PUBLIC HEALTH REPORTS.

UNITED STATES.

A REPORT ON LABORATORY WORK IN RELATION TO THE EXAMINATION OF RATS FOR PLAGUE AT SAN FRANCISCO, CAL.

[Prepared by direction of the Surgeon-General by George W. McCoy, Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service.]

The great importance in a plague campaign of keeping the epizoötic in rats under observation is unquestioned. Indeed, sanitarians are at present inclined to attach much more importance from an epidemiological and quarantine point of view to the cases of plague in rats than to cases in man. The reason for this is obvious. Cases in man are apt to be recognized early and such measures may be taken as to render them harmless to the community. With rats, of course, the matter is quite different. Infected animals may be present and scatter their deadly malady far and wide, and the cause of human cases appear to be most mysterious unless careful examination is made of the rats of the community. Thus a systematic examination of rats becomes of prime importance in any scientifically planned plague campaign.

The work of the Indian Plague Commission (Journal of Hygiene, vol. 7, No. 3, July, 1907) has given a new direction to the examination of rats for plague. This commission has by its work put the detection of plague in rats upon a substantial and accurate foundation, as it has shown that plague in rats is attended by certain well-defined lesions easily recognized by the naked eye. It has proved conclusively that the naked-eye diagnosis from the gross lesions is much more likely to be accurate than a diagnosis based upon microscopic findings. These lesions are in brief a bubo, a more or less marked subcutaneous injection, a necrotic or granular condition of the liver, pleural effusion, and a large, firm spleen.

My report is based upon the examination of about 40,000 rats made in March, April, May, and June of the present year, a time when no cases of plague were observed in man. Approximately 98 per cent of the rats examined were classified as belonging to the species, *Mus norvegicus*, the remaining 2 per cent to the species *Mus rattus*.* The earlier rat examinations in San Francisco were made the subject of a report by Wherry, Walker, and Howell (Journal American Medical Association, April 11, 1908).

Of the 40,000 rats examined 85 have presented enough of the gross lesions of plague to merit close investigations. Of this number (85) 58 have been shown to be plague infected and 27 have proved negative for plague. All of the infected rats were of the species *Mus norvegicus* except 2, which were of the species *Mus rattus*. Of the 58

infected rats 39 (67 per cent) were so typical macroscopically and microscopically as to warrant a diagnosis of plague without submitting them to the test of inoculation into guinea pigs.

Of the remaining 19 infected rats, 14 presented gross lesions that justified a diagnosis of plague, but the microscopic examination failed to show characteristic organisms, or showed them in such small numbers that for the purpose of confirming the diagnosis their tissues were submitted to the inoculation test. Five (8 per cent) of the infected rats presented gross lesions that made us suspect the existence of plague infection. They were made the subjects of inoculation for the purpose of making a diagnosis. It will be seen that of the 58 infected rats only 5 (8+ per cent) failed to present sufficiently characteristic gross lesions to justify a diagnosis.

Twenty-eight rats that were regarded as more or less suspicious of acute or chronic plague were shown by inoculation experiments to be negative for plague.

The routine procedure was as follows: A rat that presented enough typical gross lesions of plague and showed large numbers of organisms consistent with *B. pestis* in smears from its tissues was recorded as infected, without further investigation. A few of these rats from time to time furnished tissues for the inoculation of guinea pigs for purposes other than those of diagnosis, and in each instance typical cases of plague were produced in the guinea pigs. Rats presenting doubtful lesions, or sufficiently characteristic lesions but without organisms consistent with *B. pestis*, were recorded as suspicious until the results of guinea-pig inoculation made a positive diagnosis possible. On only a few occasions were cultures made directly from an infected rat. I believe sufficient reason existed for this because no artificial medium is so good for the growth of *B. pestis* in the presence of contaminating organisms as is the body of a living guinea pig, and in dealing with rats, the tissues of which were usually invaded with other organisms by the time they reached us, the securing of a pure culture of *B. pestis* by culture methods alone would have taken more time than we had at our disposal. Cultures were made from guinea pigs, and of course no difficulty was experienced in isolating the bacillus and studying it.

A word should be said here about the search for the bacillus in the tissues of infected rats. We have not considered it wise to spend much time in the search for the organism, and it was only when the typical organisms were present in considerable numbers or in almost pure culture that we permitted the microscopic finding to have any material weight in arriving at a diagnosis.

Rats, in general, that are somewhat decomposed will very frequently show a multitude of bacterial forms in the tissues, many of which are not to be distinguished morphologically from *B. pestis*. It is, of course, well known that great care should be taken in drawing conclusions from the morphology of organisms in general, and P. A. Surg. M. J. White (Medical Record, January 28, 1905) has emphasized this, especially in regard to plague in rats. The fallacy of a diagnosis based on morphology has been made very clear to us in the following manner: It is extremely desirable that a method be found for the diagnosis of rat plague in doubtful cases without awaiting the result of guinea-pig inoculation, and it seemed to me that the well-known ability of *B. pestis* to multiply vigorously at a lower

temperature than do many other bacterial species might be taken advantage of in making a diagnosis in such cases without awaiting the death of the inoculated animals. Occasionally when a rat with suspicious gross lesions was encountered in which plague-like organisms were absent or were found in such small numbers as to leave doubt in my mind as to their nature, we put the liver and spleen aside in a dark place at a temperature of from about 18° C. to about 22° C. Smears from the tissues were examined in 24 hours and again in 48 hours. In every case guinea pigs were inoculated for the purpose of controlling the method. In the first four cases apparently brilliant results were obtained. The tissues incubated at a low temperature showed practically a pure culture of *B. pestis*, and the guinea-pig controls died of plague. In the fifth case, what appeared to be a perfectly typical growth of *B. pestis* in the tissues in pure culture was obtained, but the guinea pigs failed to develop plague. In the sixth case the reverse happened; that is, the tissues failed to give a growth which we were willing to call *B. pestis*, yet the guinea pigs died of plague.

The method used in inoculating the tissues of suspected rats is as follows: The belly of one guinea pig is shaved over an area about 3 cm. square and over a part of this area, perhaps 1 cm. square, the shaving is done in such a manner as to abrade the epithelium, leaving a raw surface. In accordance with the injunction of the Indian Plague Commission, no soap or water is used; but I may say, in passing, that before I became acquainted with the views of the Indian Commission I frequently used soap and water in preparing guinea pigs for inoculation by this method, and have never seen any failures attributable to that procedure. On this abraded area, a piece of tissue (spleen, bubo, or liver) from the suspected rat is rubbed, using but little pressure. A second guinea pig is inoculated by a procedure used at the Hygienic Laboratory of this Service. In this procedure an incision about 0.7 cm. in length is made in the skin of the belly wall, a sterile dressing forceps is thrust down between the skin and the muscles for about 4 cm., and well into the pocket thus formed a bit of suspected tissue is placed. When guinea pigs are inoculated from an infected rat by the first procedure given above death usually occurs in four or five days (average, 4.8 days); by the second procedure, death usually follows on the third or fourth day (average, 3.6 days). I strongly advise against inoculation with a syringe, as when this is practiced a considerable number of guinea pigs will die acutely of infections other than plague.

THE NAKED-EYE APPEARANCE OF PLAGUE IN RATS.

The bubo.—Of the 58 infected rats, 32 (55 per cent) presented one or more well-defined buboes; 11 (19 per cent) presented no definite bubo, but a general enlargement of the lymph glands; 15 (26 per cent) presented no gross lesions of the lymph glands. Of the buboes, 26 were more or less softened or caseous upon section, while 4 were distinctly hemorrhagic. All were quite firm when examined before section, and the softened contents could be shelled out, leaving a well-defined capsule. One gland was white, succulent-looking, and not injected.

Buboes were single in 29 instances. Of these, 21 were situated in the groin, 6 in the axilla, and 2 in the pelvis. Two rats were met with

in which multiple buboes occurred. In one the right axillary and left inguinal glands were involved, and another had bilateral inguinal involvement. It is a remarkable and noteworthy fact that the cervical bubo which occurred in 72 per cent of natural plague rats examined by the Indian Commission was not found once in this series. A typical submaxillary bubo is recorded once in the 88 cases reported by Wherry, Walker, and Howell, and 33 times the submaxillary glands were reported as enlarged and congested. I am disposed to believe that some important and as yet not understood fact lies at the bottom of this difference between the experience here and that in India. Where note was made of the presence of bacilli in the buboes, they were found, sixteen times; absent, four times. In five of the sixteen cases in which bacilli were found, the "coccoid" form predominated.

Enlarged lymphatic glands are exceedingly common in rats, and glands that are merely enlarged, without surrounding infiltration or injection, are, in our experience, of no significance whatever.

Subcutaneous injection.—This sign was noted as present in greater or less degree forty-nine times (84+ per cent), in forty-five of which it was general in distribution. Twice it was confined to one side of the body, and in each of these cases it was found on the same side with the bubo. In one case no injection was noted except in the neighborhood of the glands. The injection was noted as slight eleven times; moderate, fifteen times; marked, sixteen times; and intense, seven times. In only three cases was it recorded as absent. In one case there was a considerable area of œdema in the axilla and the adjacent chest wall. The injection is the sign we have seen most frequently. When typical it is very highly significant of plague. The color is a rather dusky red. A bright pink injection is quite common in rats here other than those infected with plague.

The Indian Commission found subcutaneous injection in 69 per cent of their cases. It was recorded as present in 59 per cent of the cases reported by Wherry, Walker, and Howell.

Liver signs.—The liver was recorded as showing lesions in fifty cases (85+ per cent). Of these cases, in twenty-six the liver was yellowish brown in color and presented very distinct yellowish granules varying in number from very few to an enormous number and in size from a mere point to that of a mustard seed. In fifteen instances small whitish yellow areas rather indistinct in outline were seen. In these cases the liver showed no other departure from the normal. In two of the latter cases the spots were confined to the margin of the organ.

In 4,000 infected rats the Indian Commission found lesions of the liver in 58 per cent of the cases. Wherry, Walker, and Howell recorded them in 15 per cent of their cases.

Pleural effusion.—This sign was present thirty-four times (58+ per cent); absent, fifteen times; and in six cases the thorax was so injured by the trap that we were unable to say as to the existence of pleural effusion. The effusion was clear, serous in character, twenty-three times; blood-tinged or bloody, eleven times. Some of the latter may have been due to an injury to blood vessels when the rat was dissected. The effusion was small or moderate seventeen times; large, fifteen times.

The Indian Commission found pleural effusion in 72 per cent of cases. Wherry, Walker, and Howell found it in 71 per cent.

The spleen.—This organ was enlarged forty-two times; not enlarged, thirteen times. In consistency it was firm thirty-seven times; soft, fifteen times. The color was deep-red forty times; slate-colored, nine times; and mottled, twice. The splenic signs, in my opinion, are less useful than any of the others. This is also the view expressed by the Indian Commission. After a considerable experience in the examination of rats, I have no very clear idea as to what the normal size of the spleen should be. It varies in rats apparently healthy and of about the same size from 3 cm. in length up to 6 cm., and its other dimensions are equally variable.

In this series of 58 infected rats no one sign was found in every case in the series. In twenty-three instances (40 per cent) all the gross lesions of plague in rats were present. A typical bubo is the only lesion existing alone on which I would be willing to hazard a diagnosis of rat plague. Without a typical bubo, the other signs should be well marked to justify a diagnosis of plague.

The cases that proved negative.—Fifteen rats were found presenting microscopic lesions more or less suspicious of acute plague. Thirteen of these rats presented granular and necrotic foci in the liver, which on two or three occasions appeared to be identical with those found in plague. In two cases an intense congestion was the only markedly suspicious sign. Pleural effusion was met with four times. It is noteworthy that in not one of these cases was a typical bubo found, and I may say in passing that in no case in which a typical bubo has been found has plague not been confirmed when inoculations have been made.

Only one of these fifteen rats was recorded, after gross examination, as probably plague infected; in this case a marked subcutaneous injection, a typical plague liver, a large, firm, deep red spleen, the axillary and inguinal glands on one side deeply injected, and a large, clear, serous, pleural effusion, made a very suspicious combination. In addition, a few bipolar organisms were found in smears. Two guinea pigs were inoculated from the spleen of this rat by the routine method. They were both killed on the tenth day and in each case were found normal beyond the presence of a few whitish-yellow granules in the spleen. Smears showed a very few solidly staining organisms in the spleen resembling *B. typhosus*. Cultures made were negative for *B. pestis*, but gave a growth of an organism that I have not completely identified. This same organism, or a similar one, has been encountered in another rat presenting in the liver lesions suspicious of plague. It does not appear to be at all closely related to *B. pestis*.

Of the negative cases, twelve were rats that presented nothing suspicious of acute plague, but presented suppurating or caseous foci that were regarded as possibly due to chronic plague. Eleven of these foci were found to be suppurating or caseous lymphatic glands. They presented nothing in smears that could be interpreted as *B. pestis*. They were in each case tested on guinea pigs, but always with negative results. The remaining case was one that we were disposed to regard as very suspicious of chronic plague, as described by the Indian plague commission. The rat presented no lesion, except a caseous mass (abscess) adherent to the lower edge of the spleen. The lesion was about 1 cm. in diameter. The abscess cavity was filled with a semisolid yellowish mass. No organisms were found in smears, and

the inoculation of two guinea pigs resulted negatively. We have encountered in our work here no example of chronic or latent plague.

Cultural characteristics.—The organisms I have isolated here all gave the reactions for *B. pestis* on artificial media—that is, they did not liquefy gelatine, or ferment glucose, lactose, or muscle sugars. Milk was unchanged. The growth on agar was the characteristic sticky, translucent film usually given by plague. Only on broth and salt agar did plague give growths that could be considered at all characteristic.

We have not prepared brotl. especially for the development of stalactites—that is, by the use of an overlying fat—but have used ordinary broth in which the growth is sufficiently characteristic. Under these conditions a fine, more or less granular, precipitate was formed, which adhered to the sides and bottom of the tube. The medium never showed uniform clouding when the culture was grown under conditions that precluded serious vibration. On the surface was found a delicate, patchy film, or often only a few islands of growth; and upon slight agitation there fell down from the surface-film delicate, globular masses of the growth, often suspended by a fine filament from the surface. I observed one or two old cultures that gave what appeared to be a rather uniform turbidity; however, upon close inspection, it was found that the culture was full of exceedingly fine flakes, rather than that a uniform turbidity existed. In the old cultures a rather heavy scum was observed at times, which I was inclined at first to regard as evidence of contamination; but further investigation in every case showed these tubes to contain pure cultures.

Involution forms on 3 per cent salt agar.—The production of involution forms is, of course, universally regarded as of the greatest value in establishing the identity of a given organism such as *B. pestis*. My experience has amply confirmed this. In some thirty-odd cultures of *B. pestis* isolated here from plague-infected rats, usually after passage through guinea pigs, we never failed to get characteristic involution forms. These forms were generally to be found on 3 per cent salt agar after twenty-four hours, and always typically after forty-eight hours. The gigantic globose and trypanosome-shaped forms have, as is well known, no resemblance at all to the ordinary forms of *B. pestis*, and I more than once questioned whether we were dealing with plague at all when such extreme involution forms were present. However, I often recovered pure cultures of the ordinary type from these extreme involution forms by transplanting to ordinary media.

A few other organisms give forms that resemble the involution forms of *B. pestis;* notably *B. diphtheriæ* and *B. mallei*. The diphtheria organism does not produce forms within forty-eight hours that should lead to any confusion, but with that of glanders the case is different, as it will in forty-eight hours, or in even less time, give the long whip-like forms. Of course, the other points of difference between the two organisms would preclude any possibility of confusion.

There are several points to be observed in the use of salt agar if we are to obtain trustworthy results. In the first place, the salt used should be chemically pure sodium chloride. When I first began to work with plague cultures at San Francisco, I found that upon salt agar (3 per cent) I could get no growth at all, and, in fact, the organisms grew very poorly upon all my media. Different lots of salt agar were made, beef, beef extracts, tap water, distilled water, and differ-

ent reactions to phenolthalein being used, but still upon the 3 per cent salt medium I could get no growth of plague. My technique was carefully reviewed and the antecedents of my materials were considered. Finally it was learned that the salt was ordinary table salt from a grocery, which had inadvertently been put into a container marked "chemically pure sodium chloride." When a new lot of really pure salt was obtained no further difficulty was experienced.

A sample of this salt which so strongly inhibited the growth of *B. pestis* has been submitted to the Hygienic Laboratory of the Public Health and Marine-Hospital Service for chemical analysis, and I propose to carry out a series of experiments to determine what impurity or impurities led to the failure of plague upon this media.

The second point learned from our experience here is, that it will very frequently happen that upon salt agar (3 per cent) only a very feeble growth or even no growth, is obtained when the medium is inoculated directly from an animal. When the inoculation is made upon broth or ordinary agar and a generation of the organism is so obtained, it may be transplanted to the salt agar and a vigorous and satisfactory growth be assured.

A third point less definite and well established than the two previous ones is the variation in the type of involution-forms, dependent upon the length of time during which the culture has been carried upon artificial media. It has been my experience that cultures of plague recently isolated from an infected rat show marked involution forms earlier than a culture long carried on artificial media. Indeed, some old cultures, even after forty-eight hours on salt agar, show a large number of the organisms to be but moderately different from the forms on ordinary agar. Another point of difference between old and recent cultures is that in the former the large "whip" forms are apt to predominate, while in the recently isolated cultures globose and spindle-shaped forms usually predominate.

While there has been no question raised in any responsible quarter as to the existence of plague among the rats in San Francisco, it may not be amiss to make mention of the steps taken to absolutely prove the existence of the disease so far as methods at our disposal made it possible. In 2 cases, from rats which from gross appearances were considered plague-infected and which showed in smears from their tissues, organisms consistent with *B. pestis*, guinea pigs were inoculated by the cutaneous ("vaccination") method. The guinea pigs died on the 4th and 5th days, respectively. The animals presented the typical lesions of plague on post-mortem examination. In each case an organism was isolated from the heart's blood which gave all the cultural reactions of *B. pestis*, special attention being paid to the growth in broth, and to the production of involution-forms on salt agar. Cultures of these organisms (third generation) were then used to inoculate guinea pigs, again by the cutaneous method. One loopful of a 72-hour agar culture was used on each guinea pig. Two guinea pigs were inoculated with each culture, one having been given, intraperitoneally, just before the inoculation, 2 cc. of antiplague serum from the Pasteur Institute in Paris. In the case of culture A, the animal that had not received an inoculation of serum, died on the 7th day, while the animal that received the serum lived 12 days. In the case of culture B, the animal that received the serum did not sicken at all. It was killed on the 30th day after inoculation and at necropsy presented only

a small caseous gland in the left groin in which no *B. pestis* could be found. The control died on the 8th day. The 3 animals that died showed typical lesions of plague. In each case a pure culture of an organism giving all the reactions of *B. pestis* was obtained from the heart's blood of the dead animal. It is perhaps of not much significance that in the case of culture A, the guinea pig protected by serum lived 5 days longer than the control. The protected animal inoculated with culture B, was, however, the only example I have encountered of a guinea pig that survived inoculation with any of the cultures of *B. pestis* isolated at San Francisco. These two cultures, A and B, are the only ones I have isolated here that were tried against antiplague serum. The serum used has been in stock for a number of months and I am inclined to believe that its protective value is not especially high.

I wish to express my indebtedness to Acting Assistant Surgeon W. B. Wherry for valuable suggestions, and for kindly placing at my disposal plague literature otherwise not available.

[Reports to the Surgeon-General, Public Health and Marine-Hospital Service.]

Reports from San Francisco, Cal.—Plague prevention work at San Francisco, Oakland, and Emeryville, Cal.

Passed Assistant Surgeon Blue reports:

SAN FRANCISCO, CAL.

Week ended July 3, 1908.

Date of last case	Sickened, January 30, 1908
Sick inspected	9
Dead inspected	83
Premises inspected	15,726
Houses disinfected	103
Houses destroyed	17
Nuisances abated	1,468
Rats found dead	432
Rats trapped	3,251
Total rats taken	3,683
Rats identified:	
Mus norvegicus	2,621
Mus rattus	40
Mus musculus	379
Total	3,040
Rats examined bacteriologically	2,413
Rats infected with *B. pestis*	1
Poisons placed	85,882

Week ended July 11.

Sick inspected	20
Dead inspected	139
Premises inspected	14,762
Houses disinfected	132
Houses destroyed	6
Nuisances abated	2,003
Rats found dead	437
Rats trapped	3,923
Total rats taken	4,360

Rats identified:	
Mus norvegicus	3,396
Mus rattus	66
Mus musculus	569
Total	4,031
Rats examined bacteriologically	2,481
Poisons placed	1,064,142

OAKLAND, CAL.

Week ended July 4.

Sick inspected	60
Dead inspected	33
Premises inspected	4,996
Nuisances abated	1,062
Rats found dead	23
Rats trapped	1,191
Rats examined bacteriologically	1,164
Poisons placed	3,041
Notices served	351
Ships inspected	4
Certificates signed	3

Week ended July 11.

Sick inspected	62
Dead inspected	53
Premises inspected	4,115
Nuisances abated	669
Rats found dead	25
Rats trapped	1,219
Poisons placed	3,642
Notices served	347
Rats examined bacteriologically	1,168
Ships inspected	8
Ships fumigated	8
Certificates signed	8

BERKELEY, CAL.

Week ended July 4.

Dead inspected	6
Premises inspected	711
Nuisances abated	38
Rats found dead	97
Rats trapped	55
Poisons placed	13,600
Notices served	16

EMERYVILLE, CAL.

Week ended July 4.

Sick inspected	28
Premises inspected	956
Nuisances abated	5
Rats trapped	44
Poisons placed	5,385
Notices served	7

Outgoing quarantine transactions.

Passed Assistant Surgeon Hobdy reports:

Week ended July 4.

Vessels fumigated and certified	23
Vessels certified	56

Week ended July 11.

Vessels disinfected and certified	37
Vessels certified	77

Reports from Seattle, Wash.—Plague-prevention work—Summary, month of June, 1908.

Passed Assistant Surgeon Glover reports, July 6:

Week ended July 4.

Rats received	798
Rats necropsied	676
Plague rats found	0
Plague-infected rats to date	11
Ships inspected	16
Ships fumigated	0

Recent laboratory work on plague rats found at Seattle, Wash.

In transmitting the report of Assistant Surgeon Chapin, under date of July 7, Passed Assistant Surgeon Glover states:

The block from which the plague rats referred to in my telegrams of July 6 and 7 were brought is bounded by Spring and Madison streets on the north and south and by Ninth and Eighth avenues on the east and west. It is nine blocks from the water front and is surrounded by residences, apartment houses, and hotels. It is occupied for the most part by a woodyard, the few dwellings on the block being ranged along Spring street.

Rats had been brought in every few days from this block from April 4 to May 18 for the bounty. The subsequent dates of rats brought from this block were June 3, 19, and 23. The delay in reporting the rat brought in June 23 was due to Dr. Chapin's desire to be absolutely certain of the diagnosis, as it was an entirely new focus and a long interval had elapsed since the finding of the last plague rat, April 30.

Of the 3 suspect rats mentioned in my telegram of this date 1 was brought in on June 29 and 2 on July 6. Two of these were caught in snap traps, as were the 2 rats proven to have plague, and the other rat was picked up, badly decomposed, among the rubbish at the base of the Eighth avenue side of the stable, by a city health inspector. All of these rats have been caught in the stable or in the shed which is attached to the stable and used mainly for the storing of hay and grain.

Assistant Surgeon Chapin reports, July 6:

A rat brought to the laboratory from Eighth avenue and Madison street on June 23 presented appearances suggestive of plague infection. Microscopical examination and plate cultures were negative. A rat inoculated cutaneously from the organs died June 29 with the gross and microscopical appearances of plague, and cultures from this rat have been verified. A guinea pig inoculated cutaneously from this rat on June 29 died July 6 with plague-like lesions and bipolar bacilli in smears. A pigeon inoculated subcutaneously with a twenty-four-

hour culture on June 30 has shown no symptoms of illness. This case has been entered on our records as plague rat No. 12.

A rat delivered on June 29 from Eighth avenue and Madison street exhibited plague-like lesions. Microscopic examination was negative. Plate cultures yielded an organism which responds to the morphological and cultural tests of *bacillus pestis*. A rat inoculated cutaneously on June 30 from the twenty-four-hour culture died July 3 with the gross and microscopical appearances of plague. This case has been recorded as plague rat No. 13.

Another rat delivered on June 29 from the same locality is under examination.

Doctor Glover further reports:

July 17. Chapin reports positive 4 rats killed July 9 during clean up Eighth and Madison, making total of 9 from this locality.

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES AND CITIES OF THE UNITED STATES—UNTABULATED

CALIFORNIA—*Oakland.*—Month of April,[a] 1908. Estimated population, 200,000. Total number of deaths, 171, including enteric fever 5, diphtheria 1, and 20 from tuberculosis. Cases: Diphtheria 8, enteric fever 4, scarlet fever 1, smallpox 2, measles 27, and tuberculosis 2.

San Diego.—Month of June, 1908. Estimated population, 40,000. Total number of deaths, 53, including measles 2, whooping cough 1, and 10 from tuberculosis. Cases: Measles 23, smallpox 2, and diphtheria 4.

CONNECTICUT.—Month of June, 1908. Reports to the State board of health from 162 towns, having an aggregate population of 1,013,659, show as follows: Total number of deaths from all causes 1,135, including diphtheria 6, enteric fever 5, measles 6, scarlet fever 5, whooping cough 6, and 115 from phthisis pulmonalis. Cases: Diphtheria, 133 in 34 towns; enteric fever 39 in 14 towns; measles, 309 in 41 towns; scarlet fever, 122 in 33 towns; whooping cough, 79 in 17 towns; phthisis pulmonalis, 73 in 30 towns.

ILLINOIS—*Rockford.*—Month of June, 1908. Estimated population, 45,000. Total number of deaths not reported. Cases: Diphtheria 2 and scarlet fever 2.

INDIANA.—Month of May, 1908. Estimated population, 2,648,594. Total number of deaths, 2,694, including 11 from diphtheria, 27 from enteric fever, 25 from measles, 4 from scarlet fever, 28 from whooping cough, and 389 from tuberculosis.

Morbidity: Diphtheria, 37 cases in 13 counties; enteric fever, 91 cases in 26 counties; smallpox, 275 cases in 33 counties.

Jeffersonville.—Month of June, 1908. Estimated population, 10,840. Total number of deaths, 11, including smallpox 1 and 2 from tuberculosis. Cases: Enteric fever 2, tuberculosis 2, and smallpox 20.

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[a] Received out of regular order.

MINNESOTA.—Month of February, 1908. Estimated population, 1,979,658. Reports to the State board of health show as follows: Total number of deaths, 1,953, including diphtheria 37, enteric fever 11, measles 8, scarlet fever 18, whooping cough 7, smallpox 5, and 168 from tuberculosis. Deaths reported from State institutions during the month numbered 30, including 7 from tuberculosis.

Minneapolis.—Month of December,[a] 1907. Estimated population, 300,000. Total number of deaths, 267, including diphtheria 6, enteric fever 6, scarlet fever 2, whooping cough 2, and 33 from tuberculosis. Cases: Diphtheria 51, enteric fever 18, scarlet fever 30, smallpox 81, and tuberculosis 34.

Month of January, 1908. Total number of deaths, 325, including diphtheria 1, enteric fever 5, measles 2, scarlet fever 3, and 33 from tuberculosis. Cases: Diphtheria 40, enteric fever 8, scarlet fever 87, smallpox 145, and tuberculosis 18.

Month of February, 1908. Total number of deaths, 269, including diphtheria 2, enteric fever 2, measles 1, scarlet fever 1, and 35 from tuberculosis. Cases: Diphtheria 33, enteric fever 9, scarlet fever 78, smallpox 115, and tuberculosis 22.

NEW YORK.—Month of May, 1908. Estimated population, 8,580,603. Reports to the State department of health show as follows: Total number of deaths, 11,537, corresponding to an annual death rate of 16.1 per 1,000 of the population, including enteric fever 91, measles 203, scarlet fever 220, whooping cough 50, diphtheria 201, and 1,249 from phthisis pulmonalis. Cases: Diphtheria 1,833, enteric fever 314, measles 9,777, scarlet fever 4,547, small pox 48, and tuberculosis 1,982.

Troy.—Month of June, 1908. Estimated population, 77,650. Total number of deaths, 116, including diphtheria 2, scarlet fever 1, and 19 from tuberculosis. Cases: Diphtheria 7, enteric fever 9, measles 7, scarlet fever 8, and tuberculosis 15.

Yonkers.—Month of June, 1908. Estimated population, 72,000. Total number of deaths, 82, including enteric fever 1, scarlet fever 3, and 8 from tuberculosis. Cases: Diphtheria 6, measles 10, scarlet fever 29, and phthisis pulmonalis 32.

UTAH—*Salt Lake City.*—Month of June, 1908. Estimated population, 85,000. Total number of deaths from all causes, 80, including enteric fever 1, diphtheria 2, and 8 from tuberculosis. Cases: Diphtheria 4, whooping cough 22, measles 8, scarlet fever 21, smallpox 13, tuberculosis 3, and enteric fever 2.

WEST VIRGINIA—*Charleston.*—Month of June, 1908. Estimated population, 26,000. Total number of deaths, 32, including enteric fever 1, whooping cough 1, and 6 from tuberculosis. Cases: Diphtheria 1, and enteric fever 2.

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[a] Received out of regular order.

Smallpox in the United States as reported to the Surgeon-General, Public Health and Marine-Hospital Service, June 27 to July 24, 1908.

[For reports received from December 27, 1907, to June 26, 1908, see PUBLIC HEALTH REPORTS for June 26, 1908.]

[NOTE.—In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

Place.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Huntsville	Jan. 5–June 18	85		And vicinity.
Mobile	June 7–July 4	9		
Total for State		94		
Arkansas:				
Texarkana	Dec. 1–June 15			Present.
California:				
Angel Island Quarantine Station.	Jan. 1–May 18			5 additional cases. Report received out of date.
Los Angeles	June 7–July 4	6		July 13, 1 case on scr. Alumna.
Oakland	Apr. 1–May 31	14		
Sacramento	May 1–31	3		
San Diego County	June 1–13			100 cases estimated. Mainly on Pala Indian Reservation.
San Diego	July 6	1		From day steamer City of Long Beach.
San Francisco	June 6–27	17		
Total for State		41		
District of Columbia:				
Washington	June 14–27	8		
Total for District		8		
Illinois:				
Alexander County	May 1–31	3		
Carroll County	May 1–31	5		
Cass County	May 1–31	34		
Champaign County	May 1–31	4		
Christian County	May 1–31	3		
Clark County	May 1–31	11		
Cook County—				
Chicago	June 14–July 11	7		
Harvey	May 1–31	1		
Dupage County	May 1–31	1		
Effingham County	May 1–31	1		
Iroquois County	May 1–31	3		
Jo Daviess County	May 1–31	1		
Kane County	May 1–31	37		
Macon County	May 1–31	5		
Macoupin County	May 1–31	5		
Marshall County	May 1–31	9		
McLean County	May 1–31	5		
Mercer County	May 1–31	1		
Montgomery County	May 1–31	7		
Morgan County	May 1–31	20		
Jacksonville	June 1–30	10		
Peoria County	May 1–31	12		
Saline County	May 1–31	5		
Sangamon County—				
Springfield	June 19–July 2	3		
Stevenson County	May 1–31	25		
Tazewell County	May 1–31	64		
Warren County	May 1–31	6		
Will County	May 1–31	1		
Joliet	May 1–31	19		
Total for State		308		
Indiana:				
Allen County	Apr. 1–30	1		
Fort Wayne	June 21–27	2		
Bartholomew County	Apr. 1–30	1		
Boone County	Apr. 1–30	1		
Carroll County	May 1–31	51		
Clark County	Apr. 1–May 31	24		
Jeffersonville	June 1–30	20	1	
Dearborn County	Apr. 1–30	3		
Dekalb County	Apr. 1–May 31	11		
Delaware County	Apr. 1–May 31	21		
Fulton County	Apr. 1–30	19		
Grant County	Apr. 1–May 31	49		

Smallpox in the United States, etc.—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Hendricks County	Apr. 1-30	1		
Howard County	Apr. 1-30	15		
Huntington County	Apr. 1-30	38		
Jackson County	Apr. 1-30	3		
Johnson County	Apr. 1-30	9		
Knox County	Apr. 1-May 31	31		
Laporte County	Apr. 1-30	2		
Lawrence County	Apr. 1-30	12		
Madison County	Apr. 1-30	4		
Marion County	Apr. 1-May 31	38		
Indianapolis	June 8-July 12	18	1	
Marshall County	Apr. 1-30	1		
Miami County	Apr. 1-30	16		
Morgan County	Apr. 1-30	2		
Noble County	Apr. 1-30	9		
Orange County	Apr. 1-30	1		
Owen County	Apr. 1-30	4		
St. Joseph County—				
South Bend	June 29-July 4	1		
Shelby County	Apr. 1-30	35	1	
Steuben County	May 1-31	30		
Sullivan County	Apr. 1-30	9		
Tippecanoe County	Apr. 1-May 31	11		
Lafayette	June 21-July 6	2		
Tipton County	Apr. 1-30	1		
Wabash County	Apr. 1-30	14		
Warrick County	Apr. 1-30	1		
Wayne County	Apr. 1-30	15		
Wells County	Apr. 1-30	1		
Vigo County	May 1-31	8		
Total for State		535	3	
Iowa, general	Jan. 1-June 30	2,092		Additional reported out of date.
Cedar Rapids	June 1-July 1	4		
Davenport	June 2-30	3		
Sioux City	June 1-30	2		
Total for State		2,101		
Kansas:				
Allen County	Apr. 1-30	9		
Anderson County	Apr. 1-30	6		
Atchison County	Apr. 1-30	48		
Atchison	Apr. 1-30	16		
Barton County	Apr. 1-30	6		
Bourbon County	Apr. 1-30	10		
Chase County	Apr. 1-30	1		
Cherokee County	Apr. 1-30	7		
Cheyenne County	Apr. 1-30	2		
Crawford County	Apr. 1-30	1		
Pittsburg	Apr. 1-30	8		
Doniphan County	Apr. 1-30	3		
Douglas County	Apr. 1-30	8		
Edwards County	Apr. 1-30	2		
Franklin County	Apr. 1-30	2		
Greenwood County	Apr. 1-30	8		
Hamilton County	Apr. 1-30	1		
Harper County	Apr. 1-30	7		
Harvey County	Apr. 1-30	14		
Hodgeman County	Apr. 1-30	2		
Jackson County	Apr. 1-30	32		
Jefferson County	Apr. 1-30	1		
Kingman County	Apr. 1-30	12		
Labette County	Apr. 1-30	14		
Parsons	Apr. 1-30	14		
Leavenworth County	Apr. 1-30	18		
Lincoln County	Apr. 1-30	1		
Linn County	Apr. 1-30	15		
Lyon County	Apr. 1-30	18		
Miami County	Apr. 1-30	5		
Montgomery County	Apr. 1-30	5		
Nemaha County	Apr. 1-30	26		
Neosho County	Apr. 1-30	2		
Osage County	Apr. 1-30	1		
Pottawatomie County	Apr. 1-30	1		
Reno County	Apr. 1-30	12		
Republic County	Apr. 1-30	10		
Saline County	Apr. 1-30	11		
Sedgwick County	Apr. 1-30	7		
Shawnee County	Apr. 1-30	30		
Topeka	June 7-July 11	13		
Smith County	Apr. 1-30	7		

Smallpox in the United States, etc.—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Kansas—Continued.				
Stevens County	Apr. 1–30	1		
Sumner County	Apr. 1–30	3		
Trego County	Apr. 1–30	22		
Washington County	Apr. 1–30	2		
Wyandotte County—				
Kansas City	June 8–15	3		
Total for State		447		
Kentucky:				
Covington	June 21–July 11	4		
Total for State		4		
Louisiana:				
New Orleans	June 14–July 11	18	1	
Total for State		18	1	
Maryland:				
Baltimore	July 5–11	1		
Total for State		1		
Massachusetts, general	May 1–31	1		
Total for State		1		
Michigan:				
Detroit	July 4–11	1		
Saginaw	June 21–27	1		
Total for State		2		
Minnesota:				
Aitkin County	Apr. 1–June 15	7		
Anoka County	Apr. 28–May 10	5		
Becker County	Apr. 28–June 15	123		
Benton County	Apr. 28–June 15	10		
Bigstone County	Apr. 7–May 17	1		
Blue Earth County	Apr. 21–June 15	21		
Brown County	Mar. 31–May 17	12		
Carver County	Apr. 28–June 8	19		
Cass County	June 1–8	1		
Chippewa County	Apr. 21–June 1	8		
Chisago County	Apr. 14–June 8	2		
Clay County	Apr. 28–June 8	18		
Crow Wing County	Apr. 28–June 15	9		
Dakota County	Apr. 28–June 8	8		
Douglas County	June 9–15	2		
Faribault County	May 4–June 8	18		
Fillmore County	May 4–17	9		
Freeborn County	May 4–10	1		
Goodhue County	May 4–June 4	15		
Hennepin County	Apr. 28–June 15	29		
Minneapolis	June 1–15	10		
Houston County	Apr. 28–June 15	3		
Hubbard County	Apr. 28–June 15	26		
Isanti County	Apr. 28–May 17	5		
Itasca County	Apr. 7–June 15	20		
Jackson County	Apr. 13–June 15	14		
Kanabec County	May 4–10	5		
Kandiyohi County	May 4–15	16		
Kittson County	Apr. 14–June 1	3		
Koochiking County	May 25–June 15	6		
Lac qui Parle County	May 4–June 15	6		
Lake County	May 27–June 15	12		
Lesueur County	Apr. 28–June 15	13		
Lincoln County	June 4–10	1		
Lyon County	May 4–10	2		
McLeod County	May 24–June 8	3		
Martin County	Apr. 28–June 15	5		
Meeker County	Apr. 28–June 8	24		
Millelacs County	Apr. 28–June 15	4		
Morrison County	Apr. 28–June 15	16		
Mower County	May 17–24	3		
Nicollet County	Apr. 28–June 1	14		
Nobles County	Apr. 28–May 8	1		
Norman County	May 10–June 15	2		
Olmsted County	Apr. 28–June 15	11		
Otter Tail County	Apr. 28–June 15	15		
Pine County	May 17–June 1	8		
Pipestone County	June 1–8	1		

Smallpox in the United States, etc.—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Minnesota—Continued.				
Polk County	Apr. 28–June 8	12		
Pope County	Apr. 28–May 3	1		
Ramsey County	Apr. 28–June 15	11		
St. Paul	May 1–31	49		
Red Lake County	May 4–17	4		
Redwood County	Apr. 28–June 15	13		
Renville County	May 10–15	4		
Rice County	Apr. 28–June 8	3		
Rock County	Apr. 28–June 8	3		
Roseau County	May 4–June 10	2		
St. Louis County	Apr. 28–June 15	9		
Duluth	Apr. 28–June 15	126		
Scott County	Apr. 28–June 15	147		
Sibley County	Apr. 27–June 8	6		
Stearns County	Apr. 28–June 8	43		
Steele County	Apr. 28–June 8	13		
Stevens County	Apr. 28–May 24	7		
Swift County	Apr. 28–June 8	16		
Todd County	Apr. 28–June 15	45		
Wabasha County	Apr. 28–May 10	5		
Washington County	May 24–June 15	6		
Wilkin County	Apr. 28–June 8	5		
Winona County	May 4–June 15	4		
Winona	June 21–27	1		
Wright County	Apr. 29–June 15	33		
Yellow Medicine County	May 4–June 15	8		
Total for State		1,143		
Missouri:				
Conway	Apr. 20–June 19	29		
Durham	May 1–July 1			Present and in vicinity.
Kansas City	June 14–July 11	5		
La Belle	May 1–July 1	7		And vicinity.
Lewiston	May 1–July 1	18		Do.
Monticello	May 1–July 1	1		
St. Joseph	June 7–July 11	13		
St. Louis	June 14–20	1		
Total for State		74		
Montana:				
Cascade County	May 1–31	3		
Chouteau County	May 1–31	22		
Deerlodge County	May 1–31	1		
Fergus County	May 1–31	8		
Flathead County	May 1–31	8		
Gallatin County	May 1–31	1		
Lewis and Clark County	May 1–31	3		
Helena	May 1–31	2		
Meagher County	May 1–31	1		
Missoula County	May 1–31	6		
Missoula	May 1–31	1		
Ravalli County	May 1–31	2		
Valley County	May 1–31	4		
Total for State		62		
Nebraska:				
Friend	Apr. 13–June 18	13		
Lincoln	Mar. 1–May 31	22		
South Omaha	June 7–13	1		
Total for State		36		
New York:				
New York	June 14–20	1		
Niagara Falls	June 14–20	1		
Total for State		2		
North Carolina:				
Anson County	May 1–31	30		
Cabarrus County	Apr. 1–May 31	38		
Camden County	Apr. 1–30	5		
Chatham County	Apr. 1–30	2		
Chowan County	Apr. 1–May 31	13		
Cleveland County	Apr. 1–30	8		
Davie County	Apr. 1–30	4		
Forsyth County	Apr. 1–30	1		
Gates County	Apr. 1–30	3		
Guilford County	Apr. 1–30	6		
Johnston County	Apr. 1–30	43		May 31, still present.

Smallpox in the United States, etc.—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Mecklenburg County—				
Charlotte	June 14-27	2		
New Hanover County	Apr. 1-May 31	6		
Orange County	Apr. 1-May 31	3		
Richmond County	May 1-31	1		
Rowan County	Apr. 1-May 31	26		
Rutherford County	Apr. 1-30	12		
Wayne County	Apr. 1-30	5		
Yadkin County	Apr. 1-30	2		
Total for State		210		
Ohio:				
Cincinnati	June 20-July 10	6		
Dayton	June 14-July 4	8		
Toledo	June 14-20	4		
Troy	Apr. 15-July 3	28		
Total for State		46		
Oregon:				
Portland	Apr. 1-30	13		
Total for State		13		
Rhode Island:				
Pawtucket	June 12-29	1		
Total for State		1		
Tennessee:				
Knoxville	June 21-27	1		
Livingston	June 13-Apr. 11	9	1	
Nashville	June 14-20	1		
Total for State		11	1	
Texas:				
Fort Worth	May 1-31	9		
San Antonio	June 14-July 11	6		
Total for State		15		
Utah:				
Cache County	May 1-31	2		
Davis County	May 1-31	1		
Salt Lake County				
Salt Lake City	May 1-June 13	18		
Utah County	May 1-31	6		
Weber County	May 1-31	19		
Total for State		46		
Vermont:				
Whiting	May 5	1		
Total for State		1		
Virginia:				
Alexandria	June 25-27	13		
Total for State		13		
Washington:				
Seattle	May 1-31	19		Report for April not received.
Spokane	June 7-July 4	39		
Tacoma	June 8-14	1		
Total for State		59		
West Virginia:				
Moundsville	June 17-July 2	1		
Total for State		1		
Wisconsin:				
La Crosse	June 16-July 11	21		
Milwaukee	June 14-July 4	8		
Total for State		29		
Grand total, United States		5,322	5	

Weekly morbidity and mortality table, cities of the United States.

[For smallpox see special table.]

Cities.	Week ended—	Population, United States census, 1900.	Total deaths from all causes.	Tuberculosis.		Enteric fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Altoona, Pa	July 11	38,973	11	....	1	1	....	1	....	1	....	.....	....	....	....
Ann Arbor, Mich.	July 4	14,509	4	....	....	....	....	.....	....	.....	....	.....	....	....	....
Do	July 11	14,509	4	....	....	....	....	.....	....	.....	....	.....	....	....	....
Auburn, N. Y	July 4	30,345	5	1	1	1	....	.....	....	.....	....	.....	....	5	....
Do	July 11	30,345	7	....	....	....	....	.....	....	.....	....	.....	....	....	....
Augusta, Ga	July 14	39,441	12	2	1	....	....	1	....	.....	....	1	....	1	....
Baltimore, Md	July 11	508,957	271	8	28	20	8	15	3	10	1	6	....	1	1
Bayonne, N. J	....do ...	32,722	.....	....	....	1	....	4	....	4	....	12	....	....	....
Beaver Falls, Pa	....do ...	10,054	0	....	....	....	....	.....	....	.....	....	.....	....	1	....
Berkeley, Cal	July 4	18,214	6	1	1	....	....	.....	....	.....	....	.....	....	....	....
Biddeford, Me	July 11	16,145	1	....	....	....	....	.....	....	.....	....	.....	....	....	....
Binghamton, N.Y.	....do ...	38,647	10	....	1	....	....	.....	....	.....	....	.....	....	....	....
Boston, Mass	....do ...	560,892	209	45	26	14	....	30	1	42	6	101	7	8	2
Bradford, Pa	....do ...	15,029	3	1	....	1	....	.....	....	.....	....	1	....	....	....
Brockton, Mass	....do ...	40,063	5	5	1	1	....	.....	....	2	....	24	....	....	....
Butte, Mont	June 30	30,470	13	....	....	....	....	2	1	1	1	.....	....	....	....
Do	July 7	30,470	13	3	2	....	....	5	1	.....	....	.....	....	....	....
Cambridge, Mass.	July 11	91,886	19	6	1	2	1	4	1	8	1	3	....	2	2
Camden, N. J	....do ...	75,935	25	4	1	....	....	.....	....	3	1	2	....	....	....
Camden, S. C	....do ...	2,441	1	....	....	1	....	.....	....	.....	....	.....	....	....	....
Carbondale, Pa	....do ...	13,536	3	....	....	....	....	.....	....	.....	....	.....	....	....	....
Charlotte, N. C	....do ...	18,091	10	....	1	1	....	.....	....	.....	....	.....	....	....	....
Chicago, Ill	....do ...	1,698,575	510	26	57	6	1	45	7	62	6	75	2	8	5
Chicopee, Mass	....do ...	19,167	8	....	1	....	....	.....	....	.....	....	1	....	....	....
Cincinnati, Ohio	July 10	325,902	102	10	10	5	1	2	....	8	....	6	....	3	1
Cleveland, Ohio	....do ...	381,768	122	40	13	7	1	9	....	15	1	36	....	20	....
Clinton, Mass	July 11	13,667	2	....	....	....	....	.....	....	.....	....	3	....	....	....
Columbus, Ga	....do ...	17,614	3	....	1	....	....	.....	....	.....	....	.....	....	....	....
Covington, Ky	....do ...	42,938	23	....	....	....	....	.....	....	.....	....	2	....	....	....
Danville, Ill	....do ...	16,354	10	....	2	....	....	.....	....	1	....	.....	....	....	....
Dayton, Ohio	....do ...	85,332	34	....	7	....	....	2	....	.....	....	.....	....	1	....
Detroit, Mich	....do ...	285,704	117	....	....	....	....	.....	....	3	1	.....	....	....	....
Dunkirk, N. Y	....do ...	11,616	3	....	....	....	....	2	....	.....	....	.....	....	5	....
Elkhart, Ind	....do ...	15,184	6	....	....	....	....	1	....	.....	....	.....	....	....	....
Elmira, N. Y	....do ...	35,672	8	....	2	11	1	.....	....	1	1	.....	....	....	....
Erie, Pa	July 9	52,733	18	....	....	2	2	.....	....	.....	....	.....	....	2	....
Do	July 16	52,733	15	4	2	4	....	.....	....	.....	....	.....	....	7	2
Everett, Mass	July 11	24,336	4	2	....	....	....	.....	....	1	....	6	....	....	....
Fall River, Mass	....do ...	104,863	61	1	1	1	....	.....	....	1	....	4	1	....	....
Findlay, Ohio	....do ...	17,613	4	....	2	....	....	.....	....	.....	....	.....	....	....	....
Fort Wayne, Ind	....do ...	50,947	20	....	2	....	....	4	....	1	....	.....	....	....	....
Galesburg, Ill	July 4	18,607	3	....	....	....	....	.....	....	.....	....	.....	....	....	....
Do	July 11	18,607	2	....	....	....	....	1	....	.....	....	.....	....	....	....
Galveston, Tex	July 10	37,789	15	1	1	4	....	.....	....	.....	....	.....	....	....	....
Gloucester, Mass	July 4	26,121	4	....	....	....	....	.....	....	.....	....	.....	....	....	....
Do	July 11	26,121	3	....	....	....	....	.....	....	.....	....	.....	....	....	....
Grand Rapids, Mich	....do ...	87,565	25	6	3	3	1	3	....	....	1	14	....	6	....
Greensboro, N. C	....do ...	10,035	6	....	3	2	1	2	....	.....	....	.....	....	....	....
Greenville, S. C	....do ...	11,860	3	....	....	....	....	.....	....	.....	....	.....	....	6	....
Harrison, N. J	....do ...	10,596	8	1	1	....	....	1	....	.....	....	.....	....	....	....
Hartford, Conn	July 5	79,850	26	3	1	1	1	7	....	5	....	.....	....	....	....
Do	July 12	79,850	24	2	1	1	....	.....	....	3	1	.....	....	....	....
Haverhill, Mass	July 11	37,175	0	1	....	2	....	.....	....	1	....	.....	....	....	....
Hoboken, N. J	....do ...	59,364	.....	....	....	....	....	3	....	1	1	.....	....	....	....
Hyde Park, Mass	....do ...	13,244	4	....	....	....	....	.....	....	.....	....	.....	....	....	....
Indianapolis, Ind	July 12	169,164	64	3	6	3	1	.....	....	1	....	3	....	....	1
Jacksonville, Fla	July 11	28,429	21	....	2	....	1	.....	....	.....	....	.....	....	....	....
Johnstown, Pa	....do ...	35,936	17	....	2	5	....	2	....	.....	....	.....	....	9	1
Kalamazoo, Mich	....do ...	24,404	11	....	....	2	1	.....	....	.....	....	.....	....	4	....
Kansas City, Kans	....do ...	51,418	31	1	3	2	....	1	....	.....	....	.....	....	4	1
Kansas City, Mo	....do ...	163,752	50	....	2	....	1	1	....	1	1	.....	....	8	....
Kearny, N. J	....do ...	10,896	9	2	2	1	....	.....	....	.....	....	.....	....	....	....
Kingston, N. Y	....do ...	24,535	8	....	1	....	....	.....	....	.....	....	.....	....	....	....
Knoxville, Tenn	....do ...	32,637	.....	....	5	....	....	.....	....	.....	....	1	....	....	....
La Crosse, Wis	....do ...	28,895	3	14	....	....	....	.....	....	2	....	.....	....	....	....
La Fayette, Ind	July 13	18,116	9	2	2	....	....	.....	....	.....	....	.....	....	....	....
Lancaster, Pa	July 11	41,459	18	....	....	1	....	1	....	1	....	1	....	8	....
Lawrence, Mass	....do ...	62,559	24	2	1	1	1	.....	....	1	1	3	....	....	1
Lexington, Ky	....do ...	26,369	12	....	1	....	....	.....	....	2	1	2	....	....	....
Los Angeles, Cal	July 4	102,479	72	8	10	5	....	3	....	11	....	39	1	....	....
Lowell, Mass	July 11	94,969	45	3	3	3	....	2	....	.....	....	12	....	....	....
Lynn, Mass	....do ...	68,513	18	....	1	....	....	.....	....	10	1	4	....	....	....
Malden, Mass	....do ...	33,664	8	....	....	1	....	2	....	1	....	6	....	....	....

Weekly morbidity and mortality table, cities of the United States—Continued.

Cities.	Week ended—	Population, United States, census, 1900.	Total deaths from all causes.	Tuberculosis.		Enteric fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Manchester, N. H.	July 11	56,987	40	....	....	5	....	....	....	4	1	1	....	....	....
Manitowoc, Wis.	....do ..	11,786	3	....	....	....	1	....	....	1	....	....	....	....	....
Massillon, Ohio	....do ...	11,944	4	....	1	....	....	....	....	....	....	....	....	....	....
Medford, Mass.	....do ...	18,244	5	1	2	....	....	1	....	2	....	3	....	....	....
Melrose, Mass.	....do ...	12,962	2	....	....	....	....	....	....	....	....	....	....	....	....
Mobile, Ala.	July 4	38,469	25	3	8	3	1	....	....	2	....	....	....	....	....
Do	July 11	38,469	23	1	2	....	2	....	....	4	....	....	....	....	....
Moline, Ill.	July 12	17,248	2	....	1	1	....	....	....	....	....	....	....	....	....
Montclair, N. J.	July 11	13,962	7	....	....	....	....	....	....	....	....	....	....	....	....
Montgomery, Ala.	July 10	30,346	12	....	2	....	....	....	....	....	....	....	....	....	....
Mount Vernon, N. Y.	July 11	21,228	11	....	....	1	....	....	....	....	....	3	....	....	....
Nanticoke, Pa.	July 13	12,616	1	....	....	....	....	3	....	7	....	....	....	....	....
Nashville, Tenn.	July 11	80,865	37	1	1	22	3	....	....	....	....	....	....	....	2
Newark, N. J.	....do ...	246,070	112	....	14	3	1	26	2	8	....	....	....	....	....
New Bedford, Mass.	....do ...	62,442	29	4	1	....	1	2	....	2	....	....	....	3	....
New Brunswick, N. J.	July 4	20,006	....	....	....	2	....	....	....	....	....	....	....	....	....
Do	July 11	20,006	....	....	....	2	....	....	....	....	....	1	....	....	....
Newburyport, Mass	....do ...	14,478	7	....	....	....	....	2	....	....	....	2	....	....	....
New Orleans, La.	....do ...	278,104	123	31	14	10	....	28	....	9	....	....	....	....	4
Newport, R. I.	July 4	22,441	4	1	....	....	....	....	....	3	....	....	....	....	....
Do	July 11	22,441	5	....	....	2	....	....	....	2	....	....	....	....	....
Newton, Mass.	....do ...	33,587	7	2	....	....	....	....	....	....	....	1	....	....	....
New York, N. Y.	....do ...	3,437,202	1,516	444	107	72	10	187	16	235	33	431	14	18	3
Niagara Falls, N. Y.	....do ...	19,457	5	....	1	1	....	....	....	....	....	1	....	....	....
North Adams, Mass.	....do ...	24,200	9	....	2	....	....	....	....	1	....	....	....	....	....
Northampton, Mass	....do ...	18,643	1	....	....	....	....	....	....	1	....	15	....	....	....
Oneonta, N. Y.	....do ...	7,147	1	....	....	....	....	....	....	....	....	....	....	....	....
Orange, N. J.	....do ...	24,141	14	2	3	....	....	....	....	1	....	....	....	....	....
Ottumwa, Iowa	....do ...	18,197	13	....	....	....	....	....	....	....	....	....	....	....	....
Palmer, Mass.	....do ...	7,801	2	....	....	....	....	....	....	....	....	....	....	....	....
Plainfield, N. J.	....do ...	15,369	4	....	....	....	....	....	....	....	....	....	....	....	....
Portsmouth, N. H.	....do ...	10,637	....	....	2	1	....	....	....	3	1	....	....	....	....
Portsmouth, Va.	July 14	17,427	5	....	....	1	....	....	....	2	....	....	....	....	....
Providence, R. I.	July 11	175,597	73	10	6	4	....	3	....	7	1	....	....	....	....
Racine, Wis.	....do ...	29,102	8	6	1	....	....	1	....	....	....	....	....	....	....
Reading, Pa	July 13	78,961	32	4	1	1	....	....	....	2	....	....	....	....	....
Richmond, Va.	July 11	85,050	67	12	2	8	1	1	....	2	....	1	....	1	3
Rock Island, Ill.	July 4	19,493	2	....	....	2	....	....	....	....	....	....	....	....	....
Do	July 11	19,493	2	....	....	4	....	....	....	....	....	....	....	....	....
Rutland, Vt	July 4	11,499	3	....	....	....	....	....	....	....	....	....	....	....	....
Do	July 11	11,499	4	....	....	....	....	....	....	....	....	....	....	....	....
Saginaw, Mich	July 4	42,345	14	1	1	....	....	....	....	....	....	....	....	....	....
Do	July 11	42,345	17	1	1	1	1	....	....	1	1	....	....	....	....
St. Joseph, Mo.	July 4	102,979	12	24	2	....	....	....	....	1	....	....	....	9	....
Do	July 11	102,979	11	23	2	....	....	....	....	....	....	2	....	11	1
St. Louis, Mo.	....do ...	575,238	225	44	20	15	2	5	1	12	....	18	....	5	1
San Antonio, Tex.	....do ...	53,321	....	....	....	4	1	....	....	....	....	....	....	....	....
Sandusky, Ohio	July 4	19,664	5	....	1	6	....	....	....	....	....	....	....	....	....
Scranton, Pa	....do ...	102,026	30	....	....	2	....	6	1	2	....	6	....	....	2
Do	July 11	102,026	55	....	1	2	....	4	....	2	2	4	....	....	1
Somerville, Mass.	....do ...	61,643	16	2	1	2	....	2	....	2	....	14	1	....	1
South Bend, Ind.	....do ...	35,999	8	....	....	....	....	1	....	....	....	....	....	....	....
Spokane, Wash.	July 4	38,848	19	....	1	1	....	4	....	5	....	3	....	....	....
Springfield, Ill.	July 9	34,159	23	....	....	....	....	2	2	2	1	....	....	....	....
Springfield, Mass.	July 11	62,059	14	....	....	1	....	2	....	3	....	....	....	....	....
Springfield, Ohio	....do ...	38,253	11	4	1	....	....	....	....	....	....	3	....	....	....
Steelton, Pa	....do ...	12,068	6	....	....	....	....	....	....	....	....	1	....	....	....
Tacoma, Wash.	July 4	37,714	15	....	1	1	1	....	....	1	....	1	....	....	....
Taunton, Mass.	July 11	31,036	9	1	....	....	....	2	....	1	....	....	....	....	....
Terre Haute, Ind.	....do ...	36,673	16	3	1	....	2	....	....	1	....	3	....	....	....
Titusville, Pa	....do ...	8,244	0	....	....	....	....	....	....	1	....	....	....	....	....
Topeka, Kans.	July 4	33,608	8	....	2	....	1	....	....	1	....	2	....	....	....
Do	July 11	33,608	12	....	....	1	1	....	....	2	....	1	....	....	1
Trenton, N. J.	....do ...	73,307	....	....	....	3	....	1	....	....	....	....	....	....	....
Waltham, Mass.	....do ...	28,481	3	....	....	....	....	....	....	1	....	....	....	....	....
Warren, Ohio	June 27	8,529	2	....	....	....	....	....	....	....	....	....	....	....	....
Do	July 4	8,529	2	....	....	....	....	....	....	1	....	....	....	....	....
Do	July 11	8,529	2	1	....	....	....	....	....	....	....	....	....	....	....
Warren, Pa.	July 6	8,043	2	....	....	1	....	....	....	....	....	....	....	....	....

Weekly morbidity and mortality table, cities of the United States—Continued.

Cities.	Week ended—	Population, United States census, 1900.	Total deaths from all causes.	Tuberculosis.		Enteric fever.		Scarlet fever.		Diphtheria.		Measles.		Whooping cough.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Warren, Pa	July 13	8,043	0	2	....	....	....	....	....	....	....	....	....	....	....
Washington, D. C.	July 4	278,718	136	....	13	26	5	1	....	....	....	20	....	11	5
Do	July 11	278,718	140	....	11	11	1	3	....	1	....	18	....	10	....
Wilkesbarre, Pa	July 10	51,721	17	....	....	6	1	1	....	1	....	5	....	....	....
Wilkinsburg, Pa	June 14	11,886	5	....	....	1	....	....	....	....	....	17	1	....	....
Do	[a]July 12	11,886	7	1	1	....	....	4	....	....	....	....	....	....	....
Williamsport, Pa	July 11	28,757	6	....	....	....	....	1	....	....	....	1	....	....	....
Wilmington, Del	....do	76,508	32	....	4	....	....	....	....	....	1	....	....	....	....
Winona, Minn	....do	19,714	8	....	1	....	....	....	....	....	....	....	....	....	....
Woburn, Mass	....do	14,254	4	....	....	....	....	....	....	....	....	....	....	....	....
Worcester, Mass	....do	118,421	38	....	....	1	....	2	....	7	....	9	....	....	....

[a] Intervening weeks previously reported.

Special report.

PRELIMINARY NOTE OF A NEW PATHOGENIC HÆMOGREGARINE, HEPATOZOÖN PERNICIOSUM, FOUND IN WHITE RATS IN WASHINGTON, D. C.

[By Assistant Surgeon W. W. MILLER.]

In March of this year an epizoötic was observed among the stock of white rats kept for laboratory purposes. About 25 per cent of the animals died. The disease was marked by an apathetic condition and gradually increasing anemia. Death ensued from 4 days to 2 weeks after the onset of symptoms. Post-mortem examination showed the lesions to be great enlargement of the spleen and fatty degeneration of the liver. An examination of the blood showed a marked increase in the number of large mononuclear lymphocytes (in some rats as many as 110,000 per cm.). In many of the large lymphocytes were embedded oval, encapsulated parasites, measuring on an average 6 by 12 microns, somewhat resembling *Leucocytozoön canis* found in dogs in India. Multiplication in the rat was found to take place in the liver cells. The schizonts, encapsulated when mature, rupture and set free from 15 to 20 merozoites into the liver capillaries. The merozoites, at first free-moving vermicules, are taken in by the large lymphocytes and become the encapsulated parasites. They undergo no further change in the body of the rat, but continue to circulate in the blood stream.

The intermediate host was found to be a mite, *Lelaps echidninus* Berlese, which lives upon and sucks the blood of the rat. In the stomach of the mite the encapsulated parasites become free and conjugation between two vermicules takes place. A zygote is formed which becomes an oökinet, penetrates the stomach wall of the mite, and enters the body tissues. It becomes spheroidal in form and encapsulated, and increases greatly in size (to 200 or 300 microns in diameter). Buds are formed upon the surface of the spherical mass or sporont, which is loosely contained in the enveloping oöcyst. They increase in size and later break off as oval bodies (sporoblasts), become encapsulated, and divide into from 15 to 20 sporozoites. The sporo-

cysts are identical in size and appearance with mature schizonts (cysts) in the rat's liver. The bi-polar arrangement of the sporozoites is also the same. The mature oöcyst in the mite contains from 50 to 100 or more sporocysts.

A large number of rats were experimentally infected by placing upon them mites which had been fed upon infected rats. Infection occurred in from 15 to 28 days or longer.

A large number of healthy rats were fed upon pellets of wet bread upon which infected mites, containing many ripe sporocysts, had been crushed. Twenty-four hours later the rats' blood was found to contain a few free-moving vermicules. Eight to ten days later numerous encapsulated parasites were observed, and, after varying periods of time, some of the animals succumbed to the infection. As the rats have frequently been seen to devour the mites when disturbed by their bites, it is believed that infection is naturally conveyed in this manner. Moreover, the parasites in the mite have always been found encapsulated.

The name *Hepatozoön perniciosum*, n. g., n. sp., is proposed for this new hæmogregarine, the first to be recorded for mammals in America.

A complete description of the parasite and the intermediate host, with illustrations and details of the experimental transmission, will appear as Bull. No. 46, Hyg. Lab., U. S. Pub. Health & Mar.-Hosp. Serv., Wash., now in press, under the following title: "*Hepatozoön perniciosum* (n. g., n. sp.): A hæmogregarine pathogenic for white rats; with a description of the sexual cycle in the intermediate host, a mite (*Lelaps echidninus*)."

FOREIGN AND INSULAR.

ALGERIA.

Deratization in ports.

The following is taken from the *Bulletin Sanitaire Bimensuelle*, Algiers, June 30:

Algiers.—June 16 to 30. Rodents taken by the maritime sanitary service, 1,282; examined by the health laboratory, 197; result negative. Classification of rats: *Mus norvegicus* 1,256; *rattus* 33; *musculus* 43. Total taken during the month, 2,496.

Bougie.—118 rodents, June 1 to 4.

Bone.—224 rodents, June 10 to 12.

Arzew.—437 rodents, June 26 to 29.

BRITISH HONDURAS.

Report from Belize, fruit port.

Acting Assistant Surgeon Mengis reports:

Week ended July 8. Present officially estimated population, 10,000. General sanitary condition of this port and the surrounding country during the week, very good.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
July 2	Mobila	New Orleans	48	3	17

CHINA.

Reports from Hongkong—Quarantine restrictions—Plague and smallpox—Inspection of vessels—Examination of emigrants.

Acting Assistant Surgeon Hough reports:

Week ended May 30. Restrictions enforced by Hongkong remain as reported on March 28.

Restrictions enforced against Hongkong remain as reported on March 28.

Quarantinable diseases: Plague, 133 cases, 109 deaths; smallpox, 3 cases, 1 death. Vessels inspected and granted bill of health, 6.

Week ended June 6. Quarantinable diseases: Plague, 138 cases, 112 deaths; smallpox, 4 cases, 3 deaths. Vessels inspected and granted bill of health, 7.

Examination of aliens bound from Hongkong to the Philippine Islands, for the week ended June 6: Examined, 45; rejected, 20.

Rejections were for trachoma.

COSTA RICA.

Report from Limon, fruit port—Measures against rats—Stegomyia calopus present.

Acting Assistant Surgeon Goodman reports:

Week ended July 4. Estimated population, 6,000. General sanitary condition of this port and the surrounding country during the week, good. As a prophylactic measure against plague the health officers of Puntarenas, San Jose, and Limon are offering by public notices to buy all rats delivered to them. Heavy rains, especially at night, are very frequent. A few mosquitoes, *Anopheles* and *Stegomyia calopus* are present.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
June 28	Sarnia	New York	44	52	4
28	San Jose	Boston	46	6	0
30	Hispania	Mobile	20	0	1
July 1	Preston	New Orleans	35	6	22
2	Taunton	do	24	4	0
3	Manistee	New York	47	3	0

Two bills of health for Panaman ports were viséed and certificates issued to 9 passengers bound for Colon.

CUBA.

Report from Habana—Inspection and fumigation of vessels—Inspection of houses and water deposits—Mosquitoes abundant—Status of yellow fever at Daiquiri.

Passed Assistant Surgeon Amesse reports, July 13:

Week ended July 11.

Vessels inspected	13
Bills of health issued	16
Members of crews of outgoing vessels inspected	835
Passengers of outgoing vessels inspected	725
Certificates of immunity to yellow fever issued	34
Certificates issued to passengers bound for New York	96
Certificates issued to passengers bound for southern ports	166
Vessels fumigated prior to sailing	4

The sanitary department reports for the week 12,737 house inspections and the detection of 35 deposits of larvæ, of which 14 proved to be those of the genus *Stegomyia*.

The rainy season being now well advanced, mosquitoes are abundant everywhere, especially in the interior. The various species of the genus *Culex*, especially *C. sollicitans*, *C. tæniorhynchus*, and *C. pipiens*, are the most annoying. The two former, being salt-marsh mosquitoes, breeding in crab holes and other natural receptacles along the sea coast, their extermination is practically impossible, and, moreover, being strong fliers, they invade not only the city, but the most remote country districts.

The yellow fever expert detailed by the superior board of health to investigate sanitary conditions in and about the mining camp of Daiquiri, Province of Santiago, reports that yellow fever has been continuously present in the district since April last, the number of cases in the succeeding months being unknown. He made positive diagnoses in 4 cases and obtained notes of 10 others recovered. Since that date (July 8) 4 more cases have been reported, leaving 7 under treatment at the close of the week. Daiquiri has been quarantined, and a detention camp opened near Santiago, where all persons coming from the mines will be detained for a period of 5 days. A rigid marine quarantine has also been declared against the port.

New yellow fever cases at Daiquiri.

Doctor Amesse further reports:

July 18. Sanitary department reports two new cases (yellow fever) at Daiquiri.

July 20. One new case at Daiquiri and four cases discharged recovered, leaving 2 now under treatment.

Reports from Santiago—Inspection of vessels—Fumigation of steamship Julia to destroy mosquitoes—Daiquiri quarantined on account of yellow fever—Precautions relative to departure of nonimmunes—Disinfection measures.

Acting Assistant Surgeon Wilson reports, July 7 and 10:

Week ended July 4. Bills of health issued to 5 vessels bound for the United States. The Cuban steamship *Julia*, bound for San Juan, P. R., via Santo Domingo, was fumigated to kill mosquitoes.

No quarantinable disease has been reported in this city during the week.

July 10. Quarantine has been declared against Daiquiri and a cordon of troops put around the town.

It is probable that there have been 15 cases of yellow fever there, all told, since April, most of which were diagnosed as nephritis.

Nonimmunes wishing to leave will have to comply with one of two conditions, viz: (1) Come to Santiago by sea, and go to the quarantine station at Cayo Duan, in this bay, for 5 days' observation; or (2) deposit security that they will not leave Santiago, and that they will report to have their temperature and pulse taken daily for 5 days.

A disinfecting gang of over 100 men went, July 4, to fumigate the whole of Daiquiri. Among them are 4 trained inspectors to supervise the work.

No new cases are reported to date at Daiquiri.

CURAÇAO.

Fatal yellow fever case; imported.

Consul Cheney reports:

During the week ended July 3 one fatal case of yellow fever occurred. This is the first case to occur in Curaçao for several years. The patient came from Puerto Cabello. The case was promptly quarantined in hospital and every care has been taken to prevent development of other cases. No case of yellow fever has originated at Curaçao for seven years.

GUATEMALA.

Report from Puerto Barrios, fruit port.

Acting Assistant Surgeon Wailes reports:

Week ended July 9. Present officially estimated population, 250. General sanitary condition of this port and the surrounding country during the week, very good.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pieces of baggage disinfected.
July 3	Bluefields	25	0	.....	.....
9	Corinto	29	8	.....	.....

HAWAII.

Report from Honolulu—Examination of rats for plague infection.

Passed Assistant Surgeon Currie reports, June 27, through Chief Quarantine Officer Cofer:

Week ended June 27.

Rats trapped in Honolulu	648
Rats found dead	1
Total number of rats taken in Honolulu	649
Rats from Honolulu examined in this laboratory	567
Rats examined in Hilo under supervision of this laboratory	36
Total number of rats examined bacteriologically	603
Total number of rats destroyed	685

Classification of rats from Honolulu.

Mus rattus	155
Mus norvegicus	202
Mus alexandrinus	103
Mus musculus	185
Total classified	645
Average number of traps set daily	720
Ounces of poison placed (kind of poison used barium carbonate)	16
Rats shot in trees	5
Rat holes fumigated with carbon bisulphide	5
Rats from Honolulu showing plague infection	0
Rats from Hilo showing plague infection	0

HONDURAS.

Report from Ceiba, fruit port—Local drainage improved.

Acting Assistant Surgeon Jumel reports:

Week ended July 7. Present officially estimated population, 6,500. General sanitary condition of this port and the surrounding country during the week, good.

Local drainage has been materially improved by effectual dredging of the silted mouth of a small creek which flows diagonally through

Ceiba. At high tide salt water will flow into this creek, inundate marshy areas, and destroy many *Anopheles* mosquitoes in their larval state.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pieces of baggage disinfected.
July 1	Orleanian	33	1	0	0
3	Rosina	36	10	0	0
5	Viator	17	0	0	0
6	Harald	18	0	0	0
7	Marietta Di Giorgio	20	0	0	0

Reports from Puerto Cortez, fruit port—Stegomyia calopus present—Inspection of San Pedro—Sanitary conditions good.

Acting Assistant Surgeon Ames reports: Week ended June 27. Present officially estimated population, about 2,400. General sanitary condition of this port and the surrounding country, very good. *Stegomyia calopus* present.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
June 23	Helen	Mobile	22	0	0
24	Mercator	New Orleans	19	1	0
25	Corinto	do	28	5	0
26	Columbia	Mobile	19	0	0
26	Bodo	do	18	1	0

Temperature taken of all persons on above-named vessels on day of sailing.

Week ended July 4. General sanitary condition of this port and the surrounding country, very good. *Stegomyia calopus* present.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
June 30	Mobila	New Orleans	49	3	4
July 1	Utstein	do	15	4	0
2	Alabama	Mobile	20	0	0
3	John Wilson	New Orleans	17	0	0

Temperature taken of all persons on board above-named vessels on day of sailing.

Week ended July 11. General sanitary condition of this port and the surrounding country, very good. *Stegomyia calopus* present. July 7. Republic of Honduras under martial law (revolution). July 3–7. Inspection of San Pedro, inland town 38 miles distant on railroad. Population, 10,000. Health and sanitary conditions excellent.

Bills of health issued to the following vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pieces of baggage disinfected.
July 7	Helen	Mobile	22	6	0	0
8	Mercator	New Orleans	18	1	0	0
9	Corinto	do	27	1	0	0
11	Bodo	Mobile	17	1	0	0

Temperature taken of all persons on above-named steamers day of sailing.

Report from Tela, fruit port.

Acting Assistant Surgeon Roe reports as follows:

Week ended July 4. Present officially estimated population, about 1,250. General sanitary conditions of this port and the surrounding country during the week, good.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pices of baggage disinfected.
July 1	Rosina	New Orleans	36	0	0	0
4	Viator	do	17	0	0	0
4	Harald	Mobile	18	0	0	0

INDIA.

Report from Calcutta—Transactions of Service—Cholera, plague, and smallpox—Plague in India and Bengal.

Acting Assistant Surgeon Allan reports, June 18:

Week ended June 13. Bill of health issued to the steamship *Matoppo*, bound for Boston and New York with a total crew of 46. The usual precautions were taken, holds fumigated, rat guards on wharf lines, and Asiatics' effects disinfected.

Week ended June 6. Fifty-two deaths from cholera, 45 from plague, and 25 from smallpox in Calcutta.

In Bengal during the same week, 57 cases and 51 deaths from plague; in India during the same period, 1,409 cases, and 1,198 deaths from plague.

ITALY.

Reports from Naples—Inspection of vessels—Emigrants recommended for rejection—Smallpox in Italy.

Assistant Surgeon Wollenberg reports, June 29 and July 6:

Vessels inspected at Naples, week ended June 27.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
June 22	Moltke	New York	210	90	350
24	Carpathia	do			
26	König Albert	do	161	45	280
27	Sannio	do	225	45	270
	Total		596	180	900

Rejections recommended.

Date.	Name of ship.	Trachoma.	Favus.	Suspected trachoma.	Suspected favus.	Other causes.	Total.
June 22	Moltke	4		3			7
24	Carpathia						
26	König Albert	4					4
27	Sannio	13		2			15
	Total	21		5			26

Vessels inspected at Naples week ended July 4.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
July 4	Ancona	New York	258	60	350
4	Venezia	do	143	50	280
	Total		401	110	630

Rejections recommended.

Date.	Name of ship.	Trachoma.	Favus.	Suspected trachoma.	Suspected favus.	Other causes.	Total.
July 4	Ancona	7		1		3	11
4	Venezia	1				3	4
	Total	8		1		6	15

Week ended June 28. Smallpox—Cases: Cairate (Milan), 1; Belluno, 2; Castel San Pietro (Bologna), 1; Rotondella, 1; Sarconi, 1; Barile (Potenza), 2; Polistena (Reggio Calabria), 1; Palermo, 5; Villabate (Palermo), 1.

Week ended July 5. Smallpox—Cases: Offlugen, 1; Castenedolo (Brescia), 1; Roceormassimo (Rome), 20; Triggiano, 2; Carnota, 3; Spinazzola, 1; San Nicandro (Bari), 1; Polistena, 1; Cinquefrondi (Reggio Calabria), 2; Ragusa (Syracuse), 2.

CAMPAIGN AGAINST MALARIA IN ITALY.

The following is received from Assistant Surgeon Wollenberg, under date of June 24, in continuance of previous reports by Passed Assistant Surgeon McLaughlin, published in the Public Health Reports, November 2, 1906, page 1297, and February 15, 1907, page 163:

State quinine and mortality from malaria in Italy.

Consumption of State quinine.		Deaths.
Fiscal year.	Kilograms sold.	Malaria.
1905-6	18,000	,753
1906-7	20,723	4,871

From the above statistics it will be seen that the results of activity on the part of the Government, the Society for the Study of Malaria, and the Red Cross Society continue to be most encouraging.

One of the most effective methods of suppression being the diffusion of knowledge concerning the disease, the inclosed short treatise on the subject has recently been published by the bureau of public health, and is being distributed gratis among physicians, landowners, contractors, mine directors, parish priests, schoolmasters, presidents of labor unions and others, thus making an important part of the educational campaign.

INSTRUCTION AND POPULAR ADVICE CONCERNING PROTECTION AGAINST MALARIA.

Malaria is a disease which causes much suffering and a high mortality among our agricultural population and is of great social and economic importance. It attacks all ages, has a number of serious complications (diseases of heart, liver, spleen, kidneys, etc.), and is spread over one-third of the territory of Italy. It affects particularly the workmen in certain regions called malarial regions.

A number of laws have been enacted for the protection of the people against malaria, and through these the State has assumed the direction of the production and sale of quinine in order that its purity and low price may be guaranteed. Accordingly, it is placed within the reach of all, its sale being authorized in pharmacies and other public shops, and it may be obtained without the prescription of a physician. The Government has further instituted the gratuitous distribution of quinine and other necessary sanitary assistance to agricultural laborers and workmen in malarial districts.

The laws also provide for shelters and homes for these laborers and workmen, and for their protection against the entrance of mosquitoes by a system of screens and netting.

The laws further provide for the draining of malarial regions. Landowners are obliged to facilitate drainage and to prevent the formation of pools and marshes, as these induce malaria.

All citizens are enjoined to cooperate with the authorities so that these laws may be properly enforced.

* * * * * * *

To be attacked by malaria is believed by a great many workman in malarial regions to be their fate, but this belief is erroneous and dangerous. Malaria can be conquered as its causes and means of prevention are known.

The fever is produced by small, living animals visible only by means of the microscope. They penetrate the red blood corpuscles in which they develop and reproduce. When the new parasites reach a certain stage of development and are found in great numbers in the blood they cause an attack of malarial fever. This stage of development may be reached in one, two, or three days; accordingly there are several types of fever—quotidian, tertian, and quartan.

The mosquito carrying the germs of malaria infects the blood of man through its sting, the mosquito having been infected by sucking the blood of a person suffering

from malaria. The germ is introduced into the intestine of the mosquito, passes through its walls, reproduces, and then accumulates in the salivary gland. The germ is then communicated to man with the subsequent sting of the insect.

For the spread of the disease there are necessary (1) the presence of a person suffering from malaria and (2) the presence of the special mosquito, the genus *Anopheles*.

This mosquito is a little larger than the ordinary mosquito and develops usually in stagnant waters, marshes, ditches, canals, artificial lakes, and ponds. Its season is from the first warm weather in spring to the first cold of autumn, and it stings usually between sunset and sunrise, hiding during the day in the shadows of plants, houses, stalls, sheds, etc. Hence malaria is more generally caught in the evening and early morning.

The time between an infecting sting and the first manifestation of fever is called the incubation period. This period is from six to fourteen days.

All persons living in malarial regions are liable to an attack, and colds, excesses, debility, etc., predispose.

* * * * * * *

Sufferers from malaria should be cured as speedily as possible. Besides the personal benefit derived, the cure destroys the parasite, which prevents the disease being spread to others. When the disease is neglected it becomes chronic, and then its cure is most difficult, prolonged, and expensive.

A number of persons apparently well carry a small number of germs in their blood for a long time, and so may continually be the cause of infection in others.

Malaria is cured by means of quinine. In order that this remedy be most efficacious it must be taken regularly and for a prescribed length of time. It is dangerous to believe that a cure can be effected without the aid of a physician, and in few diseases is prompt intervention so necessary as in malaria. The remedy should be taken four or five hours before the time that the fever regularly appears.

The fever shows itself only when the germs have reached a certain grade in development, but a small number may remain in the blood a long time without producing an attack of fever. In this case the person may believe himself to be cured, while on the contrary the malady persists, as relapses after months or even years may demonstrate. Therefore the quinine treatment must continue until the fever has ceased and until all germs have disappeared from the blood.

Besides being an efficacious remedy, quinine is a safe preventive. Persons who take regularly small quantities of quinine can live indefinitely in a malarial zone without taking the disease. Since agricultural laborers and workmen in malarial zones may receive quinine gratis, they offend against themselves and others in not making use of these prophylactic doses, for when properly taken quinine is without danger.

Quinine as a preventive is recommended particularly to those living in the same house with a person suffering from malaria.

It is advisable that persons continue the use of prophylactic doses of quinine for a few weeks after leaving a malarial district. Farm laborers or workmen with fever, on leaving a malarial district for a nonmalarial district of another municipality, must be provided through a medical prescription with sufficient quinine for the cure or for the prevention of the disease for the time of the journey and for the first seven days of abode in the second locality.

* * * * * * *

The efforts of the authorities and charitable institutions must be supported by the good will of the landowners and contractors. The protection of their workmen is not only humanitarian and worthy of a civilized people, but it is advantageous to themselves.

All landowners, contractors, mine directors, citizens, farm laborers, and workmen are invited to give energetic and trusting cooperation in this work, and the propaganda of the physicians will be most effective when aided by schoolmasters, parish priests, presidents of labor unions, etc., by making plain to the people the facts about malaria, its prevention and cure.

* * * * * * *

It is recommended that contractors in malarial districts see that their employees are regularly supplied with prophylactic doses of quinine; that every new case be promptly reported and treated; that the prejudices of recalcitrants be overcome, and that prizes be distributed to those who most scrupulously carry out the advice of the physicians.

* * * * * * *

The destruction of mosquitoes, the prevention of their development, and protecting man against their stings must not be overlooked.

Landowners and contractors should do all that is possible to remove marshes, pools, stagnant surface waters, ditches, etc., in which mosquitoes generally deposit their eggs and develop. Excavations and ditches should be filled as soon as possible, canals should be built to safeguard against collection of water in pools from rains. New excavations should not be made deep enough to uncover subterranean water.

Farm laborers and workmen should always be supplied with suitable shelters as far as possible from stagnant waters. They should be well protected against the entrance of mosquitoes through apertures, windows, doors, and chimneys. The use of mosquito netting over beds is advised, and the means of protection should always be in a good state of preservation. Sleeping in the open air, in humid or shady places should be prohibited even in the daytime. All laborers should leave work and seek shelter at the setting of the sun.

* * * * * * *

Young children and infants should be well protected against mosquito stings as the mortality from malaria among them is very high.

* * * * * * *

It is a grave danger for an infected person to believe it unnecessary to protect himself against the stings of mosquitoes. He is the source of infection for others.

* * * * * * *

JAPAN.

Report from Yokohama—Inspection and fumigation of vessels—Plague-infected rats found at Yokohama—Plague at Nara—Epidemic dysentery at Shidzuoka—Smallpox in Japan during year ended May 31, 1908.

Passed Assistant Surgeon Cumming reports, June 24:

Week ended June 20. Bills of health issued to 4 steamships having an aggregate personnel of 622 crew, 226 saloon and 345 steerage passengers. One of these vessels, the steamship *Indrasamha*, bound for New York via ports, was fumigated, holds and forecastle, for destruction of rats, one hold being omitted on account of inflammable gases.

Plague-infected rats are being found in two sections of this city, both of which are being cleaned up by the authorities. These sections are distant from the water front and have no godowns or hotels; they are occupied by coolies who work upon vessels.

Plague has appeared at Nara, one of the old capitals, and in the prefecture of the same name, 14 cases being reported.

This place, formerly a city of over a million, now has about 10,000 inhabitants, is inland and about 25 miles from Osaka.

Dysentery is epidemic in Shidzuoka, one village near by having 30 infected houses out of the total of 50. This is the tea district, and all vessels to America are stopping at the port, Shimidzu.

The home department states that during the year ended May 31 there occurred throughout the Empire of Japan 17,401 cases and 5,763 deaths from smallpox.

Examination of emigrants.

Number of emigrants per steamship *Iyo Maru* recommended June 24 for rejection: For Seattle, 1; advised to wait, 5.

Per steamship *Korea* June 29: For Honolulu, advised to wait, 7.

Rejection and detentions were for trachoma.

MEXICO.

Report from Coatzacoalcos—Inspection of vessel.

Acting Assistant Surgeon Thompson reports, July 9:
Week ended July 8. One vessel inspected and passed.

Report from Veracruz—Inspection and fumigation of vessels—Stegomyia calopus not numerous—Sanitary precautions against Laguna maintained.

Acting Assistant Surgeon Jacobs reports, July 5:
Week ended July 4. Total bills of health issued, 4. Vessels inspected and fumigated, 3. Vessels inspected only, 1. Total members of crews, 244. Cabin passengers, 85; steerage passengers, 94.

The health and sanitary conditions of Veracruz and vicinity are good. No quarantinable diseases have been reported during the week. Heavy rains continue almost daily. Mosquitoes are increasing in numbers, though *Stegomyia calopus* are not plentiful. Of 9 taken from a vessel after fumigating 1 belonged to the latter genus, the others being *Culex* and *Anopheles*.

Sanitary measures against Laguna continue here as previously reported.

History of yellow fever case previously reported.

Doctor Jacobs further reports, July 8:

Male, Mexican, 17 years old, cigar maker, native of Orizaba. Two years' residence in Veracruz. Taken sick July 2. The physician in charge reported the case as suspicious, and a member of the National Board of Health saw the patient and gave a diagnosis of malaria.

The patient grew worse, and on July 7 the attending physician again called on the board, stating that in his opinion the patient had yellow fever. The whole board then went to see the case and all concurred in the diagnosis of the attending physician. The patient had all the symptoms of yellow fever, including black vomit, and died the same evening. The case was reported to me unofficially at 9 o'clock p. m. of July 7 by one of the members of the board.

The patient resided in a tenement house and had not been out of the city during the past three months. The day before being taken sick he went fishing outside the breakwater and was caught in a heavy rain.

The entire block in which the house is situated has been fumigated. The focus is not known. As all vessels sailing for ports south of the southern boundary of Maryland have been fumigated and crews and passengers carefully inspected since my arrival here, I need only add the taking of temperatures to make complete the close quarantine which is being observed from to-day.

Crews and passengers of vessels sailing for northern ports via other ports will be carefully inspected, as has been the rule. Only one vessel has sailed direct for a northern port, all others going via Mexican or Cuban ports.

The Cuban maritime sanitary officer has not yet received his instructions and no fumigation is done for vessels clearing for Cuban ports.

NICARAGUA.

Reports from Bluefields, fruit port—Stegomyia calopus numerous—Screening ordinance not generally observed.

Acting Assistant Surgeon Layton reports:

Week ended June 30. Present officially estimated population, 2,500. General sanitary condition of this port and the surrounding country during the week, good. Rainfall steady and plentiful. Mosquitoes increasing. *Culex* and *Anopheles* present in large quantities. A great many *Stegomyia calopus* observed. Excessive rains have given the port a thorough cleaning.

Bill of health issued to the following-named vessel:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
June 28	Imperator	New Orleans, La	22	12	0

Week ended July 7. General sanitary condition of this port and the surrounding country during the week, good. Screening ordinance partially enforced and imperfectly complied with. Foreign residents only have screened their tanks, cisterns, etc., and not even all of these have complied with the law.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.
July 1	Chelston	Boston, Mass., via Prinzapulca, Nicaragua, and Mathewtown Inagua, West Indies.	[a]31	5	75
5	Dictator	New Orleans, La	19	2	0

[a] Sixty-seven loading crew temporarily on board.

Temperature of all on board steamship *Dictator* taken at hour of departure; all normal.

PANAMA.

Reports from Bocas del Toro, fruit port.

Acting Assistant Surgeon Osterhout reports as follows:

Week ended June 30. General sanitary condition of this port and the surrounding country during the week, good. Present officially estimated population, 4,954.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pieces of baggage disinfected.
June 24	Katie	Mobile	22	0	0	0
25	Fort Gaines	do	23	0	0	0
26	Chickahominy	New Orleans	46	0	0	0
28	Bertha	do	24	3	0	0

Week ended July 7. General sanitary condition of this port and the surrounding country during the week, good.

Bills of health issued to the following-named vessels:

Date.	Vessel.	Destination.	Number of crew.	Number of passengers from this port.	Number of passengers in transit.	Pieces of baggage disinfected.
July 1	Belvernon	Mobile	21	0	0	0
2	Fort Morgan	do	22	0	0	0
4	José	American ports via Port Antonio, Jamaica.	27	1	0	0
5	Appomattox	New Orleans	46	2	0	0

PERU.

Report from Callao—Inspection and fumigation of vessels—Status of plague in Peru—Plague in Chilean ports.

Acting Assistant Surgeon Gutierrez reports, June 25:

Week ended June 20. Two steamships and 2 American schooners were dispatched with an aggregate personnel of 176 crew, 64 cabin, and 59 steerage passengers. The four ships were fumigated.

The following is the last report on plague in Peru received from the Director de Salubridad Pública:

Locality.	Cases June 2.	New.	Recovered.	Died.	Remaining June 8.
Lima (city)	11	1	4		8
Callao	6	2	3	2	3
Trujillo (city)	28	3	4	8	31
Trujillo (country)		12			
Mollendo	1				1
Monsefú	1				1
Niepos (Hualgayoo)	2				2

Since my last report 2 cases of pneumonic form of plague have occurred in Callao; both were removed to the lazaretto.

Bills of health from Chilean ports report as follows: Antofagasta (May 30), 18 cases of plague and 2 deaths; Iquique (June 1), 10 cases of bubonic remain in the lazaretto. No new cases. Arica (June 2), a few cases of bubonic plague in the port and the surrounding country.

PHILIPPINE ISLANDS.

Report from Manila—Smallpox—Inspection of vessels.

Chief Quarantine Officer Heiser reports, June 9:

Week ended June 6. Smallpox, 15 cases, 9 deaths.

Consular bills of health issued:

June 1, the British steamship *Taiyuan*, with 71 crew and 17 passengers, en route from Hongkong to Zamboanga, granted a supplemental bill of health.

June 2, the British steamship *Kaifong*, with 64 crew and 16 passengers, en route from Amoy and Hongkong to Cebu and Iloilo, granted a supplemental bill of health. Crew bathed and their effects and baggage disinfected at Mariveles.

June 5, the British steamship *Keemun*, with 90 crew, en route from Liverpool to Seattle and Tacoma, granted a supplemental bill of health, after the usual inspection of personnel and cargo.

PORTO RICO.

Report from San Juan—Status of measures for protection of the island against introduction of plague.

May 16, Passed Assistant Surgeon Vogel was directed by the Bureau to proceed to Porto Rico for the purpose of conferring with the acting governor and the chief quarantine officer in relation to measures in force for the protection of the island against the introduction of plague. Doctor Vogel reports:

On June 4 I had a conference with Acting Governor Willoughby, at which Chief Quarantine Officer Foster was present, and as a result of this conference can report that the municipal governments of all the Porto Rican ports are considering ways and means of conducting an anti-rat campaign.

The quarantine regulations with regard to plague-infected ports and vessels are being rigidly enforced against all arrivals from Venezuelan ports. All such vessels are required to discharge cargo into lighters in the open bay, after the vessel has been treated with sulphur dioxide to destroy vermin. The lighters are allowed alongside only during daylight and any vessel remaining longer than 24 hours is placed in strict quarantine in accordance with the regulations against plague. All passengers destined for places in Porto Rico are under observation for 7 days before disembarkation. No stevedores from shore are allowed aboard vessels, the discharging of cargo being done by the personnel of the vessel. There are about 3 vessels a month arriving at San Juan from Venezuelan ports, and an average of one vessel arriving at Ponce from Venezuelan ports each month. The number of arrivals at other Porto Rican ports from Venezuelan ports is insignificant. At Mayaguez there are about 8 vessels a year from Venezuela and about the same number at Arecibo and Aguadilla. There is no communication between the ports of Arroyo, Humacao, and Fajardo, and Venezuelan ports.

CONDITIONS AT SUBPORTS.

On visiting the subports I found the conditions as follows: Arecibo is a town of about 10,000 inhabitants. It has communication by sailing vessel about four or five times a year with Maracaibo, Venezuela. The cargo of this vessel consists of bark for tannery purposes. At a conference on June 5 with the quarantine officer, the health officer, and the mayor, it was stated that the town council had made an appropriation, to be used as a bounty on rats. This appropriation would be available after July 1. The authorities are also having a general cleaning of the town, and they contemplate using poisons in the sewers, the town being well provided with sewers. I advised the town authorities to continue the antirat campaign until all danger of infection was passed.

Aguadilla is a small place, and has communication with Venezuela about as often as Arecibo, and through the same vessel and for the

same purpose, namely, to bring bark to Aguadilla for the tannery there. The merchants of Aguadilla have subscribed to a fund which is being used as a bounty on rats. This bounty has been in effect now about three weeks, and the authorities have received an average of 300 rats per week.

Mayaguez, a port of considerable importance on the west coast of the island, has a population of 25,000. A large car barn, slaughter-house, and wharf and sugar warehouses are located here. A large part of the town is in a very unsanitary condition. There is no sewer system and the garbage is dumped several miles out of town. There is very little communication with Venezuela, the only vessel touching here being the schooner above referred to, which also brings bark for a tannery.

Ponce has about 30,000 inhabitants and has a considerable area. As stated previously, there is communication about once a month by steamer with Venezuela. The merchants of the port of Ponce have subscribed a fund to be used in cleaning up and in anti-rat measures. This work is under the direction of one of the physicians of the above-mentioned committee. The town proper has a fund appropriated for cleaning the town and for anti-rat measures.

At a conference with the local authorities there was considerable discussion about the utility of the Danyz's virus, and I gave it as my opinion, based upon my experience in San Francisco, that this virus was in many cases ineffective, working on a large scale, unless the authorities had laboratory facilities adequate to maintain a fresh supply at all times.

There is quite a large section of the town which would be very dangerous in event of plague gaining an entrance. I advised the conference to take measures against rats, by poisoning, trapping, and a rat bounty. The Insular Secretary and Chief Quarantine Officer Foster were present and took part in the discussion.

The authorities at Arroyo and Humacao have been advised to take measures to destroy rodents. These two ports are unimportant, as they have no communication with Venezuela, and there are no wharves at either place.

Fajardo, on the northeast coast of the Island, is an unimportant port, there being no communication with Venezuela and no wharves in the port. The town authorities will institute a campaign against rats by trapping.

Report from Ponce—Transactions of Service, June, 1908.

Acting Assistant Surgeon Ferrer-Torres reports, June 30, through Chief Quarantine Officer Foster:

Month of June, 1908.

Vessels inspected	11
Vessels disinfected	2
Vessels in quarantine	5
Passengers inspected:	
Incoming	69
In transit	597
Passengers in quarantine	13
Immigrants inspected	10
Rejections	0
Crew inspected	448
Bill of health issued	22
Pieces of baggage disinfected	7

ST. THOMAS.

Precautions against introduction of plague.

Acting Assistant Surgeon Wild reports, July 2:

Steamships coming from any port in Venezuela or Trinidad for coal are kept in the bay and coaled from lighters only in daytime. Coal is passed from lighters to deck of steamers by laborers. Crew then takes coal to bunkers. No one is allowed ashore, and guards are placed around ship. Should any cargo arrive it would first be fumigated.

A bounty for rats and mice has been proposed and is now before the governor for indorsement.

SIERRA LEONE.

Report from Sierra Leone—British Gold Coast again declared infected with plague—Quarantine ordered.

Consul Yerby reports, June 15:

By order of council Akkra, on the Gold Coast, was, on June 6, again declared by the Sierra Leone government an infected port, and all vessels arriving at ports in Sierra Leone are directed to be placed under quarantine.

Three new cases of plague appeared at Akkra on May 26. These cases terminated fatally. No new cases have been reported.

TRINIDAD.

New plague cases—Measures taken to eradicate the disease—Reported prevalence of yellow-fever epidemic in interior of Venezuela.

Consul Handley reports, July 1:

Four more deaths of bubonic plague have occurred here since my dispatch dated June 22.

Since the outbreak of plague (May 30) here there have been officially reported 16 cases and 12 deaths. Four are at present under treatment. No white persons have contracted the disease. There are at present 21 "contacts" in the isolation camp. Since the outbreak about 300 have been sent to this camp for a period of 5 or 10 days, but no cases have developed among any of them. The authorities are becoming more active in the eradication of the disease and are resorting to burning some of the houses where cases have occurred and fumigating the surrounding dwellings. A reward is offered for each rat delivered to the medical authorities.

Reports were received here on June 29 by steamships from Ciudad Bolivar, Venezuela, stating that there is at present a yellow fever epidemic extending from San Felix (a small town on the Orinoco River below Bolivar) to Callao (a mining village in the State of Guayana, Venezuela). It is estimated that there have been 80 cases, 50 per cent of the number having proved fatal. The villages affected are Upata, Guasipati, and Callao.

VENEZUELA.

Report from Caracas—No cases of plague since June 28—Epidemic plague at La Guaira officially declared ended.

The following is received from the Department of State, under date of July 13:

The clerk left in charge of archives at Caracas sends the following telegram, dated Willemstad, July 13:

"No more cases plague Caracas since June 28. July 3 epidemic officially declared ended at La Guaira. Death there June 30.

FOREIGN AND INSULAR STATISTICAL REPORTS OF COUNTRIES AND CITIES—UNTABULATED.

BORNEO—*Sandakan.*—Month of April, 1908. Estimated population, 10,495. Total number of deaths, 34, including 7 from beri-beri.

CANADA—*Ontario—Hamilton.*—Month of June, 1908. Estimated population, 63,256. Total number of deaths, 73, including whooping cough 2, and 11 from tuberculosis.

FRANCE—*Cherbourg.*—Month of June, 1908. Estimated population, 43,948. Total number of deaths, 76, including enteric fever 2, measles 1, and 9 from tuberculosis.

GREAT BRITAIN—*England and Wales.*—The deaths registered in 76 great towns in England and Wales during the week ended June 27, 1908, correspond to an annual rate of 11.8 per 1,000 population, which is estimated at 16,234,952.

London.—Nine hundred and ninety-one deaths were registered during the week, including measles 28, scarlet fever 7, diphtheria 8, whooping cough 11, enteric fever 2, tuberculosis 153, and 21 from diarrhea. The deaths from all causes correspond to an annual rate of 10.8 per 1,000. In Greater London 1,422 deaths were registered. In the "outer ring" the deaths included 6 from measles, 3 from diphtheria, and 4 from whooping cough.

Ireland.—The average annual death rate represented by the deaths registered during the week ended June 27, 1908, in the 21 principal town districts of Ireland was 15.2 per 1,000 of the population, which is estimated at 1,131,959. The lowest rate was recorded in Lurgan, viz, 4.4, and the highest in Newtownards, viz, 22.9 per 1,000.

Scotland.—The deaths registered in 8 principal towns during the week ended June 27, 1908, correspond to an annual rate of 14.5 per 1,000 of the population, which is estimated at 1,839,038. The highest rate of mortality was recorded in Dundee, viz, 19.2, and the lowest in Leith, viz, 9.9 per 1,000. The aggregate number of deaths registered from all causes was 510, including measles 7, scarlet fever 1, enteric fever 1, and 12 from whooping cough.

GREECE—*Patras.*—Month of June, 1908. Estimated population, 42,500. Total number of deaths, 29, including enteric fever 3, and 11 from tuberculosis.

HAWAII—*Honolulu.*—Month of June, 1908. Census population, 39,306. Total number of deaths, 84, including enteric fever 1, and 21 from tuberculosis.

SPAIN—*Barcelona.*—Month of June, 1908. Estimated population, 600,000. Total number of deaths, 1,119, including diphtheria 14, enteric fever 20, smallpox 3, measles 34, scarlet fever 3, whooping cough 16, and 66 from tuberculosis.

SWITZERLAND.—Week ended June 20, 1908. Reports from 18 cities, having an aggregate population of 876,946, show as follows: Total number of deaths, 289, including diphtheria 7, measles 1, enteric fever 2, whooping cough 2, and 44 from tuberculosis.

Cholera, yellow fever, plague, and smallpox, from June 26 to July 24, 1908.

[Reports received by the Surgeon-General, Public Health and Marine-Hospital Service, from American consuls, through the Department of State, and from other sources.]

[For reports received from December 27, 1907, to June 26, 1908, see PUBLIC HEALTH REPORTS for June 26, 1908.]

[NOTE.—In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon, general	May 17–23		1	
India:				
Bombay	May 20–June 16		3	
Calcutta	May 10–June 6		313	
Madras	May 16–June 5		17	
Rangoon	May 17–June 6		27	
Indo-China:				
Cholen	May 10–30	48	45	
Saigon	May 10–June 6	63	46	Report May 23 included Cholen.
Philippine Islands:				
Manila				First quarter calendar year 1908, 203 cases, 167 deaths.
Provinces				First quarter calendar year 1908, 806 cases, 628 deaths.
Bataan	Jan. 1–Mar. 31	20	18	
Bulacan	Jan. 1–Mar. 31	91	72	
Capiz	Jan. 1–May 23	236	191	
Cavite	Jan. 1–Mar. 31	22	20	
La Laguna	Jan. 1–Mar. 31	3	2	
Mindoro	Jan. 1–Mar. 31	32	20	
Pampanga	Jan. 1–Mar. 31	145	128	
Pangasinan	Jan. 1–May 23	388	268	
Rizal	Jan. 1–Mar. 31	143	116	
Tarlac	Jan. 1–Mar. 31	10	8	
Zambales	Feb. 2–Mar. 31	62	48	
Straits Settlements:				
Singapore	May 10–16		1	

YELLOW FEVER.

Brazil:				
Manaos	May 26–June 13	5	5	
Para	May 31–June 20	9	9	
Rio de Janeiro	June 1–7	2	2	
Cuba:				
Santiago Province—				
Daiquiri	July 6–20	11	1	In vicinity, present since April.
Santiago	July 4–11	1	1	From Daiquiri.
Curaçao	June 28–July 3	1	1	Imported.
Ecuador:				
Guayaquil	May 31–June 20		6	
Mexico:				
Frontera	July 12	1		
Laguna de Terminos	June 9–26	3	1	From May 18—1 case additional from S. S. Lembit.
Veracruz	July 17	3	1	
Venezuela	June 26	80	40	Estimated, in Upata, Guasipati, and Callao.

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

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Brisbane	June 6	1		
Brazil:				
Rio de Janeiro	May 11–June 14	5		
Sao Paulo	May 18–31		2	
British Gold Coast:				
Akkra	May 20–26	3	3	
Chile:				
Antofagasta	May 18–30	42	4	
Arica	May 21–June 2			Present.
Iquique	May 20–26	11	1	
China:				
Canton	May 1–June 9	10		Mainly imported. June 13 still present.
Foochoo	April 6			Present.
Hongkong	May 10–June 6	473	381	
Hsing-Sua	June 2–8			Do.
Ecuador:				
Guayaquil	May 31–June 20		12	
Egypt:				
Alexandria	May 27–June 16	9	5	
Provinces—				
Assiout	May 27–June 16	2	1	
Minieh	May 15–June 14	4	1	
Garbieh	May 16–June 18	15	1	
Fayoum	May 28–June 18	58	37	
Beni Souef	May 29–June 17	15		
Kena	May 28–June 18	19	19	
Galyoobeeyeh	May 21–June 16	59	12	
India:				
Bombay Presidency and Sind.	Apr. 26–June 6	3,726	3,086	
Madras Presidency	Apr. 26–June 6	237	162	
Bengal	Apr. 26–June 6	717	667	
United Provinces	Apr. 26–June 6	1,457	1,322	
Punjab	Apr. 26–June 6	12,641	10,365	
Burma	Apr. 26–June 6	681	630	
Central provinces, including Berar.	Apr. 26–May 16	23	19	
Coorg	May 24–31	4	1	
Mysore State	Apr. 26–June 6	241	194	
Central India	Apr. 26–May 16	4	4	
Rajputana	Apr. 26–June 6	621	468	
Kashmir	Apr. 26–June 6	14	7	
Northwest frontier province.	Apr. 26–June 6	402	355	
Grand total		20,768	17,280	
Indo-China:				
Cholen	May 10–30	7	5	
Saigon	May 10–June 6	21	18	Report May 23 included Cholen.
Japan:				
Formosa	May 10–June 6	490	375	From May 15 epidemic at Taiwan; 25 cases reported daily.
Kobe	May 24–30	1	1	
Nara	June 14–20	14		
Osaka	May 17–June 6	13	12	
Peru:				
Callao	May 20–June 8	13	4	
Chiclayo	May 20–June 8	2	2	
Lima	May 20–June 8	16	4	And vicinity.
Mollendo	June 2–8	1		
Monsefu	June 2–8	1		
Niepos (Hualgayoc)	June 2–8	2		
Trujillo	May 20–June 8	52	21	Do.
Siam:				
Tongkah	May 4			Present.
Straits Settlements:				
Singapore	May 17–30		2	
Trinidad:				
Port of Spain	June 4–July 4	13	9	
Turkey in Asia:				
Bagdad	June 7–27	32	19	
Venezuela:				
Caracas	June 10–27	15	4	
La Guaira	June 16–30	5	2	

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

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	June 29–July 4		2	
Arabia:				
Aden	May 28–June 22		8	
Argentina:				
Buenos Aires	Mar. 1–31		2	
Austria:				
Galicia	May 24–June 27	3		
Borneo:				
Sandakan	Apr. 16–30	6		
Brazil:				
Bahia	May 1–31	114	5	Report for April not received.
Pernambuco	May 1–15		25	
Rio de Janeiro	May 11–June 14	971	419	
Santos	May 18–June 7		4	
Canada:				
Nova Scotia—				
Halifax	June 14–July 11	19		
Ontario Province—				
Hamilton	June 1–30	3		
Ceylon, general	Apr. 1–30		2	
China:				
Amoy (Kulangsu)	Apr. 5–May 16		1	
Foochoo	Apr. 26–June 6			Present.
Hongkong	May 10–June 6	18	10	
Nanking	June 11			Epidemic.
Shanghai	May 18–June 14		8	
Ecuador:				
Guayaquil	May 31–June 20		12	
Egypt, general	May 14–June 10	256	51	
Cairo	May 31–June 24	23	7	
France:				
Paris	May 31–June 27	5		
Toulon	May 1–31	1		
Germany, general	May 24–June 20	24		
Bremen	May 24–June 6	3		
Great Britain:				
Liverpool	Apr. 30–June 6	1		
India:				
Bombay	May 20–June 26		102	
Calcutta	May 10–June 6		73	
Madras	May 23–29		1	
Indo-China:				
Choloen	May 24–30	5	1	
Italy, general	June 8–July 5	96		
Catania	May 22–June 11		1	
Naples	June 7–20	12		
Palermo	May 24–June 20	13	2	
Turin	June 8–14	1		
Japan:				
Kobe	May 31–June 13	7		May 30, 1 case on S. S Mongolia; June 13, 1 case on S. S. Muncaster Castle.
Nagasaki	May 26–31	1		
Osaka	May 10–June 6	83	50	
Yokohama	June 2–8	2		
Java:				
Batavia	May 10–30	10	1	
Mexico:				
Aguas Calientes	June 8–July 12		8	
Mexico City	May 10–30		57	
Monterey	June 8–14		1	
Philippine Islands:				
Manila	May 3–June 6	60	35	First quarter calendar year 1908, 42 cases, 12 deaths.
Porto Rico:				
Mayaguez	June 7–27	6		
Portugal:				
Lisbon	May 31–June 27	14		
Russia:				
Batoum	May 1–31	1		
Moscow	May 24–June 27	142	50	
Odessa	May 24–June 20	23	2	
Riga	June 7–27	6		
St. Petersburg	May 17–June 13	164	44	
Warsaw	May 10–23		8	
Siberia:				
Vladivostok	May 6–June 4	5		
Spain:				
Barcelona	June 1–30		3	
Valencia	June 1–27	51	2	

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

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore	May 24–June 6		3	
Turkey in Asia:				
Bagdad	May 10–June 6	49	6	Report from May 17–31 not received.
Turkey in Europe:				
Constantinople	June 1–29		20	
Zanzibar	June 8–14		1	

Weekly mortality table, foreign and insular cities.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—									
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	June 27	174,579	38	....	....	....	....	....	....	....	....	....	....	4
Aden	June 15	43,974	30	3	....	....	....	....	....	....	....	....	....	....
Aguascalientes	July 5	40,000	84	2	....	....	....	....	....	....	4	....	....	....
Alexandretta	June 13	15,000	4	....	....	....	....	....	....	....	....	....	....	....
Amsterdam	June 27	565,122	138	20	....	....	....	....	....	2	....	1	7	2
Do	July 4	565,122	130	16	....	....	....	....	....	....	....	1	4	2
Athens	June 27	241,058	88	16	....	....	....	....	1	....	....	....	....	....
Barranquilla	....do	40,000	57	....	....	....	....	....	....	5	....	....	....	....
Basel	....do	131,000	19	5	....	....	....	....	....	....	....	....	....	....
Belfast	....do	380,344	114	24	....	....	....	....	....	1	....	....	....	....
Berlin	June 13	2,101,732	494	78	....	....	....	....	....	2	2	8	....	10
Birmingham	June 27	558,336	145	....	....	....	....	....	....	....	....	1	....	3
Bluefields	July 4	2,500	3	....	....	....	....	....	....	....	....	....	....	....
Bordeaux	June 27	253,000	96	14	....	....	....	....	....	....	....	1	....	1
Bradford	....do	292,136	66	7	....	....	....	....	....	....	1	1	1	1
Bristol	....do	372,785	76	....	....	....	....	....	....	1	....	1	2	2
Brussels	....do	630,078	133	15	....	....	....	....	....	1	5	....	10	....
Calcutta	May 30	847,796	523	39	60	81	....	20	....	....	....	....	1	....
Cartagena, Colombia	June 29	30,000	25	1	....	....	....	....	....	....	....	....	....	....
Ceiba	July 4	6,500	1	....	....	....	....	....	....	....	....	....	....	....
Chemnitz	June 20	270,600	101	10	....	....	....	....	....	....	....	1	....	3
Cienfuegos	July 4	37,000	16	1	....	....	....	....	....	1	....	....	....	....
Coburg	June 20	23,334	7	1	....	....	....	....	....	....	....	....	....	....
Cognac	June 27	19,483	1	....	....	....	....	....	....	....	....	....	....	....
Cologne	June 20	461,378	148	15	....	....	....	....	....	....	2	1	8	3
Colombo	May 30	180,262	119	15	....	....	....	....	....	7	....	....	....	....
Constantinople	June 28	1,000,000	202	32	....	....	....	6	....	5	....	....	2	....
Crefeld	June 13	127,673	31	2	....	....	....	....	....	....	....	....	....	....
Do	June 20	127,673	34	4	....	....	....	....	....	....	....	....	....	1
Denia	June 27	12,421	2	....	....	....	....	....	....	....	....	....	....	....
Dresden	June 20	541,400	135	18	....	....	....	....	....	....	1	1	1	2
Dundee	June 27	168,616	60	....	....	....	....	....	....	....	....	....	....	3
Durban	June 6	60,972	13	1	....	....	....	....	....	....	....	....	....	1
East London	....do	49,253	12	1	....	....	....	....	....	....	....	....	....	2
Flushing	July 4	20,257	3	....	....	....	....	....	....	....	....	....	....	....
Funchal	June 28	44,049	23	2	....	....	....	....	....	1	....	....	1	....
Geneva	June 20	118,500	35	....	....	....	....	....	....	....	....	....	....	....
Glasgow	July 3	859,715	219	....	....	....	....	....	....	1	1	....	4	3
Gottenborg	June 27	160,500	34	6	....	....	....	....	....	....	....	....	....	1
Greenock	....do	71,783	22	....	....	....	....	....	....	....	....	....	1	1
Guayaquil	June 20	70,000	55	2	1	....	1	6	....	1	....	....	1	1
Halifax	July 4	40,727	9	....	....	....	....	....	....	....	....	....	....	....
Hamburg	June 27	854,472	177	27	....	....	....	....	....	2	2	1	6	2
Hamilton, Bermuda	June 22	20,206	5	....	....	....	....	....	....	....	....	....	....	....
Do	June 29	20,206	7	....	....	....	....	....	....	....	....	....	....	....
Do	July 6	20,206	6	....	....	....	....	....	....	....	....	....	....	....

[a] Intervening week previously reported.

Weekly mortality table, foreign and insular 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.
Havre	June 13	132,430	39	7	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Do	a June 27	132,430	52	12	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Hilo	June 21	16,000	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Johannesburg	May 23	102,078	60	.....	.....	.....	.....	.....	.....	3	1	.....	.....	.....
Do	May 30	102,078	74	.....	.....	.....	.....	.....	.....	2	1	.....	1	.....
Königsburg	June 20	234,400	111	9	.....	.....	.....	.....	.....	.....	2	1	.....	.....
Lausanne	....do ...	56,000	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leeds	June 27	477,107	110	9	.....	.....	.....	.....	.....	.....	.....	2	2	3
Leipzig	June 20	528,184	148	25	.....	.....	.....	.....	.....	2	1	4	.....	.....
London	June 27	7,323,327	1,422	.....	.....	.....	.....	.....	.....	3	9	19	48	16
Lübeck	....do ...	95,000	31	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Madras	June 5	509,346	362	.....	.....	9	.....	.....	.....	.....	.....	.....	4	.....
Magdeburg	June 20	248,052	71	11	.....	.....	.....	.....	.....	1	.....	3	1	.....
Managua	May 30	22,278	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 6	22,278	18	2	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Do	June 13	22,278	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 20	22,278	12	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manchester	June 27	631,533	177	10	.....	.....	.....	.....	.....	.....	1	1	4	4
Mannheim	June 13	177,875	39	7	.....	.....	.....	.....	.....	.....	1	1	.....	1
Matamoras	July 4	8,000	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mayaguez	June 27	35,700	29	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	July 4	35,700	34	2	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Mazatlan	June 20	22,000	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 27	22,000	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexico City	May 23	400,000	368	29	.....	.....	.....	18	13	.....	5	1	2	.....
Do	May 30	400,000	386	24	.....	.....	.....	29	20	1	3	.....	2	1
Monrovia	June 6	7,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 13	7,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moscow	June 20	1,335,104	715	78	.....	.....	.....	5	5	1	7	8	25	5
Münich	June 6	556,000	206	18	.....	.....	.....	.....	.....	.....	1	.....	3	1
Newcastle-on-Tyne	June 27	272,969	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Nottingham	June 20	255,000	77	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2
Nuevo Laredo	July 4	8,000	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Odessa	May 30	467,000	183	27	.....	.....	.....	.....	1	1	1	2	2	.....
Do	June 6	467,000	155	26	.....	.....	.....	.....	.....	.....	.....	.....	5	4
Do	June 13	467,000	123	21	.....	.....	.....	1	2	1	2	1	1	1
Do	June 20	467,000	187	26	.....	.....	.....	1	.....	2	1	1	4	1
Palermo	June 13	330,000	156	9	.....	.....	.....	.....	.....	.....	2	1	14	.....
Do	June 20	330,000	174	5	.....	.....	.....	2	.....	.....	2	1	12	.....
Paris	June 27	2,776,394	823	119	.....	.....	.....	.....	.....	.....	7	1	14	1
Plymouth	....do ...	116,000	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Elizabeth	June 6	32,959	18	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 13	32,959	15	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port of Spain	June 20	60,000	29	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prague	....do ...	231,780	127	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 27	231,780	123	29	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Pretoria	May 23	36,839	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	May 30	36,839	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rotterdam	July 4	407,346	103	.....	.....	.....	.....	.....	.....	.....	3	1	.....	.....
St. George's, Bermuda	June 13	2,189	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	June 20	2,189	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. John, N. B	July 11	40,789	7	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Salavery	June 24	1,750	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Feliu de Guixols	June 27	11,094	7	2	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Santa Cruz de Teneriffe	June 20	46,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santiago de Cuba	July 4	45,497	15	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schiedam	June 27	30,935	10	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	July 4	30,935	13	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Singapore	May 30	260,000	353	39	1	.....	.....	.....	.....	3	.....	.....	.....	.....
Southampton	June 27	122,196	24	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Stettin	....do ...	256,000	82	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Toronto	June 6	272,600	80	.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....
Do	June 13	272,600	84	.....	.....	.....	.....	.....	.....	1	.....	8	.....	.....
Do	June 20	272,600	80	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Do	June 27	272,600	67	.....	.....	.....	.....	.....	.....	.....	1	3	.....	.....
Do	July 4	272,600	66	.....	.....	.....	.....	.....	.....	2	.....	5	.....	.....
Trieste	June 20	213,719	86	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Turin	June 14	373,701	116	11	.....	.....	.....	.....	.....	3	2	1	2	.....
Valencia	June 27	250,000	122	8	.....	.....	.....	1	.....	.....	1	.....	2	.....
Vevey	June 20	14,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

a Intervening week previously reported.

Weekly mortality table, foreign and insular 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.
Victoria, B. C	July 4	27,500	6	1	.....	....	....	....	....	....	....	....	....	....
Vienna	June 20	2,021,052	733	116	.....	....	....	....	....	1	3	1	33	9
Vigo	June 27	36,000	10	3	.....	....	....	....	....	1	....	....	....	....
Warsaw	May 23	764,611	229	49	.....	....	....	4	....	1	3	1	2	1
West Hartlepool	June 27	66,750	19	....	.....	....	....	....	....	....	....	....	....	....
Zurich	....do ...	177,329	50	10	.....	....	....	....	....	....	....	....	....	....

By authority of the Secretary of the Treasury:

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