bouillon culture of plague obtained fresh from a corpse and then saturated with silk threads, wool, and silk fabrics. After drying they were wrapped in sterile filter paper and, inclosed in cotton, were packed in a box and kept in the laboratory at about 29° C. After four days the pest bacillus was alive on all the test objects. After six days only in the wool and after eight days dead in all.

The energetic drying in the desiccator over sulphuric acid hastened the death of the organism.

On account of the great importance of this question, several more tests were made, at lower temperatures, by the committee after its return to Germany. It was there possible, on account of the more favorable laboratory conditions, to make cultures as well as inoculations into mice in order to establish the life and death of the bacillus. The bacillus was kept alive in a room at 15° to 18° C. for twenty-eight days. After thirty-three days no more growth was obtained. Even after twenty-four days the growth was very sparse. The pathogenicity for mice died out much quicker after eighteen days.

“Apparently then the bacillus pestis is very sensitive to rapid and energetic drying as occurs by higher temperatures and in the desiccator.

“Slower drying at lower temperatures is much less deadly. In the climate of Germany, therefore, a rapid death of the organism in fabrics, etc., is not to be expected, as occurs in the tropics. In the hot countries no live bacilli were found in the dust.”

EDUARDO GERMANO (*a*) made many observations to determine this question. He worked with a culture from the Breslauer Hygienic Institute obtained through Kral, and which had been grown through many generations in vitro. He used bouillon suspensions of agar cultures and exposed the infected objects in Petri dishes at room temperature, 16° to 20° C.

Room dust mixed with an emulsion of plague bacilli.

Time.	Moist.	Dry.	Dried over sulphuric acid.
1 day.....	—	—	—

a Die Uebertragung von Infectionskrankheiten durch die Luft. Dr. Eduardo Germano. Zeitschrift für Hygiene, Vol. XXVI, 1897; 281.

Fine sand mixed with emulsion of plague bacilli.

Time.	Moist.	Dry.	Dried over sulphuric acid.	Time.	Moist.	Dry.	Dried over sulphuric acid.
1 day.....	x	(a) x	—	20 days.....	x	—	—
5 days.....	x	—	—	25 days.....	x	—	—
5 days.....	x	—	—	30 days.....	x	—	—
8 days.....	x	—	—	40 days.....	x	—	—
12 days.....	x	—	—	50 days.....	x	—	—
16 days.....	x	—	—	60 days.....	(b) x	—	—

NOTE.—X indicates growth. — indicates no growth.
 a The dust is not yet dry.
 b The number of colonies is diminished at least to the $\frac{1}{10}$ part of the original.

Loam (Humus boden) mixed with emulsion of plague bacillus.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Remarks.
1 day.....	x	—	—	
3 days.....	x	—	—	
5 days.....	x	—	—	
8 days.....	x	—	—	
12 days.....	x	—	—	
16 days.....	x	—	—	
20 days.....	x	—	—	
25 days.....	x	—	—	
30 days.....	x	—	—	
40 days.....	x	—	—	
50 days.....	x	—	—	
60 days.....	x	—	—	

NOTE.—x indicates growth. — indicates no growth.

Tufa (Tuff boden) rubbed up with plague bacillus.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Remarks.
1 day.....	x	—	—	
5 days.....	x	—	—	
8 days.....	x	—	—	
12 days.....	x	—	—	
16 days.....	x	—	—	
20 days.....	x	—	—	
25 days.....	x	—	—	
30 days.....	x	—	—	
40 days.....	x	—	—	
50 days.....	x	—	—	
60 days.....	x	—	—	

NOTE.—x indicates growth. — indicates no growth.

Marly loam (Löss) rubbed up with plague bacillus.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Remarks.
1 day.....	x	—	—	
3 days.....	x	—	—	
5 days.....	x	—	—	
8 days.....	x	—	—	
12 days.....	x	—	—	
16 days.....	x	—	—	
20 days.....	x	—	—	
25 days.....	x	—	—	
30 days.....	x	—	—	
40 days.....	x	—	—	
50 days.....	x	—	—	
60 days.....	x	—	—	

NOTE.—x indicates growth. — indicates no growth.

Brick dust mixed up with plague bacillus.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Remarks.
1 day.....	x	x	—	
3 days.....	x	—	—	
5 days.....	x			
8 days.....	x			
12 days.....	x			
16 days.....	x			
20 days.....	x			
25 days.....	x			
30 days.....	x			
40 days.....	x			
50 days.....	x			
60 days.....	x			

NOTE.—x indicates growth. — indicates no growth.

From these tables it follows that the bacillus of plague withstands drying badly, while it remains alive a long time in moist conditions. Only in room dust did it die quickly under moist conditions. After two months, even under moist conditions the number of bacteria were very much diminished. In addition to the test with dust, etc., a series was made with fabrics.

Square pieces of linen, wool, silk, and filter paper (1 cm. square) were sterilized and saturated with a bouillon emulsion of culture. They were placed in Petri dishes and were exposed in the desiccator and in the room. Those that were to remain moist were placed in test tubes in the moist chamber.

The results were as follows:

Linen.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Time.	Moist.	Dry.	Over H ₂ SO ₄ .
1 day.....	x	x		20 days.....	x		
3 days.....	x			25 days.....	x		
4 days.....		o		30 days.....	x		
7 days.....	x			40 days.....	x		
12 days.....	x			50 days.....	x		
16 days.....	x			60 days.....	x		

NOTE.—x indicates growth. — indicates no growth.

Wool.

1 day.....	x	x		20 days.....	x	x	x
3 days.....	x	x		25 days.....	x	x	x
4 days.....	x	x		30 days.....	x	x	
8 days.....	x	x		40 days.....	x		
12 days.....	x	x		50 days.....	x		
16 days.....	x	x		60 days.....	x		

NOTE.—x indicates growth. — indicates no growth.

Silk.

1 day.....	x	x	x	20 days.....	x		
3 days.....	x	x	x	25 days.....	x		
4 days.....		x	x	30 days.....	x		
8 days.....	x	—		40 days.....	x		
12 days.....	x		—	50 days.....	x		
16 days.....	x			60 days.....	x		

NOTE.—x indicates growth. — indicates no growth.

Filter paper.

Time.	Moist.	Dry.	Over H ₂ SO ₄ .	Time.	Moist.	Dry.	Over H ₂ SO ₄ .
1 day.....	x	x	x	20 days.....	x		
3 days.....	x	.....	—	25 days.....	x		
4 days.....	x	x		30 days.....	x		
8 days.....	x			40 days.....	x		
12 days.....	x			50 days.....	x		
16 days.....	x			60 days.....	x		

NOTE.—x indicates growth. — indicates no growth.

It is seen, therefore, that the pest bacilli remain on fabrics quite a long time. In this respect it resembles the bacillus typhosus.

He draws the following conclusions: The pest bacillus has little resistance against drying. It can, therefore, not easily be carried in the dust or air. It is, therefore, not likely, if not impossible, that the disease is spread in the air. However, it may often occur that infection takes place through contact because the organism lives when not wholly dried. Therefore, infected clothing may be very dangerous.

V. DE GIAXA and B. GOSIO, (a) made experiments in a small chamber partially ventilated and lighted, having a temperature varying from 10° to 18° C.

Strips of different fabrics, linen or wool, were infected after steam sterilization, and then suspended free or in small cabinets protected from the atmospheric dust. Some of the material was placed on large pieces of the same fabrics arranged so as to simulate a package.

The material of infection was deposited on the cloth either by rubbing with fresh agar-agar culture, in which case small particles of agar in addition to the germs adhere to the texture, or by the direct application of pus or blood from plague-infected animals.

The longest period of observation was thirty days; at the end of that time germs of plague were obtained from the pieces of cloth. In the case of pieces of cloth impregnated with pus or blood the observation was for twenty-nine days. On these the germs developed either in the open air or on cloth folded and inclosed in a box to simulate clothing packed in a trunk.

Pieces of linen thread were steeped in infected blood and exposed to desiccation in an incubator at an air circulation of 36° to 39° C.

After two, four, and five days several threads were placed in tubes of broth. Those exposed two days to desiccation developed slowly. Of those desiccated for four days, only 1 in 3 remained sterile; all those exposed for five days remained sterile.

Plague-infected blood was spread on a rabbit's skin and allowed to dry for four days. After fifteen days' exposure to a temperature varying from 12° to 16° C. (diffused light) the infected surface was scraped and the scrapings were cultivated. The plague bacillus soon developed.

a Ricerche sul bacillo della peste bubbonica, etc., Annali d'igiene Sperimentale, 1897, No. 7, page 261.

As regards pathogenic action, the germ exposed to desiccation almost always showed a decided slowness in killing the animal.

EFFECT OF SUNLIGHT ON THE PLAGUE BACILLI.

ALBRECHT and BHON (*a*) exposed peritoneal exudate in a test tube (in August, in Vienna), to direct sunlight for six hours, and could not notice any marked difference in the organism.

ABEL (*b*) found that plague bacilli on cover glasses died after one hour exposure to sunlight at 30° C. (in Hamburg). Controls kept in the dark grew after six hours. Thicker spreads from agar cultures withstood sunning at 30° C., three and one-half hours.

KITASATO (*c*) found that the bacillus was killed at Hongkong in three to four hours' sunning. He used pus from buboes.

WILM (*d*) found them destroyed in four hours' exposure to the sun.

THE GERMAN PLAGUE COMMISSION (*e*) made tests in Bombay in this manner: The various objects (glass, silk threads, wool) were saturated with a virulent agar culture of the bacillus pestis. One-half of the objects were exposed to direct sunlight. The other half were laid away in a dark place for control.

In very thin layers on glass the bacillus was killed in one hour.

In thicker layers on glass they were pathogenic for mice after three hours but not after four hours.

In silk threads they were killed after three hours' sunning.

In wool they were virulent for mice after eight hours.

Other tests were made with well grown agar cultures placed in the sunlight. In one or two hours in the sun they still contained active organisms. After a whole day's sunning they were dead. The cultures are warmed very much in the sun; therefore, other tests were made by placing the agar tube in water and kept in the sun one and one-half hours. At the end of the test the temperature of the water was 39° C. The bacillus was alive and virulent.

The following report of the experiments on the viability of the plague bacillus was published by S. L. RAPPOPORT, (*f*) St. Petersburg. The material used was allowed to soak in bouillon cultures of bacillus pestis in a dark closet for twenty four hours, then exposed for successive days to all the sunlight obtainable, or to dry heat.

a Die Peste, Müller and Poch, page 61, Vienna, 1900.

b Zur Kenntnis des Pestbacillus. Centralblatt für Bakteriologie und Parasitenkunde, etc., Bd. XXI, 1897.

c Preliminary notice of the bacillus of bubonic plague, Hongkong, 1894, July 7.

d Über die Pestepidemie in Hongkong im Jahre 1896. Hygienische Rundschau, 1897, Bd. VII.

e Loc. cit., page 277.

f Quoted by Walter Wyman, Surgeon-General Marine-Hospital Service, in "The Bubonic Plague," Treasury Department Document No. 2165.

Temperature and time required to kill.

Material.	20 C. (68 F.)	36 C. (96.8 F.)	60 C. (140 F.)	80 C. (176 F.)
	<i>Days.</i>	<i>Days.</i>	<i>Minutes.</i>	<i>Minutes.</i>
Silk thread.....	19 to 24	13	75	15
Note paper.....	10 to 17	5	30	15
Filter paper.....	10 to 24	7	45	15
Linen thread.....	9 to 13	4	30	15
Woolen thread.....	13 to 23	5	60	15

VIABILITY ON VARIOUS OBJECTS.

In sputum kept fluid, the GERMAN PLAGUE COMMISSION(a) found the bacillus of pest infectious after ten days.

HANKIN (b) made researches on various articles of produce to determine their susceptibility to endanger or support the bubonic microbe. He shows that the various descriptions of flours and grain usually stored in Bombay contain no trace of the bubonic microbe and also demonstrates that grain purposely infected does not permit of the existence of the microbe for more than about four days.

Hankin worked with linseed, yellow rape seed, brown rape seed, tilseed or ginjelly seed, ground nuts, castor seeds, poppy seeds, wheat (new hard red), wheat (another light variety), flour.

In order to test whether the microbe was still present in a living condition in a specimen of previously infected grain his method consisted of making an extract of this grain and injecting it into a mouse.

He used agar cultures making bouillon suspensions. About a kilogram of grain to be tested was placed in a sterile stoppered foot glass. One c. c. of the bouillon emulsion of the microbe was then poured into the foot glass, care being taken that it should fall into the center of the grain. The stopper was replaced and the foot glass was immediately violently shaken for about one quarter of an hour.

Extracts made from the grain in this manner were inoculated into mice with the following results :

Extract of the following injected into mice.	At once after infecting the grain.	Two days after infecting the grain.	Four days after infecting the grain.	Eleven days after infecting the grain.	Thirteen days after infecting the grain.
Linseed.....	Died within 24 hours.	Died after 7 days.	Died after 15 days.	Survived.....	Survived.
Yellow rape seed.....	Died within 72 hours.	Died after 24 hours.	Survived.....	.....do.....	Died after 24 hours.
Brown rape seed.....	Died within 48 hours.	Died after 4 days.	.....do.....	Died after 24 hours.	Survived.
Tilseed.....	Died within 24 hours.	Survived.....	.....do.....	Died after 7 days.	Do.
Ground nuts.....	.....do.....	Died after 11 days.	.....do.....	Died after 24 hours.	Do.
Poppy seed.....	.....do.....	Died after 48 hours.	.....do.....	.....do.....	Do.
Wheat (new hard red).	Died within 48 hours.	Survived.....	.....do.....	.....do.....	Do.
Wheat (another kind).	Survived.....	.....do.....	.....do.....	.....do.....	Do.
Flour.....	Died within 48 hours.....	Died after 48 hours.	.....do.....	.....do.....	Do.

a Kaiserliche Gesundheitsamte, Bd. 16, Berlin, 1899.

b The Plague in India, 1896, 1897, Vol. II, Appendices I-IV, page 10 et seq.

Hankin concludes from these experiments that the bubonic microbe derived from pure cultures perishes within thirteen days after being added to the above-mentioned specimens of grain and seeds.

Further experiments were made with grain and seeds by mixing the spleen of a rat and the liver, spleen, and oedema from a mouse, both animals having died after plague infection, instead of cultures of the organism. The organs were powdered up in a mortar with powdered glass and mixed with bouillon and added to the grain and seed. The further proceedings were as above.

The result of this showed that grain infected with the organs of animals dead of the plague lost its infectious power completely within six days.

Another set of experiments was then conducted by infecting the grain with sputum from a case of pneumonic plague. Sputum was taken, in which the organism was demonstrated to exist in large numbers in very virulent condition.

These also showed the plague infection to die out from all the variety of seed and grain tested within six days.

ABEL (*a*) found living bacilli of plague in water after twenty days. He added an ounce to 50 cc. of sterile distilled and tap water.

The GERMAN PLAGUE COMMISSION (*b*) found that the organism was no longer virulent after five days in tap and ten days in distilled water.

YOKOTE (*c*) worked on the problem of how long the plague bacillus can remain alive in the dead body. He used mice for his experiments because they are very susceptible. The mice were inoculated and the presence of the bacilli demonstrated in the heart's blood of the dead animals, which were then placed in a wooden casket. Each casket was covered with a lid and then buried in a metal box filled with garden earth. From time to time water was poured on the earth so that it always had a certain moisture. The temperature of the room was taken daily. After a certain time the bodies were disinterred, the amount of moisture present in the earth surrounding the casket determined quantitatively, also examined bacteriologically and by animal experiments for pest bacilli. Mice were used for this purpose, and glycerin agar for culture medium.

On disinterring the body the amount of decomposition was noted, and by means of cover glass preparations he determined the characters and numbers of micro-organisms present in the various organs. Plate cultures were made from the internal organs, on agar-agar, and some of the heart's blood, liver, or in case of advanced decomposition, some of the remains were inoculated into mice subcutaneously.

As a result of these experiments, he concludes that the pest bacillus loses its life and its power of infection in a relatively short time. It

a Loc cit.

b Loc cit.

c Über die Lebensdauer der Pestbacillen in der beerdigten Tierleiche. Dr. Z. Yokote. Centralblatt für Bakteriologie und Parasitenkunde, etc., Vol. XXIII, 1898, No. 24, page 1030.

remains alive, at most, twenty to thirty days. This depends on the temperature. The higher the temperature, the stronger the decomposition, the shorter the life of the bacillus. In summer many saprophytes grow in the body and cause products which kill the pest bacillus. In cold winter this growth of saprophytes is less, and the pest bacillus could therefore live and maintain its virulence a longer time.

He states that his experiments are not sufficient to determine positively the length of time the pest bacillus may live in a buried body, but he gives it as his belief that the organism can not live longer in the cadaver than spore-bearing organisms because it does not have spores. It is also of interest to notice that the pest bacillus did not escape from the wooden casket into the surrounding earth. It seems, therefore, that there is no danger in the burial of pest cadavers of infecting the surrounding earth as long as the coffin is tight.

THE LENGTH OF TIME THE PEST BACILLUS WITHSTANDS DRYING.

Author.	Conditions.	Resisted.	Killed.
Kitisato	Dried on cover glass slips at 28° to 30° C.	1 to 36 hours....	4 days.
Wilm.	Dried on glass slips at 29° to 31° C.	4½ days.....	After 4½ days.
Abel.....	Dried in vacuo.....	.....	3 hours.
	Dried on various objects at 35° C.	.....	2 to 4 days.
	Dried on various objects in vacuo over H ₂ SO ₄ at 20° C.	.....	2 to 4 days.
	Dried on cover slips from pus and culture at 16° to 20° C.	14 days.....	After 14 days.
	Dried on threads, in linen, in tissue at 16° to 20° C.	30 days.....	.....
Ficker.....	Dried piece of fresh skin, 16° to 20° C.	10 days.....	.....
	Dried on cover glasses in desiccator.	8 to 11 days....	9 to 12 days.
	Dried and moistened alternately.	20 to 36 hours..	28 to 48 hours
Batzaroff.....	Dried splenic pulp, "room temperature."	28 days.....	44 days.
	Dried cultures mixed with infusorial earth.	19 days.....	31 days.
Hankin	Dried on sheep's wool, and gunny cloth and cotton.	.....	6 days.
German Plague Commission.	Dried on glass, filter paper, silk threads, pieces of silk and wool and linen, at 30° to 32° C. exposed both in room and in desiccator.	7 days.	.....
	Dried on the same objects at 30° and 32° C., and 22° to 24° C., infected with bacillus from plague organs.	8 days.	.....
Germano.....	Dried and kept at 15° to 18° C.	28 days.....	33 days.
	In moist and dry room dust, 16° to 20° C.	.....	1 day.
	Dried in fine sand and brick dust, 16° to 20° C.	1 day.....	5 days.
	Dried in loam, tufa, and marl.	.....	1 day.
	In moist sand, loam, tufa, marl, and brick dust at 16° to 20° C.	60 days.	.....
	On moist linen, wool, silk, and filter paper at 16° to 20° C.	60 days.	.....
	Dried on linen, 16° to 20° C.	1 day.....	4 days.
	Dried on wool, 16° to 20° C.	30 days.	.....
	Dried on silk, 16° to 20° C.	4 days.....	8 days.
	Dried on filter paper	4 days.	.....
Giaxa and Gosio.....	Dried on linen and wool; agar cultures, pus and blood used. 10° to 13° C.	30 days.....	.....
	Dried on linen thread, 36° to 39° C.	4 days.....	5 days.
	Rabbit skin infected with plague-infected blood, 12° to 16° C.	15 days.....	.....
Rosenau.....	Dried on little balls of gelatin-albumen, 20° to 23° C.	75 days.....	.....
	Dried on little balls of gelatin-albumen, 17° to 19° C.	75 days.....	.....
	Dried on crash, 17° to 19° C. and 20 to 23° C.	48 days.....	.....
	Dried on crash, 20° to 27° C.	13 days.....	15 days.
	Dried on paper, 20° to 27° C.	8 days.....	11 days.
	Dried on pine wood, 20° to 27° C.	4 days.....	8 days.
	Dried on pine wood, 17° to 19° C.	8 days.....	11 days.
	Dried on pine wood, 20° to 23° C.	11 days.....	13 days.

EFFECT OF SUNLIGHT ON PLAGUE BACILLI.

Author.	Condition.	Killed.	With- stood.
			<i>Hours.</i>
Abel.....	In Hamburg, 30 C., thin spreads on cover glasses	1 hour.....	
	Thicker spreads.....		3½
Kitasato.....	In Hongkong. Pus from buboes.....	3 to 4 hours.....	
Wilm.....		4 hours.....	
Albrech and Bhon.....	Vienna in August, peritoneal exudate.....		6
German Pest Commission..	In Bombay, thin layers on glass.....	1 hour.....	
	thicker layers on glass.....	4 hours.....	3
	silk threads.....	3 hours.....	
	in wool.....		8
	agar test tube culture.....	All day.....	2
Rappoport.....	In St. Petersburg, silk threads, 20 C.....	24 days.....	
	note paper, 20 C.....	17 days.....	
	filter paper, 20 C.....	24 days.....	
	linen thread, 20 C.....	13 days.....	
	woolen thread, 20 C.....	23 days.....	

VIABILITY OF THE ORGANISM IN VARIOUS MEDIA.

Author.	Condition.	Alive.	Dead.
		<i>Days.</i>	<i>Days.</i>
German Plague Commission..	In sputum, 30° to 32° C.....	6 to 10	
	In pieces of liver kept in sealed tube.....	7	(a)
	In sterilized feces in thread, fabrics, and paper, 29° C.....	4	8
Hankin.....	On seeds, grains, and flours.....		13
Abel.....	In water, distilled and tap.....	20	
German Plague Commission..	In tap water.....		5
	In distilled water.....		10
Yokoto.....	In cadavers of mice, buried.....	20 to 30	

a After 7 days.

Plague in San Francisco.

The following telegraphic communications sent to and received by the Surgeon-General of the U. S. Marine-Hospital Service explain the status of the plague situation in San Francisco from March 8, when first case was announced, until May 21:

ANGEL ISLAND, CAL., *March 8, 1900.*

Case of alleged plague in Chinatown reported. City bacteriologists bring me specimens for examination. Animals inoculated this afternoon. So far no one has obtained history of case. Chinese Six Companies have undertaken investigation previous history suspect.

KINYOUN.

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

ANGEL ISLAND, CAL., *March 8, 1900,*
via San Francisco, Cal., March 8, 1900.

History of suspect obtained through Chinese consul and Six Companies shows that case was resident of city sixteen years. Sick since February 7 with specific disease. No developments so far in animals inoculated.

KINYOUN.

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

ANGEL ISLAND, CAL., *March 11, 1900.*

Completed examination specimens dead Chinese demonstrates plague. No further history obtainable, evidently ambulant case. Board health with Gassaway had meeting here to-day.

KINYOUN.

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

SAN FRANCISCO, CAL., *March 19, 1900.*

At request board have assisted examination 2 additional cases; suspected plague cultures from 1 shows organism very suspicious; another, autopsied to-day, shows same appearance blood spleen animal inoculations made; cases occurred different parts Chinese quarters; no history obtainable except residents for over year; sick for month; board finally adopts recommendations house-to-house inspection after two weeks delay; has no funds. Suggest officer be returned soon as possible.

KINYOUN.

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

ANGEL ISLAND, CAL., *March 23, 1900.*

Under date March 19 telegraphed you the following: "At request board have assisted examination 2 additional cases suspected plague. Cultures from 1 showed organism very suspicious. Another autopsied to day shows same appearances. Blood and spleen animal inoculation made. Cases occurred in different parts Chinese quarters. No history obtainable except residence for over year, sick for month. Board finally adopts recommendation house-to-house inspection after two weeks' delay. Has no funds. Suggest officer be returned as soon as possible." Another similar case to these reported yesterday; diagnosis, pneumonia. Autopsy does not confirm. Organism suspicious, but must await result inoculation. Rat inoculated from first case referred to, dead thirty-six hours. Examination not yet completed. The new cases can not be traced to foci already located. * * * Further information soon as obtained.

KINYOUN.

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

ANGEL ISLAND, CAL., *March 27, 1900.*

At what time can portable sulphur furnace be delivered in San Francisco for purpose of fumigating sewers?

KINYOUN.

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

ANGEL ISLAND, CAL., *April 2, 1900.*

Completed examination of specimens 3 suspected cases plague. Does not show presence of organism.

KINYOUN.

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

ANGEL ISLAND, CAL., *April 26, 1900.*

Another case suspected plague discovered yesterday; microscopical examination. Gland shows organism very suspicious; animal inoculation made; suggest immediate shipment portable sulphur furnace.

KINYOUN.

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

ANGEL ISLAND, CAL., *May 2, 1900.*

Examination plague suspect completed. Diagnosis confirmed by bacteriological examination. Old resident, no connection traced to first at present. * * *

KINYOUN.

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

ANGEL ISLAND, CAL., *May 13, 1900.*

Have now under investigation 2 additional cases suspected plague; 1 quite suspicious; 1 previously reported May 2 came from Sacramento River.

KINYOUN.

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

ANGEL ISLAND, CAL., *May 15, 1900.*

One case referred to May 13 is plague; Chinese girl; long residence; Clay street. Another discovered yesterday; dead May 13; large femoral bubo characteristic organisms; sick five days. Diagnosed typhoid fever by white physicians. Is undoubtedly plague; now have occurred 4 cases plague in San Francisco, 3 originating in San Francisco, 1 near Sacramento. Regarded now epidemic, as no connection can be traced between cases by local board of health. As requested, secrecy required first case on account of vicious attacks local press. Local board of health now proposes to announce facts to-morrow in joint meeting with editors and merchants association. Will attempt to provide ways and means; have invited me present. Please instruct whether I shall go and how far may I state Service will aid or assist; regard situation very serious. * * * Portable sulphur furnace arrives. Have tendered its use to local board of health. Please wire instructions.

KINYOUN.

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

WASHINGTON, D. C., *May 15, 1900.*

Attend meeting and wire promptly report of it. Ascertain if help is desired of the Service and to what extent. No expenditures can be authorized except under Service officers.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 15, 1900.*

Chinese consul-general, San Francisco, will be wired to use his influence to have the Chinese comply cheerfully with necessary measures and consult with you as the representative of the United States Government. Confer with consul-general. Have about 20,000 Haffkine on hand—will be shipped to-morrow. If Gassaway has any, get it. Suggest advisability of following measures: One man in supreme charge, subordinates in charge of divisions. Cordon of suspected area. Guard ferries and railroad stations with reference to Chinese only. House-to-house inspection with Haffkine inoculation. Chinatown to be districted. Pest hospital in Chinatown, using some substantial building. Suspects from plague houses to be removed to a suspect house in Chinatown, or,

if you deem necessary, to Angel Island. A disinfecting corps. Destruction of rats. Inspection of railroads and outside territory.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 15, 1900.*

The law of 1890 holds good, and can be applied.

WYMAN.

KINYOUN, *Angel Island, Cal.*

ANGEL ISLAND, CAL., *May 17, 1900.*

At joint meeting held by local board of health and merchants' association and representatives Chinese Six Companies, was decided to have further conference with representatives of Chinese to-day for purpose of perfecting plans of operation. Your telegram discussed and main features recommended for adoption. Local board of health desires to do the work itself and believes it can have funds furnished it for this purpose. Have offered to assist in every way possible, but have not made any tender of funds. Believe the work of guarding outlying districts will be necessary, and will devolve upon the Service to carry this out. Will ascertain to-day attitude of health authorities in surrounding towns, and what measures can be carried out there. Believe great danger lies in fact of exodus, which will necessarily occur as soon as house-to-house inspection begins. Shall I visit Stockton and find out whether disease exists there? Can do so now within next two days, as no vessels are due. One case plague dead May 16, reported to have arrived two days before from Stockton. Have not been able to ascertain complete history.

KINYOUN.

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

WASHINGTON, D. C., *May 17, 1900.*

Nominate 2 good acting assistants for train inspection, 1 at Reno and 1 as near Oregon border as practicable. Send them at once to places indicated to await orders. Have sent similar dispatch to Cofer for southern routes. Suggest McQuesten as 1 inspector. Answer immediately.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 17, 1900.*

Nominate 2 acting assistants for train inspection, 1 each on Santa Fe and Southern as near Arizona border as practicable. Send them there immediately to await orders. Authorized to personally inspect locations if necessary. Wire action. Acknowledge.

WYMAN.

Assistant Surgeon COFER,
Marine-Hospital Service, Los Angeles, Cal.

WASHINGTON, D. C., *May 17, 1900.*

Visit Stockton and other places if necessary. With regard to surrounding towns, suggest getting in touch with State board. Will send you some good additional junior officers. Expressed 2,000 Haffkines yesterday, 3,000 to-day, and 15,000 in the three following days. Authorized to employ such acting assistants as may be necessary,

wiring compensations and submitting regular nominations promptly by mail.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 17, 1900.*

Bureau thinks that on account case reported March 8 advisable to carefully inspect and keep under surveillance any Chinese arriving from San Francisco.

WYMAN.

HARRIS, *Quarantine Officer, Eureka, Cal.*

Same telegram was sent to Frary, quarantine officer, Hoquiam, Wash.

WASHINGTON, D. C., *May 17, 1900.*

Five plague San Francisco. Make it reason for any restrictive measures that there has been a case of plague at San Francisco March 8.

WYMAN.

FOSTER, *Quarantine, Port Townsend, Wash.*

Same telegram has been sent to quarantine officers Astoria, Oreg., Los Angeles and San Diego, Cal.

WASHINGTON, D. C., *May 18, 1900.*

Relieved from duty at Detroit, proceed immediately to San Francisco; report to Kinyoun for duty. Transportation will be wired to-morrow. Ship personal effects through quartermaster.

WYMAN.

EARLE, *through commanding officer,
Marine-Hospital Service, Detroit, Mich.*

WASHINGTON, D. C., *May 18, 1900.*

Inspect carefully the Chinese and Chinese baggage. Hold them for observation if necessary.

WYMAN.

FOSTER, *Port Townsend, Wash.*

WASHINGTON, D. C., *May 18, 1900.*

Instruct Wilson to report immediately to Kinyoun for duty. Authorized to nominate temporary acting assistant.

WYMAN.

GASSAWAY, *Marine-Hospital, San Francisco, Cal.*

WASHINGTON, D. C., *May 18, 1900.*

Relieved from duty Chicago; proceed immediately San Francisco; report to Kinyoun for duty. Transportation will be wired to-morrow. Ship personal effects through quartermaster.

WYMAN.

LLOYD, *through commanding officer,
Marine-Hospital Service, Chicago, Ill.*

MAY 18, 1900.

Envoyez grande vitesse virus Danysz, cinquante cultures en gelose ou deux litres culture en bouillon.

WYMAN.

ROUX, *Institut Pasteur, Paris.*

[Translation.]

MAY 18, 1900.

Send by express 50 agar cultures or 2 litres bouillon culture virus Danysz.

WYMAN.

ROUX, *Institut Pasteur, Paris.*

ANGEL ISLAND, CAL., *May 19, 1900.*

The local board of health officially states the existence of plague in San Francisco. Has requested the State board to act. Have requested me to notify transportation lines, and have taken steps to prevent exodus. Will commence house-to-house inspection to-day, and attempt Haff kine. Will have trouble to enforce law, as residents of San Francisco are being advised to resist by certain whites. Consul-general and Six Companies are in accord with Bureau telegram. Have notified transportation company of situation, and requested them to comply. Respectfully suggest that I be empowered to enforce the law of 1890. In event of refusal, will be requested by the State board to assume charge of this inspection. Will appoint necessary inspectors as fast as possible and assign them to duty and outlying districts. Impossible to nominate inspectors for Reno and Oregon borders yesterday, because I was absent in Stockton. Will do so to-day.

KINYOUN.

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

ANGEL ISLAND, CAL., *May 19, 1900.*

Am able to act as Bureau representative for Pacific coast if sufficient number of officers are sent me. Have advised board of health not to insist on compulsory vaccination, but rather a quarantine cordon instead, allowing no one to leave infected area until vaccination accomplished. Believe can overcome obstacles within a short time.

KINYOUN.

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

ANGEL ISLAND, CAL., *May 19, 1900.*

Health office attempt to make inspection of Chinatown with 40 inspectors and few police; all Chinatown is closed. Impossible to gain access to houses; so far no one inoculated. There is a preconcerted resistance on part of Chinese against inspection. Consul-general and Six Companies powerless to enforce demands or to cooperate. * * * Have instructed railroad lines to refuse passage to Chinese or Japanese desiring to leave San Francisco. Exodus has begun. Find it quite difficult to procure proper medical inspectors. Have secured service of McQuesten for Fresno and will supply inspector for Oregon border to-day. Wilson reports for duty this morning. Another case suspected plague found last night, dead several days.

KINYOUN.

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

WASHINGTON, D. C., *May 19, 1900.*

Instruct your inspectors at the Needles and Yuma to begin inspection of trains and prevent exit from State of Chinese or Japanese, unless

accompanied by certificate of Marine-Hospital officer. Notify Kinyoun, San Francisco.

WYMAN.

COFER, *Marine-Hospital Service, Los Angeles, Cal.*

WASHINGTON, D. C., *May 19, 1900.*

Await further orders before proceeding to Hongkong. In the meantime report to Kinyoun for duty.

WYMAN.

KERR, through KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 19, 1900.*

Advise that you use tact and discretion in enforcing Haffkine inoculation of Chinese and be not too precipitate or harsh. End will be more certainly and easily gained. As to whites interfering, notify them interference will make them equally liable with open violators of the regulations to the penalties imposed by section 1, act of Congress March 27, 1890.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 19, 1900.*

Direct your inspectors at Reno and Oregon border to allow no Chinese or Japanese to pass out without certificate from Marine-Hospital Service. Cofer directed to give same orders to inspectors at Needles and Yuma, and to notify you; notify State board health.

WYMAN.

KINYOUN, *Angel Island, Cal.*

WASHINGTON, D. C., *May 19, 1900.*

It is suggested here it would materially influence the Chinese if some whites were vaccinated.

WYMAN.

KINYOUN, *Angel Island, Cal.*

SAN FRANCISCO, CAL., *May 20, 1900.*

Board of health continues attempt at house-to-house inspection offering inoculation. All houses still closed. Japanese desiring to leave city are availing themselves Haffkine prophylactic. Only one Chinese inoculated to-day. So far no cordon around infected area. No provisions made for detention of suspects nor for hospital. Have asked War Department whether temporary use could be had for detention camp near station. Had conference with consul and representative Chinese to-day, in which they request information regarding law for action contained in telegram directing me, request transportation companies refusal tickets Chinese and Japanese. Respectfully suggest that would be better to all parties concerned to confer full powers on me to order transportation companies and others rather than a request. Believe Chinese intend testing matter in court. No serious friction exists between myself and Chinese authorities; all directed toward the local board of health. Have advised caution, and believe with good effect. Have appointed inspectors for Reno and Ashland; both on way. Have instructed them according to Bureau telegram. Please wire them fully further instructions. Have been suggested inspector required at Nogales. Have appointed to-day 7 inspectors, assigning them duty at points of exit. Will extend guard line to-morrow. Have

notified health authorities adjacent towns to look out and apprehend any Chinese or Japanese arriving without proper certificate. Have assigned Kerr work regarding vessels leaving port. Suspected case plague reported May 13 proves genuine. People here absolutely in dark as to correct situation, on account of local papers refusing publishing any matter pertaining to epidemic. State board of health meet here to-morrow evening.

KINYOUN.

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

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

By direction of the President, Secretary of Treasury has promulgated the following regulations under act of Congress March 27, 1890:

First, during the existence of plague at any point in the United States the Surgeon-General, Marine-Hospital Service, is authorized to forbid the sale or donation of transportation by common carriers to Asiatics or other races liable to the disease. Second, no common carrier shall accept for transportation any person suffering with plague, or any article infected therewith, nor shall common carriers accept for transportation any class of persons who may be designated by the Surgeon-General of the Marine-Hospital Service as being likely to convey the risk of plague contagion to other communities and said common carriers shall be subject to inspection. End of quote. Inform transportation companies and direct them, under above regulations, to refuse transportation to Asiatics except on your certificate and instruct border inspectors to inspect trains and prevent Asiatics leaving State without your certificate.

WYMAN,

Surgeon-General Marine-Hospital Service.

KINYOUN, *Angel Island, Cal.*

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

Full regulations of Secretary Treasury, by direction of President, under law of 1890 requiring common carriers to refuse Asiatics and authorizing train inspections, will be wired you about 10 to-night, Washington time.

WYMAN.

KINYOUN, *Angel Island, Cal.*

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

Acting Assistant Surgeon Jenkins, U. S. M. H. S., Needles, Cal.

Acting Assistant Surgeon McQuesten, U. S. M. H. S., Reno, Nev.

Acting Assistant Surgeon Mitchell, U. S. M. H. S., Yuma, Ariz.

Acting Assistant Surgeon McGeer, U. S. M. H. S., Ashland, Oreg.

Inspect all trains leaving California. Examine carefully all Chinese and Japanese. If not satisfied from locality free from plague and entirely free from it themselves, prevent their leaving State. Further instructions to prevent all Asiatics from passing out the State without certificate of United States Marine-Hospital Service will be wired you by Surgeon Kinyoun to-morrow.

WYMAN,

Surgeon-General.

INTERSTATE QUARANTINE REGULATIONS TO PREVENT THE SPREAD OF
PLAGUE IN THE UNITED STATES.

[Department Circular No. 73.—Marine-Hospital Service.]

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,

Washington, D. C., May 22, 1900.

To medical officers of the Marine-Hospital Service, State, and
local health authorities, and others concerned:

In accordance with the provisions of the act of March 27, 1890, the following regulations, additional to existing interstate quarantine regulations, are hereby promulgated to prevent the introduction of plague into any one State or Territory or the District of Columbia from another State or Territory or the District of Columbia:

1. During the existence of plague at any point in the United States the Surgeon-General of the Marine-Hospital Service is authorized to forbid the sale or donation of transportation by common carrier to Asiatics or other races particularly liable to the disease.

2. No common carrier shall accept for transportation any person suffering with plague or any article infected therewith, nor shall common carriers accept for transportation any class of persons who may be designated by the Surgeon-General of the Marine Hospital Service as being likely to convey the risk of plague contagion to other communities, and said common carriers shall be subject to inspection.

3. The body of any person who has died of plague shall not be transported except in hermetically sealed coffins and by consent of the local health office, in addition to the local representative of the Marine-Hospital Service. Wherever possible, such bodies should be cremated.

L. J. GAGE, *Secretary.*

A MICROBE PATHOGENIC FOR RATS (*MUS DECUMANUS* AND *MUS RATUS*)
AND ITS APPLICATION TO THE DESTRUCTION OF THESE ANIMALS.—BY
J. DANYSZ.

[Translated from *Annals of the Pasteur Institute*, April, 1900.—By P. A. Surg. H. D. GEDDINGS, U. S. M. H. S.]

Since Loeffler made known his discovery of the bacillus typhi murium, which he isolated from a spontaneous epidemic among white mice, and which he applied with success to the destruction of harvest mice (*M. arvicola*), several other bacteriologists have observed similar epidemics and have isolated the microbes thereof, morphologically identical with the bacillus of Loeffler, but more or less virulent for the various genera and species of the little rodents.

The *B. typhi murium* was only frankly pathogenic for mice (*M. musculus*) and for harvest mice (*M. arvicola*). The bacillus of Laser was pathogenic for the *M. agrarius*; that of Merechkowski for the *Spermophiles* and finally that of Issatchenko for *white rats*.

Moreover each of the various bacilli is of very variable virulence, so that their practical utilization for the destruction of all species of rodents which they may be brought to bear upon has been fraught with many difficulties.

It would evidently be of great interest, first, to extend the field of action of one of them by increasing its virulence and thus rendering it capable of attacking other species of rodents; then, this virulence increased, to be able to maintain it at its highest point. I have endeavored to solve this problem and the following is what I have arrived at:

A cocco-bacillus presenting all the characteristics of the *B. coli*, and in this resembling the bacillus of Loeffler, isolated by me from a spontaneous epidemic among harvest mice, has shown itself from the beginning as slightly pathogenic for gray rats (*M. decumanus*). Out of 10 animals fed with a culture of this microbe, 2 or 3 would die; several others would sicken, but would recover; others still appeared completely refractory.

The fact that a certain number of animals fed with these cultures always succumbed permitted the hope that it would be possible to increase the virulence of the microbe by generally employed methods, that is to say, by a certain number of passages from rat to rat.

A great number of experiments executed to this end always showed that successive passages from rat to rat, whether by feeding or by subcutaneous injection, ended by enfeebling rather than by increasing the virulence of the microbe given by ingestion. We proved always that if the culture, in a first passage, killed animals in seven to twelve days, and if the second and third passages were shown to be a little more virulent and killed in five to ten days, the cultures from succeeding passages became less and less virulent and always ended by not killing at all.

It was rarely possible to go beyond 10 to 12 passages. Sometimes the series was stopped at the fifth passage, or even sooner, by the survival of all the animals undergoing experiment. The result was exactly the same if instead of alternating each passage through the animal by a culture in bouillon or on agar, the bodies of animals dead of a preceding passage were fed to others.

It was, therefore, certain that in the evolution of an epidemic caused by the microbe it was necessary to take account, in order to explain its extinction, not only of the natural resistance of the survivors, but of an indisputable diminution of the virulence of the microbe.

The following experiment gives a direct proof of it:

A lot of 30 normal mice were placed in a cage with 2 sick mice; another lot of 30 mice were placed in 6 different jars and fed with the same culture as the sick mice placed in the cage with the 30 normal ones. In the 6 jars all the mice were dead in from four to six days; in the cage an epidemic broke out in three days after the death of the 2 first sick mice, whose bodies were devoured. This epidemic lasted

twenty-three days ; 27 mice died, three survived the experiment but succumbed later in consequence of the ingestion of a culture of average virulence.

These 3 mice then were neither completely refractory nor immunized, and their resistance in the first experiment can only be explained by the attenuation of the virulence of the microbe in the cage.

As this microbe is but slightly toxic and only kills after having passed from the intestines into the economy, where it ends by increasing enormously, it appeared to me to be indicated to seek the principal cause of the attenuation of virulence in the change of media which the microbe experienced successively in the digestive tract and in the blood, and to which it had to become habituated successively in passing from one animal to another.

In fact we note in a very constant manner that on the one hand an increase of virulence for the blood and organs obtained by a long series of subcutaneous injections, coincides with a notable diminution of virulence by the digestive tube ; on the other hand we demonstrate in an equally regular manner, that microbes isolated from the blood or spleen of an animal at the period when they commence to pass from the intestine into the blood, are always found to be more virulent by ingestion than those which are isolated after the death of the animal, that is to say, after a more or less long cultivation in the juices of the economy.

Finally it is to be noted that passages of cultures in collodion sacks, inclosed in the peritoneal cavity of rats, whether in uninterrupted series, or by alternating each sack culture with culture in bouillon or on agar, end invariably by a notable diminution of virulence administered by the digestive tract.

Increase of virulence and its preservation.

The foregoing observations inspiring me, and having proved that a virus which killed mice in four to six days, commenced to pass from the intestine to the blood, and was accumulated in the spleen in the twenty-four hours after the ingestion, I succeeded in increasing its virulence, and rendered it regularly pathogenic for rats by following the method here described.

A bouillon culture, isolated from the blood twenty-four hours after the ingestion of a virus which was mortal in four to five days, was left for twenty-four hours in the incubator and was replanted in new bouillon and distributed in flasks, as completely filled as possible. The flasks were placed first in the incubator until the culture developed, and then kept at ordinary temperatures, until a deposit formed and the bouillon became perfectly clear. This may take four or five days, and its object is to accustom the microbe to an anaerobic existence. From the flasks we pass the culture in a collodion sack which is kept for twenty-four to thirty-six hours in the abdominal cavity of a rat, then it is planted anew in ordinary bouillon, and thence again into flasks. The

culture from these last flasks is then planted on agar, and it is these cultures on agar which we give to mice to eat, after having diluted them with water, and soaked bread or grain in the dilution.

This series of operations is repeated several times, and at the fourth or fifth repetition we note a very decided increase of virulence. Mice which only died at the end of four to seven days, now die in thirty-six to sixty hours after the ingestion.

When we have obtained such a result we may replace the mice by white rats, commencing with young rats, a month or six weeks old, and as we continue the passages we may take older rats. Proceeding thus, and making sack cultures in the abdominal cavities of the species of animals which we desire to infect, we may specialize the culture, and may render it sufficiently virulent in ten passages.

Operating in this manner I have succeeded in rendering regularly virulent at first for gray rats (*M. decumanus*), and then for black rats (*M. ratus*), and finally for white rats, a culture which was originally but slightly virulent for the gray rat, and entirely innocuous for the other two.

The bouillon which I used was a bouillon of horse meat, with 1 per cent peptone, and to which was added a little carbonate of lime to neutralize the acids which are formed during culture, and which rapidly diminish the virulence of the microbe.

Contained in the flasks and kept from the influence of light and air, the cultures preserve their virulence for several months. Planted on agar, they preserve it without appreciable diminution for two months; in bouillon in flasks or tubes, stoppered with cotton, they alter very rapidly.

These are the cultures, relatively stable, which I have tried to use for the destruction of rats in sewers and in other localities which they infest. As I have said above, there are two factors in the development of an epidemic among animals: (1) a pathogenic microbe, and (2) the species of animal in which it is desired to produce it. We know that the various species of rats do not resemble each other. We have seen, too, that the properties of the same species of rats are not everywhere the same, and depend in a certain measure upon the conditions of their feeding. The question was to know what proportion of success or failure could proceed from all these badly studied causes of variation; for this, experiment was necessary.

Practical application—Results obtained.

Cultures brought, little by little, to a degree of virulence, permitting the killing by ingestion of all rats placed in cages in the laboratory, in from five to twelve days, have been used in a great number of experiments on farms, stores, and other localities infested by rats. The sum of the reports, figuring several hundred which I have received, shows that in 50 cases out of 100 there was a total disappearance of rats; in 20 cases

the results appeared entirely negative; in 30 others there was an appreciable diminution of rats noted.

In certain quite rare cases we have been enabled to follow the extension of an epidemic from a treated locality to one not treated.

Observations of this kind are interesting but scarcely permit us to precisely appreciate the real effects of the intervention. The number of sick rats and cadavers which are truly found is always very small, and it is impossible to know certainly whether the rats which have disappeared have succumbed to the disease or have simply emigrated, fleeing from the epidemic.

Thus, when the sanitary service of Paris asked of the Pasteur Institute if it were possible to destroy the rats in the sewers by means of a contagious disease, I deemed it necessary, before answering, to submit this question to a special study.

I asked of the chief engineer, M. Bechmann, and of the inspectors of sewers, Mm. Masson and Delphini, to have placed at my disposal a sewer trunk closed on all sides to prevent the escape of rats, abundantly furnished with straw and food, and to introduce therein a fixed number of living, healthy rats from neighboring sewers.

These conditions having been complied with in a sewer 160 meters long and 3 meters wide, the experiment gave the following results:

On February 2, 200 gray rats (*M. decumanus*) were released in the sewer and kept under observation for ten days. On the 12th, the sewer was carefully visited and all the rats appeared well; not a single cadaver was found. On the same day 20 tubes of culture on small pieces of bread were distributed in the sewer. The epidemic began on February 20, and a second distribution of virulent culture was made. Until March 2 the sewer was visited daily, and 80 cadavers of rats were found, of which 40 were necropsied and the others left in place. Those necropsied showed without exception the characteristics of the disease (congestion of the intestines, hypertrophy of the spleen, etc.), and contained pure cultures in the blood. The rats left in place were always eaten from one day to the next by the survivors.

March 2 we could not discover, with the most careful search, anything but a quantity of shapeless débris, not permitting an estimate of the number of rats devoured, and 8 live rats which were permitted to escape by the negligence of the watchman.

Though the experiment was thus not followed to an end, it shows in a definite fashion that the rats at liberty in the sewers always eat freely the bread soaked in culture bouillon, in spite of an abundance of other food (wheat, carrots, etc.), that they contract the disease and die in large numbers, and that the survivors eat the bodies.

It is therefore very possible to create by the aid of this culture, epidemics, which then to a certain extent, propagate themselves.

The spread of the epidemic will probably be quite limited, as it will be stopped after the third or fourth passage by attenuation of the viru-

lence, always experienced in our studies as related above and also in consequence of the greater resistance of a certain number of the survivors. Thus, when it is desired to destroy a large majority of the rats which infest a locality, the culture must be distributed at intervals of ten to twelve days, that is to say, at the period when the preceding distribution will have produced its effect.

The season of the year in which this treatment ought to be applied is not altogether a matter of indifference. The young rats are much more susceptible to the action of the virus than the old ones, and the epidemics will be more deadly in spring (April, May, and June) and in autumn (September to December) than at other periods of the year.

By systematically destroying during ten successive years, the young generations, which succumb inevitably, we would finish by destroying all rats in a most complete manner.

Experiments made simultaneously at Lille, by M. Calmette, director of the Pasteur Institute of Lille; at Hamburg by Dr. Abel, sanitary physician; at Copenhagen by M. Th. Madsen; and at Tunis by M. Loir, director of the bacteriological station, have given very nearly the same results.

Rats in a cage have always succumbed after an ingestion of culture, in from eight to twelve days, the greater number of wholesale experiments resulting in a total or very complete disappearance of rats.

THE CONSTITUENTS OF HAFKINE'S ANTIPLAGUE VACCINE.—BY S. S. MALLANNAH, M. B.

[Extracted from the British Medical Journal, May 12, 1900.]

I have carried out several experiments in order to find out the real immunizing constituent of Haffkine's prophylactic. The prophylactic fluid was passed through a Pasteur-Chamberland filter.

(1) The sediment found on the bougie consisted of bodies of dead plague bacilli. It was proteid in reaction and protected rabbits from plague in doses of 300 mg.

(2) The filtrate, a clear fluid, also gave proteid reactions and possessed well-marked protective power, even in small doses. It is possible to isolate, after Brieger's method of preparing tetanus toxin, the immunizing substance from Haffkine's fluid in a more or less pure condition, and this immunizing substance does not respond to any of the known proteid reactions, and possesses well-marked protective power in rabbits against plague in doses of 100 mg. This immunizing substance is gray and amorphous, and is soluble in water. It might be termed extracellular, as it is found dissolved in the surrounding media. The immunizing substance present in the sediment might be called intracellular, as it is found in the bodies of the dead bacilli.

The extracellular immunizing substance is found in the bodies of the cells (plague bacilli), and is then thrown into the surrounding media,

and this substance is formed most probably when the plague bacilli disintegrate.

Plague bacilli produce, besides the immunizing substance, a proteid which produces pus, and this proteid is found in the bodies of the dead bacilli. I have found that the induration at the seat of the inoculation occurs whenever the Haffkine's fluid is used, especially when it is used subcutaneously, or whenever the sediment on the bougie is used; whereas these indurations never occur when the filtrate of Haffkine's fluid or extracellular or immunizing substance is used.

I have found that these indurations generally contain sterile pus. From this it is clear that the pus-producing substance is in the dead bacilli. This fact also coincides with the clinical facts observed by many.

(1) Suppuration never occurs in severe cases of plague, but only in mild cases or in those cases in which the duration of the disease is long—that is, when plague bacilli are dying or disintegrating. Of course it must not be forgotten that suppuration occurs in cases of mixed infection in which plague germs enter the system with pyogenic cocci.

(2) It is known that it is impossible to get a culture of plague bacilli or even to find plague bacilli in buboes when suppuration has advanced. This, however, can be explained in two ways—

(a) The plague bacilli are dead or disintegrating.

(b) In cases of mixed infection pyogenic cocci might overgrow or outlive plague bacilli; but I have found from experiments that pyogenic cocci have no deleterious influence on plague bacilli, and also that they have no prophylactic power whatever against plague, as rabbits previously inoculated with pyogenic cocci invariably die of plague when subsequently inoculated with it.

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

Disinfection of baggage on steamship Alameda from Sydney, Australia, at San Francisco, Cal.

SAN FRANCISCO QUARANTINE STATION,
Angel Island, Cal., May 8, 1900.

SIR: I have the honor to report the arrival of the steamship *Alameda* from Sydney via Auckland with 96 cabin passengers and 64 steerage passengers on board. The bill of health given by the United States consul at Sydney stated that up to and including April 11 there were 82 cases of plague with 26 deaths. Information has also reached me through the public press that the disease has appeared at Brisbane and Adelaide and rats dead with plague were found on the docks at Auckland. The baggage of passengers from Sydney and Auckland was disinfected. * * *

I would state further, for the information of the Bureau, that so far Sydney has made no provisions for disinfection of vessels, there being no quarantine station.

Respectfully,

J. J. KINYOUN,
Surgeon, U. S. M. H. S.

Inspection in McDuffie and Warren counties and other places, on account of smallpox.

THOMSON, GA., *May 8, 1900.*

SIR: I have the honor to report my arrival at Thomson last night, having been directed by the governor to come here by request of the ordinary of McDuffie County, to inspect and report upon some suspects who had been exposed to a case diagnosticated smallpox, which case was quarantined in Warren County, about 3 miles from the dividing line of the two counties.

The ordinary of Warren County met the ordinary of McDuffie County and myself near the county line, and invited me to examine the case of suspected smallpox in Warren County. I found the patient, a negro male adult, suffering with a discrete form of variola in the pustular stage. The disease was about at the eleventh day, and the patient was able to be out of bed. I found that every precaution was being taken to prevent the spread of the disease, and advised the usual measures for handling the disease, and gave instruction as to after disinfection of person, clothing, and premises.

Respectfully,

T. B. PERRY,
Surgeon, U. S. M. H. S.

ALBANY, GA., *May 12, 1900.*

SIR: I have the honor to report that after leaving Thomson, Ga., I visited Augusta to confer with the health officer relative to taking measures to prevent the introduction of smallpox into that city from Warren County, but failed to find him in. Other engagements called me away to Sparta and Milledgeville. At the latter place a telegram was received on the day of my arrival from his Excellency Governor Candler, who had been kept informed of my movements, directing me to proceed to Leesburg, Ga., meet the ordinary of Lee County and report on a suspected case of smallpox, which I did to-day, finding the suspect to be an adult male negro who had been ill for about three weeks with symptoms of smallpox, and whose disease had been pronounced smallpox by a physician from Albany, Ga. The disease had progressed to the stage of desquamation and at the time it was examined by me could not be pronounced smallpox from its appearance alone, but the county commissioners were advised that it was proper to accept the diagnosis of the physician who had seen the case previous to my arrival and to take the usual precautions against the spread of the disease. To-night I came to Albany and will try to inquire into the history of the case in Lee County from the physician who first saw it. To-morrow I will return to Atlanta.

Respectfully,

T. B. PERRY,
Surgeon, U. S. M. H. S.

Smallpox in Boston, Mass.

BOSTON, MASS., *May 18, 1900.*

SIR: I have to report the occurrence, yesterday, of a case of smallpox in Boston.

Respectfully,

FAIRFAX IRWIN,
Surgeon, U. S. M. H. S.

*Smallpox in Cairo, Ill.*CAIRO, ILL., *May 19, 1900.*

SIR: I have the honor to report for the week ended May 19, 1900, 3 new cases of smallpox in this city, making the total reported to date 99 cases, with 6 deaths.

Respectfully,

JOHN MILTON HOLT,
Assistant Surgeon, U. S. M. H. S.

*Smallpox in Minnesota.*ST. PAUL, MINN., *May 15, 1900.*

SIR: Since my last report of smallpox for Minnesota, April 27, there have occurred the following additional cases:

Minneapolis	52	Goodhue County	1
St. Paul.....	2	Houston County	1
Duluth.....	6	Pipestone County	5
Little Falls	1	Rice County.....	6
Worthington	1	Wadena County.....	1
Carlton County	2		
Chippewa County.....	1	Total	80
Dodge County	1		

Respectfully,

H. M. BRACKEN,
Secretary.

*Smallpox in an immigrant from the steamship Lahn.*NEW YORK, N. Y., *May 14, 1900.*

SIR: I have the honor to inform you that an immigrant arriving on the steamship *Lahn*, May 11, 1900, and sent from the ship to the hospital for contagious diseases on North Brother Island, died yesterday of smallpox. Two immigrants, members of the same family, were removed from the barge office to the New York Quarantine.

Respectfully,

L. L. WILLIAMS,
Surgeon, U. S. M. H. S.

*Yellow fever reported at Coatzacoalcos.*LAREDO, TEX., *May 13, 1900.*

SIR: Yellow fever reported at Coatzacoalcos, Mexico. The disease especially prevails among foreigners.

Respectfully,

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

REPORTS FROM THE MEXICAN BORDER.

El Paso, Tex., May 5, 1900.—I have the honor to report the following summary of work at this station for the week ended May 12, 1900: Inspection of Mexican Central passenger trains, 208; inspection of Rio Grande and Pacific Railroad trains, 38; inspection of Mexican Central Railroad freight train crew, 42; disinfection of clothing, blankets, etc., of immigrants, 43; inspection and disinfection of party of Russian immigrants, peasants, 70; disinfection of soiled linen imported for laundry, 415; vaccination of immigrants and their children, 10.

Respectfully,

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

Laredo, Tex., May 13, 1900.—I have the honor to submit the following report for week ended May 5, 1900: Inspection Mexican National Railroad passengers, 487; immigrants inspected and allowed entry, 47; immigrants vaccinated during week reported, 9. April 29, disinfected 1 trunk which left Havana, Cuba, via Vera Cruz, Mexico, during month of April.

Laredo, Tex., May 13, 1900.—I have the honor to report that the 6 persons detained at various times during the month of April on account of having been at Vera Cruz within ten days preceding their appearance for inspection, all took the quarantine oath given by State quarantine officer at frontier, but were discovered to have been in Vera Cruz by means of labels on baggage, which I take great care in examining. They also acknowledged to the fact after discovery. Persons could, if they thought about it, remove these labels before reaching frontier, and then, by taking oath, pass inspection, unless they happened to be sick at the time.

I can suggest no way to avoid this except as was done last year, viz, by issuing certificates to persons from non-infected points, and to those who had been away from infected points the required time and their baggage disinfected. At present the only port of Mexico which is a menace to this frontier is Vera Cruz, as persons from other infected Mexican ports would pass through Vera Cruz in entering United States by Texas. The Marine-Hospital officer at Vera Cruz is in a position to judge of the danger to persons passing through Vera Cruz going to places in the southern United States. I think probably at present there is very little danger from Vera Cruz, Mexico, as there are very few cases of yellow fever there, but it depends on what part of the city is infected, the class infected, and whether travelers are liable to come in contact with foci. Passengers may reach frontier at Laredo, Tex., forty-eight hours after leaving Vera Cruz, so that when an epidemic is prevailing at Vera Cruz the danger of infection is through railroad travel via Texas. I believe that if yellow fever becomes epidemic at Vera Cruz or Tampico, Mexico, it would be advisable to adopt plan of last year, viz, certificate.

Respectfully,

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

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

CALIFORNIA—*San Francisco.*—Month of January, 1900. Estimated population, 360,000. Total number of deaths, 685, including diphtheria, 14; enteric fever, 13; measles, 1; scarlet fever, 4; whooping cough, 2, and 122 from phthisis pulmonalis.

Stockton.—Month of April, 1900. Estimated population, 17,500. Total number of deaths, 24, including enteric fever, 1, and 4 from phthisis pulmonalis.

COLORADO—*Denver.*—Month of April, 1900. Estimated population, 170,000. Total number of deaths, 177, including diphtheria, 2; measles, 1; scarlet fever, 2; whooping cough, 3, and 45 from tuberculosis.

CONNECTICUT.—Reports to the State board of health for the month of April, 1900, from 168 towns having an aggregate estimated population of 912,159, show a total of 1,678 deaths, including diphtheria, 24;

enteric fever, 12; measles, 31; scarlet fever, 7; whooping cough, 11, and 161 from phthisis pulmonalis.

IOWA—*Davenport*.—Month of April, 1900. Estimated population, 42,000. Total number of deaths, 49, including enteric fever, 2, and 4 from phthisis pulmonalis.

MASSACHUSETTS—*Holyoke*.—Month of April, 1900. Estimated population, 44,982. Total number of deaths, 101, including diphtheria, 3; enteric fever, 1; measles, 7, and 9 from tuberculosis.

Worcester.—Month of April, 1900. Estimated population, 113,273. Total number of deaths, 218, including diphtheria, 1; measles 4; scarlet fever, 5; whooping cough, 2, and 26 from tuberculosis.

MICHIGAN.—Reports to the State board of health, Lansing, for the week ended May 12, 1900, from 88 observers, indicate that enteric fever, pleuritis, and scarlet fever increased and intermittent fever and inflammation of bowels decreased in area of prevalence. Phthisis pulmonalis was reported present at 160, measles, at 127, scarlet fever at 76, whooping cough, at 29, enteric fever at 24, diphtheria at 22, smallpox at 9, and cerebro-spinal meningitis at 6 places.

MINNESOTA—*Stillwater*.—Month of April, 1900. Estimated population, 14,000. Total number of deaths, 13. One death from tuberculosis.

NEW YORK—*Auburn*.—Month of April, 1900. Estimated population, 35,000. Total number of deaths, 46, including diphtheria, 1; whooping cough, 2, and 4 from tuberculosis.

Kingston.—Month of April, 1900. Estimated population, 26,000. Total number of deaths, 59, including scarlet fever, 1, and 6 from phthisis pulmonalis.

Syracuse.—Month of April, 1900. Estimated population, 130,000. Total number of deaths, 163, including diphtheria, 3, enteric fever, 1, measles, 1, and 1 from whooping cough.

NORTH CAROLINA.—Reports to the State board of health for the month of March, 1900, from 20 towns having an aggregate estimated population of 118,950—white, 68,875; colored, 50,075, show a total of 165 deaths, including enteric fever, 3; measles, 1, and 22 from phthisis pulmonalis.

OHIO—*Cleveland*.—Month of April, 1900. Estimated population, 395,000. Total number of deaths, 641, including diphtheria, 10; enteric fever, 33; scarlet fever, 2; smallpox, 2; whooping cough, 3, and 40 from tuberculosis.

OREGON—*Portland*.—Month of April, 1900. Estimated population, 96,600. Total number of deaths, 81, including diphtheria, 1; enteric fever, 3; scarlet fever, 1; whooping cough, 1, and 8 from phthisis pulmonalis.

PENNSYLVANIA—*Scranton*.—Month of April, 1900. Estimated population, 103,000. Total number of deaths, 180, including diphtheria, 6; enteric fever, 1; scarlet fever, 14, and 11 from tuberculosis.

TENNESSEE—*Memphis*.—Month of January, 1900. Census population, 64,495. Total number of deaths, 233, including diphtheria, 1; enteric fever, 4; measles, 4, and 27 from phthisis pulmonalis.

Month of February, 1900. Total number of deaths, 196, including measles, 4, and 25 from phthisis pulmonalis.

Month of March, 1900. Total number of deaths, 237, including enteric fever, 2; measles, 1; scarlet fever, 2, and 28 from phthisis pulmonalis.

Month of April, 1900. Total number of deaths, 172, including enteric fever, 1, and 18 from phthisis pulmonalis.

WASHINGTON—*Tacoma*.—Month of April, 1900. Estimated population, 50,000. Total number of deaths, 39, including 2 from phthisis pulmonalis.

Report of immigration at Boston for the week ended May 12, 1900.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Boston, May 13, 1900.

Number of alien immigrants who arrived at this port during the week ended May 12, 1900; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
May 6	Steamship Georgian.....	Liverpool, England	21
Do.....	Steamship Yarmouth.....	Yarmouth, Nova Scotia.....	70
Do.....	Steamship Prince Arthur.....	.....do.....	88
May 7	Steamship Admiral Dewey.....	Port Morant, Jamaica.....	10
May 9	Steamship Admiral Schley.....	.....do.....	6
May 10	Steamship Prince Arthur.....	Yarmouth, Nova Scotia.....	76
Do.....	Steamship Yarmouth.....	.....do.....	57
May 11	Steamship Halifax	Halifax, Nova Scotia.....	98
Do.....	Steamship Anglian.....	London, England	20
	Total .....	.....	446

GEORGE B. BILLINGS,
Commissioner.

*Report of immigration at New York for the week ended May 12, 1900.*OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
*Port of New York, May 14, 1900.**Number of alien immigrants who arrived at this port during the week ended May 12, 1900 ;
also names of vessels and ports from which they came.*

Date.	Vessel.	Where from.	No. of immigrants.
May 6	Steamship New York.....	Southampton.....	472
Do....	Steamship Etruria.....	Liverpool and Queenstown.....	638
Do....	Steamship Spartan Prince.....	Naples.....	1,033
May 7	Steamship Rotterdam.....	Rotterdam.....	330
Do....	Steamship La Champagne.....	Havre.....	346
Do....	Steamship Coleridge.....	Rio de Janeiro.....	40
May 9	Steamship Ethiopia.....	Glasgow.....	166
Do....	Steamship Southwark.....	Antwerp.....	720
May 10	Steamship Ems.....	Genoa and Naples.....	872
Do....	Steamship Oceanic.....	Liverpool and Queenstown.....	1,079
May 11	Steamship Lahn.....	Bremen.....	615
Do....	Steamship Sempione.....	Naples.....	1,071
May 12	Steamship Pisa.....	Hamburg.....	287
Do....	Steamship Columbia.....	.....do.....	455
Do....	Steamship Main.....	Bremen.....	1,334
	Total.....		10,008

THOMAS FITCHIE,
*Commissioner.**Report of immigration at Philadelphia for the week ended May 19, 1900.*OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
*Port of Philadelphia, May 19, 1900.**Number of alien immigrants who arrived at this port during the week ended May 19, 1900 ;
also names of vessels and ports from which they came.*

Date.	Vessel.	Where from.	No. of immigrants.
May 16	Steamship Rhyndland.....	Liverpool and Queenstown.....	510
May 18	Steamship Aragonia.....	Antwerp.....	219
	Total.....		729

JNO. J. S. RODGERS,
*Commissioner.**Arrival of alien steerage passengers at Cienfuegos during the week ended
May 12, 1900.*CIENFUEGOS, CUBA, *May 14, 1900.*SIR: I submit herewith report of alien steerage passengers arriving
at this port during the week ended May 12, 1900:May 8, schooner *Joven Anna*, from Montevideo, with 7 immigrants.

Respectfully,

F. E. TROTTER,
Assistant Surgeon, U. S. M. H. S.

Arrival of alien steerage passengers at Havana during the week ended May 12, 1900.

HAVANA, May 12, 1900.

SIR: I herewith submit report of alien steerage passengers arriving at this port during the week ended May 12, 1900:

Date.	Vessel.	Where from.	No. of immigrants.
May 7	Steamship Vigilancia.....	Campeche, Vera Cruz, and Progreso ...	28
May 8	Steamship Algiers.....	New Orleans, La.	15
May 10	Steamship Folsjo.....	Cartagena.....	3
	Total.....	.....	46

H. R. CARTER,
Surgeon, U. S. M. H. S.

Arrival of alien steerage passengers at Matanzas, Cuba, during the week ended May 12, 1900.

MATANZAS, CUBA, May 14, 1900.

SIR: I herewith submit report of alien steerage passengers at this port during the week ended May 12, 1900:

No transactions.

Respectfully,

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

Arrival of alien steerage passengers at Nuevitas during the week ended May 12, 1900.

NUEVITAS, CUBA, May 14, 1900.

SIR: I hereby submit report of alien steerage passengers at this port during the week ended May 12, 1900:

No transactions.

Respectfully,

OWEN W. STONE,
Acting Assistant Surgeon, U. S. M. H. S.

Arrival of alien steerage passengers at Santiago de Cuba during the week ended May 5, 1900.

SANTIAGO DE CUBA, May 5, 1900.

SIR: I herewith submit report of alien steerage passengers arriving at this port during the week ended May 5, 1900:

May 2, British schooner *Maggie Louise*, from Lucea, Jamaica, with 8 immigrants.

Respectfully,

HERMAN B. PARKER,
Assistant Surgeon, U. S. M. H. S.

Arrival of alien steerage passengers at Ponce during the week ended May 5, 1900.

PONCE, P. R., May 7, 1900.

SIR: I submit herewith report of alien steerage passengers arriving at this port during the week ended May 5, 1900:

May 5, French steamship *St. Domingue*, from Fort de France and St. Thomas, with 3 immigrants.

Respectfully,

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

Arrival of alien steerage passengers at San Juan during the week ended April 28, 1900.

SAN JUAN, P. R., May 1, 1900.

SIR: I submit herewith report of alien steerage passengers arriving at this port during the week ended April 28, 1900:

Date.	Vessel.	Where from.	No. of immigrants.
Apr. 22	Steamship Maria Herrera.....	Havana, Nuevitas, Gibara, Baracoa, Santiago, St. Domingo, Macoris, and Ponce.	7
Apr. 28	Steamship Sardinia.....	Hamburg, Bremerhaven, and St. Thomas...	1
	Total		8

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

Arrival of alien steerage passengers at San Juan during the week ended May 5, 1900.

SAN JUAN, P. R., May 7, 1900.

SIR: I submit herewith report of alien steerage passengers arriving at this port during the week ended May 5, 1900:

Date.	Vessel.	Where from.	No. of immigrants.
Apr. 29	Steamship Mortera.....	Havana, Nuevitas, Gibara, Santiago, Puerto Plata, Mayaguez.	1
May 4	Steamship Montserrat.....	Vera Cruz, Progreso, Havana.....	1
May 5	Steamship St. Simon.....	Havre, Bordeaux, St. Thomas.....	6
	Total		8

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

Arrival of alien steerage passengers at San Juan for the week ended May 12, 1900.

SAN JUAN, P. R., May 14, 1900.

SIR: I submit herewith report of alien steerage passengers arriving at this port during the week ended May 12, 1900:

No transactions.

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

REPORTS FROM NATIONAL QUARANTINE

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure	
	UNITED STATES:					
1	Alexandria, Va.....	May 19	.....	.....	.....
2	Beaufort, N. C.	do.....	.....	.....	.....
3	Brunswick, Ga.....	May 12	Nor. bk. Poseidon (a).....	May 5	Pernambuco.....	
4	Cape Charles, Va.....	May 19	Am. brig Pablo.....	May 7	Havana.....	
			Br. ss. Mavisbrook (a).....	do.....	Vera Cruz.....	
			Br. ss. King Gruffydd.....	May 13	Chiltepec, Mex., via New York.	
			Br. ss. Camperdown.....	May 15	Matanzas via Boston.	
			Br. ss. King Bleddyn.....	May 18	Progreso via Bal- timore.	
5	Cape Fear, N. C.....	do.....	Br. ss. Imani.....	May 19	Newport, Eng- land.	
			
6	Columbia River, Oreg.....	May 12	Br. s. East African.....	May 10	Honolulu.....	
7	Delaware Breakwater Quarantine, Lewes, Del.	do.....	Am. bktn. Echo.....	do.....	do.....	
			Ger. ss. St. Georg.....	do.....	Cienfuegos via Boston.	
8	Eureka, Cal.....	May 19	.....	.....	.....
			May 12	Br. bk. Collingrove (a).....	Apr. 26	Shanghai.....
				Am. sc. Mary Buhne.....	May 6	Kahului.....
9	Grays Harbor, Wash.....	do.....	Br. bk. Helen Denay.....	May 11	Honolulu.....	
			
10	Gulf Quarantine, Ship Island, Miss.	do.....	Am. sc. Vere B. Roberts.....	May 6	Havana.....	
			Am. sc. Nan M. Dantzier.....	May 8	Vera Cruz.....	
			Am. sc. Lavina M. Snow.....	do.....	La Guayra.....	
			Am. sc. Cassie F. Bronson.....	May 9	Vera Cruz.....	
			Am. sc. Eleanor.....	May 10	Campeche.....	
			Am. sc. Sam'l T. Beacham.....	May 11	Havana.....	
			Am. sc. Otis.....	do.....	do.....	
			Am. sc. Daisy Farlin.....	May 12	Manzanillo.....	
			Am. sc. Laura.....	do.....	Havana.....	
			Am. sc. Serafina C.....	do.....	Cardenas.....	
			
11	Los Angeles, Cal.....	do.....	.....	.....	.....
12	Newbern, N. C.....	do.....	.....	.....	.....
13	Pascagoula, Miss.....	do.....	.....	.....	.....
			
14	Port Townsend, Wash.....	May 12	Am. ship Dashing Wave.....	May 8	Honolulu.....	
			Am. bk. Seminole.....	do.....	do.....	
			Am. bk. Palmyra.....	May 9	do.....	
			Am. sch. Allen A.....	do.....	do.....	
			Am. ship Philippine.....	do.....	Manila.....	
			Am. sc. Lottie Bennett.....	May 10	Honolulu.....	
			Am. sc. Bertie Minor.....	do.....	do.....	
			Am. sc. Maria E. Smith.....	do.....	do.....	
			Am. ship Berlin.....	May 11	Hongkong.....	
			Bk. Edmund Phinney.....	do.....	Buenos Ayres.....	
			
			
			
			
.....				
15	Reedy Island Quarantine, Del.	May 19	Am. ss. Chas. Nelson (a).....	May 2	Waimea.....	
16	San Diego, Cal.....	May 12	.....	.....	.....
17	San Francisco, Cal.....	do.....	Am. ss. Alameda (a).....	May 4	Sydney.....	
			Br. ship Antiope.....	May 7	Kahului.....	
			Br. bk. S. C. Allen.....	do.....	Honolulu.....	
			Am. ss. Conemaugh.....	May 8	Manila.....	
			Am. ss. Czarina.....	do.....	Honolulu.....	
			Am. s. Cyrus Wakefield.....	do.....	do.....	
			Am. sc. John G. North.....	do.....	Honoipu.....	
			Am. bk. Coryphene.....	May 9	Kehei.....	
			
			

a Previously reported.

AND INSPECTION STATIONS.

Number	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
1					6
2				No report.....	
3	Brunswick	Disinfected and held.....			1
4	do	do			
	Newport News.....	Held.....	May 13	Permitted to coal from barges at quarantine by order of Surgeon-General.	9
	Norfolk	Disinfected.....	May 15	Released after disinfection by order of Surgeon-General.	
	do	Held.....	do.....	Passed by order of Surgeon-General.	
	do	do	May 18	do	
	do	do	May 19	Previous port Bombay; passed by order of Surgeon-General.	
5				No transactions.....	
6	Portland.....	Fumigated to destroy rats.....	May 12		4
	Astoria.....	do	do.....		
7	Philadelphia.....	Boarded and passed.....	May 10		3
8	Eureka.....	Fumigated.....		Discharging ballast.....	2
	do	do			
9	do	Held.....		1 death, probably dysentery.	
10	Pascagoula.....	Disinfected and held.....	May 12		1
	do	do	May 13		
	do	do	do.....		
	do	do	May 14		
	do	do	do.....		
	do	Disinfected and held 24 hours.	May 12		
	do	Disinfected and held.....			
	Ship Island.....	do			
	do	do			
	Moss Point.....	do			
11					2
12				No transactions.....	
				do	
13					1
14	Seattle.....	Partial disinfection of vessel.....	May 10	Crew bathed and clothing disinfected.	8
	Port Townsend.....	do	do.....	do	
	do	do	May 11	do	
	do	do	May 12	do	
	do	do	May 11	do	
	do	do	May 12	do	
	do	Being disinfected.....			
	do	Partial disinfection of vessel.....	May 12	Crew bathed and clothing disinfected.	
	Tacoma.....	Being disinfected.....			
15	Philadelphia	Disinfected.....	May 15		21
16					3
17	San Francisco.....	Disinfected.....	May 5	Vessel and personnel held to complete 15 days' period; effects of passengers disinfected.	13
	do	Disinfected to kill vermin.....	May 6	Packed effects of passengers disinfected.	
	do	Disinfected.....	May 9		
	do	do	May 12	Crew bathed and effects disinfected.	
	do	Disinfected to kill vermin.....	May 10	Forecastle crew bathed and effects disinfected.	
	do	Disinfected.....	May 11	Crew bathed and effects disinfected.	
	do	do	do.....	do	
	do	do	May 12	Effects of passengers and crew on Br. ship Euphrosyne, from Calcutta, disinfected; crew bathed.	
	do	Held for disinfection.....			

REPORTS FROM NATIONAL QUARANTINE

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.
	UNITED STATES—Continued.				
	San Francisco, Cal.....	May 12	Am. bgtn. Consuelo	May 9	Makukona.....
			Haw. bk. Star of Bengal..	May 11	Honolulu
18	San Pedro, Cal.....	May 12			
19	Savannah, Ga.....	do.....	Br. sc. Bessie Parker (a)...	May 3	Cardenas.....
20	South Atlantic Quarantine, Blackbeard Island, Ga.	do.....			
21	Tortugas Quarantine, Key West, Fla.	do.....	Am. sc. Lillie (a).....	May 5	Havana
			Sp. ss. Santanderino (a).....	do.....	Liverpool via Spain and Cuba.
			Am. sc. Iolanthe	May 7	Sagua la Grande.
			U. S. light-house tender Laurel.	May 8	Key West
			Am. sc. Joseph W. Hawthorne.	May 11	Matanzas.....
			Br. ss. Newlyn	do.....	Buenos Ayres via Montevideo and Havana.
22	Washington, N. C	May 19			
	CUBA:				
23	Caibarien.....	May 12			
24	Cardenas.....	do.....			
25	Cienfuegos.....	do.....			
26	Daiquiri.....	Apr. 28			
		May 5			
27	Gibara.....	do.....			
28	Guantanamo.....	do.....			
29	Havana	May 12	Ss. Aransas	May 5	New Orleans.....
			Emily B.....	May 8	Miami.....
			Mabel Hooper.....	do.....	Havana
30	Isabela de Sagua.....	do.....			
31	Manzanillo.....	May 5			
32	Matanzas.....	May 12	Nor. ss. Tyr.....	May 9	Cardenas.....
			Br. ss. Ardanrose.....	May 10	New York.....
			Ss. Laura.....	May 11	Key West.....
			Ss. Lyderhorn.....	May 12	Cardenas.....
33	Nuevitass.....	do.....			
34	Santiago de Cuba.....	May 5	U. S. A. transport Burnside.	Apr. 29	San Juan.....
			U. S. A. transport Wright.	Apr. 30	Manzanillo
			Nor. ss. Volund.....	May 1	Port Limon
			U. S. A. transport McPherson.	May 4	San Juan.....
			Rev. cutter Viking.....	do.....	Havana
	PHILIPPINES:				
35	Manila	Apr. 7			
		Apr. 14			
	PORTO RICO:				
36	Ponce.....	Apr. 28			
		May 5			
37	San Juan	Apr. 28			
		May 5	Sp. ss. Montserrat.....	Apr. 4	Havana
		May 12			
	Supports—				
38	Aguadilla.....	Apr. 28			
39	Arecibo.....	do.....			
40	Arroyo.....	do.....			
41	Humacao.....	do.....			
42	Mayaguez.....	do.....			

a Previously reported.

AND INSPECTION STATIONS—Continued.

Number.	Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
	San Francisco.....	Held for disinfection.....			
	do.....	do.....			
				Oriental crew and 426 steerage passengers on Jap. ss America Maru, from Hongkong bathed and effects disinfected; packed effects of 1 cabin passenger from Manila via Shanghai disinfected.	
18				No transactions.....	
19	Savannah.....	Disinfected and held.....	May 11		2
20					2
21	Key West.....	Disinfected.....	May 7	With certificate of disinfection.	
	Pensacola.....	Disinfected and held.....	May 10		
	Mobile.....	Disinfected.....	May 9		
	7th Lighthouse District.	do.....	May 10	do.....	
	Apalachicola.....	Disinfected and held.....			
	New York via Havana.	Preliminary disinfection to kill rats.		Remanded from Havana for preliminary disinfection before lightering cargo at Mariel.	
22				No transactions.....	
23					3
24					14
25				1 case malaria on ss. Ramon de Larrinaga from Liverpool; sent to hospital.	9
26					3
					3
27				No report.....	
28					4
29	New Orleans.....	Complete disinfection.....	May 6	Baggage of passengers disinfected.	16
	Key West.....	do.....	May 9		
	Mobile.....	do.....	May 6		
30					3
31					10
32	Matanzas.....	Passed without inspection..	May 9		7
	do.....	do.....	May 10		
	do.....	Disinfected.....	May 11		
	do.....	Passed without inspection..	May 12		
33					8
34	New York.....	Boarded and passed.....	Apr. 27		8
	Santiago.....	do.....	Apr. 30		
	Santiago.....	Held 24 hours.....	May 2		
	New York.....	do.....	May 4		
	Santiago.....	do.....	do.....		
35					68
					84
36					6
					8
37					14
	Palmas.....	Held.....	Apr. 5	4 nonimmune passengers detained to complete period; baggage disinfected.	9
					8
38				No transactions.....	
39					1
40					2
41					1
42				No transactions.....	

REPORTS FROM STATE AND

Number.	Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.
1	Anclote, Fla.....	May 19	.....	.....	.....
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.....	.....	.....	.....
10	Galveston, Tex.....	do.....	.....	.....	.....
11	Gardiner, Oreg.....	May 12	.....	.....	.....
12	Key West, Fla.....	do.....	Am. sc. Emily B.....	May 11	Havana.....
		May 19	Am. sc. Laura.....	May 17	Matanzas.....
13	Mayport, Fla.....	do.....	.....	.....	.....
14	Mobile Bay, Ala.....	May 12	Barge Nelson Bartlett (a).....	May 2	Havana.....
			Ger. ss. Pionier.....	May 12	Matanzas.....
15	New Bedford, Mass.....	May 19	.....	.....	.....
16	New Orleans, La.....	do.....	.....	.....	.....
17	Newport News, Va.....	do.....	.....	.....	.....
18	Newport, R. I.....	do.....	.....	.....	.....
19	New York, N. Y.....	do.....	.....	.....	.....
20	Pass Cavallo, Tex.....	do.....	.....	.....	.....
21	Pensacola, Fla.....	do.....	.....	.....	.....
22	Port Royal, S. C.....	do.....	.....	.....	.....
23	Providence, R. I.....	do.....	.....	.....	.....
24	Quintana, Tex.....	May 12	.....	.....	.....
25	St. Helena Entrance, S. C.....	May 19	.....	.....	.....
26	Tampa Bay, Fla.....	May 12	Sc. Mary Russell (a).....	May 1	Csibarien.....
			Bk. Louise Adelaide.....	May 7	Cardenas.....

a Previously reported

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	.....	.....	.....	.....	1
4	.....	.....	.....	No report.....	.....
5	.....	.....	.....	do.....	.....
6	.....	.....	.....	do.....	.....
7	.....	.....	.....	.....	1
8	.....	.....	.....	No report.....	.....
9	.....	.....	.....	do.....	.....
10	.....	.....	.....	do.....	.....
11	.....	.....	.....	do.....	.....
12	Key West.....	Held to complete period.....	.....	.....	16
	Punta Rasa.....	do.....	.....	.....	11
13	.....	.....	.....	No report.....	.....
14	Mobile.....	Disinfected.....	May 3	.....	15
	do.....	Held to complete period.....	.....	.....	.....
15	.....	.....	.....	No report.....	.....
16	.....	.....	.....	do.....	.....
17	.....	.....	.....	do.....	.....
18	.....	.....	.....	do.....	.....
19	.....	.....	.....	do.....	.....
20	.....	.....	.....	do.....	.....
21	.....	.....	.....	do.....	.....
22	.....	.....	.....	do.....	.....
23	.....	.....	.....	No transactions.....	.....
24	.....	.....	.....	.....	7
25	.....	.....	.....	No report.....	.....
26	St. Petersburg.....	Disinfected.....	May 10	.....	13
	Port Tampa.....	do.....	.....	.....	.....

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1899, to May 25, 1900.

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

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Huntsville.....	Apr. 4.....	19	0	
Jefferson County.....	Jan. 1-Feb. 5..	86		
Mobile.....	Jan. 2-May 12..	71	1	
Whistler.....	Jan. 1-Feb. 3..	2		
Total for State.....		178	1	
Total for State, same period, 1899.....		139	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-Apr. 21..	337	18	
Saline County.....	Feb. 2.....			Do.
Scott County.....	do.....			Do.
White County (Searcy).....	Feb. 2-Feb. 21..	40		Do.
Woodruff County.....	do.....			Do.
Total for State.....		377	18	
Total for State, same period, 1899.....		8	1	
California:				
Los Angeles.....	Jan. 18.....	3		
Total for State, same period, 1899.....		94	15	
Colorado:				
Arapahoe County.....	Jan. 7-Apr. 30..	41		
Conejos County.....	Apr. 25.....	1		
Douglas County.....	Apr. 2-May 1....	4		
El Paso County.....	Feb. 12-Apr. 26..	12		
Huerfano County.....	Dec. 29-Jan. 26..	6		
Lake County.....	Jan. 17-Feb. 28..	2		
Las Animas County.....	Feb. 4-Apr. 23..	17		
Lincoln County.....	Dec. 15-Jan. 1..	2		
Logan County.....	Apr. 2-Apr. 28..	6		
Otero County.....	Apr. 6.....	1		
Pueblo County.....	Apr. 13.....	1		
Rio Grande County.....	Feb. 27-Mar. 19..	17	2	
Saguache County.....	Dec. 28.....	1		
San Miguel County.....	Apr. 24.....	1		
Weid County.....	Feb. 23-Apr. 14..	8		
Total for State.....		120	2	
Total for State, same period, 1899.....		136	9	
Delaware:				
Wilmington.....	Jan. 7-Jan. 13..		1	
Total for State, same period, 1899.....		0	0	
District of Columbia:				
Washington.....	Jan. 12-May 11..	24	4	
Total for District, same period, 1899.....		85		
Florida:				
Jacksonville.....	Jan. 7-May 5....	24		
Pensacola.....	Jan. 16-Feb. 9..	2		
Total for State.....		26		
Total for State, same period, 1899.....		216		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Georgia:				
Appling County.....	Jan. 20.....	1		
Blackshear.....	Jan. 11.....	16		
Brunswick.....	Dec. 19-Mar. 1...	112	2	
Darien.....	Jan. 17.....	2		
Jesup.....	Jan. 20.....	2		
Lee County.....	May 8.....	1		
Liberty.....	Jan. 20.....	8		
McIntosh County.....	do.....			Several cases.
Polk County.....	Apr. 28.....	30		
Savannah.....	Jan. 20.....	1		
Warren County.....	May 8.....	1		
Wayne County.....	do.....	3		
Waycross.....	Jan. 1-Feb. 18...	23		
Total for State.....		200	2	
Total for State, same period, 1899.....		319		
Illinois:				
Aurora.....	Feb. 11-Apr. 7...	34		
Cairo.....	Dec. 24-May 19...	99	6	
Chicago.....	Dec. 27-May 19...	32	1	
Danville.....	Feb. 4-Feb. 10...	1		
Rockford.....	Feb. 11-Feb. 17...	2		
Springfield.....	Jan. 21-Apr. 13...	3		
Alexander County.....	Dec. 1-Feb. 28...			Smallpox reported.
Bond County.....	do.....			Do.
Boone County.....	do.....			Do.
Bureau County.....	do.....			Do.
Christian County.....	do.....			Do.
Clinton County.....	do.....			Do.
Cook County.....	do.....			Do.
Cumberland County.....	do.....			Do.
DeWitt County.....	do.....			Do.
Douglas County.....	do.....			Do.
Fulton County.....	do.....			Do.
Gallatin County.....	do.....			Do.
Hamilton County.....	do.....			Do.
Hardin County.....	do.....			Do.
Henderson County.....	do.....			Do.
Henry County.....	do.....			Do.
Iroquois County.....	do.....			Do.
Jackson County.....	do.....			Do.
Jefferson County.....	do.....			Do.
Johnson County.....	do.....			Do.
Lee County.....	do.....			Do.
Livingston County.....	do.....			Do.
Macon County.....	do.....			Do.
Macoupin County.....	do.....			Do.
Madison County.....	do.....			Do.
Massac County.....	do.....			Do.
McHenry County.....	do.....			Do.
McLean County.....	do.....			Do.
Morgan County.....	do.....			Do.
Ogle County.....	do.....			Do.
Perry County.....	do.....			Do.
Piatt County.....	do.....			Do.
Pope County.....	do.....			Do.
Pulaski County.....	do.....			Do.
Randolph County.....	do.....			Do.
Rock Island County.....	do.....			Do.
Saline County.....	do.....			Do.
Sangamon County.....	do.....			Do.
St. Clair County.....	do.....			Do.
Schuyler County.....	do.....			Do.
Shelby County.....	do.....			Do.
Union County.....	do.....			Do.
Whiteside County.....	do.....			Do.
Williamson County.....	do.....			Do.
Winnebago County.....	do.....			Do.
Total for State.....		171	7	
Total for State, same period, 1899.....		47		
Indian Territory:				
Choctaw Nation.....	Dec. 18.....	75		
Total for same period, 1899.....		0	45	
Indiana:				
Adams County.....	Dec. 1-Dec. 31...	1		
Clay County.....	Jan. 17.....			Many cases.

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Dearborn County.....	Dec. 1-Dec. 31...	1		
Evansville.....	Dec. 24-May 12...	96		
Gibson County.....	Mar. 31.....			Smallpox reported.
Greene County.....	do.....			Do.
Indianapolis.....	Jan. 15-May 5...	22		
Jackson County.....	Mar. 31.....			Do.
Jennings County.....	Dec. 1-Dec. 31...	4		
Madison County.....	do.....	14		
Marion County.....	Mar. 31.....			Do.
Posey County.....	Dec. 1-Dec. 31...	26		
Washington County.....	Mar. 31.....			Do.
Total for State.....		164		
Total for State, same period, 1899.....		87	1	February 28, 750 cases in the State, March 31, 56 cases in the State.
Iowa:				
Des Moines.....	Feb. 1-Apr. 30...	19	0	
Ottumwa.....	Apr. 15-Apr. 21...	1		
Polk County.....	Feb. 8.....	16	0	
Total for State.....		36		
Total for same period, 1899.....		13	2	
Kansas:				
Anthony.....	Jan. 1-Jan. 31...	2		
Arkansas City.....	do.....	9	1	
Atchison County.....	Jan. 29-Feb. 28...	11		
Barber County.....	Feb. 1-Mar. 31...	67	1	
Burlingame.....	Mar. 1-Mar. 31...	5		
Burns, Marion County.....	Jan. 1-Mar. 31...	4		
Butler County.....	Mar. 1-Mar. 31...	1		
Centralia.....	Jan. 1-Mar. 31...	2		
Cherokee County.....	Feb. 1-Mar. 31...	32	4	
Chautauque County.....	Feb. 1-Feb. 28...	2		
Douglas County.....	Mar. 1-Mar. 31...	35		
Emporia.....	Feb. 1-Mar. 31...	10		
Florence.....	Mar. 1-Mar. 31...	1		
Franklin County.....	do.....	9		
Galena and Cherokee County.....	Feb. 1-Mar. 31...	31		
Grantville.....	do.....	1		
Greenwood County.....	Mar. 1-Mar. 31...	6		
Hartford.....	do.....	2		
Harvey County.....	Feb. 1-Mar. 31...	8		
Holliday.....	do.....	1		
Hutchinson.....	Mar. 1-Mar. 31...	1		
Jefferson County.....	do.....	29	1	
Junction City.....	Feb. 1-Mar. 31...	8		
Kansas City.....	do.....	35		
Kingman County.....	Jan. 1-Mar. 31...	27	2	
Labette County.....	Jan. 1-Feb. 28...	7		
Lawrence County.....	do.....	98		
Lyon County.....	do.....	100		
Marshall County.....	do.....	2		
McCune.....	Mar. 1-Mar. 31...	9		
McPherson.....	do.....	1		
Montgomery County.....	Jan. 1-Feb. 28...	5		
Mound City.....	Mar. 1-Mar. 31...	2		
Nemaha County.....	Jan. 1-Mar. 31...	59		
Newton.....	Jan. 1-Feb. 28...	3		
Neosho.....	Mar. 1-Mar. 31...	5		
Oasawatomie.....	Jan. 1-Mar. 31...	10		
Osage County.....	do.....	8		
Oswego, Labette County.....	Nov. 5-Feb. 8...	17	0	
Ottawa.....	Feb. 1-Mar. 31...	2		
Paola.....	Jan. 1-Jan. 31...	1		
Parsons County.....	Feb. 1-Mar. 31...	9	2	
Pittsburg.....	Mar. 1-Mar. 31...	10		
Reno County.....	Feb. 1-Feb. 28...	1		
Salina.....	Mar. 1-Mar. 31...	16		
Sedgwick County.....	Feb. 1-Mar. 31...	18		
Seneca.....	Mar. 1-Mar. 31...	2		
Shawnee County.....	Jan. 1-Mar. 31...	67		
Sumner County.....	do.....	86		
Summerfield.....	Mar. 1-Mar. 31...	1		
Tonganoxie.....	Jan. 1-Jan. 31...	64	1	
Topeka.....	Jan. 1-Mar. 31...	61	4	Many cases.
Wabaunsee County.....	Jan. 1-Feb. 28...	29		
Wattville.....	Mar. 1-Mar. 31...	2		
White Water, Butler County.....	Jan. 1-Jan. 31...	1		
Wichita.....	Jan. 1-May 12...	111	1	

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Kansas—Continued.				
Woodson County.....	Jan. 1-Apr. 28...	7		
Wyandotte County (outside Kansas City).....	.....do.....	44		
Yale.....	Mar. 1-Mar. 31...	83		
Total for State.....		832	17	
Total for State, same period, 1899.....		152	16	
Kentucky:				
Covington.....	Jan. 14-May 19...	106	1	
Lexington.....	Mar. 25-May 5...	10		
Louisville.....	Jan. 12-Feb. 22...	10		
Paducah.....	Jan. 21.....	18		
Total for State.....		144	1	
Total for State, same period, 1899.....		464	7	
Louisiana:				
Ascension.....	Jan. 29-Feb. 3...	5		
Assumption.....	.....do.....	8	4	
Avoyelles.....	Jan. 21-Jan. 27...	7		
Caddo.....	Jan. 21-May 5...	259	30	
Calcasieu.....	Jan. 7-Apr. 7...	29	3	
Concordia.....	Jan. 29-Feb. 3...			Several cases.
De Soto.....	Jan. 14-Jan. 20...	1		
E. Baton Rouge.....	Jan. 29-Feb. 3...	5		
East Carroll Parish.....	Feb. 4-Apr. 14...	3		
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-Mar. 3...	12	1	
New Orleans.....	Dec. 31-May 12...	1,160	342	
Ouachita.....	Jan. 29-Feb. 3...	1		
Plaquemine.....	Jan. 21-Apr. 28...	6	1	
Point Coupée.....	Dec. 31-Feb. 3...	7		
Rapides.....	Jan. 21-Jan. 27...	5		
Richland.....	Feb. 11-Feb. 17...	5		
Shreveport.....	Dec. 24-May 12...	232	19	
St. Charles.....	Jan. 29-Feb. 3...	3		
St. James.....	Dec. 24-Jan. 17...	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-Feb. 24...	11		
Tensas.....	Jan. 29-Feb. 3...	35		
Vermilion.....	Jan. 21-Mar. 3...	17		
Webster.....	Mar. 18-Mar. 24...	2		
Total for State.....		3,194	430	
Total for State, same period, 1899.....		212	3	
Maine:				
Portland.....	Mar. 18-May 19...	6	2	
Total for State, same period, 1899.....		165		
Maryland:				
Baltimore.....	Apr. 8-May 19...	8	0	
Total for State, same period, 1899.....		29		
Massachusetts:				
Boston.....	Dec. 30-May 19...	7		
Chelsea.....	Dec. 25-Dec. 31...		1	
Chicopee.....	May 6-May 12...		1	
Lawrence.....	Jan. 28-Feb. 3...	1		
Lowell.....	Dec. 24-Dec. 30...		1	
Malden.....	Jan. 14-Jan. 27...	3		
Total for State.....		11	3	
Total for State, same period, 1899.....		9	1	

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Michigan:				
Detroit.....	Feb. 19-May 12...	27	1	
Grand Rapids.....	Mar. 4-May 5...	6		
Total for State.....		33	1	
Total for State, same period, 1899.....		22	1	
Minnesota:				
Albert Lea.....	Jan. 1-Apr. 27...	26	0	City.
Anoka County.....	Mar. 1-Apr. 27...	48		
Butterfield.....	Jan. 1-Mar. 31...	6	0	Village.
Carlton County.....	Apr. 6-May 15...	6		
Chippewa County.....	May 15.....	1		
Dodge County.....	Apr. 1-May 15...	2		
Duluth.....	Jan. 1-May 15...	29	0	Do.
East Grand Forks.....	Apr. 6-Apr. 27...	1		
Faribault County.....	do.....	1	0	
Fergus Falls.....	Apr. 6.....	2	0	City.
Freeborn County.....	Jan. 1-Apr. 27...	36	0	
Goodhue County.....	Apr. 1-May 15...	4		
Hennepin County.....	Apr. 6-Apr. 27...	8		
Hou-ton County.....	May 15.....	2		
Janesville.....	Jan. 1-Mar. 1...	1	0	Village.
Jordan.....	do.....	1	0	Do.
Kandiyohi County.....	Mar. 20-Apr. 27...	5		
Le Sauer County.....	Mar. 1-Mar. 20...	1	0	
Little Falls.....	May 15.....	1		
Martin County.....	Apr. 6-Apr. 27...	3		
Meeker County.....	do.....	1		
Minneapolis.....	Oct. 1-May 15...	348	5	
New Richland.....	Jan. 1-Mar. 1...	1	0	Do.
Northfield.....	Jan. 1-Apr. 14...	36	1	City.
Owatonna.....	do.....	4	0	Do.
Pipestone County.....	May 15.....	5		
Pope County.....	Apr. 1-Apr. 27...	8		
Ramsey County.....	Apr. 6-Apr. 27...	1		
Rice County.....	Jan. 1-May 15...	21	0	
St. James.....	do.....	18	0	Village.
St. Paul.....	Mar. 1-May 15...	18	0	
Steele County.....	Jan. 1-Apr. 14...	2	0	
Wadena County.....	May 15.....	1		
Watsonwan County.....	Jan. 1-Mar. 31...	9	0	
Wilkin County.....	Apr. 6-Apr. 27...	6		
Worthington.....	May 15.....	1		
Wright County.....	Jan. 1-Apr. 27...	9	0	
Total for State.....		621	5	
Total for State, same period, 1899.....		23		
Mississippi:				
Greenwood.....	Jan. 21-Feb. 17...	303	9	
Hinds County.....	Mar. 7.....			Epidemic prevails.
Total for same period, 1899.....		23	3	
Missouri:				
Paris.....	Sept. 3-Feb. 5...	37	4	
St. Louis.....	Dec. 19-May 6...	88	0	
Total for State.....		125	4	
Total for State, same period, 1899.....		90	17	
Montana:				
Butte.....	Feb. 7.....	100		
Total for same period, 1899.....		2		
Nebraska:				
Dubois.....	Dec. 1-Feb. 15...	2	2	
Guide Rock.....	do.....	7	0	
Liberty.....	Dec. 1-Feb. 15...	13	0	
Omaha.....	Dec. 1-May 12...	31	0	
Total for State.....		53	2	
Total for State, same period, 1899.....		372	3	
New Jersey:				
Union County.....	Jan. 1-Apr. 1...	3		
Morris County.....	do.....	12		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
New Jersey—Continued.				
Middlesex County.....	Jan. 1-Apr. 1...	1		
Hudson County.....	.....do.....	1		
Total for State.....		17		
Total for State, same period, 1899.....		6		
New Mexico:				
Capitan.....	May. 1.....	2		
Folsom.....	Mar. 21.....	4		
Total for Territory.....		6		
New York:				
Amsterdam.....	Dec. 25-Dec. 30...	1		
Buffalo.....	Apr. 27-May 9.....	3		On ss. John Oades.
New York City.....	Jan. 7-May 5.....	25	1	
New York Quarantine.....	May 11.....	1	1	On ss. Lahn.
Total for State.....		29	2	
Total for State, same period, 1899.....		26	4	
North Carolina:				
Alamance County.....	Jan. 1-Mar. 31...	28		
Alexander County.....	Mar. 1-Mar. 31...	3		
Beaufort.....	Dec. 27.....	1		
Bertie County.....	Jan. 1-Jan. 31...	3		
Buncombe County.....	Mar. 1-Mar. 31...	15		
Burke County.....	.....do.....	1		
Cabarrus County.....	Dec. 1-Mar. 31...	6		
Cartaret County.....	.....do.....	1		
Charlotte.....	Dec. 1-Apr. 30...	27	0	
Chatham County.....	Nov. 1-Jan. 31...	38		
Chowan County.....	Mar. 1-Mar. 31...	6		
Coswell County.....	.....do.....	1		
Currituck County.....	Dec. 1-Jan. 31...	7		
Davidson County.....	Dec. 1-Mar. 31...	30	1	
Davie County.....	Jan. 1-Mar. 31...	15	1	
Durham County.....	Mar. 1-Mar. 31...	3		
Edgecombe County.....	.....do.....	2		
Gates County.....	Jan. 1-Mar. 31...	15		
Greensboro.....	Jan. 15.....			Numerous cases.
Guilford County.....	Jan. 15-Mar. 31...	144		
Halifax County.....	.....do.....	67		
Harnett County.....	Mar. 1-Mar. 31...	5		
Henderson County.....	.....do.....	1		
Hertford County.....	Dec. 1-Mar. 31...	11	1	
Iredell County.....	Mar. 1-Mar. 31...	1		
Johnston County.....	Jan. 1-Mar. 31...	2		
Mecklenburg County.....	Dec. 1-Mar. 31...	24		
Moore County.....	Jan. 1-Mar. 31...	68		
Nash County.....	Dec. 1-Mar. 31...	14		
New Hanover County.....	Jan. 1-Mar. 31...	7		
Northampton County.....	Jan. 15-Jan. 31...	10		
Orange County.....	Jan. 1-Mar. 31...	21		
Person County.....	Mar. 1-Mar. 31...	17		
Randolph County.....	Dec. 1-Mar. 31...	13		
Richmond County.....	Jan. 1-Jan. 31...	27		
Robeson County.....	Jan. 1-Mar. 31...	28		
Rockingham County.....	Mar. 1-Mar. 31...	120	6	
Rowan County.....	Jan. 15-Dec. 31...	54		
Rutherford County.....	Mar. 1-Mar. 31...			A number of cases.
Stanley County.....	Jan. 1-Mar. 31...	8		
Stokes County.....	Jan. 1-Mar. 31...	4		
Surry County.....	Dec. 1-Jan. 31...	84		
Union County.....	.....do.....	5		
Vance County.....	Jan. 15-Dec. 31...	1		
Warren County.....	Mar. 1-Mar. 31...	1		
Wilmington.....	Jan. 25-Mar. 31...	4		
Total for State.....		840	9	
Total for State, same period, 1899.....		85	1	
Ohio:				
Allen County.....	Jan. 1-Apr. 18...	7		
Ashtabula County.....	.....do.....	5		
Auglaize County.....	.....do.....	10		
Brown County.....	.....do.....	4		
Butler County.....	.....do.....	4		
Clark County.....	.....do.....	1		
Columbiana County.....	.....do.....	19	2	

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Coshocton County	Jan. 1-Apr. 18...	2		
Cuyahoga County:				
Brooklyn Township	May 19.....	2		
Cleveland.....	do	316	6	
Dover Township.....	do	1		
Glenville.....	do	4		
Mayfield Township	do	14		
Newburg.....	do	7		
Lakewood.....	do	2		
Darke County.....	Jan. 1-Apr. 18	7		
Defiance County.....	do	8		
Delaware County.....	do	44		
Franklin County:				
Columbus.....	do	17		
Fulton County.....	do	2		
Geauga County.....	do	3		
Greene County.....	do	20	2	
Hamilton County:				
Cincinnati.....	do	46	1	
Hyde Park.....	do	1		
Hancock County.....	do	1		
Hardin County.....	do	3		
Henry County.....	do	96	3	
Huron County.....	do	9		
Lake County.....	do	2		
Licking County.....	do	1		
Lorain County.....	do	85		
Lucas County:				
Toledo.....	do	1		
Madison County.....	do	45		
Mahoning County:				
Youngstown.....	do	11		
Medina County.....	do	2		
Morrow County.....	do	4		
Putnam County.....	do	6		
Stark County:				
Beach City.....	do	1		
Canton.....	do	10		
Trumbull County.....	do	18	1	
Union County.....	do	2		
Washington County.....	do	1		
Total for State		844	15	
Total for State, same period, 1899.....		815	16	
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.....		37	13	
Oregon:				
Astoria.....	Feb. 12.....	1		
Portland.....	Jan. 23-May 4...	7		
Total for State		8		
Total for State, same period, 1899.....		0	0	
Pennsylvania:				
Allegheny County.....	Dec. 17-Apr. 21...	14	2	
Beaver County.....	Jan. 1-Dec. 31...	1		
Crawford County.....	Mar. 1-Mar. 31...	2		
Lawrence County.....	do	3	1	
McKeesport.....	Mar. 21-Apr. 10...	3	1	
Philadelphia.....	Dec. 24-May 5...	15		
Pittsburg.....	May 6-May 12...	2		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Pennsylvania—Continued.				
Susquehanna County	Mar. 1-Mar. 31...	15		
Westmoreland County .....	.....do	3		
Total for State		56	4	
Total for State, same period, 1899.		244	13	
South Carolina:				
Greenville.....	Dec. 24-May 12...	21		
Total for State, same period, 1899.		140	10	
Tennessee:				
Chattanooga.....	Jan. 22.....	9		
Columbia.....	Jan. 6.....	24		
Memphis.....	Nov. 4-May 12...	569	5	
Mount Pleasant.....	Jan. 6.....	8		
Nashville.....	Dec. 24-May 5...	27		
Total for State.....		621	5	
Total for State from Oct. 1, 1899, to Mar. 5, 1900.		2,591	413	
Total for State, same period, 1899.		123		
Texas:				
Aline.....	Feb. 7-Feb. 13...	1		
Angelina County	Jan. 17-Jan. 23...	1		
Austin	Jan. 1-Feb. 28...	15		
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. 20...	15		
Bonham.....	Jan. 1-Jan. 16...			
Bowie County.....	Jan. 1-Feb. 28...	5		
Brenham .....	.....do	5	1	
Brookshire.....	.....do	1		
Caddo Mills.....	Jan. 17-Jan. 23...	1		
Caldwell	Feb. 14-Feb. 20...	2		
Carmine	Jan. 24-Jan. 30...	10		
Cass County	Jan. 1-Jan. 16...	1		
Chappel Hill.....	Feb. 7-Feb. 13...	1		
Colmesneil.....	.....do	1		
Corpus Christi.....	May 4.....	1		
Corsicana	Feb. 7-Feb. 13...	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.....	Feb. 4-Feb. 28...	1	1	Do.
Floydada	Jan. 1-Jan. 16...	1		
Fort Stockton.....	.....do	4		
Gainesville.....	Feb. 7-Feb. 13...	8		
Galveston.....	Feb. 10.....	2		
Garrett.....	Feb. 7-Feb. 13...	7		
Gilmer County.....	Feb. 22-Feb. 28...	2		
Grand Saline.....	Feb. 14-Feb. 20...	3		
Greenville.....	.....do	1		
Grimes County	Jan. 1-Apr. 8...	195	3	
Hillsboro	Feb. 22-Feb. 28...	4		
Honey Grove.....	Jan. 1-Feb. 28...	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		
Leesburg.....	Feb. 22-Feb. 28...	2		
Malakoff.....	Feb. 14-Feb. 20...	3		
Meadow.....	Jan. 17-Jan. 23...	9		
Meridian.....	.....do	2		
Milano	Jan. 17-Jan. 30...	8		
Mount Pleasant.....	Feb. 22-Feb. 28...	10		
Navarro County.....	Jan. 1-Jan. 16...	3		
Palestine.....	Feb. 7-Feb. 20...	26		
Paris	Jan. 17-Jan. 30...	6		
Prairie Dell.....	Jan. 24-Jan. 30...	13		
Port Sullivan.....	.....do	3		
Silver Lake.....	Feb. 22-Feb. 28...	4		
St. Jo	Feb. 14-Feb. 20...	20		
San Antonio.....	Dec. 1-Apr. 30...	7	1	
Sealey.....	Jan. 24-Jan. 30...	2		
Seguin	Jan. 1-Jan. 30...	3	1	
Smithville	Jan. 11-Jan. 30...	14		

Smallpox in the United States, etc.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Texas—Continued.				
Taylor.....	Feb. 22-Feb. 28	2	.....
Temple.....	Jan. 11-Feb. 28	20	1	
Tyler.....	Jan. 11-Jan. 30	1	.....
Village Mills.....	Feb. 7-Feb. 13	1	.....
Washington County.....	Feb. 22-Feb. 28	.....	2	
Whorton County.....	Feb. 14-Feb. 20	.....	2	
Weimer.....	Feb. 14-Feb. 20	1	.....
Wolfe City.....	Jan. 17-Jan. 23	3	.....
Yoakum.....	Feb. 22-Feb. 28	7	.....
Total for State.....		401	12	
Total for State, same period, 1899.		887	143	
Utah:				
Morgan County.....	Apr. 16.....	1	.....
Salt Lake City.....	Dec. 1-May 12	58	.....
Ogden.....	Mar. 1-Apr 30	21	1	
Total for State.....		80	1	
Total for State, same period, 1899.		0	0	
Virginia:				
Alexandria.....	Feb. 14-Mar. 17	4	.....
Bath County.....	Mar. 13.....	7	.....
Danville.....	Mar. 21-Mar. 28	30	.....
Norfolk.....	Jan. 20.....	1	.....
Petersburg.....	Dec. 1-Dec. 26	4	.....
Portsmouth.....	Dec. 24-Apr. 26	96	21	
Richmond.....	Jan. 1-Feb. 28	35	0	
Roanoke.....	Jan. 1-Mar. 31	44	0	
Southampton.....	Apr. 27.....	.....	.....	Smallpox reported.
Total for State.....		221	21	
Total for State, same period, 1899.		2,107	31	
Washington:				
Centralia.....	Feb. 26.....	150	.....
Pierce County.....	Feb. 7.....	1	.....
Seattle.....	Feb. 15-Apr. 30	4	0	
Spokane.....	Jan. 1-Apr. 21	185	2	
Tacoma.....	Feb. 12-May 5	28	1	
Walla Walla.....	Feb. 21.....	2	.....
Total for State.....		370	3	
Total for State, same period, 1899.		5	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-Mar. 1	25	.....
McDowell County.....	Jan. 31.....	1	.....
Mingo County.....	.....do.....	.....	.....	Do.
Monongalia County.....	Jan. 26.....	1	.....
Upshur County.....	Dec. 1-Mar. 1	35	1	Do.
Webster County.....	Feb 8.....	10	.....
Total for State.....		95	1	
Total for State, same period, 1899.		0	0	
Wisconsin:				
Douglas County.....	Apr. 14-Apr. 23	2	.....
Earl Claire County.....	Mar. 26.....	2	.....
La Crosse County.....	Mar. 21.....	6	.....
Lafayette County.....	Feb. 3.....	1	.....
Lemonweir.....	Jan. 24-Feb. 3	5	1	
Mauston.....	Jan. 24.....	1	.....
Pierce County.....	Apr. 14-Apr. 23	6	.....
St. Croix County.....	Apr. 14-Apr. 23	13	.....
Superior.....	Apr. 1-Apr. 30	4	.....
Wausara County.....	Mar. 26.....	1	.....
Total for State.....		41	1	
Total for State, same period, 1899.		26	3	

Smallpox in the United States—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Wyoming:				
Cheyenne	Apr. 16.....	5		
Sweetwater County.....	Mar. 13-May 4...	15		
Uintah County.....	Mar. 3-May 4...	5		
Total for State		25		
Total for State, same period, 1899.....		6		
Grand total		10,439	573	
Grand total, same period, 1899.....		7,207	365	

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.						
Allentown, Pa.....	May 5	25,228	10																	
Do.....	May 12	25,228	11	2																
Ashtabula, Ohio.....	May 19	8,338	3																	
Baltimore, Md.....	do.....	434,439	192	18						1		2	1	3						
Bay City, Mich.....	May 12	27,839	5																	
Do.....	May 19	27,839	9	1							1									
Binghamton, N. Y.....	May 20	35,005	24	1																
Boston, Mass.....	May 19	448,477	245	32						5	8	11	3	1						
Bristol, R. I.....	May 12	5,478	1																	
Do.....	May 19	5,478	3																	
Cambridge, Mass.....	do.....	70,028	32	3						1		2		1						
Camden, N. J.....	do.....	58,313	25	2								1								
Carbondale, Pa.....	May 14	10,832	8								1	1								
Charleston, S. C.....	May 12	a 54,955	b 36	7																
Chelsea, Mass.....	do.....	27,909	12									1								
Chicago, Ill.....	May 19	1,099,850	502	48		1				3	8	15	7	6						
Chicopee, Mass.....	do.....	14,050	5																	
Chillicothe, Ohio.....	May 12	11,288	2									1								
Cleveland, Ohio.....	do.....	261,353	133	4		1				8	1	1	1							
Do.....	May 19	261,353	119	2		1				4										
Clinton, Mass.....	do.....	10,424	4																	
Concord, N. H.....	May 12	17,044	6									1								
Do.....	May 19	17,044	7	1									1	1						
Covington, Ky.....	do.....	37,371	21	6																
Dayton, Ohio.....	do.....	61,220	25	4								1								
Detroit, Mich.....	May 12	205,876	120	9								1		1						
Dunkirk, N. Y.....	do.....	9,416	4	1																1
Elmira, N. Y.....	do.....	29,708	18	2															1	
Evansville, Ind.....	May 19	50,756	16	1															2	
Everett, Mass.....	May 12	11,068	8																	
Fall River, Mass.....	May 19	74,398	47	5																1
Fitchburg, Mass.....	May 12	22,037	11	1									1							
Gloucester, Mass.....	May 19	24,651	12																	
Green Bay, Wis.....	May 13	9,069	7	2																
Greenville, S. C.....	May 12	8,607	7																	
Holyoke, Mass.....	do.....	35,637	17									3		45						
Honolulu, H. I.....	Apr. 28	44,500	27	5																
Indianapolis, Ind.....	May 12	105,436	55	5								1								
Jackson, Mich.....	do.....	20,795	4								1									
Do.....	May 19	20,795	3																	
Jacksonville, Fla.....	May 14	17,201	14																	1
Jersey City, N. J.....	May 13	163,003	92	8									3							
Johnstown, Pa.....	May 19	21,805	18	1									2	1						
Lawrence, Mass.....	May 12	44,654	49	6								2	1	4						
Lebanon, Pa.....	do.....	14,664	5																	
Lexington, Ky.....	do.....	21,567	11	2																
Los Angeles, Cal.....	do.....	50,395	34	9																
Lowell, Mass.....	May 19	77,696	43	4							1									
McKeesport, Pa.....	May 12	20,741	9										1							
Malden, Mass.....	do.....	23,031	8	1																
Do.....	May 19	23,031	8																	
Manchester, N. H.....	May 12	44,126	22	2								1								
Do.....	May 19	44,126	26	4																
Massillon, Ohio.....	May 12	10,092	2																	
Medford, Mass.....	May 19	11,079	2																	
Melrose, Mass.....	May 12	8,519	1																	
Milwaukee, Wis.....	do.....	204,468	100	10									1	3						3
Do.....	May 19	204,468	100	12									1	1	1					1
Mobile, Ala.....	do.....	31,076	18	4							2									1
Nashville, Tenn.....	do.....	76,168	27	9																
Newark, N. J.....	do.....	181,830	111	11								3	4	1						
New Bedford, Mass.....	do.....	40,733	29																	
Newburyport, Mass.....	May 12	13,947	5																	
New Orleans, La.....	do.....	242,039	149	17		14														
Newton, Mass.....	May 19	24,370	4								2									
New York, N. Y.....	do.....	c3,654,594	1,469	171		1					1	4	16	45	23	14				
Norristown, Pa.....	do.....	19,791	11																	
North Adams, Mass.....	May 12	16,074	7																	
Omaha, Nebr.....	do.....	140,452	22										1							
Oneonta, N. Y.....	May 19	6,272	1																	
Palmer, Mass.....	do.....	6,520	4	1																
Philadelphia, Pa.....	do.....	1,046,964	535	54							9	12	33	22						
Pittsburg, Pa.....	May 12	238,617	114	11							6	1	4	1						8

a Estimated population, 65,165—white, 28,870; colored, 36,295. b White, 9; colored, 27. c Estimated.

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.	Variceloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Pittston, Pa.....	May 19	10,302	6											
Plainfield, N. J.....	do.....	11,267	7									1		
Port Huron, Mich.....	Mar. 31	13,543	6											
Do.....	Apr. 7	13,543	8											
Do.....	Apr. 14	13,543	6											
Do.....	Apr. 21	13,543	6											
Do.....	Apr. 28	13,543	10											
Do.....	May 5	13,543	6											
Do.....	May 12	13,543	3											
Portland, Me.....	May 19	36,425	20	1										
Portsmouth, Ohio.....	do.....	12,394	7							2				
Providence, R. I.....	do.....	132,146	80	12						1		2		1
Quincy, Mass.....	do.....	31,494	6	2							1			
Salt Lake City, Utah.....	May 12	44,843	9								1			
San Diego, Cal.....	do.....	16,159	8	1								1		
San José, Cal.....	do.....	18,060	7	1										
Santa Barbara, Cal.....	do.....	5,864	3	1										
Scranton, Pa.....	do.....	75,215	47							3	2			
Do.....	May 19	75,215	35							3				
Shreveport, La.....	May 12	11,979	6	1										
Do.....	May 19	11,979	4											
Somerville, Mass.....	do.....	40,152	24	1							2			
Spokane, Wash.....	May 12	19,922	2											
Steelton, Pa.....	May 19	9,250	3											
Tacoma, Wash.....	May 12	36,006	5											
Taunton, Mass.....	May 19	25,448	12	1									1	
Waltham, Mass.....	May 12	18,707	4											
Warren, Ohio.....	do.....	5,973	2											
Do.....	May 19	5,973	3											
Wheeling, W. Va.....	May 17	35,013	2							2				
Wichita, Kans.....	May 12	23,853	6											
Do.....	May 19	23,853	9	3						1				
Williamport, Pa.....	do.....	27,132	5											
Worcester, Mass.....	May 11	84,655	38	8						1	3	1		
Yonkers, N. Y.....	do.....	32,033	15	1										
Do.....	May 18	32,033	5	2										
Youngstown, Ohio.....	May 12	33,220	9											
Do.....	May 18	33,220	10	1								1		

Table of temperature and rainfall, week ended May 21, 1900.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	α Excess.	α Defic'ncy.	Normal.	Excess.	Deficiency.
Atlantic Coast:						
Eastport, Me.....	48		4	.84	2.16	
Portland, Me.....	54		4	.84	1.06	
Northfield, Vt.....	53	1		.71	.09	
Boston, Mass.....	56	0		.83	1.37	
New Haven, Conn.....	58	4		.84	1.36	
Albany, N. Y.....	60	2		.70	.40	
New York, N. Y.....	60	6		.70	1.90	
Harrisburg, Pa.....	61	7		1.12		.32
Philadelphia, Pa.....	62	6		.72	2.38	
New Brunswick, N. J.....	61	5		.91	3.69	
Atlantic City, N. J.....	58	6		.57	.33	
Baltimore, Md.....	64	8		.84	.26	
Washington, D. C.....	64	6		.91	2.25	
Lynchburg, Va.....	65	7		.91	.09	
Cape Henry, Va.....	65	5		.91		.21
Norfolk, Va.....	66	6		.98		.58
Charlotte, N. C.....	68	4		.98		.28
Raleigh, N. C.....	67	5		1.05	.25	
Kittyhawk, N. C.....	67	3		.77		.47
Hatteras, N. C.....	66	4		1.05	.35	
Wilmington, N. C.....	69	3		.95		.65
Columbia, S. C.....	73	1		.91	1.89	
Charleston, S. C.....	72	4		.91		.01
Augusta, Ga.....	72	0		.77		.17
Savannah, Ga.....	73	1		.63	.47	
Jacksonville, Fla.....	75	1		.93		.83
Jupiter, Fla.....	76	2		1.39		1.09
Key West, Fla.....	79		3	.78	4.92	
Gulf States:						
Atlanta, Ga.....	68	4		.68	.02	
Tampa, Fla.....	75	3		.69		.69
Pensacola, Fla.....	73	3		.74		.74
Mobile, Ala.....	74	2		.96		.56
Montgomery, Ala.....	73	3		.87		.47
Meridian, Miss.....	70	2		1.40		1.20
Vicksburg, Miss.....	72	0		1.11		.11
New Orleans, La.....	75	1		1.05		.95
Shreveport, La.....	73		1	.91	1.29	
Fort Smith, Ark.....	67		1	1.05		.35
Little Rock, Ark.....	68	2		1.33		1.33
Palestine, Tex.....	70	2		1.36		.06
Galveston, Tex.....	76	0		.88	.02	
San Antonio, Tex.....	74		2	.70	1.50	
Corpus Christi, Tex.....	75		1	.80	1.70	
Ohio Valley and Tennessee:						
Memphis, Tenn.....	71	0		.94		.04
Nashville, Tenn.....	68	2		.71		.41
Chattanooga, Tenn.....	66	4		.79		.29
Knoxville, Tenn.....	66	4		.84		.74
Lexington, Ky.....	63	7		.77		.57
Louisville, Ky.....	66	4		.77		.47
Indianapolis, Ind.....	64	4		.91	.89	
Cincinnati, Ohio.....	65	5		.77		.37
Columbus, Ohio.....	61	7		.98		.08
Parkersburg, W. Va.....	60	10		.91		.01
Pittsburg, Pa.....	62	8		.77		.37
Lake Region:						
Oswego, N. Y.....	55	0		.65		.55
Rochester, N. Y.....	57	3		.77		.17
Buffalo, N. Y.....	55	1		.77		.67
Erie, Pa.....	57	3		.91		.81
Cleveland, Ohio.....	57	5		.85		.85
Sandusky, Ohio.....	59	3		.79		.69
Toledo, Ohio.....	60	2		.77		.67
Detroit, Mich.....	58	4		.82		.52
Lansing, Mich.....	58	0		.71		.61
Port Huron, Mich.....	54	2		.77		.67
Alpena, Mich.....	49	3		.77		.27
Sault Ste. Marie, Mich.....	47	5		.49		.29
Marquette, Mich.....	49	1		.70	.60	
Escanaba, Mich.....	50	2		.80		.10
Green Bay, Wis.....	53	1		.93		.63
Grand Haven, Mich.....	54	2		.78	.12	

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

Table of temperature and rainfall, week ended May 21, 1900.—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	<i>a</i> Excess.	<i>a</i> Deficiency.	Normal.	Excess.	Deficiency.
Lake Region—Continued.						
Milwaukee, Wis.....	53	3	.....	.82	.28	.....
Chicago, Ill.....	56	.....	2	.84	.06	.....
Duluth, Minn.....	48	4	.....	.85	.....	.85
Upper Mississippi Valley:						
St. Paul, Minn.....	58	.....	0	.77	.....	.77
La Crosse, Wis.....	60	.....	0	.77	1.23	.....
Dubuque, Iowa.....	61	.....	1	.93	.57	.....
Davenport, Iowa.....	61	.....	1	1.00	1.40	.....
Des Moines, Iowa.....	60	.....	2	1.08	.82	.....
Keokuk, Iowa.....	63	.....	1	.91	1.39	.....
Hannibal, Mo.....	64	.....	2	1.13	1.37	.....
Springfield, Ill.....	62	.....	0	1.17	.13	.....
Cairo, Ill.....	67	1	.....	.90	.....	.70
St. Louis, Mo.....	66	2	.....	1.05	.....	.55
Missouri Valley:						
Columbia, Mo.....	62	.....	0	1.33	.....	.48
Springfield, Mo.....	61	3	.....	1.44	.....	.64
Kansas City, Mo.....	64	.....	0	1.05	1.25	.....
Topeka, Kans.....	63	5	.....	1.26	1.34	.....
Wichita, Kans.....	64	6	.....	.94	2.86	.....
Concordia, Kans.....	61	.....	3	1.02	.68	.....
Lincoln, Nebr.....	62	.....	4	.99	.31	.....
Omaha, Nebr.....	63	.....	3	.98	.52	.....
Sioux City, Iowa.....	57	3	.....	.77	.....	.77
Yankton, S. Dak.....	60	.....	0	.98	.....	.98
Valentine, Nebr.....	56	2	.....	.63	.....	.23
Huron, S. Dak.....	55	1	.....	.70	.....	.70
Pierre, S. Dak.....	55	5	.....	.49	.....	.49
Moorhead, Minn.....	53	3	.....	.56	.....	.56
Bismarck, N. Dak.....	55	.....	0	.56	.....	.56
Williston, N. Dak.....	54	.....	0	.43	.....	.43
Rocky Mountain Region:						
Havre, Mont.....	54	2	.....	.35	.....	.05
Helena, Mont.....	52	.....	0	.36	.04	.....
Miles City, Mont.....	57	3	.....	.52	.....	.52
Rapid City, S. Dak.....	52	4	.....	.82	.....	.52
Spokane, Wash.....	57	1	.....	.33	.67	.....
Walla Walla, Wash.....	61	.....	1	.35	1.05	.....
Baker City, Oreg.....	53	.....	1	.42	.68	.....
Winnemucca, Nev.....	54	2	.....	.21	.....	.21
Pocatello, Idaho.....	55	.....	1	.28	.....	.28
Boise, Idaho.....	57	.....	1	.40	.....	.10
Salt Lake City, Utah.....	57	.....	1	.41	.....	.41
Lander, Wyo.....	53	.....	3	.61	.....	.61
Cheyenne, Wyo.....	51	.....	3	.54	.....	.14
North Platte, Nebr.....	59	.....	3	.62	.....	.62
Denver, Colo.....	57	.....	3	.67	.....	.17
Pueblo, Colo.....	59	.....	3	.42	.68	.....
Dodge City, Kans.....	63	.....	7	.75	.....	.25
Oklahoma, Okla.....	68	.....	6	1.38	.02	.....
Amarillo, Tex.....	65	.....	9	.48	1.12	.....
Abilene, Tex.....	71	.....	5	.83	.57	.....
Santa Fe, N. Mex.....	55	.....	1	.28	.72	.....
El Paso, Tex.....	72	.....	.....	.14	.....	.....
Phoenix, Ariz.....	75	3	.....	.02	.....	.02
Yuma, Ariz.....	79	1	.....	.00	.....	.00
Pacific Coast:						
Seattle, Wash.....	56	.....	0	.42	.....	.22
Tacoma, Wash.....	54	2	.....	.55	.....	.15
Astoria, Oreg.....	51	.....	0	.64	.....	.34
Portland, Oreg.....	57	1	.....	.56	.....	.56
Roseburg, Oreg.....	57	1	.....	.42	.....	.22
Eureka, Cal.....	54	.....	0	.70	.....	.70
Redbluff, Cal.....	67	5	.....	.28	.....	.28
Carson City, Nev.....	55	5	.....	.14	.....	.14
Sacramento, Cal.....	63	7	.....	.20	.....	.20
San Francisco, Cal.....	57	1	.....	.15	.....	.15
Fresno, Cal.....	68	4	.....	.07	.....	.07
San Luis Obispo, Cal.....	59	5	.....	.07	.....	.07
Los Angeles, Cal.....	62	4	.....	.07	.....	.07
San Diego, Cal.....	61	1	.....	.07	.....	.07

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

FOREIGN AND INSULAR.

ARABIA.

Plague in Aden.

ADEN, *April 17, 1900.*

Fifty-two days have elapsed since the appearance of plague in Aden, and during this period there have been officially reported 290 cases and 208 deaths from this cause. Several times cases have been landed on Plague Island from steamers coming from India, but this is the first visitation on shore since the pest appeared in Bombay in 1893.

The first case appeared here on Hedjaf Wharf, where a great portion of Indian cargo is landed, and it seems to be generally conceded that the germs were carried here in cargo, or by rats in cargo, though it is probably impossible to fix the exact ship which conveyed the germs to this port. Immediately after the outbreak this wharf was closed and a strict quarantine established around it, and all the inhabitants in the infected district moved on Alia Island, and the entire premises were disinfected. However, though the authorities have been most vigilant in improving the sanitary condition of Aden and using all possible precaution in their endeavor to prevent spread, it has since appeared in each division of the British territory.

The rats are being considered largely responsible for the spread of this most fatal disease. There has been offered a reward of one-half (1 cent) anno for each one killed within the limits of Aden.

The effect of plague on business has been very great. The trade has been badly deranged and greatly diminished, and some exporting houses have ceased to seek business, and a few of them say they will close up unless the disease is quickly stamped out. All regular steamers, except those of the Messageries Maritimes Company, have refused to take any cargo or passengers from here for the west, lest they would have to go through a quarantine at their next port of call. Consequently, the merchants find it impossible to secure adequate shipping facilities, and unless some reliable arrangements can be made for shipments, trade must necessarily be paralyzed. Only 2 steamers have called here since February 22, which would take cargo destined for American ports, and their space was entirely inadequate. Of course the amount of cargo going from Aden may be so small that the cargo steamers do not care to take trouble of loading cargo in quarantine, but it seems unreasonable discrimination for a steamer from an infected port to refuse to take cargo from Aden for no other reason than this is an infected port. Many of the Indian lines, which formerly got a fair amount of cargo here now pass by without calling and it would seem that the local shipping agents have failed to properly provide for their old patrons.

Red Sea ports are practically closed against Aden, or else require local ships to spend ten days in quarantine.

Another very serious impediment to trade is the exodus of hundreds and perhaps thousands of coolies, who have left on account of fright, which makes it quite difficult to obtain sufficient coolies at any price to handle the small arrivals of articles of commerce.

Taken as a whole, merchants agree that business is worse than it was ever before known, and the prospects of an early improvement very remote.

E. S. CUNNINGHAM,
United States Consul.

BELGIUM.

*Report from Antwerp.*ANTWERP, *May 8, 1900.*

SIR: I have the honor to transmit herewith inclosed weekly abstract of bills of health issued during the week ended May 5, 1900.

Seven vessels cleared for ports in the United States carrying cargo. Steamship *Aragonia* sailed for Philadelphia on the 3d instant with 219 steerage passengers and on the 5th instant the steamship *Westernland* cleared for New York with 987 steerage and 70 cabin passengers.

There was no evidence of quarantinable diseases on board of either ship.

Respectfully,

E. K. SPRAGUE,

Passed Assistant Surgeon, U. S. M. H. S.

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

BRAZIL.

Reappearance of plague at Rio de Janeiro.

On May 19 the following cablegram was received:

RIO DE JANEIRO, *May 19, 1900.*

Since April 8 there have been 19 cases of plague at Rio de Janeiro. Since Wednesday, 4. The cases can not be traced to foci already located. Believe the facts are being suppressed. Private rumors exaggerate. Probably the State health authorities will quarantine. This will be decided within four days.

HAVELBURG.

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

The State and national quarantine officers on the Atlantic and Gulf coasts were promptly notified of the existence of plague at Rio de Janeiro.

RIO DE JANEIRO, *May 22, 1900.*

Plague slowly increasing. Epidemic rats. Diagnosis confirmed by bacteriological examination. By order of the President quarantine has been declared against Rio de Janeiro.

HAVELBURG.

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

To this the following answer was sent:

WASHINGTON, D. C., *May 22, 1900.*

As soon as you think plague is sufficiently widespread in Rio de Janeiro to endanger cargoes notify the Bureau by wire, and if you feel any doubt as to merchandise or rat infection of any vessel leaving, make note to that effect on bill of health. Acknowledge receipt.

HAVELBURG,
Rio de Janeiro.

WYMAN.

[Reply.]

RIO DE JANEIRO, *Brazil, May 23, 1900.*

Telegram received. Will do as requested.

W. HAVELBURG.

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

COSTA RICA.

Report from Port Limon—Fruit port.

PORT LIMON, COSTA RICA, *May 6, 1900.*

SIR: I have the honor to submit report for week ended May 5. The following vessels have cleared from this port direct for the United States:

Date.	Vessel.	Master.	No. of crew.	Destination.	No. of passengers.	No. pieces of baggage.
May 2	Steamship Anselm.....	McFarlan	38	New Orleans, La.....	0	0
May 4	Steamship Hispania.....	Frockberg	21	.....do	0	0
May 5	Steamship Jamaica.....	Peterson	16	.....do	0	0
Do....	British steamship Esther	Olsen.....	17	.....do	0	0

The health of Port Limon is very good. One case of yellow fever reported in San José in the person of a male Italian opera singer from Puntarenas. Only 2 deaths in the port during the week. One, an adult, of mitral insufficiency on May 3; the other a child of 7 months, of convulsions, on May 4.

Respectfully,

J. GREY THOMAS,
Acting Assistant Surgeon, U. S. M. H. S.

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

CUBA.

Reports from Cienfuegos, Casilda, and Santa Cruz del Sur.

CIENFUEGOS, CUBA, *May 14, 1900.*

SIR: I have the honor to report that during the week ended May 12, 1900, 12 deaths have occurred in this city, 1 from malaria, 1 from intestinal disease, 3 from tuberculosis. No deaths occurred this week in the Civil Hospital. Death rate for the week is 15.64. No contagious diseases reported. Health of port is good. Nine foreign vessels entered this port and 8 vessels cleared for other ports during the week. Seven alien steerage passengers were landed at this port during the week from the schooner *Joven Anna*, from Montevideo.

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

Santa Cruz del Sur.—Dr. Juan R. Xiques, reports no deaths; no contagious diseases; health of port is good. Inspected 1 foreign vessel during the week.

Respectfully,

F. E. TROTTER,
Assistant Surgeon, U. S. M. H. S.

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

Disinfection and labeling of baggage.

CIENFUEGOS, CUBA, *May 16, 1900.*

SIR: I have the honor to acknowledge the receipt of Bureau letter (F. L. G.), with inquiry regarding disinfection and labeling of baggage at this port.

I would state that the regulations under Article X, page 23, of the

United States Quarantine Regulations, have been strictly enforced since the 1st of May.

The passenger travel from this port is principally by the United States transports and Ward Line steamers, with an occasional vessel of the Spanish Trans-Atlantic Line for New Orleans.

By arrangement with the steamship agents and the Quartermaster Department, passengers are unable to obtain transportation until they have obtained a health certificate from this office and have had their baggage labeled according to the regulations. I inclose a report of the baggage disinfected or inspected and passed of outgoing passengers from this port since the 1st of the month.

Respectfully,

F. E. TROTTER,
Assistant Surgeon, U. S. M. H. S.

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

[Inclosure.]

Baggage disinfected or inspected and passed.

“CIENFUEGOS, CUBA, *May 16, 1900.*

“Disinfected, 4 pieces, United States army transport *Sedgwick*, May 9, 1900; inspected and passed, 5 pieces, United States army transport *Sedgwick*, May 9, 1900; inspected and passed, 7 pieces, steamship *Saratoga*, May 9, 1900.

“F. E. TROTTER,
“*Assistant Surgeon, U. S. M. H. S.*”

Reports from Havana.

HAVANA, CUBA, *May 13, 1900.*

SIR: I have the honor to submit report for the week ended May 12, 1900, with mortuary statistics for the week ended May 9, 1900. The April report shows 5 cases of yellow fever and no death reported for that month.

Two cases, 1 of which died, of yellow fever are reported this week. Both were at the same house, *Diario de la Marina*. None others have been reported to date. An attempt was made to conceal the fatal case, which matter is now under investigation for the assessment of the fine provided by law.

The general health of the city continues good, and it is worthy of note that so far no cases of yellow fever have been reported on the water front or among the seafaring population. Although the rainy season has not set in yet, there has been a considerable amount of rain on the last three days of the week. On the last two days it has been cloudy and cold, so much so that thicker clothing had to be worn.

But little work has been done in the disinfection of vessels, 1 Morgan liner going from here to Cienfuegos where she clears for New Orleans, and another from here to ports on the north coast where she will clear. There is not much shipping now for the United States in the harbor, decidedly less than at this time last year.

The disinfection of baggage, etc., continues smoothly. The work on the *Protector* is still receiving my personal attention in every detail.

Respectfully,

H. R. CARTER,
Surgeon, U. S. M. H. S.

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

[Inclosure.]

Report of inspection and disinfection at Havana for week ended May 12, 1900.

OFFICE.

Number of passengers examined.....	295
Number of passengers vaccinated.....	28

OUT-DOOR DEPARTMENT.

Number of vessels disinfected.....	3
Number of viveros disinfected.....	18
Number of pieces of baggage disinfected.....	125
Vessels inspected and entered.....	17
Vessels inspected and cleared.....	16
Immigrant steerage passengers inspected.....	46

Mortuary report for week ended May 9, 1900.

Bronchitis.....	5
Enteritis.....	14
Yellow fever.....	1
Typhoid fever.....	2
Pernicious malarial fever.....	2
La grippe.....	1
Glanders.....	1
Malaria.....	6
Pneumonia.....	5
Tetanus.....	5
From all causes.....	112

Disinfecting and labeling baggage.

HAVANA, CUBA, *May 13, 1900.*

SIR: In answer to Bureau letter (F. L. G.) of May 8, I would state that the disinfection and labeling of baggage at this station is enforced.

A. All baggage for southern ports is disinfected here.

B. Baggage for northern ports is disinfected if it be in any of the three following classes:

(1) If we are not satisfied it will remain north.

(2) If it comes from any place in Cuba where we believe it has been specially exposed to infection.

(3) If from its nature it is adjudged specially liable to convey infection; *i. e.* if it contains bedding, sorted clothing, etc.

This last in point of fact covers nearly all the steerage baggage.

For the second we have a map of the city of Havana dotted with all the cases of yellow fever that are reported, and as any especial quarter shows infection we disinfect the baggage from that quarter.

Baggage of a clean nature which we are satisfied will remain north, and from a locality accounted clean, is passed.

C. Baggage going north via southern lines, which we can insure reaching its destination without being opened in the south, is treated as northern baggage. This is checked through to destination, in general, New York, and I mail the claim check to the passenger's address, which he writes out in my presence. There are other precautions in labeling, checking, etc., of which the Bureau is aware, but which would take too long to give in detail. Suffice it to say that the baggage so checked will not stop short of its destination, and it is believed to be free from infection if it should so stop. There is but a small amount of it—belonging to wealthy Cubans going to Saratoga. The hand baggage of these people, in short everything not forwarded thus and checked, is disinfected. Last week 459 pieces were disinfected; this week only 125.

Baggage for Porto Rico is treated like that going to southern ports, *i. e.*, disinfected. Baggage for clean ports of Cuba not connected with us by rail is inspected and, where necessary, disinfected.

Household goods are not allowed shipment to the United States without disinfection; most kinds being incapable of being disinfected are excluded. Such as are shipped are disinfected.

Respectfully,

H. R. CARTER,
Surgeon, U. S. M. H. S.

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

Steamship Newlyn arrives at Havana from Buenos Ayres.

HAVANA, CUBA, May 11, 1900.

SIR: I have the honor to report that the British steamship *Newlyn* arrived off this port yesterday evening from Buenos Ayres via Montevideo with cargo of jerked beef in bags from Montevideo; deck cargo, dyewoods from Buenos Ayres. She lay at the wharf at Buenos Ayres. All well on board on arrival and en route. I placed McConnell on board and sent her to Tortugas for preliminary disinfection for the purpose of killing her rats. Expect that she will return on the 13th, when she will go to Mariel, discharge her cargo on lighters, disinfecting every night with sulphur; the crew working cargo to remain at Mariel, those bringing the lighters here having no contact therewith. After being discharged, the crew working lighters will be detained at Mariel fifteen days.

These somewhat rigorous requirements are put on because her cargo is so stored that I doubt if the fumigation at Tortugas will certainly kill the rats aboard, and even if so the dead rats, if infected, lying on the bags might contaminate the workmen handling them. The unloading will be done under medical observation and with proper precautions as to the handling of any dead vermin found and disinfection of the pieces where they are found.

Respectfully,

H. R. CARTER,
Surgeon, U. S. M. H. S.

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

Steamship Newlyn disinfected at Tortugas—Sent to Mariel.

HAVANA, CUBA, May 17, 1900.

SIR: I have the honor to report that the British steamship *Newlyn* returned May 14 from Tortugas, having received sulphur disinfection for the purpose of killing vermin. As intimated in my letter reporting her arrival, she was sent on to Mariel without entering this harbor for the discharge of her Havana cargo in lighters under the precautions set forth in that letter. Acting Assistant Surgeon McConnell goes with her, with sufficient guards, in whose charge she is. She will leave direct from Mariel for New York. It would be impossible to perform a complete disinfection without shifting her New York cargo, which is economically impossible.

Respectfully,

H. R. CARTER,
Surgeon, U. S. M. H. S.

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

Report from Matanzas—Disinfection and labeling of baggage bound for United States.

MATANZAS, CUBA, *May 14, 1900.*

SIR: In reply to Bureau letter dated May 8, 1900 (F. L. G.), I have the honor to report that the regulations regarding the disinfection and labeling of baggage are enforced at this station at the present time as follows, it being understood that this port may be considered at present as a clean port:

(1) All baggage of passengers leaving for the United States north of the southern boundary of Maryland, is inspected and passed, and so labeled with a pink label; the label shows also the name of the port, the date of inspection and the seal of the quarantine officer.

(2) All baggage bound for points south of the southern boundary of Maryland is disinfected, and so labeled with a yellow label; the label giving the same additional information to the one above mentioned.

(3) All baggage which may be presumed to be infected or which, in a general way, is in an unsanitary condition, is disinfected, no matter what its destination may be.

Respectfully,

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

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

Reports from Nuevitas, Gibara, and Puerto Padre.

NUEVITAS, CUBA, *May 14, 1900.*

SIR: I have the honor to submit the following report for the week ended May 12, 1900: Five vessels arrived at this port and 7 bills of health were issued; 3 deaths were reported, 1 of yellow fever. We have heavy rains every evening and the weather is very warm; no new cases of yellow fever reported.

Gibara.—Reports show the arrival of 5 vessels, 5 bills of health issued, and 4 deaths; no quarantinable disease.

Puerto Padre.—Reports show the arrival of 4 vessels, 10 bills of health issued, and no deaths; sanitary condition good. There is no report of quarantinable disease at any point in the district.

Respectfully,

OWEN W. STONE,
Acting Assistant Surgeon, U. S. M. H. S.

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

Case of yellow fever in discharged soldier.

NUEVITAS, CUBA, *May 14, 1900.*

SIR: I have the honor to submit the following report of a case of fever which I reported in last week's report: On the night of April 28, an American, a dishonorably discharged soldier, called at my residence and requested a prescription, stating that he had been sick two or three days. I prescribed for him, called to see him the next morning, and found him in a house of which the sanitary condition was very bad. I found him with a temperature of 103° F., eyes injected, skin congested, with much pain on pressure in the epigastrium. I also ascertained that he had been drinking a good deal, and in doing so had been exposed to the infection of the first case of yellow fever reported. Two of my

children had la grippe, with high fever at the time, and suspecting the case would prove to be one of yellow fever, I requested Dr. Ariza to take charge of the case.

The following day Dr. Ariza found albumin in the urine, and reported the case to the alcalde, who had the case removed to an isolated tent, and placed the municipal physician in charge. I saw the case again with Major Carr, who came from Santiago to investigate sanitary matters here. Major Carr is now acting chief surgeon of this province. This was on the seventh day. The case seemed hopeless at this time and Major Carr ordered necropsy in the event of death, the man dying about thirty-six hours later. A necropsy was held by the acting assistant surgeon, Mendosa, who had been, in the meantime, assigned to the camp, assisted by Ariza, and the case was pronounced yellow fever with malarial complication.

I was not present at the post-mortem, being sick with la grippe, which has been epidemic here the past three weeks.

Respectfully,

OWEN W. STONE,
Acting Assistant Surgeon, U. S. M. H. S.

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

Reports from Santiago, Manzanillo, Guantanamo, and Daiquiri.

SANTIAGO DE CUBA, *May 9, 1900.*

SIR: I have the honor to make the following report of the sanitary condition of the fourth district of the island of Cuba for the week ended May 5, 1900:

Santiago.—There was a total of 29 deaths in the civil population of the city for this period, an increase of 1 over the preceding week. The causes of death were as follows: Tuberculosis, 6; pneumonia, 5; la grippe, 4; intestinal diseases, 3; malarial fever, 2; typhoid, 1; other causes, 8; total, 29. Population, 43,000; mortality, 35.07.

The Norwegian steamship *Volund*, from Port Limon, Costa Rica, reports 1 case of yellow fever with 1 death at that port.

Manzanillo.—Acting Asst. Surg. R. de Socarras reports a total of 7 deaths for the period, the following being the principal causes: Pneumonia, 2; cancer, 2; enteritis, 1; other causes, 2; total, 7.

Guantanamo.—Acting Asst. Surg. Luis Espin reports a total of 7 deaths for this period from the following causes: Tuberculosis, 1; pneumonia, 1; enteritis, 1; nephritis, 1; other causes, 3; total, 7.

Daiquiri.—Acting Asst. Surg. Juan J. de Jongh reports 1 death from remittent fever for the week ended April 28, 1900; no death during the week ended May 5, 1900. No yellow fever or smallpox is reported in this district.

Respectfully,

HERMAN B. PARKER,
Assistant Surgeon, U. S. M. H. S.

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

DOMINION OF CANADA.

Smallpox in Montreal.

MONTREAL, CANADA, May 15, 1900.

The smallpox situation in this Province is as follows :

Municipality.	County.	Population.	Date of outbreak.	New cases since last report.(a)	Total cases since outbreak.	Died.	Recovered.	Still sick.	Houses infected since outbreak.	Houses still infected.
Ste. Angèle.....	Matane.....	1,281	Mar. 11	0	2	.....	2	0	1	0
Paspébiac.....	Bonaventure.....	1,749	Jan. 6	2	118	1	109	3	28	3
Maris.....	do.....	2,433	Mar. 28	0	8	.....	3	0	1	0
Rimouski town.....	Rimouski.....	2,649	Feb. 3	5	48	.....	46	2	20	2
Rimouski (rural).....	do.....	.....	Mar. 18	14	32	.....	27	5	11	3
St. Gabriel.....	do.....	937	Apr. 9	5	8	.....	1	7	4	3
St. Moïse.....	do.....	537	Apr. 7	0	1	.....	1	0	1	0
St. Blandine.....	do.....	595	Apr. 6	0	6	.....	4	2	2	1
St. Anaclet.....	do.....	742	Apr. 1	1	1	.....	.....	3	1	2
St. Valérien.....	do.....	814	May 6	.....	.....	.....	.....	3	1	1
St. Michel Archange.....	Quebec.....	1,300	Apr. 15	2	2	.....	.....	2	1	1
Montreal City.....	Montreal.....	275,000	Apr. 22	2	3	1	.....	2	2	50
St. Cunégonde.....	Hochelega.....	8,000	May 6	1	1	.....	.....	1	1	50

a Date of last report, May 5. b Except the civic hospital.

Municipalities in which no new case has occurred for thirty days or more after the quarantine on the last house has been raised are omitted from the above list.

Respectfully,

ELZÉAR PELLETIER,

Secretary Board of Health of the Province of Quebec.

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

Smallpox in Ontario.

TORONTO, CANADA, May 18, 1900.

SIR: In compliance with the resolutions adopted at the conference of State and provincial boards of health, held at Toronto, October 6, 1886, respecting interstate notification of contagious diseases, I beg to make the following statement regarding the prevalence of smallpox in Ontario at the present time :

Municipality.	County.	Date of outbreak.	Source.	Cases.				Remarks.			
				Total.	Still sick.	Died.	Recovered.	Houses infected.	Houses at present infected.	Isolated in hospitals.	Isolated in private houses.
Arnprior.....	Renfrew.....	Apr. 23.....	C.P.R.train from West	1	0	1	0	0	0	0	0
Port Arthur.....	Thunder Bay	May 1.....	do.....	2	2	0	0	1	1	2	0
Carleton Place	Lanark.....	Apr. 25.....	do.....	3	3	0	0	2	2	3	0
Collingwood...	Simcoe.....	May 12.....	Michigan.....	1	1	0	0	0	0	1	0
Total.....	.....	.....	.....	7	6	1	0	3	3	6	0

Walkerville Town declared free of smallpox on May 14. Arnprior Town declared free on May 11. The Collingwood case was brought into port by a steamer.

Respectfully,

PETER H. BRYCE,

Secretary.

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

ENGLAND.

*Report from Liverpool.*LIVERPOOL, ENGLAND, *May 7, 1900.*

SIR: I have the honor to make the following report of the transactions of the Service at the port of Liverpool for the week ended May 5, 1900:

The general health of the port remains good. For the two weeks ended May 3, 18 cases of smallpox are reported with 4 deaths, and 3 cases of typhus fever with no deaths.

Sixteen vessels cleared for United States ports during the week; of these, 3 were not inspected. Twelve hundred and twenty-eight emigrants were inspected and passed. No baggage was disinfected as all the emigrants came from nonsuspected localities. The situation in regard to freight remains unchanged.

Respectfully,

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

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

*Report from Southampton.*SOUTHAMPTON, ENGLAND, *May 7, 1900.*

SIR: I have the honor to report the following transactions for the week ended May 5, 1900: Wednesday, May 2, issued supplemental bill of health to the North German Lloyd steamship *Lahn*, bound for New York with passengers and cargo. There were inspected and passed 6 steerage, 1 second-cabin, and 17 first-cabin passengers, and 7 pieces of luggage. Friday, May 4, issued supplemental bill of health to the Hamburg-American steamship *Columbia*, bound for New York with passengers and cargo. There were inspected and passed 13 first-cabin passengers. Saturday, May 5, cleared the steamship *Saint Paul*, of the American Line, bound for New York with passengers and cargo. There were inspected and passed 702 steerage, 153 second cabin, and 127 first-cabin passengers and 699 small and 352 large pieces of luggage. I had to disinfect only 15 pieces of luggage for this ship.

Respectfully,

W. C. HOB DY,
Assistant Surgeon, U. S. M. H. S.

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

FRANCE.

*Report from Havre.*HAVRE, FRANCE, *May 7, 1900.*

SIR: I have the honor to report that on May 5 the steamship *La Gascogne* sailed from this port with 933 steerage passengers. They were inspected and vaccinated as usual, together with about 100 Turks and Armenians, who were detained on account of lack of quarters on the *Gascogne*. There were disinfected for this vessel 66 large bundles of bedding and 6 trunks.

Respectfully,

S. B. GRUBBS,
Assistant Surgeon, U. S. M. H. S.

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

*Danger of anthrax from handling horsehair in factories.*WASHINGTON, D. C., *May 15, 1900.*

SIR: I have the honor to inclose for your information a copy of a dispatch from the consul of the United States at Nantes, transmitting an article on anthrax written by Dr. Stephane Leduc.

Respectfully,

JOHN HAY,
Secretary of State.

HON. SECRETARY OF THE TREASURY.

NANTES, FRANCE, *May 2, 1900.*

SIR: I have the honor to inclose an article written by Dr. Stephane Leduc, of Nantes, on the subject of handling horsehair in factories, and the danger arising therefrom when the horsehair has been taken from animals suffering from charbon, known in English as anthrax. Dr. Leduc is one of the most prominent physicians in this part of France, and I trust the article may be of interest.

Respectfully,

JOSEPH I. BRITAIN,
United States Consul at Nantes.

HON. ASSISTANT SECRETARY OF STATE.

[Inclosure—Translation.]

The most dangerous material which comes into France, and that which produces the most accidents, is the horsehair which comes from abroad. In France it is forbidden to use any product which comes from an animal infected with anthrax. All animals dying from that disease are destroyed, and other horses are vaccinated to prevent the malady. No accidents have ever been caused by French horsehair. The hair which causes anthrax is purchased in the market of Antwerp, the greatest port of Europe for that sort of merchandise. It comes from South America, especially from Buenos Ayres. It arrives at the factories in bales, made by hydraulic pressure. The first operation is unpacking these bales which is done by hand, and is dangerous to the operator on account of the liability to accidents, from scratching the skin.

The second operation is the sorting and separating the hair by hand, according to color. This work is peculiarly dangerous, since in 18 cases of anthrax described by Dr. Bertin, in his study at the 'Ruff' factory, 10 occurred among the workmen employed in sorting. The unpacking and sorting should be done in different localities, and a ventilating tube should be placed in front of each workman engaged in assorting. After sorting the hair it is beaten—an operation which was responsible for 4 out of 18 cases above mentioned. The hair spread by hand on the carding machine is then placed on the movable screens, which carry it under the beater. This operation produces much dust, and in order to protect the workmen each machine is enveloped in a drum furnished with 2 chimneys, 1 at each extremity of a vertical diameter. A ventilator fans the dust in each chimney to carry it to an exterior chimney. The dust in the workroom is by this means considerably reduced. The hair passes through 2 beaters successively. There is almost no dust in the carding which comes next, and the workmen are not especially protected. The mattress hair is next spun into ropes in order that it may be curled by pressure.

The spun hair is then steamed under pressure for twenty minutes.

The vapor bath is not used with white hair, because it discolors it, thereby destroying much of its commercial value. Two cases of anthrax out of 18 were produced among the workmen making brushes. Surmont and Arnoud cite 1 case produced by the brush of a hair dresser, showing that it is possible for the hair to preserve its dangerous qualities, after all the manipulation necessary to the manufacture of brushes. The precautions indicated by Dr. Leroy, of Barres, and applied in the workrooms of St. Denis consist in the mechanical carrying off of dust, the wearing of special clothing, perfect cleanliness, and final surveillance exercised by an experienced person, for the purpose of discovering the malignant pustules the same day upon which they make their appearance, as, says Dr. Leroy, when they are treated the same day on which they appear, they can be cured. A prohibition against the importation of foreign hair and the exclusive use of French hair would be a protective measure of almost absolute value, but on account of the insufficient quantity of native hair the measure would almost lead to the suppression of the industry in France. Another measure would be the examination of the hairs to find and destroy those which are contaminated. On the face of it, this measure is impossible, because in a bale many hairs are intact, and it would be impossible to separate the good from the bad. The question arises whether vaccination which protects so perfectly animals from anthrax might not be used efficaciously in the case of human beings. The vaccination of animals is practiced with attenuated cultures of the anthrax bacillus, but the culture attenuated for a special animal can prove virulent for another, and the bacilli attenuated for animals are capable of producing grave accidents in men.

At the same time for several years experimenters have immuned animals against anthrax by the aid of sterile substances easy to apportion, and which may be employed without inconvenience. It is thus that Ogata and Iasuhara have been able to prevent the spread of anthrax among mice (animals especially liable to that disease), by injecting into each animal a single drop of the blood of a frog. Roux and Chamberland have vaccinated sheep with blood sterilized by heat. Buchner has obtained the same result with sterilized cultures of the bacillus of Friedlander. But it is necessary to be assured of the existence of immunity in man, and to know its duration. The study is not sufficiently advanced to permit of employing vaccination as a means of safety for workmen. Another protective measure would be the disinfecting of all the hair used in manufacturing. In order to employ this method it would be necessary to sterilize the hair without destroying its commercial value, and without entailing an expense which would make the industry in France incapable of competing with that in foreign countries. To sterilize hair it is regarded as necessary to submit it to steam under pressure, to soak it in antiseptic solutions, and to combine the soaking with the employment of a moderate heat. Some experiments have been made with sterilizing the hair with vapors of formaldehyd. With the action of formol was combined a moderate elevation of the temperature, the heat seeming to increase the antiseptic action of the formol. Yet, to-day we are not in possession of a practical process which, apart from the question of expense, permits of surely sterilizing the hair without destroying its commercial value.

The white hair is always yellowed by its passage through the process, and that circumstance would demand that the sterilization take place only after the sorting, but it is the sorting which is the most dangerous of all the processes, since 10 out of 18 cases cited above were caused

by it. Monsieur Leroy, who represents the highest authority in France on the question, wrote last year in a report of the 'Council of Hygiene of the Seine,' 'the means of practical disinfection of such delicate matters as horsehair and skins are lacking up to the present.' We are of his opinion that a practical and efficacious method of disinfecting these materials has not yet been found. All those who are occupied with the question of protecting the workmen in the factories for the treatment of the hair insist upon the necessity of preventing dust and of well airing all the compartments. Without denying the injurious action of the dust, and the usefulness of fresh air, the facts seem to demonstrate that undue importance is attached to these things. The anthrax produced by the dust is not the malignant pustule from which the workmen in horsehair suffer, but pulmonary anthrax of which not a single case occurred among the 18 already cited. We confess, however, that pulmonary anthrax is very difficult to diagnose and numerous cases might occur without being recognized. Nevertheless, we have never known of a recognized case of pulmonary anthrax in the factories where horsehair is manipulated. Pulmonary anthrax predominates among wool sorters, and has been described in England by the name of wool-sorters' disease.

Among 32 cases of anthrax noted among wool sorters of Bradford, England, in 1879 and 1888, only 9 had malignant pustules. The other 23 cases were cases of internal anthrax. The difference between the forms of anthrax in workmen working with hair and those working with wool undoubtedly arises from the fact that the hair being much heavier than the wool does not rise in the form of dust so easily. Therefore it is wise to take precautions against dust. Brightening the apartments with sunshine or electric arc lights constitutes a precaution not costly and little known until the present, but of which the value is proven by the following facts: Professor Arloing, of Lyons, has shown that spores of anthrax in certain conditions, while resisting all other agents, were sterilized after being exposed to the sunlight for two hours. Professors Nocard and Strauss confirm the results obtained by Professor Arloing, and they have been also verified by other experimenters. Elsewhere it has been observed that in the fields the surface contaminated was frequently limited by the shade of trees, the field being sterilized by the rays of the sun in the rest of its extent. Anthrax pustules develop themselves almost always on the exposed parts of the body and the more completely the body is covered the less danger there is. It is extremely important to assure the immediate treatment of the sick. The cases treated in the beginning are nearly always cured and the sooner the treatment begins the better are the chances for recovery. The workmen should be apprised by placards posted in the factories and by verbal instructions of the danger to which they are exposed, and the importance of avoiding scratches and abrasions of the skin by which anthrax can be inoculated; also of the necessity for consulting a physician when the smallest pimple appears. A physician specially designated for the duty by the inspector of the factory would be less liable than another to be mistaken as to the nature of the infection at its outset.

Perfect cleanliness should be insisted upon and antiseptic precaution should be taken. Workmen should be provided with abundant means for washing with soap and antiseptic solutions. A regular survey of the uncovered portions of the workmen in order to compel them to use an antiseptic wash at the first appearance of a pimple of any kind,

followed by a coating of elastic collodion, would be of great benefit. When the epidermis is intact or well protected by elastic collodion, physicians handle the most virulent liquids without fear and without accidents. It is well known that animals in which the mucous membrane is intact can pasture with perfect immunity for a long time in fields infected with anthrax, but if some thistles or thorny plants are sown in the field the animals are quickly destroyed by the scourge. The factories wherein the horsehair is manipulated, despite the dangers to which workmen are exposed, are not classed among dangerous establishments nor as being unhealthy or uncomfortable. Their classification among such establishments would be desirable, since it would constitute a protection for the workmen. The authorization to open an establishment would be subordinate to its good installation, protective measures would be indicated, and the responsibilities of the manufacturers being more completely understood, they would exercise more care in the protection of the workmen.

JOSEPH I. BRITAIN,
United States Consul at Nantes.

Precautions against tuberculosis.

[Communicated by the United States consul at Roubaix.]

In the interest of public health, the sixth commission of the municipal council of Paris decided, on March 6, that enameled signs bearing the following inscription, "War on tuberculosis. Please do not spit on the sidewalks," should be fitted to the walls of Paris.

All omnibuses in Paris already have printed cards requiring passengers not to spit on the floor.

Respectfully,

W. P. ATWELL,
United States Consul.

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

GERMANY.

Report from Bremen.

BREMEN, GERMANY, *May 7, 1900.*

SIR: I have the honor to report that 1,799 emigrants sailed from this port during the past week, and that 9 were detained as being physically disqualified under the immigration laws. The causes for rejection were as follows: Trachoma, 1; scabies, 3; fever of unknown cause, 2; keratitis, 1; conjunctivitis, chronic, 1; deformed lower jaw and harelip, 1.

The last weekly health report from Bremen shows 8 cases of scarlet fever and 2 of typhoid fever. The death rate was 18 per thousand.

Respectfully,

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

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

Report from Hamburg.

HAMBURG, GERMANY, *May 7, 1900.*

SIR: I have the honor to report for the week ended May 5, 1900: The steamship *Graf Walderssee*, of the Hamburg-American Line, sailed Sunday, April 29, carrying 1,520 steerage passengers. The express

steamer *Columbia*, of the same line, sailed May 3, carrying 457 steerage passengers.

The steamship *Assyria*, also of the same line, sailed for Baltimore via Halifax May 5, carrying steerage passengers for the Canadian ports, but none to the United States. These emigrants bound to Canada are Ruthenians from Galicia and Bukowina, and are a strange looking lot of mountain peasants. Bills of health were issued to 8 vessels during the week, of which 7 carried cargo.

Since Easter tide the number of emigrants has jumped to the high mark again. The number of Russians continues large, and a good many Roumanians are embarking now. On Friday night nearly 2,000 Russians were confined at the barracks, and 800 of these were embarked on the steamship *Phoenicia* on Saturday, the day before the principal embarkation.

I have taken occasion to examine into the means of identification of the place of origin of the emigrants which the government here possesses, and I find that all Germans and all Austrians including Hungarians have passport books proving birthplace, residence, and citizenship, and giving a description of the person. No passport is expected of Russians and it is known that many of them leave their country stealthily. Police inspectors stand in the gangway at the Passagier-Halle and examine the papers of the emigrants as they go to embark, their object being to prevent the departure of any German man who has not done his military service and to intercept any person whom the police of either Germany or Austria might want. What measures would be taken if a Russian or other person not properly identified should present himself without having come through the Auswanderer-Hallen, I do not know, but there is a penalty provided against any emigrant hotel keeper who takes a Russian steerage passenger into his house. I understand, however, that the only object of the police inspection at present is such as is given above.

Respectfully,

A. C. SMITH,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

GIBRALTAR.

Gibraltar declares Port Said infected.

Board of health notice.

GIBRALTAR, *May 4, 1900.*

The board of health having received information of the existence of the plague at Port Said, have this day declared that place to be an infected port.

By order,

JOHN C. KING,

Secretary to the Board of Health.

GUATEMALA.

Report from Livingston—Fruit port.

LIVINGSTON, GUATEMALA, *May 8, 1900.*

SIR: I have the honor to submit my report for the week ended May 8, 1900:

Health of this place continues excellent. Two deaths are reported, one chronic pulmonary phthisis—other accidental death from drowning.

Steamship *Stillwater*, passed here this a. m., en route to Cortez. No communication with shore. No passengers from this port. These vessels do not require my certificate.

Respectfully,

S. W. BACKUS,
Acting Assistant Surgeon, U. S. M. H. S.

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

HAWAIIAN ISLANDS.

Quarantine raised April 30, 1900.

HONOLULU, H. I., *May 3, 1900.*

SIR: I have the honor to inform you that by proclamation of the Hawaiian board of health the port of Honolulu and all other places in the Hawaiian Islands, were declared to be free from infection by bubonic plague on April 30, 1900. I inclose herewith a copy of the proclamation. Since the discovery of plague in Honolulu on December 12, 1899, 3 centers of infection have been reported—Honolulu, Hilo, and Kahului. The last case occurred in Hilo on February 6, in Kahului on February 25, and in Honolulu on March 31. It is now thirty-three days since we had a case of plague in Honolulu, and I believe the disease has been stamped out.

Interisland traffic has been resumed, without restrictions, and there is already a marked improvement in general business after four months and eighteen days of quarantine. The restrictions placed on vessels from Hawaiian ports to ports in the United States can now be removed without danger, particularly as the regulations relative to quarantine will be observed at domestic ports in the United States thirty days after these islands are declared free from infection. No results have yet been announced relative to the investigation of soils in infected areas in Honolulu. The Hawaiian exhibit for the Paris exposition was inspected, disinfected and left here by the steamship *Australia* on April 17. Please notify Pacific ports that quarantine in Hawaiian Islands was raised on April 30.

Respectfully,

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

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

[Inclosure.]

“HONOLULU, H. I., *April 29, 1900.*

“SIR: At a meeting of the board of health, on April 28, the following resolution was adopted:

“*Resolved*, That providing there is no fresh outbreak of plague in Honolulu previous to Monday, 30th, all quarantine restrictions at this port be removed at that date.

“I have accordingly caused to be published by authority the following notice:

“HONOLULU, H. I., *April 30, 1900.*

“In accordance with a resolution of the board of health, I hereby declare the port of Honolulu and all other places in the Hawaiian Islands to be free from infection by bubonic plague. All quarantine regulations adopted by the board of health on account of bubonic plague in the Hawaiian Islands are hereby rescinded.

“C. B. WOOD,
“*President Board of Health.*”

No plague since March 31.

HONOLULU, H. I., *May 13, 1900,*
via San Francisco, Cal., May 20, 1900.

No new plague since March 31. Prospects very good.

CARMICHAEL.

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

On May 17 the following telegram was sent:

WASHINGTON, D. C., *May 17, 1900.*

If no new development, may admit vessels leaving Honolulu after May 1, all conditions satisfactory on board, without detention.

WYMAN.

FOSTER, *Quarantine, Port Townsend, Wash.*

Copies of this telegram were sent to the quarantine officers stationed at the several national quarantine stations on the Pacific coast.

HONDURAS.

Reports from La Ceiba—Fruit port.

LA CEIBA, HONDURAS, *May 3, 1900.*

SIR: I failed to inclose the following report for the week ended April 28: During that week I inspected and cleared for New Orleans 2 steamers, the *Utstein* and *Alliance*, and disinfected 5 pieces of baggage for 2 passengers from Utila going to New Orleans.

Respectfully,

SPENCER FRANKLIN,
Acting Assistant Surgeon, U. S. M. H. S.

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

LA CEIBA, HONDURAS, *May 5, 1900.*

SIR: I inclose copies of papers issued by me during the past week, together with sanitary report.

I have inspected and given papers to 3 steamers and 5 passengers, also disinfected 6 pieces of baggage.

I refused to sign or give bills of health to the schooner *Flora Delaware* to clear for Tampa, Fla., by way of Juan Lopez and Utila, on the ground that Juan Lopez is only 8 miles down the coast, and if she loaded fruit there she would have to return here to clear for the United States via Utila.

Respectfully,

SPENCER FRANKLIN,
Acting Assistant Surgeon, U. S. M. H. S.

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

JAPAN.

Propagation of plague by infected fish.

YOKOHAMA, JAPAN, *April 24, 1900.*

SIR: I have the honor to forward to you the appended extracts from local journals, which are not without interest:

A new propagator of pest.

[*Japanese Times, April 23, 1900.*]

“A novel and most disquieting discovery has been made, or is alleged to have been made, in Tokyo. It was recently stated in these columns

that in the sequel of a flooding of the Castle moats after heavy rain, a quantity of dead fish—*funa*, *koi*, *kingyo*, and *dojo*—were found floating on the water, and were eagerly collected by the poor people, to whom the origin of such an incident made little matter in comparison with the supply of food that it brought within reach. The suspicions of the sanitary authorities being, however, excited, investigations were undertaken, with the result that a bacillus closely resembling that of the plague was found in the dead fish. Parts of them were then fed to healthy rats, and the animals quickly sickened and died, the autopsy showing the veritable bacillus in their carcasses. It is said to have been shown by investigations in Germany that crabs are affected by the pest, but this is believed to be the first instance of the disease attacking fresh-water fish, so far as science knows. The announcement has naturally caused much uneasiness in Tokyo, where it is feared that the arrival of the plague must now be regarded as an accomplished fact.”

Funa pest.

[Japan Times, April 24, 1900.]

“With reference to the ‘*funa*’ (a kind of roach) epidemic, Dr. Kitazato is reported to have expressed his view of the matter to the representative of a metropolitan paper as follows: After having remarked at first that the ‘*funa*’ pest does not attack the human body, the doctor said that there are in European countries such words as ‘crab pest,’ ‘rabbit pest,’ ‘pig pest,’ and the like, the word ‘pest’ having been loosely made use of whenever an unusual number of deaths occurred among a number of animals or fishes at one time. It was in accordance with this practice that the epidemic which lately attacked the ‘*funa*’ in the imperial moat might be regarded as a kind of pest. ‘The examination of the dead fishes,’ the doctor continued, ‘is now being proceeded with at the infectious diseases hospital and it is expected that the cause of the fatal occurrence will be clearly traced in about a week’s time, though it is difficult to foretell the result of the examination. Be that as it may, the people ought not to be uneasy at the appearance of the so-called ‘*funa*’ pest in consideration of the fact that the germs do not attack the human body. On the other hand, fears are entertained by some people that the ‘*funa*’ pest may be noxious to man as it has actually proved fatal to white rats, but the animal referred to belongs to a species that can easily be affected by nearly all other germs. The appearance of the disease in the heart of the capital is therefore a trifling matter.”

According to examinations made by Mr. Kiyoda, expert of the metropolitan police office, on the dead “*funa*” in the imperial moat, it has been found that various species of germs are very abundant in them all. The injection of these germs into white rats caused the animals to die in eighteen hours, and a similar experiment likewise proved fatal with regard to some fishes. It seems, however, to be a question whether or not the fish germs may also prove fatal to man.

Respectfully,

STUART ELDRIDGE, M. D.,

Acting Assistant Surgeon, U. S. M. H. S., Sanitary Inspector.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

*Status of plague in Osaka—Use of rat typhoid.*YOKOHAMA, JAPAN, *April 25, 1900.*

SIR: Continuing the current history of the plague in Osaka from my report of April 21, I have the honor to inform you that 3 more fatal cases have since occurred, making a total of 6 in all since the reappearance of the disease on April 8, of which, certainly, 5 have died.

In my report of January 2, I alluded to an experiment, as about to be tried in Osaka, in introducing among the rats of that city the germs of "rat typhoid (or typhus)." I have been unable to obtain any information as to the success attending this attempt at the wholesale destruction of the dangerous rodents, if it was actually made, but it is now reported that the same measure is to be tried on a large scale in the same city, and I shall endeavor to follow its results.

The total number of plague cases in Formosa, up to the 23d instant, from January 1, is given as 478, with 243 deaths.

Respectfully,
 STUART ELDRIDGE, M. D.,
Acting Assistant Surgeon, U. S. M. H. S., Sanitary Inspector.
 The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

*Report from Marseilles.*MARSEILLES, FRANCE, *May 8, 1900.*

SIR: I have the honor to transmit under the same cover the abstract of bills of health, and to make the usual weekly report, for the week ended May 5, 1900: May 4, bark *Clara*, Marseilles to Sapelo, in ballast, crew 11, inspected and given bill of health. May 5, steamship *Hesperia*, Marseilles to New York, via Italian ports, general cargo, crew 45, was inspected and given bill of health.

I wish to invite the attention of the Bureau to the fact that the plague has again appeared on the Mediterranean at Port Said; also that the 2 most important lines from the Orient, the Pacific and Oriental and the Messageries Maritimes, touch at 3 if not more ports infected with the plague. The ports are Hongkong, Aden, and Port Said; these lines both bring passengers and cargo to Marseilles.

Respectfully,
 JOHN F. ANDERSON,
Assistant Surgeon, U. S. M. H. S.
 The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

MEXICO.

*Report from Vera Cruz.*VERA CRUZ, MEXICO, *May 12, 1900.*

SIR: I have the honor to make the following report for the week ended May 12: Deaths from yellow fever, 6; smallpox, 8; pernicioso, 4; all causes, 42. There were 4 cases of yellow fever reported during the week. During the past two weeks I have inspected 7 vessels, and issued them bills of health. I have issued health certificates to 216 passengers to New York and Cuba.

During the past week there has been blowing a norther, which might have had some influence on the yellow fever situation, there being fewer deaths this week than the last.

There have been some deaths from yellow fever on the isthmus of

Tehuantepec lately, and according to the last report that I received from Tampico, there were some deaths there from pernicioso and malaria.

Respectfully,

SAMUEL H. HODGSON,

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

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

NETHERLANDS.

Report from Rotterdam.

ROTTERDAM, NETHERLANDS, *May 7, 1900.*

SIR: I have the honor to make the following report of the transactions of the Service at this port for the week ended May 5, 1900: Three vessels were inspected and received bills of health. The Holland-America Line steamship *Maasdam* sailed on the 3d instant, carrying 33 cabin and 387 steerage passengers. One hundred and ninety-seven pieces of baggage were inspected and 30 pieces disinfected.

The health of this port remains good.

Respectfully,

A. R. THOMAS,

Passed Assistant Surgeon, U. S. M. H. S.

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

NICARAGUA.

Reports from Bluefields—Fruit port.

BLUEFIELDS, NICARAGUA, *May 7, 1900.*

SIR: I have the honor to make my weekly report as follows: Two steamships have been inspected, both bound to New Orleans; the *Jarl* with 2 passengers and the *Hiram* with 10 passengers. Twenty-four pieces of baggage belonging to said passengers have been disinfected under my supervision. Three deaths were reported in Bluefields this past week, 2 native adults of pulmonary tuberculosis, and 1 native adult of insolation. The port and vicinity continues to be in a satisfactory sanitary condition.

Respectfully,

D. W. GOODMAN,

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

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

BLUEFIELDS, NICARAGUA, *May 11, 1900.*

SIR: I have the honor to submit my weekly report, as follows: Two steamships have been inspected, both for New Orleans, La., the *Alabama*, with 14 passengers, and the *Fulton*, with 1 passenger. The baggage of these passengers, 33 pieces, was disinfected under my supervision. Three deaths have been reported for the week ended May 6: One native adult of malarial fever, and 2 native infants of convulsions. Several heavy rains have relieved the intensity of the heat, and given the town a thorough cleansing as to streets and yards. The health of Bluefields and vicinity continues good.

Respectfully,

D. W. GOODMAN,

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

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

PHILIPPINE ISLANDS.

Report from Manila—Plague increasing.

MANILA, P. I., April 4, 1900.

SIR: I have the honor hereby to report that plague is slowly increasing in Manila, and during the next two months I think there will be a much larger number of cases. During the week ended March 31 there were 17 cases with 14 deaths.

I have received no further report about cases occurring in Cavite.

It has been rumored that a few cases of plague have also occurred in Iloilo, but I have been unable so far to verify this statement.

During the same period 1 case of smallpox was reported in Manila. Relative to the latter disease, it is of mild form and the cases much fewer than in the preceding year. The epidemic in the islands is subsiding, and with the extensive vaccination that is being done the danger from this disease will be much diminished.

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.**Vessels inspected.*

MANILA, P. I., April 4, 1900.

SIR: I have the honor to transmit report of transactions at this port for the month of March, 1900, as follows:

Bills of health issued.—To foreign ports, 44; to domestic ports, 258; total number issued, 302.

Number of vessels inspected.—From foreign ports, 58; from domestic ports, 231; total number inspected, 289. Total number crew inspected, 9,501; total number of passengers inspected, 7,482; total number crew vaccinated, 2,703; total number of passengers vaccinated, 43.

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.**Mortality during March, 1900.*

MANILA, P. I., April 13, 1900.

SIR: I have the honor hereby to submit for your information statistics of the total number of deaths occurring in Manila, Philippine Islands, during the month of March, 1900, as follows: Bubonic plague (Chinese), 34; bubonic plague (Philipinos), 10; smallpox, 1; measles, 1; typhoid fever, 5; tuberculosis, 125; influenza, 10; dysentery, 34; anthrax, 1; leprosy, 3; beriberi, 38; tetanus, 11; cancer, 1; pernicious malarial fever, 14; malarial fever, 26; diseases of the respiratory system, 76; diseases of the circulatory system, 41; diseases of the digestive apparatus, 115; diseases of the urinary apparatus, 7; diseases of the cerebro-spinal system, 236; Chinese, causes not reported, 32; from other causes, 60. Total deaths from all causes, 881.

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., *April 13, 1900.*

SIR: I have the honor to hereby report that 12 cases of plague, with 7 deaths, occurred in Manila during the week ended April 7, 1900. During the same period 1 case of smallpox was reported.

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

*U. S. Marine Hospital Service.**Plague in Hongkong and Sydney.*MANILA, P. I., *April 14, 1900.*

SIR: I have the honor to hereby inform you that plague has commenced to increase in Hongkong after a period of two weeks without a case. The report for the two weeks ended April 7, 1900, shows 10 cases and 10 deaths.

Bills of health from Sydney, New South Wales, dated March 24, 1900, report 32 cases and 10 deaths from plague in that city. The disease has appeared in several parts of the town, and a number of Europeans have been attacked.

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

PORTO RICO.

*Reports from Ponce.*PONCE, P. R., *April 30, 1900.*

SIR: I have the honor to transmit herewith the regular quarantine and abstract bills of health reports for the week ended April 28, 1900. Also a summary of the work done at this station during the month of April, 1900, and monthly report of immigrants inspected at this port during April, 1900.

The mortality is more than double that of the same period of last year. I believe this to be due to a combination of several causes, as the very large number of influenza cases, intestinal diseases caused by insufficient and improper food, but more especially by bad drinking water, during the dry season just passed. A great many sick people come from the surrounding country for treatment and charity; many of these dying, has swelled this list.

Nothing of interest has occurred in shipping circles.

Respectfully,

W. W. KING,

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

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

[Inclosure.]

Summary of transactions of service during the month of April, 1900.

(a) Total number of deaths reported during April, 1900, 345; (a) total number of deaths reported during April, 1899, 170; (a) total number of births reported during April, 1900, 98; (a) total number of births reported during April, 1899, 82.

(a) These figures are for the district of Ponce, comprising the city proper, the playa, and the surrounding country.

Total number of vessels inspected during April, 1900, 34; total number of bills of health issued during April, 1900, 32; number of vessels in quarantine during April, 1900, 2; number of passengers whose baggage was disinfected during April, 1900, 2; number of vaccination certificates stamped during April, 1900, 4; number of vessels inspected during April, 1899, 27; number of vessels which sailed during April, 1899, 32; number of immigrants inspected during April, 1900, 12.

PONCE, P. R., *May 5, 1900.*

SIR: I have the honor to transmit herewith the quarantine and abstract bills of health reports for the week ended May 5, 1900. Also mortality statistics for the past two weeks. The number of deaths from diseases of the digestive apparatus are greater than ever before known here.

Some days ago I made a flying trip to San Juan to consult with Assistant Surgeon Lavinder in regard to several quarantine matters. One hundred and twenty-nine more emigrants left this port for Daiquiri, Cuba.

Respectfully,

W. W. KING,

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

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

Number and causes of deaths in Ponce Jurisdiction (city, playa, and surrounding country) during two weeks ended May 5, 1900.

Infectious diseases.—La grippe, 12; malarial fever, 12; tuberculosis, 11; dysentery, 7; tetanus, 2; septicæmia, 1; diseases of the digestive apparatus, 80; diseases of the respiratory system, 11; diseases of the circulatory system, 3; diseases of the nervous system, 6; other diseases (anæmia, inanition, etc.), 36. Total, 181. Births during the same period, 47.

Report from San Juan.

SAN JUAN, P. R., *May 14, 1900.*

SIR: I have the honor to submit monthly report of the operations of the Service at this port and the 5 subports of the island for April, 1900:

During the month there were 92 deaths and 68 births reported. The usual list of the causes of death is inclosed herewith.

Forty-three vessels were inspected, 3 of which were held, viz, the Spanish steamers *Cataluna*, which arrived on April 3, *Rabat* on April 10, and *Isla de Panay* on April 19. The two former were from Havana direct, while the latter was by way of Central and South American ports.

They were allowed to transact their business in quarantine under the supervision of our guard boat. The *Rabat* remained in port for forty-eight hours, and a guard of 2 attendants was kept on board day and night. Three nonimmune passengers from the *Cataluna* were detained at the Miraflores station to complete the five day period. Forty-four immigrants were inspected and passed during the month at this port, and one at the port of Mayaguez. The issuance of certificates of vaccination has been discontinued as the necessity therefor is no longer apparent.

The new civil governor, Hon. Charles H. Allen, arrived on the U. S. S. *Dolphin* on April 27, and was received with appropriate ceremonies.

The weather is now much warmer and the rainy season is about to begin. The health of this city and vicinity continues fair and there are no contagious diseases.

The officers in charge of the subports report their respective localities free from quarantinable diseases. Nothing unusual is reported in regard to shipping. During the month 10 vessels were inspected at Mayaguez, 7 at Humacao, 5 at Arroyo, 3 at Arecibo, and 2 at Aguadilla.

For the same period 171 deaths were reported at Mayaguez, 72 at Arecibo, 56 at Humacao, 40 at Aguadilla, and 16 at Arroyo.

Respectfully,

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

Vital statistics of San Juan, P. R., for April, 1900.

Tetanus infantum, 3; gastric fever, 1; cirrhosis of the liver, 3; cancer of the liver, 1; enteritis, 13; la grippe, 1; broncho-pneumonia, 3; pulmonary tuberculosis, 10; internal hemorrhage, 1; cardiac lesion, 4; erysipelas, 2; mitral insufficiency, 3; old age, 4; bronchitis, 2; typhoid fever, 2; measles, 1; athrepsia, 4; anæmia, 5; cachexiæ, 1; gastric catarrh, 1; cancer of uterus, 1; rachitis, 5; pleurisy, 1; acute encephalitis, 1; pulmonary congestion, 1; pernicious fever, 2; aortic aneurism, 1; cerebral congestion, 1; acute diarrhea, 3; diabetes, 1; epilepsy, 1; entero-colitis, 3; meningitis, 1; nephritis, 1; neoplasma, 1; malaria, 1; peritonitis, 1; syphilis, 1; total, 92.

1899.—Births, 64; deaths, 72.

1900.—Births, 68; deaths, 92.

Respectfully,

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

SOCIETY ISLANDS.

Quarantine against Honolulu and Noumea.

WASHINGTON, D. C., May 15, 1900.

SIR: I have the honor to inclose for your information a copy of a dispatch from the consul of the United States at Tahiti, stating the nature of the quarantine regulations enforced in the Society Islands on account of the outbreak of bubonic plague at Noumea and Honolulu.

The consul has been informed that the outbreak at Honolulu has entirely subsided.

Respectfully,

JOHN HAY,
Secretary of State.

HON. SECRETARY OF THE TREASURY.

TAHITI, February 28, 1900.

SIR: I have the honor to inform the Department that owing to the outbreak of bubonic plague at Noumea and Honolulu, and a fear that the disease may be brought into these islands, very strict quarantine measures are enforced here.

All the ports of the colony except Papeete have been closed until further orders. All vessels arriving here must first anchor in quarantine, even though they are provided with clean bills of health. They are detained from twelve to forty-eight hours. Cargo arriving in transit from an infected port is subjected to disinfection.

Respectfully,

J. LAMB DOTY,
United States Consul.

HON. ASSISTANT SECRETARY OF STATE.

SPAIN.

BARCELONA, SPAIN, *May 8, 1900.*

SIR: I have the honor to inclose a note of the vessels inspected and bills of health issued during the two weeks ended April 30, 1900.

I have also to report that as the municipal authorities of this city, though twice requested to do so, failed to furnish this consulate-general with the official particulars of the number of cases and deaths from infectious diseases in this city, notice was sent to the various steamship companies that in future the fact that the required particulars could not be obtained from the authorities would be stated on all bills of health issued.

The effect of this intimation has been, as hoped for, that the steamship companies have taken steps in the matter, and obtained an official promise from the mayor that the required details will be furnished to them in future. I must report that on the bill of health issued to the steamship *Martin Saenz* I stated I was unable to obtain the information regarding the cases and deaths from the authorities. To-day I have received an official communication from the mayor that in future the steamship companies will be furnished with all particulars.

Respectfully,

H. HENDERSON RIDER,
Vice and Deputy Consul-General.

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

*Report from Bilbao.*BILBAO, SPAIN, *May 4, 1900.*

SIR: I have the honor to report that yesterday evening, May 3, the steamship *Ashfield*, sailing for New York with a cargo of iron ore, was inspected; crew. 22.

The health of Bilbao and vicinity continues to be good, no contagious diseases being reported.

Respectfully,

CARLOS YENSEN,
United States Consular Agent.

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

VENEZUELA.

*Quarantine of the Augusto at Cabello because of smallpox at Maricaibo.*PUERTO CABELLO, VENEZUELA, *April 23, 1900.*

SIR: April 22, 1900, about 7 a. m., the tug *Augusto*, Venezuelan ship, entered this port, after having been officially visited by the doctor and interpreter of the port, and proceeded to the wharf in front of the custom-house.

A few minutes after its arrival, instructions were received from the chief of the customs to allow no one to disembark and to have the ship taken outside in the harbor and prevented from communicating with the shore.

Investigation brought out the fact that there is smallpox in Maracaibo, Venezuela, according to the information received by the Venezuelan authorities here, and it was for that reason the *Augusto* and her passengers were not allowed to communicate with or touch the shore, after the order was received from the official named above.

To-day, the 23d, the government at Caracas gave permission to the authorities here to allow the *Augusto* to again enter the port and this time discharge its passengers. And a number of them informed me that there was some smallpox in and about Maracaibo, "and that there was much yellow fever in Cucuta, Colombia." As the latter place seems to have considerable business with Maracaibo, on account of being the only real outlet and inlet the Liberal party of Colombia has possession of, doubtless Consul Plumacher has advised you the state of health existing in his district.

Puerto Cabello consular district is free of contagious diseases at the present time, to the best of my knowledge.

Should such a disease appear you will hear from me by cable if serious, and by letter if mild.

Respectfully,

LUTHER F. ELLSWORTH,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

FOREIGN STATISTICAL REPORTS.

AFRICA—*Cape Town*.—Month of March, 1900. Estimated population, 60,000. Total number of deaths, 235, including enteric fever, 18; measles, 1; scarlet fever, 1; whooping cough, 10, and 11 from phthisis pulmonalis.

BRITISH GUIANA—*Demerara—Georgetown*.—Month of March, 1900. Estimated population, 36,567. Total number of deaths, 218. No contagious diseases reported.

CUBA—*Havana*.—Month of April, 1900. Estimated population, 235,000. Total number of deaths, 482, including enteric fever, 5, and 80 from tuberculosis.

DUTCH GUIANA—*Paramaribo*.—Month of March, 1900. Estimated population, 31,279. Total number of deaths, 75. No contagious diseases reported.

FRANCE—*Nice*.—Twenty days ended April 30, 1900. Estimated population, 120,000. Total number of deaths, 146, including enteric fever, 1, and 2 from smallpox.

GERMANY—*Dresden*.—Month of March, 1900. Estimated population, 404,500. Total number of deaths, 693, including diphtheria, 4; enteric fever, 2; measles, 5; scarlet fever, 1; whooping cough, 9, and 98 from phthisis pulmonalis.

GREAT BRITAIN—*England and Wales*.—The deaths registered in 33 great towns in England and Wales during the week ended April 28, 1900, correspond to an annual rate of 20.3 a thousand of the aggregate population, which is estimated at 11,610,296. The highest rate was recorded in Wolverhampton, viz, 30.8, and the lowest in Birkenhead, viz, 12.9.

London.—One thousand seven hundred and twenty-one deaths were registered during the week, including measles, 68; scarlet fever, 11; diphtheria, 20; whooping cough, 40; enteric fever, 8; and diarrhea and dysentery, 17. The deaths from all causes correspond to an annual rate

of 19.6 a thousand. In Greater London 2,290 deaths were registered, corresponding to an annual rate of 18.0 a thousand of the population. In the "outer ring" the deaths included 8 from diphtheria, 13 from measles, 2 from scarlet fever, and 17 from whooping cough.

Ireland.—The average annual death rate represented by the deaths registered during the week ended April 28, 1900, in the 22 principal town districts of Ireland was 23.3 a thousand of the population, which is estimated at 1,062,188. The lowest rate was recorded in Sligo, viz, 10.2, and the highest in Clonmel, viz, 63.3 a thousand. In Dublin and suburbs 178 deaths were registered, including enteric fever, 5, and 2 from whooping cough.

Scotland.—The deaths registered in 8 principal towns during the week ended April 28, 1900, correspond to an annual rate of 21.7 a thousand of the population, which is estimated at 1,606,935. The lowest mortality was recorded in Perth, viz, 15.2, and the highest in Glasgow, viz, 24.6 a thousand. The aggregate number of deaths registered from all causes was 672, including diphtheria, 5; measles, 24; scarlet fever, 6; whooping cough, 23, and 2 from smallpox.

JAMAICA—Kingston.—Month of April, 1900. Estimated population, 46,542. Total number of deaths, 108, including measles, 1, and 11 from phthisis pulmonalis.

JAPAN—Formosa—Tamsui.—Month of March, 1900. Estimated population, 2,797,543. Total number of deaths not reported. Seventy deaths from plague reported.

JAVA—Botavia.—Two weeks ended April 7, 1900. Estimated population, 150,000. Number of deaths not reported. No contagious or infectious diseases reported.

MALTA.—Two weeks ended April 15, 1900. Estimated population, 181,698. Total number of deaths, 217, including enteric fever, 1; whooping cough, 3, and 4 from Mediterranean fever.

[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 May 25, 1900.

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

CHOLERA

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 22-Apr. 17..		124	
Calcutta	Nov. 5-Mar. 24..		832	
Ouam.....	Mar. 10.....			Cholera reported.

YELLOW FEVER.

Argentina:				
Buenos Ayres	Nov. 1-Nov. 30..		1	
Brazil:				
Bahia.....	Feb. 4-Mar. 3..	5	2	
Casa Branca	Jan. 1-Jan. 31..		10	
Jemdiahy.....	do.....		1	
Rio de Janeiro.....	Nov. 4-Mar. 30..		238	
Santos.....	Jan. 16-Apr. 8..		160	
Sao Paulo.....	Jan. 1-Jan. 31..		5	
Sorocaba.....	do.....		200	
Colombia:				
Barranquilla	Dec. 24-Mar. 31..		4	
Panama	Dec. 20-Dec. 26..		1	
	Mar. 1-Apr. 24..	21	3	
Costa Rica:				
Port Limon	Apr. 20.....	1		
San Juan	May 6.....	1		
Cuba:				
Cienfuegos.....	Feb. 10.....	7		On training ship Lancaster in quarantine.
Havana.....	Dec. 1-Dec. 31..	70	22	
	Jan. 1-Mar. 31..	41	17	No report received for week ended February 24.
	Apr. 1-Apr. 30..	5		
	May 3-May 9..	2	1	
Matanzas.....	Dec. 29.....		1	
	Feb. 11-Feb. 17..	1	1	
Neuvas	Apr. 16.....	1		
Santiago	Dec. 10-Dec. 30..		3	
Mexico:				
Coatzacoalcos.....	May 13			Yellow fever reported.
Cordoba.....	May-Dec., 1899..	730	353	
Laguna.....	Mar. 4.....		1	Several cases.
Vera Cruz.....	Dec 22-May 12..		30	
Salvador:				
San Salvador.....	Apr. 8.....			Yellow fever epidemic.
West Indies:				
Curacoa	Feb. 4-Feb. 10..	1		

PLAGUE.

Arabia:				
Aden	Feb. 25-Apr. 14..	290	208	
Beni-Shekir, Yemen	Dec. 7.....		15	
Matrah.....	Feb. 21-Mar. 10..		34	
Argentina:				
Buenos Ayres.....	Jan. 13-Mar. 12..	46	16	Plague reported epidemic.
Rosario.....	Jan. 25.....			
Australia:				
Adelaide.....	Jan. 16.....	2		Plague reported.
Sydney	Jan. 20-Apr. 10..	96	30	
Brazil:				
Conceicao dos Guarulhos..	Dec. 31.....	3		
Rio de Janeiro.....	Jan. 6-Jan. 12..	2	1	
	Apr. 20.....		6	
Santos.....	Oct. 13-Jan. 13..	39	15	
Sao Paulo.....	Dec. 15-Dec. 31..	4	3	

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

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Nov. 12-Dec. 30...	11	10	Plague reported.
	Mar. 25-Mar. 31...	4	4	
	May 8.....			
Egypt:				
Alexandria	May 9.....			Do.
Port Said.....	May 2.....			Do.
Formosa:				
Tamsui.....	Oct. 1-Dec. 12...	46	25	
	Jan. 1-Apr. 12...	239	176	
Hawaiian Islands:				
Hilo.....	Feb. 13.....	1		
Kahului.....	Jan. 30-Feb. 25...	8	1	
Honolulu.....	Dec. 11-Mar. 31...	71	61	
India:				
Bombay Presidency and Sind:				
Ahmedabad District.....	Nov. 19-Apr. 6.....		17	
Ahmednagar District.....	do.....		200	
Akalkot State.....	do.....		10	
Aundh State.....	do.....		45	
Baroda State.....	do.....		9	
Belgaum District.....	do.....		1,157	
Bhor State.....	do.....		122	
Bijapur District.....	do.....		539	
Bombay City.....	Nov. 19-Apr. 17...		7,811	
Broach District.....	Nov. 19-Apr. 6.....		0	
Cutch State.....	do.....		943	
Dharwar District.....	do.....		1,799	
Hyderabad (Sind) District.....	do.....		106	
Janjira State.....	do.....		32	
Kaira District.....	do.....		1	
Kanara District.....	do.....		18	
Kurrachee City.....	Nov. 19-Apr. 15...		1,066	
Kurrachee District.....	Nov. 19-Apr. 6.....		292	
Kathiawar State.....	do.....		96	
Khandesh District.....	do.....		1	
Kolaba District.....	do.....		110	
Kolhapur State.....	do.....		1,794	
Mahi Kantha State.....	do.....		0	
Nasik District.....	do.....		144	
Palanpur State.....	do.....		0	
Panch Mahals District.....	do.....		0	
Poona City.....	do.....		20	
Poona District.....	do.....		508	
Ratnagiri District.....	do.....		267	
Rewakantha State.....	do.....		0	
Sachin State.....	Dec. 3-Apr. 6.....		26	
Satara District.....	Nov. 19-Apr. 6.....		682	
Savantvadi State.....	do.....		1	
Savanur State.....	do.....		33	
Shikarpur District.....	do.....		0	
Sholapur District.....	do.....		1,668	
Surat District.....	do.....		173	
Thana District.....	do.....		594	
Upper Sind Frontier.....	do.....			
Outside Bombay Presidency and Sind:				
Madras Presidency—				
Anantapur District.....	Nov. 19-Apr. 7.....			
Bellary District.....	do.....		49	
Chingleput District.....	do.....		2	
Kurnool District.....	do.....			
Madras City District.....	do.....			
North Arcot District.....	do.....		7	
Salem District.....	do.....		401	
South Canara District.....	Feb. 25-Apr. 7.....		1	
Nellore District.....	Nov. 19-Apr. 7.....			
Trichinopoly District.....	do.....			
Coimbatore District.....	do.....		24	
Vizagapatam.....	Jan. 28-Apr. 7.....		1	
Mysore State—				
Bangalore City.....	Jan. 6-Apr. 7.....		248	
Bangalore Civil and Military Station.....	do.....		178	
Bangalore District.....	do.....		571	
Kolar District.....	do.....		13	
Kolar Gold Fields.....	do.....		87	

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

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Outside Bombay Presidency and Sind—Cont'd.				
Mysore State—Cont'd.				
Mysore City.....	Jan. 6-Apr. 7.....		137	
Mysore District.....	do.....		178	
Tumkur District.....	do.....		131	
Chitaldrug District.....	do.....		81	
Hyderabad State—				
Gulburga District.....	Dec. 31-Apr. 7.....		106	
Lingsugur District.....	do.....		595	
Naldrug District.....	Dec. 31-Apr. 7.....		272	
Bidar District.....	do.....		3	
Arangabad District.....	do.....			
Central Provinces—				
Wardha District.....	Nov. 19-Apr. 7.....		10	
Nagpur City.....	do.....		424	
Nagpur District.....	do.....		86	
Nimar District.....	do.....		1	
Punjab—				
Jullundur District.....	Nov. 19-Apr. 7.....		228	
Hoshiarpur District.....	do.....		1	
Patiala State.....	Mar. 18-Apr. 7.....		11	
Rawal Pindi District.....	do.....			
Bengal—				
Calcutta.....	Nov. 19-Apr. 7.....		4,120	
Berhampore District.....	Mar. 18-Apr. 7.....			
Burdwan District.....	Feb. 11-Apr. 7.....		1	
Howrah District.....	Nov. 19-Apr. 7.....		60	
Houghly District.....	do.....		37	
24 Parganas District.....	do.....		16	
Nadia District.....	do.....		3	
Khulana District.....	do.....		1	
Dacca District.....	do.....			
Darbhanga District.....	do.....		21	
Midnapore District.....	Jan. 23-Apr. 7.....		10	
Monghyr District.....	Feb. 11-Apr. 7.....		419	
Mozufferpore.....	Feb. 18-Apr. 7.....		14	
Rangoon District.....	Nov. 19-Apr. 7.....		1	Imported.
Patna.....	do.....		10,480	
Saran District.....	do.....		538	
Shahabad District.....	do.....		1	
Tipperah District.....	do.....			
Singbhoom District.....	do.....			
Balasore District.....	do.....		1	Imported and suspected.
Rajputana.....	do.....		6	Do.
Jeypore.....	Apr. 1-Apr. 7.....		1	
N. W. Provinces—				
Allahabad District.....	Jan. 1-Apr. 7.....		79	
Burma.....	Mar. 18-Apr. 7.....		1	
Japan:				
Osaka and Hiogo.....	Nov. 5-Jan. 26.....		52	
	Apr. 8-Apr. 25.....		9	
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	
Shizuoka Ken.....	do.....		1	
Wakayama Ken.....	do.....		1	
Madagascar:				
Tamatave.....	Sept. 10-Dec. 16.....	51	42	
Mauritius.....	Jan. 25-Dec. 23.....	3,000	2,500	Estimated. Year 1899.
New Caledonia:				
Noumea.....	Dec. 17-Apr. 4.....	123	77	
Paraguay:				
Asuncion.....	Nov. 1-Jan. 15.....		14	
	Jan. 22-Feb. 16.....		6	
Persia:				
Djivanro.....	Mar. 29.....			Plague reported.
Philippine Islands:				
Manila.....	Jan. 20-Apr. 7.....	172	131	
Portugal:				
Lisbon.....	Jan. 16.....	1		
Masan.....	Dec. 25.....	9	7	
Oporto.....	Aug. 16-Jan. 6.....	287	108	
Villa Nova de Gaya.....	Nov. 15.....	1		
South Africa:				
Cape Town.....	Mar. 6.....	4		On ss. Kilburn from Rosario.
Spain:				
Tuy.....	Feb. 12.....	1		

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

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Argentina:				
Buenos Ayres.....	Oct. 1-Feb. 28...		10	
Austria:				
Prague.....	Dec. 30-Apr. 28...	136	1	
Belgium:				
Antwerp.....	Dec. 3-Apr. 28...	80	31	
Ghent.....	Jan. 14-May 5.....		16	
Brazil:				
Pernambuco.....	Dec. 1-Dec. 15.....		5	
Rio de Janeiro.....	Nov. 4-Mar. 30.....		565	
British Columbia:				
Grand Forks.....	Mar. 7-Apr. 10.....	3	0	
Nakusp.....	Feb. 28-Apr. 10.....	1	0	
Nelson City.....	Feb. 16-Apr. 10.....	2	0	
Nelson District.....	Feb. 8-Apr. 10.....	1	0	
Rossland.....	Feb. 9-Apr. 10.....	5	0	
China:				
Hongkong.....	Dec. 17-Dec. 23.....	1	1	
	Mar. 4-Apr. 7.....	16	3	
Colombia:				
Barranquilla.....	Jan. 21-Mar. 31.....		6	
Cuba:				
Casilda.....	Jan. 2-Jan. 22.....	34	0	
Havana.....	Jan. 15.....	2		On ss. Santanderino
Egypt:				
Cairo.....	Nov. 19-Apr. 1.....		77	
England:				
Birmingham.....	Mar. 4-Mar. 10.....	2		
Leeds.....	Jan. 29-Feb. 3.....	1		
Liverpool.....	Jan. 7-Apr. 28.....	91	12	
London.....	Dec. 10-Apr. 28.....	183	4	
Southampton.....	Jan. 1-May 5.....	39		
Formosa:				
Tamsui.....	Oct. 1-Dec. 31.....	23		
	Jan. 1-Jan. 31.....	31		
	Mar. 1-Mar. 31.....	134	2	
France:				
Lyons.....	Dec. 17-Apr. 21.....		19	
Marseilles.....	Nov. 1-Mar. 31.....	225	25	
Nice.....	Dec. 19-Apr. 30.....	46	16	
Paris.....	Jan. 14-Apr. 7.....		12	
Rheims.....	Mar. 4-Mar. 10.....		4	
St. Nazaire.....	Mar. 8.....	82	4	
Germany:				
Hamburg.....	Jan. 1-Jan. 13.....	4	1	
Königsberg.....	Dec. 17-Feb. 3.....	9	3	
Gibraltar:				
	Dec. 4-Apr. 29.....	64	7	
Greece:				
Athens.....	Dec. 3-Apr. 28.....	98	36	
Hungary:				
Budapesth.....	Dec. 18-Dec. 24.....	1		
India:				
Bombay.....	Nov. 15-Apr. 17.....		2,923	
Calcutta.....	Nov. 26-Mar. 24.....		210	
Ceylon.....	Dec. 10-Jan. 27.....		5	
Madras.....	Jan. 13-Mar. 9.....		7	
Kurrachee.....	Jan. 15-Apr. 15.....	200	83	
Italy:				
Milan.....	Dec. 17-Apr. 28.....	5		
Palermo.....	Mar. 18-Mar. 24.....		1	
Rome.....	Mar. 25-Apr. 7.....		2	
Venice.....	Apr. 15-Apr. 21.....		1	
Japan:				
Nagasaki.....	Jan. 1-Mar. 31.....	3		
Yokohama.....	Nov. 19-Mar. 3.....	2		
Korea:				
Seoul.....	Jan. 21-Feb. 17.....	2	1	
Manitobah:				
Winnipeg.....	Apr. 1-May 12.....	12	2	
Mexico:				
Chihuahua.....	Dec. 24-May 12.....		68	
City of Mexico.....	Dec. 18-Apr. 29.....	298	166	
C. Porfirio Diaz.....	Feb. 11-Mar. 7.....	7	2	
Guadalajara.....	Apr. 21.....	150		
Monclova.....	Mar. 17.....	150		
Nuevo Laredo.....	Jan. 1-Dec. 31.....		16	
Vera Cruz.....	Dec. 22-May 12.....		68	

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

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
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	
Woodstock	Apr. 28.....			Smallpox reported.
Ontario :				
Amherstberg.....	Feb. 11-Mar. 3...	4	0	
Brant County	Jan. 27-Feb. 24...	1	0	
Essex County... ..	Oct. 30-Apr. 18...	240	0	
Frontenac County	Jan. 14-Feb. 24...	1	0	
Kent County.....	Nov. 2*-Jan. 14...	2	0	
Lambton County.....	Dec. 30-Feb. 24...	4	0	
Lanark County	May 18.....	3	0	
Middlesex County	Dec. 6-Feb. 24...	4	0	
Thunder Bay County.....	May 1-May 18...	2	0	
Renfrew County.....	Apr. 28-May 18...	1	0	
Simcoe County.....	May 18.....	1	0	
York County.....	Feb. 13-Feb. 24...	17	0	
Philippine Islands :				
Manila	Feb. 4-Apr 7...	26	1	
Porto Rico :				
Ponce.....	Mar. 11-Mar. 17...	2	0	
Quebec :				
Bonaventure County.....	Oct. 16-May 15...	311	3	
Kamouraska County.....	Aug. 18-Apr. 17...	284	1	
Matane County.....	Dec. 16-Apr. 17...	5	1	
Montreal	Jan. 16-Apr. 17...	1	0	
Quebec County.....	Apr. 15-May 15...	7	0	
Rimouski County.....	May 15.....	86	0	
Russia :				
Moscow.....	Nov. 26-Apr. 28...	62	19	
Odeasa.....	Dec. 3-Apr. 28...	173	41	
Riga.....	Nov. 1-Nov. 30...		15	
St. Petersburg.....	Jan. 1-Jan. 31...		38	
Vladivostock.....	Dec. 3-Apr. 21...	411	109	
Warsaw.....	Nov. 1-Nov. 30...	3	0	
Warsaw.....	Nov. 26-Apr. 21...		68	
Scotland :				
Edinburgh	Jan. 14-Jan. 20...	1	0	
Glasgow.....	Apr. 8-Apr. 28...	26	3	
Leith.....	Jan. 1-Jan. 6...	1	0	
Spain :				
Cadiz.....	Oct. 1-Oct. 31...		5	
Corunna.....	Dec. 3-Apr. 28...		21	
Madrid	Dec. 3-Apr. 14...		180	
Valencia.....	Mar. 18-Apr. 28...		5	
Straits Settlements :				
Singapore.....	Nov. 5-Mar. 24...		44	
Switzerland :				
Geneva.....	Jan. 7-Feb. 24...	8	0	
Zurich.....	Jan. 7-Jan. 27...	2	1	
Turkey :				
Constantinople.....	Dec. 19-Mar. 26...		3	
Smyrna.....	Dec. 4-Feb. 4...		11	
Uruguay :				
Montevideo.....	Nov. 26-Dec. 2...	1	0	
Venezuela :				
Maracaibo.....	Apr. 8-Apr. 14...		1	

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated pop-ulation.	Total deaths from all causes.	Deaths from—																
				Tuberculosis	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.						
Acapulco.....	Apr. 28	6,000	3																	
Do.....	May 5	6,000	5																	
Aix la Chapelle.....	do.....	129,000	46										1							
Alexandretta.....	Apr. 14	8,000	3																1	
Do.....	Apr. 21	8,000	5																	
Amherstburg.....	May 12	2,300	1																	
Amsterdam.....	May 8	524,809	158																	2
Antwerp.....	Apr. 28	293,111	67						1			2								
Athens.....	Apr. 28	200,000							2											
Barmen.....	do.....	141,000	39									1								1
Barranquilla.....	do.....	40,000	22	1																
Belfast.....	do.....	350,000	127									3								4
Do.....	May 5	350,000	171									8		1						8
Belize.....	May 10	13,000	1																	
Belleville.....	May 14	10,442	4																	
Bergen.....	May 1	68,000	24																	
Berlin.....	Apr. 21	1,849,996	709																	
Birmingham.....	May 5	519,610	191									3		2						6
Bluefields.....	May 6	3,018	3																	
Bremen.....	Apr. 21	141,000	43																	
Breslau.....	Apr. 28	300,000	192	34							1									
Bristol.....	May 5	324,973	136																4	1
Brussels.....	Apr. 28	600,000	186																1	
Budapest.....	Apr. 30	640,000									4								8	2
Callao.....	Apr. 22	25,000	31	6																
Catania.....	May 5	124,000	66	3																
Chihuahua.....	do.....	24,000	31										1							
Do.....	May 12	24,000	33																	
Christiania.....	May 5	233,000	92																	
Coburg.....	Apr. 21	20,299	2																	
Do.....	Apr. 28	20,299	8																	
Cognac.....	do.....	20,400	8																	
Do.....	May 5	20,400	10																	
Cologne.....	Apr. 28	365,667	367																	
Colombo.....	Mar. 31	130,000	82										2						3	3
Do.....	Apr. 7	130,000	71																	
Corunna.....	Apr. 28	40,500	23																	
Do.....	May 6	40,500	21																	
Crefeld.....	May 5	108,128	28																	
Curacao.....	Apr. 28	20,718	7																	
Dresden.....	Apr. 21	401,500	133																3	1
Do.....	Apr. 28	404,500	154																	1
Dublin.....	do.....	349,594	178																	2
Do.....	May 5	349,594	204									5		1						4
Dusseldorf.....	Apr. 28	205,056	73																3	1
Edinburgh.....	do.....	302,262	116																3	1
Do.....	May 5	302,262	134											1					2	2
Flushing.....	do.....	19,034	7																	
Frankfort-on-the-Main.....	Apr. 28	258,000	76											1						
Funchal.....	Apr. 23	36,980	16											2						
Do.....	Apr. 29	36,980	18											1						
Ghent.....	Apr. 28	163,030	57	7																
Do.....	May 5	163,030	86	7																
Gibraltar.....	Apr. 29	25,900	7																	
Girgenti.....	Apr. 28	24,428	15																	
Do.....	May 5	24,428	10																	
Glasgow.....	Apr. 28	743,969	352																	14
Do.....	May 5	743,969	296																	14
Gothenburg.....	May 4	125,800	53																	
Guayaquil.....	Apr. 14	60,000	63																	
Do.....	Apr. 21	60,000	59																	
Do.....	Apr. 28	60,000	76																	
Hamburg.....	May 5	691,349	261																	
Hamilton, Bermuda.....	May 8	16,000	5																	
Havre.....	Apr. 28	119,470	61	12																
Hongkong.....	Mar. 31	248,710	6		4															
Do.....	Apr. 7	248,710	8		6															
Königsberg.....	Apr. 28	193,273																		
La Ceiba.....	May 5	1,500	1																	
La Rochelle.....	Apr. 15	30,000	16																	
Do.....	Apr. 22	30,000	17																	
Do.....	Apr. 29	30,000	13																	
Leeds.....	May 5	423,899	186											2	2			5	9	3
Leghorn.....	Apr. 28	104,948	38	8															1	2
Leipsic.....	do.....	439,200	155											1				1	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.
Tuxpam.....	May 7	10,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utiilla.....	May 5	800	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valencia.....	do	203,558	107	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Vera Cruz.....	May 12	25,000	42	9	.....	.....	6	8	.....	.....	.....	.....	.....	.....
Vienna.....	Apr. 23	1,656,662	755	.....	.....	.....	.....	.....	.....	1	5	5	14	4
Warsaw.....	Apr. 21	645,848	266	.....	.....	.....	.....	2	.....	.....	.....	.....	3	4
Windsor, Nova Scotia.....	May 12	3,000	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winnipeg.....	May 5	7,985	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Do.....	May 12	7,985	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....
Zurich.....	Apr. 23	164,149	52	.....	.....	.....	.....	.....	.....	.....	.....	1	1	3

By authority of the Secretary of the Treasury :

WALTER WYMAN,
Surgeon-General U. S. Marine-Hospital Service.