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TYPHUS FEVER.

ITS ETIOLOGY AND THE METHODS OF ITS PREVENTION.[1]

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The subject that I have chosen for my address is at once an old one and a new one. It is old because the disease has been known for a great many years, even back to the time of the Great Plague in London, many deaths during that great epidemic having been undoubtedly due to typhus fever. It is new because of certain recent additions to our knowledge of the etiology, method of transmission, and distribution of the disease.

Typhus fever has been confused, especially, with two other diseases, namely, relapsing fever and typhoid fever. The distinction was first clearly drawn clinically between relapsing fever and typhoid in Ireland about 1826, and their nonidentity was conclusively settled by the discovery of the spirillum of relapsing fever in 1868. Gerhard, in 1837, was the first to set forth clearly the clinical and pathological differences between typhoid and typhus fevers, and the discovery of the typhoid bacillus by Eberth in 1880 definitely established this distinction.

The disease has been the subject of a large amount of painstaking and careful work without any very great advance having been made in our knowledge of it until the latter part of 1909, when Nicolle infected a chimpanzee with blood drawn from a human case of typhus fever. Sometime later, working with Comte and Conseil, he reported the successful transmission of typhus fever from one monkey to another by the bite of the body louse.

Just about that time the studies by Goldberger and myself were begun in Mexico City and we were not aware of the work of Nicolle and his coworkers until after he publication of our first two notes. We found, contrary to the first reported experiments of Nicolle, that the lower monkeys, such as he rhesus and capuchin, could be

[1] Abstract of a lecture delivered before the Minnesota Pathological Society Mar. 30, 1915, and before the Army Medical School, Apr. 23, 1915.

infected by inoculation of blood drawn directly from human cases of the disease, and without the passage of the virus through one of of the higher apes, such as the chimpanzee, as was claimed to be necessary by Nicolle. We found that one attack of Mexican typhus in the monkey conveyed a definite immunity to subsequent attacks and, in our opinion, the epidemiological evidence pointed unmistakably to the correctness of Nicolle's observations as to the part played by the body louse in the transmission of the disease.

Just at this point our work in Mexico was interrupted by the illness of Dr. Goldberger with typhus and after his recovery his condition was such as to necessitate our return to the United States. For this reason our work on typhus fever was discontinued, as it was not believed that cases of the disease, except at rare intervals, occurred in this country.

About this time, however, Dr. Nathan E. Brill published a paper giving the results of a study of 221 cases of an acute infectious disease of unknown origin observed by him in the wards of Mount Sinai Hospital during several previous years. He had previously reported 17 cases of the same disease. The important features of the disease, as observed by Dr. Brill, are so well summarized in his definition that I shall quote it:

> An acute infectious disease of unknown origin and unknown pathology, characterized by a short incubation period (four to five days), a period of continuous fever, accompanied by intense headache, apathy, and prostration, a profuse and extensive erythematous maculo-papular eruption, all of about two weeks' duration, whereupon the fever abruptly ceases either by crisis within a few hours or by rapid lysis within three days, when all symptoms disappear.

In a third paper Brill reported on a study of 34 additional cases observed since the 221 reported in his second paper. This paper was of especial interest to us, as it gave the results of the inoculation of monkeys with material obtained during life and at autopsy from cases of the disease and it gave the postmortem findings in the fatal case. When Brill's second paper appeared in April, 1910, we had recently returned from the City of Mexico where we had seen many cases of typhus and we were struck by the very remarkable resemblance between the disease described by Brill and typhus fever as observed by us in Mexico and as observed by one of us in certain places abroad. For this reason we endeavored to obtain access to cases of Brill's disease for purposes of study in order that we might determine if possible their relationship to typhus. A case was finally seen in the wards of Mount Sinai Hospital and blood was drawn from the arm vein of this patient and used for the inoculation of monkeys. One of these animals, after an incubation period of 10 days, developed a fever which reached its maximum six days later and fell by rapid crisis 14 days after the rise began.

Blood was drawn from this animal and used for the inoculation of other animals which, after an incubation period of nine days, developed a fever which, in its rise, duration, and termination, was similar in all respects to that in the monkey first inoculated. Since then this strain of typhus fever has been passed through 76 monkey generations and over 150 generations in the guinea pig.

After intraperitoneal or intravenous inoculation of infective blood into a monkey there follows an incubation period of 5 to 14 days. At the end of this time there is usually a rapid rise of the animal's temperature, which not infrequently reaches a maximum in 36 to 48 hours of 41 to 41.5° C. The temperature remains high until toward the end of the febrile period, when it may show a gradual decline; but it usually declines by crisis or rapid lysis, frequently to subnormal.

Convalescence is usually rapid. We have never noticed the presence of an eruption, although careful search has been made for the same. In other words, the fever is the only definite index of a reaction. Although apparently a mild disease in the monkey, we have had four deaths in a total of 105 cases of typhus in that animal.

After we had established the susceptibility of the rhesus monkey to infection by inoculation with blood from a case of Brill's disease it became important to determine the relationship of Brill's symptom-complex to typhus fever, and for this purpose we tested the susceptibility of animals that had recovered from Brill's disease to Mexican typhus, as well as the converse of this. It was found that an attack of Brill's disease in the monkey conferred a definite immunity to infection with Mexican typhus, and that an attack of Mexican typhus in the monkey conferred a definite immunity to an attack of Brill's disease. In other words, Brill's disease, so called, and typhus fever are identical.

The results of these cross-immunity tests having plainly justified the conclusion that the disease described by Brill was identical with the typhus fever of Mexico, and inasmuch as the New York strain of typhus was undoubtedly of European origin, the further conclusion was made that the typhus fever of Europe and the typhus fever of Mexico are identical.

During the progress of the work necessary for the demonstration of the identity of the two diseases, a number of related problems were given attention. Among the first of these was work upon the method of transmission. It was found that the so-called Brill's disease, as well as the typhus fever of Mexico, could be transmitted to the monkey by the bite of body lice which had previously been allowed to feed either on human cases of the disease or on monkeys sick with typhus fever.

Attempts have been made by various workers, including ourselves, to transmit the disease from monkey to monkey or from human beings

to monkeys by the bite of insects other than the body louse. The experiments with fleas and bedbugs have been frankly negative, and the experiments with the head louse by Goldberger and Anderson, while highly suggestive, were not conclusive.

Since the body louse has been shown to be the means by which typhus fever is transmitted, it has been possible to put into effect practical methods of preventing typhus which, when intelligently applied, have worked remarkable results. Thus the disease, which has always been endemic in Tunis and which each year has carried off a large number of victims among the native population, has now almost disappeared. According to Nicolle, in 1909 there occurred in Tunis 838 cases of typhus fever, but in 1912, after the efforts to control the disease in the light of recent researches had been put into effect, there occurred only 22 cases. The only prophylactic measure resorted to has been the systematic destruction of lice found on persons (and their clothing) in the vicinity of patients suffering from typhus.

Typhus fever has always been one of the great plagues of military camps, particularly in the temperate zone, and it is more than probable that, unless the newer methods are adopted for the control of the disease in the large armies now engaged in warfare in Europe, the disease may become a scourge among the troops. This is particularly true, as typhus fever is known to be endemic in certain German, Russian, and Austrian Provinces and in eastern Europe.

The experimental work of various investigators of typhus fever has shown conclusively that the virus of typhus is present in the blood, at least throughout the febrile period, and we have found that the blood of the monkey may still be virulent from 24 to 32 hours after the return of the temperature to normal, but that the blood of the animals in the instances tested by us was not virulent in the pre-febrile stage. The infective agent is present in the different elements of the blood; that is to say, the blood serum collected by defibrination and centrifugation or by clotting, the washed blood corpuscles, and the leucocyte layer all contain the infective agent in about equal proportions.

The virus in the blood is not very highly resistant. It has been found that drying for 24 hours and heating at 55° C. for five minutes deprive it of infectivity. It may resist freezing as long as eight days.

We made a number of experiments to determine the filterability of the infective agent as it exists in the blood serum and we believe that the virus of typhus fever is not filterable and that therefore the infective agent is of a size sufficiently large to be seen with the ordinary powers of the microscope.

I have referred to the fact that the guinea pig is susceptible to infection with typhus fever. This is of importance because I have

suggested that the inoculation of this animal with blood drawn from cases of fever giving a negative Widal and a negative blood culture for the typhoid bacillus will be of value in the diagnosis of suspected cases of typhus fever.

Now, just a few words in regard to the clinical differences between typhus and typhoid. This may be of special significance to the clinician. Both the older and the more recent history of the disease testify to its great clinical likeness to typhoid.

As a rule, the onset of typhus is more abrupt than that of typhoid fever. It is common in typhus to find a history of well-being on going to bed and of rising in the morning with a severe headache and malaise which, within a few hours, compel a return to bed. Chilliness or a distinct chill are common at the onset of typhus, very much more so than in typhoid. Headache with or without chilliness and with or without malaise almost invariably marks the invasion of typhus. Indeed, the patient may complain of little else, either at the beginning or throughout the course of the disease.

In marked contrast to typhoid, the face is flushed and the conjunctivæ are congested in the first few days as the result of a capillary congestion not unlike that seen at the onset of dengue or of yellow fever.

The temperature rises rapidly, very abruptly indeed, and with it the pulse rate.. In typhoid the evolution of the fever takes longer as a general thing, and the rise in the pulse rate is sluggish and not in proportion to the fever. The fever does not as a general thing range at high levels. In this, as well as in some features of its onset, typhus strikingly resembles yellow fever. The duration of the fever is about twice that of yellow fever and about half that of typhoid, namely, about 14 to 16 days. The defervescence also suggests yellow fever, except that it is not infrequently critical in typhus. Some of the older descriptions of typhus give the impression that a critical defervescence is invariable; this has not been our experience as we have seen typhus in Mexico.

An important distinction relates to the eruption. The eruption of typhus appears within three to five days after the onset, therefore earlier than is the rule in typhoid; it is general, sparing only palms and soles; its evolution is rapid, being fully out within 24 to 36 hours, and is permanent, in marked contrast to the typhoid eruption which appears in successive crops. It is important also to recall that the macules constituting the typhus eruption are polymorphic. They have not the regularity of outline or the uniformity of size and appearance of the typhoid rose-spots. Moreover, while most or all of the lesions may fade markedly on pressure in the early stages, some fade little if at all, and the proportion of these may and usually does rapidly increase, the eruption becoming petechial as it becomes older.

Recently, Plotz, working at Mount Sinai Hospital, has reported the cultivation of an organism from cases of typhus, using special anærobic methods. Should his work be confirmed it is possible that methods may be developed, using the organism, for the serum treatment of cases and perhaps a vaccine may be devised that will be of value for prophylactic purposes.

Brill, in his three papers, has reported the observation of 254 cases of so-called Brill's disease, which we now know to be typhus fever, in the wards of Mount Sinai Hospital between the years 1896 and 1910. Eighteen cases were reported by Louria at the Jewish Hospital, Brooklyn, during the summer and fall of 1910. Cases have been reported from other hospitals in New York City, Chicago, Milwaukee, Washington, Atlanta, Providence, Boston, and points in Virginia and Indiana.

Roger Lee, in a study of the case records of the Massachusetts General Hospital for the 10 years from 1902 to 1912, concluded that typhus fever in mild form had been present in Boston and vicinity during that time. He found, in his study of the records of 1,404 cases of continued fever of a greater duration than seven days, 28 cases which corresponded extremely closely with Brill's description of typhus fever. This gave a ratio of 1 case of typhus to 47 cases of typhoid.

There is reason to believe that this same ratio would hold, not only for cases of typhoid fever in Boston, but for typhoid fever in other large cities of the United States. If we assume that the ratio of 1 case of typhus to 47 cases of typhoid, as found by Roger Lee in the Massachusetts General Hospital, holds for certain other large cities, we may estimate for 1912, based upon the reported cases of typhoid fever, that there were present in New York City for that year 72 cases of typhus, in Baltimore 22, Boston 10, Chicago 22, and Philadelphia 34.

That this is not altogether an unwarranted assumption is evident from the fact that, according to the reports from two hospitals in New York City, 36 cases of typhus were treated at Mount Sinai Hospital and 19 cases at the Jewish Hospital in the year 1912. The ratio of cases of typhus to typhoid in the Jewish Hospital for that year was about 1 to 2.3 instead of the ratio of 1 to 47, as found by Lee in Boston.

From this it is evident that typhus fever, instead of having disappeared from the United States, is present and has been present for years, at least in the large cities. This hardly need occasion any surprise when we recall how frequently the presence of certain diseases may be overlooked, as is shown by the history of pellagra and hookworm disease in this country.

There is no experimental evidence to support the view that typhus is acquired in any manner other than by the bite of lice, which have previously fed on a person sick with the disease. This being so, in our prophylaxis it is necessary only that we keep this important fact clearly in mind, and by so doing we may readily deduce the fundamental procedures on which prevention may be based.

In my opinion it may safely be assumed that association with a case of typhus, in the absence of the transmitting insect (the louse), is no more dangerous than association with a case of yellow fever or malaria in the absence of the proper species of mosquito.

All our efforts at prevention, therefore, are centered upon the louse, and these efforts may be broadly grouped under the following headings:

1. Measures for the reduction of lice infestation among the population in general.

2. The destruction of all lice and their eggs found on the bodies, clothing, bedding, and surroundings of all cases of typhus, typhus suspects, and contacts.

3. The adoption of measures, by persons in the vicinity of cases of typhus, to reduce or prevent the possibility of their being bitten by lice.

4. Inoculation with the mild type of the disease (Brill's disease) by persons contemplating entering localities where the disease is prevalent. Should Plotz's work be confirmed the use of a vaccine prepared from the typhus-fever germ may be substituted for this.

The measures to be adopted under the first heading are, to a considerable extent, educational, except in institutions and places over which the sanitary authorities have supervision, such as bathhouses, lodging houses, and other places where numbers of persons may gather.

In surroundings where lice may be found, systematic efforts should be made for the destruction of lice and their eggs. These efforts consist in the use of insecticides, both chemical and physical, bearing in mind the important point that the louse requires frequent feeds of blood and therefore is most apt to be found on recently used clothing or bedding. It is not difficult to kill when exposed to insecticides, while its eggs are much more resistant to chemical agents, but are destroyed by heat or steam.

Under the second heading comes, first of all, the institution of measures requiring the prompt report to the sanitary authorities of all cases or suspected cases of typhus fever. Such cases should be promptly seen and the inspector should be satisfied that the patient's surroundings are free from lice, in which case the patient may, without danger to the community, be treated at home. If, however,

such is not the case, or there is doubt, the patient should at once be removed to a hospital and the place from which he is removed be treated to destroy all lice and even their eggs. For the treatment of materials, such as clothing and bedding, the use of steam is the method of choice. All suspects and contacts should be bathed, the lice and their eggs in the hair being destroyed, and then be given a change of clothing, and their old clothes disinfected. They should be kept under observation for at least 12 days.

The measures to be adopted under the third heading are such as should prevent or minimize the possibility of persons near cases of typhus being bitten by lice. It should be borne in mind that the louse has not the radius of action of the mosquito or even of the flea; and therefore the striking distance of typhus is shorter than that of yellow fever, malaria, or plague. For the transference of lice from one individual to another, rather intimate association with the lice-infested person or his surroundings is necessary; and by reason of the fact that the louse requires frequent feedings to maintain life, this means, for practical purposes, surroundings recently occupied by persons, and possibly by animals.

There is but little to say in regard to the procedures suggested under the fourth heading. The case mortality of the mild form of typhus (Brill's disease), so widespread in the United States, is very low, probably not over 1 per 100 attacked, while the case mortality in Serbia, for example, is possibly 20 or perhaps more per 100 attacked. For this reason alone (and there are other reasons) the advisability of inoculation with the mild form of typhus would certainly seem worthy of serious consideration for those going to places where typhus is prevailing in a virulent form.

The following papers on the subject may be consulted by those interested:

Anderson, John F.: The problem of typhus in the United States. Journ. Am. Med. Assn., vol. 60, June 14, 1913, p. 1845.

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—— and —— Some recent advances in our knowledge of typhus. Journ. Am. Med. Assn., August 17, 1912, p. 514.

Nicolle, Ch.: Reproduction expérimentale du typhus exanthématique chez le singe. Compt. Rend. Acad. des Sciences, vol. 149, July 12, 1909, p. 157.

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Wilder, Russell M.: The problem of the transmission of typhus fever. Journ. Infec. Disease, vol. 9, July, 1911, p. 9.

ANOPHELINE SURVEYS.

METHODS OF CONDUCT AND RELATION TO ANTIMALARIAL WORK.

By R. H. von Ezdorf, Surgeon, United States Public Health Service.

In the course of malarial investigations conducted by the United States Public Health Service since June 27, 1913, a number of surveys have been made with a view to studying the prevalence of malarial fevers and the conditions contributing thereto.

With reference to the Anopheline mosquitoes, these surveys have comprised chiefly an examination of the location and extent of their breeding places, and the determination of the species, their flight and habits.

For the intelligent application of antimalarial measures and the economic expenditure of public moneys, researches must be made at each place along the lines to be described.

No new method of procedure has been evolved, but the following description, together with the experiences encountered as a result of surveys made by the different working parties in 16 places in Arkansas, 2 in Mississippi, 1 in Alabama, 3 in Virginia, 2 in Georgia, 4 in South Carolina, and 1 in North Carolina, may serve as a guide to local health officers in undertaking similar work.

The local health officer should have information regarding the cases of malaria, the types of infection and seasonal prevalence in the locality to be studied. Other desirable information is the location and kind of industries, form of water supply and drainage system, topographical and meteorological conditions, including location and

number of natural water courses, natural direction of surface drainage, presence of ditches, low, poorly drained areas, temperature, rainfall, and direction of prevailing winds.

The Malaria-Bearing Mosquitoes.

One must, of course, be familiar with the characteristic appearance of Anopheline mosquitoes in their various stages of development, so that a brief description of these may be warranted.

The malaria-bearing mosquitoes belong to the subfamily of Anophelinæ, which has been divided into 18 genera, but in a more recent nomenclature all of these are classed in one genus of Anopheles.

Many species have been determined, of which number 40 are more or less definitely known to act as hosts for the transmission of the malarial parasite.

Frederick Knab gives a list of 34 species of American Anopheles, of which number 8 have been definitely shown to serve as hosts for the malarial parasite. These are:

Anopheles albimanus.	Anopheles quadrimaculatus.
argyritarsis.	pseudomaculipes.
crucians.	pseudopunctipennis.
intermedium.	tarsimaculata.

The most common species encountered in the Southern States where surveys have been made are *Anopheles crucians, quadrimaculatus* and *punctipennis*. The last named, *Anopheles punctipennis*, is not considered to be a transmitter of malaria. *Anopheles crucians*, according to experiments by Beyer and his coworkers, is said to be a transmitter of the estivo-autumnal parasite only, but this needs confirmation. It is evident from this that Anopheles mosquitoes may be present, and yet no malaria prevail, and again, the prevailing species may determine the type of malaria. *Anopheles quadrimaculatus* will transmit all three types of malarial parasites, and this species is the one most commonly found in the Southern States where malaria prevails.

For the determination of the species, it is advised that specimens be collected and sent to a competent entomologist or person familiar with the characteristics of the Anophelines. Specimens collected by the working parties were sent for determination to Dr. L. O. Howard, Consulting Entomologist of the Public Health Service.

General Description.

The Anopheles mosquitoes pass, as do all mosquitoes, through the stages of (a) egg or ovum, (b) larva or wiggler, (c) pupa or tumbler, from which (d) the imago or mosquito emerges. Although the larval and pupal stages are passed in water, mosquitoes, during these stages,

are, nevertheless, true air breathers. All stages present characteristics with which the health officer should be familiar.

The eggs of the Anopheles are minute and appear lying singly and flat on the water surface. Where present in numbers they frequently form symmetrical patterns. The individual egg is long and narrow, flat on one side, convex on the opposite side, and has lateral floats. (See figs. 1, 2, and 3.)

In making a survey of breeding places eggs are not looked for, although their presence is of interest, larvæ and pupæ only being sought.

The Anopheles' larva is distinguished by the flat or parallel position normally assumed at the surface of the water, since during a great part of its existence it feeds at the surface and descends only when disturbed, but quickly rises to the top. The full-grown larva frequently descends and feeds below the surface.

Anatomically, the head of the larva is narrower than the thorax. A stump-like respiratory siphon projects from the eighth abdominal segment. The larva of other species of mosquitoes has a longer respiratory siphon, so that when it rises to the surface of the water to breathe, the body is submerged and usually appears to be hanging with the head downward. (See figs. 4, 5, and 6.)

The larvæ may be found variously colored white, yellow, brown, green, or black, the color sometimes depending upon the character of their food. The size varies with the age, the smallest being about one-sixteenth inch in length, while those reaching the stage before pupating (eight to nine days) are about one-fourth inch in length.

The Anopheles pupæ are comma-shaped in appearance. They are not so easily distinguished from other mosquito pupæ, the only reliable differences being in the arrangement of some of the minute hairs. Ordinarily in the surveys where Anopheles and the common Culex have been found, the Anopheles pupæ could be distinguished by the two breathing tubes located on either side of the back of the thorax, which appear funnel-shaped, with the broad end toward the surface, while those of the common Culex appear slender and narrow. (See fig. 7.)

The Anopheles (punctipennis, crucians, and quadrimaculatus) mosquito commonly met with is distinguished:

(1) By its position when resting on a surface. It holds its entire body in one straight line, forming an angle, or standing nearly vertical to the surface on which it stands.

(2) By its palpi, which are as long, or nearly as long, as the proboscis in both sexes. In the male the palpi are club-shaped apically, which distinguishes it from other male mosquitoes.

(3) By having dark spots on the wings. (There are other species of mosquitoes, as *Theobaldia incidens*, *Lutzia bigoti*, *Bancrofti* sp., etc., with spotted wings, but none was found in any surveys made.)

The male is recognized by the antennæ, which are densely covered with long hairs; in the female the hairs of the antennæ are short and fewer. Of course it is known that only the female bites, and is therefore the transmitter of the malarial parasites. (See figs. 8–15.)

For all practical purposes a knowledge of the general characteristic appearances of the larvæ and adult Anopheles is all that is necessary.

It has been found that even school children readily learn to distinguish Anopheles mosquitoes by these characteristics. The sanitary inspector on whom the local health officer may depend for discovering the breeding places of Anopheles soon becomes quite proficient.

Equipment.

The equipment necessary for making surveys consists of the following:

One small canvas bag.

One white enameled dipper, with hollow handle.

One stick for making extension to handle of dipper, and for beating a way through brush, briers, or tall grass.

One small glass dropper, with the tip cut off, so that the opening is about one-eighth inch in diameter. This to be used in securing larvæ and pupæ from the dipper.

Six small vials.

Six small pill boxes.

One note book and pencil.

One entomological bottle, 4 inches long, 1 inch in diameter (a large test tube will serve equally well), with cork. The bottom of the bottle is filled for a depth of 1 inch, with cotton and rubber bands saturated with chloroform. This is covered with a circular disk of cardboard or thin layer of cork. This is to serve as a catching bottle for collecting adult mosquitoes.

Method of Procedure.

For this survey one must be prepared to walk, as in no other way can the work be accomplished.

An ordinary *dipper* is used in making the examination of any collection of water. It is useless to dip in an open stream of running water. The dipper should be used for skimming the surface of water close to banks, shallow pools, or any collections of water, particularly where leaves, stumps, grass, trees, or any other vegetation are present. Another method may be employed by lowering the dipper into the water and allowing the water to rush over the edge. In any case, when a dipper of water is obtained it is examined for the presence of larvæ and pupæ.

If it is desired to preserve Anopheles larvæ and pupæ, these may be easily removed from the dipper with the dropper and placed in collecting bottles or other containers at hand. The convenience of using a dropper is that only the Anopheles larvæ and pupæ desired may be secured, thus eliminating all other species that may be in the dipper of water.

Fig. 1.—A raft of Culex ova. (After Deaderick.)

Fig. 2. — Patterns assumed by Anopheles ova. (After Deaderick.)

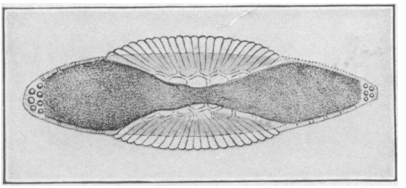

Fig. 3.—Egg, Anopheles maculipennis (quadrimaculatus). (After Ludlow.)

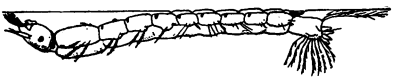

Fig. 4.—Larva of Anopheles mosquito. (Castellani and Chalmers. Modified after Howard.)

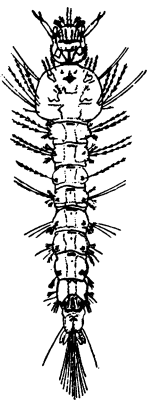

Fig. 5.—Larva of Anopheles maculipennis (quadrimaculatus). (Castellani and Chalmers, after Nuttall and Shipley.)

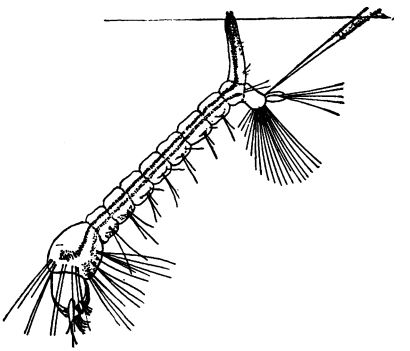

Fig. 6.—Larva of a Culex mosquito. (After Howard.)

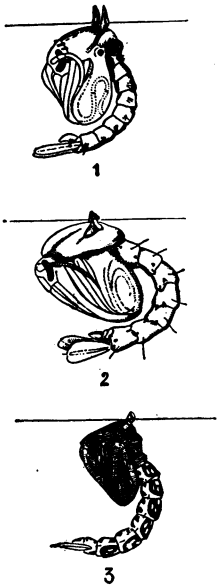

Fig. 7.—Pupae; 1 Culex; 2 Anopheles; 3 Aëdes calopus. (After Howard.)

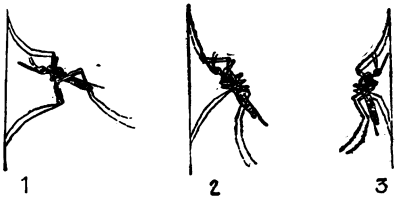

Fig. 8.—Resting posture of mosquitoes; 1 and 2 Anopheles; 3 Culex pipiens. (After Sambon.)

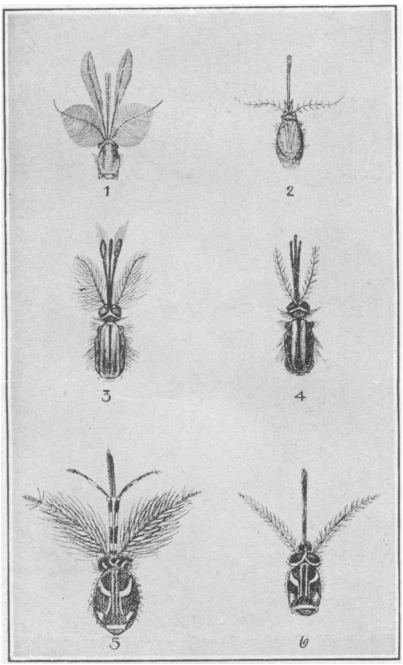

Fig. 9.—Heads of mosquitoes; 1 and 2 male and female Culex pungens; 3 and 4 male and female Anopheles; 5 and 6 male and female Aëdes calopus. (After Stitt.)

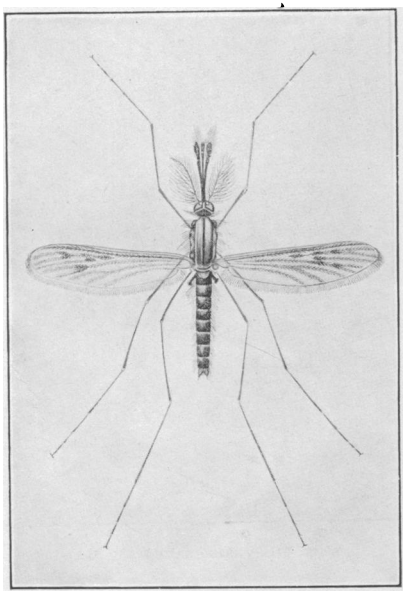

Fig. 10.—Anopheles maculipennis (quadrimaculatus), male. (After Castellani and Chalmers.)

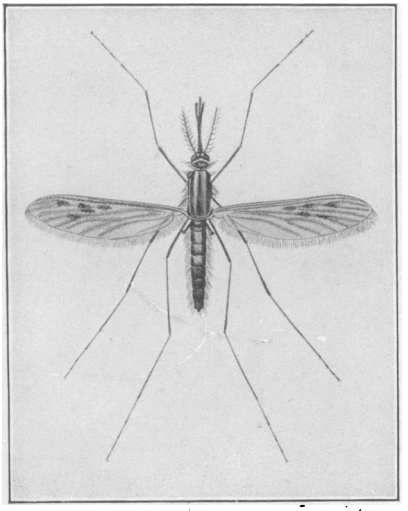

Fig. 11.—Anopheles maculipennis (quadrimaculatus), female. (Castellani and Chalmers, after Austen.)

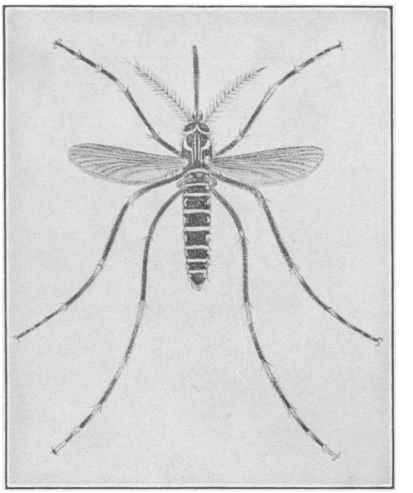

Fig. 12.—Aëdes calopus, female.

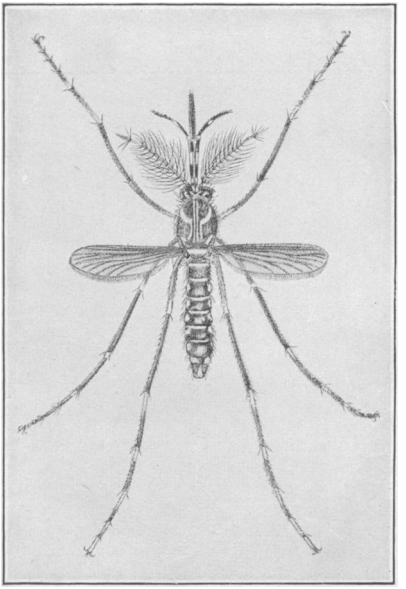

Fig. 13.—Aëdes calopus, male.

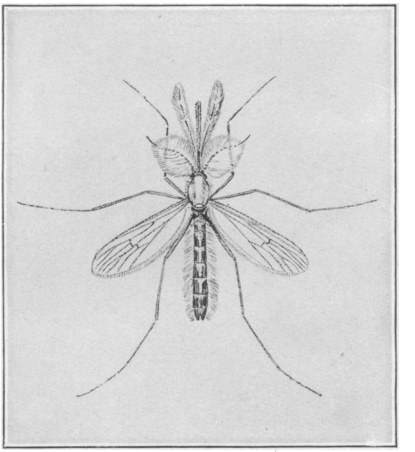

Fig. 14.—Culex pungens, male. (After Howard.)

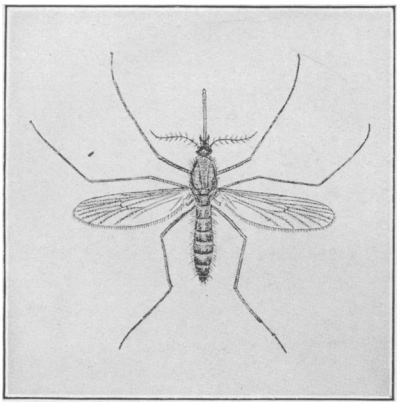

Fig. 15.—Culex pungens, female. (After Howard.)

A small label, giving the place and date of collection, may be stuck in with the cork.

It is important to note the number of larvæ and their apparent ages as shown by their comparative sizes.

Other conditions should be noted, such as the character of water, whether clean or muddy, stagnant, or flowing, the presence of vegetation, algæ, fish, water insects, and the like.

The presence of mosquito larvæ in any place examined is not always positive evidence that Anopheles are propagating there. For example, if all the larvæ found are small or not beyond the half-grown size, this may be due to adverse conditions, such as the presence of fish which eat the larvæ before they reach adult size; again, if only large or nearly grown larvæ are found, these may have been carried to the place by heavy rains. In a typical breeding place, larvæ in various sizes and stages will be found.

At times one will find what appears to be a most favorable place for the breeding of Anopheles and yet no Anopheles mosquito larvæ are to be found. A careful examination may explain this, e. g., presence of top-minnows, predaceous water insects such as "water boatmen," water shield, or other plants forming a dense mat over the water surface. The absence of larvæ may also be due to some chemical influence from waste discharges, such as dye water, coal-gas water, engine oils, etc., as may be evidenced by the presence of dead algæ or dead grass.

Breeding Places.

A general division of breeding places found may be given under two heads, viz:

(1) Natural or breeding places of selection or choice.

(2) Artificial or breeding places of necessity, opportunity, or accident.

The natural or breeding places of choice are: Brooks, creeks, branches, edges of ponds, ditches, street gutters, swamps, low wet areas, hog wallows, water-filled hoof prints of cattle, road pools in roads little traveled, pools among rocks, rice fields, etc.

It has been found that water from ice plants, exhaust water from steam plants, leaks from water pipes, mains, fire plugs, pumps, hydrants, overflows from troughs and tanks, in fact, any puddles of clear, fresh water collecting in places where grass, algæ (frog grass), or any other form of vegetation is present, form conditions which may be classed as natural breeding places, and are frequently prolific sources of Anopheles mosquitoes in many communities.

The artificial breeding places are barrels, hollow stumps of trees, boats, fountains, and the like. Wherever artificial containers have been found to contain Anopheles larvæ, natural breeding places were usually not very distant, or Anopheles mosquitoes were quite numer-

ous, so that the selection of such places by them for laying their eggs seems to be one of convenience.

Artificial water containers may, therefore, at times and under certain conditions, become factors in breeding Anopheles mosquitoes, and will have to be dealt with when undertaking antimosquito measures.

Special Conditions.

A description of some of the special conditions encountered may be of interest.

Anopheles larvæ are rarely found in water containing sewage, or waste water containing soap, grease, or oil, but Culex mosquito larvæ are commonly encountered in such contaminated waters.

At Wynne, Ark., there is a ditch beginning at the railroad station, receiving the effluent water from a septic tank, and, a short distance from this, water containing lime from the railroad water-purification tanks.

The ditch takes a tortuous route for the first quarter of a mile of its course. In this the water was foul and Culex mosquitoes were breeding in enormous numbers; but in the remaining portion as it continued along a street gutter for a distance of a mile, the water, as a result of sedimentation and other influences, became clear and apparently clean. Here Anopheles found a most favorable breeding ground.

At Osceola, Ark., the overflow water from the septic tank of a hotel, discharging into a ditch, contained countless numbers of Culex larvæ and pupæ in the first 300 feet of its course, but Anopheles larvæ in the remaining portion of the ditch where the water was clean and clear.

At Forest City, Ark., a ditch receiving water from an ice plant and bottling works contained Anopheles and Culex larvæ, while at the place of juncture with the water from a discharging sewer no more Anopheles larvæ could be found, but Culex prevailed.

At Columbus, Ga., Senior Surg. H. R. Carter found a ravine running about 3 to 3½ miles to the river. In the upper end a sewer emptied into it. On the side of this ravine there were a number of small springs 50 to 200 feet distant, nine of them within a mile and a quarter. Along the course of the stream there were many marshy places containing clear and apparently clean water from these springs. Anopheles mosquitoes in great numbers were breeding up to the points where these emptied into the foul stream of the ravine. No Anopheles were to be found in the polluted stream until about a mile and a quarter below its origin, where the water became clear and odorless and flowed broadly over a grass-covered area for a quarter of a mile, at which point sewage water again

entered and Anopheles again disappeared. Culex larvæ in enormous numbers were found in the foul waters.

At Greenville, Miss., a ditch received waste water from a municipal pumping plant. Beginning at the source for a distance of about 300 feet no mosquito life was found, due to the engine oil which covered the water; then for a distance of about two squares—600 feet—only Culex larvæ and pupæ were found, increasing proportionately farther on where the ditch was deep and covered with vegetation.

In only one place, at Wakefield, Va., were Anopheles larvæ found in a pool of water which was soapy in character. It is possible that the water contamination occurred after the larvæ had developed.

Collections of water formed from steam exhausts and waste water have been mentioned as frequently contributing to the formation of breeding places for Anopheles mosquitoes. The examination of industrial and manufacturing plants, such as ice plants, mills, artesian wells, electric light and power plants, lumber mills, bottling works, and many manufacturing concerns, in places where malaria prevails, is therefore important. In every State where surveys were made, as in Arkansas, Mississippi, South Carolina, North Carolina, and Virginia, some industrial plants were responsible for the formation, in close proximity to habitations, of breeding places of Anopheles mosquitoes.

Many artificial water containers were examined and Anopheles found in some of them. Some of these observations are interesting.

At Lake Village, Ark. (1913), two barrels containing rain water, were found standing beside a house. In one of them Culex and Aëdes (Stegomyia) were breeding and in the other Anopheles, Culex, and Aëdes. The only difference noted in the conditions of the two barrels was that the barrel having Anopheles larvæ contained dead leaves from trees.

On a trestle at Helena, Ark., there were three open barrels containing water with no vegetation, partly covered with cinders and coal dust. Anopheles larvæ were found in them.

Barrels containing water for fire protection purposes, as in lumber yards, were frequently found breeding Culex and Aëdes (Stegomyia) mosquitoes, but occasionally Anopheles were also found.

At Osceola, Ark., a garden fountain, containing large water lilies, was found to be swarming with Anopheles larvæ and pupæ. It was learned that a catfish, when small, was placed in this fountain and as it grew to full size had disposed of a number of small gold fish. Gold fish ordinarily feed on larvæ.

No bottles or tin cans were found (in 1914) which contained Anopheles larvæ. In 1911 at Mobile, Ala., one tin can and one bottle having grass in them were found to contain Anopheles larvæ.

Other interesting artificial breeding places of Anopheles were found, such as a boat used as a watering trough, at Scott, Miss.; a partly submerged boat in the river at Emporia, Va.; the hollow stump of a burned oak tree at Scott, Miss.; an iron pot located 20 feet from a stream, standing beside other artificial water containers, tubs, and barrels, at Helena, Ark.

Prevailing Species of Mosquitoes.

It is important that the prevailing species of Anopheles mosquitoes be known. This may be ascertained in two ways:

(1) By collecting the adult mosquitoes.

(2) By breeding out larvæ and pupæ.

In breeding out larvæ the adult or nearly full grown larvæ should be selected. Pupæ will hatch out in one or two days.

For making a collection of mosquitoes a collecting bottle, such as an entomological bottle, or a large-mouth test tube, previously described under equipment, is very convenient.

When chloroform is not available the bottle or test tube may be charged by blowing the smoke from a cigar, pipe, or cigarette into it. The smoke leaves a minute deposit of nicotine, which, while a little slower in its action in killing mosquitoes collected, will serve for a day or two.

Searching for the Adult Anopheles Mosquitoes.

The places where Anopheles are likely to hide during the daytime are sought. The search often requires considerable time and patience, as this mosquito is very shy and dislikes daylight.

The places where adult Anopheles were collected were garrets, bedrooms, on walls, under mosquito bars, behind pictures, on clothing, behind doors and furniture, in barns, open fireplaces, privies, chicken coops, wood and coal sheds, stables, garages, under porches and buildings, in wind-protected corners of porches, in empty barrels, trash heaps, wagons, carriages, automobiles, on trunks of trees, in the hollows of trees and tree stumps, in caves, eroded overhanging banks of streams, and on spider webs.

Since Anopheles are frequently, almost invariably, to be found in the outhouse privies, often engorged with blood, the question may arise if these places may not be a source of malarial infection. The sanitary privy should therefore be made mosquito proof as well as fly proof.

Anopheles mosquitoes are undoubtedly carried great distances, as they are not infrequently found in carriages, on tops of wagons and automobiles, and in freight cars.

Spider webs and cobwebs are favorite resting places for Anopheles mosquitoes, from which they will fly upon the slightest disturbance.

The Anopheles appear hanging from a web, and as many as 60 have been counted on a single web.

Records and Other Data.

A record of all mosquito-breeding places found should be kept. All mosquito-producing areas, such as pools, ditches, streams, etc., should be marked on a map (to be known as a mosquito-campaign map) and each place given a number.

The date when each place is treated or inspected should also be recorded, so that every step may be followed, particularly in checking up the work done by inspectors or others.

The record of the different measures taken and the cost of each, will also be valuable for making comparative studies of results of antimosquito work.

Antimosquito Measures.

The measures generally employed are, briefly, the following:

(a) Regrading and training of streams, creeks, or similar natural watercourses so as to favor a free current.

The shallow grass-grown margin of streams, ponds, or any bodies of water must be cleared and the banks made with a clean-cut edge in order that any top-feeding minnows present may have a clear field for their activity and that this field may be extended.

(*b*) *Drainage* is employed for the removal of standing water, or to produce a movement of water unfavorable to mosquito breeding. Ditches should be as few and as short as possible, and so constructed that any water present will be confined to a narrow channel. Open ditches must be kept free of grass, débris, or any other obstructions. They may be made permanent and easy of maintenance by lining with cement, stone, or wood.

Ditches, as ordinarily used, should have a bottom not over 8 inches wide and the sides sloping.

Subsoil tile drains, while more costly, are most effective.

(*c*) *Filling* in of low places that are too low to drain, or which can not be drained economically. For this purpose any available porous material, such as ashes, sawdust, or shavings, may be employed. When using sawdust or shavings, such material should extend 6 inches or more above high water which follows a heavy rain.

(*d*) *Oiling and larvacides.*—Oil may be applied by the use of:

(1) Garden watering pot.

(2) Knapsack sprayer.

(3) Drip can for intermittent or continuous oiling regulated to deliver 18–20 drops of oil per minute. The bottom of the drip can should be about 4 feet above the level of the water surface.

(4) Oil-saturated bundle of cotton waste. This is to be anchored into place and will serve for about one week.

Larvacides are used as a substitute for oil. The most effective larvacide in use in Panama is a phenol preparation. At some places, industrial waste discharges, such as dye water, coal-gas water, and bleaching water, may be economically diverted into a stream or small watercourse and serve every purpose of a larvacide.

(*e*) *Natural enemies:* Stocking with top-feeding minnows is a measure applicable in certain ditches, ponds, pools, swamps, streams, and many other bodies of water.

General Remarks.

Constant supervision and inspection must be made of all antimosquito work undertaken, and new breeding places must be sought.

The season of mosquito prevalence begins in the Southern States in March and April and continues until November. Antimosquito measures should be planned and begun in the winter months, but much depends upon the character and extent of the work to be done and the climatic conditions. The work should begin from the center of a town and extend, for practical purposes, a quarter of a mile or more beyond the corporate limits or bordering residences to be benefited.

No antimalarial campaign, however, will or can be successfully and economically conducted without making surveys on the lines given.

It has been the experience of all the officers engaged in this work that antimalarial work is more readily undertaken by communities in which the majority of the population is engaged in a few industries, or a single large industry, than in the ordinary commercial towns having divided interests.

There are several reasons for this, namely:

(1) Managers of large industries are accustomed to finance undertakings from which no immediate returns may be obtained.

(2) Housing, sanitation, and the medical service for all residents are provided, and are therefore under their direct control.

(3) Steady, sufficient, and efficient labor is assured when living conditions are made attractive and healthful.

In the ordinary commercial towns, public interest must be aroused in order to create a demand for health work. An educational campaign must be conducted, and the people taught that the disease is preventable. It is an asset to any town to advertise its freedom from malaria, particularly in the Southern States.

PLAGUE-PREVENTION WORK.

CALIFORNIA.

The following report of plague-prevention work in California for the week ended April 10, 1915, was received from Passed Asst. Surg. Hurley, of the United States Public Health Service, in temporary charge of the work:

San Francisco, Cal.

RAT PROOFING.

New buildings:	
Inspections of work under construction	283
Basement floors concreted (53,970 sq. ft.)	110
Floors concreted (101,960 sq. ft.)	139
Yards, passageways, etc. (30,720 sq. ft.)	115
Total area of concrete laid (sq. ft.)	186,650
Class A, B, and C (fire proof) buildings:	
Inspections made	264
Roof and basement ventilators, etc., screened	3,519
Wire screening used (sq. ft.)	20,690
Openings around pipes, etc., closed with cement	11,201
Sidewalk lens lights replaced	3,940
Old buildings:	
Inspections made	603
Wooden floors removed	55
Yards and passageways, planking removed	18

RAT PROOFING—continued.

Old buildings—Continued.	
Cubic feet new foundation walls installed	5,548
Concrete floors installed (43,792 sq. ft.)	42
Basements concreted (18,346 sq. ft.)	17
Yards and passageways, etc., concreted (14,425 sq. ft.)	57
Total area concrete laid (sq. ft.)	76,563
Floors rat proofed with wire cloth (8,890 sq. ft.)	8
Buildings razed	13
New garbage cans stamped approved	633
Nuisances abated	337

OPERATIONS ON THE WATER FRONT.

Vessels inspected for rat guards	22
Reinspections made on vessels	24
New rat guards procured	8
Defective rat guards repaired	3
Vessel on which cargo was inspected	1

Amount of cargo and description of same.	Condition.	Rat evidence.
Steamer Queen, from Seattle:		
30 bales rags	O. K.	None.
120 cases salmon, milk, household goods	O. K.	None.
600 sacks peanuts, wheat and bran	O. K.	None.

Rats trapped on wharves and water front	16
Rats trapped on vessels	16
Traps set on wharves and water front	180
Traps set on vessels	48
Vessels trapped on	10
Poisons placed on water front (pieces)	3,600
Poisons placed within Panama-Pacific International Exposition grounds	7,200
Bait used on water front and vessels. Bacon (lbs.)	6
Amount of bread used in poisoning water front (loaves)	12
Pounds of poison used on water front	6

RATS COLLECTED AND EXAMINED FOR PLAGUE.

Collected	233
Examined	193
Found infected	0

RATS IDENTIFIED.

Mus norvegicus	115
Mus musculus	39
Mus alexandrinus	43
Mus rattus	36

Squirrels collected and examined for plague.

San Benito County	119
Contra Costa County	81
Merced County	69
Stanislaus County	29
Santa Cruz County	25
Santa Clara County	23
Total	346
Found infected	0

Ranches inspected and hunted over.

San Benito County	39
Contra Costa County	24
Merced County	16
Stanislaus County	4
Santa Cruz County	2
Santa Clara County	12
Total	97

Record of plague infection.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco	Jan. 30,1908	Oct. 23,1908	(1)	398 rats.
Oakland	Aug. 9,1911	Dec. 1,1908	(1)	126 rats.
Berkeley	Aug. 28,1907	(1)	(1)	(1)
Los Angeles	Aug. 11,1908	(1)	Aug. 21,1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).	Sept. 24,1909	Oct. 17,1909[2]	Aug. 7,1914	286 squirrels, wood rat.
Contra Costa	May 17,1914	(1)	Mar. 4,1915	1,567 squirrels.
Fresno	(1)	(1)	Oct. 27,1911	1 squirrel.
Merced	(1)	(1)	July 12,1911	5 squirrels.
Monterey	(1)	(1)	Apr. 10,1914	6 squirrels.
San Benito	June 4,1913	(1)	Sept. 26,1914	36 squirrels.
San Joaquin	Sept. 18,1911	(1)	Aug. 26,1911	18 squirrels.
San Luis Obispo	(1)	(1)	Jan. 29,1910	1 squirrel.
Santa Clara	Aug. 31,1910	(1)	July 23,1913	25 squirrels.
Santa Cruz	(1)	(1)	May 17,1910	3 squirrels.
Stanislaus	(1)	(1)	June 2,1911	13 squirrels.

[1] None. [2] Wood rat.

Operations are being carried on under Federal supervision on the Tormey estate, Contra Costa County, labor and material being furnished by the owners, as follows:

Number of acres covered	74
Number of holes treated	3,885

The work is being carried on in the following-named counties: Alameda, Contra Costa, San Francisco, Merced, San Joaquin, Santa Cruz, Stanislaus, San Benito, Santa Clara, and San Mateo.

LOUISIANA—NEW ORLEANS—PLAGUE-ERADICATION.

The following report of plague-eradication work at New Orleans for the week ended April 17, 1915, was received from Surg. Creel, of the United States Public Health Service, in temporary charge of the work:

OUTGOING QUARANTINE.

Vessels fumigated with sulphur	46
Vessels fumigated with carbon monoxide	15
Vessels fumigated with hydrocyanic gas	1
Pounds of sulphur used	10,445
Pounds of coke consumed in carbon monoxide fumigation	23,300
Pounds of potassium cyanide used in hydrocyanic gas fumigation	102
Pounds of sodium carbonate used in hydrocyanic gas fumigation	120
Pounds of sulphuric acid used in hydrocyanic gas fumigation	104
Clean bills of health issued	31
Foul bills of health issued	8

OVERLAND FREIGHT INSPECTION.

Cars inspected, found in good order, permitted to load	2,212
Cars ordered repaired before loading	1,496
Total cars inspected	3,708

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED FOR WEEK ENDED APRIL 17, 1915.

Alabama	108
Arizona	2
Arkansas	24
California	21
Carolina, North	2
Carolina, South	4
Colorado	5

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED FOR WEEK ENDED APRIL 17, 1915—con.

Florida	15
Georgia	45
Illinois	287
Indiana	18
Iowa	27
Kansas	19
Kentucky	32
Louisiana	965
Michigan	66
Minnesota	12
Mississippi	287
Missouri	68
New York	20
Ohio	107
Oklahoma	8
Oregon	4
Pennsylvania	6
Tennessee	94
Texas	174
Virginia	5
Wisconsin	44
Canada	7

FIELD OPERATIONS.

Rats trapped	5,872
Premises inspected	11,351
Notices served	1,778

BUILDINGS RAT PROOFED.

By elevation	179
By marginal concrete wall	138
By concrete floor and wall	325
By minor repairs	519
Square yards of concrete laid	16,211
Total buildings rat proofed	1,161
Total buildings rat proofed to date	30,830
Number of abatements	2,853
Number of abatements to date	20,816

BUILDINGS RAT PROOFED—continued.

LABORATORY OPERATIONS.

Rodents examined	2,820
Mus norvegicus	1,965
Mus rattus	362
Mus alexandrinus	283
Mus musculus	3,102
Wood rats	61
Putrid	163
Muskrats	149
Total rodents received at laboratory	5,902
Number of suspicious rats	7
Last case of human plague, Oct. 4, 1914.	
Last case of rodent plague, Mar. 9, 1915.	
gtal number of rodents captured to Apr. 17	323,725
Total number of rodents examined to Apr. 17	237,625

Total cases of rodent plague to Apr. 17 by species:	
Mus musculus	4
Mus rattus	16
Mus norvegicus	203
Mus alexandrinus	8
Total rodent cases to Apr. 17, 1915	236

HAWAII—HONOLULU—PLAGUE-PREVENTION.

The following report of plague-prevention work at Honolulu for the week ended April 3, 1915, was received from Surg. Trotter, of the United States Public Health Service:

Total rats and mongoose taken	421
Rats trapped	412
Mongoose trapped	6
Rats found dead (Mus musculus)	3
Examined microscopically	350
Showing plague infection	0
Classification of rats trapped:	
Mus alexandrinus	203
Mus musculus	143
Mus norvegicus	36
Mus rattus	30
Average number of traps set daily	1,085
Cost per rat destroyed ....cents..	19.7

Last case rat plague, Aiea, 9 miles from Honolulu Apr. 12, 1910.
Last case human plague, Honolulu, July 12, 1910.
Last case rat plague Kalopa stable, Paauhau, Hawaii, Aug. 29, 1914.
Last case human plague, Paauhau Landing, Hawaii, Aug. 17, 1914.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

RECIPROCAL NOTIFICATION.

Minnesota.

Cases of communicable diseases referred during March, 1915, to other State health departments, by Collaborating Epidemiologist Bracken, of the Minnesota State Board of Health.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Smallpox:		
Devils Lake, N. Dak.	Minneapolis, Hennepin County, Minn.	Patient transferred from Devils Lake, N. Dak., to Minneapolis, Minn., while ill with smallpox.
Moorhead, Clay County	Fargo, Cass County, N. Dak.	Moved from Moorhead to quarantine hospital at Fargo, N. Dak.
Albert Lea, Freeborn County.	Ottumwa, Wapello County, Iowa.	Had been traveling in Iowa while sick with smallpox. Arrived at Albert Lea and was quarantined.
Hendrum Township, Norman County.	Carthage, Miner County, S. Dak.	Came direct from Carthage, S. Dak., to Hendrum Township and developed prodromes of smallpox.
Tuberculosis:		
St. Paul, Ramsey County...	Wilson, Lincoln County, Wis.	"Open" case, left St. Paul to live at Wilson, Wis.
Do	South Tacoma, Pierce County, Wash.	"Open" case, left St. Paul to live at South Tacoma, Wash.
Typhoid fever:		
Fairview Township, Lyon County.	Chinook, Blaine County, Mont.	Patient left Chinook, Mont., while first sick to come home to Fairview Township, Minn.
Crookston, Polk County	Grand Forks, Grand Forks County, N. Dak.	Three weeks previous to earliest symptoms was employed as nurse at Grand Forks, N. Dak.

CEREBROSPINAL MENINGITIS.

State Reports for March, 1915.

Places.	New cases reported.	Places.	New cases reported.
California:		Indiana:	
Imperial County—		Boone County	1
El Centro	1	Johnson County	1
Los Angeles County—		Montgomery County	1
Los Angeles	4	Ripley County	1
San Francisco County—		Washington County	3
San Francisco	2		
Total	7	Total	7

CEREBROSPINAL MENINGITIS—Continued.

State Reports for March, 1915—Continued.

Places.	New cases reported.
Kansas:	
Leavenworth County	1
Reno County	1
Shawnee County—	
Topeka	1
Sumner County	2
Wyandotte County—	
Kansas City	1
Total	6
Massachusetts:	
Bristol County—	
New Bedford	1
Franklin County—	
Greenfield	2
Middlesex County—	
Chelmsford	2
Lowell	1
Norfolk County—	
Wellesley	1
Suffolk County—	
Boston	4
Revere	1
Worcester County—	
Worcester	1
Total	13
Minnesota:	
Benton County—	
Glendorado Township	1
Hennepin County—	
Minneapolis	1
St. Louis County—	
Duluth	2
Total	4
Ohio:	
Ashtabula County—	
Ashtabula	1
Belmont County—	
Martins Ferry	1
Cuyahoga County—	
Cleveland	3
Ohio—Continued.	
Hamilton County—	
Cincinnati	4
Huron County	1
Knox County	1
Lucas County—	
Toledo	1
Montgomery County	1
Total	13
South Carolina:	
Marion County	1
Orangeburg County	2
Total	3
Virginia:	
Accomac County	2
Albemarle County	1
Amelia County	1
Augusta County	1
Bedford County	2
Campbell County	1
Dinwiddie County	1
Fluvanna County	1
Grayson County	1
Henrico County	1
Richmond	4
James City County	1
Loudoun County	1
Nansemond County	2
Orange County	1
Powhatan County	1
Prince Edward County	1
Rockbridge County	1
Scott County	1
Smyth County	1
Sussex County	2
Tazewell County	2
Washington County	1
Wise County	5
Wythe County	1
Total	37

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.
Buffalo, N. Y.	1	
Chicago, Ill.	1	1
Cincinnati, Ohio	3	
Columbus, Ohio	1	
El Paso, Tex.	1	1
La Crosse, Wis.		1
New Orleans, La.		1
New York, N. Y.	2	1
Worcester, Mass.	1	

DIPHTHERIA.

California—San Francisco.

Passed Asst. Surg. Hurley reported that during the 9 days ended April 21, 1915, 22 new cases of diphtheria were notified in San Francisco, Cal.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1340.

ERYSIPELAS.

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md	.....	1	Philadelphia, Pa	14	5
Beaver Falls, Pa	1	.....	Pittsburgh, Pa	11	.....
Binghampton, N. Y	1	.....	Reading, Pa	3	.....
Bridgeport, Conn	1	.....	Richmond, Va	.....	1
Brockton, Mass	1	.....	Rochester, N. Y	2	.....
Buffalo, N. Y	3	1	Sacramento, Cal	1	.....
Chicago, Ill	18	2	St. Louis, Mo	11	2
Cincinnati, Ohio	5	1	San Francisco, Cal	1	.....
Cleveland, Ohio	8	.....	Schenectady, N. Y	3	.....
Cumberland, Ohio	1	.....	South Bethlehem, Pa	3	.....
Dayton , Ohio	3	.....	Steelton, Pa	1	.....
Detroit, Mich	2	.....	Syracuse, N. Y	2	.....
Harrisburg, Pa	2	.....	Trenton, N. J	1	.....
Hartford, Conn	1	.....	Toledo, Ohio	.....	1
Kalamazoo, Mich	1	.....	Wheeling, W. Va	1	.....
Lancaster, Pa	1	.....	Wilkes-Barre, Pa	1	.....
Los Angeles, Cal	5	1	Wilkinsburg, Pa	1	.....
Madison, Wis	3	.....	York, Pa	2	.....
Milwaukee, Wis	3	.....	Yonkers, N. Y	1	.....
New York, N. Y	.....	9	Zanesville, Ohio	1	.....
Oakland, Cal	1	.....			

GONORRHEA.

State Reports for March, 1915.

During the month of March, 1915, cases of gonorrhea were notified in States as follows: California 29, Louisiana 9, Ohio 347.

MALARIA.

State Reports for March, 1915.

During the month of March, 1915, cases of malaria were notified in States as follows: California 41, Massachusetts 3, South Carolina 68, Virginia 500.

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1340.

PELLAGRA.

State Reports for March, 1915.

During the month of March, 1915, cases of pellagra were notified in States as follows: California 3, Louisiana 7, South Carolina 38, Virginia 51.

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Charleston, S. C	.....	1	Nashville, Tenn	.....	1
Florence, S. C	1	.....	New Orleans, La	.....	1
Little Rock, Ark	1	.....	Norfolk, Va	1	1

PNEUMONIA.

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Auburn, N. Y.	3	2	Marinette, Wis.	4	3
Binghamton, N. Y.	7	3	Muscatine, Iowa	1	.....
Braddock, Pa.	7	.....	Nashua, N. H.	1	.....
Canton, Ohio.	1	.....	New Bedford, Mass.	2	2
Chicago, Ill.	238	113	New Castle, Pa.	1	.....
Cleveland, Ohio	45	22	Newport News, Va.	1	1
Coffeyville, Kans.	2	.....	Norfolk, Va.	7	7
Dayton, Ohio.	4	4	Philadelphia, Pa.	107	120
Detroit, Mich.	6	13	Pittsburgh, Pa.	51	37
Dubuque, Iowa.	2	2	Pasadena, Cal.	2	.....
Duluth, Minn.	2	2	Pascagoula, Miss.	1	.....
Fitchburg, Mass.	2	2	Reading, Pa.	4	2
Galesburg, Ill.	1	1	Rochester, N. Y.	5	12
Grand Rapids, Mich.	2	3	San Francisco, Cal.	8	5
Hamilton, Ohio.	1	.....	Schnectady, N. Y.	1	.....
Harrisburg, Pa.	1	.....	South Bethlehem, Pa.	1	.....
Kalamazoo, Mich.	3	.....	South Omaha, Nebr.	3	.....
Lancaster, Pa.	7	.....	Spokane, Wash.	1	1
Los Angeles, Cal.	4	.....	Washington, D. C.	25	.....
Manchester, N. H.	5	5			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for March, 1915.

Places.	New cases reported.	Places.	New cases reported.
California:		Ohio:	
Kings County—		Lawrence County	1
Hanford	1	Lucas County—	
Tulare County—		Toledo	1
Visalia	1	Total	2
Total	2	Virginia:	
Indiana:		Accomac County	1
Dekalb County	1	Dickenson County	1
Gibson County	1	Gloucester County	1
Total	2	Grayson County	1
Massachusetts:		Henry County	1
Berkshire County—		Highland County	1
Pittsfield	2	Isle of Wight County	1
Middlesex County—		Lancaster County	1
Chelmsford	1	Lee County	2
Somerville	1	Montgomery County	2
Suffolk County—		Nansemond County	1
Boston	2	Nelson County	1
Norfolk County—		Northampton County	1
Walpole	1	Orange County	1
Worcester County—		Page County	1
Webster	1	Prince Edward County	2
Total	8	Wise County	1
Michigan:		Total	20
Oakland County—			
Rose	1		

RELAPSING FEVER.

Massachusetts—Immigration Station, Boston.

Asst. Surg. Safford reported that on April 23, 1915, a case of relapsing fever developed in an Armenian immigrant who had arrived at Boston on the steamship *Canopic* March 10, 1915, since which date he had been under detention at the immigration station.

ROCKY MOUNTAIN SPOTTED FEVER.

Montana.

The State Board of Health of Montana reported that during the month of March, 1915, one case of Rocky Mountain spotted fever was notified in each of the following counties of Montana: Carbon, Gallatin, Missoula.

Montana—Gallatin County.

Surgeon Fricks reported that a case of Rocky Mountain spotted fever was notified from the extreme northern part of Gallatin County, Mont., April 16, 1915.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1340.

SMALLPOX.

California—Imperial County.

Acting Asst. Surg. Richter reported by telegraph that during the week ended April 24, 1915, three new cases of smallpox were notified in Imperial County, Cal.

Kansas.

Collaborating Epidemiologist Crumbine reported that during the two weeks ended April 17, 1915, cases of smallpox were notified in counties of Kansas as follows: Anderson 2, Atchison 5, Comanche 8, Chase 1, Cherokee 10, Clay 4, Cowley 1, Coffey 3, Crawford 1, Doniphan 1, Greenwood 4, Ford 4, Harper 10, Johnson 1, Kingman 3, Lane 10, Lyon 1, Leavenworth 2, Marshall 2, Miami 1, Morris 1, Morton 2, Osage 4, Osborne 1, Phillips 9, Pratt 2, Reno 17, Republic 8, Rice 1, Saline 3, Sedgwick 15, Smith 11, Sumner 27, Wilson 2, Wyandotte 19.

Kentucky—Breathitt County.

Surg. McMullen reported April 26, 1915, that 25 cases of smallpox were then present at Quicksand, a lumber camp situated about 3 miles from Jackson, Breathitt County, Ky.

Maryland—Washington County.

Collaborating Epidemiologist Fulton reported by telegraph that two new foci of smallpox infection had been reported in Maryland, one case of the disease having been notified at Sharpsburg, R. F. D., Washington County, April 23, 1915, and two cases at Hagerstown, Washington County, April 24, 1915.

SMALLPOX—Continued.

Minnesota.

Collaborating Epidemiologist Bracken reported by telegraph that during the week ended April 24, 1915, new foci of smallpox were reported in Minnesota as follows: Aitkin County, Farm Island Township, 1 case; Cass County, Maple Township, 1 case; Hennepin County, Independence Township, 1 case; Koochiching County, International Falls, 1 case; Rice County, Faribault, 1 case; Stearns County, Owatonna, 1 case; Wright County, Howard Lake, 1 case; Yellow Medicine County, Canby, 1 case.

State Reports for March, 1915.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
California:						
Imperial County	7		1		6	
Calexico	13			3	9	1
Los Angeles County—						
Los Angeles	4				4	
Pomona	2			1	1	
Santa Monica	1				1	
Madera County	3			2	1	
Madera	1				1	
Orange County—						
Santa Ana	1				1	
Riverside County—						
Riverside	1					1
Sacramento County—						
Sacramento	2			1	1	
San Bernardino County—						
Ontario	7			2	2	3
San Bernardino	2				2	
Total	44		1	9	29	5
Kansas:						
Anderson County	30				12	18
Barber County	3				2	1
Barton County	1				1	
Brown County	12				12	
Butler County	4					4
Chase County	43				4	39
Cherokee County	5				4	1
Clark County	1					1
Clay County	37				7	30
Comanche County	29			2	26	1
Crawford County	2				1	1
Doniphan County	11				5	6
Franklin County	3				2	1
Greenwood County	1				1	
Harper County	14					14
Jewell County	5				5	
Lane County	14				14	
Linn County	1				1	
Lyon County	1					1
Marshall County	2				2	
Montgomery County	2					2
Coffeyville	1				1	
Morton County	14				3	11
Neosho County	2				1	1
Osage County	6				6	
Osborne County	2				2	
Pawnee County	2				1	1
Phillips County	5			2	2	1
Pratt County	1		1			

SMALLPOX—Continued.

State Reports for March, 1915—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain
Kansas—Continued.						
Reno County—						
Hutchinson	1				1	
Republic County	5				1	4
Rice County	3				1	2
Riley County	9					9
Saline County	3				3	
Sedgwick County	4				4	
Wichita	28					23
Shawnee County—						
Topeka	5				3	2
Stafford County	7		1		4	2
Sumner County	45				4	41
Wilson County	2				2	
Wyandotte County	2				2	
Kansas City	24					24
Total	392		2	4	140	246
Michigan:						
Allegan County—						
Cheshire Township	1				1	
Hopkins Township	1				1	
Lee Township	1				1	
Watson Township	1					1
Barry County—						
Hastings	1			1		
Berrien County—						
Benton Harbor	4				4	
Calhoun County—						
Convis Township	1					1
Clinton County—						
Olive Township	1					1
St. Johns	1			1		
Dickinson County—						
Iron Mountain	1				1	
Eaton County—						
Potterville	1				1	
Grand Traverse County—						
Blair Township	1				1	
Houghton County—						
Quincy Township	1				1	
Ingham County—						
Delhi Township	1				1	
Iron County—						
Iron River	1				1	
Crystal Falls	1				1	
Kalamazoo County—						
Kalamazoo	1					1
Kent County—						
Caledonia Township	3				3	
Wyoming Township	1					1
Grand Rapids	4				4	
Macomb County—						
Mount Clemens	5			2	3	
Marquette County—						
Ishpeming	2				2	
Menominee County—						
Menominee	2				2	
Newaygo County—						
Dayton Township	4				4	
Big Prairie Township	1					1
Garfield Township	2				2	
Lincoln Township	3				3	
Sherman Township	7				7	
White Cloud	1					1
Oakland County—						
Birmingham	1				1	
Ogemaw County—						
Richland Township	1				1	

SMALLPOX—Continued.

State Reports for March, 1915—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Michigan—Continued.						
Cntonagon County—						
Greenland Township....	3	.....	.....	2	1	.....
Van Buren County—						
Bloomingdale Township	22	.....	.....	.....	22	.....
Washtenaw County—						
Salem Township.....	2	.....	.....	.....	.....	2
Wayne County—						
Monguagon Township...	1	.....	.....	.....	1	.....
Highland Park.....	1	.....	.....	.....	1	.....
Northville.....	2	.....	1	.....	1	.....
Detroit.....	6	.....	.....	.....	6	.....
Wyandotte.....	1	.....	.....	.....	1	.....
Total.....	95	.....	1	6	79	9
Minnesota:						
Anoka County—						
Anoka.....	1	.....	.....	.....	1	.....
Blue Earth County—						
Jamestown Township...	2	.....	.....	.....	.....	2
Le Roy Township.....	10	.....	.....	.....	10	.....
Mankato.....	9	.....	.....	2	6	1
Rapidan Township.....	2	.....	.....	.....	2	.....
Vernon Township.....	2	.....	.....	.....	2	.....
Brown County—						
Cottonwood Township..	1	.....	1	.....	.....	.....
New Ulm.....	2	.....	.....	.....	2	.....
Springfield.....	1	.....	.....	.....	1	.....
Carlton County—						
Cloquet.....	8	.....	.....	.....	.....	8
Clay County—						
Moorhead.....	1	.....	.....	.....	1	.....
Cottonwood County—						
Amo Township.....	1	.....	.....	.....	1	.....
Dakota County—						
Farmington.....	1	.....	.....	.....	1	.....
Faribault County—						
Elmore.....	3	.....	.....	.....	3	.....
Frost.....	1	.....	.....	.....	1	.....
Lura Township.....	3	.....	.....	.....	3	.....
Verona Township.....	2	.....	.....	.....	1	1
Freeborn County—						
Alden.....	5	.....	.....	.....	2	3
Goodhue County—						
Burnside Township.....	3	.....	.....	.....	3	.....
Hennepin County—						
Minneapolis.....	9	.....	2	.....	6	1
Isanti County—						
Cambridge.....	5	.....	.....	1	4	.....
Itasca County—						
Bovey.....	2	.....	.....	.....	2	.....
Jackson County—						
Lakefield.....	2	.....	.....	.....	2	.....
Petersburg Township...	1	.....	.....	.....	.....	1
Le Sueur County—						
Washington Township..	1	.....	.....	.....	.....	1
Lincoln County—						
Lake Benton.....	1	.....	.....	.....	.....	1
Tyler.....	1	.....	.....	.....	.....	1
McLeod County—						
Hutchinson.....	1	.....	1	.....	.....	.....
Murray County—						
Cannon Township.....	2	.....	.....	.....	2	.....
Holly Township.....	1	.....	.....	.....	1	.....
Nicollet County—						
North Mankato.....	2	.....	.....	.....	2	.....
Nobles County—						
Westside Township.....	9	.....	2	3	2	2

SMALLPOX—Continued.

State Reports for March, 1915—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Minnesota—Continued.						
Olmsted County—						
Viola Township	2				2	
Pipestone County—						
Elmer Township	2			1		1
Jasper	1				1	
Pope County—						
Glenwood	1				1	
Ramsey County—						
St. Paul	18				18	
Redwood County—						
Lamberton	1				1	
Rock County—						
Luverne	1					1
St. Louis County—						
Bassett Township	8				8	
Duluth	1			1		
Missabe Mountain Township	1				1	
Virginia	6				6	
Sibley County—						
Henderson	1				1	
Stearns County—						
Raymond Township	2					2
Swift County—						
Appleton	1		1			
Todd County—						
Long Prairie	2					2
Long Prairie Township	1				1	
Wabasha County—						
Kellogg	1				1	
Washington County—						
Altona Township	1				1	
Woodbury Township	5					5
Watonwan County—						
Riverdale Township	4				1	3
Winona County—						
St. Charles	1				1	
Winona	6				3	3
Wright County—						
Middleville Township	1				1	
Waverly	2				2	
Yellow Medicine County—						
Echo	1				1	
Total	166		7	8	112	39
Ohio:						
Allen County—						
Lima	1				1	
Ashland County	3				2	1
Ashtabula County	9		1		3	5
Athens County	1				1	
Auglaize County	24				20	4
Carroll County	1					1
Columbiana County—						
East Liverpool	27				12	15
Wellsville	2				1	1
Crawford County—						
Bucyrus	2			1	1	
Cuyahoga County	6				2	4
Darke County	5				1	4
Delaware County—						
Delaware	1					1
Erie County	26				21	5
Hamilton County	10			1	5	4
Hancock County	2				2	
Hardin County	18				9	9
Jackson County	20				8	12
Lake County	1					1

SMALLPOX—Continued.

State Reports for March, 1915—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Ohio—Continued.						
Lawrence County	1					1
Licking County	1				1	
Logan County	9					9
Lucas County—						
Toledo	7			1	6	
Marion County	16				12	4
Paulding County	120				38	82
Perry County	1					1
Richland County—						
Mansfield	1				1	
Scioto County	23				23	
Seneca County	25		1		20	4
Stark County	25		1	1	21	2
Summit County	3					3
Trumbull County	1					1
Tuscarawas County	17				7	10
Van Wert County	1					1
Wayne County	6				5	1
Wood County	1				1	
Wyandot County	7				1	6
Total	424		3	4	225	192

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Indiana (Mar. 1–31):			Indiana (Mar. 1–31)—Contd.		
Counties—			Counties—Continued.		
Allen	2		Scott	7	
Benton	1		Switzerland	6	
Blackford	23	1	Tippecanoe	3	
Clark	21		Vanderburg	53	
Clinton	44		Vigo	9	
Daviess	33		Warrick	4	
Delaware	82		Washington	2	
Dubois	3		White	5	
Elkhart	4				
Floyd	5		Total	524	1
Fountain	5				
Gibson	7				
Hamilton	3		Louisiana (Mar. 1–31):		
Hancock	3		Parishes—		
Henry	6		Acadia	5	
Howard	1		Allen	5	
Huntington	20		Caddo	2	
Jackson	1		Calcasieu	11	
Jay	13		Cameron	2	
Jefferson	2		De Soto	2	
Knox	41		East Baton Rouge	3	
Lake	4				
Lawrence	2		Total	30	
Madison	4				
Marion	10		Montana (Mar. 1–31):		
Miami	4		Cascade County—		
Newton	11		Great Falls	6	
Orange	8		Gallatin County	2	
Parke	7		Bozeman	2	
Pike	32		Granite County	1	
Posey	16		Madison County	1	
Putnam	6		Meagher County	2	
Randolph	3		Missoula County—		
Ripley	8		Missoula	5	

SMALLPOX—Continued.

Miscellaneous State Reports—Continued.

Places.	Cases.	Deaths.
Montana (Mar. 1-31)—Continued.		
Park County—		
Livingston	5	
Silver Bow County	2	
Butte	6	1
Teton County	1	
Wibaux County	1	
Total	34	1
North Dakota (Mar. 1-31):		
Counties—		
Bottineau	2	
Burleigh	1	
Cass	2	
Dickey	1	
Emmons	1	
Grand Forks	1	
Logan	3	
McHenry	9	
McLean	22	
Morton	13	
Mountrail	8	
Pembina	2	
Ransom	1	
Sargent	1	
Sheridan	1	
Stutsman	1	
Total	69	
South Carolina (Mar. 1-31):		
Counties—		
Bamberg	2	
Charleston	32	
Chester	12	
South Carolina (Mar. 1-31)—Continued.		
Counties—Continued.		
Darlington	1	
Greenville	1	
Laurens	1	
Orangeburg	7	
Sumter	2	
Total	58	
Virginia (Mar. 1-31):		
Counties—		
Accomac	14	
Albemarle	4	
Augusta	1	
Brunswick	1	
Fauquier	1	
Giles	7	
Goochland	3	
Grayson	7	
Greensville	47	
Lunenburg	9	
Madison	5	
Nelson	1	
Nottoway	1	
Patrick	1	
Pittsylvania	3	
Powhatan	3	
Prince George	2	
Pulaski	8	
Roanoke	1	
Russell	10	
Southampton	8	
Tazewell	8	
Total	145	

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.
Butte, Mont	1	
Charleston, S. C	6	
Covington, Ky	2	
Dallas, Tex	12	
Danville, Ill	4	
Davenport, Iowa	28	
Detroit, Mich	3	
El Paso, Tex	3	
Evansville, Ind	9	
Fort Smith, Ark	1	
Galveston, Tex	1	
Kansas City, Kans	6	
Key West, Fla	1	
Lincoln, Nebr	1	
Little Rock, Ark	4	
Los Angeles, Cal	3	
Milwaukee, Wis	4	
Moline, Ill	4	
Montgomery, Ala	8	
New Orleans, La	1	
Newport, Ky	3	
Newport News, Va	1	
Plainfield, N. J	1	
Portland, Oreg	1	
Racine, Wis	2	
Richmond, Va	1	
Rock Island, Ill	7	
St. Louis, Mo	16	
Sioux City, Iowa	4	
Spokane, Wash	2	
Springfield, Ill	1	
Toledo, Ohio	1	
Washington, D. C	2	

SYPHILIS.

State Reports for March, 1915.

During the month of March, 1915, cases of syphilis were notified in States as follows: California 16, Louisiana 7, Ohio 175.

TETANUS.

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md		1	New York, N. Y		1
Covington, Ky		1	Philadelphia, Pa	1	
Dallas, Tex		1	Sacramento, Cal	1	
El Paso, Tex	1	1	San Juan, P. R	1	1

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1340.

TYPHOID FEVER.

State Reports for March, 1915.

Places.	New cases reported.
California:	
Alameda County—	
Alameda	1
Berkeley	6
Hayward	1
Oakland	15
Piedmont	1
Butte County	1
Colusa County	3
Fresno County—	
Clovis	1
Imperial County	1
Calexico	1
Los Angeles County	4
Los Angeles	11
Orange County	3
Sacramento County—	
Sacramento	14
San Francisco County—	
San Francisco	19
San Mateo County—	
San Bruno	4
Santa Clara County	1
San Jose	1
Tulare County	1
Yolo County	1
Total	90
Indiana:	
Clark County	6
Daviess County	2
Franklin County	3
Gibson County	1
Hamilton County	3
Huntington County	2
Jackson County	1
Jefferson County	21
Johnson County	4
Lake County	19
Laporte County	7
Lawrence County	2
Marion County	3
Perry County	1
Pike County	1
Ripley County	1
Shelby County	1
Steuben County	1
St. Joseph County	4
Switzerland County	2
Tippecanoe County	4
Vanderburg County	6
Washington County	2
Wayne County	1
White County	3
Total	101
Kansas:	
Atchison County—	
Atchison	1
Barber County	1
Bourbon County	2
Fort Scott	1
Butler County	1
Chase County	1
Chautauqua County	1
Cherokee County	1
Clay County	1
Cloud County	1
Coffey County	1
Dickinson County	1
Douglas County	1
Ellsworth County	2
Greenwood County	1
Jewell County	1
Leavenworth County—	
Leavenworth	2
Nemaha County	1
Neosho County	1
Ness County	1
Reno County	1
Shawnee County—	
Topeka	2
Sumner County	1
Thomas County	1
Woodson County	1
Total	29
Louisiana:	
Allen Parish	1
Caddo Parish	1
East Feliciana Parish	2
Evangeline Parish	1
Franklin Parish	2
Grant Parish	2
Total	9
Massachusetts:	
Barnstable County—	
Provincetown	3
Berkshire County—	
North Adams	1
Pittsfield	1
Bristol County—	
Fall River	4
Mansfield	20
New Bedford	4
Westport	1
Taunton	1
Essex County—	
Haverhill	1
Lawrence	1

TYPHOID FEVER—Continued.

State Reports for March, 1915—Continued.

Places.	New cases reported.
Massachusetts—Continued.	
Essex County—Continued.	
Marblehead	2
North Andover	1
Lynn	14
Franklin County—	
Montague	2
Hampden County—	
Chicopee	1
Holyoke	1
Springfield	6
Hampshire County—	
Hatfield	1
Middlesex County—	
Arlington	1
Belmont	2
Cambridge	2
Concord	1
Everett	1
Lowell	4
Maynard	1
Somerville	2
Norfolk County—	
Brookline	1
Quincy	1
Walpole	1
Wrentham	1
Plymouth County—	
Bridgewater	1
Hanover	1
Suffolk County—	
Boston	17
Worcester County—	
Gardner	3
Southborough	1
Worcester	2
Total	108
Michigan:	
Alpena County—	
Alpena	8
Barry County—	
Nashville	1
Bay County—	
Bay City	8
Benzie County—	
Thompsonville	1
Berrien County—	
Three Rivers Township	1
Weesaw Township	1
Benton Harbor	1
Niles	6
Branch County—	
Bethel Township	1
Calhoun County—	
Homer	1
Albion	1
Clare County—	
Clare	1
Eaton County—	
Roxana Township	1
Genesee County—	
Flint	2
Hillsdale County—	
Camden Township	1
Houghton County—	
Stanton Township	4
Huron County—	
Fairhaven Township	1
Ingham County—	
Lansing	1
Ionia County—	
Berlin Township	1
Kalamazoo County—	
Kalamazoo	1
Kent County—	
Bowne Township	1
Grand Rapids	18

Places.	New cases reported.
Michigan—Continued.	
Lenawee County—	
Cambridge Township	1
Livingston County—	
Cohoctah Township	1
Manistee County—	
Manistee	2
Marquette County—	
Marquette	6
Midland County—	
Midland	1
Muskegon County—	
Casnovia Township	1
Oakland County—	
Rochester	2
Osceola County—	
Orient Township	1
Ottawa County—	
Holland	1
Saginaw County—	
Albee Township	1
Marion Township	2
Zilwaukee Township	1
Saginaw	21
St. Clair County—	
Casco Township	1
Marine City	1
Port Huron	2
Schoolcraft County—	
Manistique	1
Shiawassee County—	
Owosso	1
Van Buren County—	
Almena Township	1
Wayne County—	
Monguagon Township	1
St. Clair Heights	1
Detroit	10
Wyandotte	1
Total	123
Minnesota:	
Beltrami County—	
Bemidji	1
Brown County—	
New Ulm	1
Crow Wing County—	
Riverton	1
Dakota County—	
Lakeville Township	1
West St. Paul	1
Fillmore County—	
Wykoff	1
Freeborn County—	
Albert Lea	12
Bancroft Township	1
Freeman Township	1
Goodhue County—	
Florence Township	1
Red Wing	1
Vasa Township	1
Hennepin County—	
Minneapolis	12
West Minneapolis	1
Hubbard County—	
Akeley Township	1
Park Rapids	1
Itasca County—	
Marble	1
Kanabec County—	
Mora	1
Kittson County—	
St. Vincent Township	1
Koochiching County—	
International Falls	2
Lyon County—	
Fairview Township	1

TYPHOID FEVER—Continued.

State Reports for March, 1915—Continued.

Places.	New cases reported.
Minnesota—Continued.	
Mille Lacs County—	
Milaca	1
Mower County—	
Austin	1
Olmsted County—	
Dover Township	1
Elmira Township	1
Rochester	1
Ottertail County—	
Fergus Falls	1
Polk County—	
Crookston	1
Pope County—	
Reno Township	3
Ramsey County—	
St. Paul	7
Red Lake County—	
Red Lake Falls	1
Rice County—	
Faribault	5
Richland Township	1
Rock County—	
Martin Township	1
St. Louis County—	
Culver Township	1
Duluth	3
Hibbing	1
Sibley County—	
Arlington	1
Swift County—	
Benson	1
Washington County—	
Stillwater	1
Wilkin County—	
Brandrup Township	1
Breckenridge	1
Campbell	1
Winona County—	
Winona	1
Yellow Medicine County—	
Granite Falls	1
Normania Township	1
Total	83
Montana:	
Blaine County	7
Chouteau County	2
Custer County	1
Dawson County	2
Gallatin County	1
Hill County	1
Lincoln County	1
Lewis and Clark County—	
Helena	3
Park County—	
Livingston	2
Stillwater County	1
Teton County	1
Yellowstone County—	
Billings	3
Total	25
North Dakota:	
Barnes County	3
Dickey County	1
Dunn County	2
Griggs County	1
Nelson County	1
Pierce County	8
Sargent County	1
Steele County	1
Total	18

Places.	New cases reported.
Ohio:	
Ashtabula County—	
Ashtabula	2
Athens County	1
Belmont County	21
Butler County—	
Hamilton	1
Middletown	1
Champaign County	2
Clark County—	
Springfield	3
Clermont County	2
Clinton County	1
Columbiana County	10
Cuyahoga County—	
Cleveland	23
East Cleveland	1
Darke County	2
Defiance County—	
Defiance	1
Delaware County	1
Fairfield County—	
Lancaster	1
Fayette County	1
Franklin County—	
Columbus	3
Gallia County	1
Guernsey County—	
Cambridge	6
Hamilton County	7
Hardin County	1
Jackson County	2
Jefferson County	7
Lawrence County—	
Ironton	15
Licking County—	
Newark	1
Lorain County	2
Lucas County—	
Toledo	1
Madison County	19
Mahoning County	12
Marion County—	
Marion	1
Mercer County	3
Miami County	3
Montgomery County—	
Dayton	8
Morrow County	1
Muskingum County	3
Perry County	1
Portage County	1
Richland County—	
Mansfield	1
Scioto County—	
Portsmouth	1
Shelby County—	
Sidney	1
Stark County	2
Summit County	5
Trumbull County	5
Tuscarawas County	3
Washington County	1
Wood County	2
Wyandot County	3
Total	196
South Carolina:	
Abbeville County	1
Aiken County	1
Bamberg County	1
Calhoun County	1
Charleston County	3
Clarendon County	1
Marion County	3

TYPHOID FEVER—Continued.

State Reports for March, 1915—Continued.

Places.	New cases reported.
South Carolina—Continued.	
Spartanburg County	1
Union County	3
Total	15
Virginia:	
Accomac County	9
Albemarle County	4
Alleghany County	2
Appomattox County	2
Augusta County	1
Bath County	3
Bland County	1
Campbell County	6
Chesterfield County	1
Dickenson County	1
Dinwiddie County	1
Elizabeth City County	2
Floyd County	2
Franklin County	3
Gloucester County	1
Goochland County	5
Halifax County	4
Henrico County—	
Richmond	1
Henry County	2
Highland County	2
King William County	1
Lee County	6
Loudoun County	4
Lunenburg County	2
Mecklenburg County	1
Middlesex County	1
Montgomery County	3
Nansemond County	1
Norfolk County	1
Norfolk	1
Northumberland County	1
Page County	3
Patrick County	2
Pittsylvania County	1
Princess Anne County	1
Prince William County	1
Pulaski County	2
Roanoke County	3
Roanoke	2
Rockingham County	3
Russell County	3
Shenandoah County	4
Smyth County	5
Stafford County	1
Tazewell County	7
Wise County	2
Wythe County	3
York County	1
Total	119

City Reports for Week Ended Apr. 10, 1915.

Places.	Cases.	Deaths.
Akron, Ohio	1	1
Alameda, Cal		1
Baltimore, Md	11	
Beaver Falls, Pa	1	
Buffalo, N. Y	2	1
Cambridge, Mass	1	
Camden, N. J	2	
Charleston, S. C	1	
Chelsea, Mass	1	
Chicago, Ill	15	2
Cincinnati, Ohio	1	
Cleveland, Ohio		3
Columbus, Ohio	1	
Dayton, Ohio	2	2
Detroit, Mich	1	1
Duluth, Minn	1	
Fall River, Mass		1
Galesburg, Ill	1	1
Grand Rapids, Mich	2	
Haverhill, Mass	1	
Hilo, Hawaii	1	
Jersey City, N. J	1	1
Lancaster, Pa	1	
Lincoln, Nebr	1	
Little Rock, Ark	1	
Lowell, Mass	1	
Malden, Mass	1	
Medford, Mass	1	
Milwaukee, Wis	5	
Nashville, Tenn	2	1
Newark, N. J	2	
New Bedford, Mass	2	
New Orleans, La	6	3
New York, N. Y	23	2
Norfolk, Va	1	1
Oakland, Cal	1	
Philadelphia, Pa	6	4
Pittsburgh, Pa	1	
Providence, R. I	1	
Reading, Pa	2	
Sacramento, Cal	2	
St. Louis, Mo	4	1
San Francisco, Cal	3	
Saratoga Springs, N. Y	1	
Schenectady, N. Y	1	
Stockton, Cal	1	
Toledo, Ohio		1
Trenton, N. J	1	
Washington, D. C	2	
Wilkinsburg, Pa		1
York, Pa	2	
Zanesville, Ohio	1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for March, 1915.

States.	Cases reported.			States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
California	422	2,007	270	Minnesota	252	253	533
Indiana	187	992	381	Montana	14	45	47
Kansas	91	960	85	North Dakota	23	205	70
Louisiana	4	7	.....	Ohio	580	2,007	830
Massachusetts	723	2,640	840	South Carolina	36	6	7
Michigan	176	476	187	Virginia	152	785	162

City Reports for Week Ended Apr. 10, 1915.

Cities.	Population as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md	597,590	229	20	1	35	4	33	1	24	19
Boston, Mass	733,802	287	60	7	234	.....	116	1	56	31
Chicago, Ill	2,393,325	746	109	17	900	9	63	3	344	98
Cleveland, Ohio	639,431	197	32	2	115	2	15	.....	49	25
Detroit, Mich	537,650	173	34	2	7	1	23	1	24	13
New York, N. Y	5,333,537	1,934	255	26	1,619	20	407	12	475	200
Philadelphia, Pa	1,657,810	628	49	8	482	8	24	2	114	60
Pittsburgh, Pa	564,878	213	20	2	179	.....	32	4	19	13
St. Louis, Mo	734,667	203	50	3	295	1	17	.....	42	26
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y	454,112	139	20	1	6	.....	14	.....	26	13
Cincinnati, Ohio	402,175	.....	9	.....	17	.....	6	.....	39	14
Los Angeles, Cal	438,914	104	5	.....	553	.....	5	1	39	23
Milwaukee, Wis	417,054	110	11	2	8	.....	14	.....	17	13
Newark, N. J	389,106	135	21	.....	6	.....	25	.....	34	22
New Orleans, La	361,221	168	11	2	37	.....	2	.....	22	27
San Francisco, Cal	448,502	154	27	2	31	1	4	.....	44	18
Washington, D. C	353,378	152	7	.....	84	1	31	.....	32	19
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio	204,567	71	3	.....	22	.....	2	.....	7	9
Jersey City, N. J	293,921	106	16	1	25	.....	19	.....	26	10
Portland, Oreg	260,601	40	23	.....	.....	.....	5	.....	9	1
Providence, R. I	245,090	81	11	1	7	1	23	.....	.....	8
Rochester, N. Y	241,518	84	1	.....	15	.....	7	.....	9	8
From 100,000 to 200,000 inhabitants:										
Bridgeport, Conn	115,289	37	2	.....	6	.....	1	.....	8	5
Cambridge, Mass	110,357	40	11	2	18	1	9	.....	4	9
Camden, N. J	102,465	.....	2	.....	21	.....	1	.....	7	.....
Dallas, Tex	111,986	.....	1	.....	.....	.....	.....	.....	1	1
Dayton, Ohio	123,794	41	2	.....	22	.....	10	.....	13	3
Fall River, Mass	125,443	44	6	.....	6	.....	6	.....	5	1
Grand Rapids, Mich	123,227	35	2	.....	2	.....	1	.....	6	2
Hartford, Conn	107,038	42	11	.....	1	.....	5	.....	3	1
Lowell, Mass	111,004	52	.....	.....	3	.....	8	.....	6	3
Nashville, Tenn	114,899	53	.....	.....	2	.....	2	.....	9	6
New Bedford, Mass	111,230	30	.....	.....	31	.....	4	.....	12	.....
Oakland, Cal	183,002	.....	4	.....	11	.....	3	.....	7	2
Reading, Pa	103,361	39	2	.....	2	.....	1	.....	1	3
Richmond, Va	134,917	86	2	.....	1	.....	13	.....	7	7
Spokane, Wash	135,657	.....	.....	.....	.....	.....	1	.....	.....	.....
Springfield, Mass	100,375	32	3	.....	18	.....	1	.....	3	4
Toledo, Ohio	184,126	62	4	.....	25	.....	5	.....	25	6
Trenton, N. J	106,831	50	5	1	.....	.....	3	.....	10	6
Worcester, Mass	157,732	77	7	1	.....	.....	6	.....	3	1
From 50,000 to 100,000 inhabitants:										
Akron, Ohio	80,291	.....	4	.....	1	.....	11	.....	.....	.....
Altoona, Pa	56,553	16	2	.....	.....	.....	.....	.....	.....	1
Atlantic City, N. J	53,952	10	.....	.....	8	.....	2	.....	3	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Apr. 10, 1915—Continued.

Cities.	Population as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
Bayonne, N. J.	65,271	13	6	.....	3	.....	.....	.....	2	.....
Binghamton, N. Y.	52,191	26	8	.....	.....	.....	3	.....	2	1
Brockton, Mass.	64,043	15	.....	.....	3	.....	1	.....	2	1
Canton, Ohio.	57,426	13	.....	.....	3	.....	13	1	1	1
Charleston, S. C.	60,121	36	.....	.....	.....	.....	.....	.....	.....	4
Covington, Ky.	55,896	.....	1	.....	.....	.....	1	.....	.....	2
Duluth, Minn.	89,331	.....	.....	.....	.....	.....	12	1	7	2
Erie, Pa.	72,401	22	.....	.....	.....	.....	.....	.....	7	.....
Evansville, Ind.	71,284	20	2	.....	41	2	6	.....	1	1
Harrisburg, Pa.	69,493	14	.....	.....	2	.....	.....	.....	6	.....
Johnstown, Pa.	64,642	22	4	1	1	.....	5	.....	3	3
Kansas City, Kans.	94,271	.....	3	1	2	.....	.....	.....	6	2
Little Rock, Ark.	53,811	32	2	.....	7	.....	.....	.....	.....	.....
Lynn, Mass.	98,207	34	.....	.....	2	.....	8	.....	6	1
Manchester, N. H.	75,635	26	2	.....	1	.....	4	.....	2	2
Mobile, Ala.	55,573	22	.....	.....	.....	.....	.....	.....	1	2
New Britain, Conn.	50,612	9	.....	.....	.....	.....	.....	.....	2	.....
Norfolk, Va.	86,540	.....	2	.....	45	.....	1	.....	2	2
Passaic, N. J.	66,276	28	7	.....	1	.....	24	.....	5	5
Pawtucket, R. I.	56,901	24	1	.....	.....	.....	.....	.....	.....	1
Rockford, Ill.	52,337	.....	1	.....	.....	.....	2	.....	.....	.....
Schenectady, N. Y.	90,503	.....	2	1	20	.....	2	.....	.....	3
South Bend, Ind.	65,114	13	.....	.....	4	.....	.....	.....	.....	.....
Springfield, Ill.	57,972	30	2	.....	33	.....	1	.....	.....	4
Wilkes-Barre, Pa.	73,660	21	3	.....	10	.....	.....	.....	2	1
Yonkers, N. Y.	93,383	23	3	.....	4	.....	5	.....	4	3
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	26,330	4	2	.....	1	.....	1	.....	2	1
Auburn, N. Y.	36,509	14	1	.....	.....	.....	4	.....	.....	.....
Aurora, Ill.	33,022	13	1	.....	8	.....	.....	.....	.....	2
Brookline, Mass.	31,138	8	2	.....	4	.....	9	.....	.....	.....
Butte, Mont.	41,731	18	.....	.....	1	.....	.....	.....	25	2
Chelsea, Mass.	32,452	15	.....	.....	4	.....	.....	.....	1	.....
Chicopee, Mass.	28,057	11	2	.....	1	.....	.....	.....	2	.....
Danville, Ill.	30,847	10	1	.....	2	.....	1	.....	.....	2
East Orange, N. J.	39,852	.....	3	.....	1	.....	1	.....	1	.....
Elmira, N. Y.	37,816	.....	.....	.....	15	.....	4	.....	.....	1
El Paso, Tex.	49,505	.....	1	1	14	.....	1	.....	.....	2
Everett, Mass.	37,381	9	3	.....	70	.....	4	.....	2	.....
Fitchburg, Mass.	40,507	14	5	.....	1	.....	3	.....	5	.....
Galveston, Tex.	40,289	16	1	1	.....	.....	2	.....	.....	.....
Haverhill, Mass.	47,071	20	2	.....	26	1	5	.....	1	1
Kalamazoo, Mich.	45,842	22	2	.....	.....	.....	.....	.....	1	3
La Crosse, Wis.	31,367	.....	2	.....	.....	.....	.....	.....	3	1
Lancaster, Pa.	49,685	.....	.....	.....	2	.....	3	.....	3	.....
Lexington, Ky.	38,819	.....	.....	.....	51	.....	1	1	6	1
Lynchburg, Va.	31,830	13	.....	.....	.....	.....	.....	.....	1	.....
Malden, Mass.	48,979	18	2	2	50	.....	7	.....	3	1
Medford, Mass.	25,210	9	2	.....	70	.....	2	.....	1	1
Moline, Ill.	26,402	6	.....	.....	.....	.....	.....	.....	.....	1
Newcastle, Pa.	39,569	.....	2	.....	.....	.....	7	.....	9	.....
Newport, Ky.	31,517	4	.....	.....	.....	.....	1	.....	2	2
Newport, R. I.	29,154	9	.....	.....	.....	.....	.....	.....	.....	1
Newton, Mass.	42,455	16	.....	.....	6	.....	1	.....	.....	.....
Niagara Falls, N. Y.	35,127	10	.....	.....	2	.....	.....	.....	1	2
Norristown, Pa.	30,265	9	1	1	.....	.....	2	.....	.....	1
Orange, N. J.	31,968	11	.....	.....	.....	.....	.....	.....	.....	.....
Pasadena, Cal.	40,830	15	.....	.....	54	.....	.....	.....	1	1
Perth Amboy, N. J.	38,265	8	3	.....	14	.....	1	.....	1	2
Pittsfield, Mass.	36,531	21	3	1	38	.....	1	.....	3	1
Portsmouth, Va.	37,569	9	.....	.....	2	.....	.....	.....	.....	1
Racine, Wis.	44,528	18	1	.....	.....	.....	6	.....	2	.....
Rock Island, Ill.	26,945	8	.....	.....	25	1	.....	.....	2	2
Sacramento, Cal.	62,717	14	.....	.....	2	.....	.....	.....	5	3
San Diego, Cal.	48,900	5	2	.....	.....	.....	.....	.....	5	5
South Omaha, Nebr.	26,368	10	.....	.....	.....	.....	.....	.....	.....	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Apr. 10, 1915—Continued.

Cities.	Population as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Superior, Wis	44,344	9	.....	.....	.....	.....	1	.....	.....	1
Taunton, Mass	35,631	17	.....	.....	1	.....	4	.....	.....	4
Waltham, Mass	29,688	8	.....	.....	5	.....	.....	.....	.....	.....
West Hoboken, N. J	40,647	4	2	.....	.....	.....	2	.....	2	1
Wheeling, W. Va	42,817	10	1	.....	.....	.....	4	.....	.....	.....
Williamsport, Pa	33,181	13	1	.....	3	.....	.....	.....	.....	.....
Wilmington, N. C	27,781	4	.....	.....	.....	.....	.....	.....	.....	.....
York, Pa	49,430	.....	3	.....	.....	.....	.....	.....	4	.....
Less than 25,000 inhabitants:										
Ann Arbor, Mich	14,948	13	5	.....	.....	.....	4	.....	6	.....
Beaver Falls, Pa	13,100	.....	1	.....	.....	.....	.....	.....	.....	.....
Braddock, Pa	20,935	.....	.....	.....	.....	.....	1	.....	2	.....
Cairo, Ill	15,392	10	.....	.....	.....	.....	.....	.....	.....	3
Clinton, Mass	13,075	5	.....	.....	1	.....	.....	.....	2	1
Coffeyville, Kans	15,982	.....	.....	.....	.....	.....	.....	.....	.....	1
Concord, N. H	22,291	8	1	.....	.....	.....	.....	.....	.....	.....
Cumberland, Md	23,846	6	.....	.....	1	.....	.....	.....	.....	1
Florence, S. C	.....	6	.....	.....	.....	.....	.....	.....	.....	.....
Galesburg, Ill	23,570	10	.....	.....	.....	.....	.....	.....	1	1
Kearny, N. J	21,967	5	1	.....	.....	.....	.....	.....	1	1
Key West, Fla	21,150	4	.....	.....	.....	.....	.....	.....	.....	.....
Kokomo, Ind	19,694	7	.....	.....	2	.....	.....	.....	1	1
Marinette, Wis	14,610	5	.....	.....	.....	.....	.....	.....	.....	.....
Melrose, Mass	16,887	6	1	.....	75	.....	4	.....	1	1
Montclair, N. J	24,782	4	.....	.....	.....	.....	2	.....	5	1
Morristown, N. J	13,033	8	.....	.....	.....	.....	.....	.....	1	.....
Muscatine, Iowa	17,074	10	.....	.....	.....	.....	.....	.....	1	.....
Nanticoke, Pa	21,756	9	.....	.....	5	.....	.....	.....	.....	.....
Newburyport, Mass	15,147	6	.....	.....	.....	.....	.....	.....	.....	.....
New London, Conn	20,557	9	.....	.....	2	.....	1	.....	.....	1
Newport News, Va	20,446	7	1	.....	.....	.....	.....	.....	2	2
North Adams, Mass	22,019	4	1	1	.....	.....	1	.....	.....	.....
Northampton, Mass	19,766	9	.....	.....	.....	.....	.....	.....	.....	2
Pascagoula, Miss	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Phoenix, Ariz	16,870	4	.....	.....	.....	.....	2	.....	.....	.....
Plainfield, N. J	22,755	4	.....	.....	13	.....	.....	.....	1	.....
Rutland, Vt	14,417	3	.....	.....	.....	.....	1	.....	.....	1
Saratoga Springs, N. Y	12,813	4	.....	.....	13	.....	.....	.....	.....	1
South Bethlehem, Pa	22,840	1	1	.....	.....	.....	.....	.....	5	1
Steelton, Pa	15,126	3	.....	.....	.....	.....	.....	.....	1	.....
Vineyard Haven, Mass	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Wilkinsburg, Pa	21,701	10	.....	.....	.....	.....	1	.....	.....	.....
Woburn, Mass	15,755	4	.....	.....	.....	.....	.....	.....	.....	.....

FOREIGN REPORTS.

CHINA.

Plague—Plague-Infected Rats—Hongkong.

During the week ended February 27, 1915, a case of plague was notified at Hongkong.

During the two weeks ended March 6, 1915, 3,638 rats were examined at Hongkong. Three plague-infected rats were found.

Plague-Infected Rats—Shanghai.

During the week ended March 20, 1915, 234 rats were examined at Shanghai. Three plague-infected rats were found.

Typhus Fever—Antung.

A death from typhus fever was notified at Antung during the week ended February 7, 1915.

CUBA.

Communicable Diseases—Habana.

Communicable diseases were notified at Habana during the 10 days ended March 31, 1915, as follows:

Diseases.	New cases.	Deaths.	Remaining under treatment Mar. 31, 1915.	Diseases.	New cases.	Deaths.	Remaining under treatment Mar. 31, 1915.
Diphtheria	23	2	15	Scarlet fever	6	.....	12
Leprosy	3	1	252	Smallpox	.....	.....	1
Measles	2	.....	6	Typhoid fever	15	2	53
Paratyphoid fever	1	.....	5	Varicella	11	.....	9
Plague	1	1	.....				

Plague—Habana.

A case of plague occurring in an old focus was notified at Habana April 24, and one in a new focus, April 26, 1915, making a total of 11 cases notified since the beginning of the outbreak.

EGYPT.

Plague.

During the period from January 1 to March 18, 1915, 18 cases of plague with 15 deaths were notified in Egypt. The cases were distributed as follows:

Alexandria.—One case with 1 death; date of case January 28, 1915.

Port Said.—Three cases with 2 deaths; date of last case March 9, 1915.

Province of Fayoum.—Two cases with 1 death; date of last case January 3, 1915.

Province of Assiout.—Twelve cases with 11 deaths; date of last case February 21, 1915.

Typhus Fever.

Typhus fever has been notified in Egypt as follows:

Alexandria.—Week ended February 18, 1915, 1 case; week ended March 11, 1915, 26 cases with 8 deaths.

Cairo.—Week ended February 4, 1915, 1 case, 2 deaths; two weeks ended March 4, 1915, 15 cases, 24 deaths.

GREAT BRITAIN AND IRELAND.

Typhus Fever.

Typhus fever has been notified in Great Britain and Ireland as follows:

Dublin.—Week ended February 27, 1915, 1 case; week ended March 20, 1915, 4 cases.

Glasgow.—Week ended March 3, 1 case,

GUATEMALA.

Typhus Fever—Guatemala City.

Typhus fever was reported present in Guatemala City during the week ended March 27, 1915.

INDO-CHINA.

Communicable Diseases.

During the month of December, 1914, communicable diseases were notified in Indo-China as follows:

Diseases and districts.	Cases.	Deaths.	Diseases and districts.	Cases.	Deaths.
Cholera:			Plague:		
Anam	17	16	Anam	27	12
Cochin-China	218	117	Cambodia	14	13
Tonkin	86	64	Total	41	25
Total	321	197	Smallpox:		
Dysentery:			Cambodia	7	.....
Cochin-China	45	2	Cochin-China	4	.....
Leprosy:			Laos	7	.....
Cambodia	3	.....	Total	18	.....
Tonkin	52	.....			
Total	55	.....			

ITALY.

Typhus Fever—Florence.

During the month of February, 1915, 3 fatal cases of typhus fever were notified at Florence.

JAPAN.

Typhus Fever—Hakodate.

During the two weeks ended February 13, 1915, 9 cases of typhus fever with 3 deaths were notified at Hakodate.

PERU.

Plague.

Plague was notified in Peru during the month of February, 1915, as follows:

Places.	New cases.	Remaining Feb. 28, 1915.	Places.	New cases.	Remaining Feb. 28, 1915.
Barranco	2	1	Lima (country)	9	4
Callao	7	4	Mollendo	5	2
Catacaos	3	.....	Pacasmayo	2	.....
Chiclayo	4	6	Piura	7	3
Ferrenafe	1	.....	San Pedro	6	.....
Lambayeque	15	10	Trujillo	9	4
Lima (city)	8	3	Viru	2	.....

RUSSIA.

Typhus Fever.

Typhus fever has been notified in Russia as follows: Moscow, week ended January 23, 1915, 8 cases with 1 death; three weeks ended February 20, 1915, 35 cases with 5 deaths. Petrograd, two weeks ended February 6, 1915, 17 cases with 3 deaths; two weeks ended February 27, 1915, 16 cases with 3 deaths. Vladivostok, week ended February 20, 1915, 1 case with 1 death; week ended March 8, 1915, 1 death.

TURKEY IN ASIA.

Typhus Fever.

Typhus fever has been notified in Turkey in Asia as follows: Harput, week ended February 27, 1915, present; Mersina, week ended March 13, 1915, present; Trebizond, period from December 13, 1914, to February 27, 1915, many cases among soldiers returning from the front, with very high fatality rate.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Apr. 30, 1915.[1]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria	Feb. 28–Mar. 6	1		
Vienna	Mar. 7–13	1		
Bosnia-Herzegovina	Feb. 14–20	4		Not previously reported.
Do	Feb. 21–28	3		
Croatia-Slavonia	Feb. 14–20	25		Do.
Do	Feb. 21–28	1		
Hungary	Feb. 8–21	26		
Indo-China:				
Cochin China—				
Saigon	Feb. 28–Mar. 6	43	24	
Philippine Islands:				
Manila	do	7	4	

PLAGUE.

Cuba:				
Habana	Apr. 24–26	2		
Egypt:				
Assiout	Feb. 21	1		
Guatemala:				
Guatemala	Mar. 30–Apr. 5			Present.
Japan:				
Kagi	Mar. 7–13	2		
Turkey in Asia:				
Bagdad	Feb. 21–Mar. 6	120	85	
Union of South Africa:				
Cape Province	Feb. 5–Mar. 6	18	10	

SMALLPOX.

Austria-Hungary:				
Austria—				
Vienna	Jan. 31–Mar. 20	597	134	
Belgium:				
Antwerp	Mar. 23–29	1		
Canada:				
Manitoba—				
Winnipeg	Apr. 4–10	2		
Ontario—				
Toronto	Apr. 11–17	4		
Quebec—				
Montreal	do	7		
China:				
Shanghai	Feb. 28–Mar. 13	6	13	Deaths among natives.
Tientsin	Mar. 7–13		1	
Great Britain:				
London	Mar. 21–27	3		
Guatemala:				
Guatemala	Mar. 30–Apr. 5			Present.
Indo-China:				
Cochin China—				
Saigon	Feb. 28–Mar. 6	2		
Japan:				
Taiwan	Mar. 7–13	8	1	
Mexico:				
Aguascalientes	Apr. 5–11		2	
Nuevo Laredo	Apr. 4–10		1	
Mazatlan	Feb. 25–Apr. 6	29	19	
Monterey	Mar. 23–29	3		
Progreso	Apr. 4–10	7	2	
Vera Cruz	Mar. 29–Apr. 10	46	16	
Portugal:				
Lisbon	Mar. 7–27	4		
Russia:				
Moscow	Feb. 14–20	18	6	
Do	Feb. 28–Mar. 6	10	1	
Petrograd	do	63	22	
Sweden:				
Sundsvall	Feb. 1–28	4		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria				Total Sept. 15–Dec. 5: Cases, 3,467; deaths, 937. Total Jan. 4–Feb. 27: 147 cases.
Do				Total Nov. 18–Dec. 22: Cases, 741; deaths, 133.
Bohemia				Total Sept. 23–Dec. 5: Cases, 176; deaths, 56.
Coast land—				
Trieste	Nov. 15–21	5		
Galacia				Total Sept. 23–Dec. 5: Cases, 2,047; deaths, 793.
Kracow	Oct. 4–Dec. 5	109	4	
Lisko	Sept. 23–Nov. 7	355	186	
Przemsyl	Nov. 1–14	132	3	
Lower Austria				Total Sept. 1–Dec. 5: Cases, 473; deaths, 67.
Vienna	Sept. 1–Jan. 30	390	42	
Moravia				Total Sept. 15–Dec. 5: Cases, 362; deaths, 93.
Brunn	Sept. 15–Nov. 21	18	3	
Silesia				Total Sept. 23–Dec. 5: Cases, 283; deaths, 39.
Styria				Sept. 23–28: Cases, 55; deaths, 18.
Gratz	Oct. 3–Nov. 14	10		
Upper Austria	Oct. 4–Nov. 7	3		
Bosnia-Herzegovina	Jan. 4–Feb. 20	110	60	Total Oct. 4–10: Case, 1.
Croatia-Slavonia	Dec. 31–Feb. 20	473	160	Total Oct. 4–10: Case, 1; death, 1.
Hungary	Dec. 31–Feb. 7	498	157	Total Sept. 15–Nov. 30: Cases, 3,024; deaths not yet reported.
Do				Total Nov. 18–Dec. 22: Cases, 452; deaths not reported.
Budapest	Dec. 25–Feb. 13	22	4	
Fiume	Jan. 25–Feb. 7	3	1	
Ceylon:				
Colombo	Sept. 5	1	1	
China:				
Nanking	Nov. 15–21			Present.
Wuchow	Nov. 27			Do.
Dutch East Indies:				
Banca—				
Muntok	Dec. 6–12	11	7	
Celebes—				
Menado	Oct. 18–Dec. 5	425	409	
Java—				
Batavia	Oct. 25–Dec. 26	361	343	
Sumatra—				
Lampong	Nov. 8–14	27	7	
Mengals	Oct. 18–Nov. 7	65	69	
Palembang	Oct. 18–Dec. 19	175	147	
Pencoulen district	Oct. 25–31	88	32	
Telok Betong	Nov. 14–Dec. 12	47	44	
Germany				Total Nov. 8–Jan. 16: Cases, 54.
Do	Feb. 21–Mar. 3	17	1	In prison camps.
Brandenburg	Dec. 6–23	4		Vicinity of Frankfort on the Oder.
Torgau	Jan. 5–16	1		At Birnbaum.
Posen	Dec. 20–26	2		
Zirka	Jan. 5–16	5		
Silesia	Nov. 8–Dec. 26	46		In 23 localities.
Rosenberg	Jan. 5–16	1		
India:				
Bombay	Nov. 1–Jan. 9	9	3	
Calcutta	Nov. 1–28		42	Oct. 25–31: Deaths, 17. Not previously reported.
Madras	Nov. 8–Mar. 3	175	125	
Madura district	Jan. 17–Mar. 6	622	403	
Rangoon	Sept. 1–Dec. 31	6	5	
Indo-China				Jan. 1–Aug. 31: Cases, 259; deaths, 148. Aug. 1–31; Cases, 18; deaths, 15.
Anam—				
Binh-Dinh	Oct. 1–Nov. 30	84	42	
Cambodia—				
Pnum Penh	Aug. 1–Oct. 31	2	1	
Cochin-China—				
Baria	Aug. 1–31	6	6	And vicinity, Nov. 3–23: Cases, 20; deaths, 10.
Cantho	Oct. 1–31	2		
Cholon	Aug. 1–Nov. 30	70	49	Total Jan. 1–Dec. 20: Cases, 154; deaths, 79.
Saigon	Aug. 1–Feb. 28	590	339	
Laos—				
Pakse	Aug. 1–31	1	1	
Tonkin—				
Ninh-Binh	Oct. 1–31	11	2	

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915—Continued.

CHOLERA—Continued.

Places	Date.	Cases.	Deaths.	Remarks.
Japan				Total Jan. 1–Dec. 31: 5 cases, 4 deaths.
Kyoto fu	Oct. 1–31	1	1	
Philippine Islands:				
Manila	Oct. 25–Jan. 30	66	37	
Do	Feb. 7–27	16	10	
Russia:				
Moscow	Nov. 8–Jan. 23		4	
Siam:				
Bangkok	Sept. 27–Feb. 20		10	
Straits Settlements:				
Singapore	Oct. 4–Jan. 30	5	5	

YELLOW FEVER.

Brazil:				
Bahia	Jan. 24–Feb. 20	3	1	
Rio de Janeiro	Dec. 13–26	2	1	
Ecuador:				
Guayaquil	Nov. 1–Feb. 28	3	2	
French Guiana:				
St. Jean du Maroni	Sept. 23–Oct. 10	15	8	At the penal station.
Venezuela:				
Caracas	Dec. 31	1		

PLAGUE.

Bahrein (in Persian Gulf)	Dec. 29			Present.
Brazil:				
Bahia	Nov. 16–Feb. 27	20	16	
Pernambuco	Oct. 11–Dec. 31		12	
Rio de Janeiro	Dec. 20–Jan. 5	2		
Ceylon:				
Colombo	Oct. 25–Feb. 20	64	60	
China:				
Canton				June 12–July 12: Cases, 325.
Hongkong	Dec. 28–Feb. 24	2	1	Chinese.
Shanghai	Dec. 6–Jan. 2		3	Among natives.
Cuba:				
Habana	Feb. 9–Apr. 18	9	5	
Pinar del Rio	Apr. 9–10	2	1	
Dutch East Indies:				
Java	Jan. 29–Feb. 11	576	504	East Java.
Provinces				Total, Oct. 1–Nov. 30: Cases, 2,562; deaths, 2,278.
Kediri	Oct. 1–Nov. 30	730	678	
Madicen	do	128	110	
Pasoerocan	do	1,405	1,211	
Surabaya	do	299	279	
Do	Dec. 13–Feb. 27	144	129	
Ecuador:				
Duran	Nov. 1–Jan. 31	10	4	
Guayaquil	Nov. 1–Feb. 28	350	137	
Milagro	Dec. 1–31	1	1	
Sanborondon	Nov. 1–Dec. 31	4	3	
Egypt				Total, Jan. 1, 1914–Jan. 28, 1915: Cases, 225; deaths, 116.
Alexandria	Nov. 5–28	1	1	
Assiout	Jan. 28	5		
Port Said	Oct. 22–Dec. 24	9	7	Jan. 1–Dec. 18: Cases, 44.
Greece				Sept. 12, present in Drama and Kavala.
Piraeus	Jan. 17–27	1		
Saloniki	Apr. 9	12		
India:				
Bassein	Jan. 4–Dec. 5	13	10	Not previously reported.
Bombay	Nov. 1–Mar. 6	53	43	
Karachi	Nov. 8–Mar. 6	25	17	
Madras	Nov. 22–Dec. 12	6	6	
Madras Presidency	Jan. 17–30	299	211	
Do	Feb. 7–Mar. 6	445	323	
Rangoon	Sept. 1–Dec. 31	125	117	
Indo-China				Jan. 1–Aug. 31: Cases, 1,780; deaths, 1,413. Aug. 1–3: Cases, 155; deaths, 121.

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Anam—				
Phanitet	Aug. 1-31	4	1	
Phanrang	Aug. 1-Nov. 30	12	10	
Phanri	Oct. 1-Nov. 30	2	1	
Cambodia—				
Kompong-Speu	Nov. 1-30	5	3	
Pnum Penh	Aug. 1-Nov. 30	88	84	
Stung-Treng	Oct. 1-Nov. 30	4	3	
Cochin China—				
Cantho	Nov. 1-30	3	.....	
Cholon	Aug. 1-Nov. 30	39	14	
Giadinh	Oct. 1-31	1	.....	
Saigon	Aug. 1-31	23	15	And vicinity Nov. 3-30: Cases, 5.
Do	Jan. 4-Feb. 21	39	19	
Thudaumot	Nov. 1-30	2	1	
Kouang-Techeou-Wan	Aug. 1-Nov. 30	70	70	
Tonkin—				
Tong-San	Nov. 1-30	25	25	
Japan	.....	.....	.....	Total, Jan. 1-Dec. 31: 485 cases; 110 deaths.
Chiba-ken—				
Komikawa	Jan. 1-Dec. 31, 1914	6	6	
Moriyama	do	5	4	
Ibaraki-ken—				
Isohama	do	1	1	
Kagi	Jan. 24-Mar. 6	16	15	
Kanagawa-ken—				
Hodogaya	Jan. 24-Feb. 13	8	6	Including reports previously published in P. H. R.
Kawasaki	do	1	1	
Onno-mura	do	9	8	
Tijima-mura	do	5	4	
Yokohama	do	1	1	Do.
Taiwan (Formosa)	do	303	275	Do.
Tokyo-fu	do	47	29	Do.
Tokyo	Dec. 29-Jan. 4	1	1	
Libya (Tripoli)	.....	.....	.....	Present in Derna and Marsa-Susa among native laborers.
Mauritius	Nov. 6-Jan. 14	74	.....	
Persia:				
Belessavar	Oct. 30-Nov. 9	80	80	On Caspian coast.
Kasri Shireen	Dec. 12	1	.....	
Peru:				
Departments—				
Ancachs	.....	.....	.....	Total year 1914: Cases, 34; deaths, 20.
Arequipa	.....	.....	.....	Total year 1914: Cases, 54; deaths, 24.
Cajamarca	.....	.....	.....	Total year 1914: Cases, 16; deaths, 7.
Callao	.....	.....	.....	Total year 1914: Cases, 14; deaths, 8.
La Libertad	.....	.....	.....	Total year 1914: Cases, 335; deaths, 176.
Lambayeque	.....	.....	.....	Total year 1914: Cases, 107; deaths, 47.
Lima	.....	.....	.....	Total year 1914: Cases, 106; deaths, 48.
Piura	.....	.....	.....	Total year 1914: Cases, 94; deaths, 56.
Callao	Nov. 16-Jan. 31	8	2	
Catacoas	do	35	3	
Chiolayo	do	30	15	
Chocope	Nov. 16-Jan. 3	.....	.....	Present.
Ferrenafe	Nov. 16-Jan. 31	6	.....	
Guadaloupe	Jan. 4-31	1	1	
Huancayo	do	1	1	
Lambayeque	Nov. 16-Jan. 31	14	5	
Lima (city)	do	16	2	
Lima (country)	do	9	1	
Mollendo	do	20	.....	
Pacasmayo	Nov. 16-Jan. 3	1	.....	
Piura	Nov. 16-Jan. 31	24	7	
Salaverry	Nov. 16-Jan. 3	4	.....	
San Pedro	Nov. 16-Jan. 31	23	.....	
Trujillo	do	55	8	
Russia:				
Moscow	Dec. 6-Feb. 13	9	2	

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Senegal:				
Dakar	Dec. 5			Present.
Siam:				
Bangkok	Dec. 26-Feb. 20		12	
Straits Settlements:				
Singapore	Nov. 1-Feb. 20	25	18	
Turkey in Asia:				
Bagdad	Nov. 1-Dec. 3	11	9	
Do	Dec. 26-Jan. 5	12	8	
Do	Jan. 12-Mar. 2	194	93	
Union of South Africa:				
Queenstown	Feb. 5			Do.
Zanzibar	Oct. 25-31	2	3	

SMALLPOX.

Arabia:				
Aden	Nov. 5-Feb. 17	23	25	
Muttra	Feb. 7-13			Present.
Argentina:				
Rosario	Oct. 1-31		1	
Australia:				
New South Wales—				
Newcastle	Jan. 22-28	2		
Penrith	Dec. 11-17	1		
Sydney	Dec. 11-Feb. 25	35		Total Nov. 13-19: Cases, 7 in the metropolitan area and 2 in the country districts.
Queensland—				
Brisbane				Nov. 19, in Colmslie quarantine station, 1 case from s. s. Kano Na from Melbourne, via Sydney.
South Australia	Jan. 3-16	1		
Austria-Hungary:				
Austria				Total, Feb. 28-Mar. 6, 292 cases.
Prague	Jan. 17-23	1		
Vienna	Oct. 31-Jan. 9	141	15	
Do	Jan. 17-30	211	56	
Hungary—				
Budapest	Jan. 31-Feb. 27	177		
Fiume	Dec. 6-Feb. 7	4	2	
Brazil:				
Pernambuco	Oct. 1-Dec. 31		57	
Rio de Janeiro	Nov. 1-Jan. 9	735	215	
Do	Feb. 7-Mar. 6	83	27	
Sao Paulo	Nov. 8-15	2		
Bulgaria:				
Sofia	June 30-Nov. 28	121	2	
Canada:				
British Columbia—				
Vancouver	Feb. 8-Mar. 20	4		
Manitoba—				
Winnipeg	Jan. 24-Apr. 3	8		
Ontario—				
Hamilton	Jan. 1-Mar. 31	7		
Sarnia	Dec. 12-Feb. 6	5		
Toronto	Dec. 6-Apr. 10	51	1	
Windsor	Jan. 17-Feb. 27	4		Jan. 13: Cases, 4 from Grand Trunk ferryboat Landsdowne.
Quebec—				
Montreal	Dec. 28-Apr. 10	13		
Quebec	Dec. 13-Jan. 16	3		
Canary Islands:				
Teneriffe—				
Santa Cruz	Dec. 6-26		2	
Ceylon:				
Colombo	Oct. 25-Feb. 20	168	48	
China:				
Foochow	Mar. 6			Present.
Hankow	Feb. 7-13	1		
Hongkong	Nov. 22-Mar. 13	11	8	
Nanking				Feb. 20, present.
Newchwang				Do.
Shanghai	Nov. 9-Feb. 27	36	86	Deaths among natives.
Tientsin	Dec. 6-12		1	

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Cuba:				
Guayos	Jan. 12–Feb. 10	7	1	
Habana	Mar. 8–21	1	1	Mar. 15: 1 case on steamship Morro Castle.
Dutch East Indies:				
Borneo	Nov. 8–14	50	30	Oct. 18–24: Cases, 112; deaths, 44, mainly in Pontianak.
Java	Jan. 8–Mar. 6	586	208	In the western part, including Batavia.
Batavia	Oct. 18–Nov. 21	166	44	
Do	Jan. 8–Feb. 20	90	30	
Surabaya	Nov. 1–7	1	.....	
Sumatra—				
Tepanodi district	Dec. 5–29	6	2	
Egypt:				
Alexandria	Nov. 19–Mar. 11	106	27	
Cairo	Dec. 3–Mar. 4	30	6	
France:				
Havre	Dec. 20–26	1	.....	
Marseille	Jan. 1–Feb. 28	.....	1	
Paris	Nov. 15–Dec. 26	4	2	
Germany	.....	.....	.....	Nov. 15–Dec. 19: Cases, 14. Jan. 10–16: 11 cases.
Great Britain:				
Cardiff	Nov. 30–Dec. 5	5	.....	
Liverpool	Dec. 19	1	.....	
London	Jan. 31–Mar. 20	24	3	
Germany:				
Strassburg	Jan. 1–31	4	1	
Greece:				
Kavala	Nov. 22–Mar. 13	10	.....	
Kilkish	Nov. 22–Feb. 27	1	.....	
Patras	Nov. 23–Feb. 21	.....	18	Jan. 31: Epidemic.
Saloniki	Nov. 15–Mar. 13	81	63	
Guatemala:				
Guatemala	Mar. 21–27	.....	.....	Present.
India:				
Bombay	Nov. 1–Mar. 6	229	64	
Calcutta	Oct. 25–Nov. 28	.....	37	
Karachi	Jan. 3–Mar. 6	4	2	
Madras	Nov. 1–Mar. 6	74	10	
Rangoon	Oct. 1–Dec. 31	3	3	
Indo-China:				
Anam—				
Binh-Dinh	Oct. 1–31	3	.....	
Phanrang	Nov. 1–30	.....	1	
Cambodia—				
Pnompenh	Oct. 1–Nov. 30	2	1	
Cochin China—				
Bac-Lien	Nov. 1–30	1	.....	
Saigon	Feb. 22–28	2	2	
Laos—				
Pakse	.....do	1	.....	
Tonkin—				
Haiduong	.....do	4	.....	
Haiphong	Oct. 1–Nov. 30	13	1	
Hanoi	Nov. 1–30	1	.....	
Italy:				
Milan	Dec. 1–31	1	.....	
Turin	Dec. 21–Mar. 21	5	.....	
Japan	.....	.....	.....	Jan. 1–Dec. 31: Cases, 485; deaths, 110, exclusive of Taiwan.
Kagi	Jan. 31–Feb. 6	3	3	
Nagasaki	Jan. 18–Mar. 14	4	1	
Nagasaki-ken	Oct. 1–Dec. 31	60	12	
Taiwan	Oct. 25–Feb. 28	21	4	
Mexico:				
Aguascalientes	Dec. 7–Apr. 4	.....	22	
Chihuahua	Nov. 30–Apr. 9	29	19	
Juarez	Dec. 4	.....	.....	Prevalent.
Mazatlan	Dec. 9–Feb. 23	37	22	
Mexicali	Feb. 14–20	3	.....	
Monterey	Dec. 14–Mar. 28	67	2	Feb. 10: Epidemic.
Nuevo Laredo	Jan. 31–Apr. 3	5	4	
Salina Cruz	Nov. 1–7	1	.....	
Tampico	Dec. 1–Mar. 20	.....	25	Prevalent among the military.
Vera Cruz	Dec. 1–Mar. 27	157	108	

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

Reports Received from Dec. 26, 1914, to Apr. 23, 1915—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Netherlands:				
Rotterdam	Jan. 24-Mar. 6	5	1	
Newfoundland:				
St. Johns	Jan. 23-29	1		
Norway:				
Christiansand	Nov. 1-30	7	2	Including report, vol. 29.
Stavanger	Nov. 30-Dec. 5	1		
Persia:				
Teheran	Feb. 14-20			Present.
Peru:				
Arequipa	Feb. 28			Epidemic.
Philippine Islands:				
Manila	Dec. 20-26	2		From steamship Ixion.
Portugal:				
Lisbon	Nov. 22-Mar. 6	25		
Russia:				
Moscow	Nov. 8-Feb. 13	131	30	
Odessa	Oct. 25-Nov. 18	10	1	
Do	Nov. 30-Mar. 13	111	13	
Petrograd	Oct. 25-Feb. 27	561	161	
Riga	Oct. 11-Mar. 6	129		
Vladivostok	Mar. 2-8	1		
Santo Domingo:				
Santo Domingo	Feb. 1-15		2	
Spain:				
Barcelona	Nov. 22-Mar. 25		66	
Madrid	Nov. 1-Feb. 28	5	10	
Seville	Dec. 1-Feb. 28		7	
Valencia	Nov. 15-Mar. 27	967	47	
Straits Settlements:				
Singapore	Oct. 10-Feb. 20	18	7	
Sweden:				
Stockholm	Dec. 13-19		1	
Switzerland:				
Basel	Nov. 7-Mar. 13	57		
Turkey in Asia:				
Beirut	Nov. 1-Mar. 20	118	38	
Haifa	Nov. 2-Dec. 6	14	6	
Jaffa	Jan. 10-30	3		
Jerusalem	Oct. 1-Nov. 30	5		
Tripoli	Dec. 27-Jan. 9	8		
Zanzibar	Nov. 14-21		7	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

IDAHO.

Whooping Cough—Placarding—School Attendance. (Reg. Bd. of H., Apr. 1, 1915.)

RULE 19. All cases of whooping cough shall be placarded (according to rule 10) for a period of six weeks after the last case appears in a family. Children living in a house where the disease exists who have had the disease may attend school upon the parent making affidavit to that effect upon blanks furnished by the health officer. Children who have not had the disease must not attend school.

In whooping cough the board of health may enforce the same quarantine and other preventive measures as are provided for in case of scarlet fever.

Measles—Notification of Cases—Placarding—Quarantine—Disinfection—Burial. (Reg. Bd. of H., Apr. 1, 1915.)

RULE 24. 1. All cases of measles must be immediately reported to the local health authorities.

2. The front and rear entrances of the premises must be placarded with a red warning card.

3. The patient must be isolated for at least 14 days after the beginning of the disease, or until all infectious discharges have ceased. Visitors are prohibited. Susceptible children of the family must be confined to the premises, but may be permitted the freedom of an inclosed yard in which they do not come in contact with other children.

4. The patient must be excluded from the schools and places of public gathering for at least three weeks from the onset of the disease. Susceptible children of the family must be excluded for at least 18 days from date of last exposure.

5. The sale of milk and foodstuffs from infected premises is prohibited.

6. Before isolation is raised the patient must be given a disinfecting bath, and a complete change of clothing must be made.

7. Public funerals are prohibited. However, adults and nonsusceptible children may follow the remains to the grave provided they do not enter the carriages occupied by persons who have been in the infected building.

Habit-forming Drugs—Regulation of the Sale and Dispensing of. (Act Mar. 10, 1915.)

SECTION 1. It shall be unlawful to sell, to manufacture for sale, to transport for sale, to furnish or give to any person or persons within the State of Idaho any cocaine, alpha or beta ucaine, opium, morphine, heroin, chloral hydrate, or any salt or compound of any of the foregoing substances, or any preparation or compound containing any of the foregoing substances, or their salts or compounds, otherwise than as in this act specifically provided.

SEC. 2. It shall be lawful for wholesalers, manufacturers, and jobbers to sell the articles named in section 1 of this act to each other, or to regularly licensed retail druggists.

It shall be lawful for duly licensed retail druggists to sell the articles named in section 1 of this act to a regularly licensed and practicing physician, dentist, or veterinary surgeon, or, when the same enter into or form part of a written prescription duly made, dated and signed by a regularly licensed and practicing physician to the person presenting such prescription, according to the terms thereof and not otherwise: *Provided,* That all such prescriptions shall be kept on file by the retail druggist who fills them for a period of one year, and that no such prescription shall be refilled except on the written order of the physician making it. No copy or duplicate of any such prescription shall be made or delivered to any person.

It shall be lawful for a duly licensed physician, dentist, or veterinary surgeon to furnish or administer any of the articles named in section 1 of this act to or for any patient under his immediate care or treatment, but to none other.

It shall be lawful for wholesalers, manufacturers, or jobbers of articles mentioned in section 1 of this act, or for regularly licensed retail druggists to sell the same to hospitals, colleges, or scientific institutions upon the certificate of the head of such hospitals, colleges, or institutions, or of a licensed physician connected therewith, that the same are desired for medical or scientific purposes.

It shall be lawful for a regularly licensed druggist to sell proprietary preparations containing not more than four-tenths of 1 per cent of opium, or not more than one-eighth grain of morphine, or not more than one-eighth grain of heroin, or not more than 10 grains of chloral hydrate in 1 fluid ounce, or if a solid preparation, in 1 avoirdupois ounce, when the label on any such preparation shall show clearly the percentages of such articles contained therein.

SEC. 3. Any dealing in, furnishing, or giving away of any of the articles mentioned in section 1 of this act in any manner not specifically recognized as lawful by section 2 of this act shall constitute a felony which shall be punished upon conviction by imprisonment in the State penitentiary for not less than 3 nor more than 10 years.

SEC. 4. Any person who shall obtain for his own use, or otherwise any of the articles mentioned in section 1 of this act, except in the manner recognized as lawful by section 2 of this act, shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than $100 and not more than $250, or by imprisonment in the county jail for not more than six months, or by both such fine and imprisonment.

SEC. 5. Pharmacists, retail druggists, physicians, druggists or veterinary surgeons who shall furnish any of the articles mentioned in section 1 of this act to any person when the same is not in the due, lawful, and regular course of trade, or the practice of his profession, shall, upon conviction, be fined in a sum not exceeding $500, and shall forever thereafter be ineligible to secure a license to practice within this State.

SEC. 6. It is the intent and purpose of this act to make any dealing in, furnishing, or giving away of the articles mentioned in section 1 of this act prima facie unlawful, and whenever any of such articles are found in the possession of any person, proof of such possession shall be prima facie evidence of a violation of section 4 of this act, and it shall then be incumbent upon such person to show that the same was lawfully acquired.

SEC. 7. That "An act to amend chapter 21, title 8, of the Political Code, Revised Codes of Idaho, by adding thereto sections 1400a, 1400b, 1400c, and 1400d, etc.," approved March 13, 1909, and all other acts or parts of acts in conflict herewith are hereby repealed.

[This act becomes effective May 8, 1915.]

ILLINOIS.

Smallpox—Notification of Cases—Placarding—Quarantine—Vaccination—School Attendance—Disinfection—Burial. (Reg. Bd. of H., Dec. 15, 1914.)

1. *Reports of cases.*—Every householder residing in a municipality having a board of health must immediately report every known or suspected case of smallpox in his home to the health officer, health commissioner, or chairman of the board of health, as the case may be. Every physician in attendance on a case of known or suspected smallpox must immediately report the same as above provided. Every person having knowledge of the existence of an unreported case of known or suspected smallpox must likewise report the same. If the municipality has no health officer or local board of health, such reports must be made to the mayor or village president. Immediate reports of known or suspected cases of smallpox in territory outside the limits of cities and villages in counties under township organization must be made to the township health officer, if there be one, or, if there be none, to the supervisor, by every householder, attending physician, or other person having knowledge of a case. In counties not under township organization such reports must be made by the householder, attending physician, or other person having knowledge of a case to the county health officer, if there be one, or if there be none, to a member of the county board of health (board of county commissioners).

Every health commissioner, health officer, supervisor (as a health official of his township) or other health official to whom a case of smallpox has been reported must immediately notify the secretary of the State board of health of the same. This applies not only to the first case in a community but to all subsequent cases. If the attending physician is in doubt as to the nature of a suspected case he must report the same to the proper health officials as heretofore provided. If the health authorities are not qualified to pass upon the same another physician must be called into consultation. If the physicians do not agree as to the diagnosis an inspector will be sent by the State board of health as soon as possible.

2. *Placarding.*—The local health authorities must affix, in a conspicuous place at every outside entrance to a building in which a case of smallpox exists a red card not less than 10 by 15 inches in size with the following printed in with bold-faced black type: "Smallpox" in letters not less than 3½ inches high, and "keep out" in letters not less than 2½ inches high. Every building in which a person quarantined on account of exposure to smallpox resides must likewise be placarded at all outside entrances with a red card of the same size with similar printing in black bold-faced type reading "Quarantined. Keep out." These cards must not be removed except by the proper health officials. Defacement of the same shall constitute a violation of these rules.

3. *Smallpox suspects.*—All persons suspected to be suffering from smallpox must be quarantined until it is definitely established that they do not have the disease.

4. *Smallpox patients.*—All persons suffering from smallpox must be rigidly quarantined until they have completely recovered. Quarantine must not be raised until the skin is entirely smooth and the characteristic red spots at the base of the pits have disappeared. They usually disappear last of all from the soles of the feet and palms of hands. The patient must be confined to the building and must not be permitted to come in contact with or to hold communication with anyone except the attending physician and necessary attendants. To permit the patient to go outside the building or to hold communication with others is a violation of quarantine regulations. This applies to smallpox patients quarantined in the country as well as those quarantined within the limits of a city or village. Whenever it is possible the patient should be removed to a smallpox isolation hospital.

5. *Removal of patients or exposures.*—No smallpox patient shall be removed from the city, village, township, or county in which he is quarantined except by authority

of the secretary of the State board of health. No person quarantined because of exposure to smallpox shall be removed from the city, village, township, or county in which he is quarantined except by permission of the secretary of the State board of health. No smallpox patient and no person quarantined on account of exposure to smallpox shall be removed from the building in which he is quarantined to another building in the same city, village, township, or county except upon permission of the local health authorities or the State board of health.

6. *Exposures.*—All persons who have been exposed to a case of smallpox must be quarantined for a period of 20 days from date of last exposure, unless they have been recently successfully vaccinated, or unless they are vaccinated within two or there days after first exposure. Such vaccinated persons need not be quarantined but must be kept under observation of a physician to whom they must report at least once daily until it has been positively ascertained that they are in no danger of developing smallpox. No person who has been exposed to smallpox shall be released from quarantine except by the proper health authorities, and then only after his person and clothing have been disinfected.

7. *Persons who continue to reside in quarantined building.*—All persons who continue to reside in a building quarantined on account of smallpox therein must be quarantined in the same degree as the patient, and shall not be released from quarantine until 20 days after the recovery of the patient, unless they have been successfully vaccinated.

8. *Physicians.*—No physician, except the attending physician, or other person may visit a smallpox hospital or other place where a smallpox patient is quarantined, without first having obtained permission from the local health authorities or the secretary of the State board of health. An unauthorized visit for any purpose is a violation of quarantine. Local health authorities must not give permission unless such visit is absolutely necessary.

Physicians in attendance upon smallpox cases, attendants, and health officials whose duties require them to come in contact with such patients, must disinfect both person and clothing each time upon leaving the quarantined premises. Attendants must not be permitted to leave such premises except in case of extreme necessity, and then only by permission of the health authorities.

9. *Vaccination.*—Whenever smallpox appears in a community, the mayor or village president should issue a proclamation calling upon all persons residing therein to be vaccinated. Whenever the disease becomes epidemic in a community, it is the fault of the residents in not availing themselves of this preventive.

10. *Exclusion of unvaccinated children from the schools.*—Whenever smallpox appears in a community and it threatens to spread unless vigorous preventive measures are taken, unvaccinated children must be excluded from the schools. At the earliest possible moment the city council or board of village trustees should pass an ordinance requiring such exclusion when these conditions exist.

Whenever smallpox threatens to become prevalent outside of incorporated cities or villages, the township or county board of health, as the case may be, should adopt a rule requiring such exclusion.

11. *Disinfection.*—Before the quarantine of any known or suspected case of smallpox is raised the building must be thoroughly disinfected by a method approved by the State board of health, preferably by the potassium permanganate-formaldehyde or the sheet method of formaldehyde disinfection. In addition to gaseous disinfection the building must be given a very thorough airing, and all woodwork must be carefully washed.

Textile articles coming into intimate contact with the patient in his home should be destroyed. All other articles must be thoroughly disinfected.

12. *Burials.*—The body of anyone dead from smallpox must be prepared, and the funeral must be conducted under the immediate supervision of the local health authorities or of their duly authorized representatives. The body must be wrapped in a sheet soaked in a disinfectant, then placed in an air-tight coffin, which must not be opened under any pretext whatsoever. Disposal of the remains must be effected within 24 hours, and none other than the undertaker and his assistants shall be permitted to take any part in such disposition. Attendance of the public, relatives, or friends at the funeral is strictly forbidden.

13. *Deliveries of groceries and other necessities.*—Milk, foodstuffs, and other necessary supplies may be delivered at quarantined premises, but there must be no contact of any kind between inmates of the quarantined premises and the delivery agents. Milk may be delivered in bottles only. No milk bottle, basket, or any other article whatsoever, including mail, may be taken out of or away from the infected premises during the period of quarantine or before disinfection. Before milk bottles are removed from the premises after disinfection they must be sterilized under the direction of the local health authorities.

Scarlet Fever—Notification of Cases—Placarding—Quarantine—School Attendance—Disinfection—Burial. (Reg. Bd. of H., Feb. 16, 1915.)

1. *Reports.*—Every physician, attendant, parent, householder, or other person having knowledge of a known or suspected case of scarlet fever (scarlatina, scarlet rash) must immediately report the same to the local health authorities.

All local health authorities upon being advised of a case of scarlet fever must immediately report the same to the State board of health on the form provided for that purpose.

2. *Placarding.*—Whenever a case of scarlet fever (scarlatina, scarlet rash) is reported to the local health authorities, they shall affix in a conspicuous place at each outside entrance of the building, house, or flat, as the case may be, a red card not less than 10 by 15 inches in size, on which shall be printed in black, with boldface type, at least the following: "Scarlet fever" in type not less than 3½ inches in height, and "Keep out" in similar type not less than 2½ inches in height. Defacement of such placards or their removal by any other than the local health authorities or the duly authorized representatives of the State board of health is strictly prohibited.

3. *Quarantine of patient.*—All cases of scarlet fever (scarlatina, scarlet rash) must be quarantined for at least five weeks. Quarantine must not be raised, however, until desquamation (peeling) and all infectious discharges from nose and ears have entirely ceased and the acute inflammation of the tonsils has disappeared, and the premises have been thoroughly disinfected by or under the supervision of the health officer. All persons continuing to reside on the infected premises shall be confined to the infected building, house, or apartment until quarantine has been raised, excepting as hereinafter provided.

No one but the necessary attendant, the physician, the health officer, and the representative of the State board of health may be permitted to enter or leave the infected premises. Upon leaving they must take all precautions necessary to prevent the spread of the disease. The nursing attendant may leave the premises only in cases of absolute necessity.

An ample supply of towels, basins, water, and an approved disinfectant must always be on hand for the disinfection of the hands of the attendants.

4. *Quarantine of exposures.*—Adult members of the family may be removed from the infected premises upon permission granted by the health officer, and after thorough disinfection of person and clothing, provided that they do not again enter the infected premises or come in contact in any way with patient or attendant, such adults, ex-

cepting school teachers, may go about their necessary business. School teachers, so removed, must not return to their schools until one week after such removal.

Children who previously have had the disease, such fact being certified to by the physician who attended the case, may be removed from the infected premises upon permission granted by the local health officer, and after careful disinfection of person and clothing, and provided that they do not again enter the infected premises or come in contact in any way with patient or attendant, they need not be quarantined.

Children of a family in which a case of scarlet fever exists, and who have not had the disease may be removed from the infected premises upon permission granted by the health officer, after thorough disinfection of person and clothing. Such children may be removed only to premises upon which none but adults and nonsusceptible children reside, and must be confined to the premises (in the house) for one week from date of removal, during which period they must be kept under close observation, and no children shall be permitted to visit or otherwise come in contact with them during this period. They must not return to the infected premises or come in contact in any way with the patient or attendant, until quarantine has been terminated.

All children who have not had the disease who continue to reside on the infected premises must be held under close observation for at least one week following termination of the last case on the premises.

5. *Removals.*—No person, patient or exposure, and no article of any kind whatsoever, shall be removed from premises upon which a case of scarlet fever has been found, unless consent to such removal be first obtained from the local health authorities of the State board of health, and then only after strictly complying with the provisions of these rules. Under no circumstances shall permission be granted for removal of any person or article from premises upon which a case of scarlet fever has been found to any premises upon which milk or other foodstuffs are produced, sold, or handled, until quarantine has been properly terminated, and then only upon permission of the local health authorities or the State board of health.

No person affected with or exposed to scarlet fever shall be removed from any city, village, township, or county in which he is found unless consent to such removal be first obtained from the State board of health.

6. *Exclusion from the schools.*—All children who continue to reside on the infected premises must be excluded from the schools during the period of quarantine and for at least one week following date of raising of quarantine.

Nonsusceptible children, immune because of a previous attack of the disease, and who have been removed from the infected premises, may be permitted to attend school provided that a physician certifies that he has personal knowledge that they have had scarlet fever, and provided that their persons and clothing have been thoroughly disinfected upon removal from the infected premises.

All susceptible children who have been exposed to the disease who have been removed from the infected premises, in accordance with the provisions of rule 4, must be excluded from the schools for at least one week from date of last exposure.

The patient must be excluded from the schools for at least one week after quarantine is raised.

School teachers and other persons employed in or about a school building, who have been exposed to scarlet fever must be excluded from the school building and grounds for a period of one week following date of last exposure and until persons and clothing have been thoroughly disinfected.

7. *Sale of milk and other foodstuffs from infected premises prohibited.*—Whenever a case of scarlet fever (scarlatina, scarlet rash) shall occur on any premises where milk or other foodstuffs is either produced, handled, or sold, the sale, exchange, or distribution in any manner whatsoever, or the removal from the infected premises of milk, cream, any milk products or other foodstuffs until the case has been terminated by

removal, recovery, or death, and the premises and contents and all utensils are thoroughly disinfected under the supervision of the local health authorities, is prohibited: *Provided*, That in the event of scarlet fever occurring on a dairy farm, the live stock only may be removed to some other premises and the milking done and milk cared for and sold from such other premises by persons other than those of the household of the person so affected, upon obtaining permission to do so from the local health authorities or the State board of health.

Whenever a case of scarlet fever (scarlatina, scarlet rash) shall occur on premises connected with any store, such store shall be quarantined until the case is terminated by removal, recovery, or death, and the premises are thoroughly disinfected, unless the premises are so constructed that that part in which the case exists can be and is effectively sealed, under the supervision of the local health authorities, from the store and unless the employees and all other persons connected with the store do not enter that part of the premises where the case exists and do not come in contact with the patient, his attendant, or any article whatsoever from the quarantined premises.

8. *Deliveries of milk, groceries, and other necessities.*—Milk, foodstuffs, and other necessary supplies may be delivered at quarantined premises, but there must be no contact of any kind between inmates of the quarantined premises and the delivery agents. Wherever practicable milk must be delivered in bottles. Where milk can not be delivered in bottles the householder must place a thoroughly sterile container (a freshly scalded bottle or pail) to receive the milk at some convenient place outside the house, out of reach of dogs or cats. The milkman shall place the milk therein without handling the receiving container. No milk bottle, basket, or any other article whatsoever may be taken out of or away from the infected premises during the period of quarantine. Before milk bottles are removed from the premises after quarantine is raised they must be sterilized under the direction of the local health authorities. Mail must not be taken from the quarantined premises during the period of quarantine.

9. *Disinfection.*—All articles taken from the sick room must be disinfected upon removal. Exposure in the open air of carpets, rugs, curtains, bedding, and similar articles from the infected premises for the purpose of airing, shaking, beating, or sunning is strictly prohibited, unless in the opinion of the local health authorities such may be done without danger of the spread of the disease.

Books, toys, and other similar articles used to amuse the patient are best disposed of by burning. Under no circumstances should borrowed toys or books be returned. Library and school books must not be returned; they must be burned.

Bed and body linen which has been in contact with the patient and handkerchiefs or cloths which have been used to receive discharges from the patient must be immersed for not less than two hours in an approved disinfectant before removal from the sick room, and after removal should be boiled.

No article of clothing or other article may be removed from the infected premises to a laundry or other place for washing unless previously disinfected by immersion for not less than two hours in an approved disinfectant and the approval of the local health authorities has been obtained.

House animals, such as cats, dogs, or any other household pets, must be strictly excluded from the infected building, house, or flat during the entire period of quarantine. Any such animals which have been in contact with the patient must be subjected to a thorough disinfecting bath before removal from the infected building, house, or flat and must not be permitted to reenter the same. Such animals must then be confined in an outbuilding. Dogs and cats running at large should be destroyed.

Before quarantine is raised the infected premises and all articles of furniture and clothing therein must be thoroughly disinfected by or under the supervision of the local health authorities in a manner approved by the State board of health.

Immediately before disinfection of the premises the patient must be given an antiseptic bath under the direction of the physician, especial attention being paid to the disinfection of the hair and scalp. (An appropriate antiseptic bath may be prepared by dissolving two bichloride of mercury tablets in every gallon of hot water used. This should be followed by a plain soap and water bath.) After bathing the patient should be wrapped in a clean sheet handed from without, step into a non-infected room, and dress in clothing which has been disinfected.

10. *Deaths and burials.*—In the event of death the body must be wrapped in a sheet thoroughly soaked in an approved disinfectant and then placed in an air-tight coffin, which must remain in the sick room until removed for burial. The coffin must not be again opened on any pretext whatsoever. Public and church funerals are strictly prohibited. No person whose attendance is not necessary for the conduct of the funeral shall be permitted to enter the premises where the death occurred. Interment must be within 48 hours after death.

Nothing in this rule shall be held to prevent the attendance at the funeral of any adult member of the immediate family who shall have been in attendance upon the deceased and who shall have been exposed to the disease prior to such funeral and whose clothing and person have first been disinfected. Other persons desiring to follow the remains to the grave may do so, provided that they do not enter the premises where the death occurred and do not enter the vehicles occupied by persons who have entered or come from such premises.

Flowers which have been sent to the infected premises must be destroyed by burning immediately upon the removal of the body from the premises. Under no circumstances may they be taken from the infected premises.

When the body of anyone dead from scarlet fever (scarlatina, scarlet rash) is to be transported by railroad or by other common carrier, the official rules of the Illinois State Board of Health for the transportation of the dead must be observed.

Measles—Notification of Cases—Placarding—Quarantine—Attendance at Public Gatherings—Disinfection—Burial. (Reg. Bd. of H., Feb. 16, 1915.)

1. *Reports.*—Every physician, attendant, parent, householder or other person having knowledge of a known or suspected case of measles must immediately report the same to the local health authorities.

All local health authorities who have been advised of cases of measles shall report the same to the State board of health on a form provided for that purpose.

2. *Placarding.*—Whenever a case of measles is reported to the local health authorities, they shall affix in a conspicuous place at each outside entrance of the building, house or flat, as the case may be, a red warning card not less than 10 by 15 inches in size, on which shall be printed in black, with boldface type, at least the following: "Measles" in type not less than 3½ inches in height, and "keep out" in similar type not less than 2½ inches in height. Defacement of such placards or their removal by any other than the local health authorities or the duly authorized representative of the State board of health is strictly prohibited.

3. *Quarantine.*—The patient should be confined to one well ventilated room, screened against flies and similar insects, and as remote as possible from other occupied rooms. No persons, except the necessary attendants, should come in contact with the patient.

No person affected with measles shall be removed from the premises upon which he resides unless consent to such removal be given by the health authorities.

Children and susceptible adults must not visit the infected premises. Adults who have had the disease may, if necessary, enter the infected premises but they must not enter the sick room or come in contact with the patient or attendant.

Quarantine of patient must be maintained for 14 days after the beginning of the disease and until all infectious discharges from nose, ears, and throat have disappeared and the cough has ceased: *Provided, however*, That if there are no other susceptibles in the family and the patient is free from infectious discharges, the quarantine may be raised by the health officer whenever the patient's temperature has been normal for 48 hours.

Adult members of the family who have had the disease may go about their usual business.

4. *Quarantine of susceptibles.*—Susceptible children of the family may be permitted the freedom of an inclosed yard, if there be one, provided that they do not come in contact with other children, otherwise they must remain in the house for 18 days from date of last exposure. Susceptible adults of the family should avoid mingling with children and should be closely watched for development of the disease.

5. *Exclusion from schools and places of public gathering.*—The patient must be excluded from school, Sunday school, theaters, picture shows, and other places of public or social gathering for at least three weeks from the onset of the disease, and longer if bronchitis, inflammation of the throat or nose, or abscess of the ear is present.

Children of the infected family who have had the disease may be permitted to attend school provided a physician certifies that he has personal knowledge that they have had measles. They must not, however, come in contact with the patient.

Children of the family who have not had the disease and who continue to reside on the infected premises must be excluded from school, Sunday school, theaters, picture shows, and other places of public gathering for at least 18 days from date of last exposure. This exclusion also applies to susceptible teachers.

Children of the family who have not had the disease but who have been removed from the infected premises may be permitted to attend school, Sunday schools, and other public gatherings after 18 days following such removal, provided that they have not developed or do not show symptoms of the disease. School or Sunday school teachers who have been exposed to a case of measles and who have not had the disease must not attend classes until after 18 days from date of last exposure.

6. *Sale of milk and foodstuffs from infected premises.*—The sale of milk and foodstuffs from infected premises is prohibited until such time, as in the opinion of the health authorities, sale may be resumed without danger of spreading the disease.

7. *Disinfection.*—An ample supply of towels, basins, water, and an approved disinfectant should always be on hand for the disinfection of the hands of the attendants.

Soiled body and bed clothing, also handkerchiefs and cloths used to receive discharges from nose and mouth of the patient and of vomit matter should be immediately disinfected by immersion in an approved disinfecting solution for two hours, and after removal from the sick room should be boiled.

Circulating library books must not be taken into the infected premises. Any such books which may be found upon the premises when the case of measles is discovered shall not be removed therefrom until quarantine has been raised and until such books have been specially and thoroughly disinfected under the supervision of the local health authorities.

Dogs, cats, and other household pets must be excluded from the infected premises. Any such animals which have come in contact with the patient must be subjected to a thorough disinfecting bath and removed from the premises and must not be permitted to reenter the infected premises until quarantine has been raised.

Before quarantine is raised the patient should be given a disinfecting bath (special attention being paid to the disinfection of hair and scalp) and should then be dressed in clothing which has been disinfected.

After the recovery or death of the patient the sick room and contents should be disinfected by thorough scrubbing and long period of airing.

8. *Deaths and burials.*—In the event of death the body must be wrapped in a sheet thoroughly soaked in an approved disinfectant and then placed in an air-tight coffin, which must remain in the sick room until removed for burial. The coffin must not again be opened under any circumstances whatsoever. Interment must be within 48 hours after death. Public funerals are prohibited, although adult members of the family and immediate adult relatives who have had the disease may enter the premises at the time of the funeral. Other adult and nonsusceptible children may follow the remains to the grave provided they do not occupy carriages with adults who have recently left the premises from which the body was removed. Church services are prohibited. Floral offerings must not be removed from the house and must be destroyed by burning after the body has been removed from the house.

When the body of anyone dead from measles is to be transported by railroad or by other common carrier, the official rules of the Illinois State Board of Health for the transportation of the dead must be observed.

MAINE.

Communicable Diseases—Prevention of Those Transmitted by Milk. (Chap. 178, Act Mar. 24, 1915.)

SECTION 1. Whenever, in the opinion of any officer or duly authorized inspector or agent of the State board of health, it may be necessary to guard against the spread of any infectious or communicable disease or to investigate the source of infection of any case or outbreak of said disease or to facilitate the control of said disease, said officer, inspector, or agent of said board shall have full power and authority at all times to enter and inspect premises, rooms, carriages, or other places occupied or used in the production, manufacture, storage, sale, transportation, or distribution of milk, cream, ice cream, or other dairy product, and to inspect all cans and other utensils or things used in or appertaining to the work of business.

SEC. 2. When any officer, inspector, or duly authorized agent of the State board of health has reason to believe that the milk, cream, ice cream, or other dairy product from any farm, home, or other place has been or is contaminated or infected by being handled or otherwise exposed to any person who has an infectious or communicable disease, or to any person of whom there is reason to believe he may be an infection carrier, or that the milk is otherwise infected, said officer, inspector, or agent may issue an order prohibiting the transportation, sale, distribution, or use of such milk or other dairy product from that farm, home, or other place so long as the danger of contamination or infection is believed to exist; but when such order is given the State board of health shall do all it can to determine the time when the danger of transmitting infection has passed, and shall do everything it can do to shorten the period during which the milk or other dairy product shall be debarred or withheld from transportation, sale, distribution, or use.

SEC. 3. Any officer or authorized inspector or agent of the State board of health, may, upon tendering the market price of a sample of milk, cream, ice cream, or other dairy product, take such sample from any person, firm, corporation, association, or persons, when it is believed that such sample may help in any investigations which it may be thought desirable to make.

SEC. 4. The State board of health is hereby authorized to alter, modify, or make such rules and regulations as may be thought necessary relating to the diseases which it believes may be carried or transmitted through milk or other dairy products, or relating to the ways and means through which the danger of the spread of infection may be prevented or lessened, and the methods which shall be followed by any officer, inspector or agent of the State board of health in the performance of his duties in relation thereto.

SEC. 5. Whoever hinders, obstructs, or interferes with any officer, inspector, or duly authorized agent of the State board of health while in the performance of his duties, or violates or disobeys any of the orders, rules, or regulations which may be made or given by the State board of health or any officer, inspector, or agent thereof, shall be punished by a fine of not less than $5 nor more than $50, or by inprisonment for not less than 10 nor more than 30 days.

Quarantine—Supplies Furnished to Persons Under Quarantine—Expenses of, to be Borne by Local Authorities. (Chap. 181, Act Mar. 24, 1915.)

Section 2 of chapter 25 of the public laws of 1909 is hereby amended by adding to said section the words "but the provisions of this section shall not release the State from the obligations which are imposed upon it by sections 30, 31, 32, and 33 of chapter 27 of the Revised Statutes," so that said section, as amended, shall read as follows:

"SEC. 2. All expenses including all supplies of food and medicine including antitoxin incurred in carrying out the provisions of section 1 of this act, or incurred in furnishing families or persons affected with tuberculosis with burnable spitcups, or other supplies needed to prevent the spread of infection, or such part thereof as the board may determine, shall be deemed a legitimate expenditure for the protection of the public health and shall be charged to the account of incidental expenses of the town, but not to any pauper account, nor shall any person so quarantined and assisted, be considered a pauper, or be subject to disfranchisement for that cause unless such persons are already paupers as defined by the Revised Statutes; but the provisions of this section shall not release the State from the obligations which are imposed upon it by sections 30, 31, 32, and 33 of chapter 27 of the Revised Statutes."

State Board of Health—Organization, Powers, and Duties. (Chap. 338, Act Apr. 2, 1915.)

SECTION 1. Section 2 of chapter 18 of the Revised Statutes is hereby amended by striking out all of said section which follows the word "shall" in line 19 and inserting in place thereof the words, "as soon as practicable after the close of each year which is indicated by an odd number, report to the governor and council of their doings, investigations, and discoveries during the biennial period just ended, with such suggestions as to legislative action as they may deem necessary," so that said section as amended, shall read as follows:

"SEC. 2. The State board of health shall have the general supervision of the interests of health and life of the citizens of the State. They shall study the vital statistics of the State, and endeavor to make intelligent and profitable use of collected records of deaths and of sickness among the people; they shall make sanitary investigations and inquiries respecting the causes of disease and especially of communicable diseases and epidemics, the causes of mortality, and the effects of localities, employments, conditions, ingesta, habits, and circumstances on the health of the people; they shall investigate the causes of disease occurring among the stock and domestic animals in the State, and the methods of remedying the same; they shall gather such information in respect to all these matters as they may deem proper for diffusion among the people; they shall, when required, or when they shall deem it best, advise officers of the Government, or other boards within the State, in regard to the location, drainage, water supply, disposal of excreta, heating and ventilation of any public institution or building; they shall from time to time examine and report upon works on the subject of hygiene for the use of schools of the State; they shall have general oversight and direction of the enforcement of the statutes respecting the preservation of health; and they shall, as soon as practicable after the close of each year which is indicated by an odd number, report to the governor and council of their doings,

investigations, and discoveries during the biennial period just ended, with such suggestions as to legislative action as they may deem necessary."

SEC. 2. Section 3 of chapter 18 of the Revised Statutes is hereby amended by striking out the whole of said section and substituting therefor the following:

"SEC. 3. The board shall meet quarterly and at such other times as they may deem expedient. Their meetings may be held in Augusta, or in such other places as the exigencies or circumstances of their service may require. Suitable accommodations for the meetings of the board and office room for its secretary shall be provided at the State capitol. A majority shall be a quorum for the transaction of business. They shall choose annually one of their number to be their president, and may adopt rules and by-laws subject to the provisions of this chapter. They may send the secretary, or a representative of the board, to any part of the State when deemed necessary to conduct an investigation within the scope of their prescribed work, and they may send the secretary or other representative of the board to places outside of the State when it may be deemed necessary for the purpose of making investigations or of conferring with other State or municipal public health authorities at meetings or conventions when said meetings convene for the consideration and discussion of measures for the improvement of the public health."

SEC. 3. Section 8 of said chapter, as amended by section 2 of chapter 48 of the public laws of 1909 and as further amended by chapter 149 of the public laws of 1913, is hereby still further amended by striking out the words "or typhus fever" in line 5 of said section and inserting in place thereof the words "typhoid fever or other dangerous, infectious, or contagious disease," and also by striking out the words "when death results from any infectious or contagious disease" in line 34, so that said section, as amended, shall read as follows:

"SEC. 8. The more effectually to protect the public health the State board of health may establish such systems of inspection as in its judgment may be necessary to ascertain the actual or threatened presence of the infection of Asiatic cholera, smallpox, diphtheria, scarlet fever, plague, typohid fever or other dangerous, infectious, or contagious disease; and any duly authorized agent or inspector of said board may enter any building, vessel, railway car or other public vehicle, to inspect the same and to remove therefrom any person affected by said diseases; and for this purpose he may require the person in charge of any vessel or public vehicle other than a railway car to stop such vessel or vehicle at any place, and he may require the conductor of any railway train to stop his train at any station or upon any side track and there detain it for a reasonable time: *Provided*, That no conductor shall be required to stop his train when telegraphic communication with the dispatcher's office can not be obtained or at such times or under such circumstances as may endanger the safety of the train and passengers: *And provided further*, That any such agent or inspector may cause any car which he may think may be infected with any of said diseases to be sidetracked at any suitable place and there be cleansed, fumigated and disinfected. And the said board of health may from time to time, make, alter, modify, or revoke rules and regulations for guarding against the introduction of any infectious or contagious diseases into the State, including rabies, or hydrophobia of animals and men; for the control and suppression thereof if within the State; for the quarantine and disinfection of persons, localities and things infected or suspected of being infected by such diseases; for guarding against the transmission of infectious and contagious diseases through the medium of common towels, common drinking cups and other articles which may carry infection from person to person; for the sanitation of railway service and that of other common carriers, for the transportation of dead bodies; for the speedy and private interment of the bodies of persons who have died from said diseases; and, in emergency, for providing those sick with said diseases with necessary medical aid and with temporary hospitals for their accommodation

and for the accommodation of their nurses and attendants. And the said board may declare any and all of its rules and regulations made in accordance with the provisions of this section to be in force within the whole State, or within any specified part thereof, and to apply to any person or persons, family, camp, building, vessel, railway car or public vehicle of any kind."

Local Boards of Health—Duties of. (Chap. 338, Act Apr. 2, 1915.)

SEC 4. Paragraph three of section 30 of chapter 18 of the Revised Statutes is hereby amended by striking out all of said paragraph following the word "diseases" in line 16 of said paragraph and inserting in place thereof the words "occurring within the limit of its jurisdiction and shall report to said board every case of such infectious or contagious diseases as the rules and regulations of said board shall require. Those diseases which the rules and regulations of the State board of health may require to be reported shall be known, under the terms of this act, as notifiable diseases. Diseases which the State board of health may promulgate as those which shall be quarantined or isolated shall be known as quarantinable diseases," so that said section as amended shall read as follows:

"3. Guard against the introduction of contagious and infectious diseases, by the exercise of proper and vigilant medical inspection and control of all persons and things coming within the limits of its jurisdiction from infected places, or which for any cause, are liable to communicate contagion; give public notice of infected places, by displaying red flags or by posting placards on the entrances of the premises; require the isolation of all persons and things that are infected with, or have been exposed to, contagious or infectious diseases, and provide suitable places for the reception of the same; and furnish medical treatment and care for persons sick with such diseases who can not otherwise be provided for; prohibit and prevent all intercourse and communication with, or use of, infected premises, places and things, and require, and if necessary, provide the means for the thorough cleansing and disinfection of the same before general intercourse therewith, or use thereof, shall be allowed. And it shall report to the State board of health promptly, facts which relate to infectious and epidemic diseases occurring within the limit of its jurisdiction and shall report to said board every case of such infectious or contagious diseases as the rules and regulations of said board shall require. Those diseases which the rules and regulations of the State board of health may require to be reported shall be known, under the terms of this act, as notifiable diseases. Diseases which the State board of health may promulgate as those which shall be quarantined or isolated shall be known as quarantinable diseases."

Communicable Diseases—Notification of Cases—Quarantine—Disinfection—Hospitals—Vaccination. (Chap. 338, Act Apr. 2, 1915.)

SEC. 5. Section 33 of chapter 18 of the Revised Statutes as amended by section 12 of chapter 78 of the public laws of 1909 is hereby further amended by striking out the whole of said section and substituting therefor the following:

"SEC. 33. Whenever any householder knows or has reason to believe that any person within his family or household has smallpox, diphtheria, scarlet fever, cholera, typhus or typhoid fever, cerebrospinal meningitis, measles, membranous croup, so-called, whooping cough, or any other disease which is made notifiable by the rules and regulations of the State board of health, he shall, within 24 hours, give notice thereof to the health officer of the town in which he resides, and such notice shall be given either at the office of the health officer, or by letter or telephone, the communication to be mailed or delivered to him within the time above specified, and in case there is no health officer, to the secretary of the local board of health, either at his office or by communication as aforesaid."

SEC. 6. Section 34 of chapter 18 of the Revised Statutes is hereby amended by striking out the words "above mentioned diseases" in line 2 of said section and inserting in place thereof the words "any of the notifiable diseases," so that this section as amended shall read as follows:

"SEC. 34. No householder in whose dwelling there occurs any of the notifiable diseases shall permit any person suffering from any such disease, or any clothing or other property to be removed from his house, without the consent of the board, or of the health officer, and the said board or health officer, shall prescribe the conditions of removal."

SEC. 7. Section 36 of chapter 18 of the Revised Statutes is hereby amended by striking out the whole of said section and substituting therefor the following:

"SEC. 36. Whenever any physician knows or has reason to believe that any person whom he is called upon to visit, has or is infected with any of the notifiable diseases, such physician shall forthwith give notice thereof to the secretary of the local board of health or the health officer of the town in which such person lives."

SEC. 8. Section 38 of chapter 18 of the Revised Statutes is hereby amended by striking out the word "cholera" in line 2 of said section and inserting in place thereof the words "other quarantinable disease," so that said section as amended shall read as follows:

"SEC. 38. No person affected with smallpox, scarlet fever, diphtheria, or other quarantinable disease, and no person having access to any person affected with any of the said diseases, shall mingle with the general public until such sanitary precautions as may be prescribed by the local board of health shall have been complied with."

SEC. 9. Section 39 of chapter 18 of the Revised Statutes is hereby amended by striking out the word "cholera" in line 2 of said section and inserting in place thereof the words "other diseases for which disinfection may be required by the State board of health," so that said section as amended shall read as follows:

"SEC. 39. Persons recovering from smallpox, scarlet fever, diphtheria, or other diseases for which disinfection may be required by the State board of health, and nurses who have been in attendance on any person suffering from any such disease shall not leave the premises until they have received from the board of health or health officer a certificate that they have taken such precautions as to their persons, clothing, and all other things which they propose bringing from the premises as are necessary to insure the immunity from infection of other persons with whom they may come in contact, and no such person shall expose himself in any public place, shop, street, inn, or public conveyance without having first adopted such precautions."

SEC. 10. Section 40 of chapter 18 of the Revised Statutes is hereby amended by striking out the word "cholera" in line 2 of said section and inserting in place thereof the words "or other quarantinable disease," so that said section as amended shall read as follows:

"SEC. 40. Nurses and other attendants upon persons sick with smallpox, scarlet fever, diphtheria, or other quarantinable disease shall adopt for the disinfection and disposal of excreta, and for the disinfection of utensils, bedding, clothing, and other things which have been exposed to infection, such measures as may be ordered in writing by the local board of health."

SEC. 11. Section 41 of chapter 18 of the Revised Statutes is hereby amended by striking out the words "measles, cholera, plague, or pulmonary tuberculosis or consumption," in lines 3 and 4 of said section and inserting in place thereof the words "or other disease for which disinfection may be required by the State board of health," so that said section as amended shall read as follows:

"SEC. 41. No person shall give, lend, transmit, sell or expose any bedding, clothing, furniture or other article which has been used by persons affected with smallpox, scarlet fever, diphtheria, or other diseases for which disinfection may be required by

the State board of health, or from rooms which have been occupied by such persons without first having said articles disinfected to the satisfaction of the local board of health."

SEC. 12. Section 44 of chapter 18 of the Revised Statutes is hereby amended by striking out the words, "specified in the preceding section," in line 2 of said section and inserting in place thereof the words, "for which disinfection may be required by the State board of health," so that said section as amended shall read as follows:

"SEC. 44. When persons from houses or places which are infected with any of the diseases for which disinfection may be required by the State board of health have entered any schoolroom, or when from any other cause the schoolroom has probably become infected, the teacher shall dismiss the school and notify the school officers and local board of health, and no school shall be again held in such schoolroom until the room has been disinfected to the satisfaction of the local board of health, and the school officers and board of health shall cause the room to be disinfected as soon as possible."

SEC. 13. Section 48 of chapter 18 of the Revised Statutes is hereby amended by striking out the whole of said section and substituting therefor the following:

"SEC. 48. No person shall let or hire any house or room in a house in which any of the diseases have existed for which disinfection may be required by the State board of health without having caused the house and the premises used in connection therewith to be disinfected to the satisfaction of the local board of health."

SEC. 14. Section 75 of chapter 18 of the Revised Statutes is hereby amended by striking out from the end of said section the following words, "but no such hospital shall be within 100 rods of an inhabited dwelling house in an adjoining town without the consent of its local board of health," so that said section as amended shall read as follows:

"SEC. 75. A town may establish therein one or more hospitals for the reception of persons having the smallpox or other diseases dangerous to the public health; or its local board of health may license any building therein as a hospital, which shall be under the control of said board."

SEC. 15. Section 76 of chapter 18 of the Revised Statutes is hereby repealed.

SEC. 16. Section 77 of chapter 18 of the Revised Statutes is hereby amended by striking out the word "inoculated" in line 2 of said section and inserting in place thereof the words, "who are infected, infectious," so that said section as amended shall read as follows:

"SEC. 77. When a hospital is so established or licensed the physicians, the persons who are infected, infectious, or sick therein, the nurses, attendants, and all who come within its limits, and all furniture or other articles used or brought there shall be subject to the regulations made by the local board of health."

SEC. 17. Section 82 of chapter 18 of the Revised Statutes is hereby amended by striking out the words, "over two years of age," in line 4 of said section, so that said section as amended shall read as follows:

"SEC. 82. The board of health of each city, village, town, and plantation shall annually on the 1st day of March, or oftener if they deem it prudent, provide for the free vaccination with the cowpox of all the inhabitants within their respective localities, to be done under the care of skilled practicing physicians, and under such circumstances and restrictions as said authorities adopt therefor."

State Laboratory of Hygiene—Appropriation for. (Chap. 274, Act Apr. 1, 1915.)

Section 23 of chapter 18 of the Revised Statutes, as amended by chapter 26 of the public laws of 1907 and by chapter 40 of the public laws of 1913, is hereby further amended by striking out the words "five thousand" in the first line of said section and inserting in place thereof the words "six thousand," so that said section as amended shall read as follows:

"Section 23. The sum of $6,500 a year is hereby appropriated to pay for the services of the director, and of such assistance as may be necessary, to procure the necessary supplies, and to meet the other necessary expenses of said laboratory, which sum shall be expended under the supervision of the State board of health."

Undertakers and Embalmers—Licenses—Renewal of. (Chap. 310, Act Apr. 1, 1915.)

Section 9 of chapter 181 of the public laws of 1911 is hereby amended by striking out the whole of said section and substituting therefore the following:

"Section 9. All licenses which have been, or may be issued to undertakers by the State board of embalming examiners, shall expire on the 31st day of December annually: *Provided*, That the licenses hereafter issued shall be valid and shall not expire the last day of the following year. Any person holding an embalmer's license under the provisions of this act may have the same renewed by making and filing with the secretary of said board of examiners an application therefor within 30 days preceding the expiration of his or her license, upon blanks prescribed by said board and upon payment of $1 renewal fee: *Provided, however*, That any person neglecting or failing to have his or her license renewed as above, may have the same renewed by making application therefor within 30 days after date of expiration, and upon payment of $2 revival and renewal fees."

MASSACHUSETTS.

Tuberculosis—Reimbursement of Towns and Cities for Money Expended—Investigation of, by State Department of Health and Trustees of Hospitals. (Chap. 24, Act Mar. 23, 1915.)

Resolved, That the State department of health and the trustees of hospitals for consumptives are hereby authorized and directed to investigate the subject of reimbursing cities and towns for money expended by them in the care at hospitals of persons suffering from tuberculosis, and especially the subject matter contained in senate document No. 102 of the current year, and to report the result of their investigation to the general court on or before the second Wednesday of January next, together with any recommendations for legislation which said department and trustees may deem expedient.

Tuberculosis—Expenses of Trustees of Hospitals for. (Chap. 111, Act Mar. 2, 1915.)

SECTION 1. The sums hereinafter mentioned are appropriated, to be paid out of the treasury of the Commonwealth from the ordinary revenue, for the expenses of the trustees of hospitals for consumptives, for the fiscal year ending on the 30th day of November, 1915, to wit:

For the salaries of the secretary and clerks, a sum not exceeding $5,069.49.

For traveling and other necessary expenses of the trustees, to include printing and binding of their annual report, a sum not exceeding $4,700.

For the salary of an agent to inspect hospitals in cities and towns, $1,400.

For salary of a trained social worker to look up discharged patients, a sum not exceeding $1,200.

Drugs and Poisons—Analyses of, by State Department of Health—Legal Effect of Certificate. (Chap. 104, Act Mar. 25, 1915.)

SECTION 1. Chapter 495 of the acts of the year 1910 is hereby amended by striking out section 2 and inserting in place thereof the following:

"SEC. 2. The analyst or an assistant analyst of the State department of health shall, upon request, furnish a signed certificate, under oath, of the result of the analysis provided for in section 1 to any police officer or any agent of an incorporated charitable organization, and the presentation of such certificate to the court by any police officer or agent of any such organization shall be prima facie evidence that all the requirements and provisions of section 1 have been duly complied with. This certificate

shall be sworn to before a justice of the peace or notary public, and the jurat shall contain an allegation that the subscriber is the analyst or an assistant analyst of the State department of health, and when properly executed shall be prima facie evidence of the composition and quality of the drugs analyzed, and the court shall take judicial notice of the signature of the analyst or assistant analyst, and of the fact that he is such."

NORTH CAROLINA.

Tuberculosis—Training School for Nurses for Treatment of. (Act Mar. 8, 1915.)

SECTION 1. The State sanatorium for the treatment of tuberculosis, located at Sanatorium, N. C., is hereby authorized and power is hereby expressly given it to organize and conduct a training school for nurses in connection with the said sanatorium.

SEC. 2. The superintendent of the said, the North Carolina sanatorium for the treatment of tuberculosis, shall be ex officio dean of the training school for nurses, and he shall have power and authority to appoint such faculty, prescribe such course or courses of lectures, study, and clinical work; and award such diplomas, certificates, or other evidence of the completion of such course or courses as he may think wise and proper, and perform such other functions and do such other acts as he may think necessary in the conduct of the said training school.

Tuberculosis—Local Authorities Authorized to Provide for Treatment at State Sanatorium. (Act Mar. 9, 1915.)

SECTION 1. That any city or town in the State of North Carolina through its board of aldermen, town council, or other governing body, and any county in the State of North Carolina through its board of commissioners, is hereby authorized and empowered to provide for the treatment of any tubercular person or persons resident in and who is a bona fide citizen of said city, town, or county, at the North Carolina sanatorium for the treatment of tuberculosis, and pay therefor to the said North Carolina sanatorium for the treatment of tuberculosis an amount which shall not be more than $1 per day per patient.

OREGON.

Ophthalmia Neonatorum—Notification of Cases—Directions for Treatment of. (Chap. 210, Act Feb. 23, 1915.)

SECTION 1. Should one or both eyes of an infant become inflamed or swollen or reddened at any time within two weeks after birth, it shall be the duty of the midwife or nurse, or other person having the care of such infant, to report in writing within 24 hours after the discovery thereof, to the health officer or legally qualified practitioner of the city, town, or district in which the mother of the child resides, the fact that such inflammation or swelling or redness exists.

SEC. 2. That it shall be the duty of said health officer, immediately upon receipt of said written report, to notify the parents or the person having charge of said infant of the danger to the eye or eyes of said infant by reason of said condition from neglect of proper treatment of the same, and he shall also inclose to them directions for the proper treatment thereof.

SEC. 3. Every health officer shall furnish a copy of this act to each person who is known to him to act as midwife or nurse in the city or town for which such health officer is appointed, and the State board of health shall cause a sufficient number of copies of this act to be printed and supply the same to such health officer on application.

SEC. 4. Any failure to comply with the provisions of this act shall be punishable by fine of $25 to $100 or imprisonment not to exceed 30 days, or both.

[This act becomes effective May 22, 1915.]

Water Supplies and Sewage Disposal—Plans to be Approved by the State Board of Health. (Chap. 73, Act Feb. 15, 1915.)

SECTION 1. Any incorporated town or city in the State desiring to provide a new water supply for drinking or culinary purposes or any person or corporation who shall undertake to provide a new water supply for a town or city or for any number of persons exceeding 10 families or a total of 50 persons shall before performing any work on the ground (other than making examination or surveys for the preparation or prosion of such water supply) submit to the State board of health plans showing the source of the supply, and the transmission and distribution systems, with further information as to the amount proposed to be taken and transmitted, the drainage areas from which the waters are to be derived, the purity and wholesomeness of the supply, the kind and character of the works for gathering, storing, and transmitting the water, and the number of persons to be supplied, together with any additional data which the board of health may require as in its judgment proper to enable it to pass intelligently upon the effect of such water supply upon the public health. No such work shall be undertaken or proceeded with until the board of health shall have approved such plans either as originally offered or as modified pursuant to its requirements.

SEC. 2. Any city or town in the State proposing a sewer system or any individual or corporation proposing to install a system of sewerage or disposal of waste products for the use of more than five families or 50 persons shall before undertaking any work on the ground, other than making surveys and preliminary plans, submit to the State board of health the full plans and specifications for the system, showing particularly the location of the outfall and the streams or other places of final disposal, and the method, if any, for the reduction, purification, or use of the sewage. No such plan shall be proceeded with or work done thereon until the plans and specifications either as originally proposed or modified are approved by the State board of health.

SEC. 3. Any violation of the provisions of this act shall be a misdemeanor and shall be punished by a fine of not more than $500 or by imprisonment of not more than six months in the county jail, and every person in any way responsible for the proceeding with the actual construction of such work until the approval of the State board of health shall have been given thereon shall be deemed guilty of a violation of this act. The State board of health may by proceeding in the proper court enjoin any construction of sewerage or sewage disposal to which it has not given its approval.

[This act becomes effective May 22, 1915.]

UTAH.

State Board of Health—Secretary—Qualifications, Duties, and Salary. (Chap. 60, Act Mar. 16, 1915.)

SECTION 1. That section 1102, Compiled Laws of Utah, 1907, be, and the same is hereby, amended to read as follows:

"1102. The secretary of the State board of health shall be State health commissioner and shall perform and superintend the work prescribed in this title and shall perform such other duties as the board may require. He shall keep the minutes of all meetings, make quarterly reports to the board, and employ, subject to the confirmation of the board, all necessary employees. The secretary shall be a licensed physician in good standing of temperate habits and good moral character, and shall be thoroughly informed and experienced in all matters pertaining to hygiene and sanitation and skilled in the management and treatment of infectious and contagious diseases. The secretary shall give his entire time to the duties of his office and shall receive from the State treasury in quarterly payments an annual salary of $4,000 and such actual and necessary traveling expenses as shall be allowed by the State board of examiners on presentation of an itemized account certified by the State board of health. All other expenses of the board of health shall be paid out of the appropriations made for that purpose."

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

PASADENA, CAL.

Premises—Sanitary Regulation. Manure—Removal of. (Ord. 1522, Mar. 29, 1915.)

SECTION 1. That section 5 of ordinance No. 1055 be and is hereby amended to read as follows:

"SEC. 5. *Filthy stables and yards.*—(*a*) It is hereby declared to be a nuisance, and it shall be unlawful for any person, firm, or corporation, as principal, agent, officer, clerk, or employee, for himself or itself, or for another person, firm, or corporation, in the city of Pasadena, to keep, or suffer, or permit to be kept at or upon any premises owned, controlled, or occupied by him or it, any chicken coop, yard, cow house, stable, cellar, vault, drain, pool, sewer, or sink in a foul, offensive, noxious, or filthy condition.

"(*b*) It shall be unlawful for any person, firm, or corporation keeping five or more head of stock to fail, refuse, or neglect to cause the manure therefrom either to be completely removed from the premises where such stock is kept, or covered with earth so as to be free from noxious odors and inaccessible to flies at least once in every 48 hours.

"(*c*) It shall be unlawful for any person, firm, or corporation keeping less than five head of stock to fail, refuse, or neglect to cause the manure therefrom either to be completely removed from the premises where such stock is kept, or covered with earth so as to be free from noxious odors and inaccessible to flies, at least once in every four days.

"(*d*) It shall be unlawful to fail, refuse, or neglect to thoroughly disinfect the surface upon which manure is permitted to accumulate after each removal thereof with lime, gypsum, or some equally effective substance approved for that purpose by the health officer of the city."

QUINCY, ILL.

Drugs, Habit-forming—Sale of. (Ord. 120, Feb. 1, 1915.)

SECTION 1. No person, firm, or corporation shall sell, offer for sale, or give away any opium, morphine, heroin, or codeine, or any of their salts or derivatives, or any compound or preparation of any of them which contains more than 2 grains of opium, or one-quarter grain of morphine, or salts thereof, or one-eighth grain of heroin, or salts thereof, or 1 grain of codeine, or salts thereof, in 1 fluid ounce, or, if a solid preparation, in 1 advoirdupois ounce, except upon the written order or written prescription of a duly licensed registered physician, licensed registered dentist, or licensed registered veterinarian, which prescription shall contain the name and address of the person for whom prescribed (or if prescribed by licensed veterinarian shall state the kind of animal for which prescribed and the name of the owner thereof) and the date the same shall have been filled, and shall be permanently retained on file by the person, firm, or corporation by whom it was filled; and it shall be filled but once, and of it no copy shall be taken by any person, and the original prescription shall at all times be open to the inspection of the prescriber, the State board of phar-

macy and all officers of the law: *Provided*, That nothing in this section shall be construed to prevent the legitimate administration of said drugs, their salts, compounds, and derivatives by a licensed registered physician, licensed regsitered dentist, or licensed registered veterinarian: *And provided further*, That none of the exemptions contained in this section shall apply, when opium, morphine, heroin, or codeine, or any of their salts or derivatives are sold or dispensed in simple solutions or with inert substances: *And provided also*, That nothing herein contained shall prohibit the sale of liniments which contain some substance which renders such liniments unfit for internal use.

SEC. 2. It shall be unlawful for any person, firm, or corporation to sell, offer for sale, or give away any paregoric, except upon the written order or written prescription of a duly licensed registered physician.

SEC. 3. Such opium, morphine, heroin, and codeine, or any salt or any compound or any derivative of them, or any preparation or compound containing any of them in excess of the amounts provided in section 1, may lawfully be sold at wholesale upon the written order of a registered pharmacist, licensed registered physician, licensed registered dentist, or licensed registered veterinarian. The wholesale dealer shall, before delivering any of the aforesaid substances, make or cause to be made a record of the sale thereof, stating the date of sale, the quantity, name, and form in which sold, the name and address of the purchaser and the name of the person by whom the sale is made; and the said record shall be always open for inspection by the proper authorities of the law and shall be preserved for at least five years: *Provided*, That nothing in this section contained shall permit the sale of any such drugs to any habitual user thereof, knowing him to be such.

SEC. 4. It shall be unlawful for any person, firm, or corporation, to sell, offer for sale, or give away any opium, morphine, heroin, or codeine, or any of their salts or derivatives, or any compound or preparation of any of them, to any habitual user of the same, knowing him to be such: *Provided*, Any licensed registered physician may, in good faith, prescribe or furnish for the use of any habitual user of said drug who is under his professional care, such substances as he may deem necessary for his treatment, when such prescriptions are not given or substances furnished for the purpose of evading the provisions of this ordinance.

SEC. 5. Every licensed registered physician shall keep a record showing the name and address of every habitual user thereof to whom such physician administers or disposes of, in any way whatsoever, any cocaine, eucaine, opium, morphine, heroin, or codeine, or any of their salts, alkaloids or derivatives, or any compound or preparation of any of them, with the date thereof, and the quantity so administered or disposed of in any way. Such record shall be preserved for five years and shall always be open to the inspection of duly authorized officers of the law.

SEC. 6. Any person, firm, or corporation, who shall violate any of the provisions or sections of this ordinance shall be fined not less than $100 nor more than $200 for each offense.

SANDUSKY, OHIO.

Milk—Production, Care, and Sale. (Res. Bd. of H., Jan. 5, 1915.)

SECTION 1. All milk produced, held, kept or offered for sale, sold or delivered in the city of Sandusky, Ohio, shall be so produced, held, kept, or offered for sale or sold or delivered under either of the following grades or designations and no other, and shall be graded and labeled in conformity with the following requirements, rules, and regulations, or such as may from time to time be adopted by the board of health.

SEC. 2. *Inspected milk.*—First. Milk of this grade shall be produced on dairy farms holding permits therefor from the board of health.

Second. It shall be produced from healthy cows as determined by a physical examination, and every diseased cow shall be removed from the herd at once and no milk from such cows shall be offered for sale.

Third. No new cows shall be added to a herd until they have passed a physical examination and the tuberculin test, applied within one year by a veterinarian approved by the board of health and by a method approved by the health officer. Charts showing the results of such tuberculin tests shall be filed with the dairy and milk inspector before the addition of such cow to the dairy herd.

Fourth. Milk should be produced from dairies scoring not less than 65 points on the score card of a form adopted by the board of health.

Fifth. As soon as drawn milk shall be removed from the stable to a room or house used exclusively for the care and storing of milk and shall be cooled to a temperature not higher than 60 degrees Fahrenheit and shall be stored and delivered to the consumer at a temperature not higher than 60 degrees Fahrenheit.

Sixth. It shall contain not more than 200,000 bacteria per cubic centimeter and no pathogenic bacteria at the time of delivery to the consumer.

Seventh. The caps or labels of all containers holding milk of this grade shall be white and contain the words *Inspected milk* in large black type.

SEC. 3. *Pasteurized milk.*—First. Milk of this grade shall be milk produced on dairy farms holding a permit therefor from the board of health.

Second. It shall be produced from healthy cows as determined by physical examination, and every diseased cow shall be removed from the herd at once and no milk from such cows shall be offered for sale.

Third. It shall be milk produced on dairy farms scoring not less than 60 points on a score card of the form adopted by the board of health.

Fourth. Milk of this grade shall contain not more than 600,000 bacteria per cubic centimeter before pasteurization and not more than 100,000 bacteria per cubic centimeter when delivered to the consumer.

Fifth. Milk shall be pasteurized in conformity with the following rules and regulations:

a. Milk shall be heated to a temperature not less than 140 degrees Fahrenheit and not higher than 155 degrees Fahrenheit, and held at that temperature for not less than 30 minutes from the time the whole amount reaches the required temperature. After the required heating milk shall be immediately cooled to a temperature not higher than 50 degrees Fahrenheit and shall be stored and delivered to the consumer at a temperature not higher than 55 degrees Fahrenheit.

b. All pasteurizing apparatus shall be equipped with a recording thermometer of such type that the same may be kept locked by the dairy and milk inspector, and the thermometric record of all pasteurization of milk shall become the property of the board of health and shall be collected by the dairy and milk inspector.

Sixth. Pasteurized milk shall be delivered to the consumer not later than 24 hours after pasteurization.

Seventh. Milk once pasteurized must not be repasteurized.

Eighth. The caps or labels of all containers holding milk of this grade shall be white and contain the words *Pasteurized milk* in large green type.

SEC. 4. The number of bacteria which a milk contains shall be determined by at least five consecutive bacterial counts taken at a period of not less than one week and not more than one month, and at least 80 per cent of the tests must fall below the number set for that grade in this resolution: *Providing*, That the failure of the inspector in the first instance to make such tests shall not prohibit the dealer from selling such milk.

SEC. 5. Whoever violates any of the provisions of this resolution shall be fined in any sum not to exceed $100, and shall be liable to have permit for selling milk in the city of Sandusky, State of Ohio, revoked by the health officer.

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SEC. 7. This resolution to take effect and be in full force from and after April 1, 1915.

SANTA BARBARA, CAL.

Garbage and Refuse—Care and Disposal. (Ord. 857, Apr. 2, 1915.)

SECTION 1. The word "rubbish" within the meaning of this ordinance is all refuse paper, pasteboard, rags, matresses, worn-out furniture, bottles, straw, excelsior, floor sweepings, old metal, packing boxes, barrels and broken parts thereof, tin cans, and all other refuse, except garbage; and the word "garbage" within the meaning of this ordinance is all refuse accumulation consisting of animal matter, fruit or vegetable matter, fish, fowls, fluids, and all preparations for cooking, and all other matter offensive to the sense of smell, or to health.

SEC. 2. It is hereby made unlawful for any person occupying any premises within said city of Santa Barbara to allow or permit the accumulation of any rubbish upon such premises, or to allow any garbage, within the meaning of this ordinance, to be or remain upon such premises not confined in tin cans or other receptacles to be provided by such person and approved by the health officer of said city; or for any person to engage in the business of collecting or removing rubbish or garbage within said city without first having a license so to do from the health officer of said city; or for any person to deposit any rubbish within said city in any other place or places than the said health officer may designate.

SEC. 3. Any person desiring a license to engage in the business of collecting and removing rubbish and garbage within said city shall apply to the health officer in writing for the same, and it shall be the duty of said health officer to issue to such applicant, free of charge, a license for such purpose, who shall revoke the same if such person holding such license shall violate any of the provisions of this ordinance.

SEC. 4. Any person violating any of the provisions of this ordinance shall be guilty of a misdemeanor, and upon conviction, shall be punished by a fine of not less than $5, nor more than $50, or by imprisonment in the jail of said city for not less than 5 days, nor more than 30 days, or by both such fine and imprisonment.

SCRANTON, PA.

Milk and Cream—Must be Sold in Original Containers. (Ord. Feb. 9, 1915.)

SECTION 1. It shall be unlawful for any person or persons, firm or corporation, or any agent, managing officer, or employee thereof, to sell, offer, or expose for sale, or have in possession with intent to sell, in any store, market, lunch room, hotel, saloon, restaurant, or other place where milk is sold or offered for sale, any fresh milk, buttermilk, skimmed milk, or cream, unless the same is in original containers, plainly marked as such, and with the name of the dealer who supplied the same. The word "dealer" as used in this ordinance means any person, firm, or corporation supplying or furnishing in original containers at wholesale or retail, fresh milk, buttermilk, skimmed milk, or cream to others selling or offering the same for sale as aforesaid.

SEC. 2. Any person violating the provisions of this ordinance shall, upon conviction before the mayor or police magistrate of the city of Scranton, be fined not less than $5 and not more than $20, and in default of the payment of such fine it shall be the duty of the said mayor or such magistrate to commit every such person having been convicted as aforesaid to the county jail of Lackawanna County, there to be imprisoned until such fine shall be paid, not exceeding, however, a period of 20 days.

Places of Public Amusement—Cleaning and Disinfection. (Ord. Mar. 30, 1915.)

SECTION 1. That after the passage of this ordinance and its approval by the mayor, it shall be unlawful for any person or persons, firm or corporation, or any agent, managing officer, or employee thereof to operate or permit to be operated within the

limits of the city of Scranton, any theater, moving-picture show, or other place of public amusement or recreation where the public congregate unless the same be cleansed daily and disinfected at least once each week, and at such other time as may be required, with a disinfectant, and in a manner to be approved by the bureau of health.

SEC. 2. Any person violating the provisions of this ordinance shall, upon conviction before the mayor or police magistrate of the city of Scranton, be fined not less than $10 or more than $25, and in default of the payment of such fine it shall be the duty of the said mayor or such magistrate to commit every such person having been convicted as aforesaid to the county jail of Lackawanna County, there to be imprisoned until such fine shall be paid, not exceeding, however, a period of 25 days.

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