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GUIDE TO MOSQUITO IDENTIFICATION FOR FIELD WORKERS ENGAGED IN MALARIA CONTROL IN THE UNITED STATES.

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Successful control of malaria by antimosquito measures is based upon a knowledge of the species concerned in malaria transmission. Recent malaria-control work undertaken by cooperating health agencies in urban communities in the southern United States has shown the necessity for controlling both nonmalaria-carrying and malaria-carrying mosquitoes, because the public frequently judges the success of malaria-control measures by the amount of reduction of the mosquito nuisance. This guide will discuss only those species which carry malaria in the United States, or which, while not carriers of infection, are sufficiently common in malarious regions to be known as pests.

General Description.

Mosquitoes belong to the order Diptera of the insects, the true flies, which have only two wings. The body of the mosquito is divided into three parts—head, thorax, and abdomen. The head is almost entirely composed of large compound eyes, and bears also the feelers or antennæ, and two appendages at the base of the feelers, known as the palpi, and a long, prominent proboscis, or beak. The thorax bears the two wings and six legs, and two small appendages near the base of the wings, short knobbed stalks, known as halteres, characteristic of the true flies. The abdomen, composed of ten segments, bears no appendages except the inconspicuous sexual apparatus at the tip.

Mosquitoes may be distinguished from all other two-winged insects by the possession of scales along the wing veins, a fringe of scales along the hind margin of the wings, together with the prominent proboscis or beak, which projects from the head. Male mosquitoes have bushy or feathery antennæ, or feelers, while the antennæ of the female are not feathery. Some gnats, or midges, have feathery feelers, but none has the long beak of the male mosquito. Some crane flies, or gallinippers, resemble female mosquitoes, but lack the piercing beak; and the wings are bare, not scaled along the veins, as in mosquitoes.

Life history of mosquitoes.—The mosquito passes through four stages during the course of its development (three of which are passed in water): (1) The egg, (2) the larva, or wiggletail, (3) the pupa, or tumbler, and (4) the winged adult, or imago. The eggs are laid by the female mosquito on water, or in moist mud, or at the edge of water. In some cases eggs are laid in the dry bottoms of temporary pools, and hatch as soon as rain fills the pools. The wiggletails hatched from the eggs are strictly aquatic, and can not exist except in water. It should be emphasized that mosquitoes do not propagate in weeds or other vegetation. The wiggletail stage usually lasts from 5 to 10 days or more, varying with the temperature, high temperature causing rapid development. The pupa or tumbler stage covers normally from 48 to 72 hours, also varying with the temperature. The period of the adult stage is very variable in length, some species hibernating through the winter. Usually, however, the ordinary life period of the house mosquito in midsummer is not more than 3 or 4 weeks.

Many species of mosquitoes require a blood meal in order to mature their eggs. It is this necessity which causes them to become pests, or spreaders of disease. The males of mosquitoes do not bite, but live on nectar, fruit, and juices of plants.

Collection of Material for Identification.

Larvæ, or wiggletails, are collected by means of a white-enamelled dipper with a hollow handle, into which can be thrust a stick of convenient length. For collecting large numbers of larvæ for rearing purposes, aluminum bread pans, measuring 10 by 5 inches by 3 inches deep, are probably better than anything else. To separate *Culex* larvæ and to remove them from the dipper to vials or rearing jars, an all-glass syringe, with thread-wrapped piston, may be used instead of the ordinary medicine dropper with rubber bulb, while a large spoon is excellent for collecting *Anopheles* larvæ.

In order to determine the species of mosquito found, if wiggletails and pupæ have been collected, the pupæ should be separated from the wiggletails and placed in a wide-mouthed jar about half filled with water, and netting placed over the top of the jar. The wiggletails should be kept in jars or shallow pans in the same water in which they were found, and, as they transform into pupæ, they may be placed in the jar with the other pupæ. When a number of mosquitoes have emerged, a wisp of cotton saturated with chloroform may be placed over the jar until all the mosquitoes have dropped to the surface of the water. The contents of the jar are then rapidly emptied, the remaining pupæ transferred to fresh water, and the adult mosquitoes placed in a chloroform tube until dead. Adult mosquitoes may be captured while biting or while resting on walls

by the use of the chloroform tube. They should be handled with tweezers, and never with the fingers, as they are very fragile, and the spots on the wings of the malaria-carrying species are easily rubbed off, making identification almost impossible.

A chloroform tube is made by placing a number of rubber bands, or a rubber stopper of proper diameter, in the bottom of a wide-mouthed test tube, shell vial, or any small bottle having the same diameter throughout its length. The bands or the stopper are saturated with chloroform, a small piece of cotton is placed over the top, and the whole covered with a circular piece of blotting paper, cut to fit down over the cotton. The tube should be kept tightly corked.

In using a hand lens for mosquito identification, the first requisite is a good light. The mosquito should be examined against both white and dark backgrounds, so that dark markings and the white markings on legs or beak may be more easily seen. An excellent lens of low cost is the thread counter, which has a single lens mounted in a folding brass frame. For identification of larvæ a compound microscope with high-power lens is necessary. A very useful low power of the compound microscope is obtained by unscrewing the lens of the low-power objective, which is nearest the object to be examined. This gives a wide field of low magnification.

Larvæ may be prepared for shipment for identification by placing them in small vials in 70 per cent alcohol or 10 per cent commercial formalin solution. The vials should be labeled with the name of the locality and date of capture. Mosquitoes may be placed in cotton and packed loosely in pill boxes, properly labeled. Vials or pill boxes should be packed in cotton or excelsior in a wooden or pasteboard container, in order to avoid crushing or jarring.

Distinguishing Characters of Adult Mosquitoes.

For the purpose of this guide, mosquitoes of the United States are classified as anophelines, or malaria carriers, and nonanophelines (which term has been selected as preferable to *Culex*), the pestiferous but nonmalaria-carrying species. So far as is known, malaria is transmitted only by mosquitoes of the genus *Anopheles*, of which there are three common species in Southeastern United States, and another, less common, occurring in the Southwest. Dengue, or breakbone fever, and yellow fever are transmitted by a nonanopheline mosquito (*Aedes ægypti* (*Aedes calopus*) = *Stegomyia fasciata*, the yellow-fever mosquito). Filariasis is conveyed by *Culex quinquefasciatus*. All other nonanophelines in this country, to our present knowledge, are not disease-carrying mosquitoes.

GENUS ANOPHELES.

Adult anophelines may be readily distinguished from nonanophelines by the way they stand when at rest or biting. The beak, head, thorax, and abdomen are in one straight line, and the insect rests at an angle of 45° to 90° with the surface, so that it appears to stand on its head. The nonanophelines are humpbacked, resting almost parallel with the surface. The palpi of *Anopheles* are almost as long as the beak, and the wings are marked or spotted with black, or black and white, or black, white, and yellow. The palpi of nonanophelines are much shorter than the beak, and the wings are unspotted.

Anopheles quadrimaculatus, the most effective carrier of malaria in this country, has four black spots (patches of scales) on the second and fourth wing veins; the palpi are uniformly dark brown, and the sixth or hindmost wing vein is wholly dark scaled.



FIG. 1.—Wing of *Anopheles quadrimaculatus*.

Anopheles crucians has heavily spotted wings, the front margin being darkest. The sixth or hindmost wing vein has three dark spots, one at each end and one in the middle. Rubbed male *crucians* much resemble male *quadrimaculatus*, especially if the marginal spot on the sixth vein is obliterated, but usually some trace of the central spot remains. The markings of the female palpi afford the easiest means of identification for this species; for all of the terminal joint of the female palpus is white, the base and apex of the next to the last joint are white, with another white ring near the middle of the longest palpal joint. These markings are more easily seen if examination is made against a dark background in a strong light, with the aid of a lens.

Anopheles punctipennis has the front margin of the wing dark, except for a very conspicuous yellowish-white patch about one-quarter the way from tip to base, with another smaller white patch near the extreme tip. The last vein is dark scaled at both ends, and light in the middle. The palpi are a uniform brown. The thorax has a wide, pale-gray longitudinal stripe.

Anopheles pseudopunctipennis, a species found in Southwestern United States, is lighter in ground color than any of the preceding species. The front margin of the wing has three light spots, one about

one-third the distance from base to tip, the next about two-thirds this distance, and the last at the extreme tip of the wing. The last or sixth vein is white at the base and black on the outer half. The

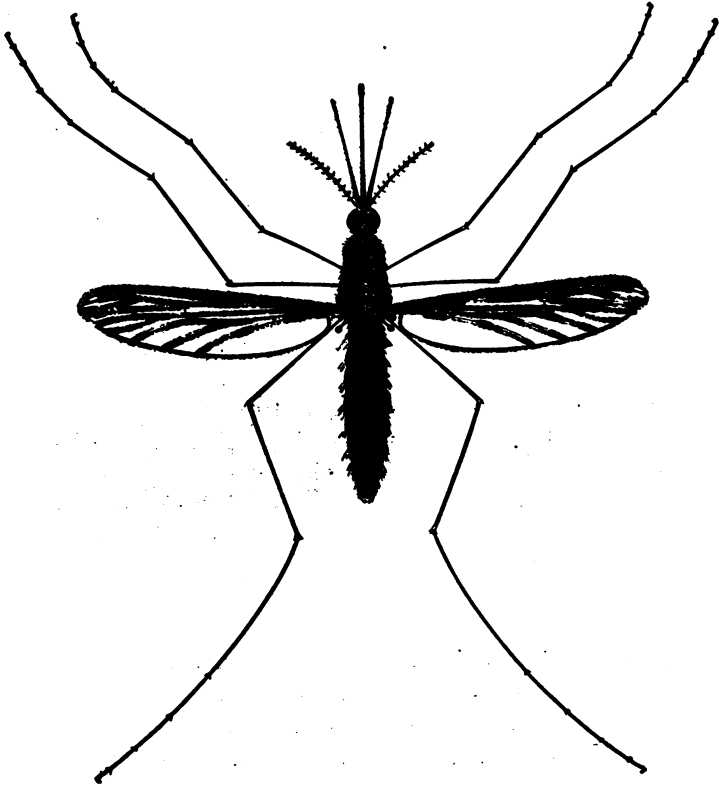


FIG. 2.—A typical anopheline—*Anopheles crucians* (female). Note three dark spots on hindmost vein of wing, and long, white-banded palpi.

fringe of scales on the edge of the wing has large pale spots at the tips of all the veins. The thorax has a pale-gray longitudinal stripe. The principal distinguishing character separating this species from



FIG. 3.—Wing of *Anopheles punctipennis*.

punctipennis is the marking of the palpi, which have the tips white, the base and apex of the next to the last joint white banded, and a white ring near the middle of the long joint. In *punctipennis* the palpi are unbanded.

ADULT NONANOPHELINES.

Three common nonanophelines encountered in mosquito-control operations in Southern United States, *Culex quinquefasciatus*, *Culex restuans*, and *Culex salinarius*, resemble each other so closely that it is not feasible to attempt a separation here. One description will serve for all three species, as they are nearly indistinguishable in appearance and very similar in habits.

Culex quinquefasciatus, the common house mosquito of the South, replacing *Culex pipiens* south of Washington, D. C., has beak and legs of a uniform blackish brown, not ringed or spotted in any way. The thorax is of a reddish or grayish brown. The abdomen is dark brown, with narrow bands of yellowish scales at the bases of the segments. In *quinquefasciatus* these bands tend to be widest at the middle, but this character is not constant. *Culex salinarius* resembles *Culex quinquefasciatus* so closely that a distinction is not possible to the untrained observer.

Culex restuans also resembles *Culex quinquefasciatus* very closely, so that the same description will apply. Sometimes *Culex restuans* has two white spots on the middle of the thorax, with other scattered white markings, but these characters are inconstant, and can not be relied upon for identification.

The foregoing three species are the only common mosquitoes in which the legs and beak are uniformly dark brown in color. All other species of nonanophelines which are of practical importance to the field director of malaria control in Southern United States have the legs or beak, or both, ringed or spotted with white.

Aedes ægypti (*Aedes calopus*, *Stegomyia fasciata*), the yellow-fever mosquito, is black in ground color, marked with gleaming silvery white. The beak is not banded, the palpi are white tipped, and the thorax is marked with two dorsal parallel white lines, which, with other broad curved white lines, form a lyre-shaped design. The abdomen is ornamented with two rows of lateral triangular white spots. The tarsi of the legs are banded at the bases of the joints with silvery white, while the last joint of the hind legs is wholly white.

Aedes vexans (*Aedes sylvestris*) is a medium-sized, brownish-black species, in which the beak is unbanded, and the thorax uniform brown in color, but with narrow dirty-white rings at the base of all tarsal joints of the legs. The abdominal bands are the most characteristic marks, as they are constricted at the center and at the edges, so that a B-shaped band is formed at the base of each segment. This central "notching" is more noticeable on the terminal segments of the abdomen.

Aedes sollicitans, the salt-marsh mosquito, is of a golden-brown color, with the beak centrally banded with white, the sides of the

thorax silvery gray beneath a black edging, the bases of the abdominal segments with wide yellowish-white bands, crossed longitudinally by a broad line of the same color extending down the center. The bases of the tarsi of the legs are broadly ringed with white, the last joint of the hind legs being wholly white. This is the common salt-marsh species, and is found sometimes 40 miles inland from the coastal marshes.

Aedes taeniorhynchus resembles *Aedes sollicitans*, but is usually smaller, while the ground color is blackish, instead of golden brown.

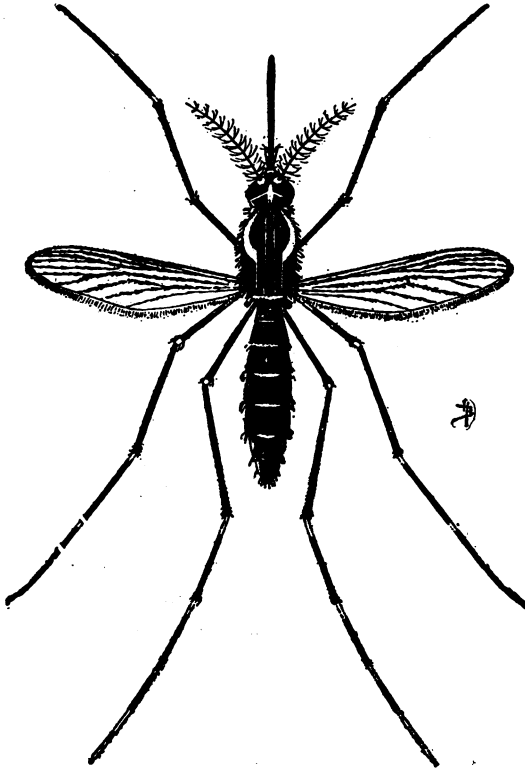


Fig. 4.—Adult female *Aedes aegypti*, the yellow fever mosquito. (After Howard.)

The dorsal central abdominal stripe is lacking. The beak is narrowly ringed centrally with white, and the tarsi of the legs are narrowly white banded at the bases of the joints, the last joint of the hind legs being wholly white. A form of *taeniorhynchus*, *Aedes niger* (*Aedes portoricensis*), having the last hind tarsal joint largely black, occurs in Florida.

Psorophora columbix is a large, brownish-black species, spotted and mottled with dull white. The beak is broadly banded with dirty white, the wings are rather heavily scaled, while the abdomen is not strikingly marked with bands or spots. The most characteristic markings of this species occur on the legs. The femora of the

first pair of legs are marked near the apex with a narrow white band, while the middle femora have almost no marking. The femora of the last pair of legs are marked with a broad white band near the apex. The tibiae are black, with a white dot near the base, and many spots of white along one side. The first tarsal joint of the last pair of legs has a broad white band in the center, which is less noticeable on the first tarsal joints of the first and middle pairs of legs. All the tarsal joints are ringed with white at their bases, except those of the fifth joints on the fore and middle legs, which are wholly black.

Psorophora ciliata is the giant among the common mosquitoes. It can be easily recognized by its large size. The proboscis is not banded.

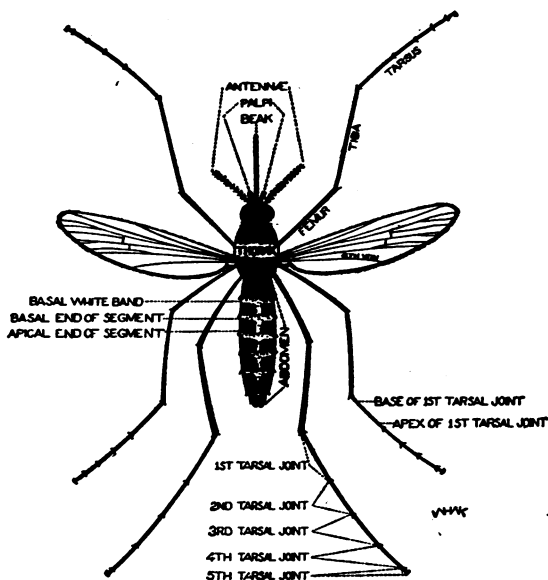


FIG. 5.—A typical non-anopheline, *Aedes sollicitans* (female), with parts named. Note short palpi and banded beak and legs. (Modified, after J. B. Emith.)

The thorax has a broad central band of yellowish-brown scales along its entire length. On each side of this central strip is a bare, shining, yellow area, wider at the posterior end. The abdomen has no spots or bands, but is fairly uniform in color. The tips of the femora of all legs are fringed with dense scales, while the tibiae of the middle and posterior legs and the hind tarsi are likewise scaled, except for yellowish-white bands at the bases of each tarsal joint.

Among other species which may be locally abundant are the following:

Psorophora sayi, a woods species, a large metallic purplish mosquito, with the tips of the hind legs only pure white.

Culex erraticus is a small, black species, with unbanded beak and legs, characterized by the black banding of the under side of the abdomen, a mark found in no other common mosquito.

Structure of Mosquito Larva.

The body of the mosquito larva, or wiggletail, is divided into three distinct parts—head, thorax, and abdomen. The head is large, usually globular, and is provided with two prominent dark-colored eyes. Just in front of the eyes lie the antennæ, or feelers, which bear a tuft of hairs at or near the middle. The upper surface of the head is provided with a number of paired hairs, which are of importance in classification. The thorax is clothed with numerous lateral tufts of hair. The abdomen is composed of nine segments, each provided with tufts of hair, and bearing on the eighth segment a number of spines or scales, arranged in a triangular patch, in a row, or in a band.

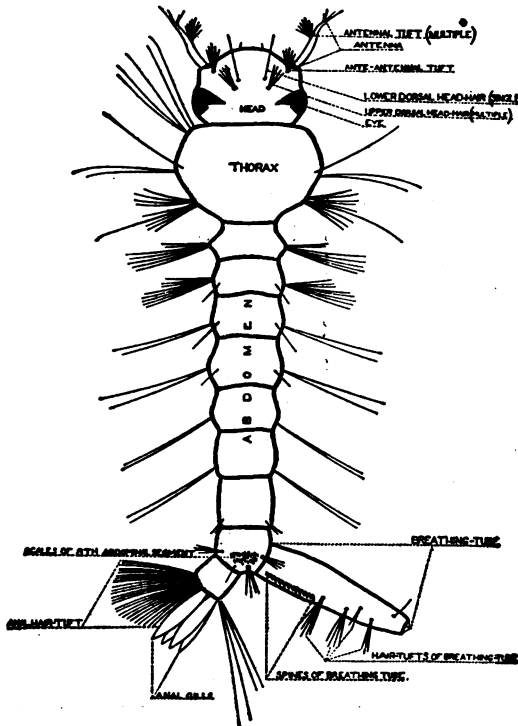


FIG. 6.—Diagram of *Culex* larva with parts named.

Arising from the eighth segment, in all species except the *Anopheles*, is a breathing tube, or siphon, which is thrust up through the surface of the water, and through which the larva breathes atmospheric air. The siphon has a double row of spines near the base, where it joins the eighth segment, and one or more paired hair tufts along its length. Other details of structure are described in the accompanying figure.

DESCRIPTION OF ANOPHELINE WIGGLETAILS.

The wiggletails of *Anopheles* are easily distinguished from those of nonanophelines in two ways. Nonanophelines have a breathing

tube at the hind end of the body; anopheline wiggletails have none. When coming to the surface of the water to breathe, nonanopheline wiggletails hang head downward, seemingly suspended from the tip of the breathing tube. Anopheline wiggletails seldom go to the bottom, but float at the top of the water, in the surface film, parallel with the surface. An excellent mode of illustrating the difference between the two types of wiggletails is to view them in a glass of water which is held about 4 inches above eye level, about 6 inches from the face.

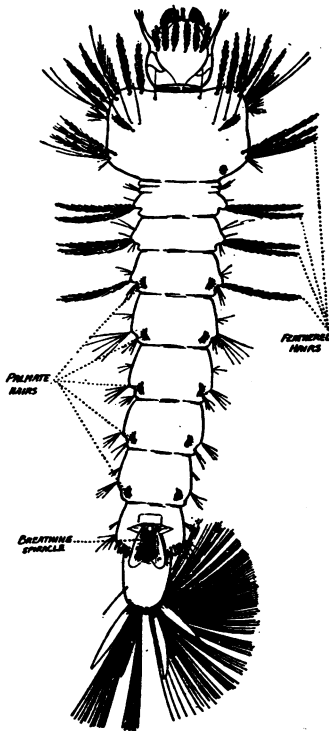


FIG. 7.—Larva of *Anopheles quadrimaculatus*.

Anopheles larvæ are variously colored, sometimes being grass green, gray, reddish-brown, or black. Often there is a longitudinal stripe on the back of the abdomen, which may be broken by spots of lighter or darker pigment. The young wiggletails are dark in color, mottled on the backs with flecks of white. The head is much smaller than the thorax, and is somewhat pear shaped. The antennæ do not hang down like those of nonanophelines, but arise from the sides of the head, and project straight forward. On the dorsal surface of the third to seventh segments of the abdomen are short rosettes of hair, the so-called palmate hairs, which serve as aids to keep the larva afloat.

It is not practicable to attempt to differentiate between the larvæ of the three common *Anopheles*, and the easiest way of making the distinction is to collect full-grown larvæ and breed out the adults.

DESCRIPTION OF NONANOPHELINE WIGGLETAILS.

Nonanopheline wiggletails will be grouped here in four divisions—the genus *Aedes*, the genus *Culex*, the genus *Psorophora*, and a miscellaneous group. The separation is made on characters which hold good only for the species described, but not for all species of the genera.

Genus *CULEX*.

All species considered here have more than one pair of tufts on the breathing tube, which differentiates them immediately from the wiggletails of the other divisions. In all species of *Culex* except *Culex restuans* the antennal tuft projects from an offset about two-thirds the distance from base to tip, the antenna being thick at the base, the part beyond the tuft slender.

Culex quinquefasciatus (*Culex fatigans*, *Culex pungens*) has the antennal tuft arising from an offset, the dorsal head hairs are multiple, and the scale patch of the eighth abdominal segment is composed of about 40 small scales. The breathing tube is four times as long as wide, tapering slightly, with a double row of spines, nine on each side. There are four paired hair tufts on the breathing tube, beyond the spines, the last pair being out of line.

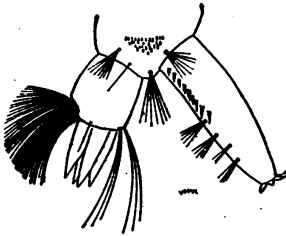


FIG. 8.—Eighth and ninth segments and breathing tube of larva of *Culex quinquefasciatus*.

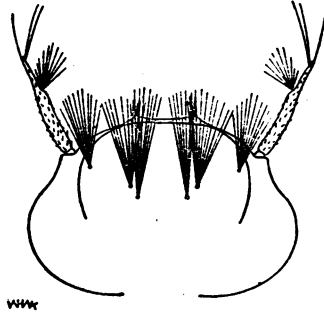


FIG. 9.—Head of larva of *Culex quinquefasciatus*.

Culex restuans is much like *C. quinquefasciatus*, but the antennal tuft arises from the middle of the evenly tapering antenna, not from an offset. Scale patch and siphonal spines are like *C. quinquefasciatus*, but the tufts on the breathing tube are replaced by six long, coarse hairs, and a small tuft near the tip.

Culex salinarius is remarkable for the length of the breathing tube. Antennæ are the same as in *C. quinquefasciatus*, and the paired head hairs are multiple. The breathing tube is very slender, about seven times as long as broad. Eight small tufts occur between the spines and the tip of the tube.

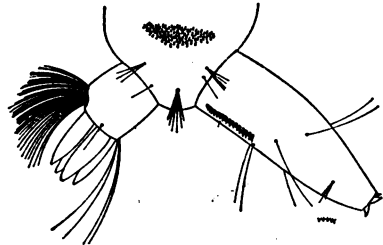


FIG. 10.—Eighth and ninth segments and breathing tube of larva of *Culex restuans*.

Culex testaceus (*Culex territans*) has a very long, slender breathing tube, seven times as long as wide; with eight small hair tufts between spines and tip. The head is broader than the thorax, the antennæ are light colored at the base, the part beyond the tuft is darker. Both pairs of dorsal head hairs are single, thus differing from *Culex salinarius*, in which they are multiple.

Culex erraticus is a small larva, often bright green. The bases of the antennæ are conspicuously white. The first pair of head hairs are long, single hairs, the second, short multiple tufts. The scale patch of the

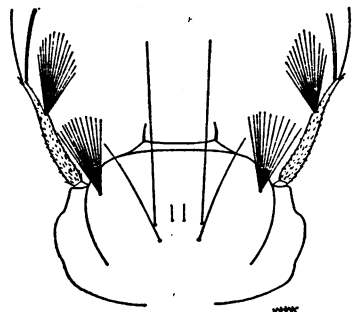


FIG. 11.—Head of larva of *Culex territans*.

eighth abdominal segment consists of an irregular double row of sharp-pointed scales, not fringed at the tip. The breathing tube has five pairs of very long tufts beyond the spines. The body is pilose, or furry, which character separates it unmistakably from all other common *Culex* larvæ.

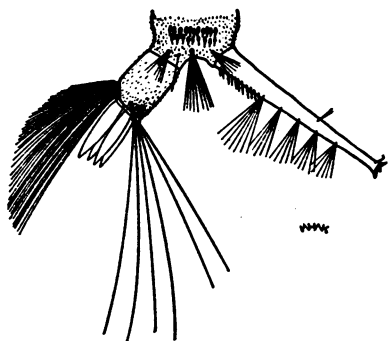


FIG. 12.—Eighth and ninth segments and breathing tube of larva of *Culex erraticus*.

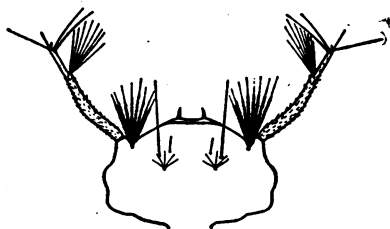


FIG. 13.—Head of larva of *Culex erraticus*.

Genus *AËDES*.

The wiggletails of the genus *AËdes* are separated on the basis of the character and arrangement of the scale patch and of the siphonal spines. In *AËdes* the scale patch consists of few to many pointed scales, not finely fringed as in *Culex*. There is only one pair of tufts beyond the spines on the breathing tube. The antenna is usually uniformly tapering, with the tuft at or near the middle.

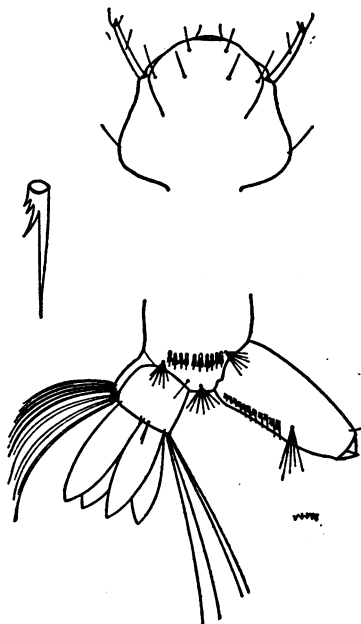


FIG. 14.—Parts of larva of *AËdes ægypti*. Above—head; left—spine of breathing tube; right—scale of eighth abdominal segment; below—eighth and ninth segments and breathing tube.

AËdes ægypti (*AËdes calopus*, *Stegomyia fasciata*) is long and grayish, usually with darker head and breathing tube when full grown. It moves with a characteristic wriggle when disturbed, jerking from side to side in a wide arc as it descends to the bottom. When breathing, it hangs almost straight down from the water surface. The dorsal head hairs are all single and short, and the antenna has a single hair at the middle instead of the usual tuft.

The scale patch of the eighth abdominal segment is composed of 10 black spines in a single row. Each spine has a pointed base and a

long terminal spine with several curved spines at each side. The breathing tube is short, stout, somewhat barrel shaped, a little more than twice as long as broad, with a double row of spines at its base, followed by a single pair of tufts. The spines are long, with two large and a few small teeth near the base.

Aedes vexans (*Aedes sylvestris*) larva has the head widest behind the eyes, noticeably tapering toward the front. Both pairs of dorsal head hairs are multiple. The scale patch of the eighth abdominal segment contains 10 to 15 scales arranged in an irregular double row. Each scale is sharply pointed at the tip; the sides are finely fringed. The breathing tube is about three times as long as wide. The last two siphonal spines, which are larger than the rest, are separated from them and from each other.

Aedes sollicitans is a stout, chunky larva, with very short breathing tube. Both pairs of dorsal head hairs are single and rather long.

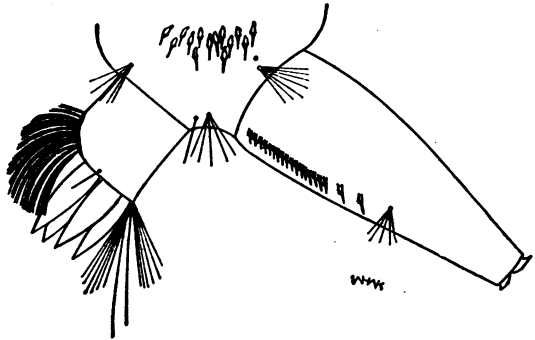


FIG. 15.—Eighth and ninth segments and breathing tube of larva of *Aedes vexans*.

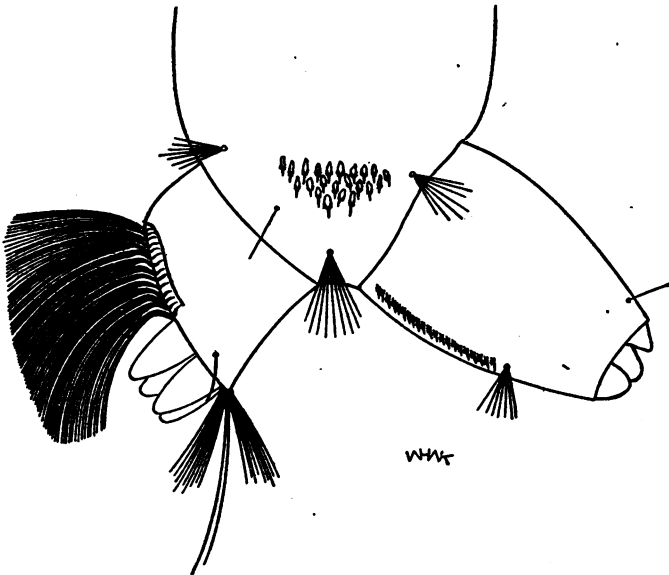


FIG. 16.—Eighth and ninth segments and breathing tube of larva of *Aedes sollicitans*.

The antennal tuft is small and placed at the middle of the joint. The scale patch of the eighth abdominal segment is of 20 to 40

scales, the single scale elliptical, with a sharp terminal spine, the sides fringed with smaller spines. This larva can be separated from others on the basis of the short breathing tube, the shape of the scales of the eighth abdominal segment, and the fact that it is found in salt water.

Aëdes tæniorhynchus larva resembles *A. sollicitans* closely, but the breathing tube is even shorter, not more than one and one-half times as long as wide. The single scale of the scale patch is rounded at the tip, not pointed as in *sollicitans*, and is fringed with from 10 to 14 spines, all alike, but smaller toward the base of the scale. The siphonal spines may be toothed on both sides, with three or four small teeth.

Genus PSOROPHORA.

This genus is divided into two subgenera: *Psorophora* proper, in which the larvæ are predaceous, and *Janthinosoma*, in which they are not. The subgenus *Psorophora* is characterized by the peculiar structure of the head, which is quadrate, broadest between the eyes, with the antennæ set well back along the sides of the head. The scales of the eighth abdominal segment are large, placed in a single row, with a large patch of very small scales above them. The breathing tube is large, swollen, tapering rapidly from middle to tip. The subgenus *Janthinosoma* resembles the usual larval type more closely. The scales of the eighth abdominal segment are few and arranged on a band. The breathing tube is large, swollen, tapering from middle to tip, and provided with a double row of few, coarse, strong spines.

Psorophora ciliata is the largest of our common larvæ, sometimes attaining the length of half an inch. The distinguishing character is the shape of the head, which is almost square, but broadest at the eyes, almost straight across the anterior margin, with the antennæ set well down along the sides. The large mouth brushes are prominently set at the anterior corners of the head. The breathing tube is large and swollen, tapering from the middle to the tip. It has a double row of 20 to 30 very long slender spines, each with one or two teeth at the base. The single large scales of the eighth abdominal segment have a long terminal spine and one or two smaller spines on each side.

Psorophora (Janthinosoma) columbiæ is a large, chunky larva, with short, curved antennæ, with the tuft at about the middle. The dorsal head hairs are multiple. The six scales of the eighth abdominal segment are attached to a band at their bases. The single scales have a long terminal spine, with a curved subapical spine at each side and two or three smaller spines along each side.

The breathing tube is stout and swollen, and tapering from middle to tip. It is provided with a double row of three to five strong spines, usually with one short tooth at the base; there is a small paired tuft beyond the spines.

Psorophora (Janthinosoma) sayi is similar to *Psorophora columbiæ*; the antennæ, however, are very long, slender, curved, with the tuft at the middle. The spines of the breathing tube number three or four, with broad base; and there are a number of small teeth at the base of the long spine. The scales of the eighth abdominal segment are like those of the preceding species.

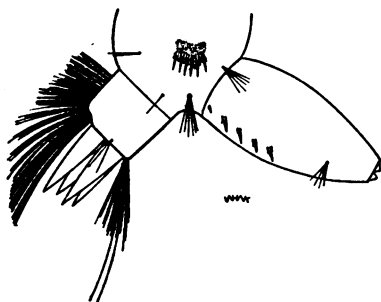


FIG. 17.—Eighth and ninth segments and breathing tube of larva of *Psorophora columbiæ*.

MISCELLANEOUS GROUP.

This includes one small species, important only in that it resembles closely the larva of *Anopheles*.

Uranotænia sapphirinus is commonly associated with *Anopheles* larvæ, in pools with much vegetation. The head is pear shaped, smaller than the thorax, as in *Anopheles*. The dorsal head hairs are single. The antenna has a single hair replacing the usual tuft. The breathing tube, the possession of which immediately separates it from *Anopheles* larvæ, is short and very slender, not tapered. The abdomen is provided with long star-shaped tufts of hair at the sides and on the back. When at the surface of the water, the wiggletail holds itself parallel with the surface, just under the surface film, with the breathing tube extended in a line with the body. When disturbed, it often darts sidewise, as do *Anopheles* wiggletails, instead of sinking to the bottom. The presence of the breathing tube, however, is an infallible means of differentiation.

Notes on Life Histories and Habits of Mosquitoes Described Above.

Of the three common *Anopheles*, it may be said that *Anopheles punctipennis* prefers clean water, breeding in streams and stream-fed pools, and in temporary rain-water pools; *Anopheles quadrimaculatus* frequents permanent bodies of water, usually well grown up with vegetation; and *Anopheles crucians* also seems to prefer such breeding places, but it is also more resistant to mineral salts, as it propagates freely in brackish water and in water impregnated with acids. There seems to be some evidence of a seasonal rotation of species, in that *crucians* is the earliest anopheline on the wing in great numbers, with *punctipennis* coming second, but disappearing in hot weather,

while *quadrimaculatus*, later in appearing and earlier in disappearing, seems, when once established, to persist through the summer.

Van Dine has made the interesting and important observation that "the capacity of certain classes of artificial collections of water is very limited in the production of *Anopheles*." These collections are "water barrels, * * * troughs used for stock, * * * disused cisterns, and * * * other artificial collections of water about habitations." "At most the emergence [from these places] was very small and in some instances negative." It may also be noted that the majority of adults produced from artificial containers are *punctipennis*, which is not an efficient carrier of malaria in the United States.

In the habits of the adult anophelines there is a sharp distinction. *A. punctipennis* is the wildest of the three, almost never entering houses, except when vacant. It is often found underneath occupied houses, and bites on porches after dusk. On the other hand, both *quadrimaculatus* and *crucians* will enter houses freely, and are sometimes more numerous than the common *Culex*. *A. quadrimaculatus* bites preferably after dusk, while *A. crucians* will bite at any time of the day, if not in direct sunlight. *A. punctipennis* is not so aggressive as the other two species, and usually bites after sunset.

Culex quinquefasciatus prefers sewage-contaminated water in which to propagate, and is the common species found in cesspools and open sewers. It may be considered axiomatic that where large numbers of *Culex*, including males, are found in outhouses and barns in any locality under control some sewage-contaminated breeding place, cesspool, catch basin, or sewer exists undiscovered in the near vicinity. The adults persist for a number of weeks after their breeding place has been destroyed. They form the usual influx of *Culex* observed in the early fall. They bite almost exclusively at night, and have the singing habit strongly developed.

Culex restuans usually prefers cleaner water than the preceding species, and is more frequently found in rural sections. It is often found in rain barrels. Its habits are similar to those of *quinquefasciatus*.

Culex salinarius is often found in fresh-water pools near the sea, but occurs inland as well, associated with the two preceding species and the following species, in the larval stage. Its habits are like those of *quinquefasciatus*.

Culex testaceus in the larval stage usually inhabits permanent pools filled with aquatic vegetation. It often accompanies *Anopheles* larvæ. It may also be found associated with *C. quinquefasciatus*, *C. restuans*, and *C. salinarius* in rain barrels and other artificial con-

tainers. It is unnecessary to institute control measures against this species, as it does not attack man.

Culex erraticus is very common in permanent bodies of water covered with duckweed, associated with the larvæ of *Anopheles* and of *Uranotænia sapphirinus*. Adults will enter houses near their breeding places, but are not very troublesome. This species inhabits the southern Mississippi Valley, ranging over into Georgia and Florida.

Aedes ægypti, the yellow-fever mosquito, is thoroughly domesticated, and seldom takes the blood of any animal but man. It breeds in artificial containers, always near human habitations. It may be easily overlooked, as the larvæ, when disturbed, sink rapidly to the bottom of the container, and rise again very slowly. Therefore, unless a vessel is completely emptied, the larvæ may remain behind in the last few drops of water. The adults are the only common daylight-biting mosquitoes in the South, in regions where the salt-marsh species are not found. They are very wary, attacking from behind, and selecting by preference the knuckles, ankles, and back of the neck. They do not sing, and their flight is weak, but their bite causes intense burning and swelling.

Aedes vexans (*Aedes sylvestris*) is an early spring species in the South, being found in woodland pools or in open swamp pools. It seldom enters houses as an adult, but may be extremely troublesome in the vicinity of its breeding place.

Aedes sollicitans, the salt-marsh or true "Jersey" mosquito, passes its larval life in salt or brackish pools on tidal marshes. It has gained its evil reputation by its habit of migrating in great numbers for long distances (40 miles or more) from the marshes where it propagates. It will bite during the daytime, especially in the late afternoon. There is some evidence to show that this species, when aided by light, warm, moist winds, may fly as far as 75 miles.

Aedes tæniorhynchus propagates in the same places and has the same habits as the preceding species. It is thought not to fly as far, but uncontrovertible evidence shows that a subspecies occurring in Florida (*Aedes niger* = *A. portoricensis*) flies 95 miles from land; and there is good evidence to show that *tæniorhynchus* flies fully as far as *sollicitans*.

Psorophora ciliata is cannibalistic as a larva, preying upon the larvæ associated with it in temporary puddles. The adult is a hard biter, and attracts notice because of its large size. It is seldom troublesome except near its breeding places.

Psorophora columbiæ is the large larva commonly found in rain-water pools, which grows with such amazing rapidity in warm weather.

Eggs are laid in the dry mud at the bottom, and hatch almost immediately after being covered with water. Under favorable conditions, the life cycle is completed in five days after the eggs hatch. The adults are not aggressive, and are troublesome only about their breeding places.

Psorophora sayi propagates in woodland pools, and, as an adult, is troublesome in the woods, never leaving the shade, but biting fiercely during the day when its haunts are invaded.

Uranotænia sapphirinus resembles *Anopheles* larvæ in the larval stage, as it takes a position parallel with the surface of the water when feeding. It can be distinguished by the presence of a breathing tube, which is absent in *Anopheles*. The adults are seldom seen, and do not bite.

Notes on Synonymy.

Several species described here have in the past been called by a number of scientific names. In order to avoid confusion the several names of each species are given. The new names, given last in each case, are according to Dr. H. G. Dyar, of the United States National Museum.

ANOPHELES:

Anopheles crucians.

Anopheles punctipennis.

Anopheles maculipennis, *A. guttulatus*, *A. quadrimaculatus*.

Anopheles pseudopunctipennis.

CULEX:

Culex pungens, *Culex fatigans*, *Culex quinquefasciatus*. (NOTE: *Culex pipiens* is an introduced European species, and is not found generally south of Washington, D. C., except at seaports.)

Culex nigrifrons, *Culex salinarius*.

Culex restuans.¹

Culex territans, *Culex testaceus*.

Culex abominator, *Culex erraticus*.

Stegomyia fasciata, *Stegomyia calopus*, *Aedes calopus*, *Aedes argenteus*, *Aedes aegypti*.

Aedes sylvestris, *Aedes vexans*.

Aedes sollicitans.

Aedes triseriatus.

Culex jamaicensis, *Aedes jamaicensis*, *Psorophora columbiae*.

Psorophora ciliata.

Genthiinosoma musica, *Aedes sayi*, *Psorophora sayi*.

Uranotænia sapphirinus.

¹ This species must be called *Culex territans*, but on account of the confusion likely to occur with *territans* = *testaceus*, the name has not been introduced here.—H. G. Dyar.

Key for Determining Species of Female Adult Mosquitoes.

(NOTE.—The characters on which the separation is based are grouped in pairs. If the first character does not apply to the species in hand, try the second character of the pair. Thus, *Aedes ægypti* would come under the second of the two characters in the first pair, as the wings are unspotted and the palpi are shorter than the beak. Following down to pair No. 4, it falls in the first group, as the legs are banded with white. Going to No. 5, it falls in the second group, as the beak is unbanded. This throws it into pair 8, in which it falls in the first group, as the thorax is marked with stripes. Going to pair No. 9, it is easily seen that the species is *Aedes ægypti*, as it is not a large yellowish species, but a small black species, with a lyre-marked thorax.)

- | | | |
|-----|--|--------------------------------|
| | {Wings spotted, palpi almost as long as the beak..... | 1 |
| | {Wings unspotted, palpi much shorter than the beak..... | 4 |
| 1. | {Palpi ringed and tipped with white..... | 2 |
| | {Palpi uniformly dark brown..... | 3 |
| 2. | {Hindmost wing vein with three black spots..... | <i>A. crucians.</i> |
| | {Front margin of wing with three light spots; hindmost wing vein basally pale, apically black..... | <i>A. pseudopunctipennis.</i> |
| 3. | {Prominent white spot on front wing margin; hindmost wing vein white with black ends; median gray thoracic stripe..... | <i>A. punctipennis.</i> |
| | {Four dark spots on wing; hindmost wing vein wholly dark scaled; no thoracic stripe..... | <i>A. quadrimaculatus.</i> |
| 4. | {Legs banded or marked with white..... | 5 |
| | {Legs unbanded, uniform in color..... | 11 |
| 5. | {Beak centrally ringed with white..... | 6 |
| | {Beak unbanded..... | 8 |
| 6. | {Abdomen with dorsal longitudinal stripe, sides of thorax white below black stripe..... | <i>Aedes sollicitans.</i> |
| | {Abdomen without dorsal stripe..... | 7 |
| 7. | {Large blackish species, tibia white spotted, femur white banded near tip, abdomen unbanded..... | <i>Psorophora columbiae.</i> |
| | {Small blackish species, tibia and femur unmarked, abdomen banded with white at bases of segments..... | <i>Aedes traxiorhynchus.</i> |
| 8. | {Thorax marked with lines or stripes..... | 9 |
| | {Thorax unmarked..... | 10 |
| 9. | {Large yellowish species, with broad yellow median thoracic stripe, legs heavily fringed with upright scales..... | <i>Psorophora ciliata.</i> |
| | {Small black species, thorax marked with lyre-shaped design, palpi white tipped, abdominal segments with lateral white spots.. | <i>Aedes ægypti.</i> |
| 10. | {White markings of legs narrow, abdominal bands nearly divided in the middle..... | <i>Aedes vexans.</i> |
| | {Large purplish species, with two terminal joints and apex of middle joint of hind tarsi white..... | <i>Psorophora sayi.</i> |
| 11. | {Abdominal segments banded with white at the apex only. | <i>Culex testaceus.</i> |
| | {Abdominal segments banded with white at base only..... | 12 |
| 12. | {Under side of abdomen with unbroken black bands.... | <i>Culex erraticus.</i> |
| | {Under side of abdomen not completely banded, upper side with narrow white or yellowish basal bands..... | <i>Culex quinquefasciatus.</i> |
| | | <i>Culex restuans.</i> |
| | | <i>Culex salinarius.</i> |

Key to Full-Grown Mosquito Larvæ.

- Without breathing tube, lying parallel with water surface in surface film..... 1
- With breathing tube; when breathing, hanging from surface film at an angle..... 2
1. Palmate hairs on abdominal segments 3 to 7 equal { *A. quadrimaculatus*.
in size. { *A. punctipennis*.
Palmate hairs on abdominal segments 3 and 7 smaller than those on segments 4, 5, and 6..... *A. crucians*.
2. { More than one pair of hair tufts or hairs on breathing tube..... 10
A single pair of hair tufts on breathing tube..... 3
3. { Abdominal hair tufts star-shaped; head pear-shaped, with four coarse head hairs..... *Uranotaenia sapphirinus*.
Abdominal hair tufts not star-shaped; head not pear-shaped, head hairs slender..... 4
4. { Breathing tube very short, dorsal head hairs single (found in salt water)..... 5
Breathing tube at least three times longer than wide (found in fresh water)..... 6
5. { Breathing tube not more than twice as long as wide; scale of eighth abdominal segment with long central spine..... *Aedes sollicitans*.
Breathing tube not more than one and one-half times as long as wide; scale of eighth abdominal segment rounded at tip, fringed with slender equal spines..... *Aedes taeniorhynchus*.
6. { Head square, almost straight across front; antennæ arising from near middle of sides of head; mouth brushes prominent, at outer angles of head; a very large larva when full grown..... *Psorophora ciliata*.
Head normal, rounded; antennæ arising from sides of front of head..... 7
7. { Scales of eighth abdominal segment 6 or 7, joined at bases to a band; breathing tube large, swollen, with four or five strong spines..... 8
Scales of eighth abdominal segment 10 to 50, not joined to a band, but arranged in a triangular patch; breathing tube short, not swollen, with a double row of small spines..... 9
8. { Antennæ shorter than head..... *Psorophora columbiæ*.
Antennæ much longer than head, slender, slightly curved..... *Psorophora sayi*.
9. { Dorsal head hairs multiple, antennal tuft multiple; last two spines in row on breathing tube larger, separated from the rest, and from each other..... *Aedes vexans*.
Dorsal head hairs single; antenna with single hair replacing usual tuft; breathing tube dark, barrel-shaped; a long, slender larva found in artificial containers..... *Aedes ægypti*.
Antenna with tuft arising from middle of uniformly shaped joint; tufts of breathing tube replaced by six long, coarse hairs..... *Culex restuans*.
10. { Antenna with tuft arising from a notch two-thirds the distance from base to tip of joint, part beyond tuft slender; breathing tube with from 6 to 10 hair tufts..... 11
11. { Breathing tube long, slender, about seven times as long as wide..... 12
Breathing tube about three times as long as wide..... 13
12. { Dorsal head hairs single, scale patch of eighth abdominal segment of many scales in a triangular patch..... *Culex testaceus*.
Dorsal head hairs multiple; scale patch as in *C. testaceus*..... *Culex sakinarius*.
13. { Lower dorsal head hairs long, single; upper pair short, multiple; scale patch of eighth abdominal segment of few, sharp, pointed scales in an irregular double row..... *Culex erraticus*.
Dorsal head hairs multiple; scale patch of many scales in a triangular patch; breathing tube slightly swollen at base, bottle-shaped; breeding by preference in polluted water; a very common species..... *Culex quinquefasciatus*.

WHOLE-TIME COUNTY HEALTH OFFICERS, 1923.

The following directory has been compiled from data furnished by State health officers. A similar directory for 1922 was published in Public Health Reports, October 27, 1922, and issued as Reprint No. 795.

In the questionnaire sent for the purpose of obtaining the necessary information a "whole-time" county health officer was defined as "one who does not engage in the practice of medicine or any other business, but devotes his whole time to official duties."

Directories of State health departments have been published annually by the Public Health Service for the years 1912 to 1922, inclusive. The directory for 1922 has been issued as Reprint No. 775 from the Public Health Reports.

Directories of city health officers have been published annually for the years 1916 to 1922, inclusive, the directory for 1922 being Reprint No. 767.

Directories of State and city health officers for 1923 will be published later.

County.	Name of health officer.	Post-office address.	Official title.
Alabama:			
Baldwin	Geo. C. Marlette, M. D.	Bay Minette	County health officer.
Barbour	F. L. Abernathy, M. D.	Clayton	Do.
Calhoun	Geo. A. Cryer, M. D.	Anniston	Do.
Colbert	W. T. Burkett, M. D.	Tusculumbia	Do.
Covington	W. G. Smillie, M. D., D. P. H.	Andalusia	Do.
Dallas	L. T. Lee, M. D.	Selma	Do.
Etowah	C. L. Murphree, M. D.	Gadsden	Do.
Houston	T. E. Tucker, M. D.	Dothan	Do.
Jefferson	J. D. Dowling, M. D.	Birmingham	Do.
Lauderdale	W. D. Hubbard, M. D.	Florence	Do.
Limestone	H. K. Gallagher, M. D.	Athens	Do.
Madison	B. F. Austin, M. D.	Huntsville	Do.
Mobile	C. A. Mohr, M. D.	Mobile	Do.
Montgomery	J. L. Bowman, M. D.	Montgomery	Do.
Morgan	H. C. McRee, M. D.	Decatur	Do.
Pike	W. H. Abernathy, M. D.	Troy	Do.
Sumter	J. S. Hough, M. D.	Livingston	Do.
Talladega	J. H. Hill, M. D.	Talladega	Do.
Tuscaloosa	A. A. Kirk, M. D.	Tuscaloosa	Do.
Walker	A. M. Waldrop, M. D.	Jasper	Do.
California:			
Los Angeles	J. L. Pomeroy, M. D.	Los Angeles	Health officer.
Monterey	B. T. Tally, M. D.	Salinas	Do.
Orange	W. Leland Mitchell, M. D.	Santa Ana	Do.
San Francisco	Wm. C. Hassler, M. D.	San Francisco	Do.
San Joaquin			
San Luis Obispo	L. F. Badger, M. D.	San Luis Obispo	Do.
Colorado:			
Denver	Wm. H. Sharpley, M. D.	Denver, City Hall.	Manager of health and charity.
Georgia:			
Baldwin	H. A. Allen, jr., M. D.	Milledgeville	Health commissioner.
Bartow	H. E. Felton, M. D.	Cartersville	Do.
Clarke	J. D. Applewhite, M. D.	Athens	Do.
Cobb	R. W. Todd, M. D.	Marietta	Do.
Decatur	J. A. Johnston, M. D.	Bainbridge	Do.

County.	Name of health officer.	Post-office address.	Official title.
Georgia—Continued.			
Dougherty.....	Hugo Robinson, M. D.....	Albany.....	Health commissioner.
Floyd.....	B. V. Elmore, M. D.....	Rome.....	Do.
Fulton.....	T. E. Lockhart.....	Atlanta.....	County health officer.
Glynn.....	H. G. Brankham, M. D.....	Brunswick.....	Health commissioner (acting).
Hall.....	B. D. Blackwelder, M. D.....	Gainesville.....	Health commissioner.
Laurens.....	O. H. Cheek, M. D.....	Dublin.....	Do.
Lowndes.....	G. T. Crozier, M. D.....	Valdosta.....	Do.
Mitchell.....	H. L. Akridge, M. D.....	Camilla.....	Do.
Richmond.....	H. B. Neagle, M. D.....	Augusta.....	Do.
Sumter.....	B. F. Bond, M. D.....	Americus.....	Do.
Thomas.....	M. E. Winchester, M. D.....	Thomasville.....	Do.
Troup.....	C. S. Kinzer, M. D.....	Lagrange.....	Do.
Walker.....	J. H. Hammond, M. D.....	La Fayette.....	Do.
Illinois:			
Morgan.....	R. V. Brokaw, M. D.....	Jacksonville.....	County health commissioner.
Indiana:			
Fulton.....	Arthur L. Oilar, M. D.....	Rochester.....	County health director.
Iowa:			
Dubuque.....	D. C. Steelsmith, M. D., C. P. H.	Dubuque.....	Director of health.
Kansas:			
Butler.....	F. A. Garvin, M. D.....	Augusta.....	Executive officer, county board of health.
Cherokee.....	J. C. Montgomery, M. D.....	Columbus.....	Do.
Ellis.....	H. S. Capps, M. D.....	Hays.....	Do.
Ford.....	F. M. Coftman, M. D.....	Dodge City.....	Do.
Geary.....	I. O. Church, M. D.....	Junction City.....	Do.
Marion.....	J. J. Entz, M. D.....	Marion.....	Do.
Ottawa.....	J. A. Settle, M. D.....	Minneapolis.....	Do.
Wabaunsee.....	J. M. Kemper, M. D.....	Alma.....	Do.
Kentucky:			
Boyd.....	R. D. Higgins, M. D.....	Ashland.....	County health director.
Daviess.....	R. E. Griffin, M. D.....	Owensboro.....	Do.
Fulton.....	J. M. Hubbard, M. D.....	Hickman.....	Do.
Harlan.....	L. O. Hancock, M. D.....	Harlan.....	Do.
Jefferson (rural).....	Irwin Lindenberg, M. D.....	Louisville.....	County health officer.
Johnson.....	D. H. Swengel, M. D.....	Paintsville.....	County health director.
Mason.....	V. D. Guitiard, M. D.....	Maysville.....	Do.
Scott.....	A. Steward, M. D.....	Georgetown.....	Do.
Louisiana:¹			
Beauregard.....	G. M. Anderson, M. D.....	De Ridder.....	Director parish health unit.
Caddo.....	W. J. Sandidge, M. D.....	Shreveport.....	Do.
De Soto.....	J. F. McHugh, M. D.....	Mansfield.....	Do.
Natchitoches.....	W. W. Knipmeyer, M. D., C. P. H.	Natchitoches.....	Do.
Ouachita.....	John Schreiber, M. D.....	Monroe.....	Do.
Rapides.....	C. M. Abbott, M. D.....	Alexandria.....	Director of public health ad- ministration.
Washington.....	F. Michael Smith, M. D.....	Franklinton.....	Director parish health unit.
Maine:			
Old Town ²	H. L. Jackson, M. D.....	Old Town.....	Local health officer.
Rumford (town).....	H. M. Howard, M. D.....	Rumford.....	Do.
Sanford (town).....	Wm. H. Kelly, M. D.....	Sanford.....	Do.
Waterville ²	Wm. J. Young, M. D.....	Waterville.....	Do.
York (town).....	W. H. Junkins, C. P. H.....	York Village.....	Do.
Maryland:			
Allegany.....	C. C. McCulloch, M. D.....	Cumberland.....	County health officer.
Montgomery.....	W. T. Pratt, M. D.....	Rockville.....	Do.
Massachusetts:			
Barnstable.....	Russell B. Sprague, M. D.....	Yarmouthport.....	Agent board of health.
Mississippi:			
Bolivar.....	R. D. Dedwylder, M. D.....	Cleveland.....	County health officer.
Coahoma.....	R. R. Kirkpatrick, M. D.....	Clarksdale.....	Director public health unit.
Forrest.....	W. D. Beacham, M. D.....	Hattiesburg.....	Do.
Harrison.....	D. J. Williams, M. D.....	Gulfport.....	County health officer.
Hinds.....	H. L. Crook, M. D.....	Jackson.....	Do.
Jones.....	W. S. Cranford, M. D.....	Ellisville.....	Do.
Lauderdale.....	R. J. Wilson, M. D.....	Meridian.....	Do.
Lee.....	J. B. Black, M. D.....	Tupelo.....	Do.
Le fore.....	C. N. D. Campbell, M. D.....	Greenwood.....	Do.
Marshall.....	P. B. Cardner, M. D.....	Holly Springs.....	Director public health unit.
Tallahatchie.....	J. M. Kittrell, M. D.....	Charleston.....	Do.
Washington.....	A. J. Ware, M. D.....	Greenville.....	County health officer.
Missouri:			
Cape Girardeau.....	E. E. Huber, M. D.....	Cape Girardeau.....	Do.
Dunklin.....	F. E. Coughlin, M. D., D. P. H.	Kennett.....	Do.
Gentry.....	A. G. Gigger, M. D., C. P. H.	Albany.....	Do.
Greene.....	U. F. Kerr, M. D.....	Springfield.....	Do.
Monroe.....	F. M. Moss, M. D.....	Paris.....	Do.
New Madrid.....	Wm. N. O'Bannon, M. D.....	New Madrid.....	Do.

¹ Parishes.² Local district.

County.	Name of health officer.	Post-office address.	Official title.
Missouri—Continued.			
Nodaway.....	C. P. Fryer, M. D., D. P. H.	Maryville.....	County health officer.
Pettis.....	J. W. Boger, M. D.	Sedalia.....	Do.
Polk.....	Wm. H. Pickett, M. D., C. P. H.	Bolivar.....	Do.
St. Francois.....	Bradford Massey, M. D.	Flat River.....	Do.
Montana:			
Cascade.....	G. A. Fuson, M. D.	Great Falls.....	Do.
Lewis and Clark.....	Arthur Jordan, M. D.	Helena.....	Do.
Missoula.....	F. D. Fease, M. D.	Missoula.....	City and county health officer.
Yellowstone.....	R. C. Main, M. D.	Billings.....	Do.
New Mexico:			
Bernalillo.....	O. C. West, M. D.	Albuquerque.....	Health officer.
Chaves.....	K. A. Bryant, M. D.	Roswell.....	Do.
Dona Ana.....	C. W. Gerber, M. D.	Las Cruces.....	Do.
Eddy.....	W. H. Enneis, M. D.	Carlsbad.....	Do.
San Miguel.....	M. D. Moran, M. D.	Las Vegas.....	Do.
Santa Fe.....	Douglas Brown, M. D.	Santa Fe.....	Do.
Union.....	E. O. Chimenne, M. D.	Clayton.....	Do.
Valencia.....	B. McV. Mackall, M. D.	Los Lunas.....	Do.
North Carolina:			
Bertie.....	J. E. Smith, M. D.	Windsor.....	County health officer.
Bladen.....	B. T. Tally, M. D.	Elizabethtown.....	Do.
Buncombe.....	R. G. Wilson, M. D.	Asheville.....	Do.
Cabarrus.....	S. E. Buchanan, M. D.	Concord.....	Do.
Carteret.....	C. L. Outland, M. D.	Beaufort.....	Do.
Columbus.....	Floyd Johnson, M. D.	Whiteville.....	Do.
Craven.....	D. E. Ford, M. D.	New Bern.....	Do.
Cumberland.....	E. W. Larkin, M. D.	Fayetteville.....	Do.
Davidson.....	D. R. Perry, M. D.	Lexington.....	Do.
Durham.....	J. H. Epperson.....	Durham.....	Do.
Edgecombe.....	R. C. Gyles, M. D.	Tarboro.....	Do.
Forsyth.....	C. N. Sisk, M. D.	Winston-Salem.....	Do.
Granville.....	J. A. Morris, M. D.	Oxford.....	Do.
Guilford.....	W. M. Jones, M. D.	Greensboro.....	Do.
Halifax.....	P. C. Carter, M. D.	Weldon.....	Do.
Lenoir.....	R. S. McGeachy, M. D.	Kinston.....	Do.
Mecklenburg.....	W. A. McPhaul, M. D.	Charlotte.....	Do.
New Hanover.....	J. H. Hamilton, M. D.	Wilmington.....	Do.
Northampton.....	P. G. Parker, M. D.	Jackson.....	Do.
Pitt.....	P. J. Chester, M. D.	Greenville.....	Do.
Robeson.....	E. R. Hardin, M. D.	Lumberton.....	Do.
Rowan.....	C. W. Armstrong, M. D.	Salisbury.....	Do.
Sampson.....	E. T. Hollingsworth, M. D.	Clinton.....	Do.
Surry.....	L. L. Williams, M. D.	Mount Airy.....	Do.
Vance.....	F. R. Harris, M. D.	Henderson.....	Do.
Wake.....	A. C. Bulla, M. D.	Raleigh.....	Do.
Wayne.....	A. J. Ellington, M. D.	Goldsboro.....	Do.
Wilkes.....	J. W. White, M. D.	Wilkesboro.....	Do.
Wilson.....	L. J. Smith, M. D.	Wilson.....	Do.
Ohio:			
Allen.....	J. J. Sutter, M. D.	Lima, Memorial Building.....	District health commissioner.
Ashtabula.....	W. S. Weiss, M. D.	Jefferson.....	Do.
Auglaize.....	C. L. Mueller, M. D.	Wapakoneta.....	Do.
Belmont.....	F. R. Dew, M. D.	St. Clairsville.....	Do.
Butler.....	C. J. Baldrige, M. D.	Hamilton court-house.....	Do.
Champaign.....	H. J. S. Dickson, M. D.	Urbana Court House.....	Do.
Clermont.....	F. A. Ireton, M. D.	Batavia.....	Do.
Clinton.....	W. K. Ruble, M. D.	Wilmington.....	Do.
Columbiana.....	S. A. McCullough, M. D.	Lisbon.....	Do.
Coshocton.....	D. M. Criswell, M. D.	Coshocton, Frew Building.....	Do.
Crawford.....	G. T. Wasson, M. D.	Bucyrus.....	Do.
Cuyahoga.....	Robert Lockhart, M. D.	Cleveland, old courthouse.....	Do.
Erie.....	F. M. Houghtaling, M. D.	Sandusky.....	Do.
Hamilton.....	C. A. Neal, M. D.	Cincinnati, court-house.....	Do.
Hocking.....	W. G. Rhoten, M. D.	Logan.....	Do.
Huron.....	B. C. Pilkey, M. D.	Monroeville.....	Do.
Lake.....	Herbert Kenning, M. D.	Painesville.....	Do.
Lorain.....	W. A. McIntosh, M. D.	Oberlin, town hall.	Do.
Lucas.....	R. L. DeSaussure, M. D., acting.		
Madison.....	Charles Koenig, M. D.	Toledo, court-house.....	Do.
Madison.....	F. D. Postle, M. D.	London.....	Do.
Mahoning.....	J. D. Boylan, M. D.	Youngstown.....	Do.
Marion.....	N. Sifritt, M. D.	Marion, court-house.....	Do.
Miami.....	A. H. Haworth, M. D.	Troy.....	Do.
Monroe.....	W. P. Johnson, M. D.	Woodsfield, court-house.....	Do.

County.	Name of health officer.	Post-office address.	Official title.
Ohio—Continued.			
Montgomery.....	H. H. Pansing, M. D.....	Dayton, Reibold Building.	District health commissioner.
Morrow.....	R. L. Pierce, M. D.....	Mount Gilead.	Do.
Muskingum.....	J. M. O'Neal, M. D.....	Zanesville.	Do.
Paulding.....	C. E. Huston, M. D.....	Paulding.	Do.
Perry.....	Stanley Runk, M. D.....	New Lexington.	Do.
Ross.....	G. E. Robbins, M. D.....	Chillicothe.	Do.
Sandusky.....	O. H. Thomas, M. D.....	Fremont.	Do.
Scioto.....	R. W. DeCrow, M. D.....	Sciotoville.	Do.
Seneca.....	H. L. S. Hinkley, M. D.....	Tiffin.	Do.
Shelby.....	Arlington Ailes, M. D.....	Sidney, courthouse.	Do.
Stark.....	C. M. Peters, M. D.....	Canton.	Do.
Summit.....	D. D. Shira, M. D.....	Akron, 144 Market Street.	Do.
Trumbull.....	L. A. Connell, M. D.....	Warren.	Do.
Tuscarawas.....	J. Bickensderfer, M. D.....	New Philadelphia.	Do.
Union.....	C. W. Hoopes, M. D.....	Marysville.	Do.
Washington.....	A. G. Sturgiss, M. D.....	Marietta.	Do.
Wayne.....	C. D. Barrett, M. D.....	Wooster.	Do.
Wood.....	H. J. Powell, M. D.....	Bowling Green.	Do.
Oklahoma:			
Ottawa.....	W. B. Smith, M. D.....	Miami.	Superintendent of health.
Oregon:			
Coos.....	Henry W. Irwin, M. D.....	Coquille.	County health officer.
South Carolina:			
Charleston.....	Leon Banov, M. D.....	Charleston.	Do.
Cherokee.....	Walter Boone, M. D.....	Gaffney.	Do.
Darlington.....	John James Post, M. D.....	Darlington.	Do.
Fairfield.....	R. G. Hamilton, M. D.....	Winnsboro.	Do.
Greenville.....	Bavlis Earle, M. D.....	Greenville.	Do.
Newberry.....	E. Paul Knotts, M. D.....	Newberry.	Do.
Orangeburg.....	G. C. Bolen, M. D.....	Orangeburg.	Do.
South Dakota:			
Brown.....	J. H. Swafford, M. D.....	Aberdeen.	Health officer.
Tennessee:			
Davidson.....	John J. Lentz, M. D.....	Nashville.	County health officer.
Gibson.....	E. A. Lane, M. D.....	Trenton.	Director county health unit.
Montgomery.....	H. C. Stewart, M. D.....	Clarksville.	Do.
Roane.....	J. C. Fly, M. D.....	Kingston.	Do.
Williamson.....	L. M. Graves, M. D.....	Franklin.	Do.
Texas:			
Cherokee.....	William Sorey, M. D.....	Jacksonville.	County health officer.
Dallam.....	L. L. Bartlett, M. D.....	Dalhart.	Do.
Dallas.....	William Hale, M. D.....	Dallas.	Do.
Hidalgo.....	H. Garst, M. D.....	Pharr.	Do.
Jefferson.....	J. D. Blevins, M. D.....	Beaumont.	Do.
Tarrant.....	F. P. Smith, M. D.....	Fort Worth.	Do.
Utah:			
Weber.....			
Vermont:*			
First.....	Warren J. Howard, M. D.....	St. Albans.	District health officer.
Second.....	William T. Slayton, M. D.....	Morrisville.	Do.
Third.....	Victor P. Genge, M. D.....	St. Johnsbury.	Do.
Fourth.....	Charles W. Many, M. D.....	Burlington.	Do.
Fifth.....	Clarence H. Burr, M. D.....	Montpelier.	Do.
Sixth.....	George F. Edmunds, M. D.....	Bristol.	Do.
Seventh.....	Bern D. Colby, M. D.....	Rutland.	Do.
Eighth.....	Charles W. Kidder, M. D.....	Woodstock.	Do.
Ninth.....	Henry W. Eliot, M. D.....	Manchester.	Do.
Tenth.....	Chester S. Leach, M. D.....	Brattleboro.	Do.
Virginia:			
Albemarle.....	W. S. Kelster, M. D.....	Charlottesville.	Health officer, joint health department.
Arlington.....	J. W. Cox, M. D.....	Clarendon.	Health officer.
Augusta.....	H. M. Wallace, M. D.....	Staunton.	Do.
Fairfax.....	W. P. Caton, M. D.....	Fairfax.	Do.
Halifax.....	Kolbe Curlice.	South Boston.	Do.
Nansemond and Suffolk.....	I. C. Ruggin, M. D.....	Suffolk.	Health officer, joint health department.
Norfolk.....	S. J. Taber, M. D., acting.	Portsmouth.	Health officer.
Russell.....	D. B. Lepper, C. P. H., M. D.	Lebanon.	Do.
Wise.....	W. R. Culbertson, M. D.....	Norton.	Do.
Washington:			
Chelan.....	E. L. Betts, M. D.....	Wenatchee.	County and city health officer.
King.....	Geo. H. T. Sparling, M. D.....	Seattle.	County health officer.
Spokane.....	T. C. Barnhart, M. D.....	Spokane.	Do.
Yakima.....	H. H. Smith, M. D.....	Yakima.	County and city health officer.
West Virginia:			
Logan.....	A. P. Goff, M. D.....	Logan.	County health officer.
Marion.....	L. N. Yost, M. D.....	Fairmont.	Do.
Mingo.....	R. J. Malott, M. D.....	Williamson.	Do.
Preston.....	H. S. Mustard, M. D.....	Kingwood.	Do.

* Districts.

SEWER CONNECTIONS BY MUNICIPALITY AT OWNER'S EXPENSE.

The facts in a recent case ¹ before the Supreme Court of New Jersey were as follows:

A board of health ordinance required property owners along the line of an existing sewer immediately to connect their several premises with the sewer, and upon failure to do so after receiving notice the connection was to be made by the local board of health at the expense of the property owner. The defendant did not connect his premises with the sewer, and an examination of his premises was made by some of the members of the board of health, who reported that a public nuisance existed. The board of health passed a resolution adopting the report and notified the defendant to abate the nuisance by connecting his premises with the sewer. The defendant failing to comply with the notice, the board of health made the connection and brought suit to recover the amount expended. The purpose of the suit, as stated in the complaint, was to recover the cost of abating a nuisance. The inspection of the defendant's premises and the adjudication by the board that a nuisance existed were had without notice to the defendant and without his being given an opportunity of being heard upon the question whether or not such nuisance existed.

The supreme court held that, in the instant case, under the issue raised by the pleadings, the board of health was entitled to recover only if a public nuisance in fact existed at the time the notice to abate was served and also held that the adjudication by the board that a nuisance existed was not conclusive, inasmuch as the defendant had not been notified of the proceeding and had been given no opportunity of being heard. The primary question of whether or not a nuisance existed at that particular time not having been submitted to the jury, because of the trial court's charge that the only question for the jury's determination was whether the defendant was notified by the board to connect his premises with the sewer and that, if he was so notified and failed to comply, the action of the board in making the connection was legally justified, the judgment in favor of the board was reversed.

PUBLIC HEALTH SERVICE PUBLICATIONS.

A List of Publications Issued Since October, 1922.

Below is given a list of publications of the United States Public Health Service issued since the last edition of "Publications of the United States Public Health Service" (Miscellaneous Publication No. 12) was printed.

The most important articles that appear each week in Public Health Reports are reprinted in pamphlet form, making possible a wider and more economical distribution of articles that are of interest to the general public.

All of the publications listed, except those marked with an asterisk (*), are available for free distribution and, as long as the supply lasts,

¹ Board of Health of Borough of Oaklyn v. Rulofson, 120 Atl. 328.

may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C. Those publications marked with an asterisk are not available for free distribution, but may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices noted. (Send no remittances to the Public Health Service.)

Annual Reports.

Annual Report of the Surgeon General of the Public Health Service for the Fiscal year 1922. 330 pages. Cloth.

Hygienic Laboratory Bulletins.

- 133. Studies on Various Intestinal Parasites (Especially Amebæ) of Man. By William C. Boeck and C. W. Stiles. (In press.)
- 134. I. A Study of the Alpha Type of Streptococcus from a Variety of Sources; by Alice C. Evans. II. The Influence of Complement upon the Tropins in Anti-streptococcus Serums; by Alice C. Evans. III. The Testing of Anti-streptococcic Serum by the Mouse Protection Method; by Ella M. A. Enlows. IV. Factors Influencing the Standardization of Anti-pneumococcic Serums; by Ella M. A. Enlows. (In press.)

Public Health Bulletins.

- 133. Transactions of the Third Annual Conference of State Sanitary Engineers.
- 134. The Campaign against Malnutrition. 1923. 37 pages.
- 135. Railroad Malaria Surveys, 1922. The Missouri Pacific Railroad. By A. W. Fuchs. (In press.)
- 136. Report of the Committee on Municipal Health Department Practice of the American Public Health Association. (In press.)
- 137. Transactions of Fourth Annual Conference of Malaria Field Workers. (In press.)

Reprints from the Public Health Reports.

- 796. Vaccination of Monkeys against Pneumococcus Type I Pneumonia by Means of Intratracheal Injection of Pneumococcus Type I Vaccine. By Russell L. Cecil and Gustav I. Steffen. November 3, 1922. 10 pages.
- 797. Sulpharsphenamine. Its Manufacture and Its Chemical and Chemotherapeutic Properties. By Carl Voegtlin, J. M. Johnson, and Helen Dyer. November 10, 1922. 16 pages.
- *798. Nutrition and Education. By E. Blanche Sterling. November 10, 1922. 10 pages. 5 cents.
- 799. Mortality from Pulmonary Tuberculosis in Recent Years. I. The Variation in Its Course During the War and Its Decline Since 1918. By Rollo H. Britten and Edgar Sydenstricker. November 17, 1922. 18 pages.
- 800. Ship Fumigation. Preliminary Report of the Board appointed by the Surgeon General to Investigate the Subject of Fumigation of Ships. November 3, 1922. 4 pages.
- 801. Malta Fever in Southwestern United States with Special Reference to a Recent Outbreak in Phoenix, Ariz. By G. C. Lake. November 24, 1922. 7 pages.
- 802. Report on a Survey of Public Health Administration in North Dakota. By Robert Olesen. December 8, 1922. 20 pages.
- 803. Some Publications Suitable for General Distribution. December 8, 1922. 8 pages.

- *804. **Disabling Sickness among Employees of a Rubber Manufacturing Establishment in 1918, 1919, and 1920.** Some Morbidity Statistics from the Department of Health of the B. F. Goodrich Co., Akron, Ohio. December 15, 1922. 12 pages. 5 cents.
- *805. **Specific Leprous Reactions and Abnormal Vaccinia Induced in Lepers by Smallpox Vaccination.** By Oswald E. Denney and Ralph Hopkins. December 22, 1922. 11 pages. 5 cents.
- 806. **Regulations Governing the Care of Lepers.** December 22, 1922. 6 pages.
- 807. **Incidence of Serious Morbidity among a Group of Wage Earners.** December 29, 1922. 16 pages.
- 808. **The Effect of Vaccinia on Leprosy.** By H. E. Hasseltine. January 5, 1923. 12 pages.
- 809. **Weight and Height as an Index of Nutrition.** By Taliaferro Clark, Edgar Sydenstricker, and Selwyn D. Collins. January 12, 1923. 22 pages.
- 810. **Fumigation of Vessels from Plague-infected Ports. Observations with Especial Reference to the Necessity for Fumigating Crates and Similar Cargo.** By B. B. Grubbs. January 12, 1923. 7 pages.
- 811. **Pasteur—An Appreciation.** An address made to the staff of the Hygienic Laboratory at the celebration of the one hundredth anniversary of the birth of Pasteur. By W. Mansfield Clark. January 19, 1923. 8 pages.
- 812. **Eight Years of Epidemic Poliomyelitis in Montana.** By John J. Sippy. January 26, 1923. 8 pages.
- 813. **An Experimental Study of the Relation of Hydrogen Ion Concentrations to the Formation of Flocc in Alum Solutions.** By Emery J. Theriault and W. Mansfield Clark. February 2, 1923. 20 pages.
- 814. **Some New Sulfonphthalein Indicators.** A preliminary note. By Barnett Cohen. February 2, 1923. 3 pages.
- 815. **The Malaria Problem of Southeast Missouri. I. General Discussion of the Locality; by K. F. Maxcy. II. A Study of Malaria Prevalence in the Sikeston Area; by M. V. Ziegler and K. F. Maxcy.** February 9, 1923. 20 pages.
- 816. **Health Scoring of School Children.** By Taliaferro Clark and Edith B. Lowry. February 16, 1923.
- 817. **Rocky Mountain Spotted Fever: Infectivity of Fasting and Recently Fed Ticks.** By R. R. Spencer and R. R. Parker. February 23, 1923.
- 818. **A Toxin-Producing Anaëroë Isolated Principally from Fly Larvæ: Its Relation to the Organisms hitherto Known to be Causative Factors in the Production of Botulism.** By Ida A. Bengtson. February 23, 1923. 23 pages.
- 819. **The Trachoma Problem in the State of Minnesota.** By Taliaferro Clark. March 2, 1923.
- 820. **A Preliminary Report on the Use of Creosote Oil as a Mosquito Repellent.** By C. P. Coogle. March 9, 1923.
- 821. **Changes in a Small Town Brought About by the Health Department.** By B. B. Bagby. March 9, 1923.
- 822. **Studies on the Bio-Assay of Pituitary Extracts: The Use of a Desiccated Infundibular Powder as a Standard in the Physiological Evaluation of Pituitary Extracts.** By Maurice I. Smith and Wm. T. McClosky. March 16, 1923. (In press.)
- 823. **Studies on Oxidation-Reduction. I. Introduction.** By W. Mansfield Clark. March 9, 1923. (In press.)
- 824. **A Report on the Indigent Migratory Consumptive in Certain Cities of the Southwest.** By Jessamine S. Whitney. March 23, 1923. (In press.)
- 825. **Schick Tests and Immunization against Diphtheria in the Eighth Sanitary District of Vermont.** By C. W. Kidder. March 30, 1923. (In press.)

826. Studies on Oxidation-Reduction. II. An Analysis of the Theoretical Relations between Reduction Potentials and pH. By W. Mansfield Clark and Barnett Cohen. March 30, 1923. (In press.)
827. Progress in Health Conservation During the Past Fifty Years. By George Martin Kober. April 6, 1923. (In press.)
828. Indicators for pH Control of Alum Dosage. By Barnett Cohen. April 6, 1923. (In press.)
829. Tuberculosis: Its Predisposing Causes. By F. C. Smith. April 13, 1923. (In press.)
830. Experimental Abortion in a Cow Produced by Inoculation with Bacterium Melitensis. By Alice C. Evans. April 20, 1923. (In press.)
831. Present Status of Sanitary Engineering: Suggestions for Objects and Aims of the Sanitary Engineering Division of the American Society of Civil Engineers. By Harrison P. Eddy. April 20, 1923. (In press.)

Supplements to the Public Health Reports.

43. State Laws and Regulations Pertaining to Public Health, 1920. (In press.)

Miscellaneous Publications.

29. Confidential Information for Patients of the United States Public Health Service. By M. J. White. (In press.)

DEATHS DURING WEEK ENDED MAY 5, 1923.

Summary of information received by telegraph from industrial insurance companies for week ended May 5, 1923, and corresponding week of 1922. (From the Weekly Health Index, May 8, 1923, issued by the Bureau of the Census, Department of Commerce.)

	Week ended May 5, 1923.	Corresponding week, 1922.
Policies in force.....	53,387,993	49,715,225
Number of death claims.....	11,040	9,418
Death claims per 1,000 policies in force, annual rate.....	10.8	9.9

Deaths from all causes in certain large cities of the United States during the week ended May 5, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, May 8, 1923, issued by the Bureau of the Census, Department of Commerce.)

City.	Week ended May 5, 1923.		Annual death rate per 1,000, corre- sponding week, 1922.	Deaths under 1 year.		Infant mortality rate, week ended May 5, 1923. ³
	Total deaths.	Death rate. ¹		Week ended May 5, 1923.	Corre- sponding week, 1922.	
Total.....	7,532	13.4	13.3	935	978	.....
Akron, Ohio.....	31	7.8	10.5	4	8	47
Albany, N. Y. ²	40	17.8	17.9	1	6	22
Atlanta, Ga.....	74	17.3	12.3	6	7	.....
Baltimore, Md. ²	210	14.2	14.3	21	20	62
Birmingham, Ala.....	60	16.0	13.1	6	3	.....
Boston, Mass.....	221	15.0	16.1	28	43	80
Bridgeport, Conn.....	33	12.0	12.7	5	5	69
Buffalo, N. Y.....	138	13.4	13.1	12	20	50
Cambridge, Mass.....	31	14.5	12.7	4	2	71

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1922. Cities left blank are not in the registration area for births.

³ Deaths for week ended Friday, May 4, 1923.

Deaths from all causes in certain large cities of the United States during the week ended May 5, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, May 8, 1923, issued by the Bureau of the Census, Department of Commerce).—Continued.

City.	Week ended May 5, 1923.		Annual death rate per 1,000, corre- sponding week, 1922.	Deaths under 1 year.		Infant mor- tality rate, week ended May 5, 1923.
	Total deaths.	Death rate.		Week ended May 5, 1923.	Corre- sponding week, 1922.	
Camden, N. J.	42	17.6	14.1	6	9	99
Chicago, Ill.	719	13.0	12.7	94	118	118
Cincinnati, Ohio.	125	16.0	14.9	8	10	53
Cleveland, Ohio.	187	11.0	10.1	27	40	74
Columbus, Ohio.	75	15.0	15.6	11	11	114
Dallas, Tex.	37	10.9	11.2	3	3	3
Dayton, Ohio.	52	16.4	11.9	3	5	49
Denver, Colo.	90	17.3	13.1	8	4	4
Des Moines, Iowa.	37	13.7	12.7	4	4	4
Detroit, Mich.	300	15.7	12.9	70	47	141
Duluth, Minn.	13	6.4	12.7	4	4	91
Erie, Pa.	18	8.3	8.6	3	3	61
Fall River, Mass.	27	11.6	18.6	8	6	114
Flint, Mich.	34	15.0	15.0	5	5	99
Fort Worth, Tex.	11	4.0	10.5	2	2	32
Grand Rapids, Mich.	37	13.2	12.3	2	7	77
Houston, Tex.	31	10.4	9.7	5	5	80
Indianapolis, Ind.	100	15.2	16.0	10	10	92
Jacksonville, Fla.	32	16.7	18.2	1	3	101
Jersey City, N. J.	66	11.1	12.1	12	6	97
Kansas City, Kans.	25	11.3	9.6	4	3	139
Kansas City, Mo.	84	12.4	17.1	13	16	79
Los Angeles, Calif.	210	16.4	15.9	27	20	119
Louisville, Ky.	68	13.8	13.6	9	11	49
Lowell, Mass.	44	19.9	16.0	8	6	78
Lynn, Mass.	23	11.7	17.1	3	7	75
Memphis, Tenn.	60	21.2	17.4	3	27	56
Milwaukee, Wis.	113	12.2	12.8	23	7	55
Minneapolis, Minn.	107	13.6	11.1	9	7	62
Nashville, Tenn.	46	19.8	14.7	4	7	78
New Bedford, Mass.	25	10.0	15.5	4	7	75
New Haven, Conn.	46	13.9	12.0	6	8	61
New Orleans, La.	133	17.1	16.2	18	18	61
New York, N. Y.	1,423	12.5	13.5	188	197	75
Bronx Borough.	151	9.4	9.5	13	15	46
Brooklyn Borough.	438	10.6	12.9	53	52	56
Manhattan Borough.	677	15.6	16.1	106	84	103
Queens Borough.	120	11.7	10.7	14	12	75
Richmond Borough.	37	15.1	12.6	2	4	36
Newark, N. J.	98	11.6	11.2	13	10	61
Norfolk, Va.	33	10.8	7.9	3	5	53
Oakland, Calif.	58	12.6	9.4	6	6	77
Omaha, Nebr.	54	13.8	14.8	5	8	54
Peterson, N. J.	33	12.3	10.2	5	1	80
Philadelphia, Pa.	536	14.5	13.4	51	49	66
Pittsburgh, Pa.	173	14.7	15.3	17	30	59
Portland, Oreg.	58	11.1	15.1	1	8	10
Providence, R. I.	71	15.3	13.6	8	8	65
Richmond, Va.	49	14.1	13.7	8	4	98
Rochester, N. Y.	98	16.1	12.6	7	10	55
St. Louis, Mo.	216	14.0	11.9	21	14	65
St. Paul, Minn.	50	10.8	12.0	7	2	49
Salt Lake City, Utah.	28	10.7	9.3	3	3	60
San Antonio, Tex.	45	12.7	14.6	11	11	35
San Francisco, Calif.	141	13.6	12.4	10	6	44
Seattle, Wash.	57	9.4	11.0	4	5	43
Spokane, Wash.	25	12.5	11.9	2	6	130
Springfield, Mass.	24	8.7	16.1	3	11	25
Syracuse, N. Y.	47	13.3	12.2	10	4	121
Tacoma, Wash.	22	11.3	13.3	1	6	68
Toledo, Ohio.	55	10.7	14.9	12	16	97
Trenton, N. J.	41	16.8	7.2	4	1	20
Washington, D. C.	122	14.5	13.6	17	10	57
Wilmington, Del.	20	8.9	13.8	1	3	65
Worcester, Mass.	44	12.0	12.6	5	7	54
Yonkers, N. Y.	15	7.3	12.6	3	4	54
Youngstown, Ohio.	34	13.4	12.6	4	7	54

*Deaths for week ended Friday, May 4, 1923.

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.

UNITED STATES.

CURRENT STATE SUMMARIES.

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

Reports for Week Ended May 12, 1923.

ALABAMA.		Cases.	CALIFORNIA.		Cases.
Chicken pox.....		93	Cerebrospinal meningitis:		
Dengue.....		5	Los Angeles.....		1
Diphtheria.....		12	Oakland.....		1
Dysentery.....		37	Sacramento.....		1
Influenza.....		169	Diphtheria.....		138
Lethargic encephalitis.....		1	Influenza.....		62
Malaria.....		150	Leprosy—San Francisco.....		1
Measles.....	1,769		Lethargic encephalitis—San Francisco.....		1
Mumps.....		6	Measles.....		1,297
Pellagra.....		24	Scarlet fever.....		159
Pneumonia.....		82	Smallpox.....		15
Scarlet fever.....		8	Typhoid fever.....		19
Smallpox.....		28			
Tuberculosis.....		57			
Typhoid fever.....		24			
Whooping cough.....		140			
ARIZONA.			COLORADO.		
Chicken pox.....		1	(Exclusive of Denver.)		
Diphtheria.....		2	Chicken pox.....		10
Measles—Gila County.....		67	Diphtheria.....		6
Scarlet fever.....		16	Measles.....		26
Tuberculosis.....		3	Mumps.....		10
			Ophthalmia neonatorum.....		1
			Pneumonia.....		4
			Scarlet fever.....		13
			Tuberculosis.....		21
			Typhoid fever.....		2
			Whooping cough.....		14
ARKANSAS.			CONNECTICUT.		
Cerebrospinal meningitis.....		2	Cerebrospinal meningitis.....		3
Chicken pox.....		38	Chicken pox.....		43
Diphtheria.....		3	Conjunctivitis.....		15
Influenza.....		63	Diphtheria.....		54
Malaria.....		41	German measles.....		12
Measles.....		343	Influenza.....		2
Mumps.....		18	Measles.....		218
Pellagra.....		5	Mumps.....		19
Scarlet fever.....		3	Pneumonia (lobar).....		26
Smallpox.....		5	Scarlet fever.....		68
Trachoma.....		2	Septic sore throat.....		1
Tuberculosis.....		12	Tuberculosis (all forms).....		53
Typhoid fever.....		6	Typhoid fever.....		3
Whooping cough.....		17	Whooping cough.....		41

DELAWARE.		Cases.	INDIANA—continued.		Cases.
Chicken pox.....	4		Diphtheria.....	46	
Diphtheria.....	4		Measles.....	1,433	
Measles.....	16		Pneumonia.....	8	
Mumps.....	1		Poliomyelitis—Greene County.....	1	
Pneumonia.....	2		Rabies in animals—Hendricks County.....	1	
Scarlet fever.....	8		Scarlet fever.....	70	
Tuberculosis.....	4		Smallpox.....	64	
Whooping cough.....	3		Typhoid fever.....	2	
FLORIDA.			IOWA.		
Dengue.....	1		Diphtheria.....	17	
Diphtheria.....	6		Scarlet fever.....	74	
Influenza.....	62		Smallpox.....	35	
Lethargic encephalitis.....	1		KANSAS.		
Malaria.....	7		Chicken pox.....	40	
Pneumonia.....	75		Diphtheria.....	22	
Poliomyelitis.....	1		German measles.....	1	
Scarlet fever.....	1		Influenza.....	1	
Smallpox.....	2		Measles.....	733	
Trachoma.....	1		Mumps.....	60	
Typhoid fever.....	19		Pneumonia.....	18	
GEORGIA.			Scarlet fever.....	32	
Chicken pox.....	4		Smallpox.....	8	
Conjunctivitis.....	1		Tetanus.....	2	
Diphtheria.....	6		Tuberculosis.....	19	
Dysentery (amebic).....	3		Typhoid fever.....	5	
Dysentery (bacillary).....	5		Whooping cough.....	43	
German measles.....	3		LOUISIANA.		
Hookworm disease.....	14		Diphtheria.....	12	
Influenza.....	18		Influenza.....	16	
Malaria.....	18		Scarlet fever.....	6	
Measles.....	243		Smallpox.....	24	
Mumps.....	14		Typhoid fever.....	6	
Pneumonia.....	23		Whooping cough.....	20	
Scarlet fever.....	4		MAINE.		
Septic sore throat.....	6		Cerebrospinal meningitis.....	1	
Smallpox.....	9		Chicken pox.....	9	
Trachoma.....	2		Conjunctivitis (infectious).....	5	
Tuberculosis (pulmonary).....	11		Diphtheria.....	5	
Typhoid fever.....	4		German measles.....	2	
Whooping cough.....	15		Influenza.....	1	
ILLINOIS.			Measles.....	36	
Cerebrospinal meningitis—Chicago.....	1		Pneumonia.....	2	
Diphtheria:			Poliomyelitis.....	2	
Cook County (including Chicago).....	121		Scarlet fever.....	7	
Chicago.....	111		Smallpox.....	7	
Scattering.....	34		Tetanus.....	1	
Influenza.....	28		Tuberculosis.....	7	
Lethargic encephalitis—Chicago.....	1		Vincent's angina.....	2	
Pneumonia.....	394		Whooping cough.....	8	
Poliomyelitis—Tazewell County.....	1		MARYLAND. ¹		
Scarlet fever:			Chicken pox.....	60	
Cook County (including Chicago).....	76		Diphtheria.....	26	
Chicago.....	61		German measles.....	6	
Scattering.....	90		Influenza.....	23	
Smallpox.....	11		Lethargic encephalitis.....	2	
Typhoid fever.....	14		Malaria.....	6	
Whooping cough.....	209		Measles.....	943	
INDIANA.			Mumps.....	82	
Cerebrospinal meningitis:			Paratyphoid fever.....	1	
Clinton.....	1		Pneumonia (all forms).....	103	
Monroe.....	1		Scarlet fever.....	142	
Washington.....	1				

¹ Week ended Friday.

MARYLAND—continued.

	Cases.
Septic sore throat.....	1
Tuberculosis.....	65
Typhoid fever.....	8
Whooping cough.....	135

MASSACHUSETTS.

Actinomycosis.....	1
Anthrax.....	1
Cerebrospinal meningitis.....	3
Chicken pox.....	132
Conjunctivitis (suppurative).....	11
Diphtheria.....	138
German measles.....	21
Influenza.....	14
Lethargic encephalitis.....	2
Measles.....	1,159
Mumps.....	237
Ophthalmia neonatorum.....	14
Pneumonia (lobar).....	76
Scarlet fever.....	315
Septic sore throat.....	2
Trachoma.....	2
Tuberculosis (all forms).....	185
Typhoid fever.....	7
Whooping cough.....	296

MICHIGAN.

Diphtheria.....	75
Measles.....	1,904
Pneumonia.....	207
Scarlet fever.....	285
Smallpox.....	24
Tuberculosis.....	319
Typhoid fever.....	2
Whooping cough.....	175

MINNESOTA.

Cerebrospinal meningitis.....	3
Chicken pox.....	3
Diphtheria.....	43
Influenza.....	2
Measles.....	967
Pneumonia.....	5
Scarlet fever.....	139
Smallpox.....	35
Trachoma.....	1
Tuberculosis.....	71
Typhoid fever.....	3
Whooping cough.....	30

MISSISSIPPI.

Diphtheria.....	7
Influenza.....	102
Scarlet fever.....	4
Smallpox.....	1
Typhoid fever.....	3

MISSOURI.

Cerebrospinal meningitis.....	2
Chicken pox.....	56
Diphtheria.....	51
Influenza.....	25
Measles.....	1,630
Mumps.....	40
Pneumonia.....	3
Poliomyelitis.....	3

MISSOURI—continued.

	Cases.
Scarlet fever.....	57
Smallpox.....	8
Trachoma.....	10
Tuberculosis.....	54
Typhoid fever.....	3
Whooping cough.....	122

MONTANA.

Diphtheria.....	11
Rocky Mountain spotted fever:	
Bridger.....	1
Florence.....	1
Hysham.....	1
Jordan.....	1
Smallpox.....	21
Typhoid fever.....	3

NEBRASKA.

Chicken pox.....	8
Diphtheria.....	10
Measles.....	54
Mumps.....	29
Scarlet fever.....	24
Septic sore throat.....	1
Smallpox.....	7
Tuberculosis.....	2
Whooping cough.....	13

NEW JERSEY.

Cerebrospinal meningitis.....	2
Chicken pox.....	175
Diphtheria.....	101
Influenza.....	27
Malaria.....	1
Measles.....	1,059
Pneumonia.....	105
Poliomyelitis.....	1
Scarlet fever.....	171
Trachoma.....	3
Typhoid fever.....	4
Whooping cough.....	124

NEW MEXICO.

Chicken pox.....	10
Diphtheria.....	18
Influenza.....	1
Measles.....	25
Mumps.....	6
Pneumonia.....	3
Scarlet fever.....	5
Smallpox.....	9
Tuberculosis.....	11
Whooping cough.....	8

NEW YORK.

(Exclusive of New York City.)

Cerebrospinal meningitis.....	2
Diphtheria.....	101
Influenza.....	18
Lethargic encephalitis.....	1
Measles.....	2,399
Pneumonia.....	233
Scarlet fever.....	259
Smallpox.....	5
Typhoid fever.....	20
Whooping cough.....	270

NORTH CAROLINA.		Cases.	VERMONT.		Cases.
Chicken pox.....		68	Chicken pox.....		14
Diphtheria.....		19	Diphtheria.....		4
German measles.....		3	Measles.....		271
Measles.....	2,545		Mumps.....		24
Ophthalmia neonatorum.....		1	Pneumonia.....		1
Scarlet fever.....		11	Scarlet fever.....		16
Smallpox.....		82	Typhoid fever.....		1
Typhoid fever.....		9	Whooping cough.....		56
Whooping cough.....		462			
OREGON.			VIRGINIA.		
Cerebrospinal meningitis:			Smallpox:		
Clackamas County.....		1	Henrico County.....		1
Chicken pox.....		19			
Diphtheria.....		10	WASHINGTON.		
Measles.....		2	Chicken pox.....		77
Mumps.....		6	Diphtheria.....		10
Pneumonia.....	17		Measles:		
Scarlet fever.....		11	Ellensburg.....		38
Smallpox:			Scattering.....		29
Portland.....		15	Mumps.....		23
Scattering.....		3	Scarlet fever:		
Tuberculosis.....		6	Spokane.....		11
Typhoid fever.....		2	Scattering.....		18
Whooping cough.....		15	Smallpox:		
SOUTH DAKOTA.			Spokane.....		9
Cerebrospinal meningitis.....		1	Scattering.....		30
Chicken pox.....		5	Tuberculosis.....		188
Diphtheria.....		6	Typhoid fever.....		10
Measles.....		44	Whooping cough.....		184
Mumps.....		4			
Pneumonia.....		7	WISCONSIN.		
Scarlet fever.....		25	Milwaukee:		
Smallpox.....		3	Chicken pox.....		15
Tuberculosis.....		2	Diphtheria.....		15
TEXAS.			Measles.....		19
Cerebrospinal meningitis.....		1	Pneumonia.....		5
Chicken pox.....		91	Scarlet fever.....		162
Diphtheria.....		20	Smallpox.....		1
Dysentery.....		2	Tuberculosis.....		17
Influenza.....		87	Typhoid fever.....		1
Measles.....		73	Whooping cough.....		26
Mumps.....		21	Scattering:		
Pellagra.....		6	Chicken pox.....		54
Pneumonia.....		20	Diphtheria.....		34
Scarlet fever.....		11	Influenza.....		31
Smallpox.....		41	Measles.....		1,189
Typhoid fever.....		3	Pneumonia.....		28
Tuberculosis.....		88	Poliomyelitis.....		1
Whooping cough.....		97	Scarlet fever.....		211
			Smallpox.....		42
			Tuberculosis.....		26
			Typhoid fever.....		23
			Whooping cough.....		80

Reports for Week Ended May 5, 1923.

DISTRICT OF COLUMBIA.		Cases.	NORTH DAKOTA—continued.		Cases.
Chicken pox.....		24	German measles.....		2
Diphtheria.....		7	Measles.....		72
Influenza.....		5	Pneumonia.....		3
Measles.....		549	Poliomyelitis.....		2
Scarlet fever.....		39	Scarlet fever.....		20
Tuberculosis.....		31	Smallpox.....		1
Typhoid fever.....		1			
Whooping cough.....		41	WYOMING.		
NORTH DAKOTA.			Chicken pox.....		1
Chicken pox.....		3	Measles.....		6
Diphtheria.....		1	Mumps.....		1

1 Deaths.

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Polioomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
<i>February, 1923.</i>										
Pennsylvania.....	14	1,355			20,943		2	1,491	1	103
<i>March, 1923.</i>										
Ohio.....	10	732	548		7,817		2	1,731	161	44
<i>April, 1923.</i>										
Arkansas.....	2	14	607	119	791	17		9	17	7
Connecticut.....	5	178	49		993			291	11	7
Florida.....	2	25	25	28	276	2		10	13	61
Louisiana.....	4	50	300	48	49	8	1	20	132	47
Massachusetts.....	11	609	79	5	3,866		6	1,421		41
Nebraska.....		54	28		172		2	139	4	4
Vermont.....		8			240			69	8	5

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923.

ANTHRAX.

City.	Cases.	Deaths.
California:		
Eureka.....	1	

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 28, 1923.		City.	Median for previous years.	Week ended Apr. 28, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				New York—Continued.			
San Bernardino.....	0		1	Rochester.....	0		1
San Francisco.....	1	1	1	Yonkers.....	0	1	1
Connecticut:				North Carolina:			
Bridgeport.....	0		1	Durham.....	6		2
Illinois:				Greensboro.....	0		1
Chicago.....	3	1		Ohio:			
Rockford.....	0		1	Ashtabula.....	0		1
Louisiana:				East Cleveland.....		1	
New Orleans.....	0	1	1	Lorain.....	0	1	
Massachusetts:				Rhode Island:			
Boston.....	1	1	2	Providence.....	0		1
Malden.....	0		1	Tennessee:			
New Bedford.....	0	1	1	Memphis.....	0	1	
Michigan:				Nashville.....	0		1
Flint.....	0	1	1	Texas:			
Highland Park.....	0	1	1	El Paso.....	0		1
Minnesota:				San Antonio.....	2		1
Duluth.....	0	1	1	Waco.....	0	1	
New Jersey:				West Virginia:			
East Orange.....	0	1	1	Huntington.....	0		1
Newark.....	0	2		Wisconsin:			
New York:				Wausau.....	0	1	
New York.....	5	6	1				

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

DIPHTHERIA.

See p. 1100; also Current State summaries, p. 1090, and Monthly summaries by States, p. 1094.

INFLUENZA.

City.	Cases.		Deaths, week ended Apr. 28, 1923.	City.	Cases.		Deaths, week ended Apr. 28, 1923.
	Week ended Apr. 29, 1922.	Week ended Apr. 28, 1923.			Week ended Apr. 29, 1922.	Week ended Apr. 28, 1923.	
Alabama:				Michigan:			
Anniston.....		1	.....	Detroit.....	3	7	2
Birmingham.....		5	.....	Highland Park.....		1	.....
Dothan.....		4	.....	Kalamazoo.....			1
Mobile.....		1	2	Pontiac.....		1	.....
California:				Minnesota:			
Long Beach.....	1		.....	Minneapolis.....			3
Los Angeles.....	10	14	2	St. Paul.....			1
Oakland.....		1	.....	Missouri:			
San Diego.....	1		.....	Kansas City.....	4	11	10
San Francisco.....	1	3	1	Nevada:			
Santa Ana.....	6		.....	Reno.....		2	.....
Connecticut:				New Jersey:			
Bridgeport.....	2	1	.....	Kearny.....	3		.....
Manchester.....	1		.....	Newark.....	8	5	1
Meriden.....	2	1	.....	Paterson.....		5	.....
New Haven.....			1	New York:			
Waterbury.....	2		.....	Albany.....	2		.....
District of Columbia:				Auburn.....	1		.....
Washington.....	3	2	.....	Lackawanna.....	1		.....
Florida:				Middletown.....		1	.....
St. Petersburg.....		1	.....	New York.....	29	54	14
Tampa.....	1		.....	Niagara Falls.....		1	.....
Georgia:				Rochester.....	22		.....
Atlanta.....	2		2	Saratoga Springs.....			1
Augusta.....	2		.....	Syracuse.....	2		.....
Rome.....		2	.....	Ohio:			
Savannah.....		4	.....	Akron.....	1	1	.....
Illinois:				Cincinnati.....			8
Chicago.....	22	21	11	Cleveland.....	2	6	3
Cicero.....	1		.....	Columbus.....			1
Danville.....		2	1	Findlay.....		1	.....
Quincy.....	2		.....	Hamilton.....			1
Rockford.....			2	Toledo.....			2
Springfield.....		1	1	Youngstown.....	2		2
Indiana:				Oklahoma:			
Frankfort.....			1	Oklahoma.....			1
Kansas:				Pennsylvania:			
Coffeyville.....	1		.....	Philadelphia.....	2	13	9
Lawrence.....		2	.....	Rhode Island:			
Wichita.....			1	Providence.....	1		.....
Kentucky:				Tennessee:			
Covington.....		1	.....	Memphis.....			4
Louisville.....	1	6	.....	Nashville.....			1
Louisiana:				Texas:			
Baton Rouge.....	5		.....	Dallas.....	1		2
New Orleans.....	1	8	5	El Paso.....			4
Maine:				Fort Worth.....		3	3
Lewiston.....		1	.....	San Antonio.....			2
Portland.....			1	Utah:			
Maryland:				Provo.....	4		.....
Baltimore.....	12	11	1	Virginia:			
Cumberland.....	2		.....	Norfolk.....		1	.....
Massachusetts:				Roanoke.....			2
Boston.....	6	1	3	West Virginia:			
Cambridge.....	2		.....	Huntington.....			1
Everett.....		1	.....	Wisconsin:			
Fall River.....	1	1	1	La Crosse.....	3		.....
Haverhill.....		1	1	Madison.....	1		.....
Lowell.....		1	1	Milwaukee.....	1	1	.....
Lynn.....			1				
Malden.....		1	.....			
Newton.....	1		.....			
Saugus.....	1		.....			

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

LETHARGIC ENCEPHALITIS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
California:			Nebraska:		
San Francisco.....		1	Omaha.....		1
Connecticut:			Wisconsin:		
New Haven.....	1		Eau Claire.....	1	

MALARIA.

Alabama:			Louisiana:		
Dodman.....	1		New Orleans.....	1	
Arkansas:			Massachusetts:		
Little Rock.....	4		Boston.....	1	
North Little Rock.....	1		New York:		
Georgia:			New York.....	1	
Brunswick.....	1		Tennessee:		
Macon.....	2		Memphis.....	14	
Savannah.....		1	Texas:		
Kentucky:			Dallas.....		2
Louisville.....		1	Virginia:		
			Richmond.....	2	

MEASLES.

See p. 1100; also Current State summaries, p. 1090, and Monthly summaries by States, p. 1094.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama:			Tennessee:		
Montgomery.....		1	Memphis.....	1	1
Georgia:			Nashville.....		1
Atlanta.....		1	Texas:		
Brunswick.....	1	1	San Antonio.....		1
Louisiana:					
New Orleans.....	1	1			

PNEUMONIA (ALL FORMS).

Alabama:			Georgia:		
Anniston.....	5		Atlanta.....		12
Birmingham.....		10	Brunswick.....		2
Dodman.....	1		Rome.....	4	
Mobile.....		2	Savannah.....		1
Montgomery.....		5	Illinois:		
Arkansas:			Alton.....	1	
Little Rock.....	3		Aurora.....	1	
California:			Bloomington.....		1
Eureka.....	1		Champaign.....	2	
Glendale.....		1	Chicago.....	362	99
Long Beach.....		2	Cicero.....	2	
Los Angeles.....	12	9	Danville.....	4	2
Oakland.....		6	East St. Louis.....		2
Pasadena.....	1		Elgin.....	5	2
Sacramento.....	2	1	Evanston.....	3	
San Bernardino.....	3	3	Forest Park.....	3	
San Diego.....	5	4	Freeport.....		1
San Francisco.....	9	5	Galesburg.....		2
Santa Ana.....		1	Jacksonville.....		3
Colorado:			Kewanee.....	5	2
Denver.....		13	La Salle.....	2	
Pueblo.....		4	Oak Park.....	6	
Connecticut:			Peoria.....		5
Bridgeport.....		6	Quincy.....	3	
Hartford.....		4	Rockford.....		2
Meriden.....	2		Springfield.....	3	1
Milford.....	2		Indiana:		
New Haven.....	8	7	East Chicago.....		2
District of Columbia:			Fort Wayne.....		4
Washington.....		27	Gary.....		6
Florida:			Hammond.....		1
St. Petersburg.....	1		Indianapolis.....		11
Tampa.....		1	Kokomo.....		1

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Indiana—Continued.			Missouri:		
Laporte.....		2	Kansas City.....	24	18
Logansport.....		1	St. Joseph.....		1
Michigan City.....		1	Montana:		
Muncie.....		1	Great Falls.....		1
South Bend.....		2	Missoula.....		1
Iowa:			Nebraska:		
Sioux City.....	1		Lincoln.....	6	
Kansas:			Omaha.....		6
Kansas City.....	3		New Hampshire:		
Lawrence.....		1	Concord.....		1
Topeka.....		2	Keene.....		1
Wichita.....		2	Manchester.....		1
Kentucky:			Nashua.....		3
Covington.....		2	New Jersey:		
Lexington.....		1	Atlantic City.....		1
Louisville.....		13	Bloomfield.....	1	
Louisiana:			Clifton.....	1	
New Orleans.....	16	13	Elizabeth.....		1
Maine:			Englewood.....	2	
Bangor.....	2	1	Garfield.....	3	2
Bath.....		1	Hackensack.....		1
Lewiston.....	1		Harrison.....	1	
Portland.....	1		Hoboken.....		2
Sanford.....		4	Jersey City.....	2	
Maryland:			Kearny.....		1
Baltimore.....	76	24	Long Branch.....		1
Cumberland.....		2	Montclair.....	3	2
Frederick.....	1		Morristown.....		2
Massachusetts:			Newark.....	51	15
Amesbury.....		1	Orange.....	2	
Belmont.....	3	2	Passaic.....		3
Beverly.....	1		Paterson.....	6	
Boston.....	27	23	Perth Amboy.....		1
Brockton.....		3	Phillipsburg.....		1
Cambridge.....		6	Plainfield.....	6	1
Chelsea.....	3	2	Rahway.....		2
Chicopee.....		1	Summit.....	2	1
Clinton.....		1	Trenton.....		5
Easthampton.....	2	1	West Hoboken.....		1
Everett.....		1	West New York.....		1
Fall River.....		2	New Mexico:		
Gardner.....		1	Albuquerque.....		3
Haverhill.....	3		New York:		
Lawrence.....	2		Albany.....	11	
Lowell.....		11	Amsterdam.....	1	
Lynn.....	3		Auburn.....	1	
Malden.....		1	Buffalo.....	35	17
Medford.....		1	Cohoes.....		1
Melrose.....	1		Dunkirk.....	3	1
New Bedford.....		8	Hornell.....	1	
Newton.....	3	2	Hudson.....		1
North Adams.....		2	Ithaca.....		1
Pittsfield.....		3	Jamestown.....		1
Quincy.....	3	2	Lackawanna.....	1	
Salem.....	1		Middletown.....	2	
Somerville.....	2	1	Mount Vernon.....	2	1
Springfield.....		3	New York.....	305	191
Worcester.....		4	Niagara Falls.....	3	
Michigan:			Ogdensburg.....		1
Alpena.....	2	1	Peckskill.....	2	1
Ann Arbor.....		3	Port Chester.....	2	
Battle Creek.....	1		Poughkeepsie.....		2
Benton Harbor.....	1		Rochester.....	30	7
Detroit.....	132	57	Rome.....	1	
Flint.....	6	3	Schenectady.....	6	3
Grand Rapids.....	11	4	Syracuse.....	8	4
Hamtramck.....	4	1	Troy.....	7	3
Highland Park.....	8	2	Watertown.....	3	1
Jackson.....	3		White Plains.....	2	
Kalamazoo.....		2	Yonkers.....		2
Muskegon.....	3	1	North Carolina:		
Pontiac.....		3	Durham.....		1
Port Huron.....		1	Greensboro.....		2
Sault Ste. Marie.....	1		Raleigh.....		2
Minnesota:			Rocky Mount.....		1
Duluth.....		4	Wilmington.....		2
Hibbing.....		2	Winston-Salem.....		5
Minneapolis.....		8	Ohio:		
St. Paul.....		12	Akron.....	4	
Winona.....		1	Ashtabula.....		1

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Ohio—Continued.			Tennessee:		
Barberton.....		1	Chattanooga.....	6	
Cambridge.....		3	Memphis.....		12
Chillicothe.....		3	Nashville.....		14
Cincinnati.....		13	Texas:		
Cleveland.....	44	30	Beaumont.....		1
Cleveland Heights.....	1		Dallas.....		2
Columbus.....		3	El Paso.....		4
Dayton.....	1		Fort Worth.....		3
East Cleveland.....	3		Houston.....		5
Findlay.....	1		San Antonio.....		4
Hamilton.....		3	Utah:		
Lancaster.....		1	Provo.....	2	
Lima.....		1	Salt Lake City.....		3
Lorain.....		1	Vermont:		
Mansfield.....	4	1	Burlington.....		1
Marion.....	1		Rutland.....		1
Middletown.....	3	1	Virginia:		
Newark.....		2	Alexandria.....	1	
Piqua.....	3	2	Norfolk.....		3
Salem.....		2	Petersburg.....		2
Springfield.....		2	Portsmouth.....		2
Toledo.....		2	Richmond.....		6
Youngstown.....	4	4	Roanoke.....		5
Zanesville.....		2	West Virginia:		
Oklahoma:			Charleston.....		5
Oklahoma.....		1	Huntington.....		5
Oregon:			Parkersburg.....		2
Portland.....		7	Wheeling.....		4
Pennsylvania:			Wisconsin:		
Philadelphia.....	103	63	Ashland.....		2
Rhode Island:			Beloit.....	4	2
Cranston.....		3	Eau Claire.....	3	
Pawtucket.....		2	Kenosha.....		1
Providence.....		7	Madison.....		1
Woonsocket.....		1	Milwaukee.....		16
South Carolina:			Oshkosh.....		3
Charleston.....		2	Sheboygan.....		1
Columbia.....		3	Superior.....		1

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 28, 1923.	
		Cases.	Deaths.
Louisiana:			
New Orleans.....	0	1	
Massachusetts:			
Boston.....	0	2	
New Bedford.....	0	1	
West Virginia:			
Wheeling.....	0		1

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:		Missouri:	
Los Angeles.....	15	Kansas City.....	4
Pasadena.....	2	New Jersey:	
Georgia:		Orange.....	1
Savannah.....	1	West Orange.....	2
Massachusetts:		Texas:	
Medford.....	1	Dallas.....	1
Methuen.....	2		
Quincy.....	1		

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923.—Continued.

SCARLET FEVER.

See p. 1100; also Current State summaries, p. 1090, and Monthly summaries by States, p. 1094.

SMALLPOX.

The column headed "Median for previous years" gives the median numbers of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for pre- vious years.	Week ended Apr. 28, 1923.		City.	Median for pre- vious years.	Week ended Apr. 28, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				North Carolina—Contd.			
Anniston.....	0	3	.....	Wilmington.....	0	3	.....
Birmingham.....	1	1	.....	Winston-Salem.....	3	20	.....
California:				Ohio:			
Oakland.....	1	2	.....	Canton.....	2	1	.....
Santa Cruz.....	0	1	.....	Columbus.....	0	1	.....
Connecticut:				Dayton.....	2	3	.....
Fairfield.....	0	1	.....	Lancaster.....	0	1	.....
District of Columbia:				Middletown.....	0	3	.....
Washington.....	0	1	.....	Sandusky.....	0	4	.....
Georgia:				Toledo.....	3	21	.....
Atlanta.....	13	1	.....	Oklahoma:			
Savannah.....	0	3	.....	Oklahoma.....	3	6	.....
Vaidosta.....	1	2	.....	Tulsa.....	1	2	.....
Illinois:				Oregon:			
Peoria.....	1	1	.....	Portland.....	3	11	.....
Indiana:				Pennsylvania:			
Anderson.....	0	9	.....	Sharon.....	0	1	.....
Fort Wayne.....	3	4	.....	Tennessee:			
Gary.....	3	8	.....	Chattanooga.....	2	6	.....
Huntington.....	0	25	.....	Knoxville.....	1	41	.....
Logansport.....	0	1	.....	Memphis.....	4	2	.....
Iowa:				Texas:			
Burlington.....	0	1	.....	Beaumont.....	0	1	.....
Council Bluffs.....	5	1	.....	El Paso.....	1	1	.....
Davenport.....	6	21	.....	Fort Worth.....	2	6	.....
Sioux City.....	8	1	.....	Utah:			
Kansas:				Salt Lake City.....	5	.....	1
Hutchinson.....	3	1	.....	Vermont:			
Kansas City.....	5	1	.....	Burlington.....	0	1	.....
Topeka.....	3	1	.....	Virginia:			
Maine:				Roanoke.....	1	3	.....
Auburn.....	0	2	.....	Washington:			
Biddeford.....	.....	3	.....	Seattle.....	9	6	.....
Lewiston.....	.....	1	.....	Spokane.....	6	3	.....
Portland.....	0	1	.....	West Virginia:			
Michigan:				Huntington.....	0	1	.....
Detroit.....	10	1	.....	Wisconsin:			
Grand Rapids.....	0	2	.....	Beloit.....	0	1	.....
Jackson.....	0	1	.....	Eau Claire.....	0	3	.....
Sault Ste. Marie.....	0	1	.....	Kenosha.....	0	11	.....
Minnesota:				Milwaukee.....	2	2	.....
St. Paul.....	6	9	.....	Oshkosh.....	3	2	.....
Montana:				Racine.....	0	1	.....
Great Falls.....	3	7	.....	Stevens Point.....	.....	1	.....
North Carolina:				Superior.....	1	4	.....
Greensboro.....	0	5	.....			
Raleigh.....	0	2	.....			

TETANUS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama:			New York:		
Birmingham.....	1	1	Syracuse.....	1	.....
Montgomery.....	.....	1	Watertown.....	2	1
California:			Oklahoma:		
Los Angeles.....	1	1	Oklahoma.....	.....	1
Colorado:			Texas:		
Denver.....	.....	1	San Antonio.....	.....	1
Massachusetts:			Virginia:		
Boston.....	1	1	Portsmouth.....	.....	1
Michigan:					
Detroit.....	.....	1			

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

TUBERCULOSIS.

See p. 1100; also Current State summaries, p. 1090.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 28, 1923.		City.	Median for previous years.	Week ended Apr. 28, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Missouri:			
Birmingham.....	1	2	.....	Kansas City.....	1	2	1
Tuscaloosa.....	0	1	.....	St. Louis.....	4	1	.....
California:				New Jersey:			
Los Angeles.....	3	4	1	Rahway.....	0	1	.....
Pasadena.....	0	1	.....	Trenton.....	0	1	.....
San Francisco.....	1	.....	1	New York:			
Colorado:				Buffalo.....	1	.....	1
Pueblo.....	1	2	.....	New York.....	12	10	3
Connecticut:				Newburgh.....	0	1	.....
Bridgeport.....	0	1	1	Syracuse.....	0	1	.....
Florida:				Ohio:			
St. Petersburg.....	.....	1	.....	Akron.....	0	10	.....
Georgia:				Bellaire.....	0	.....	1
Atlanta.....	0	1	.....	Cincinnati.....	1	1	.....
Valdosta.....	0	1	.....	Coshocton.....	0	1	.....
Illinois:				Lorain.....	0	1	.....
Chicago.....	3	2	1	Mansfield.....	0	1	.....
Indiana:				Steubenville.....	0	1	.....
South Bend.....	0	1	.....	Zanesville.....	0	1	.....
Kentucky:				Pennsylvania:			
Covington.....	0	6	.....	Allentown.....	0	2	.....
Louisiana:				Beaver Falls.....	0	1	.....
New Orleans.....	3	3	3	Canonsburg.....	1	1	.....
Maryland:				Cotterville.....	0	1	.....
Baltimore.....	5	2	1	Philadelphia.....	5	4	.....
Frederick.....	0	1	.....	Steelton.....	0	1	.....
Massachusetts:				Tennessee:			
Boston.....	2	1	.....	Knoxville.....	0	2	1
Brookline.....	0	1	.....	Virginia:			
Cambridge.....	0	1	.....	Lynchburg.....	0	1	.....
Chelsea.....	0	3	.....	Norfolk.....	0	1	.....
Fall River.....	1	1	.....	Petersburg.....	0	.....	1
Lawrence.....	1	.....	1	Portsmouth.....	0	3	.....
Malden.....	0	1	.....	Richmond.....	0	1	.....
Michigan:				Wisconsin:			
Detroit.....	3	4	2	Appleton.....	0	1	.....
Highland Park.....	0	1	.....	Milwaukee.....	1	.....	1
Muskegon.....	0	2	.....	Racine.....	0	1	.....
Minnesota:							
Minneapolis.....	1	1	.....			
Rochester.....	0	1	.....			
St. Paul.....	0	2	.....			

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria		Measles		Scarlet fever		Tuberculosis	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Anniston.....	17,734	.....	.....	.....	20	.....	.....	.....	.....	.....
Birmingham.....	178,806	79	3	.....	196	2	2	.....	4	7
Dothan.....	10,094	2	.....	.....	3	.....	.....	.....	.....	.....
Mobile.....	60,777	18	2	.....	2	.....	1	.....	1	1
Montgomery.....	43,464	16	.....	.....	316	.....	1	.....	1	.....
Tuscaloosa.....	11,996	.....	.....	.....	21	.....	.....	.....	.....	.....
Arkansas:										
Fort Smith.....	28,870	.....	.....	.....	4	.....	.....	.....	.....	.....
Little Rock.....	65,142	.....	.....	.....	112	.....	.....	.....	7	.....
North Little Rock.....	14,048	.....	.....	.....	39	.....	.....	.....	.....	.....

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
California:										
Alameda.....	28,806	5			18		1			
Bakersfield.....	18,638	9	1		1					2
Eureka.....	12,923	2					3		4	
Glendale.....	13,536	10								2
Long Beach.....	55,593	26			17		1			1
Los Angeles.....	576,673	192	67	3	160	2	32	1	37	22
Oakland.....	216,261	51	9	2	153	1	11	1	3	6
Pasadena.....	45,354	11			8		2			2
Richmond.....	16,843	4	2		1		7			
Riverside.....	19,341	7	1		2				1	
Sacramento.....	65,908	18			16		6		6	3
San Bernardino.....	18,721	20			9		1		11	4
San Diego.....	74,683	24	3	1	58		1		4	3
San Francisco.....	506,676	153	27	3	32		25		24	18
Santa Ana.....	15,455	11			5					1
Santa Cruz.....	10,917	3								
Colorado:										
Denver.....	256,491	78	31	1	364	1	14			10
Greeley.....	10,958	0								
Pueblo.....	43,050	12	1							2
Trinidad.....	10,906		4		2					
Connecticut:										
Bridgeport.....	143,555	39	7	2	10		15		6	3
Bristol.....	20,620	6					2			
Fairfield (town).....	11,475	1			21		1			
Hartford.....	138,046	52	7		1		6		4	4
Manchester (town).....	18,370	4					2			
Milford (town).....	10,193	2			8		1			
New Haven.....	162,537	36	4		39		2		7	1
District of Columbia:										
Washington.....	437,571	134	14	1	807	4	28		26	10
Florida:										
St. Petersburg.....	14,237	9								2
Tampa.....	51,608	15	1		5					1
Georgia:										
Albany.....	11,555				36				2	
Atlanta.....	200,616	70	2		23		6		1	4
Brunswick.....	14,413	4								
Macon.....	52,995		2		47					
Rome.....	13,252				8					
Savannah.....	83,252	24			4	1	1			
Valdosta.....	10,783	5							1	1
Idaho:										
Boise.....	21,393	5					1			
Pocatello.....	15,001	3								
Illinois:										
Alton.....	24,682	6	1				56			
Aurora.....	36,397	10	1		38					1
Bloomington.....	28,725	11			10		1		2	
Centralia.....	12,491	2			11					
Champaign.....	15,873				6		1		2	
Chicago.....	2,701,705	728	108	6	1,001	9	83	2	183	52
Cicero.....	44,995	6	1		94	1	2		2	
Danville.....	33,776	10	1	1	30		2		4	2
East St. Louis.....	66,767	11	1		9				1	2
Elgin.....	27,454	9	1		21		1		1	
Evanston.....	37,234	16	1		105		2		4	
Forest Park.....	10,768				3					
Freeport.....	19,669	4			41				3	
Galesburg.....	23,834	9	1		8		3			
Jacksonville.....	15,713	10			2				2	2
Kewanee.....	16,026	7			2		2		1	1
La Salle.....	13,050	2			2					
Mattoon.....	13,552	1			34		1			
Oak Park.....	39,858	11	3		25		2		1	
Peoria.....	76,121	31			20					
Quincy.....	35,978	9			13				1	
Rock Island.....	35,177	7	2		2				1	1
Rockford.....	65,651	10			33		2			
Springfield.....	59,183	17	6	1	26					1
Indiana:										
Anderson.....	29,767	3			2		1			1
Bloomington.....	11,595	5			2					1
Crawfordsville.....	10,139	2	1				2			1

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Indiana—Continued.										
East Chicago.....	35,967	12	1	.....	38	2	1	.....	1	.....
Elwood.....	10,790	5	.....	.....	.....	.....	.....	.....	.....	.....
Fort Wayne.....	86,549	21	.....	.....	.....	.....	.....	5	.....	2
Frankfort.....	11,585	2	.....	.....	.....	.....	.....	.....	.....	.....
Gary.....	55,378	19	.....	.....	37	.....	4	.....	.....	1
Hammond.....	36,004	11	2	.....	5	.....	1	.....	.....	.....
Huntington.....	14,000	3	.....	.....	.....	.....	.....	.....	.....	.....
Indianapolis.....	314,194	81	12	2	711	1	4	.....	6	3
Kokomo.....	30,067	7	.....	.....	.....	.....	1	.....	.....	1
La Fayette.....	22,486	7	1	.....	16	.....	1	.....	1	.....
Laporte.....	15,158	7	.....	.....	.....	.....	.....	.....	.....	1
Logansport.....	21,626	6	.....	.....	35	.....	.....	.....	.....	.....
Michigan City.....	19,457	4	.....	.....	.....	.....	.....	.....	.....	.....
Mishawaka.....	15,195	6	.....	.....	.....	.....	3	.....	5	.....
Muncie.....	36,524	20	1	.....	8	.....	.....	.....	.....	2
South Bend.....	70,983	11	.....	.....	2	.....	4	.....	5	1
Terre Haute.....	60,683	26	1	.....	121	.....	1	.....	.....	.....
Iowa:										
Burlington.....	24,057	7	4	.....	21	.....	2	.....	2	.....
Cedar Rapids.....	45,566	.....	.....	.....	.....	.....	3	.....	.....	.....
Council Bluffs.....	36,162	8	2	.....	.....	.....	2	.....	.....	.....
Davenport.....	56,727	.....	5	.....	4	.....	.....	.....	.....	.....
Dubuque.....	39,141	.....	.....	.....	6	.....	.....	.....	.....	.....
Iowa City.....	11,267	.....	1	.....	.....	.....	7	.....	.....	.....
Muscatine.....	16,068	4	.....	.....	9	.....	.....	.....	.....	.....
Sioux City.....	71,227	0	6	.....	1	.....	.....	.....	1	.....
Waterloo.....	36,230	.....	1	.....	124	.....	2	.....	.....	.....
Kansas:										
Atchison.....	12,630	.....	1	.....	1	.....	1	.....	.....	.....
Coffeyville.....	13,452	4	.....	.....	115	.....	.....	.....	.....	.....
Fort Scott.....	10,693	4	.....	.....	.....	.....	1	.....	.....	.....
Kansas City.....	101,177	.....	4	.....	183	.....	1	.....	2	.....
Lawrence.....	12,456	4	.....	.....	.....	.....	1	.....	.....	.....
Parsons.....	16,028	4	.....	.....	32	.....	.....	.....	.....	.....
Topeka.....	50,022	14	1	.....	2	.....	4	.....	.....	.....
Wichita.....	72,217	26	1	.....	20	.....	3	.....	.....	.....
Kentucky:										
Covington.....	57,121	27	.....	.....	6	.....	2	.....	.....	.....
Henderson.....	12,169	1	.....	.....	.....	.....	.....	.....	.....	.....
Lexington.....	41,534	16	.....	.....	.....	.....	.....	.....	.....	2
Louisville.....	234,891	79	6	1	89	.....	2	.....	29	9
Owensboro.....	17,424	.....	.....	.....	.....	.....	1	.....	.....	.....
Louisiana:										
New Orleans.....	387,219	130	7	.....	8	.....	3	.....	24	10
Maine:										
Auburn.....	16,985	5	.....	.....	.....	.....	6	.....	.....	.....
Bangor.....	25,978	.....	.....	.....	4	.....	2	.....	2	.....
Bath.....	14,731	7	.....	.....	.....	.....	.....	.....	1	.....
Biddeford.....	18,008	5	.....	.....	.....	.....	.....	.....	.....	.....
Lewiston.....	31,791	16	.....	.....	10	.....	9	.....	4	.....
Portland.....	69,272	12	3	.....	62	1	5	.....	.....	.....
Sanford (town).....	10,691	8	.....	.....	77	.....	.....	.....	.....	.....
Maryland:										
Baltimore.....	733,826	245	31	2	550	6	62	2	49	26
Cumberland.....	29,837	6	1	.....	21	.....	.....	.....	.....	.....
Frederick.....	11,066	2	.....	.....	2	.....	.....	.....	.....	.....
Massachusetts:										
Adams (town).....	12,967	0	.....	.....	9	.....	.....	.....	1	.....
Amesbury (town).....	10,036	3	1	.....	6	.....	.....	.....	.....	.....
Arlington (town).....	18,665	1	.....	.....	16	.....	1	.....	2	.....
Attleboro.....	19,731	3	.....	.....	.....	.....	.....	.....	2	.....
Belmont (town).....	10,749	4	.....	.....	16	.....	1	.....	.....	.....
Beverly.....	22,561	5	.....	.....	.....	.....	.....	.....	.....	.....
Boston.....	748,060	264	72	1	334	1	80	3	47	25
Braintree (town).....	10,580	3	1	.....	9	.....	1	.....	.....	2
Brockton.....	66,254	16	1	.....	61	.....	4	.....	1	.....
Brookline.....	37,748	11	2	.....	3	.....	7	.....	.....	.....
Cambridge.....	109,694	40	9	.....	49	.....	10	.....	4	2
Chelsea.....	43,184	13	1	.....	.....	.....	6	.....	1	1
Chicopee.....	36,214	8	2	.....	1	.....	3	.....	1	1
Clinton.....	12,979	11	1	.....	.....	.....	.....	.....	.....	.....
Danvers.....	11,108	.....	.....	.....	.....	.....	3	.....	1	.....
Dedham.....	10,702	2	.....	.....	.....	.....	.....	.....	.....	.....
Easthampton.....	11,261	2	.....	.....	.....	.....	.....	.....	3	1
Everett.....	40,120	13	.....	.....	39	.....	3	.....	1	2

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Popu- lation Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Fall River	120,485	34	4	—	8	1	5	—	8	2
Frammingham	17,033	3	—	—	—	—	4	—	1	—
Gardner	16,971	8	—	—	—	—	1	—	1	—
Greenfield	15,462	7	—	—	—	—	—	—	—	1
Haverhill	53,884	9	2	—	48	—	5	—	3	—
Lawrence	94,270	20	—	—	39	—	1	—	3	—
Leominster	19,744	4	—	—	1	—	3	—	—	2
Lowell	112,750	46	8	1	33	—	4	—	5	2
Lynn	99,148	27	2	—	7	—	7	—	—	2
Malden	49,103	16	2	—	23	—	10	—	4	—
Medford	39,038	6	1	—	19	—	3	—	3	1
Melrose	18,204	4	2	—	6	—	4	—	—	—
Methuen	15,180	6	1	—	5	—	1	1	2	1
Milford	13,471	1	—	—	2	—	2	—	1	—
New Bedford	121,217	38	—	—	—	—	—	—	6	2
Newburyport	15,618	7	—	—	5	—	—	—	—	—
Newton	46,054	11	—	—	3	—	3	—	—	—
North Adams	22,282	5	—	—	1	—	—	—	—	—
Northampton	21,951	11	—	—	—	—	11	—	—	—
Peabody	19,552	3	2	—	—	—	—	—	1	1
Pittsfield	41,763	12	1	2	—	—	4	—	—	1
Plymouth	13,045	1	—	—	—	—	—	—	—	—
Quincy	47,876	7	2	—	9	—	12	—	—	—
Salem	42,529	1	1	1	4	—	3	—	2	—
Somerville	93,091	20	2	—	30	—	4	—	3	2
Southbridge	14,285	2	—	—	1	—	1	—	—	—
Springfield	129,614	37	4	1	3	—	7	—	4	2
Taunton	37,137	8	1	—	9	—	9	—	2	1
Wakefield	13,625	3	—	—	14	—	—	—	1	1
Waltham	30,915	11	3	—	2	—	3	1	1	1
Watertown	21,457	4	3	1	5	—	3	—	—	—
Webster	13,258	4	1	—	—	—	10	—	1	—
West Springfield	13,443	1	—	—	—	—	—	—	—	—
Westfield	18,604	3	—	—	—	—	3	—	2	—
Winchester	10,486	—	1	—	4	—	1	—	—	—
Wintthrop	15,455	1	—	—	19	—	—	—	2	—
Woburn	16,574	4	—	—	—	—	—	—	—	—
Worcester	179,754	47	8	—	—	—	24	—	5	1
Michigan:										
Alpena	11,161	—	—	1	—	—	2	—	—	—
Ann Arbor	19,516	10	3	—	—	—	—	—	—	—
Battle Creek	36,164	—	3	—	42	—	5	—	—	—
Benton Harbor	12,233	1	1	—	10	—	—	—	—	—
Detroit	993,678	291	43	2	227	4	108	4	68	19
Flint	91,590	30	7	1	24	—	8	—	6	1
Grand Rapids	137,684	43	3	1	70	—	8	—	8	—
Hamtramck	48,615	13	8	1	2	1	1	—	7	1
Highland Park	46,499	14	5	1	59	—	13	—	—	—
Holland	12,182	—	1	—	—	—	2	—	—	—
Jackson	48,374	14	1	—	158	—	1	—	2	2
Kalamazoo	48,487	16	1	—	7	—	3	—	1	—
Marquette	12,718	3	1	—	1	—	11	—	—	—
Muskegon	36,570	13	2	2	24	—	—	—	—	—
Pontiac	34,273	16	3	—	27	—	2	—	4	—
Port Huron	25,944	19	—	—	3	—	2	—	—	1
Sault Ste. Marie	12,996	4	—	—	—	—	1	—	—	—
Minnesota:										
Duluth	98,917	30	1	—	13	—	1	—	4	1
Hibbing	15,080	3	—	—	—	—	2	—	—	—
Mankato	12,469	—	1	—	18	—	—	—	—	—
Minneapolis	380,582	119	14	2	246	2	23	3	34	7
Rochester	13,722	17	—	—	1	—	3	—	1	—
St. Cloud	15,573	—	1	—	7	—	—	—	—	—
St. Paul	234,696	50	3	—	419	3	20	—	28	5
Winona	19,143	3	—	—	3	—	1	—	—	—
Missouri:										
Cape Girardeau	10,252	5	—	—	34	—	—	—	—	1
Independence	11,686	—	—	—	1	1	3	—	—	—
Joplin	29,902	—	—	—	—	—	—	—	—	—
Kansas City	324,410	122	10	1	422	4	14	—	13	8
St. Joseph	77,939	29	—	—	4	—	2	—	—	1
St. Louis	772,897	224	29	1	1,132	3	23	1	40	7
Springfield	39,631	10	—	—	—	—	—	—	—	—

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Montana:										
Anaconda.....	11,668	3								
Billings.....	15,100	5					2			
Great Falls.....	24,121	10		1					1	2
Helena.....	12,037	2					1		1	
Missoula.....	12,668	7	1				3			
Nebraska:										
Lincoln.....	54,948	7	1		1		2			
Omaha.....	191,601	64	5		7		2			3
Nevada:										
Reno.....	12,016	5			7					1
New Hampshire:										
Berlin.....	16,104	7	1				1			1
Concord.....	22,167	6			2		3			
Dover.....	13,029	3								
Keene.....	11,210	5	1		2				4	1
Manchester.....	78,384	28	8	2	2					6
Nashua.....	28,379	7			2		3			
New Jersey:										
Asbury Park.....	12,400	2			76					
Atlantic City.....	50,707	7			8		1			
Bayonne.....	76,754		1						4	
Belleville.....	15,660				7		2		1	
Bloomfield.....	22,019	5			8					
Clifton.....	26,470	2	1		9		1			
East Orange.....	50,710	6	1		26		2		3	1
Elizabeth.....	95,783		16	1	17		7		1	
Englewood.....	11,627	3			11		1			
Garfield.....	19,381	6		1	2				1	
Hackensack.....	17,667	7			23		3			
Harrison.....	15,721		2		5				2	
Hoboken.....	68,166	20					1		2	2
Jersey City.....	298,103		10		24		14		12	
Kearny.....	26,724	7			23		2		2	1
Long Branch.....	13,521	3							1	
Montclair.....	28,810	5			27		2		1	
Morristown.....	12,548	5			6				1	1
Newark.....	414,524	117	10	1	186	2	20		20	11
Orange.....	33,268	8	2		15		1			
Passaic.....	63,841	14	2		17	1	1		1	
Paterson.....	135,875		13		38		4		11	
Perth Amboy.....	41,707	7	2		4		4		3	1
Phillipsburg.....	16,923	7							1	1
Plainfield.....	27,700	9			10		5		1	
Rahway.....	11,042	4					1			
Summit.....	10,174	3			1					
Trenton.....	119,280	39	11	1			7		9	1
Union (town).....	20,651		1						1	
West Hoboken.....	40,074	9	1						1	1
West New York.....	29,925	8			14				1	
West Orange.....	15,573	4			13				1	
New Mexico:										
Albuquerque.....	15,157	4			2		1			1
New York:										
Albany.....	113,344		2		52		9		8	
Amsterdam.....	33,521	4			2				2	
Auburn.....	36,192	7			87				2	2
Buffalo.....	505,775	146	4		261	1	46	2	25	8
Cohoes.....	22,987	4	1						2	1
Dunkirk.....	19,333	7			9				2	1
Geneva.....	14,648	4								
Hornell.....	15,025	3			42					1
Hudson.....	11,745	4								
Ithaca.....	17,001	9			2		2		1	
Jamestown.....	38,917	14	1		3		3			1
Lackawanna.....	17,918	3					1			
Little Falls.....	13,029	7			1				1	1
Lockport.....	21,308	9								
Middletown.....	18,420		2		57		1			1
Mount Vernon.....	42,723	8	1		1					2
New York.....	5,620,048	1,555	192	16	510	9	283	7	254	118

† Pulmonary only.

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
Newburgh.....	30,366	12	2							
Niagara Falls.....	50,760	9			7		5		1	1
North Tonawanda.....	15,482	4			7		2			
Ogdensburg.....	14,609	8								1
Olean.....	20,506	7			41		20			1
Peekskill.....	15,868	9	1		22		3			1
Port Chester.....	16,573	7			1					
Poughkeepsie.....	35,000	8			3		4			
Rochester.....	295,750	69	6		50	1			17	4
Rome.....	26,341	7					3			1
Saratoga Springs.....	13,181	6			3				1	
Schenectady.....	88,723	13	2		17		1		3	1
Syracuse.....	171,717	56	9		133		29		6	2
Troy.....	72,013	29	3						5	2
Watertown.....	31,285	10					1			
White Plains.....	21,031	3	1		6		1			1
Yonkers.....	100,176	26	1		4		14			3
North Carolina:										
Durham.....	21,719	8	1		143					1
Greensboro.....	43,525	11			43				2	
Raleigh.....	24,418	11			56		1		2	1
Rocky Mount.....	12,742	6								1
Wilmington.....	33,372	6			3					1
Winston-Salem.....	48,395	19			3				10	
North Dakota:										
Grand Forks.....	14,010				2					
Ohio:										
Akron.....	208,435	35	7		88		5		23	
Alliance.....	21,603	4			6	1	1			
Ashtabula.....	22,082	7					7			
Barberton.....	18,811	2			13				1	
Bellaire.....	15,061	7							1	
Bucyrus.....	10,425	2			4				1	
Cambridge.....	13,104	8	2	1			1			
Canton.....	87,091	0	6		8		1		1	
Chillicothe.....	15,831	8			4					
Cincinnati.....	401,247	129	4	1	38		16		12	16
Cleveland.....	796,841	181	21	3	376		103	3	42	17
Cleveland Heights.....	15,236				95		7		1	
Columbus.....	237,031	74	1		142		6		4	3
Coshocton.....	10,847		1		7					
Dayton.....	152,559	44	8		77		11		2	
East Cleveland.....	27,292	3	2		50		4	1	1	
Findlay.....	17,021	2			23					
Fremont.....	12,468	2			4				1	
Hamilton.....	39,675	15			35		1		22	
Kenmore.....	12,683				19				1	
Lancaster.....	14,706	9	2		3					2
Lima.....	41,326	9	1		3				1	2
Lorain.....	37,295		6		32		9			
Mansfield.....	27,824	12			30				1	
Marion.....	27,891		3		3					
Martins Ferry.....	11,084	4							1	1
Middletown.....	23,594	11			21	1			2	3
Newark.....	26,718	4			37					
Niles.....	13,080	3	2		10					
Norwood.....	24,866	3	1		7		1			
Piqua.....	15,044	6	1							
Salem.....	10,395	8			1				1	
Sandusky.....	22,687	10			80					
Springfield.....	60,840	13			40				1	
Steubenville.....	28,508	9			2				1	
Tiffin.....	14,375	7			4	2				
Toledo.....	243,164	51	4		23		24		7	5
Youngstown.....	132,358	24	8		40		6			1
Zanesville.....	29,569	9					1		2	
Oklahoma:										
Oklahoma.....	91,295	31	2		10		4		2	1
Tulsa.....	72,075		3		7		1			
Oregon:										
Portland.....	256,288	59	2		3		5		7	3

CITY REPORTS FOR WEEK ENDED APRIL 28, 1923—Continued.

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

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Pennsylvania:										
Allentown.....	73,502		1		14		4			
Altoona.....	60,331		1		5		1			
Beaver Falls.....	12,802		2		3		1			
Berwick.....	12,181						3			
Bethlehem.....	50,358		5		59				4	
Braddock.....	20,879		1						1	
Bradford.....	15,525				36					
Bristol.....	10,273		1		4					
Butler.....	23,778		1		8					
Canonsburg.....	10,632		1						1	
Carbondale.....	18,640						1		1	
Carlisle.....	10,916				3					
Carnegie.....	11,516				1					
Carrick.....	10,504				1					
Chambersburg.....	13,171				6		1			
Charleroi.....	11,516		1		12					
Chester.....	58,030		1		3					
Coatesville.....	14,515		1		5		1			
Connellsville.....	13,804				41		1			
Donora.....	14,131		1		6					
Dubois.....	13,681				21					
Duquesne.....	19,011								2	
Easton.....	33,813				10					
Erie.....	93,372		3		44		4		5	
Farrell.....	15,586		3		32		3			
Harrisburg.....	75,917		1		6		3			
Hazleton.....	32,277				2					
Homestead.....	20,452		1		4					
Jeannette.....	10,627				3					
Lancaster.....	53,150		1		33		7		1	
McKee's Rocks.....	16,713				9		1			
McKeesport.....	46,781				3				2	
Meadville.....	14,568				17					
Monessen.....	18,179				6		1			
Nanticoke.....	22,614		2		12					
New Castle.....	44,938		1				1		1	
New Kensington.....	11,987				1					
Norristown.....	32,319		3		3				1	
North Braddock.....	14,928				8					
Oil City.....	21,274				41					
Philadelphia.....	1,823,779	587	63	10	87	1	61	3	100	48
Phoenixville.....	10,484						1			
Pittsburgh.....	588,343		27		195		25		22	
Plymouth.....	16,500				2					
Pottstown.....	17,431		1		2					
Pottsville.....	21,876				2					
Reading.....	107,784		4		5				1	
Scranton.....	137,783		4		92					
Shamokin.....	21,204				1					
Sharon.....	21,747		16							
Steelton.....	13,428						1			
Sunbury.....	15,721		1		3					
Uniontown.....	15,692				2		2			
Warren.....	14,272				37					
Washington.....	21,480		1		2		1			
Wilkes-Barre.....	73,833		4		2		3			
Wilkinsburg.....	24,403				9					
Williamsport.....	36,198		2		6		1			
Woodlawn.....	12,495				1					
York.....	47,512		2		46		1			
Rhode Island:										
Cranston.....	29,407	9			15	1				
Cumberland (town).....	10,077	3	1							
Newport.....	30,255	10	5			1	1			
Pawtucket.....	64,248	30	1		12					
Providence.....	237,595	82	6	2	81	6	9	1	1	6
Woonsocket.....	43,496	3								
South Carolina:										
Charleston.....	67,957	18					1			3
Columbia.....	37,524	17			1					1
Greenville.....	23,127	7	1		1		1			1
South Dakota:										
Sioux Falls.....	25,202	7	3							

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

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Tennessee:										
Chattanooga.....	57,805		7							
Knoxville.....	77,818		1		60		3			
Memphis.....	162,351	77	4		47	2			10	8
Nashville.....	118,342	57	1		196	4	1		9	2
Texas:										
Amarillo.....	15,404						1			
Beaumont.....	40,422	14								2
Corpus Christi.....	10,522	2							1	
Dallas.....	158,976	38	3		15		2		3	12
El Paso.....	77,560	52	2		58	1			16	1
Fort Worth.....	106,492	27			2				2	2
Galveston.....	44,255	6			1		1			
Houston.....	128,276	35	3				2			6
San Antonio.....	161,379	60	2		7		4			5
Waco.....	38,500	4			8					
Utah:										
Provo.....	10,308	2								
Salt Lake City.....	118,119	27	3		6		2		3	1
Vermont:										
Barre.....	10,008				11		1			
Burlington.....	22,779	12	1		28		1			2
Rutland.....	14,954	7					7			
Virginia:										
Alexandria.....	18,000	6			15				1	
Charlottesville.....	10,688	9								1
Lynchburg.....	30,070	12	3		63	2	1		4	1
Norfolk.....	115,777	1	1		126	2			3	3
Petersburg.....	31,012	10	2		48	1			1	
Portsmouth.....	54,357	15	2		20					
Richmond.....	171,667	48			383		3		7	4
Roanoke.....	50,842	26	3		160	2	1		3	2
Washington:										
Bellingham.....	25,585						1			
Seattle.....	315,312		11		9		8		52	
Spokane.....	104,437		13		1		7			
Tacoma.....	96,965		4				3			
Yakima.....	18,539				2					
West Virginia:										
Charleston.....	39,608	10			15		2		1	
Clarksburg.....	27,869		1		45					
Fairmont.....	17,851		1				1			
Huntington.....	50,177	27			129					1
Martinsburg.....	12,545				6		1			
Morgantown.....	12,127				4				1	
Moundsville.....	10,669	3								
Parkersburg.....	20,050	6			1					1
Wheeling.....	56,208	23	2		18		2		2	1
Wisconsin:										
Appleton.....	19,561	2	1				1		2	
Ashland.....	11,334	4					3		1	
Beloit.....	21,284	6			72		4			
Eau Claire.....	20,906				3					
Fond du Lac.....	23,427	4								
Green Bay.....	31,017	4	2		12		7			
Janesville.....	18,293				5		4			
Kenosha.....	40,472	12					1		2	
La Crosse.....	30,421				55		7			
Madison.....	38,378	5			169		1		1	1
Manitowoc.....	17,563				8				2	
Marinette.....	13,610	6			1		2			
Milwaukee.....	457,147	131	19	3	25		217	6	21	11
Oshkosh.....	33,162	11								
Racine.....	58,593	9	4	1	37		2		2	
Sheboygan.....	30,955	7	1		26		1			
Stevens Point.....	11,371				26					
Superior.....	39,671	8			25					
Waukesha.....	12,558				38		4			
Wausau.....	18,661				148					
West Athens.....	13,745				1				4	
Wyoming:										
Cheyenne.....	13,829	3								

FOREIGN AND INSULAR.

CANADA.

Communicable Diseases—Ontario—April, 1923 (Comparative).

During the month of April, 1923, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease.	1923		1922	
	Cases.	Deaths.	Cases.	Deaths.
Cerebrospinal meningitis.....	13	11	9	8
Chancroid.....	3	—	6	—
Diphtheria.....	170	21	308	27
Gonorrhea.....	125	—	165	—
Influenza.....	—	84	—	—
Lethargic encephalitis.....	—	7	—	—
Measles.....	1, 148	7	1, 266	8
Pneumonia.....	—	332	—	375
Pneumonia, influenzal.....	—	22	—	30
Poliomyelitis (infantile paralysis).....	4	3	1	1
Scarlet fever.....	329	11	249	11
Smallpox.....	29	—	79	—
Syphilis.....	122	—	194	—
Tuberculosis.....	173	118	207	135
Typhoid fever.....	338	54	13	7
Whooping cough.....	286	18	69	8

CANARY ISLANDS.

Plague.

Information received under date of April 13, 1923, shows enforcement of strict sanitary precautions at St. Vincent, Canary Islands, for vessels and passengers calling at or leaving the port, on account of the existence of plague at that port.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified in Habana as follows:

Disease.	Apr. 21-30, 1923.		Remain- ing under treat- ment Apr. 30, 1923.
	New cases.	Deaths.	
Cerebrospinal meningitis.....	1	—	13
Chicken pox.....	5	—	9
Diphtheria.....	2	—	3
Leprosy.....	—	—	112
Malaria.....	13	1	23
Measles.....	3	—	1
Poliomyelitis (infantile paralysis).....	1	1	0
Scarlet fever.....	1	—	5
Typhoid fever.....	11	5	30

¹ From abroad, 2.

² From the interior, 20.

³ From the interior, 12.

ECUADOR.

Plague—Plague-Infected Rats—Guayaquil.

During the period April 1-15, 1923, one case of plague with two deaths was reported at Guayaquil, Ecuador. During the same period, of 4,500 rats examined, 18 rats were found plague infected.

LATVIA.

Communicable Diseases—February, 1923.

Communicable diseases were reported in the Republic of Latvia during the month of February, 1923, as follows:

Disease.	Cases.	Remarks.
Cerebrospinal meningitis.....	2	
Diphtheria.....	55	
Measles.....	62	
Scarlet fever.....	133	
Typhoid fever.....	80	
Typhus fever.....	37	
Typhus fever, recurrent.....	1	Paratyphus, one case.
Whooping cough.....	50	

Other Diseases.

During the same period other diseases were reported in Latvia as follows: Chicken pox, 17 cases; dysentery, 10; influenza, 102; pneumonia, 5; rabies, 3. One case of leprosy and one of malaria were reported.

LITHUANIA.

Vital Statistics—January to June, 1922.

A report received from Kovno, Lithuania, states that the Central Statistical Bureau of the Lithuanian Cabinet began collecting and arranging vital statistics in February, 1922, after an interruption of seven years. Information for the years 1915 to 1921 has been collected and it is expected that it will be published soon.

The following table gives the births, deaths, and natural increase of the population during the first six months of the year 1922:

Lithuania—Births, deaths, and natural increase of population—January to June, 1922, inclusive.

Nationality.	Births.	Per cent of total births.	Deaths.	Per cent of total deaths.	Increase.	Per cent of total increase.
Lithuanians.....	22,832	87.6	16,015	86.3	6,817	90.9
Jews.....	1,034	4.0	753	4.1	281	3.7
Poles.....	476	1.8	379	2.0	97	1.3
Russians.....	476	1.8	302	1.6	174	2.3
Germans.....	173	.7	141	.8	32	.4
Others.....	246	1.0	202	1.1	44	.6
Unknown.....	816	3.1	758	4.1	58	.8
Total.....	26,053	100.0	18,550	100.0	7,503	100.0

The ratio of male to female births was 110 to 100. Seventeen hundred and twenty-seven births were illegitimate (6.6 per cent). Before the war illegitimate births are said to have constituted 4.5 per cent of the total.

During the six months 8,461 marriages were recorded.

Deaths under 1 year of age were 3,962, or 152 per thousand births.

MADAGASCAR.

Plague—March 1-15, 1923.

During the period March 1 to 15, 1923, 44 cases of plague with 31 deaths were reported in the island of Madagascar. Of these cases, 26 were bubonic, 17 septicemic, and 1 pneumonic. For distribution of occurrence according to locality, see page 1111.

PERU.

Plague—Month of March, 1923.

During the month of March, 1923, 109 cases of plague with 50 deaths, occurring in 14 localities, were reported in Peru. For distribution according to locality, see page 1111.

TRINIDAD, BRITISH WEST INDIES.

Quarantine Against Martinique on Account of "Alastrim."

On April 12, 1923, quarantine was imposed by the island of Trinidad, British West Indies, on arrivals from the island of Martinique, on account of the occurrence of "alastrim" on the latter island.

TUNIS.

Plague—Ben-Gardane.

Under date of April 19, 1923, 21 cases of plague were reported at Ben-Gardane, in southern Tunis, frontier of Tripoli.

YUGOSLAVIA.

Communicable Diseases—December 31, 1922-March 24, 1923.

During the period December 31, 1922, to March 24, 1923, 567 cases of smallpox with 100 deaths and 106 cases of typhus fever with 20 deaths were reported in the Kingdom of the Serbs, Croats, and Slovenes (Yugoslavia). (Population, 12,017,393.) The greatest occurrence of smallpox was reported in the Provinces of Bosnia-Herzegovina and Serbia, viz, in Bosnia-Herzegovina 266 cases with 35 deaths (population, 1,889,929) and in Serbia 70 cases with 21 deaths (population, 4,129,638). Of the 106 cases of typhus fever reported, 51 occurred in Bosnia-Herzegovina, with 1 case of recurrent fever, and 25 cases in Serbia.

During the same period other communicable diseases were reported in Yugoslavia as follows:

Disease.	Cases.	Deaths.	Disease.	Cases.	Deaths.
Diphtheria.....	453	87	Scarlet fever.....	4,110	917
Measles.....	1,987	65	Typhoid fever.....	552	92

Population, 12,017,323. The returns for the Province of Voivodina were stated to be incomplete.

Dysentery.

During the same period 110 cases of dysentery with 14 deaths were reported in Yugoslavia.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended May 18, 1923.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Mar. 11-17.....	1	1	
Calcutta.....	Apr. 1-7.....	26	23	
Madras.....	Mar. 25-Apr. 7.....	1	1	
Rangoon.....	Mar. 18-24.....	3	2	
Philippine Islands:				
Province				
Zamboanga.....	Feb. 11-17.....	1	1	

PLAGUE.

Canary Islands.....				Apr. 13, 1923: Present.
Ceylon:				
Colombo.....	Mar. 18-31.....	6	1	Plague rodents, 6.
Ecuador:				
Guayaquil.....	Apr. 1-15.....	1	2	Rats examined, 4,500; found infected, 18.
India:				Mar. 4-17, 1923: Cases, 20,706; deaths, 15,911.
Bombay.....	Mar. 4-17.....	127	105	
Calcutta.....	Apr. 1-7.....	16	16	
Karachi.....	do.....	28	20	
Madras Presidency.....	Mar. 25-Apr. 7.....	410	301	
Rangoon.....	Mar. 18-24.....	52	48	
Madagascar:				Mar. 1-15, 1923: Cases, 44; deaths, 31.
Province—				
Tananarive.....				Mar. 1-15, 1923: Cases, 42; deaths, 29. Bubonic, 25, 12; pneumonic, 1, 1, septicemic, 16, 16.
Town—				Septicemic.
Diego Suarez.....	Mar. 1-15.....	1	1	Bubonic.
Tamatave.....	do.....	1	1	Mar. 1-31, 1923: Cases, 109; deaths, 50.
Peru:				
Locality—				
Callao.....	Mar. 1-31.....	1		
Canete.....	do.....	10	6	
Catacaos.....	do.....	6	2	
Chepen.....	do.....	1		
Chiclayo.....	do.....	10	4	
Cutervo.....	do.....	28	25	
Huacho.....	do.....	12	4	
Lima (city).....	do.....	3	1	
Lima (country).....	do.....	2	1	
Mochumi.....	do.....	2	1	
Mollendo.....	do.....	1		
Paiza.....	do.....	3	2	
Piura.....	do.....	5	2	
Trujillo.....	do.....	25	2	City and country.
Straits Settlements:				
Singapore.....	Mar. 18-24.....	3	2	
Tunis:				
Ben-Gardane.....	Apr. 21.....	21		

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

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

Reports Received During Week Ended May 18, 1923—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Bolivia:				
La Paz.....	Mar. 1-31.....	6	5	
Canada:				
Manitoba—				
Winnipeg.....	Apr. 15-21.....	2		
Ontario—				
Niagara Falls.....	Apr. 30-May 5.....	5		
Chile:				
Valparaiso.....	Jan. 29-Mar. 18.....		106	
China:				
Amoy.....	Mar. 25-31.....		2	
Chungking.....	Mar. 18-24.....			Present.
Nanking.....	Mar. 4-Apr. 14.....			Do.
Shanghai.....	Apr. 2-15.....	3	3	Cases, foreign; deaths, Chinese.
Chosen (Formosa):				
Chemulpo.....	Mar. 1-31.....	4	4	
Fusan.....	do.....	6	1	
Gensan.....	do.....	2	1	
Seoul.....	do.....	26	9	
Ecuador:				
Babahoyo.....	Apr. 1-15.....	1		
Greece:				
Athens.....	Feb. 13-Mar. 31.....		3	
Patras.....	Feb. 18-Mar. 10.....		18	
Piræus.....	Feb. 1-13.....		1	
India:				
Bombay.....	Mar. 4-17.....	102	40	
Karachi.....	Apr. 1-7.....	3	1	
Madras.....	Mar. 25-Apr. 7.....	40	16	
Rangoon.....	Mar. 18-24.....	60	18	
Java:				
West Java—				
Batavia.....	Mar. 25-30.....	1		Province.
Mexico:				
Mexico City.....	Mar. 25-Apr. 7.....	52		
Persia:				
Tabriz.....	Feb. 14-28.....		2	
Peru:				
Lima.....	Mar. 1-31.....	2	2	
Portugal:				
Lisbon.....	Apr. 2-14.....	7	2	
Oporto.....	Apr. 8-14.....	1		
Russia:				
Siberia—				
Vladivostok.....	Mar. 1-31.....	1		Present in Nikolsk, Spassk, and Ussurisk Counties.
Turkey:				
Constantinople.....	Mar. 25-Apr. 7.....		82	
Union of South Africa:				
Cape Province.....	Mar. 11-17.....			Outbreaks.
Transvaal.....	do.....			Do.
Yugoslavia.....				Dec. 31, 1922-Mar. 24, 1923: Cases, 567; deaths, 100.
Bosnia-Herzegovina.....	Dec. 31-Mar. 24.....	266	35	
Serbia.....	do.....	70	21	
Belgrade.....	Mar. 18-24.....	1	1	

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Bolivia:				
La Paz.....	Mar. 1-31.....	5	3	
Bulgaria:				
Sofia.....	Mar. 25-Apr. 7.....	4		Paratyphus, 1 case, 1 death.
Chile:				
Iquique.....	Mar. 18-31.....		2	
Valparaiso.....	Jan. 29-Mar. 18.....		14	
Egypt:				
Alexandria.....	Apr. 2-8.....	1		
France:				
Marseille.....	Mar. 1-31.....		1	
Germany:				
Königsberg.....	Apr. 1-7.....	1		
Greece:				
Athens.....	Mar. 1-20.....		4	
Patras.....	Feb. 18-24.....		3	
Piræus.....	Jan. 13-Mar. 31.....		12	
Hungary:				
Budapest.....	Apr. 1-7.....	1		

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

Reports Received During Week Ended May 18, 1923—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Latvia.....				Feb. 1-28, 1923: Cases, 37; recurrent typhus, 1; paratyphus, 1.
Mexico:				
Mexico City.....	Mar. 25-Apr. 7....	25		Including municipalities in Federal District.
Persia:				
Teheran.....	Feb. 14-29.....		4	
Russia—				
Siberia—				
Vladivostok.....	Mar. 1-31.....	85		Indefinite cases, 5.
Turkey:				
Constantinople.....	Mar. 25-Apr. 7....		78	
Union of South Africa:				
Cape Province.....	Mar. 11-17.....			Outbreaks.
Transvaal.....	do.....			Do.
Yugoslavia.....				Dec. 31, 1922-Mar. 24, 1923: Cases, 106; deaths, 20.
Bosnia-Herzegovina.....	Dec. 31-Mar. 24....	51		Recurrent fever, 1 case.
Serbia.....	do.....	25		
Belgrade.....	Mar. 18-Apr. 7....	2		

Reports Received from December 30, 1922, to May 11, 1923.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Liutaoku.....	Sept. 22.....	60	20	
Chosen (Korea):				
Yalu River Region.....				Sept. 22, 1922: 30 deaths reported.
India:				Sept. 24-Dec. 30, 1922: Cases, 14,637; deaths, 8,833. Dec. 31, 1922-Feb. 17, 1923: Cases, 6,449; deaths, 3,407.
Bombay.....	Oct. 27-Dec. 23....	2	1	
Do.....	Feb. 4-10.....	2	2	
Calcutta.....	Nov. 12-Dec. 30....	102	60	
Do.....	Dec. 31-Mar. 24....	325	221	
Madras.....	Nov. 19-Dec. 10....	4	2	
Do.....	Jan. 21-Mar. 24....	12	5	
Rangoon.....	Nov. 12-Dec. 23....	17	10	
Do.....	Dec. 31-Mar. 3....	8	4	
Philippine Islands:				
Province—				
Laguna.....	Oct. 12-18.....	1		Jan. 1-Oct. 7, 1922: Cases, 83,367.
Russia:				
Archangel (Government).....	Oct. 1-7.....	7		
Moscow.....	Jan. 1-31.....	1		
Tashkent.....	Oct. 1-7.....	27		Turkestan Republic: 3 cases reported on waterways.
Ukraine.....				Sept. 1-30, 1922: Cases, 119.
Donets (Government).....	Sept. 1-30.....	29		
Tchernigov (Government).....	do.....	36		
Siam:				
Bangkok.....	Oct. 29-Dec. 23....	4	1	
Do.....	Dec. 31-Feb. 24....	5	1	

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

PLAGUE.

Argentina:				
Rosario.....	Feb. 10-27.....	8	3	
Azores:				
Fayal Island—				
Castelo Branco.....	Dec. 2-31.....		3	Vicinity of Horta. Dec. 30, 1922.
Do.....	Mar. 12-18.....	2		Several cases.
Horta.....	Mar. 23.....	1		Actual occurrence about Mar. 6, 1923.
Pico Island—				
Lages.....	Nov. 27-Dec. 15....		8	

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Azores—Continued.				
St. Michaels Island.				
Ponta Delgada.	Nov. 25-Dec. 9	3		Nov. 12-Dec. 30, 1922: Cases, 100; deaths, 35. At localities 3-9 miles from Ponta Delgada, Dec. 31, 1922-Feb. 24, 1923: Cases, 128; deaths, 52. From 6 to 20 miles distant from port of Ponta Delgada.
Brazil:				
Bahia.	Oct. 23-Dec. 30	5	5	
Do.	Jan. 28-Feb. 3	1	1	
Perambuco.	Jan. 14-20	3	2	
Porto Alegre.	Nov. 19-25	1		
British East Africa:				
Kenya Colony—				
Tanganyika Territory.	Oct. 15-Dec. 16	12	7	
Do.	Jan. 14-Feb. 10	11	10	
Uganda.				Dec. 1-31, 1922: Cases, 141; deaths, 129. Jan. 1-31, 1923: Cases, 73; deaths, 73.
Entebbe.	Nov. 24-30	211	202	Jan. 15-Mar. 17, 1923: Cases, 8; deaths, 7. Rodent plague present, Feb.-Mar., 1923.
Canary Islands.				
Celebes:				
Macassar.	Feb. 15			Present, bubonic; epidemic, pneumonic.
Ceylon:				
Colombo.	Nov. 12-Dec. 30	46	38	Plague rodents, 16.
Do.	Dec. 31-Mar. 17	71	66	Plague rodents, 18.
Chile:				
Antofagasta.				Quarantine. Year, 1922: March, 1 case; May, 1 case.
China:				
Hongkong.	Nov. 5-Dec. 23	14	12	
Do.	Dec. 31-Mar. 3	3	2	
Manchuria—				
Harbin.	Jan. 29-Feb. 4	7		
Ecuador:				
Guayaquil.	Nov. 1-Dec. 31	9	3	Rats examined, 16,600; found infected, 72.
Do.	Jan. 1-Mar. 15	24	9	Rats examined, 22,400; found infected, 116.
Sabanilla.	Mar. 1-15	1		Country estate.
Egypt:				
City—				Jan. 1-Dec. 23, 1922: Cases, 435; deaths, 228. Jan. 1, 1922-Jan. 4, 1923: Cases, 457; deaths, 228.
Alexandria.	Nov. 19-25	2		Jan. 1-Mar. 29, 1923: Cases, 134; deaths, 69. Mar. 19-25, 1922: Cases, 50—Assiout, 28; Fayoum 4; Girgeh, 17.
Do.	Jan. 8-10	1	1	
Port Said.	Nov. 19-27	4	2	
Do.	Jan. 26-Mar. 5	2	1	
Suez.	Nov. 18-Dec. 5	3	4	
Do.	Mar. 2	1	1	
Province—				
Assiout.	Nov. 19-Dec. 29	4	1	Septicemic: 1 case, 1 death.
Do.	Jan. 26-Mar. 29	56	28	Cases: Pneumonic, 8 cases, 4 deaths; bubonic, 36 cases; septicemic, 5 cases, 1 death.
Dakahlieh.	Dec. 3	1	1	Pneumonic.
Fayoum.	Mar. 25-23	3	1	Bubonic.
Girgeh.	Mar. 24-27	6	4	Bubonic, 4; septicemic, 2.
Kena.	Mar. 8	1	1	Pneumonic, 1 death.
Minieh.	Nov. 18-27	2	1	
Do.	Feb. 24		1	
Hawaii:				
Honokaa.				Feb. 8-9, 1923: Plague rats, 3.
Do.				Mar. 24-25, 1923: Plague rats, 2. In vicinity Pacific Sugar Co. near Honokaa.
India:				
Bombay.	Oct. 27-Dec. 30	41	32	Oct. 1-Dec. 30, 1922: Cases, 25,007; deaths, 13,803. (Report for Nov. 19-25, 1922, not received.)
Do.	Dec. 31-Mar. 3	146	119	Dec. 31, 1922-Mar. 3, 1923: Cases, 43,298; deaths, 41,775.
Calcutta.	Feb. 11-Mar. 24	6	6	
Karachi.	Dec. 10-16	1	1	
Do.	Dec. 31-Mar. 31	69	58	
Madras Presidency.	Nov. 19-Dec. 30	2,269	1,448	
Do.	Dec. 31-Mar. 24	4,804	4,528	
Madras.	Nov. 19-25	1	1	
Do.	Jan. 21-27	1	1	
Rangoon.	Nov. 12-Dec. 30	52	49	
Do.	Dec. 31-Mar. 17	269	247	

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Iraq (Mesopotamia):				
Bagdad.....	Oct. 1–Nov. 30.....	16	.....
Do.....	Jan. 1–Feb. 28.....	11	.....
Sumaichah.....	Mar. 14.....	.....	30	Among Beni-Tenim tribes in vicinity. Locality about 30 miles from Bagdad.
Japan:				
Osaka.....	.....	.....	.....	July 1–Nov. 30, 1922: Cases, 70.
Java:				Oct. 1–Nov. 3, 1922: Cases, 900; deaths, 763. Jan. 1–Feb. 28, 1923: Cases, 1,308; deaths, 1,367.
East Java:				Dec. 1–31, 1922: Deaths, 900.
Residences—				
Pekalongan.....	Dec. 1–31.....	56	.....
Samarang.....	do.....	202	.....
Soerabaya.....	Oct. 22–Dec. 31.....	34	14	
Do.....	Jan. 14–20.....	2	2	Jan. 17–23, 1923: Cases, 5; deaths, 3.
Toeleng-Agoeng.....	Oct. 29–Dec. 16.....	18	18	Not a seaport.
Soerakarta—				
Klaten.....	Nov. 4.....	.....	.....	Present in epidemic form.
Madagascar:				Jan. 1–Dec. 10, 1923: Cases, 143.
Provinces—				Jan. 1–Feb. 28, 1923: Cases, 115; deaths, 77.
Antsirabe.....	Jan. 16–Feb. 15.....	2	2	Bubonic and septicemic.
Diego Suarez.....	Jan. 1–Feb. 15.....	4	2	Bubonic.
Moramanga.....	.....	.....	.....	To Nov. 12, 1922: Cases, 24; deaths, 21. Cases reported to Oct. 30, pneumonic.
Amparafara region.....	Sept. 18–Nov. 5.....	21	.....	Bubonic, 18; septicemic, 3 (doubtful, 2).
Moramanga.....	Dec. 6–9.....	3	.....	Bubonic.
Tamatave.....	Feb. 10–Sept. 12.....	10	.....	Do.
Miarinarivo.....	.....	.....	.....	Dec. 14, 1922–Jan. 1, 1923: 1 case (European).
Tananarive.....	.....	.....	.....	Jan. 1–Dec. 10, 1922: Cases, 73 (bubonic, 37; pneumonic, 8; septicemic, 28). Jan. 1–Feb. 28, 1923: Cases, 88; deaths, 66.
Ambobhimangakeley.....	Nov. 19–Dec. 9.....	9	.....	Bubonic, 3; pneumonic, 3; septicemic, 3.
Anketrina.....	Mar. 27–May 9.....	11	.....	Bubonic, 4; pneumonic, 2; septicemic, 5 (3 doubtful).
Fenoarivo region.....	Oct. 7–Nov. 28.....	16	.....	Bubonic, 3; pneumonic, 8; septicemic, 5.
Tananarive.....	Oct. 23–Dec. 10.....	.....	5	1 septicemic.
Do.....	Dec. 14–Feb. 28.....	23	7	Bubonic and septicemic.
Mauritius:				Year 1922: Cases, 98; deaths, 73.
Mexico:				January, 1923: Cases, 18.
Tampico.....	Mar. 23.....	2	1	Plague rodent found, Mar. 14, 1923.
Palestine:				
Jaffa.....	Nov. 27–Dec. 4.....	1	.....
Peru:				
Do.....	.....	.....	.....	Nov. 1–Dec. 31, 1922: Cases, 199; deaths, 93.
Do.....	.....	.....	.....	Jan. 1–31, 1923: Cases, 151; deaths, 59.
Do.....	.....	.....	.....	Feb. 1–15, 1923: Cases, 52; deaths, 21. (All localities of occurrence not given.) Feb. 16–28, 1923: Cases, 38; deaths, 36.
Localities—				
Barranco.....	Feb. 1–15.....	1	.....
Canete.....	Nov. 16–Dec. 31.....	56	19	Including vicinity.
Do.....	Jan. 1–Feb. 28.....	26	12	Do.
Casma.....	Jan. 1–31.....	1	.....	At Campina.
Catacos.....	do.....	4	1	
Chepen.....	Dec. 16–31.....	2	1	
Do.....	Jan. 1–31.....	1	.....	Present, Nov. 9–15, 1922.
Chiclayo (city and country).....	Nov. 16–Dec. 15.....	17	7	
Do.....	Jan. 1–Feb. 28.....	25	13	
Cutervo.....	Feb. 16–28.....	.....	8	
Eten.....	Nov. 16–Dec. 15.....	4	.....
Guadeloupe.....	Nov. 1–Dec. 31.....	22	12	
Do.....	Jan. 1–31.....	4	1	
Huacho.....	Nov. 16–Dec. 31.....	4	2	
Do.....	Jan. 1–Feb. 28.....	13	1	
Huara.....	Jan. 1–Feb. 15.....	8	.....	Country.

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Localities—Continued.				
Huacal.....	Nov. 16-30.....	1	2	
Do.....	Jan. 1-Feb. 28.....	2	2	
Huancayo.....	Dec. 1-31.....	2	2	
Do.....	Feb. 1-15.....	9		
Jayanca.....	Nov. 16-Dec. 31.....	10	8	
Lambayeque.....	do.....	7	3	
Do.....	Jan. 1-Feb. 15.....	10	7	
Lima (city).....	Nov. 1-Dec. 31.....	11	8	
Do.....	Jan. 1-Feb. 28.....	5	1	
Lima (country).....	Nov. 1-Dec. 31.....	14	5	
Do.....	Jan. 1-Feb. 28.....	7	3	
Lurin.....	Dec. 1-15.....	1		
Magdalena del Mar.....	Nov. 16-30.....	1		
Do.....	Jan. 1-31.....	1	1	
Magdalena Vieja.....	Dec. 16-31.....	1	1	
Mala.....	Dec. 1-31.....	2		
Do.....	Jan. 1-31.....	4		
Miraflores.....	Jan. 1-Feb. 15.....	5	2	
Mochumi.....	Dec. 16-31.....	3	3	
Do.....	Feb. 1-23.....	4	1	
Monsefu.....	Feb. 1-15.....	2	3	
Mosche.....	Nov. 16-30.....	2	1	
Paita.....	Dec. 16-31.....	3	2	
Do.....	Jan. 1-Feb. 28.....	14	10	
Piura.....	Nov. 16-Dec. 31.....	12	7	
Do.....	Jan. 1-Feb. 28.....	18	8	
Pueblo Nuevo.....	Dec. 1-31.....	7	4	
Do.....	Jan. 1-31.....	10	6	
San Pedro.....	Nov. 1-Dec. 31.....	8	4	
Do.....	Jan. 1-Feb. 28.....	7	4	
Santa Cruz (Hualgayoc).....	Feb. 16-28.....	9	9	
Sullana.....	Nov. 16-30.....	3	3	
Do.....	Jan. 1-31.....	1	1	
Trujillo.....	Nov. 1-Dec. 31.....	3	1	
Do.....	Jan. 1-Feb. 28.....	41	15	District.
Tuman.....	Nov. 16-30.....	3		
Portugal:				
Lisbon.....	Nov. 10-29.....	4	2	
Oporto.....	Jan. 21-27.....		1	
Portuguese West Africa:				
Angola—				
Loanda.....	Oct. 1-Dec. 30.....		45	Fatal cases among white population.
Do.....	Dec. 31-Feb. 3.....	2	2	
Russia:				
Kirghiz Republic.....				
				Dec. 2, 1922-Feb. 16, 1923: Cases, 116 (pneumonic), occurring in 2 out of 6 governments.
Siam:				
Bangkok.....	Nov. 12-Dec. 23.....	5	5	
Do.....	Dec. 31-Mar. 10.....	76	62	
Spain:				
Barcelona.....	Nov. 15-Dec. 18.....	1		Sept. 24-Nov. 14, 1922: Cases, 23; deaths, 9.
Malaga.....	Jan. 27.....	3		17 suspected cases.
Straits Settlements:				
Singapore.....	Dec. 17-23.....	2	2	
Do.....	Jan. 21-Mar. 17.....	7	7	
Syria:				
Beirut.....	Nov. 6-30.....	4	3	
Turkey:				
Constantinople.....	Nov. 22-28.....	2		
Do.....	Jan. 28-Feb. 10.....	2		
Union of South Africa:				
Transvaal—				
Klipfontein Farm.....	Dec. 16.....	2	1	Natives. Jan. 25, 1923: Plague-infected wild rodent found in vicinity.
West Africa:				
Senegal—				
Dakar.....	Feb. 1-28.....	2	2	
On vessels:				
S. S. He'cion.....	Dec. 1.....	1		At Thursday Island Quarantine, Australia, from Singapore, Straits Settlements. In Chinese firemen.
S. S. —.....	Dec. 30.....			At port of London: Plague-infected rats and cats found in grain cargo on vessel from South America.

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers.....	Dec. 1-10.....	1	.....
Do.....	Jan. 1-Mar. 31.....	4	.....
Arabia:				
Aden.....	Nov. 19-Dec. 23.....	7	3	
Do.....	Jan. 7-Mar. 31.....	23	2	
Barbados (West Indies).....	Apr. 26.....	.....	.....	Present. (Reported as alastrim).
Bolivia:				
La Paz.....	Jan. 1-Feb. 28.....	11	11	
Brazil:				
Bahia.....	Nov. 5-11.....	1	.....
Do.....	Mar. 4-10.....	1	.....
Para.....	Feb. 12-Mar. 25.....	14	.....
Pernambuco.....	Jan. 21-Mar. 31.....	12	2	
Rio de Janeiro.....	Nov. 25-Dec. 30.....	40	15	
Do.....	Dec. 31-Apr. 7.....	54	25	
Sao Paulo.....	Oct. 16-22.....	1	1	
Do.....	Jan. 8-Feb. 18.....	5	1	
British East Africa:				
Kenya Colony—				
Tanganyika Territory..	Oct. 8-Dec. 23.....	193	10	
Do.....	Jan. 7-Feb. 21.....	44	2	
Uganda.....	Sept. 1-Dec. 31.....	3	1	Jan. 1-31, 1923: Cases, 3; deaths, 1.
Entebbe.....	Nov. 24-30.....	3	3	
Canada:				
Alberta—				
Calgary.....	Mar. 4-10.....	1	.....
British Columbia—				
Fernie.....	Mar. 18-24.....	1	.....
Manitoba—				
Winnipeg.....	Dec. 10-30.....	14	.....
Do.....	Jan. 21-Apr. 14.....	64	.....
New Brunswick—				
Northumberland County.....	Jan. 21-Feb. 17.....	8	.....
Restigouche County.....	Mar. 11-17.....	1	1	
Ontario.....				Dec. 1-31, 1922: Cases, 51; deaths, 1.
Hamilton.....	Dec. 31-Feb. 24.....	7	.....	1. Jan. 1-Mar. 31, 1923: Cases, 92.
Niagara Falls.....	Dec. 3-30.....	10	.....
Do.....	Dec. 31-Jan. 12.....	12	.....
Ottawa.....	Dec. 10-23.....	6	.....
Do.....	Jan. 7-Mar. 31.....	21	1	
Toronto.....	Dec. 10-30.....	2	.....
Do.....	Feb. 4-10.....	1	.....
Quebec—				
Quebec.....	Jan. 14-20.....	3	.....
Sherbrooke.....	Mar. 1-31.....	.....	2	
Saskatchewan—				
Regina.....	Dec. 3-23.....	2	.....
Ceylon:				
Colombo.....	Nov. 12-Dec. 24.....	9	4	1 case, 1 death outside city.
Do.....	Feb. 18-Mar. 10.....	3	.....
Chile:				
Antofagasta.....	Apr. 1-7.....	1	.....
Concepcion.....	Oct. 30-Dec. 25.....	.....	7	
Do.....	Feb. 1-Mar. 12.....	3	1	
Valparaiso.....	Oct. 2-Dec. 30.....	4	153	In hospital Dec. 26, 83 cases.
Do.....	Jan. 9-Feb. 10.....	.....	90	Dec. 31, 1922-Jan. 27, 1923: Deaths, 66. Feb. 16, 1923: 80 cases present (estimated).
China:				
Amoy.....	Nov. 5-Dec. 23.....	.....	3	Nov. 26-Dec. 30, 1922: Present.
Do.....	Jan. 7-Mar. 24.....	.....	9	
Antung.....	Nov. 13-Dec. 10.....	2	.....
Do.....	Feb. 26-Mar. 4.....	1	.....
Canton.....	Oct. 1-Nov. 30.....	.....	.....	Provalent.
Do.....	Jan. 21-Feb. 17.....	.....	.....	Present.
Changsha.....	Feb. 11-17.....	1	.....
Chungking.....	Nov. 5-Dec. 30.....	.....	.....	Do.
Do.....	Dec. 31-Mar. 10.....	.....	.....	Do.
Foochow.....	Nov. 12-Dec. 30.....	.....	.....	Do.
Do.....	Dec. 31-Mar. 17.....	.....	.....	Do.
Hankow.....	Dec. 31-Jan. 20.....	4	1	
Hongkong.....	Nov. 5-11.....	.....	1	
Do.....	Dec. 31-Mar. 17.....	29	19	
Manchuria—				
Harbin.....	Nov. 20-Dec. 31.....	13	.....
Do.....	Jan. 8-Mar. 18.....	8	.....
Mukden.....	Nov. 19-Dec. 16.....	.....	.....	Do.
Do.....	Jan. 7-Feb. 3.....	.....	.....	Do.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**Reports Received from December 30, 1922, to May 11, 1923—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
China—Continued.				
Manchuria—Continued.				
Nanking.....	Nov. 5-Dec. 23.....	.....	.....	Present.
Do.....	Jan. 7-Mar. 3.....	.....	.....	Do.
Shanghai.....	Jan. 15-Mar. 25.....	3	2	Cases, foreign. Deaths, Chinese.
Tientsin.....	Feb. 18-24.....	1	.....	Reported from foreign office.
Chosen (Korea):				
Chemulpo.....	Oct. 1-Dec. 31.....	135	92	
Do.....	Jan. 1-Feb. 28.....	36	17	
Fusan.....	Nov. 1-Dec. 31.....	4	.....
Do.....	Jan. 1-Feb. 28.....	9	1	
Gensan.....	Dec. 1-31.....	6	2	
Seoul.....	Oct. 1-Dec. 31.....	19	1	
Do.....	Jan. 1-Feb. 28.....	65	25	
Colombia:				
Buenaventura.....	Jan. 25-Feb. 20.....	48	.....	Estimated, 50 cases present; type mild; among colored population. Feb. 16-26, 1923: 6 to 9 cases 2 miles from town limits.
Santa Marta.....	Apr. 18.....	.....	.....	Mild outbreak.
Cuba:				
Province—				
Camaguey.....	Nov. 11-Dec. 31.....	20	.....
Matanzas.....	Jan. 1-31.....	2	.....
Oriente.....	Nov. 21-Dec. 31.....	22	.....
Do.....	Jan. 1-Feb. 10.....	10	.....
Santa Clara.....	Dec. 21-31.....	1	.....
Czechoslovakia:				
Province—				
Bohemia.....	Oct. 1-31.....	1	.....	Oct. 1-31, 1922: Cases, 3. Jan. 1-31, 1923: Cases, 3.
Moravia.....	do.....	1	.....
Slovakia.....	Oct. 1-Nov. 30.....	2	.....
Dominica (West Indies).....				Feb. 26, 1923: Present with several thousand cases (estimated). Reported as alastrim.
Dominican Republic:				
Puerto Plata.....	Dec. 14-30.....	2	.....
Santo Domingo.....	Dec. 3-16.....	.....	.....	Present.
Do.....	Feb. 28-Mar. 6.....	3	.....
San Pedro de Macoris.....	Jan. 13-19.....	2	.....
Ecuador:				
Guayaquil.....	Dec. 1-31.....	10	.....
Do.....	Jan. 1-Feb. 28.....	11	.....
Egypt:				
Alexandria.....	Feb. 19-25.....	1	.....
Port Said.....	Jan. 21-27.....	1	.....
Estonia.....				Oct. 1-Dec. 31, 1922: Cases, 61.
Do.....				Jan. 1-Feb. 28, 1923: Cases, 25.
France:				
Paris.....	Dec. 1-10.....	1	.....
Do.....	Mar. 4-10.....	1	.....
Germany:				
Bremen.....	Dec. 3-9.....	1	.....
Great Britain:				
Liverpool.....	Dec. 11-17.....	1	.....	From vessel.
London.....	Nov. 26-Dec. 23.....	3	.....
Nottingham.....	Nov. 19-Dec. 13.....	4	.....
Do.....	Jan. 7-Mar. 10.....	16	.....
Greece:				
Kalamata.....	Jan. 13-Feb. 13.....	.....	1	
Patras.....	Jan. 21-Feb. 17.....	.....	84	
Saloniki.....	Nov. 6-Dec. 31.....	6	5	
Do.....	Jan. 15-Feb. 18.....	9	1	
Zante.....				Epidemic, Jan. 17, 1923.
Do.....	Jan. 7-14.....	13	4	
Guadaloupe (West Indies).....				Feb. 26, 1923: Present. Reported as alastrim.
Guatemala:				
Guatemala City.....	Feb. 23.....	.....	.....	Present.
Honduras.....				Apr. 17, 1923: Outbreak in interior.
India.....				Nov. 5-Dec. 30, 1922: Cases, 5,783; deaths, 333. Dec. 31, 1922-Feb. 17, 1923: Cases, 12,751; deaths, 3,254.
Bombay.....	Nov. 5-Dec. 30.....	22	10	
Do.....	Dec. 31-Mar. 3.....	128	66	
Calcutta.....	Nov. 12-Dec. 30.....	46	23	
Do.....	Dec. 31-Mar. 24.....	178	94	

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Karachi.....	Nov. 26-Dec. 30.....	6	—	
Do.....	Dec. 31-Mar. 31.....	56	27	
Madras.....	Nov. 12-Dec. 30.....	71	23	
Do.....	Dec. 31-Mar. 24.....	266	79	
Rangoon.....	Nov. 5-Dec. 30.....	27	6	
Do.....	Jan. 7-Mar. 17.....	205	79	
Iraq (Mesopotamia):				
Bagdad.....	Oct. 1-Nov. 30.....	588	361	
Do.....	Jan. 1-Feb. 28.....	32	50	
Italy:				
Turin.....	Jan. 29-Mar. 18.....	21	—	
Genoa.....	Apr. 1-10.....	1	—	From vessel.
Jamaica:				
Kingston.....	Mar. 11-Apr. 14.....	8	—	Dec. 31, 1922-Apr. 14, 1923: Cases, 652. Previously reported as alastrim.
Japan:				
Kobe.....	Jan. 13-Apr. 3.....	7	2	
Taiwan Island.....	Mar. 4-10.....	1	1	
Yokohama.....	Jan. 22-Mar. 25.....	2	—	
Java:				
East Java—				
Soerabaya.....	Nov. 5-11.....	4	—	
Do.....	Feb. 4-Mar. 10.....	5	1	
West Java—				
Batavia.....	Nov. 11-Dec. 22.....	25	1	City and Province.
Do.....	Jan. 27-Mar. 16.....	17	2	Province.
Latvia:				
Martinique.....				Oct. 1-Dec. 31, 1922: Cases, 7.
				Mar. 31, 1923: Present. Reported as alastrim.
Mexico:				
Chihuahua.....	Dec. 4-17.....	—	4	
Do.....	Jan. 1-Apr. 15.....	61	22	
Guadalajara.....	Dec. 1-31.....	4	—	
Do.....	Jan. 1-Mar. 31.....	74	23	
Mexico City.....	Nov. 12-Dec. 23.....	43	—	Including municipalities in Federal District.
Do.....	Dec. 31-Mar. 24.....	221	—	Do.
Nogales.....	Dec. 10-19.....	—	1	
Do.....	Dec. 31-Feb. 10.....	—	2	
Saltillo.....	Jan. 28-Feb. 3.....	1	—	
San Luis Potosi.....	Jan. 14-20.....	—	1	
Sonora, State.....				Nov. 1-30, 1922: Present in northern section.
Empalme.....	Nov. 1-30.....	4	1	
Tabasco, State.....				Present in some localities Mar. 26, 1923.
Torreón.....	Dec. 1-31.....	—	1	
Vera Cruz.....	Feb. 26-Apr. 8.....	12	5	
Palestine:				
Persia:				Jan. 23-Feb. 19, 1923: Cases, 8; northern district.
Tabriz.....	Dec. 18-31.....	—	2	
Do.....	Jan. 15-Feb. 13.....	—	3	
Teheran.....	Oct. 24-Dec. 22.....	—	139	
Do.....	Dec. 20-Jan. 20.....	—	56	
Peru:				
Callao.....	Nov. 1-15.....	2	—	Feb. 1-28, 1923: Cases, 8; deaths, 1.
Lima (city).....	Dec. 1-15.....	3	1	
Lima (country).....	Nov. 1-15.....	2	1	
Do.....	Feb. 16-28.....	2	—	City and country.
Poland:				
				Oct. 1-Dec. 23, 1922: Cases, 132; deaths, 25. Jan. 1-27, 1923: Cases, 70; deaths, 7.
Portugal:				
Lisbon.....	Nov. 19-Dec. 30.....	143	34	
Do.....	Dec. 31-Mar. 31.....	170	83	Dec. 25-31, 1922: Deaths, 12.
Oporto.....	Oct. 15-Dec. 30.....	24	12	Mar. 26-Apr. 7, 1923: Cases, 11; deaths, 5.
Do.....	Dec. 31-Apr. 10.....	23	11	Jan. 5-20, 1923: Cases, 22; deaths, 6.
Portuguese West Africa:				
Angola—				
Loanda.....	Oct. 27-Nov. 11.....	—	10	
Rumania:				
Bucharest.....	Feb. 1-10.....	1	—	
Chisinau.....	Jan. 1-Feb. 28.....	26	—	
Galatz.....	Feb. 1-10.....	2	—	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**Reports Received from December 20, 1922, to May 11, 1923—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Russia:				
City—				
Moscow.....				Jan. 1-31, 1923: Cases treated in hospital, 10.
Province—				
Ukraine.....				Jan.-Sept., 1922: Cases, 8,744.
Santa Lucia Island.....	Apr. 26.....			Present.
Sierra Leone:				
Freetown.....	Feb. 16-28.....	1		
Spain:				
Corunna.....	Nov. 26-Dec. 2.....		1	
Huelva.....	Nov. 24-Dec. 31.....		4	
Madrid.....	Dec. 1-31.....		1	
Do.....	Jan. 1-31.....		1	
Seville.....	Nov. 27-Dec. 31.....		32	
Do.....	Jan. 1-Mar. 11.....		16	
Valencia.....	Nov. 26-Dec. 23.....	3		
Do.....	Dec. 31-Apr. 14.....	52	3	
Switzerland:				
Basel.....	Feb. 23-Apr. 7.....	5		
Bern.....	Nov. 19-Dec. 30.....	85		
Do.....	Dec. 31-Apr. 7.....	182		
Lucerne.....	Jan. 1-Mar. 31.....	22		
Zurich.....	Nov. 19-Dec. 30.....	19		
Do.....	Jan. 14-Apr. 7.....	52		
Syria:				
Aleppo.....	Nov. 19-Dec. 23.....	38	20	
Do.....	Dec. 31-Apr. 14.....	30	6	
Beirut.....	Dec. 11-20.....	1		
Damascus.....	Nov. 1-Dec. 31.....	97	16	
Do.....	Jan. 1-Feb. 20.....	22		
Tunis:				
Tunis.....	Dec. 1-22.....	2	1	
Do.....	Jan. 22-Feb. 4.....	1	1	
Turkey:				
Constantinople.....	Nov. 19-Dec. 16.....	122	34	
Do.....	Dec. 31-Mar. 24.....	416	324	
Union of South Africa.....				Oct. 1-Dec. 31, 1922: Cases—Colored, 64; deaths, 1; white, cases, 4.
Do.....				Jan. 1-Feb. 28, 1923: Cases, 34; colored, 30; white, 4; deaths, 3 (colored).
Cape Province.....				Oct. 1-Dec. 31, 1922: Cases—Colored, 48; deaths, 1; white, 4 cases.
Do.....				Jan. 1-Feb. 28, 1923: Cases, 23 (colored, 18; white 4). Deaths, colored, 2.
Do.....	Dec. 31-Mar. 10.....			Outbreaks.
East London.....	Jan. 7-13.....	2		
Natal:				Dec. 1-31, 1922: Cases, 6 (colored).
Do.....				Jan. 1-Feb. 28, 1923: Cases, 7; deaths, 1 (colored).
Do.....	Feb. 4-10.....			Outbreaks.
Orange Free State.....				Dec. 1-31, 1922: Cases, 2 (colored).
Do.....				Jan. 1-31, 1923: Cases, 3 (colored).
Do.....	Jan. 14-Feb. 3.....			Outbreaks.
Southern Rhodesia.....	Nov. 9-15.....	3		
Transvaal.....				Oct. 1-Dec. 31, 1922: Cases, 10.
Do.....				Jan. 1-Feb. 28, 1923: Cases, 2 (colored).
Do.....	Dec. 31-Mar. 3.....			Outbreaks.
Johannesburg.....	Nov. 1-30.....		1	
Do.....	Jan. 1-31.....	1		
Uruguay:				
Montevideo.....	do.....	8		
Yugoslavia:				Aug. 1-31, 1922: Cases, 30; deaths, 12.
Serbia.....				Aug. 1-31, 1922: Cases, 26.
Belgrade.....	Nov. 12-Dec. 31.....	10	4	
On vessel:				
S. S. Bahia.....	Mar. 4-10.....	1		At Pernambuco, Brazil.
S. S. Huntress.....	Nov. 11.....	1		At Fremantle, Australia; from Cape Town, South Africa.
S. S. Junin.....	Jan. 13.....	1		At Antofagasta, Chile. Vessel proceeded to Arica, Chile, with patient on board.
S. S. —.....	Dec. 17-23.....	1		At Liverpool.
S. S. Tenyo Maru.....	Mar. 20.....	1		At Shanghai, China, from Japan. In steerage passenger.

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers.....	Nov. 11-Dec. 31...	2	1	
Do.....	Jan. 1-Mar. 31.....	41	10	
Oran.....	Jan. 11-20.....	1	1	
Austria:				
Vienna.....	Jan. 7-17.....	1		
Bolivia:				
La Paz.....	Jan. 1-Feb. 28.....	26	21	
Brazil:				
Pernambuco.....	Dec. 3-9.....	2	2	
Porto Alegre.....	Nov. 19-Dec. 16.....	3		
Do.....	Feb. 25-Mar. 3.....		3	
Bulgaria:				
Sofia.....	Feb. 4-24.....	2		Paratyphus, 3 cases.
Chile:				
Antofagasta.....	Nov. 12-Dec. 30.....	24	5	Nov. 11-Dec. 5, 1922: Cases, 10;
Do.....	Dec. 31-Apr. 7.....	4	2	deaths, 2. Quarantine station:
Concepcion.....	Oct. 17-Dec. 18.....		9	October, 1922—1 fatal case
Do.....	Dec. 26-Feb. 28.....		10	on vessel from Valparaiso;
Iquique.....	Jan. 14-20.....		1	November, 1922—cases, 7; De-
Talcahuano.....	Nov. 12-Dec. 23.....	10	6	cember, 1922—cases, 9; remain-
Do.....	Jan. 7-Mar. 17.....	7	2	ing, Dec. 31, 3 cases.
Valparaiso.....	Dec. 3-30.....		9	
Do.....	Dec. 31-Feb. 10.....		23	Daily hospital average, Feb. 16,
				25 cases.
China:				
Antung.....	Nov. 13-Dec. 10.....	7		
Manchuria—				
Harbin.....	Nov. 20-26.....	7		
Do.....	Jan. 1-Feb. 18.....	7		
Cuba:				
Matanzas.....	Dec. 25-31.....	1	1	
Czechoslovakia:				Jan. 1-31, 1923: Cases, 76.
City.....				
Prague.....	Nov. 19-25.....	1		
Province.....				
Bohemia.....	Nov. 1-30.....	1		
Ruthenia.....	Oct. 1-Dec. 31.....	25		
Slovakia.....	Nov. 1-30.....	2		
Danzig (Free City).....	Jan. 7-Feb. 24.....	2		Including one from Poland.
Egypt:				
Alexandria.....	Nov. 19-Dec. 31.....	2	1	
Do.....	Jan. 22-Apr. 1.....	5	3	Imported, 1.
Cairo.....	Oct. 1-Dec. 31.....	19	9	
Do.....	Jan. 1-28.....	7	4	
Port Said.....	Mar. 25-31.....	1		
Estonia:				
				Oct. 1-Dec. 31, 1922: Cases, 6.
				Recurrent typhus: Cases, 10.
				Year 1922: Cases, 159; recurrent
				typhus, 91 cases.
Do.....				Jan. 1-Feb. 28, 1923: Cases, 9.
Libau.....	Dec. 24-30.....	1		Recurrent typhus Jan. 1-31,
				cases, 4.
Narva.....				Year, 1922: Cases, 140; recurrent
				typhus: Cases, 83.
Finland:				Feb. 16-Mar. 15, 1923: Cases, 7;
				recurrent typhus, 1.
Germany:				
Berlin.....	Nov. 26-Dec. 2.....		1	
Coblenz.....	Dec. 10-16.....	1		
Do.....	Mar. 25-31.....	1		
Dresden.....	Dec. 10-16.....	1		
Königsberg.....	Mar. 24-30.....	1		
Great Britain:				
Glasgow.....	Jan. 7-Feb. 17.....	4	1	
Greece:				
Corfu Island.....	Feb. 8.....			Present.
Leucadia.....	Jan. 17.....			Do.
Patras.....	Nov. 19-25.....		1	
Do.....	Jan. 1-17.....	3	5	
Piræus.....	Feb. 8.....			Do.
Prevesa.....	Jan. 17.....			Do.
Saloniki.....	Dec. 18-21.....	3		Among refugees.
Do.....	Jan. 7-Feb. 25.....	79	4	Refugees.
Zante.....	Jan. 17.....			Present.
Guatemala:				
Guatemala City.....	Jan. 1-31.....		1	

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Hungary:				
Budapest.....	Jan. 14-Mar. 31....	23	4	
Iraq (Mesopotamia):				
Bagdad.....	Feb. 1-28.....	1		
Ireland:				
Belmullet.....	June 15-Dec. 14....	20		In county Mayo.
Italy:				
Trieste.....	Feb. 25-Mar. 3.....	1		
Latvia.....				Oct. 1-Dec. 31, 1922: Cases, 74. Recurrent typhus: Cases, 10.
Mexico:				
Guadalajara.....	Mar. 1-31.....	1		
Mexico City.....	Nov. 12-Dec. 30....	90		Including municipalities in Federal District.
Do.....	Dec. 31-Mar. 24....	144		Do.
San Luis Potosi.....	Jan. 28-Apr. 7.....		4	
Palestine.....				Dec. 5-25, 1922: Cases, 3; in northern section. Feb. 27-Mar. 5, 1923—1 case in northern section.
Jaffa.....	Dec. 12-18.....	2		
Do.....	Jan. 16-Apr. 9.....	6		
Jerusalem.....	Dec. 26-Jan. 1.....	1		
Paraguay:				
Asuncion.....	Jan. 1-27.....		1	
Persia:				
Tahriz.....	Dec. 18-31.....		3	
Do.....	Jan. 15-28.....		1	
Teheran.....	Sept. 24-Nov. 24....		3	
Poland.....				Oct. 1-Dec. 23, 1922: Cases, 1,916; deaths, 130. Recurrent typhus: Cases, 2,071; deaths, 56. Jan. 1-27, 1923: Cases, 1,411; deaths, 127. Recurrent typhus: Cases, 501; deaths, 10.
Portugal:				
Lisbon.....	Mar. 26-Apr. 1.....		1	
Oporto.....	Oct. 15-Dec. 2.....	1	1	
Do.....	Mar. 11-17.....	3		
Rumania:				
Bucharest.....				To Jan. 31, 1923: Cases, 96; deaths, 13.
Do.....	Feb. 1-10.....	133		
Chisinau.....	Nov. 1-30.....	5		
Do.....	Jan. 1-Feb. 28.....	110		Recurrent typhus: Cases, 33.
Craiova.....	Feb. 1-10.....	1		
Russia.....				July 30-Sept. 23, 1922: Cases, 23,803. Undetermined cases, 38. Provisional figures.
Moscow.....	Jan. 1-31.....	290		
Ukraine.....	Jan.-Sept.....	307,329		
Ukraine, Tartar Republic, and Siberia.....	June 1-30.....	35,926		
Do.....	July 1-31.....	17,262		Do.
Do.....	Aug. 1-31.....	6,864		Do.
Do.....	Sept. 1-30.....	2,388		Do.
Elberia:				
Vladivostok.....	Nov. 1-Dec. 31.....	5		Remittent, 1 case; indefinite, 6 cases.
Do.....	Jan. 1-Feb. 28.....	130		Remittent, 1 case; indefinite, 33 cases.
Spain:				
Barcelona.....	Nov. 30-Dec. 27....		3	
Do.....	Jan. 11-Mar. 28.....		2	
Madrid.....	Dec. 1-31.....		1	
Do.....	Feb. 1-28.....		1	
Syria.....				
Aleppo.....	Dec. 10-16.....	1	1	
Do.....	Jan. 7-Apr. 14.....	101	22	Generally among refugees.
Beirut.....	Oct. 1-22.....	1		
Turkey:				
Constantinople.....	Nov. 27-Dec. 2.....	3		
Do.....	Dec. 31-Mar. 24....	199	109	
Union of South Africa.....				Oct. 1-Dec. 31, 1922: Colored—cases, 3,097; deaths, 298; white—cases, 11; deaths, 2. Jan. 1-Feb. 28, 1923: Total—cases, 1,050; deaths, 93. (Colored—cases, 1,037; deaths, 92; white—cases, 13; 1 death.)
Do.....				

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

Reports Received from December 30, 1922, to May 11, 1923—Continued.

TYPHUS FEVER—Continued

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa—Con.				
Cape Province.....				Oct. 1-Dec. 31, 1922: Colored—cases, 2,799; deaths, 250; white—cases, 6; deaths, 1.
Do.....				Jan. 1-Feb. 28, 1923: Colored—cases, 853; deaths, 72; white—7 cases, 1 death.
Do.....	Dec. 31-Mar. 10.....			Outbreaks.
Port Elizabeth.....	Jan. 28-Feb. 10.....	3		
Natal.....				Oct. 1-Dec. 31, 1922: Colored—cases, 143; deaths, 32; white—cases, 2.
Do.....				Jan. 1-Feb. 28, 1923: Colored—cases, 38; deaths, 3; white—1 case.
Do.....	Feb. 4-17.....			Outbreaks.
Orange Free State.....				Oct. 1-Dec. 31, 1922: Colored—cases, 91; deaths, 8; white—cases, 3; deaths, 1.
Do.....				Jan. 1-Feb. 28, 1923: Colored—cases, 93; deaths, 7; white—2 cases.
Do.....	Jan. 7-Mar. 3.....			Outbreaks.
Transvaal.....				Oct. 1-Dec. 31, 1922: Colored—cases, 64; deaths, 8.
Do.....				Jan. 1-Feb. 28, 1923: Colored—cases, 53; deaths, 11; white—cases, 2.
Do.....	Jan. 14-Feb. 17.....			Outbreaks.
Johannesburg.....	Nov. 1-30.....	3	6	
Do.....	Jan. 1-Feb. 28.....	28	3	
Venezuela:				
Maracaibo.....	Jan. 21-27.....		1	
Yugoslavia:				
Bosnia-Herzegovina.....	Aug. 1-31.....	1		
Serbia.....				Aug. 1-31, 1922: Recurrent typhus fever: Cases, 4.

YELLOW FEVER.

Brazil:				
Bahia.....	Dec. 31-Mar. 10.....	46	11	
Mexico:				
Ciudad Victoria.....	Dec. 17-23.....	1		
Tampico.....	Jan. 15.....	1		Reported on bills of health.
West Africa:				
Gold Coast—				
Saltpond.....				Reported present Dec. 21, 1922.
Nigeria—				
Warrai.....				Do.