PUBLIC HEALTH REPORTS

VOL. XXVII. AUGUST 23, 1912. No. 34.

THE PLAGUE SITUATION.

PORTO RICO.

From August 14 to 20, both dates inclusive, there was only 1 case of plague reported in Porto Rico. This case occurred in San Juan and was reported as suspicious on August 14. The diagnosis of plague was established August 16. This makes a total of 49 cases reported in all Porto Rico up to August 20. Of these, 33 occurred in San Juan.

The disease seems to be well under control, there having been only 2 cases since the 1st of August. The work of eradicating the infection among rodents, however, still remains. This will take some time, as it necessarily includes the poisoning and trapping of rats over a sufficiently long period to markedly reduce their numbers and the general ratproofing of all buildings which might otherwise harbor rodents. Both the destruction of rats and the ratproofing of buildings have been under way for some time.

CUBA.

In Cuba there have been in all 3 cases of plague in Habana. The last case was reported on July 22, and the last death July 27. It is a month since any case has developed.

The restrictions placed upon passengers coming from Habana to the United States, therefore, have been removed excepting as regards persons who have resided in Habana between Cuba Street and the water front. The restrictions on vessels and cargoes directed against the importation into the United States of infected rodents remain unchanged.

The work of trapping and poisoning rats continues, and the rats collected are being examined to ascertain whether plague infection exists among them. From June 24 to August 10, 6,216 rats had been examined in this way without the finding of any infected with plague.

ACTIVE AND PASSIVE IMMUNIZATION AGAINST PLAGUE.

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Between the identification of the *Bacillus pestis* as the specific cause of bubonic plague and the full recognition of the rôle played by rats and fleas in its dissemination, there intervened a period of about 10 years, during which the ravages of a widespread pandemic concen-

trated the attention of many of the most eminent scientists upon the problems of the prevention and cure of this most fatal disease.

The literature of those years is full of reports upon studies of plague from every point of view—studies of its bacteriology and pathology, its clinical aspects, its epidemiology, and of the efficiency of the preventive measures so laboriously, if often ineffectually, carried out. The inefficiency of eradicative measures, which at that time were based largely upon the belief that human cases were the important sources of infection, rendered the search for methods of immunization and specific therapy most urgent.

It is the object of this paper to give a brief review of the methods evolved for immunization against plague, a review which is believed to be timely because of the present interest in plague consequent upon its proximity to American ports and because the generally circulated medical literature of the United States contains little on this subject.

No effort has been made to consult or cite original references, except a few of the more important. In the monographs which have been freely used in the preparation of this paper may be found full bibliographies and more detailed discussions of the technical questions involved.

I.

ACTIVE IMMUNIZATION AGAINST PLAGUE.

Any method of active immunization, to be of practical application in human beings, must be not only efficient in conferring immunity, but without danger to life, must give a minimum of discomfort, must be simple in its administration, and not prohibitively expensive. Without undertaking a review of all the methods which have been advocated, the following may be cited as those which have seemed to best meet the conditions:

1. THE USE OF KILLED CULTURES AND THEIR PRODUCTS.

(*a*) Haffkine's method (1, 3) [1]: Haffkine, who was the first to extensively advocate and employ preventive inoculations against plague, prepared his material as follows:

Plague bacilli were grown at a temperature of 25° to 30° C. in large shallow flasks, containing bouillon having on its surface droplets of sterile oil, enabling the bacilli to grow in stalactites dependent from these droplets. Every few days the flasks were agitated, causing the growth to fall to the bottom and allowing a new growth at the top. At the end of six weeks, when a very heavy growth had been obtained, the cultures were heated to 65° C. for one hour or more. After their sterility had been proven by subculture, phenol sufficient to make 0.5 per cent was added as an additional assurance of sterility and to guard against subsequent accidental contamination. The bacterial content of the emulsion was estimated roughly by comparison with a standard test culture.

The dose usually given was, for adults, 2 to 3.5 c. c.; for children under 10 years of age, 0.1 to 0.5 c. c.; for older children, 1 to 2 c. c. Doses much larger than these, namely, 10 to 20 c. c., for adults, were subsequently employed with seemingly better results. It was recommended to give, 10 days after the first injection, a second larger dose.

[1] The figures in parentheses refer to the references at the end of the article.

The reaction following an injection of Haffkine's virus appears to have been quite variable. Elevation of temperature, general malaise, headache, and local reaction at the site of inoculation were common, but seldom lasting more than 24 hours and rarely severe.

(*b*) The German plague commission, (2) after extended experimental researches, came to the conclusion that the efficacy of Haffkine's preparation was due solely to the killed bacilli present therein. The bouillon, when freed from bacilli, was found to have almost no immunizing properties.

This commission accordingly recommended young agar cultures for use instead of the bouillon cultures employed by Haffkine. They used 48-hour agar cultures of virulent plague bacilli, grown at a temperature of about 30° C. These, after being removed and emulsified in physiologic salt solution, were heated to 65° C. for one hour or longer, after which phenol was added sufficient to make 0.5 per cent. They recommend for an adult dose an amount of the emulsion corresponding approximately to one agar culture.

This preparation has the advantage over bouillon cultures that it is more easily and rapidly prepared; the dose can be more accurately regulated; it is not so subject to contamination, especially with tetanus; it has been found experimentally to confer on laboratory animals a high degree of immunity. Its superior efficiency is believed to be due in part to the fact that the cultures used are actively virulent, whereas the bouillon cultures used by Haffkine are said to lose a great deal of their virulence in the six weeks' cultivation.

(*c*) Lustig and Galeotti (3) have devised a method which they believe to be superior to that of the German commission. Twenty-four-hour agar cultures are scraped off and emulsified in a 0.75 per cent solution of caustic soda, which is kept at about 10° C. for 12 to 24 hours. The emulsion has by that time become opalescent, with a bottom sediment, which is removed by filtration through paper. Acetic acid, added to the filtrate, causes a white, flocculent precipitate, which is filtered off, dried in vacuo, and powdered. For use it may be dissolved in a weak solution of sodium carbonate.

It is claimed for this product, which is considered to be a nucleoproteid derived from the plague bacilli, that its immunizing property is approximately equal to that of killed agar cultures of the bacilli; that the dose can be more accurately measured; that the powder keeps well in all climates; and that the reaction following its injection is less severe.

(*d*) Terni and Bandi (3) have recommended, for active immunization, the peritoneal exudate of guinea pigs, inoculated intraperitoneally with virulent plague bacilli and killed in the terminal stage of infection. The exudate, a more or less viscid, cloudy liquid, is kept in an ice chest one or two days until cultures have shown the presence of living bacilli and the absence of other contaminating bacteria. It is then incubated 12 hours at 37° C. to cause multiplication of *B. pestis*, and heated on 2 consecutive days to 52° C. to kill the plague bacilli without coagulating the albumin. After this it is diluted, according to its consistency, with salt solution, containing 0.5 per cent phenol and 0.25 per cent sodium carbonate.

The authors claimed for this method of immunization that it gave to laboratory animals an active immunity demonstrable within a few hours after inoculation and caused only a mild reaction.

(*e*) Several workers, notably Shiga and Besredka, have made use of killed agar cultures mixed with specific antiplague immune serum, claiming for this preparation an efficacy equal to that of killed cultures alone, and the advantage that the reaction after inoculation is decidedly less severe, and that immunity is established very rapidly without a "negative phase."

2. INOCCULATION WITH ATTENUATED LIVE CULTURES.

It has been shown by numerous observers that inoculation with attenuated or avirulent cultures of plague bacilli will give to laboratory animals an immunity of higher degree and longer duration than that conferred by inoculation with killed cultures or their products.

The cultures used have been attenuated by long subculture on artificial media, to which have been added, in some instances, alcohol or other substances unfavorable to the development of the bacilli.

Strong (3), using a long-cultivated culture of plague bacilli which he had found harmless but highly immunizing for guinea pigs and monkeys, inoculated 42 condemned criminals in a Manila prison. Some of these, after the preliminary tests of small doses, received as much as a whole agar culture of live bacilli with no harmful effect other than a brief local and general reaction. Immune bodies were demonstrated in the blood of 24 of these patients, and from the results of animal experiments it may be inferred that these people acquired a considerable degree of immunity against plague infection.

However, in spite of the demonstrated harmlessness of the method in this series of experiments, it is hardly to be expected that such a procedure will come into general use, for there remains the fear of sometimes using a culture insufficiently attenuated, or of encountering persons peculiarly susceptible to the infection.

3. RESULTS OBTAINED IN ACTIVE IMMUNIZATION AGAINST PLAGUE.

The results obtained by different workers in attempting to compare the efficiency of the several methods of immunization above enumerated are various (1). It seems to be quite generally agreed that inoculation with attenuated living cultures (true "vaccination") gives experimentally more definite and lasting immunity than does inoculation with killed cultures or derivatives.

Kolle and Otto (4) found the immunizing effect of Haffkine's preparation and that of the German plague commission approximately equal and that of Lustig and Galeotti somewhat less. They were unable, by any of these methods, to constantly immunize highly susceptible animals (rats and guinea pigs) against experimental infection with virulent plague bacilli. They estimated that in their experiments the immunizing effect on rats was, with living attenuated cultures, 45 per cent; by Haffkine's method, 22.2 per cent; by the German plague commission's method, 21.9 per cent; and by Lustig's, 16.6 per cent. Their results with guinea pigs were even less favorable.

A more satisfactory estimate of the practical efficiency of antiplague inoculations may be obtained from a study of the records of the incidence of plague among inoculated and uninoculated persons in plague-stricken communities in India during the last great epidemic there. Since 1897 over a million of people have received antiplague inoculations in India and elsewhere. In most instances

it has been impossible to accurately estimate the results obtained because of the impossibility of keeping full records and the difficulty of estimating the influence of environmental factors, or because the incidence of plague among the uninoculated population has been so small that its nonincidence among the inoculated was of doubtful significance. Nevertheless, during the great epidemic in India some tests were made under conditions so well controlled as to warrant quite definite conclusions. A few of these tests may be cited here, from reports by Haffkine, Bannerman, and others.

In the last week of January, 1897, plague appeared in the Byculla house of correction, in Bombay, causing, up to January 30, 9 cases, of which 6 were fatal (1, 5, 7). On the morning of January 30, 6 more cases developed, of which 3 resulted fatally. On the afternoon of this day Dr. Haffkine inoculated all the inmates who volunteered to submit to it. Altogether 154 were inoculated, while 183 refused the offer. The inoculated and uninoculated remained together under the same conditions as regards exposure to infection, food, and work. After the inoculations it was discovered that one of those inoculated had a bubo, and the same evening two more of the inoculated developed plague, all three of these cases proving fatal.

The following table shows the subsequent incidence of plague and deaths therefrom among the inoculated and the uninoculated prisoners. The average daily number of inoculated inmates was 148 and of the uninoculated 173 during this period.

Date.	Uninoculated inmates, 173.		Inoculated inmates, 148.	
	Cases of plague.	Fatal cases.	Cases of plague.	Fatal cases.
Jan. 31	2	1	1	.....
Feb. 1	1	1	.....	.....
2	1	1	.....	.....
3	.....	.....	.....	.....
4	1	1	.....	.....
5	2	1	.....	.....
6	5	1	1	.....
Total	12	6	2	.....

NOTE.—In the various reports of this experiment there are slight discrepancies as to the number of inoculated and uninoculated, but all agree as to the incidence of plague.

The last case of plague occurred on February 6. Up to that time there had been among the 173 uninoculated 12 cases of plague with 6 deaths, while among the 148 inoculated there had been exclusive of the 3 sick at the time of inoculation, only 2 cases, both terminating in recovery.

In December, 1897, plague appeared in the Umarkadi jail at Bombay (5, 7). Up to January 1, 1898, there had been 3 cases, all resulting fatally. On this date, the inmates being willing to have the protective inoculation, all were lined up and marched into the yard, where an officer impartially picked out every second man to be inoculated. Special care was taken that the inoculated and the uninoculated should be subjected to identical conditions. The uninoculated were even allowed to rest from work during the period of reaction from the inoculations.

After that date 13 cases of plague appeared during the next 30 days. The average daily number of inoculated inmates during this time was 147, and of the uninoculated, 127. The 13 cases of plague were distributed as follows:

	Cases.	Deaths.
Among 147 inoculated inmates	3	0
Among 127 uninoculated inmates	10	6

At Kirkee, a military suburb of Poona, plague broke out among a colony of native camp followers, living in barracks well isolated from other communities (5, 7). A census showed 1,530 persons—men, women, and children—of whom 671 availed themselves of the offer of inoculation, while 859 persons- members of the same families, living under identical conditions, in the same houses—remained uninoculated. From the time of the inoculation up to the end of the epidemic there occurred 175 cases of plague with 115 deaths. The distribution of cases and deaths among the inoculated and the uninoculated was as follows:

	Cases.	Deaths.	Mortality rate per 100.
Among 671 inoculated	32	17	2.5
Among 859 uninoculated	143	98	11.4

Another test was made in the village of Undhera, near Baroda, where plague broke out in the latter part of December, 1897, causing 76 deaths from plague up to February 12 (5, 7). On this date there were, according to a careful census, 950 people in the village. Of these, 513 were inoculated, leaving 437 uninoculated.

In choosing subjects for inoculation the families were called out from the census records and each divided in such a way as to give an approximately equal proportion of men, women, and children, sickly and strong. Excluding from consideration 3 deaths occurring among the uninoculated from February 12 to 14, inclusive, there occurred in the village 35 cases of plague from February 15 to March 26, after which no further cases occurred. These 35 cases occurred in 28 families, containing 135 persons, of whom 71 were inoculated and 64 uninoculated, as follows:

	Cases.	Incidence per 100.	Deaths.	Deaths per 100.	Case fatality rate per 100.
Among 71 inoculated	8	11.3	3	4.2	37.5
Among 64 not inoculated	27	42.2	26	40.6	96.3

The reduction both in the incidence and in the case mortality among the inoculated is striking. Considering the village as a whole, the incidence among inoculated and uninoculated was:

	Cases.	Incidence per 100.	Deaths.	Mortality rate per 100.
Among 513 inoculated	8	1.5	3	0.58
Among 437 not inoculated	27	6.17	26	5.95

From these figures it appears that the mortality from plague among the total inoculated population was approximately one-tenth that among the uninoculated, the difference being due in part to the less frequent incidence of the disease, and in part to the much lower case mortality among the inoculated.

Many other statistics have been collected by Haffkine, Bannerman, and others, seldom as well controlled as those above cited but tending, almost without exception, to show that inoculation with Haffkine's prophylactic effected a marked but variable reduction in the incidence of plague and the severity of the attack.

The India plague commission,[1] while granting that these conclusions are correct, were unable to arrive at a numerical estimate of the protection afforded, and called attention to several shortcomings in the process, namely:

1. The protection is not absolute.
2. The immunity conferred within the first few days is slight and its duration is indeterminable—certainly several weeks, perhaps several months.
3. The lack of any satisfactory method of standardizing the product is a serious obstacle in the way of obtaining uniform results.

It might well be feared that an inoculation during the incubation period would aggravate the severity of the attack, lessening the chances for the patient's recovery. Bannerman has prepared from reports of Government officials the following statistics relative to the case mortality from plague in inoculated persons. His statistics embrace 358 cases of plague developing within 10 days after inoculation and 566 developing later.

Case mortality of plague in persons inoculated with Haffkine's prophylactic [*Bannerman* (7)].

Day after inoculation on which plague developed.	Number of cases.	Number of deaths.	Case mortality rate per 100.
Same day	43	21	48.8
First day after inoculation	40	23	57.5
Second day after inoculation	40	22	55.0
Third day after inoculation	38	21	55.3
Fourth day after inoculation	27	10	37.0
Fifth day after inoculation	37	18	48.6
Sixth day after inoculation	26	10	38.5
Seventh day after inoculation	29	14	48.3
Eighth day after inoculation	24	9	39.5
Ninth day after inoculation	24	15	62.5
Tenth day after inoculation	30	9	30.0
Total to and including the tenth day	358	172	48.04
More than 10 days after inoculation	566	230	40.6
Total among inoculated	924	402	43.5
Total among uninoculated population during same period	5,079	3,728	73.7

[1] Cited by Dieudonné. Original article not available.

These figures give no support to the theory that it is dangerous to give inoculations to persons in the incubation period of plague. They indicate, rather, that even in such cases inoculation may be of benefit, reducing the severity of the attack.

None of the preparations other than Haffkine's has been tested under circumstances permitting conclusions as to its efficacy in protecting human beings exposed to plague infection. The experimental evidence is, however, sufficient to justify the belief that the killed agar cultures recommended by the German plague commission are as effective as Haffkine's preparation. Concerning the other preparations it is almost impossible to attempt an estimate.

II.

PASSIVE IMMUNIZATION AND SPECIFIC SERUM THERAPY IN PLAGUE.

Yersin, Calmette, and Borrel first showed that the serum of animals immunized against *B. pestis* has protective properties, and Yersin was the first to prepare and use antiplague horse serum, which is still often spoken of as "Yersin's serum."

The serum at present most commonly used is obtained from horses immunized by repeated intravenous injections, first of killed cultures, later of living virulent cultures of *B. pestis* (8).

Modifications of this process are sometimes employed. Lustig's nucleoproteids have been used instead of plague bacilli for immunizing horses; and Markl, in the search for a serum of more markedly *antitoxic* properties, has used filtrates of bouillon cultures for immunizing goats. Terni and Bandi have used the sterilized peritoneal exudate of plague-infected guinea pigs as their antigen. It does not appear to be clearly demonstrated that any of these methods has distinct advantages over the one first mentioned.

The serum so prepared exhibits specific bacteriolytic, bacteriotropic, agglutinative, precipitating, and antitoxic properties. The antitoxic property is apparently weak. It is directed against the endotoxins liberated by the destruction of the bacilli, since *B. pestis* does not excrete a demonstrable soluble toxin.

No method has yet been devised for satisfactorily standardizing the serum. The nearest approximation seems to be attained by testing its protective property in mice.

Experimentally, the serum has been shown to have considerable potency in protecting animals against plague infection when given prior to, coincidentally with, or shortly after inoculation. The passive immunity, conferred by injection of the serum in monkeys, rats, and guinea pigs, appears not to last over 14 days, and to be by no means constant even during that period.

When given after inoculation, the serum has been found much less effective, and when administered after symptoms of sickness have developed it has seldom been found capable of saving the life of an animal inoculated with highly virulent plague.

The results obtained from the use of antiplague serum in the treatment of human plague have been extremely variable, and for the most part disappointing.

In Yersin's first test of his serum, during the epidemic of 1896 in Canton and Amoy, where the general mortality was estimated at 80

to 90 per cent, only two of the 26 patients treated with serum died, a mortality of only 7.6 per cent. In Bombay, in 1897, the mortality among 141 serum-treated cases was 49 per cent, while among 685 cases not so treated it was 80 per cent. In an epidemic at Anam in 1898 the mortality among 33 serum-treated cases was 14, or 42 per cent, while the 39 patients not so treated all died.

In the Vishandi hospital at Karachi the mortality among 288 cases treated before serum was available was 70 per cent. Later, when serum was available, the mortality among 47 serum-treated cases was 47 per cent, while in 74 cases treated without serum during the same period it was 74 per cent. Still later, when the supply of serum was exhausted, the mortality fell to 55 per cent in patients treated without serum.

So, through a long list of statistics, the results ascribed to the use of serum vary from an apparent great saving of life to almost nothing. It is difficult to draw conclusions, because in some instances the cases treated with serum have been selected, moribund cases being excluded; in other instances the comparison has been made between the mortality in cases treated with serum in hospitals and that in cases not treated in hospitals. Further error is introduced by the failure to discover and include in the statistics light cases of plague among the more ignorant classes; and by the variable virulence of the infection at different periods during the same epidemic.

Altogether, it seems impossible at present to make an even approximately accurate estimate of the efficiency of the serum. Yet, in the absence of any other effective therapy, it should undoubtedly be used wherever possible. In mild and moderately severe bubonic cases it may be expected to decrease the severity and duration of illness, and to save some lives. In the very severe bubonic forms its efficiency appears more doubtful, and pneumonic cases may be expected to terminate fatally in spite of the most active serum therapy.

When serum is used it should be administered freely, in doses of 40 to 60 c. c., given wholly or at least in part intravenously, and repeated daily until beneficial results are apparent.

Such figures as have been available relative to the efficacy of antiplague serum as a prophylactic do not appear to be convincing, though the serum has been thought by some to have proven effective. Several instances are cited of persons developing plague from 12 to 20 or more days after having received a prophylactic injection of serum, demonstrating what has been shown by animal experiments, that the immunity conferred is very transitory, as is the case generally with passive immunity.

III.

PRACTICAL APPLICATIONS OF VACCINES AND SERUM IN COMBATING PLAGUE.

The fact that inoculation confers a certain degree of immunity against plague, reducing the chance of contracting the infection and still further reducing the chances of death therefrom, does not of itself imply that this is a measure universally applicable in antiplague campaigns. Other considerations must be taken into account, as, for example, that protective inoculation is at best only a tempo-

rary measure, not of plague eradication as we now understand that term, but of plague-prevention in the inoculated individual. Inoculation, even of a whole community, leaves the really important focus of infection—in rodents—untouched, a continued danger to other communities, and eventually, when the immunity has expired, a menace to the same population.

Plague prevention at present has a broader scope than the protection of the particular community where the measures are carried out. The protection of other communities is an equally and often more important object. It is hardly necessary at this day to reiterate that plague prevention in human beings depends above all upon plague eradication in rodents. The realization of this fact, and the demonstrated efficiency of preventive measures based upon it, has relegated prophylactic inoculation to a position of less importance among plague-preventive measures than it occupied 15 years ago, when other measures, based on an imperfect knowledge of the disease, were so distressingly ineffectual.

Inoculation can be at present only supplementary to other more thorough measures of plague prevention. Inoculation en masse will probably continue to be a most valuable adjunct to other measures in communities where plague is extensively and severely epidemic, where there is reason to expect that in the natural course of events the incidence in the total population will be high, and where the social conditions make it impossible to put other measures into immediate effective operation. Such conditions have been in the past encountered in certain communities in India, where 20 per cent or more of the population have been stricken with plague within a few months.

Situations demanding mass inoculations may again be encountered in some countries, but could hardly arise in modern American or European communities where, even in the event of a localized epidemic in an institution or a restricted quarter of a city, so intense as to demand extreme measures, evacuation would doubtless prove more feasible and effective.

Even in groups of people who have been intimately exposed to plague infection inoculation is of doubtful applicability. In such a case it would be preferable to resort to the more rapid means of passive immunization, by the use of antiplague serum, either alone or in connection with inoculation.

The practical application of antiplague inoculation in the prevention of plague in a modern American community is virtually limited to the immunization of those whose work must necessarily expose them to infection; workers in plague laboratories and hospitals, rat catchers, fumigators, etc. To all such, prophylactic inoculations should be administered at least once every six months.

The use of antiplague serum for the immunization of whole communities is altogether impracticable because of its excessive cost, the limited supply available, the short duration of the immunity conferred, and the excessive discomfort and actual danger accompanying the repeated administration of serum at such intervals as would be necessary to maintain an immunity.

The serum has an application as a prophylactic for persons who have already been so exposed to plague infection as to justify a fear of the disease developing within a few days. It would, for example,

be administered to the immediate associates of a plague patient when the conditions are such as to make it probable that they have already been infected from the same source or from the patient, and should be administered to those who have wounded themselves while handling plague-infected material.

As a therapeutic agent the serum should be employed freely in all cases of plague as early as possible.

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ANTIRAT ORDINANCE OF OAKLAND, CAL.

[Ordnance No. 2734.—Adopted May 18, 1908.]

AN ORDINANCE PROVIDING FOR THE PREVENTION OF DISEASES, AND FOR THE PROTECTION OF PUBLIC HEALTH, AND PROVIDING A PENALTY FOR VIOLATION THEREOF.

Be it ordained by the council of the city of Oakland as follows, to wit:

SECTION 1. Every person, firm, or corporation owning, occupying, or controlling any wharf, building, or basement in the city of Oakland shall prevent the ingress of rats thereto, and to this end and purpose shall use in the protection of said wharf, building, or basement funnels, screens, netting, cement, or other material, and the method of placing said funnels, screens, netting, cement, or other material shall first be approved by the board of health.

SEC. 2. Every person, firm, or corporation owning, occupying, or controlling any premises in the city of Oakland, county of Alameda, State of California, shall maintain the same in a clean and sanitary condition, and remove therefrom any matter detrimental to health. All food, provisions, goods, wares, and merchandise shall be so located as to prevent rats from gaining access thereto or coming in contact therewith.

SEC. 3. Every person, firm, or corporation owning, occupying, or controlling any premises in the city of Oakland shall place all garbage and waste matters on said premises owned, occupied, or controlled by such person, firm, or corporation, in a metal can, and there shall

be used in connection with such metal can a metal cover, and said metal cover shall at all times, except when garbage or waste matter is being deposited in or taken from said metal can, be placed in proper position as a cover on said metal can.

SEC. 4. Every person, firm, or corporation owning, occupying, or controlling any premises in the city of Oakland, when directed by the board of health, shall use on such premises occupied, owned, or controlled by such person, firm, or corporation a rat trap, and shall freshly bait said trap at least twice each week and shall inspect said rat trap daily, and shall remove and kill rats caught therein, and immediately thereafter shall thoroughly smoke and reset and rebait said rat trap after the catching of each rat therein; provided, however, that persons, firms, or corporations owning, occupying, or controlling slaughterhouses in the city of Oakland, when directed by the board of health, shall use in said slaughterhouses at least two rat traps and shall freshly bait said rat traps at least twice each week, and shall inspect said rat traps daily, and shall remove and kill rats caught therein, and shall thoroughly smoke and reset and rebait said rat traps after the catching of each rat therein.

SEC. 5. It shall be the duty of the health officer of the city of Oakland and of the board of health of the city of Oakland, and of the agents and inspectors appointed by the board of health to enforce the provisions of this ordinance; and the health officer of the city of Oakland, and the agents and inspectors appointed by the board of health, shall have power and authority to enter all premises at and during reasonable hours for the purpose of determining whether or not the provisions of this ordinance are being obeyed; and no person, firm, or corporation shall erect or construct, in the city of Oakland, any building or structure, without first securing from the health officer of the city of Oakland a certificate to the effect that said building or structure when completed will be in accordance with requirements of this ordinance applicable thereto.

SEC. 6. No person, firm, or corporation shall have or permit upon any premises owned, occupied, or controlled by him or it any nuisance detrimental to health, or any accumulation of filth, garbage, decaying animal or vegetable matter, or any animal or human excrement, and it shall be the duty of the health officer of the city of Oakland to cause any such person, firm, or corporation to be notified to abolish and abate said nuisance and remove said matter, and in case said person, firm, or corporation shall fail, neglect, or refuse to remove the same within one day, after receiving such notice, such nuisance may be abolished and abated and said matter removed under and by order of the health officer, and the person, firm, or corporation whose duty it was to abolish or abate said nuisance or remove said matter, in addition to incurring penalties in this ordinance provided, shall become indebted to the city of Oakland for the damages, costs, and charges incurred by the city by reason of the existence of said nuisance and removal of said matter.

SEC. 7. No person, firm, or corporation shall dump or place upon any land, or in any water or waterways, within the city of Oakland, any dead animal, butchers' offal, fish, or parts of fish, or any waste vegetable or animal matter whatever.

SEC. 8. No person, firm, or corporation, whether the owner, lessee, occupant, or agent of any premises, next adjacent to any area way or

court, shall keep or permit to be kept in the said premises next adjacent to said area way or court, or in any alley, street, or public place adjacent to premises which premises are next adjacent to an area way or court, any waste animal or vegetable matter, dead animal, butchers' offal, fish or parts of fish, ashes, swill, or any refuse matter from any restaurant, eating house, residence, place of business, or other building, unless the same be collected and kept in a tightly covered or closed metal can or vessel, which can or vessel shall have firmly attached to the body thereof a metallic tag or label bearing the name or names of the owner or owners thereof and the number of the premises in connection with which such can or vessel is being used or intended to be used.

SEC. 9. No rubbish, waste matter, or manure shall be placed, left, or dumped or permitted to accumulate or remain in any building, place, or premises in the city of Oakland, so that the same shall or may afford food or a harboring or breeding place for rats.

SEC. 10. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in the sum not exceeding $500, and in case said fine be not paid, then by imprisonment in the city prison of the city of Oakland at the rate of one day for every $2 of the fine so imposed and unpaid.

SEC. 11. All ordinances and parts of ordinances in conflict herewith are hereby repealed.

SEC. 12. This ordinance shall take effect immediately after its passage and approval.

ANTIRAT ORDINANCE OF SEATTLE, WASH.

[Ordinance No. 17391—Approved Nov. 14, 1907.]

AN ORDINANCE RELATING TO AND PROVIDING FOR THE PROTECTION OF BUILDINGS, FOOD PRODUCTS, AND OTHER GOODS, WARES, AND MERCHANDISE FROM INVASION AND CONTAMINATION BY RATS, AND PROVIDING PENALTIES FOR VIOLATION THEREOF.

Be it ordained by the city of Seattle as follows:

SECTION 1. *Protection of food products from rats.*—For the purpose of protecting the inhabitants of the city of Seattle from infectious and contagious diseases, and especially from the disease known as bubonic plague, it is hereby declared to be unlawful to keep or store or expose for sale, or to keep or store for any other purpose whatsoever, any food products, or other goods, wares, and merchandise of whatever kind or nature, or to keep, maintain, occupy, or reside in any building, storeroom, grain elevator, warehouse, or residence within the limits of the city of Seattle without complying with the provisions in this ordinance contained for the protection of food products and other goods, wares, and merchandise from invasion and contamination by rats.

SEC. 2. *Buildings, how protected.*—All buildings and basement walls of all storerooms, grain elevators, warehouses, residences, or other buildings shall be so constructed or repaired by the use of screens, netting, cement, or other materials approved by the health officer of the city of Seattle as to prevent rats from gaining entrance to such buildings, and all food products or other products, goods, wares, and

merchandise, whether kept for sale or any other purpose, shall be so protected as to prevent rats from gaining access thereto or coming in contact therewith. All storerooms, grain elevators, warehouses, residences, or other buildings in the city of Seattle shall be provided with two or more traps of a pattern approved by the health officer, such traps to be freshly baited at least twice each week, and shall be inspected daily and any rat or rats caught therein removed and such trap or traps thoroughly smoked and reset and rebaited.

SEC. 3. *Docks, how protected.*—All docks in the city of Seattle shall be protected by wire screens or netting or other materials approved by the health officer, and so installed as to prevent rats from gaining entrance to such docks at either high or low tide from vessels anchored or moored alongside of such docks or from other sources, and all food products and other goods, wares, and merchandise stored in docks shall be so kept and stored as to prevent rats from gaining access thereto or coming in contact therewith. All docks shall be provided with two or more traps of an approved pattern, which shall be freshly baited at least twice each week and inspected daily so that rats caught therein may be removed and such traps shall be thoroughly smoked and reset and rebaited.

SEC. 4. *Slaughterhouses, how protected.*—All slaughterhouses of whatever kind or nature in the city of Seattle shall be so protected by the use of wire screens or netting or cement or other approved materials, as to prevent rats from gaining access to the building or buildings thereof, and all holes and openings in the building or basement walls shall be thoroughly stopped with cement or other materials, and all food products stored in slaughterhouses shall be so kept and stored as to prevent rats from coming in contact therewith. All slaughterhouses shall be provided with traps as required by the provisions of this ordinance for other buildings in the city of Seattle.

SEC. 5. *Penalty.*—Any person found guilty of a violation of the provisions and requirements of this ordinance shall be deemed guilty of a misdemeanor and shall be punished by a fine not exceeding the sum of $100, or imprisoned in the city jail for a term not exceeding 30 days, or may be both fined and imprisoned.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BROOKLINE, MASS.

COMMUNICABLE DISEASES—BURIALS.

ARTICLE VIII. SECTION 1. No public funeral shall be held over the remains of any person who has died of smallpox, scarlet fever, diphtheria, cerebrospinal meningitis, or infantile paralysis without the written permit of the board of health, and under such regulations as may prevent the spread of any of said diseases. The remains of any person who has died from any of said diseases shall at once be placed in a tight or sealed coffin, and shall not thereafter be exposed to view or disturbed except for burial.

SEC. 2. That in case of death where the deceased had not been attended by a practicing physician, the certificate of death shall be issued by the medical examiner.

SEC. 3. That no dead body of any person shall be carried to any cemetery, or from one place to another within the town, in any public vehicle other than a hearse or undertaker's vehicle provided for that purpose.

[Ordinance, board of health, adopted Nov. 6, 1911.]

EAST PROVIDENCE TOWN, R. I.

COMMUNICABLE DISEASES—NOTIFICATION, SCHOOL ATTENDANCE, FUNERALS.

SECTION 1. Every physician having knowledge of the existence of any cases of contagious, infectious, or epidemic disease within the town of East Providence shall immediately make report thereof to the health officer of said town, with such particulars as said health officer may indicate, on blanks furnished for that purpose.

SEC. 2. The diseases referred to in the preceding section shall include cholera, yellow fever, typhus fever, typhoid fever, cerebrospinal meningitis, diphtheria, smallpox, scarlet fever, measles, intermittent fever, anterior poliomyelitis, commonly called infantile paralysis, and such other contagious, infectious, and epidemic diseases as the health officer may from time to time designate.

SEC. 3. Any physician who shall fail to comply with the provisions of the preceding sections shall be fined not less than $2 nor more than $10 for each day of such neglect after having knowledge thereof as aforesaid.

SEC. 4. Every physician, householder, or other person having knowledge of the existence of scarlet fever, diphtheria, or other contagious disease in any house or place in said town shall forthwith give notice of the same to the health officer, who shall without delay cause to be placed upon such house or place a card bearing the name of such disease, which card shall not be removed except by permission of such health officer.

SEC. 5. No person living in a family where there is a case of smallpox shall attend school until the patient shall have passed the period of desiccation (falling off of scabs), nor until the house has been fumigated under the direction and to the satisfaction of the health officer, nor without certificate from said health officer that said period has elapsed and that said fumigation has been properly performed.

SEC. 6. No person living in a family where there is a case of scarlet fever shall attend school until at least five weeks from the beginning of the last case, nor until the house has been properly fumigated in the manner hereinbefore provided, nor without certificate from the health officer setting forth said facts,

SEC. 7. No person living in a family where there is a case of diphtheria shall attend school until at least one week after the recovery of the last patient, nor until said house has been properly fumigated in manner aforesaid, nor without a satisfactory certificate from said health officer.

SEC. 8. The above rules shall, when deemed necessary by the health officer, be extended to all persons living in the same house where any of the above diseases exist, and said health officer may, in his discretion, extend the period of isolation specified in the preceding sections.

SEC. 9. No person with measles, whooping cough, mumps, or chicken pox shall attend school until complete recovery certified to by the health officer.

SEC. 10. Such certificates will be required by the teacher in every case before the persons referred to in the foregoing sections can be admitted to school.

SEC. 11. The funeral of every person who has died of smallpox or diphtheria, scarlet fever, typhus fever, Asiatic cholera, or other contagious or infectious disease, shall be private; and the undertaker or person having the care or custody of the body of such deceased shall cause to be conspicuously affixed to the coffin, casket, or other receptacle containing such remains, and in case said coffin, casket, or receptacle shall be inclosed in a box, then upon said box, a card bearing the name of the disease whereof such person died, which card shall not be removed; and no person having the care or custody of such body shall do or knowingly or willfully permit to be done any unnecessary act by which such disease may be spread from such dead body.

SEC. 12. Every person who shall violate any of the provisions of the preceding section shall, upon conviction thereof, pay a fine of not more than $20, or be imprisoned not exceeding 10 days; and any undertaker who shall violate any provision of said section, upon conviction thereof, shall in addition to the above penalty be thereupon and thereby removed from the office of undertaker.

SEC. 13. Any person who shall violate any of the provisions of this ordinance, the punishment whereof has not been hereinbefore provided for, shall, upon conviction thereof, pay a fine of not more than $20, or be imprisoned not exceeding 10 days.

[Chap. 28 of an ordinance adopted Aug. 2, 1911.]

FLINT, MICH.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. No person, company, or corporation shall engage in the sale, delivery, or distribution of milk in Flint without a license from the clerk of the city of Flint as hereinafter provided. For the purpose of this ordinance, the word "person" shall hereinafter mean individual, partnership, or corporation.

SEC. 2. All persons keeping one or more cows for the purpose of selling or distributing milk within the city limits shall comply with this ordinance and be subject to the inspection and penalties it imposes.

SEC. 3. Persons desiring to engage in such business within the city of Flint shall make application for said license in writing to the city clerk, upon blanks furnished by the board of health, who shall issue same to any person complying with the provisions of this ordinance, upon the payment to him of the sum of $1 therefor. The money thus collected, together with that received as fines, for the violation hereof if any there be, shall be used to defray the expense incurred in carrying out the provisions of this ordinance. The application for the license shall contain an agreement on the part of the applicant that he will accept a license, if granted to him, upon the condition that it may be revoked at the will of the common council. The applicant shall also at the time he makes application for a license as herein mentioned, present a written consent from each person from whom he obtains milk, granting permission to the health officer of the city of Flint, his representative, or any member of the board of health of said city, free and open access to his dairy or premises for the purpose of making an inspection of the premises or herd, and upon consent of the owner of said herd, to apply the tuberculin test as hereinafter provided, said producer's permit shall be in the following form:

PRODUCER'S PERMIT.

Date ———

"I ——— ———, a producer of milk sold in the city of Flint, Mich., grant permission to the health officer of said city, his representative or any member of the board of health of the city of Flint, Mich., free and open access to my dairy, premises, utensils, wagons, and conveyances for the purpose of making inspection of the same so long, or while milk of my production shall be sold in said city.

"Dated ——— ———.

"Signed ——— ———."

Each license shall be good, unless sooner revoked, until May 1 following the date of issuance. The city clerk shall number each license consecutively in the order of their issuance and the licensee shall at all times have said numbers displayed in plain large letters on the outside of each vehicle used in distributing or selling milk under the provisions of this ordinance. Licenses shall not be transferable.

SEC. 4. When an application for a license has been made it shall be the duty of the board of health, the milk inspector, or other person authorized by the board of health, to investigate and report, without unreasonable delay, upon the herd, premises from which the milk comes, and methods of handling, storing, cooling, and distributing the milk. A record of this examination shall be kept on "the score cards for the production of sanitary milk," issued by the food and dairy department of the State of Michigan. A license shall be granted only to those whose total scores reach the 450 mark given on said score card and deemed necessary to procure what is called "good milk." This score card properly filled out, by the board of health, shall be attached to the application for license and filed in the office of the city clerk previous to the issuance of such license.

SEC. 5. It shall be the duty of the board of health to ascertain that the cows from which the applicant proposes to obtain milk for sale or distribution are free from tuberculosis and other infectious or contagious diseases. No cow shall be considered free from tuberculosis except after showing no response to the tuberculin test, as applied by a duly licensed veterinary. The cows from which the applicant proposes to obtain milk for sale and distribution shall be examined by a licensed veterinary before the city clerk shall issue a license, and an examination of each of the cows in the herd from which milk is obtained for sale and distribution shall be made at least once a year thereafter, and each animal tagged in a manner to afford a permanent record of the examination, and no license shall be granted to any applicant until the cows from which he proposes to obtain milk for sale or distribution are shown to be free from tuberculosis and other infectious and contagious diseases. No milk or cream shall be sold or offered for sale within the corporate limits of the city of Flint from any cow added to a herd until such cow has been examined by a licensed veterinary, and upon such examination found free from tuberculosis and other infectious or contagious diseases and such an examination shall have taken place within six months from the time it is proposed to add such cow to the herd from which any milk dealer or vendor obtains miik sold or offered for sale within the corporate limits of the city of Flint. In all cases the expense of the veterinary shall be paid by the owner of the cow or cows.

SEC. 6. For the purpose of assisting the dairymen, the board of health may publish a leaflet for distribution among them containing information concerning the source, straining, cooling, storage, keeping, handling, conveying, temperatures, and other treatment and conditions of milk, which shall also include information on the sanitary conditions imposed under this ordinance and the State law, of dairymen, of cows, dairies, ice, stables, wagons, pasture, buildings, rooms, utensils, and other apparatus and methods used in handling milk.

SEC. 7. No milk shall be offered for sale in the city of Flint which is unwholesome, adulterated, or impure. For the purpose of this ordinance, milk shall be considered unwholesome, adulterated, or impure when it—

(*a*) Contains any preservative whatever.
(*b*) Has had any water or other foreign substance added.
(*c*) Has had a temperature of more than 50° F.
(*d*) Has, if milk, less than 3 per cent fat.
(*e*) Has, if cream, less than 20 per cent fat.
(*f*) Has not a specific gravity between 1.029 and 1.033 at 60° F.
(*g*) Comes from cows fed upon swill, garbage, or brewery refuse.
(*h*) Is drawn from cows within 15 days before or 5 days after parturition.
(*i*) Comes from localities where the attendants are affected with or exposed to infectious or contagious diseases.
(*j*) Is placed in containers which are not properly washed or are washed or rinsed with polluted water.
(*k*) Shows by test more than 100,000 bacteria per cubic centimeter.

SEC. 8. Skimmed milk, sour milk, or buttermilk may be sold if plainly so marked.

SEC. 9. Milk or cream shall not be sold or offered for sale or delivered except in bottles or sealed cans, which sealed cans shall be of not less than 1 gallon capacity, and they shall not be used for any other purpose. Bottles and cans may be filled only at the dairy and such other places as the board of health have approved. The cleansing and sterilizing of all bottles and milk utensils shall be subject to the approval of the board of health.

SEC. 10. No tickets shall be used more than once.

SEC. 11. No milk shall be used or sold which comes from any place where there is contagious disease until after fumigation of the premises by the health officer or his duly authorized agent, and permission obtained in writing from the board of health. Bottles left at any place where there is a contagious disease shall not be collected and used until after disinfection under the direction of the health officer.

SEC. 12. It shall be the duty of the board of health and the milk inspector or inspectors to see that the provisions of this ordinance are fully complied with at all times. They shall at all times have the right to examine samples of milk.

SEC. 13. The common council may, after the taking of effect of this ordinance, appoint one or more milk inspectors who shall hold office until his successor is appointed and has qualified, unless removed by the common council.

SEC. 14. For the purpose of carrying out the provisions of this ordinance, the board of health, milk inspector or inspectors, and their assistants shall have the right at any and all times to enter the premises of any person licensed under this ordinance to examine and inspect the dairy and herd, and to appropriate a sufficient amount of milk or milk product for examination and analysis. The results of such examinations shall be made public and published. The board of health or its agents shall have equal rights upon the premises of anyone from whom a licensee procures or has given notice of his intention to procure milk, cream, skimmed milk, sour milk, or buttermilk.

SEC. 15. Whenever, upon examination, any milk or milk product offered for sale or delivery, in the city of Flint, is found to be unwholesome, adulterated, or impure, according to section 7 of this ordinance, the board of health shall, if deemed necessary, seize the same and destroy or otherwise dispose of it. In such cases no compensation shall be made to the owner therefor.

SEC. 16. The board of health is hereby authorized to purchase from time to time such equipment as may be necessary for the purpose of testing milk.

SEC. 17. Any person, company, or corporation violating any of the provisions of this ordinance shall, upon conviction thereof, be punished by a fine not exceeding $100 or by imprisonment in the county jail of Genesee County not exceeding 90 days, or by both such fine and imprisonment in the discretion of the court trying the offender.

SEC. 18. All ordinances and parts of ordinances inconsistent herewith are hereby repealed.

[Ordinance adopted Jan. 16, 1912.]

MARQUETTE, MICH.

COMMUNICABLE DISEASES—ARTICLES AND PLACES INFECTED WITH.

That section 4 of an ordinance entitled "An ordinance relative to the public health," adopted March 7, 1898, be and the same is amended so as to read as follows:

"SEC. 4. No person shall knowingly bring or procure or cause to be brought into the city, any property of any kind tainted or infected with any malignant fever or pestilential or infectious disease; and no person, other than a licensed physician, shall enter or leave any vessel, vehicle, premises, building, room, or other place in the city while the same is quarantined or placarded as a warning of the existence therein of any disease dangerous to the public health, unless authorized so to do by the health officer or the board of health."

[Ordinance adopted Oct. 2, 1911.]

OIL CITY, PA.

COMMUNICABLE DISEASES—NOTIFICATION AND DISINFECTION.

Rule 46. Each and every physician practicing within the limits of the city shall immediately report by telephone all cases of scarlet fever, diphtheria, and smallpox occurring within their practice and confirm such report by the regular mail report within 24 hours, and all additional cases of reportable diseases occurring in a family already under quarantine shall be reported on the regular report blank.

Rule 47. It shall be the duty of every person, or persons, the keeper or proprietor of any boarding or lodging house or hotel to report to the board of health any knowledge they may have of the existence of any person or persons suffering from tuberculosis in any form.

Rule 48. Adequate disinfection or fumigation of all premises, furniture, or belongings, used or occupied by any person or persons suffering from tuberculosis, shall be made by the board of health immediately upon the death or removal of said person or persons.

Rule 49. It shall be unlawful for any person, persons, or corporations, owner or agent, to let any house, or part of a house or building or apartments, which has been occupied by any person or persons suffering from tuberculosis, without first reporting the same to the board of health and a proper fumigation or disinfection of the premises being made by the board of health.

Rule 50. It shall be unlawful for any person or persons to in any way interfere or obstruct the entrance, inspection, examination, or fumigation of any house, building, apartment, furniture, or belongings, or the occupants thereof, by the health officer or his deputy, when any case of contagious, infectious, or communicable disease has been reported as existing in such house, building, or apartment.

[Regulations board of health, adopted Oct. 18, 1911.]

YONKERS, N. Y.

HEALTH OFFICER—DUTIES OF.

SECTION 1. It shall be the duty of the health officer to see that the provisions of the sanitary code, the ordinances, rules, regulations, and requirements of the health bureau of the city of Yonkers are properly complied with, and to report to the commissioner of public safety forthwith any violation thereof, as well as any law of the State of New York relating to the public health which has been violated in the city of Yonkers.

SEC. 2. The health officer shall report to the commissioner of public safety bimonthly all matters relating to public health which shall have come under his observation, or of which he shall have been informed, and at the first meeting of each month he shall report a table to be made up from the most reliable sources which he can command, showing the mortality within the city of Yonkers within the month then passed, and showing the particular cause thereof, specifying the different diseases, and such other information as may be necessary and important to keep said commissioner informed of the condition of the health of the city, and to enable him to prevent the spread or increase of disease; and he shall at such other times as he may deem proper communicate to the commissioner of public safety matters relating to the health of the city.

SEC. 3. The health officer or other duly authorized officers of the health bureau is hereby empowered:

(*a*) To enter upon and into any premises, lots, yards, buildings, and houses within the city of Yonkers at all reasonable times, for the purpose of investigating any suspected cause or promotant of disease or ill health, and to order and direct the removal or remedy of such cause or promotant of disease or ill health, or to remedy or remove the same.

(*b*) To examine all infected houses, buildings, dwellings, outhouses, yards, and other premises.

(*c*) To cause a smoke test or peppermint test to be applied to the plumbing and drainage system of all houses in the city of Yonkers infected with contagious disease.

(*d*) To examine any building, tenement house, dwelling, stable, vault, water conduit, cesspool, sewer pipe or basin, yard, or other premises during and within all reasonable times, for the purpose of ascertaining the cleanliness, ventilation, or other condition thereof.

(*e*) To require any person, or persons using the same, or occupying the premises whereon the same are situated, or owning said premises, to cleanse, disinfect, ventilate and purify the same, and to empty any such vault, water conduit, cesspool, sewer pipe or basin.

(*f*) To require all persons infected with, or who shall have been exposed to any contagious or infectious disease and not properly isolated, to be removed to the city hospital. The said hospital shall also have the power to ascertain and determine the expense of such removal, and the expense incurred for medical care, attendance and support of the persons so removed, and to report the same to the commissioner of public safety.

(*g*) To examine plans and specifications for plumbing and drainage submitted according to the rules and regulations of the health bureau, and to approve the same when in conformity with such rules and regulations, also to inspect the work of plumbing and drainage upon any premises in the city of Yonkers while the same is in progress and at its completion, and to see that the rules and regulations of the said bureau as to plumbing and drainage are complied with.

SEC. 4. It shall be the duty of the said health officer to personally investigate the sanitary condition of premises and the means employed for the isolation of the patient, in every case of smallpox, typhus fever, scarlet fever, diphtheria, and other dangerous contagious diseases occurring in the city of Yonkers, and to report the same in writing to the commissioner of public safety.

SEC. 5. It shall be the duty of the health officer in every case of smallpox, typhus fever, scarlet fever, diphtheria, or other dangerous contagious diseases occurring in the city of Yonkers, to cause a printed notice or placard denoting the disease, to be placed on the apartment door of all houses occupied by more than one family, and upon the front door of houses occupied by one family, where a contagious disease exists.

SEC. 6. It shall be the duty of the health officer to cause all premises infected with contagious disease to be disinfected and fumigated at the expiration of quarantine, by, or under the supervision of, an inspector of the health bureau.

SEC. 7. Whenever a physician's report, pursuant to the provisions of section 12 of this sanitary code, shall have been received by the health officer, it shall be his duty to record and register in a book suitable for the purpose all of the facts and information stated in such report. Such report and register shall be the property of the health bureau, and shall be confidential, and not accessible to the public except on recommendation of the health officer and by a written order of the commissioner of public safety, when the information may be given for such scientific and sanitary purposes as may be deemed important. The commissioner of public safety shall furnish to the health officer all necessary blanks, envelopes, and postage stamps required for making such such report, the same to be delivered by the health officer to the physician. [Part of ordinance adopted Dec. 26, 1911.]

PLAGUE.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended August 3, 1912, positive diagnosis was made of 14 plague-infected ground squirrels found in Alameda and Contra Costa Counties, Cal., as follows: Alameda County, July 31, 1 squirrel; August 2, 1 squirrel. Contra Costa County, July 26, 1 squirrel; July 29, 3 squirrels; July 31, 4 squirrels; August 1, 3 squirrels; August 2, 1 squirrel.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Franciso Bay, 4,612 acres of land in Alameda County were covered with poison during the week ended August 3, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Aug. 2, 1912	243 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	do	1,078 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	6 squirrels.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Louisiana:				
City—				
New Orleans	do	July 27, 1912	None	1 rat.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	do	25 rats.

Rats Collected and Examined for Plague Infection.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California—Cities:					
Berkeley	Aug. 3, 1912	1	[1] 148	89	.....
Oakland	.....do.....	22	[2] 654	495	.....
San Francisco	.....do.....	[3] 29	[4] 1,841	1,437	.....
Washington—City:					
Seattle	.....do.....	.....	964	896	.....

[1] Identified: Mus norvegicus, 99; mus musculus, 49.
[2] Identified: Mus norvegicus, 552; mus rattus, 3; mus musculus, 99.
[3] Of this number, 24 rats were taken from the steamships Shinyo Maru and Bessie Dollar (1) after fumigation.
[4] Identified: Mus norvegicus, 964; mus alexandrinus, 259; mus musculus, 328; mus rattus, 290.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended August 3, 1912, 87 squirrels from Alameda County, 751 from Contra Costa County, and 81 from Stanislaus County, Cal., were examined for plague infection. Two from Alameda County and 12 from Contra Costa County were found infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED AUGUST 3, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md	.....	1	Niagara Falls, N. Y	.....	1
Bennington, Vt	1	1	Orange, N. J	1	.....
Boston, Mass	2	1	Pittsfield, Mass	.....	1
Cleveland, Ohio	2	2	St. Louis, Mo	1	.....
Dayton, Ohio	.....	3	Superior, Wis	.....	1
New York, N. Y	10	5	Wilmington, N. C	.....	1

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED AUGUST 3, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Cleveland, Ohio	1	.....	Plainfield, N. J	3	.....
New York, N. Y	2	2	St. Louis, Mo	2	.....
Oklahoma City, Okla	1	.....	York, Pa	1	.....
Philadelphia, Pa	2	1			

LEPROSY.

During the week ended August 3, 1912, 1 case of leprosy was reported at Tampa, Fla.

PELLAGRA.

During the week ended August 3, 1912, pellagra was reported as follows: Boston, Mass., 1 death; Chattanooga, Tenn., 1 case; Columbus, Ga., 1 death; New York, N. Y., 1 death; San Antonio, Tex., 1 death.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED AUGUST 3, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa.		1	Moline, Ill.		1
Baltimore, Md.		12	Nashville, Tenn.		1
Binghamton, N. Y.		1	Newark, N. J.		2
Boston, Mass.		16	New Bedford, Mass.		2
Bridgeport, Conn.		2	New Orleans, La.		4
Butte, Mont.		2	New York, N. Y.		44
Cambridge, Mass.		1	Northampton, Mass.		2
Chicago, Ill.	4	35	Oakland, Cal.		3
Cincinnati, Ohio.		2	Oklahoma City, Okla.		2
Cleveland, Ohio.	12	5	Omaha, Nebr.		1
Dayton, Ohio.		2	Passaic, N. J.		1
Duluth, Minn.	2	2	Pawtucket, R. I.		2
Elizabeth, N. J.		1	Philadelphia, Pa.	16	22
Evansville, Ind.		2	Providence, R. I.		1
Fall River, Mass.		1	Reading, Pa.		1
Fort Wayne, Ind.		1	Rockford, Ill.		1
Harrisburg, Pa.		1	San Diego, Cal.	2	2
Kalamazoo, Mich.	1	3	Spokane, Wash.		1
Lancaster, Pa.	1		Springfield, Mass.		1
Lawrence, Mass.		3	Wilkes-Barre, Pa.		2
Los Angeles, Cal.	1	4	Worcester, Mass.		1
Lowell, Mass.		2	Yonkers, N. Y.		1
Lynn, Mass.		1			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED AUGUST 3, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md.	9	1	Los Angeles, Cal.	30	8
Chicago, Ill.		1	New York, N. Y.	8	2
Cincinnati, Ohio.	1		Philadelphia, Pa.	2	
Cleveland, Ohio.	9		Springfield, Mass.	8	1
Dayton, Ohio.	1	2			

THE OUTBREAK OF POLIOMYELITIS AT BUFFALO, N. Y.

Passed Asst. Surg. Frost, detailed, upon the request of the State commissioner of health of New York, to cooperate with the State and local authorities in a study of the epidemic of poliomyelitis in Buffalo, reports as follows:

The first recorded outbreak of poliomyelitis in Buffalo occurred in the summer and fall of 1910. During the year there were reported to the health department 24 cases, a number altogether unknown in previous years. In 1911 only 9 cases were reported. During the present year cases have been reported as follows:

January	2
May	1
Week ending June 29	3
Week ending July 6	2
Week ending July 13	4
Week ending July 20	13
Week ending July 27	27
Week ending Aug. 3	28
Week ending Aug. 10	18
Week ending Aug. 17	33
Total	131

The above figures, although corrected as far as possible at present, may have to be slightly revised on closer study of the cases.

It is believed, however, that they give an approximately accurate idea of the course of the present outbreak, except for the slight error introduced by the tabulation of cases according to the dates on which reported rather than the dates of onset.

Of the cases so far reported, 11 (8.4 per cent) have terminated fatally. It is, however, not improbable that this mortality may be increased, since a considerable number of cases are at present under treatment, in the acute stage of illness.

In addition to the cases in Buffalo Dr. Eugene H. Porter, commissioner of health of New York State, reports cases in neighboring municipalities as follows:

	Cases.
Silver Creek, Erie County	5
Lackawanna, Erie County	2
Lockport, Niagara County	3
North Tonawanda, Niagara County	5

The Buffalo Department of Health, while it has very justly pointed out that the prevalence of poliomyelitis is not sufficiently great to justify the popular alarm that is felt, has taken very prompt action both for the investigation and the control of the outbreak.

A careful epidemiologic investigation is being made of each case, with a view to obtaining such information as is possible regarding the source of infection.

In addition the department has detailed two especially qualified physicians from the staff of the municipal hospital for contagious diseases to make careful, detailed clinical studies of the cases admitted to the hospital and all others that are accessible; and to act as consulting diagnosticians, free of charge, whenever their services are required. In response to a circular issued by the health department the physicians of the city are cooperating very satisfactorily in the effort to discover and report cases early and to collect systematic observations of the early symptoms.

Provision has also been made by the health department for free treatment, in the contagious-disease hospital, of all cases which may be referred to it.

Physicians are required to report all cases definitely diagnosed, and are urged to report suspicious cases.

Upon receipt of a report of a case of poliomyelitis a medical inspector is sent to the home of the patient to placard the house, to leave a circular of instructions relative to the prophylactic care of the patient, and to impose such quarantine as may be necessary and practicable. The circular of instruction, a copy of which is herewith inclosed, directs isolation of the patient, exclusion of insects and domestic animals from the room, the avoidance of dust, the disinfection of all the patient's discharges and all articles soiled with them.

Members of the patient's family are, so far as possible, isolated, on the one hand from contact with the patient, and on the other hand from association with other families. At the discretion of the medical inspector, those whose business requires them to leave their homes may be allowed to do so, provided the proper precautions are exercised at their homes and that their work is not of

such a character as to bring them into especially close and dangerous contact with others.

The premises are fumigated three weeks after the onset of illness or immediately after removal or death of the patient; and contacts are excluded from public gathering for three weeks thereafter.

The investigations have not yet progressed far enough to justify any definite conclusion as to the origin and spread of the epidemic. Apparently the earlier cases were, for the most part, grouped in the central congested part of the city, while the cases reported later have been widely scattered throughout all sections of the city.

The cases of which records have been obtained so far have been generally of rather mild type, with few instances of extensive paralysis, a considerable proportion of complete recoveries and quite a number of others in which ultimate complete recovery may be expected.

It is worthy of note that physicians are recognizing and reporting mild cases and are not infrequently able to make their diagnosis before the appearance of paralysis. The services of the diagnosticians designated by the health department are being frequently requested for the diagnosis of suspicious cases in the early stage of infection. This is evidence of a marked advance during the last few years in the knowledge and recognition of poliomyelitis in its atypical forms and in its early stage.

TETANUS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED AUGUST 3, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass		1	Newark, N. J		1
Chicago, Ill		3	New York, N. Y		1
Lancaster, Pa	4		Wilkes-Barre, Pa		1
New York, N. Y		1	Worcester, Mass		1
Lynn, Mass		1			

SMALLPOX IN THE UNITED STATES.

CITY REPORTS.

Cases and Deaths Reported by City Health Authorities for the Week Ended Aug. 3, 1912.

Cities.	Cases.	Deaths.	Cities.	Cases.	Deaths.
Carbondale, Pa	1		Medford, Mass	1	
Chicago, Ill	1		Milwaukee, Wis	3	
Cincinnati, Ohio	1		New Orleans, La	2	
Dayton, Ohio	2		Niagara Falls, N. Y	1	
Detroit, Mich	3		Oakland, Cal	1	
Duluth, Minn	5		Passadena, Cal	1	2
Fort Wayne, Ind	1		Rockford, Ill	1	
Kalamazoo, Mich	1		St. Louis, Mo	1	
Knoxville, Tenn	1		Wilmington, N. C	1	
Los Angeles, Cal	5	3			

STATE REPORTS.

This table is compiled from reports made to the Bureau of the United States Public Health Service by the health authorities of certain States, and shows the number of cases of smallpox notified to the authorities in these States.

The following States report monthly: Arizona, California, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Mississippi, Montana, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

Florida, Minnesota, and the District of Columbia report by weeks.

Reports Received During Week Ended Aug. 23, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Maryland, exclusive of Baltimore.	July 1-31	.....	.....	No case.
Ohio:				
Counties—				
Athens	July 1-31	5	.....	
Franklin	do	3	.....	
Hamilton	do	4	.....	
Lucas	do	12	.....	
Montgomery	do	8	.....	
Seneca	do	1	.....	
Summit	do	25	.....	
Total for State		58	.....	
North Dakota:				
Counties—				
Benson	July 1-31	1	.....	
Bottineau	do	12	.....	
Burleigh	do	1	.....	
Burke	do	5	.....	
Steele	do	1	.....	
Walsh	do	1	.....	
Total for State		21	.....	
Pennsylvania	June 1-30	47	.....	
Virginia:				
Counties—				
Amelia	July 1-31	6	.....	
Botetourt	do	4	.....	
Brunswick	do	1	.....	
Dinwiddie	do	4	.....	
Greenville	do	5	.....	
Henrico	do	5	.....	
Lee	do	3	.....	
Mecklenburg	do	1	.....	
Nansemond	do	1	.....	
Roanoke	do	1	.....	
Smythe	do	13	.....	
Sussex	do	1	.....	
Total for State		45	.....	
Washington:				
Counties—				
Ferry	June 1-30	2	.....	
Island	do	1	.....	
King	do	1	.....	
Kittitas	do	10	.....	
Lewis	do	2	.....	
Okanogan	do	8	.....	
Pierce	do	4	.....	
Spokane	do	26	.....	
Thurston	do	1	.....	
Whatcom	do	1	.....	
Whitman	do	4	.....	
Yakima	do	18	.....	
Total for State		78	.....	
Grand total		249	.....	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLES, CITIES OF THE UNITED STATES, FOR WEEK ENDED AUG. 3, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.												
Baltimore, Md	558,485	192	6	.....	4	.....	8	.....	58	23	32	3
Boston, Mass	670,585	211	20	2	28	1	5	.....	59	16	12	.....
Chicago, Ill	2,185,283	585	95	9	57	1	82	7	151	56	24	1
Cleveland, Ohio	560,663	147	24	1	13	1	25	.....	27	8	5	2
New York, N. Y	4,766,883	1,367	211	12	207	12	104	7	431	127	100	7
Philadelphia, Pa	1,549,008	445	29	2	5	.....	23	1	114	47	54	4
St. Louis, Mo	687,029	217	7	1	6	1	3	1	45	15	18	1
Cities having from 300,000 to 500,000 inhabitants.												
Cincinnati, Ohio	364,463	88	5	1	10	.....	4	.....	30	9	9	1
Detroit, Mich	465,766	155	12	3	.....	.....	8	.....	.....	.....	.....	.....
Los Angeles, Cal	319,198	95	1	.....	8	.....	2	.....	25	15	12	.....
Milwaukee, Wis	373,857	88	14	2	5	.....	7	1	20	8	2	2
Newark, N. J	347,469	92	11	.....	12	.....	6	.....	29	5	8	.....
New Orleans, La	339,075	148	3	.....	.....	.....	14	.....	23	14	3	1
Washington, D. C	331,069	118	7	.....	25	.....	1	.....	26	9	18	5
Cities having from 200,000 to 300,000 inhabitants.												
Jersey City, N. J	267,779	65	.....	1	.....	.....	.....	1	.....	4	.....	.....
Providence, R. I	224,326	45	8	.....	.....	.....	10	.....	2	5	4	.....
Cities having from 100,000 to 200,000 inhabitants.												
Bridgeport, Conn	102,054	25	2	.....	1	.....	2	.....	1	3	1	.....
Cambridge, Mass	104,839	24	4	1	3	.....	.....	.....	6	4	2	.....
Columbus, Ohio	181,548	51	2	.....	4	.....	3	.....	10	6	6	1
Dayton, Ohio	116,577	53	4	2	2	.....	.....	.....	1	2	1	.....
Fall River, Mass	119,295	50	.....	.....	.....	.....	.....	.....	3	5	.....	.....
Lowell, Mass	106,294	30	2	.....	6	.....	5	.....	2	2	1	.....
Nashville, Tenn	110,364	37	1	.....	.....	.....	3	.....	4	3	10	1
Oakland, Cal	150,174	44	2	.....	3	.....	2	.....	6	5	7	1
Omaha, Nebr	124,096	21	.....	.....	.....	.....	1	.....	.....	3	4	.....
Richmond, Va	127,628	58	2	.....	.....	.....	4	.....	7	4	7	2
Spokane, Wash	104,402	.....	.....	.....	1	.....	4	.....	.....	1	1	.....
Toledo, Ohio	168,497	58	2	.....	10	1	2	.....	.....	8	3	2
Worcester, Mass	145,986	55	6	.....	.....	1	4	.....	.....	.....	1	.....
Cities having from 50,000 to 100,000 inhabitants.												
Altoona, Pa	52,127	8	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Bayonne, N. J	55,545	13	1	.....	15	.....	4	.....	4	1	.....	.....
Brockton, Mass	56,878	7	1	.....	.....	.....	1	1	3	.....	2	.....
Camden, N. J	94,538	.....	5	.....	.....	.....	.....	.....	4	.....	1	.....
Duluth, Minn	78,466	18	1	.....	.....	.....	8	.....	.....	2	4	1
Elizabeth, N. J	73,409	21	1	.....	1	.....	2	1	3	2	2	.....
Evansville, Ind	69,647	14	.....	.....	.....	.....	.....	.....	.....	1	1	.....
Fort Wayne, Ind	63,933	14	.....	.....	.....	.....	1	.....	.....	.....	2	.....
Harrisburg, Pa	64,186	14	1	.....	1	.....	.....	.....	2	2	.....	.....
Hartford, Conn	98,915	31	.....	.....	8	.....	3	.....	3	2	.....	.....
Hoboken, N. J	70,324	.....	1	.....	.....	.....	2	.....	4	1	.....	.....
Johnstown, Pa	55,482	23	1	.....	4	.....	5	.....	.....	1	3	.....
Kansas City, Kans	82,331	.....	.....	.....	.....	.....	.....	.....	3	.....	2	.....
Lawrence, Mass	85,892	31	.....	.....	1	1	.....	.....	3	1	.....	.....
Lynn, Mass	89,336	16	2	.....	2	.....	.....	.....	1	.....	.....	.....
Manchester, N. H	70,063	16	.....	.....	.....	.....	3	.....	.....	.....	.....	.....
New Bedford, Mass	96,652	31	1	.....	3	.....	2	.....	2	5	.....	.....
Oklahoma City, Okla	64,205	19	.....	.....	.....	.....	.....	.....	.....	1	4	.....
Passaic, N. J	54,773	23	.....	.....	10	.....	.....	.....	1	.....	1	.....
Pawtucket, R. I	51,622	4	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Peoria, Ill	66,950	12	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Portland, Me	58,571	21	.....	.....	.....	.....	3	.....	.....	3	9	.....
Reading, Pa	96,071	30	4	.....	7	.....	1	.....	1	1	10	.....

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality tables, cities of the United States, for week ended Aug. 3, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.												
Saginaw, Mich.	50,510	12	1				1		1		1	
San Antonio, Tex.	96,614	43					1			3	1	
South Bend, Ind.	53,684	12					2		1	2		
Springfield, Ill.	51,678	19	1				2				4	1
Springfield, Mass.	88,926	18			1				4	2		
Trenton, N. J.	96,815	32	1		1	1			3	5	5	
Wilkes-Barre, Pa.	67,105	25	2						2			
Yonkers, N. Y.	79,803	16	8				2		4	2		
Cities having from 25,000 to 50,000 inhabitants.												
Atlantic City, N. J.	46,150	12	2						2		1	
Auburn, N. Y.	34,668	3										
Aurora, Ill.	29,807	7										
Berkeley, Cal.	40,434	5	1				1					
Binghamton, N. Y.	48,443	13			2				2			
Brookline, Mass.	27,792	4			3							
Butte, Mont.	39,165	14					2			3		
Chattanooga, Tenn.	44,604		2								3	
Chelsea, Mass.	32,452	12	1		4				1	2		
Chicopee, Mass.	25,401	11			2	1						
Danville, Ill.	27,871	7					1			1		
East Orange, N. J.	34,371				1				2		1	
Elmira, N. Y.	37,176	10			6				5		1	
El Paso, Tex.	39,279	23					1			2	3	1
Everett, Mass.	33,484	7	1		2				4	2	2	
Fitchburg, Mass.	37,826	5	1									
Haverhill, Mass.	44,115	10	1				1		5		1	
Kalamazoo, Mich.	39,437	22			1				3	1		
Knoxville, Tenn.	36,346	5										
La Crosse, Wis.	30,417	6										
Lancaster, Pa.	47,227				1		1		6		1	
Lexington, Ky.	35,099	8					1			2	1	
Lynchburg, Va.	29,494	12					2		1	1	2	1
Malden, Mass.	44,404	7			8				2			
Montgomery, Ala.	38,136	15								3	2	
Newcastle, Pa.	36,280		5		1				4		2	
Newport, Ky.	30,309	4							1	1		
Newton, Mass.	39,806	7			5		1		1	2		1
Niagara Falls, N. Y.	30,445	12	1	1			1			1	2	
Norristown, Pa.	27,875	5							1			
Orange, N. J.	29,630	11	5		6		1		1	1		
Pasadena, Cal.	30,291	9										
Pittsfield, Mass.	32,121	14					1		3	1		
Portsmouth, Va.	33,190	11	1							1		
Racine, Wis.	38,002	10	1				3					
Roanoke, Va.	34,874	11	1		2				4		4	
Rockford, Ill.	45,401	11		1						1	14	
Salem, Mass.	43,697	13								1		1
San Diego, Cal.	39,578	6							4	4	1	
South Omaha, Nebr.	26,259	5										
Superior, Wis.	40,384	10								2		
Taunton, Mass.	34,259	14	2							2		
Waltham, Mass.	27,834	4							1			
West Hoboken, N. J.	35,403		1		1							
Williamsport, Pa.	31,860	9			3							
Wilmington, N. C.	25,748	8	1								2	
Woonsocket, R. I.	38,125											
York, Pa.	44,750		1		2				3		2	
Zanesville, Ohio	28,026	5										

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality tables, cities of the United States, for week ended Aug. 3, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.												
Alameda, Cal.	23,833	3							2	1		
Ann Arbor, Mich.	14,817	3										
Bennington, Vt.		3										
Biddeford, Me.	17,079	8										
Braddock, Pa.	17,759	10	1		3						2	
Butler, Pa.	20,728								3			
Cambridge, Ohio.	11,327	2			1							
Carbondale, Pa.	17,040	2	2									
Clinton, Mass.	13,075	3										
Coffeyville, Kans.	12,687								1	1	3	
Columbus, Ga.	20,554	6										
Concord, N. H.	21,497	6	1		2		1				1	
Cumberland, Md.	21,839	7	1		5		3				5	1
Dunkirk, N. Y.		3									1	
Galesburg, Ill.	22,089	6	1									
Harrison, N. J.	14,498	4	1	1								
Kearny, N. J.	18,659	6	1		1				5			
La Fayette, Ind.	20,081	6			2					1		
Lebanon, Pa.	19,240	4										
Logansport, Ind.	19,050	4			1						1	
Marinette, Wis.	14,610	3	1									
Marlboro, Mass.	14,579	1	1									
Medford, Mass.	23,150	9			6		7					1
Melrose, Mass.	15,715	5								1		
Moline, Ill.	24,199	3	1								2	1
Montclair, N. J.	22,150	7							2	2		
Morristown, N. J.	12,507	1										
Nanticoke, Pa.	18,857	7										
Newburyport, Mass.	19,240	3							2			
North Adams, Mass.	22,019	3										
Northampton, Mass.	19,431	8								2		
Ottumwa, Iowa.	22,012	6								1	1	
Plainfield, N. J.	22,550	12			1				1	1	1	1
Saratoga Springs, N. Y.		3										
South Bethlehem, Pa.		4	1						2			
Steelton, Pa.	14,246	3	1						2			
Warren, Pa.	11,080	5			13							
Wilkinsburg, Pa.	18,924	1							3		1	
Woburn, Mass.	15,308	5							2	2	1	

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

IOWA.—Month of May, 1912. Population, 2,224,771; total number of deaths from all causes, 1,732, including diphtheria 6, measles 5, scarlet fever 6, tuberculosis 130, and typhoid fever 18.

KANSAS.—Month of March, 1912. Population, 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 3, measles 4, typhoid fever 3. Cases reported: Diphtheria 42, measles 473, scarlet fever 163, smallpox 104, typhoid fever 35.

(For report for month of April, 1912, see Public Health Reports, July 5, 1912, p. 1087.)

MICHIGAN.—Month of June, 1912. Population, 2,810,173. Total number of deaths from all causes, 2,852, including diphtheria 32, measles 17, scarlet fever 12, tuberculosis 218, typhoid fever 42.

NEW JERSEY.—Month ended June 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,098, including diphtheria 36, measles 50, scarlet fever 17, tuberculosis 406, typhoid fever 17.

NEW YORK.—Month of June, 1912. Population, 9,113,614. Total number of deaths from all causes 10,333, including diphtheria 127, measles 141, scarlet fever 76, tuberculosis 1,266, typhoid fever 67. Cases reported: Diphtheria 1,558, measles 7,138, scarlet fever 1,476, smallpox 24, tuberculosis, pulmonary or laryngeal 2,507, typhoid fever 278.

OKLAHOMA.—Month of June, 1912. Population, 1,657,155. Total number of deaths from all causes 800, including diphtheria 1, tuberculosis 100, typhoid fever 16. Cases reported: Diphtheria 17, scarlet fever 54, smallpox 4, tuberculosis 117, typhoid fever 160.

PENNSYLVANIA.—Month of May, 1912. *Mortality.*—Total number of deaths 8,452, including typhoid fever 60, scarlet fever 53, diphtheria 111, measles 84, whooping cough 88, influenza 41, malaria 3, tuberculosis of the lungs 756, tuberculosis of other organs 129, cancer 427, diabetes 59, pellagra 1, meningitis 65, acute anterior poliomyelitis 5, pneumonia 791, diarrhea and enteritis, under 2 years, 233, diarrhea and enteritis, over 2 years, 64, Bright's disease 589, early infancy 581, suicide 96, accidents in mines, 64, railway injuries 102, other forms of violence 422, all other diseases 3,668.

Month of June, 1912. *Morbidity.*—Total number of cases of communicable diseases reported 10,647, including anterior poliomyelitis 8, anthrax 1, cerebrospinal meningitis 8, chickenpox 588, diphtheria 746, epidemic dysentery 1, erysipelas 108, German measles 93, malarial fever 16, measles 4,563, mumps 648, pneumonia 257, puerperal fever 3, scarlet fever 766, smallpox 47, tetanus 5, trachoma 1, tuberculosis 1,211, typhoid fever 461, whooping cough 1,116.

FOREIGN AND INSULAR.

CHINA.

Shanghai—Morbidity and Mortality—Plague Rats.

The following information was received from the department of health of Shanghai for the year ended June 30, 1912:

Deaths among Chinese.

	1911						1912						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
Smallpox	2					2	4	1			1	9	19
Typhus											4	3	7
Diphtheria	4	1		4	2	6	9	9	13	7	6	8	69
Scarlet fever	4	2		1	5	5	7	12	18	24	17	15	110
Tuberculosis	74	77	77	69	63	65	88	64	75	97	98	92	939
Measles							70	109	156	63	47	25	470
Dysentery							3	1	1	9	6	4	24

Cases and deaths among foreign residents.

	1911						1912						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
Smallpox: Cases	1										1	3	5
Cholera:													
Cases					1								[1] 1
Deaths					1								[1] 1
Typhus: Cases												4	4
Typhoid fever:													
Cases		2	2	4	3	1	6	5	9	8		5	45
Deaths		3	2	1	1		1	2	2	1		2	15
Diphtheria:													
Cases	1	3	1	3	2	5	3		2		1	1	22
Deaths										1	1		2
Scarlet fever:													
Cases	1	1		3	1		4	2	3	7	2	8	32
Deaths									2	1	1	1	5
Tuberculosis:													
Cases			2	1		1		1	2			1	8
Deaths	4	5	4	2		4	4	2	3	2	4	2	36
Measles: Deaths							2			1			3
Dysentery: Deaths	1	1	2	2	3								9

[1] Diagnosis not confirmed in laboratory.

Examination of Rats Found Dead—Plague Infection.

	1911						1912					
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
Rats examined	787	1,060	1,062	1,197	1,130	1,012	814	748	1,231	1,414	1,420	1,251
Plague infected	3	.....	.....	2	7	48	16	11	17	9	6	3

Acting Asst. Surg. Ransom reported July 6: Leprosy is endemic in Shanghai. Relapsing fever and hookworm are present.

CUBA.

The Plague Situation.

In Cuba there have been in all 3 cases of plague in Habana. The last case was reported on July 22 and the last death July 27. It is therefore a month since any case has developed.

The restrictions placed upon passengers going from Habana to the United States have been removed, excepting as regards persons who have resided in Habana between Cuba Street and the water front. The restrictions on vessels and cargoes directed against the importation into the United States of infected rodents remain unchanged.

The work of trapping and poisoning rats continues, and the rats collected are being examined to ascertain whether plague infection exists among them. From June 24 to August 10, 6,216 rats had been examined in this way without the finding of any infected with plague.

Habana—Inspection of Vessels Clearing for the United States.

Passed Asst. Surg. von Ezdorf reports as follows regarding the inspection at Habana of vessels clearing for United States ports:

Week ended August 3, 1912.

Bills of health issued	27
Vessels inspected and passed	21
Members of crews of outgoing vessels inspected	970
Passengers of outgoing vessels inspected	792
Vessels fumigated to kill rats	13
Vessels fumigated by Cuban authorities under the supervision of the United States Public Health Service	2
Passengers individually certified	341
Passengers certified after detention at Triscornia quarantine station:	
For New York	38
For Key West	19
For New Orleans	8

Week ended August 10, 1912.

Bills of health issued	22
Vessels inspected and passed	16
Members of crews of outgoing vessels inspected	731
Passengers of outgoing vessels inspected	376
Vessels fumigated to kill rats	10
Vessels fumigated by Cuban authorities under the supervision of the United States Public Health Service	2
Passengers individually certified	341
Passengers certified after detention at Triscornia quarantine station:	
For New York	32
For Key West	8

Destruction of Rats.

The sanitary department of Cuba continues its activity in cleaning up and rat-proofing in the infected district, and in the trapping and poisoning of rats. A circular has also been issued ordering proprietors of all places in the infected zone where food products are sold to store such articles on closing the place of business in the evening in a room or place which is rat proof.

For the purposes of rat extermination work the infected zone has been extended one block, so that it now includes all the portion of the city from Zulueta Street to the bay. This zone has been divided into four districts. Rat extermination work has also been extended to include Regla and Casa Blanca. A corps of 55 men is engaged in the work of trapping and the placing of poisons.

A tabular outline descriptive of the operations is here given:

District.	Number of squares.	Number of inspectors.	Number of cage traps.	Average number poisons placed daily.
No. 1	44	9	53	300
No. 2	48	15	51	680
No. 3	33	8	32	190
No. 4	69	7	43	250
Caballeria Wharf	.....	2	31	150
Paula Wharf	.....	1	25	100
Immigration department	.....	.....	10	.....
Regla district	.....	8	50	150
Casa Blanca district	.....	5	75	100
Total	194	55	370	1,920

The reports for the period July 8 to July 31, 1912, show the following work done by the special service engaged in the extermination of rats.

Number of inspections of city blocks	1,064
Number of poisons placed	48,947
Number of rats caught in infected zone	3,611
Number of rats caught outside of infected zone	8,310
Circular of instructions distributed to occupants of houses	1,473

The laboratory reports of rats examined show for the period of June 24 to July 8, 291, and for July 8 to 31, inclusive, 4,322, making a total of 4,613 examinations of which none was found infected.

During the week two animal inoculations were made from rats showing lesions in some organs, but these proved negative for plague.

Rats autopsied from August 1 to 10, inclusive, with negative result, 1,603.

Disposal of Garbage.

The sanitary department is making every effort to enforce the regulations providing for the proper disposal of garbage. Within two days 567 persons have had fines of from $5 to $20 imposed for noncompliance with the regulations.

Inspection of storerooms and offices of the customs department, which are in close proximity to the Caballeria wharves, showed that where wooden floors, platforms, and walks existed these places harbored rats.

ECUADOR.

Yellow Fever.

The following statement was received from Passed Asst. Surg. Parker at Guayaquil:

Yellow fever reported in Ecuador, month of June, 1912.

City or town.	Previously existing.	New cases.	Recovered.	Died.	Remaining.
Bucay:					
June 1 to 15		1			1
June 15 to 30	1				1
Chobo: June 15 to 30		2		1	1
Duran: June 15 to 30		1			1
Guayaquil:					
June 1 to 15	2	4	1	4	1
June 15 to 30	1	4		2	3
Milagro:					
June 1 to 15	1	4		3	2
June 15 to 30	2	1		1	2
Naranjito: June 15 to 30		2		2	
Yaguachi:					
June 1 to 15		1			1
June 15 to 30	1			1	
Total	3	20	1	14	8

No new cases of plague were reported during the month, but fleas are beginning to appear.

HAWAII.

Examination of Rodents for Plague Infection.

During the week ended July 20, 1912, 692 rats and mongoose were examined at Hilo and 1,748 at Honokaa. No plague infection was found.

At Honolulu during the same week 294 rats were examined. No plague infection was found.

The last case of human plague occurred at Honokaa March 15, 1912. The last plague-infected rat was found between Honokaa and Kapulena April 24, 1912.

INDIA.

Calcutta—Cholera, Plague, and Smallpox.

Acting Asst. Surg. Allan reports: During the week ended June 29, 1912, there were 30 deaths from cholera, 9 from plague, and 1 death from smallpox reported in Calcutta; in all Bengal, 6 cases of plague with 9 deaths; in all India, 317 cases of plague, with 251 deaths.

ITALY.

Examination of Emigrants.

Surg. Geddings at Naples reports:

Vessels inspected at Naples and Palermo week ended July 27, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
July 26	Friedrich der Grosse	New York	847	150	1,370

PALERMO.

July 27	Friedrich der Grosse	New York	467	500	400

JAPAN.

Cholera and Plague in Formosa—Dysentery at Yokoshuka.

Surg. Irwin at Yokohama reported July 1: Cholera is prevalent in the island of Formosa, 25 new cases with 17 deaths having been reported during the nine days ended June 19. From March 13 to June 18, 162 deaths from plague were reported in the island.

Epidemic dysentery is present at Yokoshuka, 26 cases having occurred during the week ended June 28.

MEXICO.

Quarantine Precautions at Tampico.

Consul Miller reported August 5: The local port authorities are taking certain precautions against the importation of plague and yellow fever. Vessels arriving from Habana and Puerto Mexico are fumigated. Vessels arriving from Habana must wait until a four-day period after clearing from Habana has expired before they can enter the harbor proper. After this period has expired and after the vessels have been fumigated under direction of the port medical authorities they are permitted to dock at any of the wharves. As a further precaution a small raft is placed between such vessels and the wharf to prevent rats coming ashore.

NOTE.—No yellow fever has been reported at Puerto Mexico since May 25, 1912.

Frontera—Yellow Fever on Vessel.

The American consul reports August 19 the presence of two cases of yellow fever on a Swedish vessel at Frontera.

Yellow Fever at San Juan Bautista.

The American consul at Frontera reports the occurrence of 8 cases of yellow fever at San Juan Bautista from August 11 to 19.

The total number of cases of yellow fever reported at San Juan Bautista from May 4, the beginning of the outbreak, to August 10 was 43 with 18 deaths.

PERU.

Callao—New Quarantine Station Established.

Consul General Robertson at Callao reported, June 19: The new quarantine station and military sanatorium on San Lorenzo Island in the harbor of Callao were formally inaugurated June 9.

The sanitary station is stated to be one of the most complete in South America and consists of two main divisions, the quarantine station and the military sanatorium. The first is divided into three sections, one of isolated rooms for contagious cases, one for suspected contagious cases under observation, and the third for the ordinary passenger quarantine service. Special portable beds or stretchers are provided for the careful handling of the sick.

The military sanatorium is also divided into three sections, the administration building with the steam disinfecting equipment, laundry, and pharmacy, quarters of the service of boats, pavilions for the troops, private rooms for officers, and private suites for senior officers. Behind the buildings are the shooting ranges and exercise grounds.

The buildings are all of the portable type, and the furniture is all of enameled iron. The quarantine station is entirely separated from the sanatorium.

PORTO RICO.

The Plague Situation.

From August 14 to 20, both dates inclusive, there was only one case of plague reported in Porto Rico. This case occurred in San Juan and was reported as suspicious on August 14. The diagnosis of plague was established August 16. This makes a total of 49 cases reported in all Porto Rico up to August 20. Of these, 33 occurred in San Juan.

The disease seems to be well under control, there having been only 2 cases since the 1st of August. The work of eradicating the infection among rodents, however, still remains. This will take some time, as it necessarily includes the poisoning and trapping of rats over a sufficiently long period to markedly reduce their numbers and the general rat proofing of all buildings which might otherwise harbor rodents.

Passed Asst. Surg. Creel reports as follows:

Rats examined Aug. 4 to 10, 1912.

Place.	Rats examined.	Rats found infected.	Rats found suspicious.
All Porto Rico	1,608	.....	.....
San Juan municipality:			
San Juan	363	.....	.....
Puerta de Tierra	154	1	.....
Santurce	276	.....	.....

A summary of the plague situation to August 10, including all human and rodent cases reported or discovered, was as follows: Rats examined, 7,751; rats found infected, 58; human cases, 48; deaths, 30.

Inspections made Aug. 3 to 10, 1912, inclusive.

Houses inspected	485
Cars inspected	82
Packages of freight fumigated	835
Packages of freight repacked	123
Packages of freight inspected and passed	14,375
Oxcarts and wagons carrying overland freight inspected	463
Packages inspected	9,498
Packages fumigated	9
Packages repacked	113
Express packages inspected	505
Express packages repacked	317
Express packages fumigated	25
Rats found in freight and express packages inspected	4

TURKEY IN ASIA.

Mersina—Epidemic Cholera.

Consul Nathan reports: Cholera has become epidemic at Mersina. During the period from July 1 to 28, there were reported 39 cases with 32 deaths.

VENEZUELA.

Yellow Fever.

Acting Asst. Surg. Stewart, at La Guaira, reports: During the week ended August 3, 1912, a death from yellow fever occurred at Maiquetia, a suburb of La Guaira. At Caracas 2 additional cases of yellow fever and 2 deaths of the same disease were reported for the two weeks ended July 15, 1912, making 6 cases occurring during that period.

Amebic Dysentery.

With regard to the prevalence of amebic dysentery in certain localities in Venezuela, previously noted in the Public Health Reports, Acting Asst. Surg. Stewart reports:

At Carinero, Higuerote, Rio Chico, San Jose, El Guapo, and other small neighboring towns 1,298 cases of amebic dysentery with a case fatality rate of 7.1 per cent were reported from June 1 to July 25, 1912. The diagnosis of amebic dysentery was verified by necropsy and microscopic examination of material taken from intestinal ulcers. Considering that the aggregate population of the towns affected is only 10,000, the marked prevalence of the disease is at once apparent.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Aug. 23, 1912.

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

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	July 6–13	89	68	
Straits Settlements:				
Singapore	June 23–29	6	5	
Turkey in Asia:				
Aleppo	July 15–27	34	29	
Mersina	July 15–28	7	7	

YELLOW FEVER.

Brazil:				
Manaos	July 14–27	.....	7	
Cuba:				
Habana	July 27	.....	1	
Mexico:				
Frontera	Aug. 19	.....	.....	2 cases on a Swedish vessel.
San Juan Bautista	Aug. 10–19	8	.....	Total May 4–Aug. 10: Cases 43, deaths 18, including previous reports.
Venezuela:				
Caracas	July 16–31	2	.....	
Maiquetia	July 27–Aug. 3	1	1	
Maracaibo	Aug. 2	.....	.....	Endemic in the district.

PLAGUE.

China:				
Hongkong	June 23–29	82	68	
Do	June 30–July 6	60	50	
India:				
Bombay	July 7–13	12	16	
Madras	do	1	.....	
Bombay Presidency and Sind.	May 26–June 29	444	327	
Madras Presidency	do	46	31	
Bengal	do	121	147	
Bihar and Orissa	do	553	491	
United Provinces	do	592	530	
Punjab	do	2,516	2,088	
Burma	do	219	210	
Mysore State	do	99	73	
Hyderabad State	do	1	1	
Rajputana and Ajmere Merwara.	do	80	63	
Kashmir	do	60	36	Total May 26–June 29: Cases 4,728, deaths 3,997.
Porto Rico:				
San Juan	Aug. 6–16	2	.....	
Russian Empire:				
Districts—				
Libistchensky—				
Balaptubek	May 15–June 2	2	2	
Karabas	do	5	2	
Do	June 3–16	8	10	
Kudeymula	May 27–June 2	5	4	
Do	June 3–16	.....	1	
Ural—				
Tschelirtinsky	May 20–June 2	5	4	
Do	June 3–16	8	7	
Straits Settlements:				
Singapore	June 23–29	1	.....	
At sea	July 15–20	3	.....	On s. s. Ezan Maru en route from Miike, Japan, to Hongkong.

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

Reports Received during week ended Aug. 23, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Departments—				
Algeria	May 1-31	6		
Oran	do	5		
British East Africa:				
Mombasa	June 1-30	5		
Chile:				
Coquimbo	July 7-20	6	4	
China:				
Hongkong	July 23-29	1	1	
Shanghai	June 24-30	1		
Do	July 1-14	2	5	Deaths among natives.
Egypt:				
Cairo	June 24-July 1		1	
Honduras	July 29-31			Present in vicinity and along the Honduras National Railway.
La Pimienta	July 29			Present.
Portorillas	July 31			Do.
Santa Barbara	July 29			Do.
Zacapa	do			Do.
India:				
Bombay	July 7-13	17	15	
Karachi	do	2	2	
Italy:				
Naples	July 21-27	1		
Rome	Mar. 31-Apr. 6	1	1	
Java:				
Batavia	June 30-July 6	3	1	
Mexico:				
Aguascalientes	July 29-Aug. 4	1		
Chihuahua	Mar. 11-31	12	5	
Do	Apr. 8-28	25	10	
Do	Apr. 29-May 26	11	5	
Do	May 27-June 30	46	15	
Do	July 1-14	4	4	
Guadalajara	July 14-Aug. 3	4		
Portugal:				
Lisbon	July 21-27	4		
Russia:				
Riga				May 1-31, 2 deaths.
Spain:				
Seville	July 1-31		9	
Valencia	July 21-27	5	1	
Straits Settlements:				
Penang	July 14-20	2	2	
Singapore	July 23-29	1	2	
Turkey in Asia:				
Beirut	July 14-27	20		
Dardanelles	June 23-July 20		7	
Turkey in Europe:				
Constantinople	July 22-Aug. 4		28	

Reports Received from June 29 to Aug. 16, 1912.

[For reports received from Dec. 30, 1911, to June 28, 1912, see PUBLIC HEALTH REPORTS for June 28, 1912. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo	May 19-25	1		In the port.
China:				
Amoy	June 16-29	9		June 1-20, present in vicinity.
Swatow	June 1-22			Sporadic cases occurring in the port. July 13, epidemic.
Dutch East Indies:				
Java—				
Batavia	June 16-22	1	1	
Rembang, province	July 4			Present.
Sumatra—				
Bovenlandes, province	June 27-July 4			Do.
Tapanoeli, province	July 11			Do.

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

Reports Received from June 29 to Aug. 16, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	May 5–June 25	21	18	
Bombay	May 19–July 6	1,372	1,073	
Calcutta	Apr. 21–27	.....	87	Received out of date.
Do	May 5–June 29	.....	288	
Madras	May 19–July 6	11	8	Madras Presidency, May 1–June 30: Cases, 15,858; deaths, 9,104.
Maulmain	May 5–June 25	19	19	
Rangoon	Apr. 1–May 31	34	31	
Indo-China:				
Saigon	May 14–June 24	245	194	
Japan:				
Formosa	.....	.....	.....	Total June 16–29: 31 cases, 13 deaths.
Kelung	June 27	.....	.....	Epidemic.
Russian Empire:				
Astrakhan	June 11–July 12	2	1	July 19, present.
Vitebsk	July 29	2	1	
Siam:				
Bangkok	Apr. 21–June 15	.....	941	
Straits Settlements:				
Singapore	May 12–June 22	13	15	
Turkey in Asia:				
Provinces—				
Adana—				
Adana	May 14–June 15	11	6	
Ak Keupru	Apr. 8–June 13	12	6	
Ayas	June 11–15	2	2	
Bor	May 28–June 15	6	4	
Djihan	do	11	1	
Dorach Bache	do	4	5	
Oula Kichla	May 28–July 6	5	10	
Sis	May 28–June 15	5	5	
Tarsus	May 28–June 17	4	.....	
Aleppo—				
Aleppo	May 19–July 14	263	231	
Alexandretta	May 28–June 15	7	3	
Amk	July 1–6	5	4	
Anitab	do	1	1	
Antioch	Apr. 17	2	1	
Arka	do	10	4	
Gisser	July 7–13	13	6	
Harem	June 23–July 14	32	27	
Hersem	July 1–6	5	4	
Idlib	June 23–29	4	3	
Keudige	do	4	.....	
Killis	June 16–July 13	14	6	
Marach	June 15–July 13	146	62	
Sarenda	July 1–6	7	6	
Talacrin	do	3	3	
Mersina	June 9–July 14	33	26	
Zanzibar	Aug. 10	.....	.....	Present.

YELLOW FEVER.

Brazil:				
Manaos	June 2–July 13	.....	20	
Pernambuco	Apr. 16–July 15	.....	6	
Chile:				
Toco district	May 1–16	62	17	
Tocopilla	May 1–June 17	502	195	Total Jan. 28–June 17: Cases, 1,072; deaths, 374, including report, p. 1058, Pt. I.
Colombia:				
Barranquilla	July 14–20	.....	1	From up Magdalena River.
Ecuador:				
Bucay	June 1–15	1	.....	
Chobo	June 15–30	2	1	
Duran	May 1–June 30	2	1	
Guayaquil	do	45	27	
Milagro	May 16–June 30	10	6	
Naranjito	May 1–June 30	6	4	
Yaguachi	May 16–June 30	2	1	

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

Reports Received from June 29 to Aug. 16, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida	July 14–25	2	1	From Motul, 29 miles distant.
San Juan Bautista	June 23–Aug. 9	13	3	
Peru:				
Iquitos	Jan. 1–May 31		42	Endemic. Year 1908, deaths, 11; 1910, 1; 1911, 76.
Venezuela:				
Caracas	May 1–June 30		5	July 22, 3 cases from El Valle; 1 case from Villa de Cura, about 29 miles distant.
Cua	July 20			Present.
La Guaira	May 1	1		
La Victoria				Endemic. July 20, present.
Macuto	June 1	1	1	
Maiquetia	June 17	1	1	

PLAGUE.

Algeria:				
Algiers	July 12		1	In Hospital El Kettar in vicinity.
Le Ruisseau	July 9–13		5	4 miles from Algiers.
Arabia:				
Aden	July 1		1	From s. s. India.
Oman—				
Maskat	June 1–22	1		
Brazil:				
Nictheroy	Mar. 25	8	2	
Rio de Janeiro	June 23–29	1		
Chile:				
Iquique	May 26–June 22	16	10	
China				May 18–June 15 present in the magistracies of Fungshun, Cayung, and Puning.
Amoy	May 20–June 1	46	40	Present May 18–June 29 in Amoy and vicinity.
Ampo	May 18–June 29			Present.
Canton	May 18–July 7			Do.
Chefu	June 2–8			2 deaths on s. s. Cheongshing between Tientsin and Taku.
Eng Chhun	July 6			Present. 100 miles inland from Amoy, and prevalent in the surrounding country.
Hongkong	May 12–June 15	1,006	825	
Packhoi	May 1–29		35	
Tientsin	June 2–8	1	1	From s. s. Cheongshing from Hongkong.
Wenchang	June 4			On the island of Hainan, 10 to 20 cases daily.
Cuba:				
Habana	July 4–22	3	1	
Ecuador:				
Guayaquil	May 1–31	4	2	
Dutch East Indies				May 12–June 29. Cases, 65; deaths, 56; in the eastern part.
Java—				
Provinces—				
Kediri	Mar. 31–Apr. 6	2	2	
Madiven	do	3	3	
Egypt				Total, June 1–July 2: Cases, 748; deaths, 389, including report p. 1059, Pt. I.
Alexandria	May 27–July 12	8	1	
Port Said	May 29–July 16	5		
Provinces—				
Assiout	May 25–June 27	12	5	
Beni Souef	May 30–June 26	12	9	
Carchieh	Apr. 28–July 2	7	2	
Fayoum	Apr. 28–July 14	49	26	
Galioubeh	Apr. 23–June 3	1		
Girgeh	May 26–July 6	50	42	
Minieh	May 27–July 14	33	7	
Great Britain:				
Liverpool	July 26	1		

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

Reports Received from June 29 to Aug. 16, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	May 19-July 6	248	196	
Calcutta	Apr. 21-June 29	.....	418	Report Apr. 27 received out of date.
Karachi	Apr. 1-June 24	60	60	
Rangoon	Apr. 1-May 31	81	69	
Bombay Presidency and Sind.	Apr. 21-May 25	1,434	1,211	
Madras Presidency	do	64	57	
Bengal	do	443	406	
Bihar and Orissa	do	4,796	4,167	
United Provinces	do	6,794	6,370	
Punjab	do	13,349	10,940	
Burma	do	125	108	
Central Provinces	do	283	238	
Mysore State	do	55	50	
Hyderabad State	do	217	175	
Central India	do	276	227	
Rajputana and Ajmere Merwara.	do	490	411	
Kashmir	do	229	134	Total for India Apr. 21-May 25: Cases, 28,555; deaths, 24,494.
Indo-China:				
Saigon	May 14-June 24	25	15	
Japan:				
Formosa	Apr. 22-June 29	81	59	
Persia:				
Bushir	May 12-June 15	130	116	Total Feb. 4-June 15: Cases 1,045, deaths 719, including report, p. 1060, Pt. I. June 1-7, on the route to Shiras, 4 fatal cases.
Philippine Islands:				
Manila	June 14-29	2	2	
Mariveles quarantine station.	Apr. 30-May 7	1	1	From s. s. Taisang from Amoy.
Porto Rico				Total June 14-Aug. 16: Cases, 49; deaths, 29.
Arroyo	June 22	1	.....	On the schooner Guillermito from San Juan.
Carolina	June 25-July 19	2	2	
Dorado	July 15	1	1	
Loiza	June 28	1	1	
San Juan	June 21-July 30	19	11	Total June 14-Aug. 2: Cases, 31; deaths, 16.
Santurce	June 22-Aug. 2	11	3	
Siam:				
Bangkok	Apr. 21-May 18	.....	1	
South Africa:				
Durban				Jan. 14-June 21: Cases 31, deaths 25, including report, p. 1060, Pt. I.
Straits Settlements:				
Kwala Lampour	Apr. 15	3	1	
Singapore	May 5-June 15	15	10	
Turkey in Asia:				
Adalia	May 28-June 13	1	1	July 4, present.
Basra	May 20	1	1	
Jiddah	May 18	1	.....	
West Indies:				
Trinidad				Total Apr. 1-June 13: Cases 11, deaths 7, including report, p. 1060, Pt. I; 3 of these cases were in Tunapuna.
Do	July 2-11	2	.....	
Venezuela:				
Caracas	June 1-July 22	4	4	

SMALLPOX.

Algeria:				
Algiers	Jan. 1-Apr. 30	17	.....	
Constantine	Apr. 1-30	4	.....	
Arabia:				
Aden	June 18-24	.....	1	

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

Reports Received from June 29 to Aug. 16, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Fremantle quarantine station.	Apr. 19	1		From s. s. Malwa from London via Colombo.
Townsville	May 24			1 case on s. s. Yawata Maru from Japan.
Austria-Hungary:				
Bohemia	May 12–July 13	17		
Galicia	do	18		
Brazil:				
Pernambuco	Apr. 16–May 15		73	
Rio de Janeiro	May 19–July 6	11	5	
British East Africa:				
Mombasa	May 1–31	2		
Canada:				
Provinces—				
British Columbia—				
Vancouver	July 14–20	1		
Newfoundland—				
St. Johns	do	5		
Nova Scotia—				
Halifax	July 7–13	1		
Ontario—				
Ottawa	June 9–15	1		
Windsor	June 12–22	2		
Quebec—				
Montreal	June 16–Aug. 3	7		
Quebec	July 28–Aug. 3	2		
Chile:				
Coquimbo	Mar. 1–May 1	30		
Do	May 26–July 6	42	9	
La Serena	Nov. 30–May 7	300	40	
China:				
Amoy	May 21–June 8			Present in vicinity.
Chungking	May 5–June 15			Present.
Dalny	June 23–July 6	2		
Hongkong	May 12–June 8	18	11	
Nanking	May 19–June 29			Do.
Shanghai	May 28–June 30		10	
Tientsin	June 2–8		1	
Egypt:				
Cairo	May 14–June 24	7	1	
Port Said	May 14–27	2	1	
France:				
Nantes	June 17–July 6	4		
Paris	June 2–July 20	6	1	
Germany				Total June 2–July 20: Cases, 30.
Great Britain:				
Bristol	June 22–28	2		
Liverpool	June 2–8	1		
Hawaii:				
Honolulu	July 9–13	1		
Honduras	July 19			Present in the interior.
India:				
Bombay	May 19–July 6	158	130	
Calcutta	May 5–June 29		15	Apr. 21–27, 2 cases.
Karachi	May 19–26	1	1	
Madras	May 19–July 6	10	6	
Maulmain	Jan. 1–May 4		85	
Rangoon	Apr. 1–May 31	194	73	
Indo-China:				
Saigon	May 14–20	3	2	
Italy:				
Leghorn	June 9–July 6	9		
Naples	June 2–13	20	2	
Palermo	May 26–July 6	4	2	
Turin	June 3–9	1		
Japan:				
Kobe	June 3–23	3		
Java:				
Batavia	May 12–July 24	28	10	
Surabaya	Apr. 1–30	155	70	June 4–17, still epidemic, but decreasing.
Mexico:				
Aguascalientes	June 9–July 28		9	
Durango	June 1–30	1	1	
Frontera	July 7–11	1		
Guadalajara	June 9–July 6	3	3	
Guaymas	July 14–20			Present in small towns in vicinity.

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

Reports Received from June 29 to Aug. 16, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Juarez	June 16–22	.....	1	
Mazatlan	June 19–July 16	.....	4	Total Jan. 1–June 30: Deaths, 29
Minatilan	July 29	2	.....	
Mexico	May 19–July 6	272	136	
Puerto Mexico	July 11–29	5	2	
Salina Cruz	June 29–July 6	2	1	
San Geronimo	Aug. 1	.....	.....	Present.
San Luis Potosi	Apr. 7–May 25	3	5	
Tehuantepec	Aug. 1	.....	.....	Do.
Peru:				
Callao	May 19–June 29	.....	.....	Do.
Portugal:				
Lisbon	May 27–July 20	26	.....	
Russia:				
Libau	May 14–June 13	.....	1	
Do	June 22–28	2	.....	
Moscow	May 19–June 22	19	3	
Odessa	May 19–25	.....	1	
Do	June 2–July 2	11	2	
Reval	June 1–30	.....	1	
Riga	June 9–29	8	.....	
St. Petersburg	May 27–July 6	62	20	
Warsaw	Apr. 21–May 25	28	12	
Siam:				
Bangkok	Apr. 21–June 15	.....	62	
Siberia:				
Vladivostok	May 17–23	1	.....	
South Africa:				
Durban	Apr. 28–June 29	21	3	
Spain:				
Almeria	June 1–30	.....	3	
Barcelona	July 1–6	.....	1	
Cadiz	May 1–June 30	.....	4	
Seville	June 1–30	.....	6	
Valencia	June 2–July 20	81	3	
Straits Settlements:				
Singapore	May 5–June 22	6	3	
Switzerland:				
Berne	May 5–11	2	.....	
Geneva	do	1	.....	
Lucerne	May 12–18	1	.....	
Neuchatel	do	1	.....	
Turkey in Asia:				
Beirut	May 26–July 13	80	.....	
Turkey in Europe:				
Constantinople	May 27–July 21	.....	79	
Uruguay:				
Montevideo	May 1–31	1	.....	
Venezuela:				
La Guaira	June 6	1	.....	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	July 27	163,084	56	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Aguascalientes	Aug. 4	40,000	55	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Do	Aug. 11	.....	61	.....	.....	.....	.....	.....	2	1	2	.....	.....	.....
Aix-la-Chapelle	July 13	157,909	51	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Aleppo	July 20	200,000	.....	.....	.....	22	.....	.....	.....	.....	.....	.....	.....	.....
Do	July 27	.....	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....

MORTALITY—Continued.

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.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Amsterdam	July 20	582,984	139	17	....	....	....	....	....	....	....	2	7	3
Do	July 27	.....	.....	.....	....	....	....	....	....	....	....	1	....	3
Antwerp	July 20	316,604	69	5	....	....	....	....	....	....	2	....	3	2
Do	July 27	.....	78	10	....	....	....	....	....	....	2	3	5	1
Athens	....do....	250,010	87	20	....	....	....	....	....	5	....	2	....	....
Barcelona	....do....	591,272	201	21	....	....	....	....	....	4	....	3	....	....
Belfast	....do....	391,051	117	18	....	....	....	....	....	....	1	1	1	1
Belgrade	....do....	90,050	46	....	....	....	....	....	1	....	1	....	....	....
Birmingham	....do....	842,512	162	14	....	....	....	....	....	....	3	2	10	2
Bombay	July 13	979,445	739	60	16	68	....	15	....	....	....	....	1	....
Bordeaux	July 27	253,000	78	9	....	....	....	....	....	....	....	1	2	....
Do	Aug. 13	.....	79	12	....	....	....	....	....	1	....	....	....	....
Bradford	July 13	289,618	60	3	....	....	....	....	....	....	....	1	....	....
Do	July 20	.....	73	10	....	....	....	....	....	....	....	2	....	....
Do	July 27	.....	77	7	....	....	....	....	....	....	....	1	....	....
Batavia	July 1	217,630	10	....	....	....	....	1	....	....	....	....	....	....
Bristol	July 27	359,400	79	3	....	....	....	....	....	....	....	....	1	....
Brussels	....do....	745,380	174	23	....	....	....	....	....	....	....	1	2	....
Cairo	July —	689,439	708	24	....	....	....	1	1	1	....	4	33	....
Catania	Aug. 2	207,000	70	2	....	....	....	....	....	....	1	....	....	1
Chihuahua	Mar. 17	35,000	27	1	....	....	....	2	....	....	....	1	....	....
Do	Mar. 24	.....	30	1	....	....	....	6	....	....	1	....	....	....
Do	Mar. 31	.....	24	....	....	....	....	3	....	....	....	1	....	....
Do	Apr. 14	.....	43	2	....	....	....	6	....	....	2	1	....	....
Do	Apr. 21	.....	34	1	....	....	....	2	....	1	....	....	....	....
Do	Apr. 28	.....	30	1	....	....	....	2	....	1	....	....	....	....
Do	May 5	.....	46	....	....	....	....	4	....	1	2	....	....	....
Do	May 26	.....	25	2	....	....	....	1	....	....	....	....	....	....
Do	June 2	.....	39	2	....	....	....	2	1	1	2	....	....	....
Do	June 9	.....	37	4	....	....	....	2	....	....	1	....	....	....
Do	June 16	.....	33	2	....	....	....	2	....	....	2	1	....	....
Do	June 23	.....	51	2	....	....	....	4	....	....	2	....	1	3
Do	June 30	.....	49	3	....	....	....	5	....	....	1	....	....	....
Do	July 7	.....	36	1	....	....	....	2	....	1	....	....	....	1
Do	July 14	.....	45	....	....	....	....	2	....	....	....	....	....	....
Cienfuegos	June 22	33,578	18	....	....	....	....	....	....	1	....	....	....	....
Do	June 27	.....	20	4	....	....	....	....	....	....	....	....	....	1
Colombo	July 6	227,026	134	13	....	....	....	....	....	6	....	....	....	....
Constantinople	July 28	1,300,000	235	33	....	....	....	7	....	3	2	....	2	....
Do	Aug. 4	.....	210	32	....	....	....	21	....	2	1	....	4	....
Copenhagen	July 20	465,000	111	9	....	....	....	....	....	1	1	1	....	2
Coquimbo	July 13	14,000	10	....	....	....	....	2	....	....	....	....	....	....
Do	July 20	.....	16	....	....	....	....	2	....	....	....	....	....	....
Dublin	July 20	406,536	131	28	....	....	....	....	....	....	8	3	....	....
Do	July 27	.....	120	25	....	....	....	....	....	1	....	3	7	1
Fiume	Aug. 3	51,500	17	4	....	....	....	....	....	1	....	....	....	....
Havre	June 8[1]	136,159	54	12	....	....	....	....	....	1	....	....	....	....
Do	July 27	.....	52	10	....	....	....	....	....	1	....	....	....	....
Hongkong	June 29	336,488	.....	....	68	....	....	1	....	1	....	....	....	....
Do	July 6	.....	.....	....	50	....	....	....	....	2	....	....	....	....
Karachi	July 13	157,290	106	....	....	....	....	2	....	....	....	....	....	....
Kingston, Jamaica	July 20	57,379	.....	2	....	....	....	....	....	1	....	....	....	....
Do	July 27	.....	.....	1	....	....	....	....	....	1	....	....	....	....
Leeds	...do....	445,568	.....	8	....	....	....	....	....	....	....	3	6	1
Leghorn	Aug. 3	104,000	23	3	....	....	....	....	1	....	....	....	....	....
Libau	July 28	84,000	.....	....	....	....	....	....	1	....	1	....	....	....
Mersina	June 15	25,000	.....	.....	....	1	....	....	....	....	....	....	....	....
Do	July 7–14	.....	.....	.....	....	25	....	....	....	....	....	....	....	....
Do	July 21–28	.....	.....	.....	....	7	....	....	....	....	....	....	....	....
Munich	July 6	610,000	161	26	....	....	....	....	....	....	....	....	3	1
Palermo	July 27	340,000	138	3	....	....	....	....	4	1	....	....	3	....
Paris	...do....	2,888,110	828	198	....	....	....	....	....	2	3	3	5	....
Port Said	June 10	52,811	41	....	....	....	....	....	1	....	1	2	....	....
Do	June 17	.....	32	....	....	....	....	....	1	2	....	1	....	....
Saigon	...do....	220,000	.....	....	....	36	....	....	....	....	....	....	....	....
San Luis Potosi	May 25	82,946	61	8	....	....	....	1	....	2	....	....	....	....
Singapore	June 29	303,328	302	29	....	5	....	2	....	1	....	....	....	....
Veracruz	July 27	32,000	47	3	....	....	....	....	....	....	....	....	....	....
Vienna	July 6	2,081,335	597	116	....	....	....	....	....	2	6	4	13	2

[1] Reported out of date.

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

ARGENTINA—*Buenos Aires.*—Month of May, 1912. Population, 1,379,421. Total number of deaths from all causes 1,869, including diphtheria 18, measles 4, scarlet fever 3, tuberculosis 185, typhoid fever 87.

AUSTRALIA—*Newcastle.*—Month of April, 1912. Population, 56,000. Total number of deaths from all causes 60, including diphtheria 1, tuberculosis 4, typhoid fever 2.

CHILE—*Punta Arenas.*—Month of April, 1912. Population, 14,000. Total number of deaths from all causes 39, including tuberculosis 3.

EAST AFRICA—*Lourenço Marquez.*—Month of April, 1912. Population, 10,000. Total number of deaths from all causes 42, including tuberculosis 9.

FRANCE—*Marseille.*—Month of May, 1912. Population, 550,619. Total number of deaths from all causes 762, including diphtheria 7, measles 6, scarlet fever 1, tuberculosis 128, typhoid fever 16.

GREAT BRITAIN—Week ended July 20, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 11.5 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 14.5 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Newtownards, viz, 5.7, and the highest at Tralee, viz, 21.1 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 13.6 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Clydebank, viz, 3.9, and the highest at Perth, viz, 21.7 per 1,000. The total number of deaths from all causes was 567, including diphtheria 5, measles 5, scarlet fever 1.

INDIA—*Rangoon.*—Month of May, 1912. Population, 293,316. Total number of deaths from all causes 706, including cholera 7, plague 23, scarlet fever 46, smallpox 16, tuberculosis 53, typhoid fever 1.

ITALY—*Florence.*—Month of June, 1912. Population, 239,295. Total number of deaths from all causes 277, including measles 10, typhus fever 3, tuberculosis 36.

Genoa.—Two weeks ended June 15, 1912. Population, 272,077. Total number of deaths from all causes 155, including diphtheria 3, tuberculosis 13.

Messina.—Month of May, 1912. Population, 127,000. Total number of deaths from all causes 177, including scarlet fever 10, tuberculosis 9, typhus fever 2.

PORTO RICO—*San Juan.*—Four weeks ended July 27, 1912. Population 32,048. Total number of deaths from all causes not reported. The deaths include plague 1, tuberculosis 2. Cases reported: Plague 12, tuberculosis 21, typhoid fever 7.

RUSSIA—*Libau.*—Month ended June 13, 1912. Population 84,000. Total number of deaths from all causes not reported. The deaths include diphtheria 4, scarlet fever 5, smallpox 1, typhoid fever 2.

SPAIN—*Huelva.*—Month of June, 1912. Population 28,982. Total number of deaths from all causes 53, including tuberculosis 5, typhoid fever 2.

URUGUAY—*Montevideo.*—Month of May, 1912. Population 343,849. Total number of deaths from all causes 450, including tuberculosis 69, typhoid fever 5.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health Service.

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