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THE INFLUENZA OUTBREAK IN EUROPE

A special bulletin giving information concerning the prevalence of influenza in Europe has been issued under date of January 11, 1927, by the health section of the secretariat of the League of Nations.

The following reports are taken from the bulletin:

Germany.—The Reichsgesundheitsamt reported on January 8 that there was no influenza epidemic in Germany but an increase of affections of the upper respiratory tract. Hospital admissions in Berlin are increasing since the beginning of January.

The General Sickness Insurance Institute (Allgemeine Ortskrankenkasse) at Berlin has received the following number of reports of influenza cases among its members (about 500,000):

Dec. 27	158	Jan. 1–2	
Dec. 28	286	Jan. 3	[1] 338
Dec. 29	329	Jan. 4	[1] 545
Dec. 30	337	Jan. 5	[1] 688
Dec. 31	292	Jan. 6	682

Belgium.—The health administration reports (January 7) numerous cases of simple influenza of benign type and short duration. Fatal cases are rare and due particularly to complications of respiratory system.

Denmark.—The following information has been received from the health administration (January 7): Influenza broke out during the third week of December in the southern part of Jutland, affecting particularly the towns. It spread in leaps, affecting the island of Fyen during the last week of December, leaving the northern part of Jutland untouched. A few cases are occurring at Copenhagen and elsewhere in the island of Sealand. The cases are generally mild and only few deaths occur. The most prevalent clinical characters are: Tracheitis, conjunctivitis, epistaxis, irritation of throat, headache, rachialgia, abdominal pains, colitis. Fever high but of short duration, complications rare, very infectious, incubation period two days. Instruction has been given to health officers as to isolation of infected and suspicious persons; warnings have been issued against gatherings. Weekly reports and immediate notification of first case is being requested from local health officers.

[1] Including cases occurring on Jan. 1 and 2.

Spain.—The Spanish Health Administration cables on January 8: While awaiting reply to urgent telegraphic request for information sent to all Provinces of Spain, which it is hoped they will submit in a couple of days, I may say that influenza epidemic appeared in the beginning of December in the towns bordering on the French frontier, especially at Barcelona and San Sebastian, becoming rather widespread, remaining, however, of benign character up to now. The first cases appeared in Madrid 20 days ago, extending rapidly, equally with benign character. General mortality and mortality from diseases of the respiratory system have been about the same as during the same period last year.

France.—Influenza is or has been prevalent in central, eastern, and southern France. Statistics are not as yet available except for Paris, where the epidemic appears to have reached its maximum about the middle of December.

Number of deaths reported at Paris November 21–December 31, 1926

	Nov. 21–30	Dec. 1–10	Dec. 11–20	Dec. 21–31
Deaths from—				
All causes	1,077	1,471	1,834	1,942
Influenza	11	55	138	139
Respiratory diseases	156	318	518	----
Heart diseases	114	140	164	159
Senility	61	82	125	----

Broncho-pneumonia is the most common fatal complication. Deaths are more frequent among women than among men and are most numerous among persons of advanced age.

Distribution of deaths in Paris by age and sex, December 1–20, 1926

Age	Influenza		Respiratory diseases	
	Male	Female	Male	Female
Under 20	14	19	82	74
20–39	9	22	30	20
40–59	16	20	65	68
60 and over	31	62	169	333
Total	70	123	346	490

Great Britain and Ireland.—The Ministry of Health telegraphs (January 10): Incidence and mortality of influenza here is normal for time of year. The following information has been extracted from the registrar general's weekly return of births and deaths in England and Wales:

Number of deaths reported in English towns, December 5, 1926–January 1, 1927

	Dec. 5–11	Dec. 12–18	Dec. 19–25	Dec. 26–Jan. 1
Deaths in 105 towns:				
All causes	4,919	4,797	4,556	5,897
Influenza	52	60	69	86
Whole country:				
Pneumonia cases notified	1,309	1,316	1,173	1,514
Deaths in London:				
All causes	1,172	1,161	1,070	1,473
Influenza	13	18	16	17
Respiratory diseases	244	263	222	364
Heart diseases	198	170	186	252

The weekly reports for Scotland and Ireland give the following number of deaths from influenza during the week ended January 1: Edinburgh 2, Glasgow 4, Dublin 2, Belfast 4.

The registrar general of Scotland telegraphs (January 10): Death returns to 8th give no indication of epidemic.

Italy.—The Italian Health Administration wired on January 9: Sanitary conditions in the Kingdom are excellent. No centers of epidemic influenza have so far been reported.

Netherlands.—The health administration states (January 7): Influenza has been prevalent since Christmas, the number of absences for sickness among the personnel of the public services is two or three times as high as in January, 1926. Statistics regarding the personnel of the municipal services available for Amsterdam and other towns show that those who are occupied in open air, such as tramway employees and the police, have suffered much less than those who are not exposed to the cold. The proportion of sick among the personnel varies from 10 to 20 per cent; 25 per cent of the nurses at one of the Amsterdam hospitals are sick. The cases have hitherto been of benign character. There are few complications and deaths. Since the beginning of the epidemic there have been only 2 deaths at Amsterdam, 3 at Rotterdam, 3 at The Hague, and 4 at Utrecht. Only a few cases are being cared for in hospitals. The situation is much the same in other towns and rural districts. No general measures have been taken.

Norway.—The Norwegian Health Administration cabled the following information (January 8): Influenza has hitherto been benign in character and of the usual type. Monthly reports for December are just beginning to come in. There were reported during the month at Oslo, 501 cases and 2 deaths from influenza, 913 cases and 3 deaths from bronchitis, 32 cases and 7 deaths from pneumonia. In smaller towns, 639 cases and no deaths from influenza, 1,588 cases and 2 deaths from bronchitis, and 91 cases and 7 deaths from pneumonia.

Sweden.—The Swedish Health Administration states (January 8): Influenza has not as yet appeared in any manner unusual for the season nor under any form more serious than usual.

Switzerland.—The following information has been received from the Federal Health Service (January 8): Since about the 10th of December an unusual prevalence of influenza has been remarked in Switzerland. The epidemic has spread in certain parts of the country and especially in the canton of Berne, Basel town, and Geneva. In the beginning of the epidemic the cases were of the usual benign character; although the vast majority of cases are still benign, pulmonary complications are actually less rare than before. A certain number of deaths have been reported at Basel; for example, there were 42 deaths from the 26th of December to the 6th of January, with a maximum of 7 deaths on January 1. Deaths occur mostly among persons of advanced age, and there is a marked predominance for the female sex. It appears that the epidemic is now decreasing in the three cantons, Berne, Basel, and Geneva, where it first appeared. A recrudescence is now remarked in other cantons, such as Zurich and Soleure. Schools have been closed in the cantons affected by the epidemic and visits to hospitals prohibited. The following table summarizes the cases reported in the various cantons:

Influenza cases reported in the cantons of Switzerland, December, 1926

Canton	Dec. 5–11	Dec. 12–18	Dec. 19–25	Dec. 26, 1926–Jan. 1, 1927
Berne	510	1,144	852	561
Basel		160	2,487	5,126
Geneva		5	721	2,533
Zurich		1	30	256
Soleure			6	458
Lucerne				54
Thurgovie				58
Vaud			10	(1)
Neuchatel				15
Valais				(1)
Fribourg				(2)

[1] Epidemic. [2] Numerous cases.

During the week ended January 8, 3,149 influenza cases were reported at Geneva.

Czechoslovakia.—The Health Service reports (January 8): Usual seasonal prevalence of mild influenza.

LATER INFORMATION

A cablegram received January 26, 1927, from the Health Section of the Secretariat of the League of Nations gives the following later information:

Influenza has decreased markedly in France, Spain, and those parts of Switzerland which were affected early. The disease is very prevalent, but mostly of mild type, in southern and eastern England and in Denmark, Netherlands, Hungary, and Bulgaria.

SOME SPECIAL FEATURES OF THE WORK OF THE PUBLIC HEALTH SERVICE

In the PUBLIC HEALTH REPORTS of December 10, 1926, there was printed a series of eight articles from the United States Daily which gave a sketch of the general work of the United States Public Health Service.

The United States Daily has, since that time, printed a considerable number of articles relating to special phases of the research and administrative activities carried on by the United States Public Health Service.

The publication of the first series in the PUBLIC HEALTH REPORTS caused a considerable number of very favorable comments to be received by the bureau, and resulted in numerous requests for large numbers of the reprints of this statement of the service work. It has therefore been thought desirable to reprint, with the permission of The United States Daily, the remaining articles on public health work, and these articles are being printed in this issue and the following issue of the PUBLIC HEALTH REPORTS for the information and use of health officers and other interested persons.

SCIENTIFIC RESEARCH

On a hill overlooking the Potomac River, near the Lincoln Memorial in the National Capital, is a group of red brick buildings that sometimes excites the curiosity of tourists. It is here, adjoining the Naval Hospital, that the Bureau of the Public Health Service has its laboratory, where studies are made that intimately concern the health of every man, woman, and child in the country.

Because this laboratory exists, for instance, every person who is vaccinated may rest assured that the vaccine is as pure and potent as it is humanly possible to make it. Not only is this so with respect to vaccine virus, but it applies with equal force to the other vaccines, serums, antitoxins, and similar products so much used by the physician at the present time.

But the control over the production and sale of biologic products, as they are called, is but a small part of the activities of the Hygienic Laboratory. The most important work of the laboratory pertains to the study of the cause and cure of disease in man.

The institution started as a small clinical laboratory connected with the Marine Hospital in New York in 1887. Later it was transferred to Washington, and early in the present century Congress established it as a separate institution under the Public Health Service.

So important did Congress consider the health of the people that it directed that the Hygienic Laboratory should engage in the investigation of infectious and contagious diseases and other matters pertaining to the public health.

The law is wide in its scope; certainly none imposes greater burden of responsibility on a Government institution.

The members of the scientific staff at the Hygienic Laboratory take nothing for granted; they have to be shown. And when any member makes a statement of the results of his researches he never does so with a fanfare "announcement." He publishes his findings in a Government bulletin, of which 142 have been issued so far, or he submits a carefully worded article to a medical or other scientific journal.

These papers are often so technical that when a new medical or chemical fact is discovered the newspapers of general circulation seldom grasp its import. A case is known, in fact, where a newspaper man wrote up a human interest story centered in one of the discoveries of the Hygienic Laboratory and it was rejected by a well-known syndicate because the facts, while admittedly well presented and truthful, were contrary to the popular idea of what they should be.

In searching out Nature's secrets and applying them to the benefit of mankind the scientist goes about it systematically. He no longer applies hit-or-miss methods. When a new disease puts in an appearance—and this has happened recently—the Surgeon General of the United States Public Health Service delegates one of his experts, usually from the Hygienic Laboratory, to run it down, giving the latter such assistants as he may need.

The expert begins by visiting the community where the disease is prevalent. Arrived there, he consults the health officer and physicians who may know anything about the disease, studies local conditions, finds out everything he can as to how the disease travels from person to person and from place to place, gets clinical specimens from patients, probably inoculates animals with these specimens, and enters upon a laboratory study of the disease.

By employing bacteriological and chemical methods he seeks to isolate the germ of the disease. That done, he proceeds to learn all about this germ; how it lives; what it feeds on; how it grows and reproduces; and how it may be destroyed or otherwise prevented from infecting people.

As the facts are discovered, the scientist publishes his findings in a scientific journal so that others working on the same problem may profit by his labors.

Of course, much of the work undertaken fails to yield useful results. Indeed, as is true of most experimental work, failures usually outweigh in numbers experiments with successful results.

For administrative purposes the Hygienic Laboratory is organized into several divisions, each cooperating and interlocking. It is the aim of the laboratory to avoid hard and fast rules that might inter-

fere with the free working out of research problems. The scientific staffs of the four divisions—zoology, pharmacology, chemistry, and pathology and bacteriology—the latter divided into sections of pathology, infectious diseases, nutritional diseases, and tuberculosis—are encouraged to consult each other on their various problems without formality.

The administrative work at the Hygienic Laboratory is subordinated to, and not allowed to interfere with, the research activities. Salary payments are made at rates of pay varying from $1,140, the lowest, to $7,000 a year. Men and women are on an equal footing as regards pay and work. Promotions are not necessarily by seniority; they depend upon individual accomplishment and importance of the work performed. Three of the divisions of the laboratory are presided over by scientists who hold the title of professor.

The director of the laboratory is selected by the Surgeon General from the medical staff of the Public Health Service, not necessarily from those on duty at the Hygienic Laboratory. The present director, Dr. G. W. McCoy, was brought from the leprosy research laboratory in the Hawaiian Islands, where he spent four years after having served for the same period as chief of the plague laboratory on the Pacific coast. Since the Hygienic Laboratory was established in 1887 there have been only four directors.

It not infrequently happens that a particularly well-qualified research man or woman who is getting things done in the laboratory receives offers from private establishments which, from a financial viewpoint, are too attractive to turn down. Within the past six or eight years the laboratory has lost a number of its best scientists by this route.

It is customary for the Surgeon General to detail medical officers from the field staff of the Public Health Service to the laboratory, as the need arises, for purposes of conducting researches in special medical problems. Young medical officers are sent here for training and to familiarize themselves with the latest and most approved methods of handling diagnostic and epidemiologic work. More than half of the commissioned personnel of the Public Health Service, including the Surgeon General, have "served time" at the Hygienic Laboratory.

Foreign governments from time to time detail their scientists to the Hygienic Laboratory to study and acquaint themselves with the work carried on there and with new methods of handling difficult problems of technique. The foreign doctors are always made most welcome and are shown the best that the laboratory has to offer.

The staff includes a number of women scientists working in bac teriology, zoology, pharmacology, and chemistry. Some of the notable contributions that have come from the laboratory have been

the result of the work of the women workers in the field of experimental medicine.

In research work the staff members are encouraged to select their own problems. If a scientist's choice is approved by the director of the laboratory, he is told to go ahead—always with the understanding that he is to continue on the problem until he obtains results of some kind, whether positive or negative.

At the outset of any piece of research work no one can predict the outcome. The Public Health Service sought for a quarter of a century some means of combating Rocky Mountain spotted fever, and it was not until 1925 that anything even remotely promising was evolved.

For more than 100 years the medical world sought a clue to the cause and cure of pellagra. After many years of study and experimentation the scientists attached to the Hygienic Laboratory have brought the underlying facts concerning this disease to the family physician, and one more of the mystery diseases has fallen before the attacks of knowledge.

While in much of the research work at the Hygienic Laboratory animals are used for experimental purposes, in some cases human experiments are carried out, the scientists themselves being the first to volunteer.

In some instances tragedy has stalked the research scientist. The personnel of the laboratory has suffered a good many serious accidents in connection with its investigations. Two men have acquired typhoid fever, one recovered, the other died from the disease; three men working at the branch laboratory in the West established especially for the study of Rocky Mountain spotted fever acquired the disease and all died. A total of 12, men, 6 at the Hygienic Laboratory and 6 at the branch laboratory at Hamilton, Mont., acquired tularaemia. Fortunately, all recovered.

Three of the workers acquired Malta, or Mediterranean, fever, a disease little known in this part of the country, although not so rare in our Southwestern States, from one of whom the infection was transferred to the Hygienic Laboratory for study. Fortunately, all recovered, but one is still suffering from some effects of the infection.

The Hygienic Laboratory uses in its work a large number of laboratory animals, ranging all the way from the horse and the monkey down to the lowly mouse. It is a matter of utmost importance to the successful outcome of experiments that the animals shall be carefully and regularly fed and that they shall in every respect be treated in the most humane manner possible. One of the inflexible rules of the laboratory is that no one can remain at the institution who fails in the humane care of animals.

ROCKY MOUNTAIN SPOTTED FEVER

From time immemorial the sheep herder or shepherd has been accepted as an ideal type of healthy manhood.

Much that has been said on this subject is true; the shepherd is, normally, a healthy person, and probably his outdoor existence has much to do with his health. But modern science has discovered that the sheep herder's work exposes him to some diseases peculiar to his occupation.

One of the most dangerous of such diseases is Rocky Mountain spotted fever. It has existed in the northwestern United States ever since that section was first settled; and there is no reason to suppose that the Indians did not have the affection prior to the advent of the white man, though there are no authentic records.

One of the most remarkable features of Rocky Mountain spotted fever is the fact that it is geographically limited to a small section of the United States. Moreover, the virulence of the disease varies with the locality. For example, in the Bitterroot Valley of Montana the mortality is 80 to 90 per cent, while in the neighboring State of Idaho it is often considerably lower.

Owing to its limited distribution, Rocky Mountain spotted fever is obviously not as well known as other less fatal scourges. However, of late years the growing economic importance of this section of the country has demanded a solution of the problem.

The Public Health Service, at the request of local authorities, began investigations of this disease as early as 1904. Already three men from the service have sacrificed their lives in this work. Passed Asst. Surg. T. B. McClintic and Laboratory Assistants William Gettinger and Henry Cowan contracted this disease while carrying out experimental studies and died within 10 days of infection.

It has been established that Rocky Mountain spotted fever does not depend upon man for its continued existence; hence it can not be wiped out by segregating or curing the persons suffering from it. The disease occurs among small rodents and passes from rodent to rodent by means of ticks.

So far as can be ascertained, the rodents are not seriously inconvenienced by the infection, but they are capable of infecting any ticks which may feed upon them for a period of about 10 days. In this way the disease is maintained in nature.

The same ticks which bite the rodents will also bite man, if given an opportunity, and in man the disease is frequently fatal—always serious.

The intensive studies at the Hygienic Laboratory in Washington and at the branch laboratory at Hamilton, Mont., carried on since 1922, have culminated in the discovery of a protective vaccine which has definitely been shown to protect rabbits, guinea pigs, and monkeys.

The use of the vaccine among human beings has been so encouraging that it is believed it will be a major factor in the control of this dread malady.

Since one attack of the disease apparently develops an immunity to future attacks, the possibility of a vaccine suggested itself at once to the investigators. Here an initial difficulty was encountered; for it was found that the virus could not be cultivated in the usual laboratory methods, in a test tube.

But it was also discovered that the virus is developed and carried in the bodies of the ticks which transmit the disease. Hence it was decided to use the ticks as test tubes and prepare the vaccine from them. The ticks were allowed to feed upon infected guinea pigs until they had become thoroughly infected themselves. Then at the time when experiments showed the virus to be most concentrated, the ticks were eviscerated and ground up and an emulsion was prepared with a 0.5 solution of phenol, the preservative used in most vaccines.

Experimentation upon animals indicated the efficacy of this vaccine, and, as a final step, in 1924, Dr. R. R. Spencer took the first dose administered to a human being. The results were in no way harmful and the blood of people so vaccinated has since been shown to neutralize the virus. The preparation is known as the Spencer-Parker vaccine, because it was discovered jointly by Doctor Spencer and R. R. Parker, special entomological expert of the United States Public Health Service, who has directed much of the work at the branch laboratory at Hamilton, Mont.

It is believed that the vaccine for Rocky Mountain spotted fever is the only preparation of its kind ever made from an insect host for human use, and if it fulfills its expectations, it has established a new method of attack upon insect-borne infections, of which there are more than 20.

Since the vaccine was discovered it has been tried out in various ways and, while still regarded as more or less of an experiment, there is considerable evidence to indicate that it is an effective preventive. During 1926, in the Shoshone (Idaho) district, a group of 300 sheep herders were selected and 140 were vaccinated. None of the men vaccinated developed the disease, although they all worked in the areas known to be infected.

Of the 160 sheep herders who were not vaccinated and whose records were kept as a control group, 8 developed cases of the fever. In the same area there were 25 other cases among persons of other occupations who had not been vaccinated.

In the Bitterroot Valley, where the fever assumes a particularly virulent form, 600 persons were vaccinated and none contracted the disease.

Among the laboratory workers who were exposed to the fever there were 5 virulent and fatal infections before the vaccine came into use, and there have been 4 very mild cases among the laboratory workers who were vaccinated. One of these mild cases was a janitor 62 years old, who was infected with the Bitterroot Valley strain and recovered—the only case on record in which a person over 60 years old recovered from this particular strain.

These mild cases among the vaccinated in the Bitterroot Valley indicate that lives were saved by the vaccine, but that still larger doses must be given to prevent entirely this virulent type of the disease.

TULARAEMIA

There is a widespread assumption that the sole function of medical science is to cure disease—an assumption based upon a lack of accurate knowledge of conditions. For, while it is true that the primary reason for the existence of medical science is the preservation of the bodily health of man, it is also true that infectious disease always comes from without, and that exact knowledge is first demanded as to where the infection exists in nature, how it finds entrance to man's body, and where it localizes in his body before any intelligent search for a cure can be undertaken.

Discovery of a disease in the scientific sense does not mean a mere collection of statistics showing that a certain number of persons exhibited certain symptoms and an ascertained percentage of these persons died. What medical science wants to know is what caused the symptoms and how that cause may be removed. In many instances the discovery of the causative agent is as difficult as devising curative methods, although this is not universally the case. But it is obvious that only by blind chance can a cure be devised before the causative agent has been discovered and studied. Hence, the discovery of a new disease is an important milepost in medical history.

In the history of human medicine there is only one instance in which American investigators alone have discovered a disease of man, isolating its causative agent, determining its sources of infection, its modes of transmission to man, and otherwise elucidating the many essential problems connected with the complete knowledge of a disease. That is the story of tularaemia.

Beginning in 1910 and continuing until after the World War, there came from Utah and adjacent States reports of the ravages of a peculiar disease of man popularly known as "deer fly fever," resembling septic infection in some of its characteristics, and causing serious disablement of farmers in the busy season of midsummer when their sugar beets needed plowing and their alfalfa required cutting.

Lack of funds and available personnel prevented an investigation of this disease by the United States Public Health Service until 1919, at which time an officer of the service was sent to Utah for that purpose. In the ensuing investigation, the laboratory research method was followed—and the first principle of that method is to reproduce the disease to be studied in animals which may be subjected to laboratory experimentation. Hence, the equipment taken to Utah for the investigation included an assortment of guinea pigs, rabbits, white mice, and white rats.

The disease in Utah in its most frequently occurring form manifested itself by an ulcer at the point of primary infection and enlargement of the lymph glands which drain that ulcer. At the outset of this investigation some pus was taken from an ulcer on one of the sufferers and injected subcutaneously into the animals selected for experimentation. Within a few days the animals thus treated sickened and died, and at necropsy they exhibited the same characteristics as to pathologic conditions of lymph glands, spleen, and liver as had been noted by Dr. Geo. W. McCoy, now director of the Hygienic Laboratory, when he discovered among the ground squirrels of Tulare County, Calif., in 1910, a new disease which he called a "plaguelike disease of rodents."

Although in 1910 there was not, nor has there been up to the present time, any indication that Doctor McCoy's "plaguelike disease of rodents" was ever transmitted from a ground squirrel to man, yet Doctor McCoy made a careful tabulation and analysis of his findings in squirrels, all excellently illustrated.

The result has proved the truth of the axiom that knowledge is never valueless, because Doctor McCoy's findings of 1910 in the ground squirrels of Tulare County, Calif., found instant recognition by Doctor Francis in 1919 in a sick man of Millard County, Utah.

Now known to be a disease of man, a change of name from "plaguelike disease of rodents" to "tularaemia" (after Tulare County) was welcomed, not only for scientific accuracy, but by the sick themselves; for what human being would not recover more quickly from the euphonious "tularaemia" than from the depressing "plaguelike disease of rodents"?

In man, tularaemia manifests itself as follows: An ulcer appears at the site of primary infection, and this is accompanied, or possibly preceded, by a swelling of the lymph glands which drain the area in which the ulcer is located. Fever is always present, the febrile period lasting from two to three weeks. The symptoms frequently lead to a diagnosis as typhoid fever; but when the patient gives a negative Widal reaction a blood test for tularaemia should be made. The diagnosis of tularaemia is like working a cross-word puzzle; the trick is to find the letters which spell R-A-B-B-I-T.

Wild rabbits, ticks, and flies are the known agents through which man is infected with tularaemia. The ticks and the flies transmit the disease by biting a man after they have bitten an infected wild rabbit.

Direct transmission from rabbits to man occurs only when the internal organs of the rabbit are handled. Cuts, scratches, punctures, and other abrasions of the skin of the hands afford a portal of entry for the infection when dressing an infected rabbit. In addition, there is good evidence for believing that the bacterium of tularaemia is one of those rare organisms which can pass through the unbroken human skin. In any event, laboratory workers, market men who skin and dress rabbits, cooks, hunters, all who handle the internal organs of infected animals are very likely to contract the disease. Most of the patients recover, but not infrequently the disease is fatal. It should be remarked that it is only wild rabbits which seem to be subject to the disease. There is no record of an infection in the rabbits which are raised domestically for food or laboratory purposes or by rabbit fanciers. Probably this is due to the absence of ticks on the domesticated rabbits.

Every person—six in all—who has worked on the tularaemia investigation in the Hygienic Laboratory in Washington has contracted the disease. All have recovered and, fortunately for the investigation, it has been found that persons who have once had the disease are thereby immunized. The work is now carried on by an immune crew of workers in a room shut off from the rest of the building and avoided as much as possible by those having no official business there.

In the branch laboratory at Hamilton, Mont., six more persons contracted tularaemia after they had performed necropsies on infected animals, and a similar case has been reported from Los Angeles.

Shortly after the discovery of the disease was announced, the Public Health Service received a request from the Lister Institute of Preventive Medicine in London for samples of the bacteria of tularaemia. A culture was prepared and sent to the British scientists, who inoculated laboratory animals with it. In a short time three of the scientists who transferred the infection from animal to animal in the laboratory were brought down with the disease.

At this point the authorities of the Institute took administrative charge of the investigation and ordered all of the cultures and infected animals and every other trace of the disease wiped out. So far as is known, that was the last case of tularaemia in the British Isles. No cases have been recognized in Europe, although the Public Health Service is constantly asked for information on tularaemia by European medical authorities who suspect that the disease may exist there. So far, definite cases of tularaemia have been recognized in 28 States

of the United States, the District of Columbia, and Japan. It has been established that tularaemia is identical with "Ohara's disease," which has been known in Japan for several years.

From the viewpoint of the general public the most important question regarding tularaemia is "What is the cure?" And to that it must be answered that there is no known cure, but there are simple preventive measures which are effective. If all laboratory workers doing necropsies on infected animals and all cooks, market men, hunters, housewives, and others who dress rabbits, would wear rubber gloves when doing so, they would not contract tularaemia. It should be remembered that thorough cooking destroys the infection in a rabbit, thus rendering an infected rabbit harmless for food.

It is idle to speculate on the possibility of wiping out the disease by wiping out the rabbits. Anyone who has seen the profusion of jack rabbits in the Western States will appreciate the futility of such procedure. And even if all the rabbits in the United States were wiped out to-morrow, tularaemia would not vanish because the ticks which have acquired the disease by biting infected rabbits pass the infection through their eggs to the next generation of ticks and form a permanent reservoir of infection.

The only treatment which can be advised for tularaemia in the present state of medical knowledge is rest in bed and, in general, such care under a competent physician as will build up the patients' resistance and aid the body in throwing off the attack. But it is almost always a long and rather trying course which the disease runs.

No preventive vaccine or curative serum has yet been perfected, although there is constant experimentation along that line.

TUBERCULOSIS

In the eternal battle between science and disease there is a certain logical sequence in the tactics of the scientist. In general terms, this sequence is isolation of the cause of the disease, isolation of a substance or discovery of a method which will overcome the cause, and the development of a method to apply the remedy to the cause. In each phase of the plan of campaign, of course, there must be endless experimentation, checking and rechecking of results, and all possible precautions to insure accuracy.

There is a general feeling that isolation of the cause of the disease—at least in diseases of bacterial origin—is more than half the battle. However, there are exceptions, and one of these exceptions is tuberculosis, the disease which costs approximately half a billion dollars in the United States each year—more than the Army, nearly twice as much as the Navy, and second only to the national debt in comparison with Government expenditures.

The tubercle bacillus was discovered nearly 50 years ago. Hundreds of disease germs have been discovered since, and many of

them have succumbed to cures resulting from the scientific research following their discovery. But the most ubiquitous and best known of all the germs has so far proved elusive.

There is a popular impression that the battle against tuberculosis has been practically won as a result of the educational campaigns and the improvements in the hygiene of living during recent years. But a disease which kills 100,000 persons every year in the United States can hardly be said to have been conquered, and to scientists there are many disquieting possibilities in the recurrence—and in some cases even the increase—of the prevalence of tuberculosis in communities where all known preventive methods have been tried.

Five years ago the National Tuberculosis Association appointed a research committee and entrusted it with funds to seek a more intimate knowledge of the life history and habits of the tubercle bacillus. The members of that committee were—Dr. William Charles White, chairman; Dr. Allen Krause, director of the Kenneth Dows Research at Johns Hopkins; Dr. Paul Lewis, of the Rockefeller Institute for Animal Research at Princeton; and Dr. Charles Hatfield, director of the Phipps Institute for the Study of Tuberculosis, in Philadelphia.

After long consideration and study involving problems too numerous to mention in the scope of the present article, and after obtaining the cooperation and guidance of the Public Health Service, this committee worked out a plan of attack designed to make use of all the knowledge of the tubercle bacillus gained through the long years of research since its discovery, and at the same time to progress in knowledge by obtaining the services of the best research workers in the world in the attempt to solve the problems with which each worker is peculiarly fitted to deal.

There is in chemistry what is known as the Mendeljeff table, a series of the known and unknown elements worked out years ago by the Russian scientist from whom it takes its name. The table is based on the atomic weights of the various elements; and from a study of these weights Mendeljeff was able to declare that at certain places on the table in between the then known elements, there exist other elements of specified atomic weight. Several of these gaps have been filled in by discoveries since Mendeljeff prepared his table; others remain to be filled.

When the present investigation of tuberculosis was undertaken, those in charge of it prepared a sort of Mendeljeff table of the facts then known about the tubercle bacillus. They said, in effect: "Here is a fact about a certain phase of the life cycle of the bacillus and here is another fact about another phase, but the two phases are not continuous. Hence research should be concentrated on the gap between the first fact and the second."

Once this plan had been worked out, the problem which presented itself was the selection of the scientists best qualified to work on the various gaps in the knowledge of the life cycle of the bacillus. Arrangements had to be made to interest these scientists in undertaking the particular work assigned to each. When this had been done—and it was an undertaking of considerable magnitude, because all of these selected scientists were men of prominence and nearly all were already engaged on other research work of their own—then it became necessary to devise some method of keeping the entire work coordinated.

Under the system finally worked out, each scientist, when he has studied his particular problem and has mapped out a method of research, goes before what might well be termed a jury of fellow scientists and presents his plan with his arguments to support it. If the jury approves the plan, he goes ahead; if it is not approved, he seeks another plan. Or he may present several plans and the jury will select the one to be carried out.

It is the function of the office of tuberculosis research work of the Hygienic Laboratory of the Public Health Service to check many of the research results, to coordinate the various pieces of related research work on tuberculosis now being carried on in laboratories throughout the world, and to arrange for the periodic conferences at which decisions are reached by the scientific juries, as well as to carry on its independent share of the research plan. The progress that has been made is of such a nature that an explanation would be too technical for the purposes of the present article, but it may be said that the gaps in the table of knowledge are gradually being filled in.

SCARLET FEVER

Many years ago it was noted that, on making throat cultures from scarlet fever cases, one particular kind of germ was found more frequently than any other. This microorganism is known as a hemolytic streptococcus, called coccus because it is round in shape, called streptococcus because the cocci form chains, and called hemolytic because this streptococcus destroys the red pigment in blood cells, when cultured in medium containing blood.

As long ago as 1902, Doctor Moser, in Vienna, used a strain of this organism to immunize horses. He then used the blood serum from these horses to treat cases of scarlet fever, with favorable results. A little later, Doctor Gabritschewski, of Moscow, used killed broth cultures of hemolytic streptococci to immunize children.

Repeated attempts were made to produce scarlet fever in animals, without conclusive results. This fact, together with the failure of many workers to find hemolytic streptococci in all cases of scarlet fever, led to the generally accepted conclusion that these organisms

were the most common secondary invaders in scarlet fever and were the cause of many of the complications, as middle ear disease, but were not the single etiologic agent.

In 1923, Drs. G. F. and G. H. Dick (man and wife), working in Chicago, announced the production of experimental scarlet fever in volunteers by inoculating them with cultures of hemolytic streptococci of scarlatinal origin. They found also that these streptococci when grown in media produced a toxin much as diphtheria bacilli do.

After a great deal of experimental work these doctors found that by using a carefully determined strength of this toxin and making small injections (one-tenth of a cubic centimeter) into the skin of individuals, they could determine which individuals were susceptible to the toxin and which were not. This test became known as the Dick test and has been widely used to determine susceptibility or immunity to scarlet fever.

In addition to using this toxin for testing the susceptibility of individuals, the Doctors Dick also discovered that, by giving increasing doses of the toxin to those found susceptible, such individuals would become insusceptible and instead of showing a positive Dick test would give a negative reaction when tested. This fact is being put to practical use in immunizing children against scarlet fever.

In testing children for susceptibility, if too weak a toxin (scarlet fever streptococcus toxin) is used, it will fail to show all the children who are susceptible; and if too strong a toxin is used more children will show a positive reaction than are susceptible to scarlet fever. Again, if too little toxin is used in immunizing children, the immunization will not prove successful, and if too much is injected, the child will react in an unnecessary and undesirable manner (rash and fever).

In view of the foregoing, it can readily be seen that it is necessary that the strength of toxins used in this country should be accurately determined. Under the law regulating the manufacture and sale of biologic products in interstate traffic it is the duty of the Federal Government to see that this is done. To do this the Hygienic Laboratory of the Public Health Service distributes, to the manufacturers making this product, a carefully standardized toxin with which the manufacturers can compare their toxins and thus determine the proper strength to be used for susceptibility test and the proper amount to be used in immunization.

The present problem in connection with this toxin is the determination of the best methods of preservation. At present a new toxin is made and standardized at the Hygienic Laboratory each year. It is hoped that a method of preservation may be found that will make possible the preparation and storing of enough toxin to last several years.

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We now think that the serum made by Doctor Moser many years ago was of value in the treatment of scarlet fever, because it contained an antitoxin against the toxin of the scarlet fever streptococcus. Doctor Dochez, of New York City, found that, by using a special technique, he could produce an antitoxin which gave good results when used in treating scarlet fever. The Doctors Dick found that by using the toxin alone to immunize horses a good antitoxin could be produced.

As far as can be determined there is little or no choice in the method of antitoxin production. The horse serum containing the antitoxin is concentrated to get rid of as many of the horse proteins as possible and is then distributed by the manufacturers to physicians for use in treatment of cases of scarlet fever.

In order that the physician may treat a case of scarlet fever intelligently, he must know the strength of the antitoxin he is using. For his information the manufacturer must state the strength of the antitoxin on the label. The test of the scarlet fever streptococcus antitoxin to determine its strength is difficult, largely because, as yet, the manufacturer has no very good yardstick by which to measure the antitoxin. The Hygienic Laboratory is working on the problem of furnishing a standard antitoxin of known value with which the manufacturer can compare his new antitoxins.

The search for a standard for the antitoxin has so far presented many obstacles, but it is now thought that the Hygienic Laboratory may soon have available a satisfactory comparative antitoxin.

LEPROSY

The Public Health Service has deep interest in leprosy for several reasons. Leprosy prevails to a limited extent in the United States. In addition to the moderate number of imported cases which, for the most part, represent persons arriving at our borders and ports before the disease has developed far enough to be detected, there are a number of cases in our Gulf Coast States which have been infected in their home communities. Put in another way, the Gulf States constitute a zone of infection for leprosy, although the risk is small.

Even there the disease is rare and need not be a source of serious concern, since the health authorities are fully alive to the situation and, when a case is detected, take suitable measures looking to the prevention of spread.

The total number of known lepers in the United States is somewhere in the neighborhood of 300, and it is probable that not far from an equal number remain unrecognized. The interest of the Public Health Service lies also in the fact that all of our insular possessions have leprosy problems, some of them rather serious ones. Porto Rico and the Canal Zone each has a few cases, chiefly confined to local colonies.

In the Territory of Hawaii, where the disease is now distinctly on the decline, the infection in the past has reached as high an incidence as 3 per cent of the native population; for it is among the Hawaiians and other native Polynesians that leprosy has found a most fertile field for propagation. The number of known lepers in Hawaii at the present time is in the neighborhood of 600.

The government of the Philippine Islands has established a large and important colony for lepers on the island of Culion. The number of patients there at the present time is around 5,000, and no one familiar with the situation doubts that other thousands are still at large in those islands.

Perhaps the chief immediate interest of the Public Health Service in leprosy lies in the fact that this service has two large and important stations, established by special acts of Congress, that are devoted exclusively to the leprosy problem.

The first of these to be considered is the leprosy investigation station in Hawaii, which is under the direction of the scientific research division of the service. This station is staffed by a physician, a bacteriologist, a chemist, and scientists, who devote their time exclusively to the study of the research problems presented by the disease.

It would be difficult to find a more satisfactory place for carrying on investigations in leprosy than is afforded by Hawaii. The number of cases available for study is ample, and these patients, through long experience with the medical men assigned by the Government to this duty, have learned to trust and cooperate with the physicians of the leprosy investigation station.

This has had a distinct advantage in another way, one perhaps not foreseen when the station was established. The realization on the part of the Hawaiians that better care and treatment would be available and better prospect for recovery if they sought aid than if they remained at home, has undoubtedly led many to come forward voluntarily and seek admission to the leprosy station before they have had much opportunity to convey the disease to those around them.

The second of the Federal stations is the one located at Carville, La. This is known as Hospital No. 66, one of the important hospitals in the chain coming under the administration of the hospital division of the service. The number of patients there is about 300.

This station offers almost everything desirable in the way of facilities for the care and treatment of lepers. Nothing has been left undone that could be done to make the surroundings as delightful as possible.

The patients are well housed, well clad, and well fed, and provision is made for spiritual welfare and social diversion. The medical and

surgical staff is made up of men with special qualifications in different fields of medicine and surgery, including dentistry. Equally good professional and nursing care is available to the lepers as is to be had by the most favored citizen of any community. Investigations of a purely research nature are also carried out at this station.

It can scarcely be said that the studies at the Hawaiian station or at the Louisiana station have yielded conspicuously important results. Some details of treatment have been improved, the most recent being the discovery that radium, though not curative, is helpful in some of the nasal conditions so common among lepers. The investigations, of course, go forward year by year, and no one would think of curtailing them because thus far no very favorable results have been obtained.

Leprosy has been studied for thousands of years, and it would be almost too much to expect that in the few years since studies have been made by the newer scientific methods available a definite cure would have been discovered.

The history of leprosy is most interesting. As one author says, it is "Lost in the night time, but it maintains its supremacy as the patriarch of diseases."

Everybody is familiar with the leprosy of both the Old and the New Testaments. In the former we find it serving as an instrumentality of punishment meted out to those who have incurred Divine wrath. In the Old Testament also we find the diagnosis discussed fully and methods of control in vogue which still serve as patterns for what we do to-day.

It was largely due to the fact that ancient Hebrews dealt so intelligently with leprosy that we are justified in recognizing them as the "founders of public hygiene." In the New Testament, stress is laid on the miraculous cure of leprosy, and while cure is one of the goals of our modern investigations, we have not been able to duplicate any of the results described in the New Testament. In medieval times leprosy must have been one of the most common of diseases found in the then known world.

Isolation was carried out with varying degrees of rigor. In England it was customary, when a leper was separated from his home surroundings, to chant a burial hymn as well as to say the masses for the dead; and, finally, there was the throwing over the person of the symbolic handful of earth. Then, according to some writers, after all this ceremony, no very stringent means were used to keep the individual from mingling with the healthy members of the community, but he was required to wear a special garb and announce his coming by a bell or gong.

There was one important by-product of leprosy in the Middle Ages. As one historian has said: "It vastly aided the city hospital movement, and the building of leprosaria represented a great social

and hygienic movement and this was a wave of genuine prophylaxis as well as human charity."

In modern times leprosy prevails to a lesser extent throughout a large part of the world but with very peculiar features with regard to its geographical distribution. Leprosy is transmitted in most places in the Tropics and in some very cold parts of the world, as, for example, Iceland; so it is incorrect to speak of it as a strictly tropical disease. On the other hand, there are parts of Europe and America in which for all practical purposes the disease can not spread, or at least does not spread. Many lepers infected in the Tropics are from time to time domiciled in the British Islands; but it is extraordinarily exceptional for any case of the disease to be acquired in the British home countries.

We may come a little nearer home. For example, the communicability of leprosy from person to person is practically unknown in our Northern and Eastern States while it is well recognized as a possibility in the States bordering on the Gulf of Mexico. If we knew just why one community has this highly desirable immunity which the other lacks, probably we would be able to go much further in intelligently dealing with the public health aspects of the problem than we can at the present time. Usually rather intimate contact seems necessary to permit of the conveyance of leprosy from a leper to a well person, but we do not know the exact way in which it is carried.

There are some popular misconceptions about leprosy. One is that it is hereditary. The fallacy of this has been demonstrated by removing children from leprous parents immediately after birth. Under these conditions the children practically always remain free from this infection. There is additional evidence against hereditary infection. Another erroneous impression is that the disease is racial in its affiliations, and that the members of the dark and brown races are far more susceptible than whites. It is true that the dark-skinned races do suffer most at the present time, but we must remember that there was a time in history when the white race suffered heavily and, given the same surroundings and the same opportunity for infection, there is reason to believe that all are about equally susceptible.

Up to the present time the only way we know of dealing with leprosy in communities in which there is risk of spread is to isolate the individual. In later years, emphasis has been laid more on the matter of treatment than upon isolation, but essentially from the public health point of view the object of the sanitary office is to remove the leper from the surroundings in which it is possible for him to convey the infection to his associates.

Leprosy is not to be regarded as absolutely incurable. A certain, though small, percentage of cases recover. How much of this

favorable outcome is attributable to treatment and how much to the natural evolution of the disease is very debatable. The physicians of the modern leprosy institution anywhere, however, consider that they are not doing their duty to patients without giving them every opportunity in the way of general and special treatment. It is often astonishing to observe the improvement that may take place in cases placed in the excellent surroundings of a suitable modern sanatorium, even without special medical treatment.

MALARIA

Although a great reduction in the malaria of the United States has taken place during the past 25 years, this disease still remains one of the major public health problems of our country. Malaria is no longer commonly found north of the Ohio River, nor is it uniformly spread over the Southern States. Its habitat is in the tidewater regions of the Middle and South Atlantic States, along the Gulf coast and up the Mississippi Valley as far north as southeast Missouri and southern Illinois.

Malaria is a public health problem not so much because of the number of deaths resulting from it, nor the serious disability attending it, as because of the potential harm which malaria can do to industrial and agricultural development anywhere in the malaria belt. And a community can continue to eke out its existence without even being aware of the presence of malaria; but should it attempt any large industrial development—an impounded water project, a new railroad, or a new manufacturing plant—malaria, like the old man of the sea, is likely to spring up and throttle it unmercifully.

Such has been the history of malaria in the United States, and this is why the Public Health Service undertook the study of the malaria problem more than 10 years ago and has continued it.

The discovery that yellow fever was transmitted by a mosquito virtually solved the yellow-fever problem, at once, and forever. The discovery that malaria is transmitted by a mosquito was made earlier, but the malaria problem has not yet been solved. Why? Undoubtedly the chief reasons are the inherent differences between the two diseases and the differences in life habits of the two mosquitoes.

Yellow fever is frank in its onset and prompt in its termination—recovery or death within 10 days—and usually easy of diagnosis; while malaria is in every way the opposite—a most insidious and chronic disease, frequently very difficult to diagnose. The yellow-fever mosquito is city bred, while the malaria mosquito is from the country.

The Public Health Service began the study of the prevalence of malaria in the United States in 1914. Information has been secured

from State and local health officials and from practicing physicians, wherever malaria was thought to prevail, as to their knowledge of malaria incidence.

Thousands of malaria and mosquito surveys have been made in 13 Southern and in many Northern States. These surveys involved the collection of information from all available sources bearing upon the prevalence of malaria in the community, studies of local mosquito production, and control by suitable measures. Frequently house-to-house canvasses were made in which every individual was questioned for a history of past malaria, and a blood examination was made for present malaria infection.

An extensive malaria survey of the rural school children of the Southern States has been recently completed. More than 13,000 children were examined in this survey. Each child was examined for enlarged spleen, a result of malaria, a blood smear was taken and examined for malaria parasites, and a history of malaria in the past was obtained. From all of these different sources of information it appears that within the past 10 years malaria has been reduced at least 50 per cent within the United States, and the general tendency seems toward a continued reduction.

Apparently, however, there was an increase in malaria during 1926 as compared with the past two or three years, and the increase of mosquitoes during 1926 was pronounced all over the South. This applies not only to the malaria mosquito but to the common pestiferous mosquitoes, *Culex* and *Aëdes*. It does not apply, however, to the salt marsh-mosquitoes.

Studies of malaria-control methods have been conducted by the Public Health Service every year during the active malaria season for the past decade.

Based on its experience in the Panama Canal Zone and the extra-cantonment sanitation work which was done during the World War, it was known that malaria could be controlled under the worst conditions—provided sufficient funds were available for extensive drainage and oiling operations. But inasmuch as adequate funds for this purpose can not be secured in many rural communities in the Southern States, the main objective of the malaria-control studies of the service has been to discover easier and cheaper measures for controlling malaria than by extensive drainage and oiling. Drainage and oiling, however, are applicable in villages, and successful demonstrations of these methods of malaria control have been made in more than 350 southern cities and towns.

Following the careful study of many impounded water projects in the Southern States, it was found that some of the fundamental principles of malaria and mosquito control could be applied to them without prohibitive cost, and would result in greatly improved health conditions around these projects.

Based on these studies, the service advised that the lake bed be properly cleared before the water was impounded; that the labor employed in preparing the lake bed and dam be properly housed in screened houses and given adequate medical attention; that effort be made to control drift and flotage in the lake; that the lakes be stocked with top minnows (*Gambusia affinis*); and that mosquito production be controlled after the water was impounded by fluctuation of the water level and by oiling where necessary.

Most of the Southern States have adopted regulations based on these suggestions, and a great advance has been made toward the control of malaria around these impounded water projects. Advice was furnished to the State health authorities and to many of the power companies during the year in carrying out these regulations and meeting the various problems of mosquito control which came up from time to time.

A few years ago a service officer, Dr. M. A. Barber, discovered that Paris green in very small quantities will quickly kill the larvæ of malaria mosquitoes. Since this discovery was made, this larval poison has been carefully studied, under various local conditions, all over the United States and in many foreign countries. It has been found peculiarly applicable to conditions in southern Italy and gives promise of solving the malaria problem of that country.

During 1926 a very interesting study was made around the United States marine barracks at Quantico, Va., of the use of Paris green dusted from an airplane in killing the larvaæ of the malaria mosquito. The officers in charge of this investigation report complete success at a very small cost, and it seems highly probable that this method of destroying malaria mosquitoes may be so developed in the future that it can be applied over very large areas at a reasonable cost. The possibilities of this method of controlling malaria are very great.

Paris green will kill other mosquito larvæ as readily as it will those of the malaria mosquito, but because their feeding habits differ it has not yet been found so effective against them. The larvæ of the malaria mosquito feeds on the surface of the water, while the other common larvæ feed below the surface. A number of observations have been made during the year for the purpose of devising a method whereby the larvæ which feed below the surface can be made to ingest the Paris green particles. If an effective way for doing this can be devised it will greatly simplify the mosquito problems of the world. Any community can then well afford to rid itself of mosquito pests as well as mosquito-borne diseases.

During 1926 a careful study of screening as a means of malaria control was conducted on a plantation in the Mississippi Delta region. It has long been known that adequate screening would protect against malaria, but the problem has been to reduce the cost of

screening to the point where it would be well within reach of the average negro tenant, and at the same time make it effective. The studies which were conducted during the year seem to show that this can be done, and farm labor conditions being as they are now in the southern United States, it is certainly cheaper to screen tenant houses than it is to work with inefficient labor resulting from malaria.

It may be fairly concluded from the malaria studies conducted by the service that malaria is on the decrease in the United States; that should present agricultural conditions remain unchanged in the South, malaria will cease to be a major public health problem within the next 50 years, and if we continue to develop our measures and methods of attack by careful investigation and rigid application in the field, as we have done in the past 10 years, the solution of the malaria problem of the United States may be greatly hastened.

MALTA FEVER

Malta fever takes its name from the island in the Mediterranean where first it was studied. It has been a problem of importance to physicians and public health officials of Mediterranean countries for many years. For a long time it was a scourge among the British troops in Mediterranean stations until the discovery that the disease was transmitted through milk from infected goats which showed no evidence of disease. Prohibition of the use of goat's milk in the army and navy has practically eliminated the disease from the British troops, although it is still prevalent among the natives in the Mediterranean countries.

In the United States, Malta fever was unknown until 1905. During that year a nurse who had been attending sick soldiers in a Washington, D. C., hospital contracted a disease which was diagnosed as Malta fever by Col. Charles F. Craig, who, in his report, made the following statement:

> I am convinced that a careful study, by use of the Widal test, and the agglutination reaction with *Micrococcus melitensis*, of many of the cases of obscure continued fevers which are prevalent in this country will result in the demonstration that Malta fever is by no means a rare disease in the warmer portions of the United States, and that many of the so-called anomalous cases of typhoid fever are in reality instances of infection with the organism of Malta fever.

Further observations confirmed the opinion of Colonel Craig. Army medical officers studied the obscure continued fevers in the States along the Mexican border where goats are raised commonly, and they found Malta fever endemic in those regions. Ordinarily the cases are sporadic, but one outbreak occurred in Phoenix, Ariz. It was reported by Dr. G. C. Lake, of the Public Health Service. He found 35 cases which had developed the disease in Phoenix during the summer of 1922. The infections were traceable to goat's milk.

In 1918, Miss Alice C. Evans, bacteriologist of the Hygienic Laboratory, made the observation that there is a very close relationship between the organism which causes Malta fever and that which causes contagious abortion in cattle. It was found that the two organisms are indistinguishable by ordinary laboratory methods, although a slight difference can be detected by the use of a certain complicated and tedious test.

It is interesting to speculate why the resemblance between the organisms of Malta fever and contagious abortion of cattle had not been recognized earlier. Apparently the names had something to do with it. The question is sometimes asked, "What is in a name?" In this instance the names seem to have blinded bacteriologists to the similarity of the casual organisms of these two diseases.

Bacteria (like people) have two names. The Englishman, Bruce, discoverer of the causal organism of Malta fever, called it "*Micrococcus melitensis.*" The first name, micrococcus, means "small kernel." It is applied to bacteria which are spherical, or nearly spherical in form. In 1897, 10 years after Bruce discovered the *Micrococcus melitensis*, a Dane by the name of Bang discovered that contagious abortion in cattle is due to a germ which he called *Bacillus abortus*. The first name, bacillus, means "small rod." It is applied to bacteria which are of the form of small rods.

The early bacteriologists (the science of bacteriology is less than a half century old) held the theory that a coccus must always be spherical and a bacillus must always be of the rod form with never a transition from one form to the other, a theory that has been found to be untenable. As a matter of fact, cultures of the organisms under discussion are a mixture of coccoid and bacillary forms. It happened that in the strains studied by Bruce the coccoid forms predominated, whereas in the strains studied by Bang the bacillary forms predominated. In the two separate baptisms the similarities of these two organisms were concealed for two decades. It is as if twin brothers had been adopted by different families and given different surnames, and for 20 years no one recognized the similarities between the boys because they were seen at different times and in different places.

The observations of Miss Evans were confirmed by Dr. K. F. Meyer and his associates in the United States and by investigators in Germany, Austria, South Africa, Italy, the Netherlands, Egypt, Tunisia, and Japan. From all of these countries there has come the confirmation that the organisms from the two diseases are alike in appearance, behavior, and capability. This point having been established, there arose a question as to why Malta fever was unknown in regions where cow's milk was used. For several years there was no answer to that question. Then the answer came. It is that sporadic cases of Malta fever do exist in all parts of this country. There are

not enough data at hand to estimate the degree of prevalence, but it appears certain that there are not nearly so many cases among those who drink infected cow's milk as among those who drink infected goat's milk.

In countries where Malta fever has been known to be endemic, diagnosis is very difficult on account of the varied manifestations of the disease and its resemblance to certain other diseases. Obviously, then, the chances are almost negligible for its recognition in countries where its existence is unknown.

The first case of Malta fever in which the causal agent was definitely determined to be the *abortus*, or bovine variety, was recognized in the Johns Hopkins Hospital in Baltimore, Md., in the latter part of 1922. Each year since then an increasing number of cases have been recognized in this and other countries.

Contagious abortion among cattle is widespread. In this country it ranks with bovine tuberculosis as a source of enormous economic loss to cattle raisers. The disease is so prevalent among cattle that there is little chance for anyone to drink un-Pasteurized milk for any considerable length of time without ingesting the organism which may cause Malta fever.

Pasteurization will, however, give protection. There are reasons enough for Pasteurization of milk even if there were no danger of Malta fever, and most city populations have this protection. On the other hand, Pasteurization is not commonly practiced on farms. The farm housewife should be warned of the danger in raw milk, particularly at times when the cows on the farms are aborting.

There is another source of Malta fever infection other than cattle in regions where there are no goats. Contagious abortion is a disease, of hogs, as well as of cattle, and those who handle the infected animals or those who handle the infected hog carcasses or meat in slaughter-houses and butcher shops, are in danger of contracting the infection.

Malta fever does not have a high rate of mortality, although occasionally it does end fatally. But it is an extremely debilitating disease which usually renders the patient unfit to carry on his usual occupation for many months, sometimes for as long as two or three years.

CANCER

The last few decades have witnessed striking and even spectacular reductions in the mortality in the many diseases which formerly decimated the population. Yellow fever has practically ceased to exist. The death rate from tuberculosis, typhoid fever, diphtheria, and gastroenteritis of infants have undergone dramatic decreases. The discovery of the causative agents for these diseases, or their manner of propagation, the steadily improving sanitary conditions of centers of population, the increasing practical application of

health laws, and more favorable social and economic conditions have been adding steadily to the defenses against the the diseases which used to take such toll of childhood, adolescence, and early manhood.

Yet, in the face of man's increasing mastery over the infectious diseases, the cancer death rate has not only failed to decrease, but has apparently registered a steady increase. This increase in the death rate was not confined to the United States alone, but was recorded in practically all the civilized countries throughout the world.

This apparent increase, of course, attracted attention of students of public health, many of whom were unwilling to accept it at its face value. The optimistic urged that the growing number of survivors to the later decades of life, better diagnosis, greater precision in filling out certificates of deaths, changes in the age distribution of the population were able to account for the increase in the cancer death rate—that the disturbing increase in the mortality was apparent only and not real.

Those who took a gloomier view of the situation pointed out that the increases in the cancer death rate were too great, too general, to be more than partly accounted for in any such fashion. Of course, in the case of a disease so grim and relentless as cancer, which in 1920 was the cause of death of about one in every eight deaths in persons 40 years and over, the question of an apparent versus an actual increase in the cancer death rate provoked lively and controversial discussion.

One of the first tasks of the Public Health Service upon entering the field of cancer research in 1922 was to determine, if practicable, for the United States whether or not we were facing an actual increase in the cancer mortality. Annual vital statistics began for the United States, when, in 1900, the registration area for deaths was formed with the 10 States of Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, and Vermont as a nucleus, the other States now constituting the registration area having been added from time to time.

A critical study of the course of cancer mortality was undertaken in these 10 original registration States because they offered the largest available area in this country furnishing a continuous statistical record for the 21-year period 1900–1920. In 1900 these States had a population of over 19,000,000 which by 1920 had increased to somewhat over 27,000,000.

After due tabulation and construction of graphs the course of the cancer mortality was analyzed. As a result of the analysis, corrections were applied for changes in age distribution of the population and improvements in the accuracy and completeness of the death returns.

As a result of this analysis the conclusion was reached that, although the actual increase in cancer mortality in the area studied is not so great as the increase in the crude death rates indicated, still there has been in the 21-year period, 1900–1920, a considerable increase in the actual death rate from cancer.

In the population aged 40 years and over the increase in the mortality rate for this period amounts to about 30 per cent. Some of the most striking increases occurred in such readily recognized cancers as cancer of the mouth and tongue, cancer of the breast, and cancer of the female organs of generation, all of which showed higher percentage increases in the death rate than cancers of sites supposedly more difficult of diagnosis, as, for instance, cancers of the stomach and liver.

This study shows that the great apparent increase in the crude mortality rates shown by the United States vital statistics for cancer is, in part at least, due to an actual increase in the frequency of the disease. The mortality rates for 1924 indicate some further increase since 1920.

The factors responsible for higher cancer death rates must evidently be sought in the increasing complexity of our modern social and economic environment. This, in turn, suggests that more intensive epidemiological studies of cancer—i. e., the study of cancer in relation to all factors in its environment—may perhaps yield some useful clue to its cause, which, so far, has baffled all efforts of scientific research.

Although the search for the cause of cancer is still fruitless, there is also the hope that research in the field of chemotherapy, or treatment of disease by chemical compounds, may result in the discovery of a compound specific for cancer. This problem well might be solved by finding a compound or group of compounds toxic for cancer cells and possessing a special affinity for them so that normal tissue cells would be spared.

In cooperation with the department of pharmacology of the Harvard Medical School, work has been done to determine whether a relation could be discovered between the chemical constitution of compounds and their penetration into and their retention and elimination by cancer cells. Rats and mice bearing inoculated malignant tumors were used in these studies. There were available for trial a large number of new arsenic compounds (made in the pharmacological laboratory of the Harvard Medical School), some new organic dyes, and some mercury compounds. New methods had to be devised for the analytical work. Although results are still far from being complete, some interesting findings have already been obtained.

Organic compounds of mercury were studied from two viewpoints: (1) The possibility of finding a compound of mercury which entered

the tumor and would injure it; and (2) the possibility that such a compound, when taken up by the tumor would render it more sensitive to radiation with X rays or with ultra-violet light.

It was found, with respect to the first possibility, that the presence of bromin in a fluorescein-mercury compound (fluorescein being an organic dye) markedly increased the amount of mercury taken up by a tumor. That this may be a general principle is suggested by the fact that this was found to be true for analogous compounds containing arsenic instead of mercury.

In regard to the second line of inquiry, eosin (an organic dye) was found to be retained by the tumors for a considerable period. Mice bearing tumors eliminated eosin much more slowly than did normal mice. Since eosin is one of the "photodynamic" substances—i. e., increases the sensitiveness of living cells to light—it seemed possible that if eosin is retained by tumors, the destructive action of ultra-violet light might thereby be enhanced. Experiments on this subject are still incomplete. However, one point of interest has been established: Tumor-bearing mice succumb to irradiation with ultra-violet light more quickly than do normal mice. Whether the previous injection of eosin into the tumor-bearing mice increased the injurious action of the irradiation was not clear; the diminished resistance seemed dependent upon the size of the tumor rather than upon the presence or absence of eosin.

Trivalent arsenic was found to be retained by the tumors much longer than was pentavalent arsenic. As in the case of mercury, the retention of arsenic by tumors could be increased by the introduction of bromine into the molecule of certain arsenic compounds containing fluorescein dyes.

So far, none of the compounds studied seemed to have an injurious effect upon the growth of tumors; yet future work may lead to the discovery of a compound which will penetrate tumors and have a deleterious action upon them.

This hope is encouraged by the work of Bell in England, which shows that colloidal lead compounds are highly toxic for cancer cells, and that by their use a number of advanced cancers in human beings have been apparently cured. However, even colloidal lead compounds which are low in poisonous qualities compared to other lead compounds, are nevertheless highly toxic to normal cells, so that the lethal dose for cancer cells lies very close to a fatal one for the other cells of the body. Therefore, considerable work remains to be done before the use of lead compounds can be generally used for cancer treatment.

Within the past two years the Public Health Service has begun work in a new field; i. e., the effects upon living cells of electric currents of very high frequency. By "high frequency" in this connection

are meant oscillating currents having a frequency of from 200,000,000 to 10,000,000 or 15,000,000 cycles per second. It is only within the past few years, through the development of the vacuum tube oscillator and associated circuits, that apparatus has become available by which such high frequencies could be reliably generated and controlled and their effects upon living cells studied.

Through the cooperation of the Cruft High Tension Laboratory of Harvard University, apparatus was developed by which the physiological action of these currents upon small laboratory animals might be studied.

Although this work is only in its beginning, some interesting results have already been obtained. In studying the effects of an electrostatic field, subject to an oscillating potential within the range of frequencies given above, it was found that the very high and the lowest frequencies studied were relatively harmless, but that the intermediate frequencies had a highly injurious effect. A zone of pronounced lethal action was observed over a band of frequencies extending from 90,000,000 to 18,000,000 cycles per second.

Since these studies show that there is a marked differential action in the effect upon living organisms in the action of high-frequency currents which is apparently due to the frequency alone, other studies are now in progress, upon which it is still too early to report, to determine if any practical application of these findings can be developed. In particular, the effects of these currents upon the growth of tumor cells is being studied.

TYPHUS FEVER

"Typhus" comes from a Greek word which means a mist or a cloud. This fever was so named because of the mental confusion or delirium which so frequently accompanied it. Originally it included what we now know as typhoid fever. Early in the last century, however, the two diseases were differentiated.

Typhus fever resembles typhoid somewhat, but it is more abrupt in onset and in termination, lasts only two weeks, and is characterized by a profuse skin eruption of a peculiar sort.

Typhus has been one of the scourges of man for centuries. It is one of the pestilences which swept through countries in the wake of devastating wars and in time of famine.

It claimed its victims by the millions during the World War. Following the invasion of Serbia by the Austrian Army in 1915, an epidemic raged in that country, causing 500,000 cases and 150,000 deaths in a single year. In Russia during the year 1920 there were 3,000,000 cases reported, and of these probably one-fourth died.

In Mexico, where it is called "tabardillo," the disease is known to have existed in the highlands since a great epidemic in 1576–1577, which, according to the writings of Padre Sabagun, carried off some 2,000,000 Indians.

Fortunately, typhus never obtained a permanent foothold in the United States, in spite of frequent importations from Europe and Mexico. During the middle of the last century, small epidemics of the disease were not uncommon in the large cities of the eastern seaboard—Boston, New York, and Philadelphia. The worst outbreaks occurred during the late forties, when, as a result of the great famine, large numbers of infected Irish immigrants came to this country.

Although the disease had been known to be associated with crowding, poverty, and filth since early times, it was not until 1909 that a French scientist, M. Nicolle, discovered that it was conveyed from one individual to another by the body louse. About the same time, Doctor Anderson and Doctor Goldberger, of the United States Public Health Service, and Doctor Ricketts and Doctor Wilder, of the University of Chicago, working independently, proved that Mexican typhus also was conveyed by the louse, thus confirming the work of M. Nicolle.

Knowledge gives power. With the means of transmission known, it was generally held that danger from typhus in the United States was practically negligible. Delousing plants for immigrants were set up by the United States Public Health Service at all ports of entry, and it was felt that even if individual cases did occasionally find their way into this country, there need be no fear of spread.

So far as the virulent European typhus is concerned, this theory has worked out well. Following the recent World War, in spite of the wide dissemination of the disease throughout Europe and parts of Asia, this country remained free except for the occasional sporadic case, usually promptly isolated upon arrival.

Recently, however, this feeling of security so far as typhus is concerned has been somewhat disturbed. Attention was first directed in 1910 by Dr. Nathan Brill to the fact that there were occurring in New York City each year a number of sporadic cases of what appeared to be mild typhus. Because of its mildness, because it showed no tendency to spread, and because of certain other features, Doctor Brill decided that the disease with which he was dealing probably was not identical with the typhus of the Old World. Doctor Anderson and Doctor Goldberger, of the United States Public Health Service, however, showed by animal experiments that the causative virus of Doctor Brill's disease was actually the same as that of Mexican typhus.

It has since been accepted that mild typhus—"Brill's disease"—is endemic in New York and some of the other eastern cities. Here, it was thought, the disease persisted because of the occasional arrival in this country of immigrants carrying infected lice. There was little tendency to spread because of the relatively few persons infested with lice.

Since the report of Doctor Brill it has gradually become evident that cases of this mild form of typhus fever were occurring in many parts of the United States—apparently independently of importation. The realization of this fact followed upon a study by Doctor Maxcy, of the Public Health Service, of certain cases occurring in Montgomery and Mobile, Ala., Savannah, Ga., and several other cities and small towns in the southeastern United States. This discovery led the service to embark upon a thoroughgoing scientific investigation of the whole question of the existence or persistence of typhus in this country and its potentialities, and Doctor Maxcy was detailed to this duty.

It seemed imperative to answer several questions which arose from the situation. Is this disease which is occurring in the southeastern United States identical with Old World typhus? Is it transmitted by the body louse, as is Old World typhus, or in some other way? Where and under what conditions does it occur? Is it becoming more prevalent? What is the danger from it? Can it be prevented?

It may be said that, for all practical purposes, the first objective has been attained. The work done thus far confirms the previous observations of Doctor Anderson and Doctor Goldberger as to the identity of the causative virus with that of Old World typhus. On the other hand, some very interesting evidence has been uncovered which indicates that this disease in the United States is not conveyed from man to man by the louse, but has some other mode of transmission.

The information which has been gathered suggests that there is some reservoir of infection outside of man. Reasoning by analogy with what is known of other diseases in this same group, it seems not unlikely that a reservoir will be found in small rodents—rats or mice. If this be true, then it is probable that man is accidently infected by the bite of some insect which is parasitic upon the rodent. It is along these lines that the field investigations and laboratory studies are being conducted.

The problem is of importance not only to this country but to the Old World as well, inasmuch as its solution may throw light upon the mechanism by which the virus of typhus survives between epidemics.

GOITER STUDIES

The Public Health Service, like other agencies engaged in safeguarding the public health, had been interested in the cause and prevalence of goiter prior to the notable experimental work carried on by Marine and Kimball in Akron, Ohio, which resulted, in 1917, in their announcement of success in their efforts to prevent the occurrence of simple goiter among the school girls of that city.

It was not until July, 1923, however, that systematic goiter studies were begun. At that time headquarters for that purpose were established in Cincinnati, Ohio. When the word goiter is used in this article it refers to a simple enlargement of the thyroid gland, and does not include enlargement due to malignant disease, or to the exophthalmic type of goiter.

The development of the goiter studies of the Public Health Service has been along logical lines. While a steady interest has been maintained in the treatment of existing goiters, it has been with the prevention of so-called simple or endemic goiter that the chief activities have been concerned. The various phases of the work may be grouped as follows:

(1) Goiter surveys and resurveys.
(2) Studies of the effects of simple goiter.
(3) Educational work.

It must not be supposed that knowledge of the distribution of simple goiter in the United States was wholly lacking prior to the surveys made by the service. Quite on the contrary, the general prevalence of the malady has been known for some time, particularly since the results of the draft examinations became available. While the information gained from the draft figures was interesting and helpful, its value has been questioned because of its restriction to men of military age. Moreover, the examinations were made by many physicians with varying degrees of skill and experience. Despite these obvious deficiencies, however, the draft figures have afforded much useful general information.

Before undertaking any surveys on its own account the Public Health Service made a compilation of all existing data on goiter prevalence. All available literature on the subject was examined and additional survey reports were obtained by correspondence with approximately 1,200 State, county, and city health officers. The combination of these data represents the most complete record of thyroid surveys yet made in this country.

Surveys were conducted in Cincinnati, Colorado, Connecticut, Massachusetts, and several other States. It was found that relatively little simple goiter was present in the New England States included in the surveys. Moreover, the malady was least frequent in localities near the coast, increasing in prevalence as the western portion of the State was approached. It was concluded that the incidence of goiter was too small in most places to warrant widespread prophylactic measures.

As a result of the State surveys undertaken by the Public Health Service it has been found that goiter is most prevalent in Minnesota, Montana, Colorado, Ohio (Cincinnati only), Connecticut, and Massachusetts, in the order named. After each survey, appropriate ad-

vice was given to the health authorities for the prevention of simple goiter. Furthermore, approved treatment of existing thyroid enlargement was cited for the benefit of practicing physicians.

In order to determine the results of prophylaxis a resurvey of thyroids has been made in Cincinnati. This, when the results have been analyzed, will show whether there has been a reduction in goiter prevalence since the original investigation three years before. Moreover, evidence of any possible ill effects of the prophylaxis will be forthcoming.

A study having for its purpose the determination of whether endemic goiter influences intelligence included examinations of 3,796 children in the sixth grade of the Cincinnati public schools. When the chronological age data, indicative of school retardation or advancement, were analyzed it was found that there were no significant variations between thyroid-normal and thyroid-enlarged children. Similarly the intelligence tests failed to show differences of sufficient magnitude to warrant the conclusion that the thyroid-normal have a keener mentality than the thyroid-enlarged.

The stunted growth of individuals deficient in thyroid tissue and the augmentation of height of those in whom the gland is hyperactive have led to the popular belief that simple goiter retards physical development. In order to gain some information on this point the Public Health Service made 12 uniform measurements of 1,341 white boys and 1,576 white girls in eight Cincinnati schools. As a result of this study it was found that better nutrition and posture, according to the estimates of the examining physicians, were slightly more frequent among the thyroid-normal children. Underweight was more frequent in the group studied among those having simple thyroid enlargement.

An investigation of the effects of simple goiter on school attendance failed to afford suggestive information of the ill effects of this condition. In fact, the attendance of the thyroid-enlarged children was slightly better than that of the normal individuals.

The Public Health Service receives many requests for information on the goiter problem. Among those seeking information may be mentioned physicians, public health officials, nurses, manufacturing concerns, advertising agencies, students engaged in writing essays, and persons who have goiter.

Many persons with goiter write to the Public Health Service for advice concerning treatment. Attracted by the apparent ease with which the malady may be prevented, they often conclude that what was useful prophylaxis should likewise be efficacious as a means of treatment. It is necessary, however, to emphasize the fact that there are certain forms of goiter which are made worse by the administration of iodine. Therefore, every patient with goiter must receive in-

dividualized treatment, an accurate diagnosis being a preliminary requisite.

In view of these facts, goitrous individuals are advised to consult reputable physicians, preferably those skilled in the diagnosis and treatment of goiter. Furthermore, goiter patients are particularly cautioned by the Public Health Service against self-treatment, the use of proprietary remedies, and reliance upon quack doctors who advertise.

Many public health workers seek advice of the Public Health Service regarding the most efficient methods of making thyroid surveys. In these instances, detailed explanations are made through correspondence or, when practicable, a representative of the service visits the community and gives a first-hand demonstration.

SOCIAL DISEASES

Among the microscopic enemies of the human race there is perhaps none which has done more to cause suffering and unhappiness than the tiny corkscrewlike microorganism known as *Treponema pallidum*, which causes syphilis. This disease in its various manifestations has far-reaching powers for evil and is all too widely distributed among our population in all classes of persons.

One of the most practical means of preventing its spread is to cure promptly such cases as can be discovered before they have opportunity to infect others. Fortunately, there are now potent remedies capable of doing this, but they are poisonous and consequently in need of safeguards to prevent them from doing injury.

One of the outgrowths of the World War is the production by American laboratories of that group of biologic products now known as arsphenamine, neoarsphenamine, and their derivatives, used chiefly in the treatment of syphilis, but having many other important uses. Prior to the war, these products, under the names of salvarsan and neosalvarsan, etc., were controlled by German patents and manufactured only in that country. In America, one firm in New York acted as the exclusive agent for this country for the German owners.

When the war cut off the supply of the German product, there was an acute shortage of these drugs in the United States. A number of substitutes were placed on the market by various domestic laboratories, and one laboratory even succeeded in making a product very similar to salvarsan. Their efforts, however, were not very successful, due chiefly to the restrictions of German patents.

After the United States entered the war, Congress, by the act of October 6, 1917, abrogated all enemy-owned patents and placed them under the supervision of the Alien Property Custodian. This opened the way for the issuance of licenses under war-time legislation for the manufacture of salvarsan, neosalvarsan, and derivatives.

The Federal Trade Commission, which acted under the authority of the War Trade Board at that time, issued the licenses and specified that the products should be known as arsphenamines, and provided that the Public Health Service should have the Hygienic Laboratory act as the laboratory control office.

The supervision thus instituted under war-time powers of the Government was continued in peace time by a ruling of the Solicitor of the Treasury that these products come within the scope of the biologics control act of 1902, by virtue of which the Hygienic Laboratory controls the production and sale of vaccines, viruses, toxins, and similar products, and the ruling later was replaced by a statutory enactment.

Other drugs commonly used in intravenous injections, such as quinine, cocaine, novocaine, and arsenicals other than those with an arsphenamine base do not come under this control.

Control of products of the arsphenamine group is highly desirable from the standpoint of protection for the public. Arsphenamine is a toxic drug the exact quantitative composition of which is known. Because of its highly complicated organic structure it is impossible for a manufacturer to produce a product of uniform strength on all occasions. The only method of insuring an exact knowledge of this strength is through biologic control—experiments with laboratory animals—and by confirmation of this information clinically.

Arsphenamines may be manufactured only in laboratories which have been licensed for that purpose by the Secretary of the Treasury on recommendation of the Surgeon General of the Public Health Service. The procedure for this licensing is the same as that followed for manufacturers of all biologic products.

Manufacturers are required to supply samples of each lot of these products for examination by the Hygienic Laboratory, and these products may not be placed on the market until they have been passed and, in the case of initial license, until clinical evidence of the safety of the preparation has been submitted by the manufacturer and found satisfactory by the Hygienic Laboratory.

In spite of all the precautions taken to insure safety in the use of arsphenamine, there are occasional unfavorable or even fatal reactions following its administration. The section of pathology and arsphenamine products control of the Hygienic Laboratory has investigated practically all serious reactions which have occurred in the Government service since control over these products was instituted. In the majority of cases it has been shown that the reactions were due (1) to some error in the technique of the preparation and administration of the drug or (2) to faulty examination of the patient, especially in relation to the effects of previous injections, and (3) in a limited number of cases to the personal idiosyncrasy of the patient to arsenic.

In no case has it been possible to prove that the reactions have been due primarily to an undue toxicity of the drug itself, although in some instances reactions have resulted from the use of a deteriorated product.

To minimize the danger from faulty technique in the administration of the arsphenamines the Public Health Service, in cooperation with the medical departments of the Army and Navy and the Veterans' Bureau, has prepared a set of detailed instructions on technique and has directed that the medical officers under these respective jurisdictions follow these instructions.

In addition to exercising control over the arsphenamines, the above-mentioned section of the Hygienic Laboratory also serves as a central pathological laboratory for all hospitals and stations of the Public Health Service, particularly with regard to the microscopic examination and diagnosis of specimens of tumors, diseased tissues, glands, etc. These specimens, removed in the course of operations or post-mortems, are sent to the Hygienic Laboratory, where they are examined microscopically and diagnoses made of the conditions.

At present the greatest field of endeavor along this line is the examination of tumors, to determine whether or not they are benign or malignant. Without this information the surgeon may be unable to determine whether a given case calls for simple treatment or the most radical procedure.

It is generally recognized nowadays that no hospital is complete without competent pathological service; but since competent gross and histological pathologists are scarce and command large salaries, it is impossible for each hospital to have its own service. The Public Health Service, therefore, makes available facilities by having the Hygienic Laboratory act as a central laboratory for its hospitals and stations.

Arrangements are made to some extent for the employment of private pathologists in emergency cases where distances would preclude an efficient service from the Hygienic Laboratory. The laboratory, in its pathological work, has the benefit of a consulting staff composed of some of the ablest pathologists in the country.

DISEASES IN INDUSTRY

The application of one branch of science to industry frequently begets problems which another branch of science must solve. Hence, it comes about that the ever-expanding utilization of scientific methods in manufacturing brings with it an ever-increasing list of health problems.

Humanity is becoming increasingly sensitive of the sufferings as well as loss of earning power which may be inflicted upon large numbers of the population because of occupational hazards.

The foregoing factors explain the existence of the office of industrial hygiene and sanitation in the division of scientific research, Bureau of the Public Health Service. It is this office which is charged with the investigation of industrial health hazards and causes of sickness in industry. Obviously, on account of the extreme broadness of the field of work, the investigations undertaken are largely confined to those industrial hazards which affect large groups of workers and which are common to many industries.

Probably the greatest single health hazard existing in industry at the present time is dust, and there are approximately between 4,500,000 and 5,000,000 persons working in the so-called dusty trades. To study this problem the office of industrial hygiene and sanitation has begun six studies which, in a general way, cover the field of the dusty trades, and in which each investigation is representative of a great class of dust. Each study is made in exactly the same way as are the others, so that in the end all will be comparable.

The dusts which have been taken up are, first, cement dust, which represents the great group of calcium and lime dusts and which are generally believed to be innocuous in so far as they tend to cause an increase in tuberculosis among the workers.

Second, hard coal dust, which is representative of the organic, or carbon, dusts. These dusts are believed to cause asthma through the development of general fibrosis of the lungs.

Third, granite dust, which is representative of the broad group of silicious dusts and which has always been regarded as extremely dangerous in producing pneumonoconiosis of the lungs and in increasing the susceptibility of the worker to tuberculosis.

Fourth, metal dusts, of which silver dust is representative. Metal dusts appear to act much in the same manner as do silica dusts.

Fifth, cotton dust, which was taken to represent the vegetable dusts, does not seem to increase the susceptibility to tuberculosis, but, on the other hand, bronchitis and asthma appear to be much above the normal in these workers.

Lastly, the office of industrial hygiene is conducting a study among the street cleaners in New York City.

In each study a group of from 500 to 1,000 workers is selected. These workers are given a complete physical examination and classified according to the length of time employed in the trade.

X rays are made of the lungs of workers in the various groups in order to determine the development of pneumonoconiosis, which might result from the breathing of the dust, and also for the purpose of comparing the degree of development resulting from exposure to the various dusts.

All absences from work on account of sickness among the workers under observation are investigated by the Public Health Service.

While the study of sickness in the dusty trades is of particular importance in understanding the health problems of a specific industrial hazard, of equal importance is the study of the causes of disabling sickness and the average duration of such illnesses in general industry. The office of industrial hygiene receives annually reports from approximately 40 industrial concerns which employ approximately 135,000 persons. These reports give the causes of absence on account of sickness which lasts eight days or longer.

The study of these reports has brought out a number of very interesting facts: First, that the respiratory group of diseases causes approximately 47 per cent of all sickness; and, second, that common colds and influenza are the most important diseases in the respiratory disease group in causing lost time.

These reports also show that the sickness rate among female workers is much higher than among male workers. It was first thought that this increased sickness rate might be due to illnesses peculiar to the female sex; but upon examination of the data collected by the Public Health Service it was found that the higher rates were practically constant for all diseases and groups of diseases except pneumonia, hernia, varicose veins, and one or two other minor diseases.

The importance of good illumination in factories in its effects on the vision of the workers and on production is obvious. In the research work in this field the office of industrial hygiene and sanitation has carried on two main projects: First, a study of the effect of different degrees of artificial illumination varying from poor to very good on the vision of workers and upon production. The results of this study have been published in a bulletin on illumination in Government post offices, and as a result of this study considerable improvement has been effected in the lighting of post-office buildings and public buildings in general.

The second field of investigation has been that relating to natural illumination. This investigation has been concerned with the relationship of outdoor and indoor illumination, and with the establishment of certain basic data upon which architectural engineers may build factories, hospitals, schools, and public buildings with dependable assurance as to the degree of natural illumination throughout the building at all seasons of the year and all times of the day.

A study has also been made of the variation in daylight in the latitude of Washington, D. C., by taking daily readings by means of the Case photo-electric cell, which automatically records the daylight variations. This study is the first of a number of studies which will zone the United States from Maine to Florida, and which may form particularly valuable data in the study of relationship of disease and daylight.

The increased use of paint spraying and lacquering and similar work has brought with it an entirely new phase of an old problem—ventilation. The use of new paints and varnishes necessitates new solvents and rapid-drying preparations which were unknown to the trades 10 years ago, or which, if then used, were in such small quantities as to be negligible from a public health standpoint.

Similarly, chemical development in industry adds each year new compounds and substances about which there is little known information as to their effects on the health of the workers. This field of industrial health research must be considered of continually increasing importance if the health of many thousands of workers is to be safeguarded.

A problem of this nature which has just been completed in cooperation with the National Safety Council is the study of benzol poisoning in industry. In this investigation an extensive survey was made of the amount of benzol vapor in the air in many types of industries where adequate ventilation was furnished as compared to those where there was no such provision.

At the same time the blood picture was studied to estimate the amount of chronic poisoning. Partly as the result of this investigation, many sprays and varnishes which several years ago contained benzol in dangerous amounts have been discontinued and other solvents supposedly less dangerous are being substituted for benzol.

The general physical condition of industrial workers and the relation of their diseases and defects to their occupation has formed an important investigation in the field of industrial hygiene undertaken by the United States Public Health Service. In this comprehensive study, embracing 10 industries, the physical condition of 12,000 industrial workers was investigated, and as a result a very much clearer picture has been obtained of the development of particular diseases in specific industries, the incidence of disease and disease groups throughout life, and the relative merit of physical examination in the determination of the health of workers.

Several years ago the industrial hygiene office began a study of the posture of normal individuals, including in this group 3,000 persons ranging from 3 to 70 years of age. This preliminary study forms the basis for an investigation of posture in industry, so that once understanding the elements of normal posture it will be possible to evaluate the effects on health, if any, of those trades in which the work requires those employed to assume a type of posture other than that which has been considered normal.

The studies of industrial hygiene and sanitation necessarily enter all fields of industry whenever the effects of occupation on the health of the workers is questioned. The incidence of lead poisoning in the pottery and other industries, the prevalence of tuberculosis in

zinc mines and in general industry, the effects of fatigue and the finding of a physiological or chemical measure of fatigue, the effects of high temperature, the standardization of a sanitary code for States, and the standardization of the technique of the prone pressure method of resuscitation for persons rendered unconscious from drowning, electric shock, gas poisoning, etc., represent a few of the problems, some of which have been completed, and others of which are in the process of investigation, but as a whole indicative of the practical health work that the United States Public Health Service is carrying on for the benefit of workers and industry.

(The concluding articles of this series will be published in the next issue of PUBLIC HEALTH REPORTS.)

CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT ISSUED NOVEMBER 15, 1926, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS, SECRETARIAT •

Cholera.—A continued diminution in the cholera incidence in the Far East was reported by the Health Section of the League of Nations' Secretariat in its Monthly Epidemiological Report for November. The outbreaks in Amoy, Shanghai, and Bangkok apparently had about come to an end in October or early in November, except for a few sporadic cases. The ports in French Indo-China and Singapore were entirely free from the disease in October, but cases reappeared in November. The ports of Cholon and Haiphong had been free from cholera since July, but became reinfected in November. Tonkin was the only province of French Indo-China to show an increase in cholera in October; there the reported cases rose from 200 in September to 460 in October.

TABLE 1.—*Cholera cases, or deaths, reported in the principal maritime towns of the Far East between October 3 and November 26, 1926*

Town	Week ending—							
	October				November			
	9	16	23	30	6	[1] 13	[1] 20	[1] 26
CASES								
Amoy	18	13	5	2	1	0	0	0
Shanghai	6	3	3	1	1	0	0	0
Bangkok	2	0	1	1	1	2	3	0
Saigon and Cholon	0	0	0	0	1	1	0	0
Turane	0	0	0	0	5	10	6	1
Haiphong	0	0	0	0	0	22	27	[2] 32
Singapore	0	0	0	0	0	3	2	1
Colombo	0	0	0	0	1	0	0	0
DEATHS								
Bombay	0	1	0	0	0	0	0	0
Calcutta	14	8	15	------	16	19	34	16
Rangoon	0	0	0	0	1	0	0	1
Negapatam	0	0	0	0	0	0	1	0

[1] From weekly telegraphic reports of the eastern bureau of the Health Section at Singapore. [2] Deaths.

• From the Office of Statistical Investigations.

Cholera appeared in northern Korea in September, and 196 cases had been reported up to September 28. "According to information received from the North Manchuria Plague Prevention Service, about 1,500 cholera deaths have been reported in Manchuria since the beginning of the epidemic early in August up to the end of September. This is the most extensive cholera epidemic in Manchuria since 1919, when about 10,000 deaths were caused by this disease. Two hundred and eighty-nine cholera patients were treated in the hospitals of Harbin, of which 226 were Chinese and 63 Russians; there were 51 deaths among the Chinese and 33 among the Russians, giving a case mortality of 23 per cent for the former and 52 per cent for the latter."

Although cholera was decreasing in India during September, the incidence remained higher than during the corresponding month of the preceding year. The number of deaths in each of the Provinces is shown in Table 2.

TABLE 2.—*Deaths reported from cholera in the Provinces of India*

Province	1926		1925, Sept. 13-26
	Aug. 29-Sept. 11	Sept. 12-25	
North-West Frontier	0	0	0
Kashmir	0	0	102
Punjab	24	6	126
Delhi	6	5	2
United Provinces	267	135	462
Bihar and Orissa	1,441	766	135
Bengal	249	200	89
Assam	11	15	3
Central Provinces	277	244	0
Madras Presidency	495	423	598
Bombay Presidency	0	0	0
Burma	102	114	2
Other Indian States	13	63	0
Total	2,885	2,070	1,519

Plague.—At Sidi-Barrani, in the Western Desert Province of Egypt (on the Mediterranean coast), where a small outbreak of plague started last August, there were 11 new cases reported between October 11 and October 21. No cases of plague had been reported elsewhere in Egypt from the middle of August to October 21.

Algeria reported 10 cases of plague in the period from September 21 to October 20—1 case at Algiers and the other 9 cases at Oran.

At Constantinople, five cases of plague were reported from October 11 to 19.

At Antelias, a suburb of Beirut, one case of plague was reported on October 22.

In Mauritius, at Port Louis, 9 plague cases were reported in October; only 1 case had been reported in the island during the preceding 9

months. At Saint Denis, on the island of Reunion, 8 cases were reported between October 21 and 31; the latest previous case had occurred on August 30.

In Madagascar, plague cases have been increasing since July, and 257 cases were reported in October, as against 186 in September and 142 in August. Cases are more numerous than in the corresponding season of any previous year of record. Both Tamatave and Majunga, the principal ports of the island, were seriously infected.

In southern Nigeria, plague was more prevalent in August (187 cases were reported) than during previous years; as in former years, Lagos and the Province of Ijebu-Ode were the sections chiefly affected. Tanganyika Territory reported 5 cases of plague in July and 2 cases in September.

Since May, plague has been more prevalent in Uganda than in previous years. The peak of the outbreak apparently was passed in June.

The incidence of plague in the various Provinces of India in September is shown in Table 3. The disease was spreading chiefly in Mysore and Hyderabad States and in the Central Provinces, but the cases numbered about the same as in the corresponding month of 1925.

TABLE 3.—*Plague declared in the Provinces of India*

Province	1926		1925, Sept. 13–26
	Aug. 29–Sept. 11	Sept. 12–25	
North-West Frontier	0	0	0
Punjab	23	49	40
Delhi	0	0	0
United Provinces	14	39	28
Bihar and Orissa	8	16	3
Bengal	0	0	0
Assam	0	0	0
Central Provinces	70	252	293
Madras Presidency	83	58	21
Hyderabad State	240	506	441
Mysore	160	228	219
Bombay Presidency	236	373	628
Burma	58	45	85
Other Indian States	16	29	137
Total	908	1,595	1,895

The only Asiatic ports reporting cases of plague during October were Rangoon (5 cases), Bombay (1 case), and Surabaya (1 case).

At Guayaquil, Ecuador, 4 cases of plague were reported in September. In Peru, 45 cases were reported in September as against 21 cases in the preceding month.

Yellow fever.—Cases of yellow fever were reported as follows in the month preceding the publication of the November issue of the Epidemiological Report:

TABLE 4.—*Cases of yellow fever reported since preceding issue of the Epidemiological Report*

Locality	Date	Cases	Deaths
Africa:			
Gold Coast	Aug. 1-31	7	2
Upper Volta—			
Gaoua District	Oct. 25	2	
Senegal:			
Birkelane	do	2	
Kaolak District	Oct. 28	2	
	Nov. 8	1	1
	Nov. 13	1	1
Kaffrine	Nov. 3-5	1	1
Niaro Rip	Nov. 4	1	1
Sedhiou	Nov. 10	1	
Tamba Counda	do	1	1
French Sudan:			
Bamako	Nov. 1	1	
Segou	Oct. 31-Nov. 4	2	2

Relapsing fever.—The Report gives the following account of relapsing fever in western Africa: "The epidemic of relapsing fever which, since 1921, has been progressing from west to east through the more or less arid zone south of the North-African desert belt, decimating the population on its way, is reported to have made a new eastward extension. A serious outbreak occurred in Darfur, the westernmost Province of Anglo-Egyptian Sudan, in September and October. The outbreak is reported to extend over an area of about 20,000 square miles, but details are not as yet available. The epidemic reached the Chad Territory early in 1925, and an outbreak with a high mortality occurred in March, 1926, in Wadai, which is the easternmost of the French possessions and borders on Darfur. It is reported that the epidemic reappeared in September in Wadai, especially at Abeshr."

Dysentery.—On the whole, the autumn of 1926 is reported to have been favorable in regard to the prevalence of dysentery in Europe. The incidence reported in Russia for August was less than half of that in August, 1925, but a slight increase occurred in Ukraine. Poland showed an excess of cases in August, September, and October over the corresponding months of 1925, but the 1925 incidence in Poland was unusually favorable. The seasonal maximum during the past autumn occurred later than in 1925, in general. This was particularly true in Germany, where the maximum occurred in the week ended October 2.

TABLE 5.—*Cases of dysentery in various European countries in the summer and autumn of 1925 and 1926*

4 weeks ending—	Germany		Poland		Italy	
	1925	1926	1925	1926	1925	1926
June 19	369	264	176	99	33	39
July 17	512	240	377	275	176	53
Aug. 14	903	503	801	1,261	246	143
Sept. 13	1,229	803	998	1,323	217	198
Oct. 9	406	923	335	870	111	.....

Month	Czechoslovakia		Hungary		Rumania		Serbs, Croats, and Slovenes	
	1925	1926	1925	1926	1925	1926	1925	1926
June	106	30	124	94	52	43	77	51
July	127	52	221	145	256	119	223	166
August	145	206	403	426	310	210	301	236
September	128	138	407	407	178	211	307	264
October	38	215	206	.....	65	166	195	206

Smallpox.—"The incidence of smallpox increased in October in northern England; 510 cases were reported during the four weeks ended October 30 as against 242 cases during the corresponding period of the preceding year," states the Report. In the first week of November, 302 cases were reported, most of which were in Durham, though small outbreaks occurred in Yorkshire, Derbyshire, and Northumberland.

An outbreak of malignant smallpox appeared at Paris early in September. During October, 44 cases and 16 deaths were reported in the city and 14 cases in the suburbs.

A virulent type of smallpox became prevalent in Rio de Janeiro in August, 1925. In July, 1926, the incidence of the disease increased sharply and the epidemic seemed to reach its maximum in the latter half of August. From January 1 to September 18, 1926, 3,101 cases and 1,598 deaths were reported.

Enteric fever.—During August the incidence of enteric fever in European countries was lower than in the preceding year, but in September and October the situation was less favorable. The seasonal maximum came later in 1926 than in 1925, as was true also of dysentery.

A severe outbreak of typhoid fever occurred at Hanover in Germany, causing about 2,500 cases and 260 deaths from the beginning of the outbreak in August to its practical close at the end of October. A special study of the outbreak is published in the November issue of the Epidemiological Report. Elsewhere in Germany there was no unusual prevalence of this disease.

Influenza.—At the time this report was published, a considerable increase in influenza deaths had occurred in the large towns of England and Wales, but no unusual prevalence of the disease was

noted in the reports from other countries. In the towns in England and Wales the deaths from influenza during the four weeks ending November 13 numbered 313, which was more than had been reported for the corresponding period of the preceding seven years.

Acute poliomyelitis.—Outbreaks of poliomyelitis occurred in Germany in August and September, but the incidence diminished in October. The case fatality averaged 9 per cent. In England the incidence was about the same in October as in September.

TABLE 6.—*Cases of acute poliomyelitis reported in England and Wales, Germany, and the United States from July to October, 1926*

Two weeks ending—	England and Wales	Germany	United States
July 17	13	32	85
July 31	41	56	108
Aug. 4	57	104	151
Aug. 28	87	155	229
Sept. 11	94	299	263
Sept. 25	126	224	235
Oct. 9	111	198	179
Oct. 23	130	127	166
Nov. 6	114	----	----

Scarlet fever.—The October reports indicated that scarlet fever was epidemic only in Poland, northern Germany, and the Netherlands. The incidence was lower than in 1925 in England and the Scandinavian countries, and about the same in Belgium and France. The disease was slightly more prevalent in Austria and in Hungary than in 1925, but slightly less so in Czechoslovakia and Rumania, and its incidence was much lower in the Kingdom of the Serbs, Croats, and Slovenes.

The epidemic in Poland seemed to have reached its maximum in the second half of September, but the incidence in Germany was still increasing slightly at the middle of October. It is not likely to increase much further, according to the report.

TABLE 7.—*Scarlet fever cases reported in Poland, Germany, and the Netherlands, from July to October, 1926*

Three weeks ending—	Poland		Germany		Netherlands	
	1925	1926	1925	1926	1925	1926
July 31	1,168	1,653	1,992	2,146	599	699
Aug. 21	1,676	2,142	2,052	2,573	618	684
Sept. 11	1,436	2,421	2,383	3,389	747	782
Oct. 2	1,797	3,867	2,991	4,339	946	1,131
Oct. 23	1,957	3,676	2,744	4,561	1,111	1,300

The reported case fatality in Poland averaged 8.4 per cent, and in Germany 0.63 per cent. Some of the difference undoubtedly is due to better reporting of cases in Germany, but it is known that in most of Eastern Europe scarlet fever is more severe than in Central or Western Europe.

WHY PARENTS SHOULD HAVE THEIR CHILDREN PROTECTED AGAINST DIPHTHERIA BY TOXIN-ANTITOXIN

The New York State Department of Health is conducting an energetic campaign to protect permanently all children in that State against diphtheria. As a part of its public health educational program a leaflet has been recently issued by Dr. Matthias Nicoll, jr., commissioner of health of the New York State Department of Health, which is furnished to physicians for display on their waiting-room table. The pamphlet is entitled "Why Parents Should Have Their Children Protected Against Diphtheria by Toxin-Antitoxin," and reads as follows:

"Many parents do not worry much about diphtheria. They have read or heard about the treatment of the disease with antitoxin. They feel that with such a wonderful remedy there is little to fear.

"It is true that antitoxin is a wonderful remedy for diphtheria. A few years ago, however, a method of prevention was discovered, which possibly is even more remarkable than the remedy. It was found that a child can be protected against diphtheria, probably for life, by injecting under the skin a substance known as toxin-antitoxin, commonly called 'T–A.' T–A causes the body to form its own antitoxin, so that after several months there is enough of it to successfully overcome the toxin or poison of the diphtheria germ. Furthermore, there is ground for belief that once the body has formed its own antitoxin, it will continue to do so throughout life.

"There are several reasons why it is better to prevent diphtheria than to depend merely upon proper treatment:

"(1) Antitoxin may be administered too late and in insufficient quantity to save life. Evidence of diphtheria may be so slight that a physician is not called early enough.

"(2) One form of diphtheria (laryngeal) attacks the larynx or windpipe and may cause croup but no sore throat. The child may choke to death before medical attendance can be had.

"(3) Another form, nasal diphtheria, attacks the lining of the nose, and may be regarded as a common cold until it is too late.

"(4) A person who has diphtheria must undergo a period of illness and may suffer from bad after effects, especially heart disease.

"(5) Other members of the family must usually suffer inconvenience from quarantine regulations.

"THE USE OF T–A

"Hundreds of thousands of children have already been treated with T–A. It has proved itself safe. It is very, very seldom, indeed, that children under 10 notice any after effects at all, while among those under 5 such effects are almost unheard of.

"Only three injections a week apart are usually necessary. The protection given by these injections develops slowly. It may take a few months before it is complete.

"The Schick test is used only for the purpose of finding out whether or not a person is protected against diphtheria. It gives no protection; and since experience has shown that the vast majority of children are not protected naturally, its general use is being abandoned.

"The best time to have children protected by T–A is at the age of 6 months. Before this age the baby usually has some immunity which has been handed down by its mother.

"Where the use of T–A has been systematically promoted diphtheria has steadily decreased. Many children's institutions have been entirely freed from the disease.

"In Auburn, N. Y., population approximately 35,000, where intensive work has been carried on under the direction of the State department of health, diphtheria has been practically eliminated. In that city there had been an average of nine deaths a year during the eight years 1915–1922. In March of the latter year an aggressive campaign for immunization by T–A was begun. Now that sufficient time has elapsed for most of those who have been injected to form their own antitoxin, the results of this campaign leave no doubt that diphtheria can be completely wiped out of any community. Since January, 1923—10 months after the first children were injected—there have been but four deaths from diphtheria—three in 1923 and one on March 9, 1924.

"*Between the latter date and September 25, 1926, when this leaflet went to press, there has not been a single death from diphtheria in Auburn.*

"See your physician about T–A injections for your child. He can obtain T–A free from the State Department of Health."

DON'T TAKE CHANCES NOW!

YOU MAY SAVE YOUR CHILD'S LIFE

BY HAVING TOXIN-ANTI-TOXIN USED

NOW

THE STORY OF A "COMMON COLD"

Health Commissioner William H. Peters, of Cincinnati, Ohio, recently contributed to the public press a valuable health message prepared in the form of a short story. This story is quoted by the Ohio Health News for January 15, 1927, giving credit to the Cincin-

nati Times-Star. Doctor Peters's health message shows why it is so difficult to prevent the spread of the minor respiratory diseases. The story follows:

Willie's Cold

"Willie, Willie! Come right into the house. Don't you know you've got a bad cold? Bring the children in here where it's warm.

"Oh, Mrs. Jones, so glad to see you! The house looks dreadful, but do come in. All the children in the neighborhood are playing here to-day. Willie has a bad cold and I wouldn't let him stay out. He's sneezing all the time. I'll be glad when Monday comes and he can go back to school. Willie, shake hands with Mrs. Jones.

"Willie, did you lose your handkerchief again? Go let Annie wipe your nose with hers.

"Willie, there's the doorbell again. It's Mrs. Smith and her baby. You let them in and talk to them till I get dressed. Kiss the baby nicely.

"Hello! Hello! Yes, I can hear you, Daddy. You want to bring Mr. Black home to dinner. Yes, indeed. Come early so he can have a romp with Willie. I can manage. But don't forget that medicine for Willie's cold. His nose is running awfully to-night. Good-by.

"Don't play in that cold water, Willie, when you have such a cold. Now, go wipe your hands on the kitchen towel.

"Willie, let Howard Green blow that whistle just once if he wants to. You've played with it all afternoon.

"Willie, don't put those cards in your mouth. You'll get them dirty. Those are for auntie's card club to-night. You mustn't spoil them.

"Yes, Mrs. Green, Willie's gone back to school again. His ears are still aching some, but the doctor thinks that the drums won't burst. Pretty bad, though. Everyone of us has been sick, but Willie was the worst. How's Harold's cold? Did you hear about poor Mrs. Smith? Her children all have dreadful colds, and the baby almost died of pneumonia. She was here the first day Willie was sick, with the baby, and not a thing on its head! My house was nice and warm, and I told her when she went out to cover up the baby's head, but you can't teach some people. Willie just loves the baby. It was too cute the way he hugged and kissed her that day.

"Did you hear what the woman who's just moved in next door said? I've been so mad ever since I can scarcely look at her house. She had the impudence to say the reason her precious boy had a cold was that he came over and caught it from Willie. I'll see that they don't play together again, I can tell you. I know well enough where he got his cold. Didn't I hear her say that she made him take a bath every day? In this cold weather, too! Next she'll be saying Mrs. Smith's baby caught her pneumonia from Willie."

PUBLIC HEALTH ENGINEERING ABSTRACTS

Treatment of Algae and Weeds in Lakes at Madison. Bernard F. Domogalla, city biochemist, Madison, Wis. *Engineering News Record*, vol. 97, No. 24, December 9, 1926, pp. 950–954. (Abstract by H. R. Crohurst.)

The article describes the lakes in the vicinity of Madison, Wis., and the obnoxious conditions from the growth of algae and weeds. Methods of collecting samples of the water for examinations are described and types of plankton present indicated. Methods of applying copper sulphate, spraying arsenical compounds, and weed cutting are given. Important points brought out during the study include the following: (1) The copper sulphate dragging method is preferable for the type of algae that does not rise to the surface of the water and where the lake is well stirred by wind; from 1 to 2 pounds of copper sulphate per million gallons are effective in practically eliminating these forms. (2) The spraying method is more effective where the algae come to the surface and for very shallow water where a boat would stir up the bottom mud and débris. (3) Weeds growing in large bodies of open water may be kept under control by a weed-cutting machine. (4) In shallow places and along shore lines, weeds may best be removed, both the roots and the foliage, by means of steel cables with clips and swivels attached to them. (5) Arsenical compounds have been found to destroy a variety of water weeds. (6) Soluble phosphorus, the different forms of nitrogen, and the type of bacterial flora living in the waters are the growth-promoting factors for the algae and weeds.

Typhoid Patient Wins Suit Against City of Albany, N. Y. Anon. *The American City*, vol. 35, No. 6, December, 1926, p. 848. (Abstract by Charles R. Cox.)

A suit brought by John Weisner against the city of Albany in behalf of one of his sons who is said to have contracted typhoid fever from drinking polluted city water in the spring of 1924, and to have suffered permanent injury to his health thereby, was decided in favor of the plaintiff in the supreme court at Albany on October 26 by a jury which awarded damages in the sum of $3,000, $2,000 of which is given to the son and $1,000 to the father. This was a second trial of the action, the first, brought last spring, having resulted in a disagreement. Counsel for the city announced that an appeal would probably be taken to the court of appeals if necessary.

Counsel for the plaintiff based the case on the theory that the city contracts with each citizen to furnish water free from pollution, and that the city was negligent in failing to give timely and sufficient warning to the people of such pollution.

Of approximately 200 cases of typhoid fever which occurred at about the same time, 13 filed notice of suit within the required period and now have right of action.

(Abstractor's note: The number of cases of typhoid fever noted is erroneous, as there were about 100 cases in May and 50 throughout the remainder of the year.)

The Interrelation of the Problems of Water Purification and Sewage Treatment in Ohio. Howell Wright. Sixth Ohio Conference on Water Purification, Toledo, Ohio, October 21, 1926. (Abstract by H. W. Streeter.)

The author gives an excellent summary of the situation at Cleveland resulting from the proximity of the water intakes and sewer outfalls and from the technical and administrative difficulties which have arisen from this situation. The technical difficulties, he states, have resulted from the general tendency to develop sewage treatment primarily for nuisance prevention rather than for water-supply protection. The administrative difficulties have been due to a division of the financing of sewage disposal between two separate funds, the construction of works being paid out of tax levy funds and their operation out of public utility funds.

Although Cleveland now has the best water supply in its history, owing to the filtration of all of the supply (since October, 1925), "the sewage, trades wastes, and surface wash from the metropolitan area are sources of pollution of Lake Erie opposite the city and its suburbs" and "the only source for a public water supply for Cleveland and its suburbs is Lake Erie." The questions to be solved are stated as follows: "(1) How contaminated have the waters of the lake opposite the city become? (2) How great is the pollution of our intake waters when measured by accepted standards for drinking waters? (3) How much increase in the pollution by the raw intake waters is possible before present water purification processes become inadequate? (4) How does sewage treatment conserve the purity of the water supply?"

The author undertakes to answer each question in turn. From a consideration of these questions, he concludes—(*a*) That there has been a significant increase in the bacterial pollution of the lake waters coincidently with an increase in population of the city; (*b*) that the present water purification plant is overburdened at times; (*c*) that partial treatment of the sewage, as at present practiced, is inadequate for the proper protection of the water supply; and (*d*) that Cleveland should provide, at an early date, the most modern and complete sewage purification practicable "to protect its water supply from its raw pollution."

(Abstractor's note: In a report dated March, 1926, prepared by the Municipal Research Bureau of Cleveland and entitled, "A Report upon the Correlation of Water Purification and Sewage Disposal in Cleveland," issue appears to be taken with some of Mr. Wright's conclusions as to the immediate need for more complete treatment of Cleveland's sewage for the protection of its water supply.)

Sewage Disposal in San Fernando, Calif. Paul A. Diehl, *Western Construction News*, vol. 1, No. 22, November 25, 1926, pp. 39–42. (Abstract by L. D. Mars.)

San Fernando is a town of 7,000 people situated in Los Angeles County, Calif. The chief item of interest in the construction of this plant was the temporary nature of the installation. The town is within the limits of the new sanitary district of Los Angeles and within five years the outfall sewer will be extended to San Fernando and the sewage plant abandoned.

The type of plant chosen was Imhoff tanks and sprinkling filters. The Imhoff tank has four flowing-through channels. The detention period at maximum rate of flow is 48 minutes. The gas-vent area is 28 per cent of the total tank area. The sludge capacity is 2 cubic feet per capita, and the total depth of tank is 30 feet. The sludge-drying beds have an area of 5,000 square feet, or one-half square foot per capita. The sprinkling filter is 25,600 square feet in area and has an average depth of 5½ feet. This gives about 14 cubic feet of filter rock per capita. Due to the temporary nature of the plant, the filter bottom was constructed without concrete walls or floor upon a bed of natural gravel.

AUTOMOBILE FATALITIES IN 78 LARGE CITIES, APRIL 26, 1925–JANUARY 1, 1927, BY FOUR-WEEK PERIODS

The Department of Commerce announces that, during the four weeks ended January 1, 1927, automobile accidents were responsible for 521 deaths in 78 large cities of the United States, as compared with 551 deaths from the same cause during the four weeks ended January 2, 1926.

Below is shown the number of automobile fatalities in 78 large cities, by four-week periods, from April 26, 1925, to January 1, 1927. The lowest number of fatalities (350) is for the four weeks ended March 27, 1926, and the highest (676) is for the four-week period ended November 6, 1926.

Four weeks ended—

1927		1926	
Jan. 1	521	Feb. 27	378
1926		Jan. 2	551
Dec. 4	634	1925	
Nov. 6	676	Dec. 5	625
Oct. 9	656	Nov. 7	612
Sept. 11	560	Oct. 10	529
Aug. 14	497	Sept. 12	531
July 17	484	Aug. 15	469
June 19	549	July 18	495
May 22	487	June 20	492
Apr. 24	424	May 23	424
Mar. 27	350		

POPULATION OF HOSPITALS FOR THE CARE OF THE INSANE

Data for May and June, 1926

Reports for the month of May were received from 110 institutions for the care and treatment of the insane located in 29 States. The reports for June, 1926, included 136 institutions, in 32 States.

MAY, 1926

The average number of patients during the month of May in the institutions which reported for that month was 151,664. The increase during May was 0.3 per cent. The number of patients in the hospitals decreased 0.01 per cent and the number of patients on parole increased 4.0 per cent.

At the end of the month 8.1 per cent of the patients were on parole, but 9,351 patients were in hospitals which did not report any patients as paroled. Omitting these, 8.6 per cent of the patients were paroled on May 31.

There were 940 female patients per 1,000 male patients. In institutions caring for both sexes, there were 957 females per 1,000 males.

"First admissions" constituted 71.7 per cent of the total admitted; 14.7 per cent were readmissions, 13.5 per cent transfers from other hospitals, and 0.05 per cent of the admissions were not accounted for.

The condition of the patients discharged was reported to be as follows: Recovered, 29.9 per cent; improved, 45.0 per cent; unimproved, 15.8 per cent; without psychosis, 5.5 per cent; otherwise discharged and not accounted for, 3.8 per cent.

The death rate for the month was 94.95 per thousand per annum.

JUNE, 1926

The average number of patients during June in hospitals which reported for that month was 190,353. There was a decrease during the month of 0.09 per cent, but the number of patients in hospitals increased 0.4 per cent, while the number on parole decreased 6.3 per cent. More than two-thirds of this decrease occurred in eight hospitals in Ohio, which showed a decrease of 595 patients on parole, an increase of 157 in hospitals, and a decrease in total patients of 438. These eight hospitals reported 333 patients discharged during the month as recovered and 279 as improved.

On June 30, 7 per cent of the total number of patients were absent from the hospitals on parole. The patients in hospitals carrying patients on parole numbered 177,844 on June 30. Of these, 7.5 per cent were paroled on that date.

There were, in the aggregate, 919 female patients per thousand males. In hospitals caring for both sexes, the ratio was 935 females per thousand males.

Three-quarters of the admissions were recorded as "first admissions" (75.4 per cent); 14.8 per cent were readmissions, 9.6 per cent transfers from other institutions, and 0.2 per cent were not accounted for.

Thirty-six per cent of the patients discharged were recorded as recovered, 45.4 per cent as improved, 11 per cent as unimproved, 4.6 per cent as without psychosis, and 3 per cent as otherwise discharged or not accounted for.

The annual death rate for the month of June for the hospitals reporting was 92.7 per thousand patients.

	May, 1926	June, 1926
Number of public institutions included	87	113
Number of private institutions included	23	23
Total	110	136
Patients on books first day of month:		
In hospitals	139,604	176,266
On parole or otherwise absent but still on books	11,831	14,172
Total	151,435	190,438
Admitted during month:		
First admissions	2,703	3,630
Readmissions	556	712
Admitted by transfer	509	461
Not accounted for	2	11
Total received during month	3,770	4,814
Total on books during month	155,205	195,252
Discharged during month:		
As recovered	462	1,102
As improved	695	1,391
As unimproved	244	337
As without psychosis	85	141
Otherwise discharged	59	91
Not accounted for	1	2
Total discharged during month	1,546	3,064
Transferred	542	469
Died	1,223	1,450
Total discharged, transferred, and died during month	3,311	4,983
Patients on books last day of month:		
In hospitals	139,589	176,984
On parole or otherwise absent, but still on books	12,305	13,285
Total	151,894	190,269
Male patients	78,314	99,143
Female patients	73,580	91,126

DEATHS DURING WEEK ENDED JANUARY 22, 1927

Summary of information received by telegraph from industrial insurance companies for week ended January 22, 1927, and corresponding week of 1926. (From the Weekly Health Index January 26, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Jan. 22, 1927	Corresponding week, 1926
Policies in force	66,588,121	62,860,526
Number of death claims	13,298	13,869
Death claims per 1,000 policies in force, annual rate	10.4	11.5

Deaths from all causes in certain large cities of the United States during the week ended January 22, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, January 26, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Jan. 22, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate week ended Jan. 22, 1927 [2]
	Total deaths	Death rate [1]		Week ended Jan. 22, 1927	Corresponding week 1926	
Total (68 cities)	7,946	14.0	14.7	859	904	[3] 72
Akron	40			9	10	97
Albany [4]	34	14.8	23.7	7	6	146
Atlanta	87			11	18	
White	56			5	8	
Colored	31	(5)		6	10	
Baltimore [4]	275	17.5	18.3	37	29	114
White	211		17.3	25	19	96
Colored	64	(5)	23.7	12	10	187
Birmingham	65	15.8	18.0	15	13	
White	26		15.9	4	8	
Colored	39	(5)	21.4	11	5	
Boston	245	16.1	15.7	32	18	89
Bridgeport	35			3	9	56
Buffalo	169	16.0	15.3	19	18	80
Cambridge	27	11.4	12.4	2	1	36
Camden	25	9.8	15.5	5	7	96
Canton	27	12.5	12.3	5	4	118
Chicago [4]	767	12.9	11.9	90	78	78
Cincinnati	148	18.7	17.4	10	7	62
Cleveland	198	10.5	10.1	19	25	50
Columbus	94	16.8	16.1	6	9	56
Dallas	43	10.7	15.7	6	7	
White	34		12.4	4	6	
Colored	9	(5)	36.7	2	1	
Dayton	56	16.2	9.4	4	5	66
Denver	89	16.0	12.1	9	10	
Des Moines	37	12.9	14.3	0	3	0
Detroit	282	11.0	14.1	56	72	83
Duluth	18	8.2	9.2	0	4	0
El Paso	30	13.7	15.8	6	4	
Erie	20			4	4	78
Fall River [4]	18	7.1	14.7	5	6	88
Flint	20	7.3	6.5	3	4	49
Fort Worth	23	7.3	9.2	0	2	
White	19		8.2	0	2	
Colored	4	(5)	16.5	0	0	
Grand Rapids	44	14.4	11.7	3	4	44
Houston	59			8	7	
White	43			5	4	
Colored	16	(5)		3	3	
Indianapolis	107	14.9	14.5	12	7	94
White	92		13.9	12	4	108
Colored	15	(5)	19.0	0	3	0
Jersey City	59	9.6	14.8	4	12	30
Kansas City, Kans	19	8.5	11.1	3	1	58
White	14		8.1	3	1	67
Colored	5	(5)	25.4	0	0	0
Kansas City, Mo	98	13.3	13.1	7	9	
Los Angeles	258			23	25	66
Louisville	99	16.1	15.4	10	7	85
White	72		15.0	7	6	68
Colored	27	(5)	17.8	3	1	210
Lowell	24	11.3	16.5	4	5	77
Lynn	22	10.9	14.0	1	2	26
Memphis	75	21.8	20.6	8	12	
White	36		17.8	3	7	
Colored	39	(5)	25.7	5	5	
Milwaukee	113	11.2	11.8	21	21	17
Minneapolis	103	12.2	12.3	3	10	98
Nashville [4]	59	22.3	24.0	3	5	
White	38		20.8	2	3	
Colored	21	(5)	32.1	1	2	

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 64 cities.
[4] Deaths for week ended Friday, January 21, 1927.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City, Kans., 14, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Norfolk 38, Richmond 32, and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended January 22, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Jan. 22, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate week ended Jan. 22, 1927
	Total deaths	Death rate		Week ended Jan. 22, 1927	Corresponding week 1926	
New Bedford	35	15.3	14.4	6	5	104
New Haven	46	13.0	13.8	2	0	28
New Orleans	189	23.2	22.5	19	15	
White	118		19.8	5	10	
Colored	71	(5)	30.1	14	5	
New York	1,612	14.1	14.9	136	174	56
Bronx Borough	191	10.8	12.0	7	11	22
Brooklyn Borough	519	11.9	13.7	55	66	57
Manhattan Borough	708	20.2	19.7	55	77	65
Queens Borough	156	10.1	10.0	14	17	60
Richmond Borough	43	15.3	13.5	5	3	93
Newark, N. J.	103	11.5	13.4	9	16	45
Norfolk	40	11.7	11.7	7	1	141
White	18		10.8	3	1	98
Colored	22	(5)	13.2	4	0	212
Oakland	62	12.1	14.6	6	8	70
Oklahoma City	33			4	1	
Omaha	43	10.2	15.0	1	7	11
Paterson	41	14.8	11.3	2	2	35
Philadelphia	612	15.7	15.7	73	69	97
Pittsburgh	228	18.5	14.4	31	19	108
Portland, Oreg.	67			6	4	63
Providence	74	13.7	11.9	10	3	85
Richmond	65	17.7	20.7	19	12	132
White	38		13.2	4	1	81
Colored	27	(5)	38.9	6	11	228
Rochester	70	11.3	16.7	10	9	84
St. Louis	215	13.4	15.6	20	24	
St. Paul	50	10.4	9.0	5	2	45
Salt Lake City [4]	33	12.7	16.5	4	5	61
San Antonio	60	14.8	19.6	9	13	
San Diego	48	21.8	19.4	2	1	43
San Francisco	174	15.8	20.8	15	9	93
Schenectady	28	15.7	16.3	1	2	30
Seattle	67			3	3	31
Somerville	23	11.8	13.6	2	3	72
Spokane	19	9.1	15.8	4	2	100
Springfield, Mass.	33	11.7	10.8	3	1	46
Syracuse	48	12.7	13.2	5	4	64
Tacoma	25	12.2	10.8	0	2	0
Toledo	85	14.6	15.4	10	10	96
Trenton	39	14.8	21.0	7	11	122
Utica	21	10.6	15.7	0	6	0
Washington, D. C.	179	17.3	17.9	15	17	87
White	126		17.3	8	10	68
Colored	53	(5)	19.5	7	7	129
Waterbury	26			3	4	71
Wilmington, Del.	31	12.8	15.1	5	8	124
Worcester	44	11.8	15.9	2	7	24
Yonkers	26	11.4	16.2	5	4	114
Youngstown	33	10.2	10.1	8	6	112

[4] Deaths for week ended Friday, Jan. 21, 1927.

[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City, Kans., 14, Louisville 71, Memphis 38, Nashville 30, New Orleans 26, Norfolk 38, Richmond 32, and Washington, D. C., 25.

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 WEEKLY STATE REPORTS

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 January 29, 1927

ALABAMA

	Cases
Chicken pox	77
Diphtheria	37
Influenza	91
Lethargic encephalitis	1
Malaria	7
Measles	79
Mumps	17
Ophthalmia neonatorum	2
Pellagra	6
Pneumonia	106
Scarlet fever	34
Smallpox	97
Tuberculosis	110
Typhoid fever	10
Typhus fever	4
Whooping cough	19

ARIZONA

Chicken pox	9
Diphtheria	1
Influenza	2
Measles	16
Pneumonia	1
Scarlet fever	6
Tuberculosis	26

ARKANSAS

Cerebrospinal meningitis	1
Chicken pox	30
Diphtheria	12
Influenza	100
Malaria	11
Mumps	9
Pellagra	7
Scarlet fever	7
Smallpox	3
Tuberculosis	6
Typhoid fever	7
Whooping cough	44

CALIFORNIA

	Cases
Cerebrospinal meningitis:	
Los Angeles	1
Pasadena	1
Sacramento	1
San Diego	1
Torrance	1
Tuolumne County	1
Yolo County	1
Chicken pox	579
Diphtheria	148
Influenza	44
Jaundice	2
Lethargic encephalitis—San Luis Obispo	1
Measles	1,731
Mumps	197
Poliomyelitis:	
Kings County	1
Los Angeles	1
San Diego	1
San Jose	1
Stockton	1
Scarlet fever	284
Smallpox	23
Tuberculosis	176
Typhoid fever	10
Whooping cough	84

COLORADO

Cerebrospinal meningitis	1
Chicken pox	13
Diphtheria	2
German measles	1
Influenza	1
Measles	76
Mumps	8
Pneumonia	6
Poliomyelitis	1
Scabies	1
Scarlet fever	97

COLORADO—continued

	Cases
Septic sore throat	1
Smallpox	24
Tuberculosis	2
Typhoid fever	2
Whooping cough	5

CONNECTICUT

Chicken pox	113
Diphtheria	29
German measles	4
Influenza	31
Lethargic encephalitis	1
Measles	48
Mumps	32
Paratyphoid fever	1
Pneumonia (broncho)	26
Pneumonia (lobar)	52
Poliomyelitis	1
Scarlet fever	104
Septic sore throat	3
Tuberculosis (all forms)	36
Typhoid fever	6
Whooping cough	61

DELAWARE

Cerebrospinal meningitis	1
Chicken pox	5
Diphtheria	4
Influenza	1
Measles	2
Pneumonia	7
Scarlet fever	44
Tuberculosis	3
Whooping cough	6

FLORIDA

Chicken pox	43
Dengue	1
Diphtheria	56
Dysentery	11
Influenza	45
Lethargic encephalitis	1
Malaria	25
Measles	32
Mumps	5
Paratyphoid fever	1
Pellagra	1
Pneumonia	117
Poliomyelitis	2
Scarlet fever	25
Smallpox	59
Tetanus	18
Tuberculosis	98
Typhoid fever	27
Whooping cough	14

GEORGIA

Cerebrospinal meningitis	2
Chicken pox	29
Conjunctivitis (infectious)	1
Diphtheria	11
Dysentery	2
Hookworm disease	1
Influenza	159
Malaria	8

GEORGIA—continued

	Cases
Measles	107
Mumps	25
Pellagra	1
Pneumonia	52
Scarlet fever	29
Septic sore throat	4
Smallpox	106
Tuberculosis	11
Typhoid fever	6
Whooping cough	35

IDAHO

Chicken pox	4
Diphtheria	1
Measles	130
Mumps	2
Scarlet fever	15
Smallpox	5
Typhoid fever	1

ILLINOIS

Cerebrospinal meningitis—Cook County	3
Chicken pox	493
Diphtheria	114
Influenza	53
Lethargic encephalitis:	
Cook County	2
Rock Island County	1
Measles	1,575
Mumps	283
Pneumonia	352
Scarlet fever	365
Smallpox:	
Clay County	37
Scattering	20
Tuberculosis	241
Typhoid fever	9
Whooping cough	191

INDIANA

Cerebrospinal meningitis	1
Chicken pox	93
Diphtheria	52
Influenza	73
Measles	143
Mumps	1
Pneumonia	13
Scarlet fever	235
Smallpox	158
Tuberculosis	26
Typhoid fever	5
Whooping cough	31

IOWA

Chicken pox	81
Diphtheria	28
German measles	1
Measles	163
Mumps	11
Pneumonia	3
Scarlet fever	28
Smallpox	13
Tuberculosis	12
Whooping cough	10

KANSAS

	Cases
Chicken pox	193
Diphtheria	19
German measles	6
Influenza	9
Measles	262
Mumps	48
Pneumonia	41
Poliomyelitis—Dickinson County	1
Scarlet fever	201
Smallpox:	
Topeka	20
Scattering	39
Tetanus	1
Tuberculosis	21
Typhoid fever	2
Whooping cough	42

LOUISIANA

Cerebrospinal meningitis	2
Diphtheria	17
Influenza	53
Malaria	11
Measles	88
Ophthalmia neonatorum	2
Paratyphoid fever	1
Pneumonia	36
Scarlet fever	20
Smallpox	7
Tuberculosis	40
Typhoid fever	14
Whooping cough	8

MAINE

Chicken pox	71
Diphtheria	2
Dysentery	1
German measles	24
Influenza	21
Measles	185
Mumps	9
Paratyphoid fever	1
Pneumonia	18
Scarlet fever	44
Tuberculosis	6
Typhoid fever	1
Vincent's angina	4
Whooping cough	85

MARYLAND [1]

Chicken pox	192
Diphtheria	63
German measles	1
Impetigo contagiosa	1
Influenza	115
Lethargic encephalitis	2
Measles	26
Mumps	28
Ophthalmia neonatorum	1
Paratyphoid fever	1
Pneumonia (broncho)	47
Pneumonia (lobar)	78
Scarlet fever	96
Septic sore throat	7

[1] Week ended Friday.

MARYLAND—continued

Smallpox	1
Tuberculosis	37
Typhoid fever	6
Whooping cough	118

MASSACHUSETTS

Cerebrospinal meningitis	1
Chicken pox	417
Conjunctivitis (suppurative)	10
Diphtheria	108
German measles	12
Influenza	27
Lethargic encephalitis	2
Measles	170
Mumps	354
Ophthalmia neonatorum	22
Pellagra	1
Pneumonia (lobar)	110
Poliomyelitis	1
Scarlet fever	598
Septic sore throat	7
Tuberculosis (pulmonary)	97
Tuberculosis (other forms)	26
Typhoid fever	4
Whooping cough	191

MICHIGAN

Diphtheria	135
Measles	136
Pneumonia	151
Scarlet fever	393
Smallpox	44
Tuberculosis	38
Typhoid fever	4
Whooping cough	189

MINNESOTA

Cerebrospinal meningitis	6
Chicken pox	197
Diphtheria	41
Influenza	2
Measles	328
Pneumonia	6
Scarlet fever	284
Smallpox	6
Tuberculosis	71
Typhoid fever	2
Whooping cough	20

MISSISSIPPI

Diphtheria	16
Scarlet fever	12
Smallpox	15
Typhoid fever	4

MISSOURI

(Exclusive of Kansas City)

Chicken pox	72
Diphtheria	46
Influenza	9
Malaria	2
Measles	225
Mumps	43
Pneumonia	5

MISSOURI—continued

	Cases
Scarlet fever	127
Smallpox	12
Tetanus	1
Trachoma	1
Tuberculosis	49
Whooping cough	36

MONTANA

Cerebrospinal meningitis	6
Chicken pox	15
Diphtheria	9
Measles	174
Mumps	22
Scarlet fever	143
Septic sore throat	1
Smallpox	1
Tuberculosis	9
Typhoid fever	2
Whooping cough	2

NEBRASKA

Cerebrospinal meningitis	1
Chicken pox	51
Diphtheria	10
German measles	2
Influenza	27
Measles	151
Mumps	30
Pneumonia	8
Scarlet fever	99
Septic sore throat	6
Smallpox	21
Tuberculosis	2
Whooping cough	12

NEW JERSEY

Anthrax	2
Cerebrospinal meningitis	3
Chicken pox	379
Diphtheria	115
Dysentery	1
Influenza	40
Measles	28
Pneumonia	174
Rabies	1
Scarlet fever	387
Typhoid fever	1
Whooping cough	234

NEW MEXICO

Chicken pox	45
Conjunctivitis	6
Diphtheria	2
German measles	5
Influenza	8
Measles	22
Mumps	6
Pneumonia	11
Scarlet fever	38
Tuberculosis	22
Whooping cough	4

NEW YORK

(Exclusive of New York City)

Cerebrospinal meningitis	2
Chicken pox	418
Diphtheria	111

NEW YORK—continued

	Cases
Dysentery	1
German measles	107
Lethargic encephalitis	3
Measles	717
Mumps	270
Pneumonia	350
Scarlet fever	283
Septic sore throat	7
Smallpox	10
Trachoma	5
Typhoid fever	12
Vincent's angina	8
Whooping cough	281

NORTH CAROLINA

Chicken pox	317
Diphtheria	41
German measles	14
Measles	162
Poliomyelitis	2
Scarlet fever	65
Septic sore throat	2
Smallpox	47
Typhoid fever	2
Whooping cough	564

OKLAHOMA

(Exclusive of Oklahoma City and Tulsa)

Chicken pox	42
Diphtheria	27
Influenza	297
Measles	94
Pneumonia	118
Poliomyelitis:	
Blaine County	1
Lincoln County	1
Scarlet fever	48
Smallpox	25
Whooping cough	10

OREGON

Chicken pox	78
Diphtheria	10
Influenza	111
Lethargic encephalitis	1
Measles	75
Mumps	26
Pneumonia	[1] 10
Scarlet fever	52
Septic sore throat	4
Smallpox:	
Douglas County	14
Klamath County	24
Scattering	14
Tuberculosis	[2] 4
Typhoid fever	5
Whooping cough	5

PENNSYLVANIA

(Exclusive of Philadelphia)

Cerebrospinal meningitis:	
Lancaster	1
Scranton	1
Chicken pox	695
Diphtheria	161
German measles	39

[1] Deaths.

PENNSYLVANIA—continued

	Cases
Impetigo contagiosa	2
Measles	779
Mumps	183
Ophthalmia neonatorum—Greene County	1
Pneumonia	158
Poliomyelitis—Chambersburg	1
Scabies	4
Scarlet fever	452
Trachoma	2
Tuberculosis	126
Typhoid fever	14
Whooping cough	269

RHODE ISLAND

Chicken pox	15
Conjunctivitis	1
Diphtheria	7
German measles	1
Measles	1
Ophthalmia neonatorum	1
Pneumonia	3
Scarlet fever	20
Tuberculosis	11
Typhoid fever	1
Whooping cough	9

SOUTH CAROLINA

Chicken pox	92
Dengue	5
Diphtheria	17
Hookworm disease	41
Influenza	1,299
Malaria	82
Measles	90
Pellagra	28
Poliomyelitis	4
Scarlet fever	7
Smallpox	24
Tuberculosis	27
Typhoid fever	7
Whooping cough	97

SOUTH DAKOTA

Chicken pox	11
Measles	116
Mumps	14
Pneumonia	9
Scarlet fever	63
Smallpox	12
Whooping cough	13

TENNESSEE

Chicken pox	47
Diphtheria	15
Influenza	147
Lethargic encephalitis—Loudon County	1
Malaria	6
Measles	180
Pneumonia	66
Rabies	2
Scarlet fever	45
Smallpox	4
Trachoma	1
Tuberculosis	7
Typhoid fever	15
Whooping cough	56

TEXAS

	Cases
Cerebrospinal meningitis	1
Chicken pox	47
Diphtheria	51
Influenza	248
Measles	17
Mumps	23
Pneumonia	17
Scarlet fever	49
Smallpox	73
Trachoma	1
Tuberculosis	4
Typhoid fever	4
Whooping cough	36

UTAH

Chicken pox	25
Diphtheria	4
Influenza	2
Measles	270
Mumps	28
Pneumonia	11
Scarlet fever	15
Smallpox	1

VERMONT

Chicken pox	22
Diphtheria	2
Measles	99
Mumps	35
Scarlet fever	8
Whooping cough	46

VIRGINIA

Smallpox	10

WASHINGTON

Cerebrospinal meningitis	9
Chicken pox	117
Diphtheria	40
German measles	51
Measles	210
Mumps	56
Pneumonia	3
Scarlet fever	95
Smallpox	61
Tuberculosis	47
Typhoid fever	4
Whooping cough	19

WEST VIRGINIA

Cerebrospinal meningitis—Pocahontas County	1
Chicken pox	105
Diphtheria	20
Influenza	65
Measles	120
Scarlet fever	65
Smallpox	13
Tuberculosis	24
Typhoid fever	19
Whooping cough	111

WISCONSIN

Milwaukee:	
Cerebrospinal meningitis	6
Chicken pox	115

WISCONSIN—continued

Milwaukee—Continued	Cases
Diphtheria	32
German measles	3
Influenza	2
Measles	40
Mumps	50
Pneumonia	32
Poliomyelitis	1
Scarlet fever	40
Smallpox	1
Whooping cough	57
Scattering:	
Cerebrospinal meningitis	2
Chicken pox	177
Diphtheria	9
German measles	26
Influenza	49
Measles	670
Mumps	156
Pneumonia	18

WISCONSIN—continued

Scattering—Continued	Cases
Poliomyelitis	2
Scarlet fever	158
Smallpox	16
Tuberculosis	21
Typhoid fever	2
Whooping cough	65

WYOMING

Cerebrospinal meningitis—Hot Springs County	4
Chicken pox	9
Diphtheria	7
German measles	42
Impetigo contagiosa	1
Measles	276
Mumps	3
Scarlet fever	38
Whooping cough	4

Reports for week ended January 22, 1927

DISTRICT OF COLUMBIA

	Cases
Chicken pox	64
Diphtheria	13
Influenza	1
Measles	4
Pneumonia	41
Scarlet fever	24
Smallpox	1
Tuberculosis	24
Whooping cough	4

NORTH DAKOTA

	Cases
Chicken pox	15
Diphtheria	6
Influenza	11
Measles	115
Pneumonia	10
Poliomyelitis	1
Scarlet fever	57
Smallpox	3
Tuberculosis	2
Typhoid fever	2
Whooping cough	4

SUMMARY OF MONTHLY REPORTS FROM 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	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
November, 1926										
Idaho	1	32	----	----	194	----	0	250	11	6
December, 1926										
Alabama	3	268	146	80	45	16	5	93	184	103
Idaho	3	6	6	----	414	----	1	206	29	4
Illinois	14	519	135	11	2,930	----	5	1,265	51	115
Kansas	6	110	57	1	334	1	2	468	121	18
Mississippi	2	170	2,940	----	637	213	3	153	78	80
Missouri	1	261	82	1	556	----	0	502	8	33
Montana	6	26	35	----	563	----	1	454	83	17
North Carolina	2	393	----	2	265	----	0	277	267	28
Ohio	4	1,123	36	----	246	----	10	1,606	121	79
Oklahoma [1]	2	120	508	43	138	11	4	162	112	75
Oregon	4	100	128	1	175	----	1	276	137	11
Pennsylvania	4	989	----	3	2,818	----	3	2,290	0	165
Rhode Island	0	67	36	----	6	----	2	82	0	1
South Carolina	0	484	2,120	529	34	68	2	66	20	68
Wyoming	3	10	----	----	157	----	0	102	0	3

[1] Exclusive of Oklahoma City and Tulsa.

November, 1926

Idaho:	Cases
Chicken pox	84
Mumps	25
Trachoma	1
Whooping cough	44

December, 1926

Anthrax:	
Ohio	1
Pennsylvania	6
Botulism—Oregon	1
Chicken pox:	
Alabama	133
Idaho	80
Illinois	2,202
Kansas	764
Mississippi	641
Missouri	401
Montana	81
North Carolina	593
Ohio	2,440
Oklahoma	101
Oregon	167
Pennsylvania	3,683
Rhode Island	78
South Carolina	200
Wyoming	76
Dengue:	
Alabama	3
Mississippi	3
Dysentery:	
Illinois	24
Mississippi (amoebic)	28
Mississippi (bacillary)	176
German measles:	
Illinois	46
Kansas	5
Montana	1
North Carolina	11
Ohio	27
Pennsylvania	73
Rhode Island	4
Glanders—Missouri	2
Hookworm disease:	
Mississippi	357
South Carolina	80
Impetigo contagiosa:	
Oregon	12
Pennsylvania	55
Lead poisoning:	
Illinois	35
Ohio	18
Lethargic encephalitis:	
Alabama	1
Idaho	1
Illinois	8
Kansas	1
Ohio	2
Oregon	1
Pennsylvania	4
Mumps:	
Alabama	26
Idaho	11
Illinois	524
Kansas	43
Mississippi	265
Missouri	28
Montana	23

December, 1926—Continued

	Cases
Mumps—Continued.	
Ohio	301
Oklahoma	12
Oregon	55
Pennsylvania	553
Rhode Island	11
Wyoming	2
Ophthalmia neonatorum:	
Illinois	33
Kansas	1
Mississippi	14
Missouri	1
Ohio	86
Oklahoma	1
Pennsylvania	26
Rhode Island	1
Paratyphoid fever:	
Illinois	3
Kansas	1
South Carolina	2
Puerperal septicemia:	
Illinois	4
Mississippi	21
Oregon	1
Pennsylvania	1
Rabies in animals:	
Mississippi	11
Missouri	2
South Carolina	19
Rabies in man—Pennsylvania	1
Scabies:	
Oregon	7
Pennsylvania	45
Septic sore throat:	
Idaho	1
Illinois	8
Kansas	5
Missouri	22
North Carolina	4
Ohio	5
Oregon	8
Tetanus:	
Kansas	1
Montana	2
Trachoma:	
Illinois	7
Mississippi	4
Missouri	14
Oklahoma	5
Pennsylvania	3
Trichinosis—Oregon	1
Typhus fever—Alabama	10
Whooping cough:	
Alabama	79
Idaho	7
Illinois	838
Kansas	146
Mississippi	861
Missouri	161
Montana	15
North Carolina	1,137
Ohio	823
Oklahoma	67
Oregon	20
Pennsylvania	1,327
Rhode Island	37
South Carolina	166
Wyoming	43

RODENT PLAGUE AT LOS ANGELES, CALIF.

One Norway rat trapped in Los Angeles, Calif., on January 24, 1927, was proved positive for plague on January 29, 1927.

State Health Officer Walter M. Dickie states that the city department of health of Los Angeles has assigned 10 men for rodent-control work in the county territory adjacent to that part of the city where the plague-infected rat was reported found, the work being carried on under the direction of an inspector from the State board of health.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

Diphtheria.—For the week ended January 15, 1927, 40 States reported 2,082 cases of diphtheria. For the week ended January 16, 1926, the same States reported 1,690 cases of this disease. One hundred cities, situated in all parts of the country and having an estimated aggregate population of more than 30,900,000, reported 1,110 cases of diphtheria for the week ended January 15, 1927. Last year for the corresponding week they reported 850 cases. The estimated expectancy for these cities was 1,166 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty-seven States reported 8,381 cases of measles for the week ended January 15, 1927, and 11,041 cases of this disease for the week ended January 16, 1926. One hundred cities reported 1,954 cases of measles for the week this year, and 5,686 cases last year.

Poliomyelitis.—The health officers of 40 States reported 16 cases of poliomyelitis for the week ended January 15, 1927. The same States reported 15 cases for the week ended January 16, 1926.

Scarlet fever.—Scarlet fever was reported for the week as follows: Forty States—this year, 5,444 cases; last year, 4,306 cases; 100 cities—this year, 2,175 cases; last year, 1,668 cases; estimated expectancy, 1,277 cases.

Smallpox.—For the week ended January 15, 1927, 40 States reported 1,253 cases of smallpox. Last year for the corresponding week they reported 906 cases. One hundred cities reported smallpox for the week as follows: 1927, 133 cases; 1926, 272 cases; estimated expectancy, 111 cases. No deaths from smallpox were reported by these cities for the week this year.

Typhoid fever.—Two hundred and seventy-three cases of typhoid fever were reported for the week ended January 15, 1927, by 40 States. For the corresponding week of 1926, the same States reported 287 cases of this disease. One hundred cities reported 56 cases of typhoid fever for the week this year and 63 cases for the corresponding week last year. The estimated expectancy for these cities was 52 cases.

Influenza and pneumonia.—Deaths from influenza and pneumonia were reported for the week by 93 cities, with an estimated population of more than 30,150,000, as follows: 1927, 1,161 deaths; 1926, 1,334 deaths.

City reports for week ended January 15, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	14	2	1	0	0	4	0	1
New Hampshire:									
Concord	22,546	0	0	0	1	1	29	0	0
Manchester	83,097	0	2	0	0	0	4	0	3
Vermont:									
Barre	10,008	2	0	0	0	0	22	0	0
Burlington	24,089	1	0	0	0	0	0	0	4
Massachusetts:									
Boston	779,620	98	65	25	1	0	23	72	42
Fall River	128,993	5	6	2	1	0	0	1	4
Springfield	142,065	24	4	10	1	1	0	1	2
Worcester	190,757	17	6	2	1	0	1	7	6
Rhode Island:									
Pawtucket	69,760	2	1	2	0	0	0	0	2
Providence	267,918	0	10	24	0	1	2	0	6
Connecticut:									
Bridgeport	(1)	0	9	4	5	2	2	2	5
Hartford	160,197	9	8	5	0	1	0	0	1
New Haven	178,927	20	3	0	0	0	1	0	13
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	44	16	16	-------	2	3	7	13
New York	5,873,356	309	214	176	98	26	20	350	249
Rochester	316,786	10	13	14	-------	0	5	0	4
Syracuse	182,003	28	7	5	-------	0	7	6	7
New Jersey:									
Camden	128,642	4	5	35	1	0	1	0	4
Newark	452,513	17	22	11	8	0	4	38	15
Trenton	132,020	3	7	0	0	0	0	0	5
Pennsylvania:									
Philadelphia	1,979,364	197	83	86	-------	8	3	65	79
Pittsburgh	631,563	54	21	14	-------	4	33	0	39
Reading	112,707	25	5	1	-------	0	2	14	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	27	10	8	0	3	1	40	13
Cleveland	936,485	181	34	65	1	2	8	5	25
Columbus	279,836	28	5	7	0	1	1	0	12
Toledo	287,380	109	11	8	3	3	18	10	8
Indiana:									
Fort Wayne	97,846	6	4	3	0	1	12	0	2
Indianapolis	358,819	67	13	14	0	0	2	2	14
South Bend	80,091	6	1	1	0	0	19	0	0
Terre Haute	71,071	5	2	4	0	0	0	0	3

[1] No estimate made.

City reports for week ended January 15, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Illinois:									
Chicago	2,995,239	158	115	92	48	10	385	71	95
Peoria	81,564	10	1	0	0	0	61	2	2
Springfield	63,923	8	1	1	0	0	76	0	1
Michigan:									
Detroit	1,245,824	166	71	62	5	5	9	80	40
Flint	130,316	17	8	0	0	0	0	2	1
Grand Rapids	153,698	8	5	0	0	2	0	0	2
Wisconsin:									
Kenosha	50,891	26	2	0	0	0	45	11	1
Madison	46,385	42	0	0	0	0	5	0	1
Milwaukee	509,192	117	21	23	0	0	51	33	19
Racine	67,707	17	2	3	0	0	0	13	0
Superior	39,671	1	1	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	1	3	0	0	0	25	0	3
Minneapolis	425,435	152	23	17	0	0	0	3	12
St. Paul	246,001	43	17	5	0	2	5	1	12
Iowa:									
Davenport	52,469	0	1	0	0	-------	9	0	-------
Des Moines	141,441	1	4	2	0	-------	3	0	-------
Sioux City	76,411	17	1	1	0	-------	0	2	-------
Waterloo	36,771	15	0	0	0	-------	5	0	-------
Missouri:									
Kansas City	367,481	49	11	3	1	1	15	2	16
St. Joseph	78,342	0	4	0	1	1	0	0	3
St. Louis	821,543	49	55	45	0	0	15	17	-------
North Dakota:									
Fargo	26,403	4	0	0	0	0	3	1	1
Grand Forks	14,811	0	0	0	0	-------	1	0	-------
South Dakota:									
Aberdeen	15,036	11	0	0	0	-------	0	1	-------
Sioux Falls	30,127	4	1	0	0	-------	1	0	-------
Nebraska:									
Lincoln	60,941	15	2	0	0	0	4	0	2
Omaha	211,768	6	5	4	0	0	28	15	9
Kansas:									
Topeka	55,411	17	2	2	0	1	1	0	1
Wichita	88,367	20	4	3	0	0	0	0	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	4	0	0	0	0	6
Maryland:									
Baltimore	796,296	139	32	55	41	5	4	9	38
Cumberland	33,741	1	1	2	2	1	1	0	1
Frederick	12,035	0	0	2	2	1	0	0	0
District of Columbia:									
Washington	497,906	70	21	20	10	2	0	0	20
Virginia:									
Lynchburg	30,395	8	1	1	0	0	0	0	0
Norfolk	(1)	15	3	0	5	0	1	0	8
Richmond	186,403	3	7	15	0	0	56	2	5
Roanoke	58,208	6	1	2	0	0	0	0	1
West Virginia:									
Charleston	49,019	6	2	1	0	1	3	1	4
Wheeling	56,208	6	2	0	0	0	1	1	6
North Carolina:									
Raleigh	30,371	15	1	1	0	0	2	0	2
Wilmington	37,061	10	0	1	0	0	1	1	0
Winston-Salem	69,031	7	1	1	0	2	1	3	0
South Carolina:									
Charleston	73,125	1	2	1	0	0	0	0	1
Columbia	41,225	4	1	0	0	-------	0	0	-------
Greenville	27,311	2	0	0	0	0	0	0	0

[1] No estimate made.

City reports for week ended January 15, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
Georgia:									
Atlanta	(1)	3	4	11	38	0	30	4	8
Brunswick	16,809	0	0	0	0	0	0	1	0
Savannah	93,134	0	2	0	9	1	1	1	4
Florida:									
Miami	69,754	12	-------	2	0	0	1	9	2
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	94,743	3	1	2	2	0	11	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	7	0	0	0	0	3
Louisville	305,985	11	8	4	3	0	0	1	9
Tennessee:									
Memphis	174,583	19	6	8	0	2	1	0	9
Nashville	136,220	1	2	9	0	2	1	0	9
Alabama:									
Birmingham	205,670	11	3	17	1	1	11	1	7
Mobile	65,955	4	1	0	0	2	5	0	2
Montgomery	46,481	0	0	4	0	0	1	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	2	1	0	0	1	0	6	-------
Little Rock	74,216	0	1	1	0	0	0	1	2
Louisiana:									
New Orleans	414,493	0	14	17	11	6	68	0	15
Shreveport	57,857	6	1	2	0	1	0	6	3
Oklahoma:									
Oklahoma City	(1)	0	2	0	4	1	0	0	4
Texas:									
Dallas	194,450	7	9	19	4	3	5	3	5
Galveston	48,375	0	2	0	0	0	0	0	0
Houston	164,954	4	5	13	0	0	0	2	11
San Antonio	198,069	1	2	7	0	0	0	0	6
MOUNTAIN									
Montana:									
Billings	17,971	0	1	0	0	0	12	0	0
Great Falls	29,883	8	1	0	0	1	6	0	1
Helena	12,037	0	0	1	0	0	0	0	1
Missoula	12,668	4	0	0	0	0	1	14	1
Idaho:									
Boise	23,042	-------	0	-------	-------	-------	-------	-------	-------
Colorado:									
Denver	280,911	24	10	4	-------	9	92	0	10
Pueblo	43,787	8	3	2	0	1	2	0	3
New Mexico:									
Albuquerque	21,000	2	0	0	1	0	7	8	3
Arizona:									
Phoenix	38,669	1	0	0	0	1	0	0	5
Utah:									
Salt Lake City	130,948	27	3	6	0	0	242	2	6
Nevada:									
Reno	12,665	0	0	0	0	0	1	0	0
PACIFIC									
Washington:									
Seattle	(1)	55	7	2	0	-------	10	32	-------
Spokane	108,897	20	4	1	0	-------	238	0	-------
Tacoma	104,455	7	4	2	0	-------	4	1	-------
Oregon:									
Portland	282,383	21	10	11	13	0	17	3	9
California:									
Los Angeles	(1)	71	42	53	19	3	99	8	38
Sacramento	72,260	3	3	3	0	0	61	23	5
San Francisco	557,530	26	22	13	8	1	154	21	5

[1] No estimate made.

City reports for week ended January 15, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	3	1	0	0	0	1	1	2	0	32	25
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	12
Manchester	3	0	0	0	0	1	0	0	0	0	22
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	0
Burlington	2	0	1	0	0	0	0	0	0	4	12
Massachusetts:											
Boston	59	137	0	0	0	15	1	4	0	14	224
Fall River	2	0	0	0	0	5	0	2	1	5	30
Springfield	9	9	0	0	0	2	0	0	0	0	41
Worcester	12	15	0	0	0	3	0	0	0	4	49
Rhode Island:											
Pawtucket	1	1	0	0	0	0	0	0	0	0	17
Providence	8	11	0	0	0	3	0	1	0	8	70
Connecticut:											
Bridgeport	8	13	0	0	0	5	0	0	0	0	44
Hartford	8	11	0	0	0	1	0	0	0	6	28
New Haven	10	7	0	0	0	1	0	0	0	0	43
MIDDLE ATLANTIC											
New York:											
Buffalo	25	13	1	0	0	11	1	0	0	15	162
New York	211	439	0	2	0	[1] 110	11	11	1	59	1,591
Rochester	14	12	0	0	0	4	0	3	0	10	56
Syracuse	14	22	0	0	0	0	1	1	0	5	53
New Jersey:											
Camden	5	6	0	0	0	1	1	0	0	0	29
Newark	24	53	0	0	0	12	0	0	0	20	121
Trenton	5	4	0	0	0	2	0	0	0	2	37
Pennsylvania:											
Philadelphia	84	99	1	0	0	31	4	2	0	30	573
Pittsburgh	39	38	0	0	0	12	1	0	0	13	236
Reading	2	0	0	0	0	1	0	0	0	1	28
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	14	24	1	0	0	10	0	0	0	5	153
Cleveland	40	60	3	0	0	8	2	1	0	22	203
Columbus	11	18	1	2	0	4	0	0	0	4	94
Toledo	15	26	1	0	0	2	1	1	1	40	71
Indiana:											
Fort Wayne	4	6	1	2	0	2	0	0	0	2	19
Indianapolis	10	28	11	23	0	4	1	0	0	8	98
South Bend	4	1	1	0	0	0	0	0	0	0	16
Terre Haute	3	1	1	0	0	0	0	0	0	0	22
Illinois:											
Chicago	135	141	2	0	0	40	4	1	0	68	732
Peoria	6	2	0	0	0	0	0	0	0	1	19
Springfield	2	5	0	0	0	2	0	0	0	2	22
Michigan:											
Detroit	92	128	3	1	0	23	2	0	0	44	310
Flint	9	31	0	2	0	1	1	0	0	6	21
Grand Rapids	12	11	0	0	0	1	0	0	0	2	39
Wisconsin:											
Kenosha	1	9	1	0	0	1	0	0	0	12	10
Madison	3	6	0	0	0	1	0	0	0	4	8
Milwaukee	32	48	2	1	0	8	1	0	0	67	129
Racine	6	4	1	0	0	0	0	0	0	6	13
Superior	3	3	3	0	0	0	0	0	0	0	11
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	6	0	0	0	2	1	0	0	0	35
Minneapolis	50	78	14	0	0	3	1	1	0	0	86
St. Paul	29	29	11	1	0	2	0	2	0	18	63
Iowa:											
Davenport	2	4	2	0	-------	-------	0	0	-------	0	-------
Des Moines	7	4	2	0	-------	-------	0	0	-------	0	-------
Sioux City	2	11	1	3	-------	-------	0	0	-------	2	-------
Waterloo	2	1	1	0	-------	-------	0	0	-------	3	-------

[1] Pulmonary tuberculosis only.

City reports for week ended January 15, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	14	52	2	6	0	9	0	0	0	5	113
St. Joseph	3	3	1	0	0	1	0	0	0	0	30
St. Louis	40	42	3	4	0	10	2	0	0	25	229
North Dakota:											
Fargo	2	17	0	0	0	1	0	0	0	0	4
Grand Forks	1	4	0	0			0	0		0	
South Dakota:											
Aberdeen	0	12	0	0			0	0		0	
Sioux Falls	2	0	0	0			0	0		0	
Nebraska:											
Lincoln	3	3	0	0	0	0	0	0	0	0	23
Omaha	5	24	8	3	0	3	0	0	0	2	
Kansas:											
Topeka	3	6	0	16	0	1	0	0	0	6	16
Wichita	4	12	0	2	0	1	0	0	0	3	24
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	32	0	0	0	0	1	0	0	1	29
Maryland:											
Baltimore	34	37	0	0	0	12	2	5	2	75	246
Cumberland	1	1	0	0	0	2	0	0	0	0	11
Frederick	0	1	0	0	0	0	0	0	0	1	2
Dist. of Columbia:											
Washington	25	32	1	0	0	12	2	0	1	20	165
Virginia:											
Lynchburg	0	1	0	0	0	0	0	0	0	0	10
Norfolk	2	4	0	0	0	4	0	0	0	12	
Richmond	5	6	0	0	0	4	0	0	0	56	51
Roanoke	1	4	0	2	0	1	1	1	1	2	13
West Virginia:											
Charleston	1	1	0	0	0	1	0	0	0	3	22
Wheeling	1	1	0	0	0	0	0	1	0	0	22
North Carolina:											
Raleigh	0	0	0	2	0	0	0	0	0	11	7
Wilmington	1	1	0	0	0	0	0	0	0	6	10
Winston-Salem	2	2	2	3	0	2	0	0	0	10	21
South Carolina:											
Charleston	1	2	0	1	0	2	0	1	0	0	24
Columbia	0	0	0	0			0	0		4	
Greenville	0	0	1	0	0	1	0	0	0	3	12
Georgia:											
Atlanta	3	13	2	16	0	0	1	1	0	1	75
Brunswick	0	0	1	0	0	1	0	0	0	0	2
Savannah	0	4	0	2	0	0	1	0	0	4	28
Florida:											
Miami		2		0	0	0		1	0	8	36
St. Petersburg	0		0		0	1	0		0		16
Tampa	1	1	0	2	0	3	1	0	0	0	31
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	2	0	0	0	0	0	0	0	0	19
Louisville	5	14	0	0	0	3	0	0	0	17	61
Tennessee:											
Memphis	5	19	2	4	0	6	0	3	1	19	74
Nashville	3	2	0	0	0	4	0	0	0	6	50
Alabama:											
Birmingham	4	0	3	13	0	2	1	0	0	0	73
Mobile	1	1	0	0	0	4	1	0	0	0	26
Montgomery	0	4	0	0	0	0	0	0	0	1	17
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	0		2	6
Little Rock	2	1	0	0	0	1	0	1	0	10	
Louisiana:											
New Orleans	5	3	1	1	0	13	2	0	0	5	154
Shreveport	1	0	2	0	0	2	0	0	0	0	23

City reports for week ended January 15, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—con.											
Oklahoma:											
Oklahoma City	2	3	1	8	0	0	1	0	1	0	32
Texas:											
Dallas	4	18	1	1	0	0	1	0	0	0	52
Galveston	1	5	0	0	0	1	0	0	0	0	15
Houston	1	3	1	4	0	3	0	3	0	0	49
San Antonio	1	4	0	0	0	10	0	0	0	0	74
MOUNTAIN											
Montana:											
Billings	2	2	0	0	0	0	0	1	1	0	9
Great Falls	1	14	1	0	0	0	0	0	0	0	12
Helena	0	1	0	0	0	1	0	0	0	0	6
Missoula	1	23	0	0	0	0	0	0	0	0	7
Idaho:											
Boise	1		1				0				
Colorado:											
Denver	11	73	2	0	0	3	0	0	0	1	79
Pueblo	2	4	0	0	0	4	0	0	0	0	16
New Mexico:											
Albuquerque	0	2	0	0	0	8	0	0	0	0	22
Arizona:											
Phoenix	1	1	0	0	0	3	0	0	0	1	16
Utah:											
Salt Lake City	3	6	2	0	0	1	0	0	0	1	34
Nevada:											
Reno	0	1	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	10	14	3	3			0	3		11	
Spokane	4	45	3	4			0	1		0	
Tacoma	3	4	3	6			0	0		7	
Oregon:											
Portland	6	20	7	4	0	3	0	1	0	2	74
California:											
Los Angeles	23	46	4	0	0	20	2	3	1	6	295
Sacramento	2	3	1	0	0	4	0	0	0	0	37
San Francisco	13	32	2	1	0	10	0	1	0	12	178

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Fall River	0	0	0	0	0	0	0	1	0
Connecticut:									
Bridgeport	1	1	0	0	0	0	0	0	0
Hartford	0	0	0	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	8	3	3	5	0	0	1	0	1
New Jersey:									
Newark	0	0	1	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	0	1	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Toledo	1	1	0	0	0	0	0	0	0
Indiana:									
Terre Haute	0	0	0	1	0	0	0	0	0

City reports for week ended January 15, 1927—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL—continued									
Illinois:									
Chicago	3	1	1	0	0	0	1	0	0
Michigan:									
Detroit	1	1	1	0	0	0	0	0	0
Grand Rapids	0	0	0	0	0	0	0	1	1
Wisconsin:									
Milwaukee	4	3	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
St. Paul	0	1	0	0	0	0	0	0	0
Missouri:									
Kansas City	0	0	0	0	1	0	0	0	0
St. Louis	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	0	0	0
Georgia:									
Atlanta	0	0	0	0	1	1	0	0	0
Florida:									
Miami	0	0	0	0	0	0	-------	1	0
Tampa	0	0	0	0	0	0	0	1	0
EAST SOUTH CENTRAL									
Alabama:									
Mobile	0	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	3	0	0	0
Louisiana:									
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	1	2	0	0	0
MOUNTAIN									
Montana:									
Helena	3	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Spokane	4	-------	0	-------	0	-------	0	0	-------
Oregon:									
Portland	2	2	0	0	0	0	0	0	0
California:									
Los Angeles	1	0	1	1	0	1	0	1	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended January 15, 1927, compared with those for a like period ended January 16, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,440,000 in 1926 and 30,960,000 in 1927. The 95 cities reporting deaths had nearly 29,780,000 estimated population in 1926 and nearly 30,290,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, December 12, 1926, to January 15, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925–26 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Dec. 19, 1925	Dec. 18, 1926	Dec. 26, 1925	Dec. 25, 1926	Jan. 2, 1926	Jan. 1, 1927	Jan. 9, 1926	Jan. 8, 1927	Jan. 16, 1926	Jan. 15, 1927
101 cities	[2] 158	189	122	[3] 163	132	177	170	[4] 199	146	[5] 157
New England	132	161	89	161	141	158	139	158	144	174
Middle Atlantic	147	167	108	139	126	171	182	183	151	177
East North Central	154	216	150	[6] 184	132	193	151	223	135	189
West North Central	178	129	184	113	160	165	288	189	258	159
South Atlantic	192	218	94	[4] 216	129	175	177	[4] 232	140	216
East South Central	89	145	74	150	110	187	52	138	67	250
West South Central	[2] 241	258	128	168	150	224	189	256	120	247
Mountain	176	164	166	137	111	137	182	126	128	[5] 122
Pacific	177	253	88	226	127	156	96	230	80	194

MEASLES CASE RATES

101 cities	[2] 515	190	416	[3] 207	613	222	1,147	[4] 384	974	[5] 329
New England	2,062	229	1,579	168	2,406	184	3,087	253	2,861	195
Middle Atlantic	518	24	382	22	558	22	997	31	846	38
East North Central	479	242	537	[6] 241	753	260	1,763	416	1,303	380
West North Central	35	109	70	77	61	60	151	260	129	193
South Atlantic	570	90	240	[4] 62	470	180	1,278	[4] 214	1,345	203
East South Central	79	21	116	31	105	78	52	107	238	97
West South Central	[2] 9	82	9	103	0	13	0	189	17	306
Mountain	28	2,349	28	2,777	83	3,541	55	5,241	91	[5] 3,334
Pacific	77	607	36	884	47	701	64	1,521	51	1,482

SCARLET FEVER CASE RATES

101 cities	[2] 232	279	203	[3] 253	225	268	269	[4] 319	286	[5] 367
New England	192	388	240	248	304	357	295	490	380	478
Middle Atlantic	189	214	146	212	168	234	210	286	238	339
East North Central	286	242	234	[6] 254	249	245	334	283	322	344
West North Central	454	413	438	371	509	385	583	451	557	558
South Atlantic	154	201	157	[4] 172	140	240	156	[4] 243	184	259
East South Central	116	249	168	244	100	176	119	234	140	214
West South Central	[2] 88	237	97	125	119	151	112	155	90	143
Mountain	277	1,111	213	974	250	892	237	953	319	[5] 1,161
Pacific	243	386	182	305	210	253	241	340	268	377

SMALLPOX CASE RATES

101 cities	[2] 20	16	18	[3] 14	24	14	33	[4] 23	47	[5] 22
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	1	1	0	0	1	1	0	0	2	1
East North Central	26	11	25	[6] 16	23	7	48	32	37	21
West North Central	37	46	20	28	18	40	63	58	52	69
South Atlantic	12	26	10	[4] 30	25	41	43	[4] 29	67	51
East South Central	11	78	0	38	74	47	47	41	57	87
West South Central	[2] 23	43	9	26	22	22	52	42	146	25
Mountain	37	0	9	18	37	9	36	0	18	[5] 0
Pacific	113	40	130	43	152	22	110	60	284	37

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Shreveport, La., not included.
[3] Terre Haute, Ind., and Norfolk, Va., not included.
[4] Norfolk, Va., not included.
[5] Boise, Idaho, not included.
[6] Terre Haute, Ind., not included.

Summary of weekly reports from cities, December 12, 1926, to January 15, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925–26—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Dec. 19, 1925	Dec. 18, 1926	Dec. 26, 1925	Dec. 25, 1926	Jan. 2, 1926	Jan. 1, 1927	Jan. 9, 1926	Jan. 8, 1927	Jan. 16, 1926	Jan. 15, 1927
101 cities	[2] 16	12	9	[3] 11	10	12	13	[4] 8	11	[5] 9
New England	10	31	10	40	7	24	31	9	2	21
Middle Atlantic	17	8	11	5	7	7	14	6	16	8
East North Central	13	5	7	[6] 4	6	5	11	5	8	1
West North Central	14	10	4	10	6	4	2	8	4	6
South Atlantic	17	19	12	[4] 16	12	34	9	[4] 8	7	16
East South Central	26	21	5	16	32	21	16	25	16	15
West South Central	[2] 28	22	9	17	48	17	21	25	13	17
Mountain	9	9	18	0	9	27	9	9	9	[5] 9
Pacific	17	24	8	22	8	16	11	8	13	21

INFLUENZA DEATH RATES

95 cities	[2] 14	14	12	[3] 15	15	17	21	[4] 20	23	[7] 21
New England	14	7	12	7	12	21	9	16	14	14
Middle Atlantic	8	13	9	14	10	21	18	18	16	20
East North Central	17	12	8	[6] 10	8	15	12	17	11	16
West North Central	4	15	6	11	15	8	8	15	19	10
South Atlantic	10	26	17	[4] 34	19	17	15	[4] 18	23	24
East South Central	53	5	32	36	32	26	83	46	88	36
West South Central	[2] 36	43	48	19	44	14	44	43	75	43
Mountain	0	9	28	27	28	46	46	63	64	[5] 103
Pacific	18	7	15	4	40	0	57	10	46	[8] 15

PNEUMONIA DEATH RATES

95 cities	[2] 149	138	136	[3] 137	186	163	220	[4] 196	211	[7] 180
New England	158	149	165	151	213	173	245	181	208	190
Middle Atlantic	148	147	145	166	188	179	229	209	236	205
East North Central	132	119	101	[6] 111	145	134	177	170	153	152
West North Central	133	120	99	91	127	118	141	116	127	125
South Atlantic	200	126	205	[4] 152	267	186	291	[4] 237	278	193
East South Central	215	130	142	109	263	192	331	204	284	199
West South Central	[2] 184	184	174	90	276	151	313	241	331	181
Mountain	120	273	203	164	268	200	128	369	328	[5] 206
Pacific	98	124	87	149	138	199	219	210	166	[8] 178

[2] Shreveport, La., not included.
[3] Terre Haute, Ind., and Norfolk, Va., not included.
[4] Norfolk, Va., not included.
[5] Boise, Idaho, not included.
[6] Terre Haute, Ind., not included.
[7] Boise, Idaho, and Tacoma, Wash., not included.
[8] Tacoma, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,438,500	30,960,600	29,778,400	30,289,800
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,644,900	7,804,500	7,644,900	7,804,500
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended January 1, 1927.—The following report for the week ended January 1, 1927, was transmitted by the Eastern Bureau of the Secretariat of the Health Section of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox		Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
British India:							Dutch East Indies:						
Bombay	----	2	----	0	8	5	Surabaya	1	1	0	0	0	0
Madras	----	0	----	2	9	0	Semarang	1	1	0	0	0	0
Calcutta	----	0	----	53	107	79	Siam: Bangkok	0	0	2	2	2	1
Rangoon	----	3	----	4	1	0	French Indo-China:						
Negapatam	----	0	----	9	2	2	Turane	0	0	1	1	0	0
Straits Settlements:							Haiphong	0	0	----	43	0	0
Singapore	0	0	1	0	6	1	U. S. S. R.: Vladivostok	0	0	0	0	3	0
							Mauritius: Port Louis	2	1	0	0	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Aden, Jeddah, Kamaran, Perim.
Iraq.—Basrah.
Persia.—Mohammerah, Bender-Abbas, Bushire.
Ceylon.—Colombo.
British India.—Karachi, Chittagong, Cochin, Vizagapatam, Tuticorin.
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Penang.
Dutch East Indies.—Batavia, Sabang, Palembang, Belawan-Deli, Padang, Cheribon, Pontianak, Macassar, Samarinda, Tarakan, Balikpapan.
Sarawak.—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
French Indo-China.—Saigon and Cholon.
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.
China.—Amoy, Shanghai (International Settlement).
Hongkong.
Macao.
Formosa.—Keelung.
Chosen.—Chemulpo, Fusan.
Manchuria.—Harbin.
Japan.—Yokohama, Osaka, Nagasaki, Niigata, Hakodate, Shimonoseki, Moji, Kobe, Tsuruga.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington Christchurch, Invercargill Dunedin.
New Caledonia.—Noumea,
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez, Alexandria.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Jibuti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reports had not been received in time for distribution from—

Dutch East Indies.—Menado, Banjermasin.
Manchuria.—Antung, Yingkow, Changchun, Mukden.
Kwantung.—Port Arthur, Dairen.
Madagascar.—Tamatave, Majunga.
Reunion.—St. Denis.

The following information has been received for the week 2d to 6th of January, 1927:

Johore Bahru (State of Johore).—Cholera, 2 cases, 1 death.

Belated information

Week ending December 18:
Philippine Islands.—Province of Nueva Vizcaya, cholera, 1 case, 1 death.

Week ending December 25:
Ceylon.—Colombo, plague, 1 case, 1 death.

ARGENTINA

Mortality from communicable diseases—Rosario—November, 1926.—During the month of November, 1926, mortality from communicable diseases was reported at Rosario, Argentine, as follows:

Disease	Deaths	Disease	Deaths
Cerebrospinal meningitis	17	Measles	2
Gastroenteritis	10	Tuberculosis	13
Diphtheria	1	Typhoid fever	1

Total number of deaths from all causes—447. Population, 406,479.

BOLIVIA

Water supply pollution—La Paz.—According to the reported results of a recent official examination of the water supply of La Paz, Bolivia, a statement of which has been received under date of December 6, 1926, a high degree of pollution of the water supply exists at La Paz, Bolivia. It was stated that the filter system at the intake does not function and that the water is not filtered at any point in its flow. It also receives refuse matter from mines along its course and the Indian natives are stated to be making use of the reservoir for bathing and washing of clothing. The reservoir is stated not to be inclosed and to be frequented by livestock.

Epidemic intestinal infections.—During the months of October and November, 1926, epidemic intestinal infections were stated to be prevalent in all parts of the city, with much mortality.

CANADA

Communicable diseases—Week ended January 15, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended January 15, 1927, as follows:

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	15				1			16
Lethargic encephalitis				1	1			2
Smallpox				36	3	6	10	55
Typhoid fever	2	3	15	7			1	28

CHINA

Epidemic pneumonic plague—Mongolia—December, 1926.—Further information received under date of December 21, 1926, relative to the outbreak of plague at Urga and Sanbese, Mongolia, China, reported December 18,[1] shows that press notices appeared early in December stating that pneumonic plague was spreading over Central Mongolia and that late in November the epidemic had extended beyond the plain country to a monastery and encampments at a point 100 miles from Tzetsenkhan and attacked about 500 persons. The town of Sanbese was stated to be crowded with refugees from the infected areas. A medical unit was sent from Urga to combat the spread of the epidemic. Preventive measures were reported being taken at stations on the Chinese Eastern Railway.

ESTONIA

Communicable diseases—November, 1926.—During the month of November, 1926, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Case
Diphtheria	44	Scarlet fever	488
Leprosy	3	Tuberculosis	144
Measles	612	Typhoid fever	38

Population, 1,107,059.

PANAMA CANAL

Communicable diseases—November, 1926.—During the month of November, 1926, communicable diseases were reported in the Canal Zone, and at Colon and Panama, as follows:

Disease	Canal Zone		Colon		Panama		Infected in other localities		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Chicken pox	3				3				6	
Diphtheria			1		11	1			12	1
Dysentery					2		3		5	
Hookworm			7		55		34		96	
Malaria	35	1	1		2		13	3	51	
Measles	3		12		36		2		53	
Meningitis					1	1	1	1	2	2
Pneumonia		3		2		16		2		23
Relapsing fever			1				1		2	
Tuberculosis		3		7		19		4		33
Whooping cough	1		2						3	

[1] Public Health Reports, Dec. 31, 1926, p. 3098.

SPAIN

Mortality from communicable diseases—Madrid—November, 1926.—During the month of November, 1926, 231 deaths from communicable diseases were reported in Madrid, Spain, including tuberculosis, 152, and typhoid fever, 19. The total number of deaths from all causes was 1,213. Population, estimated, 766,552.

UNION OF SOUTH AFRICA

Plague—Cape Province—Orange Free State—December 5–11, 1926.—During the week ended December 11, 1926, plague was reported in the Union of South Africa as follows: Cape Province—One fatal case, native, in Middelburg District; Orange Free State—in Bothaville District, one fatal case, European; in Hoopstad District, one case native. The cases occurred on farms.

VIRGIN ISLANDS

Communicable diseases—December, 1926.—During the month of December, 1926, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Chancroid	3	
Chicken pox	2	
Gonorrhea	2	Imported, 1.
Syphilis	3	Primary, 2; secondary, 1.
Tuberculosis	1	Chronic pulmonary.
Uncinariasis	1	Necator americana.
St. Croix:		
Chancroid	1	
Filariasis	2	Bancrofti.
Leprosy	1	
Tuberculosis	1	Chronic pulmonary.

WEST AFRICA

Plague—Senegal—December 19–25, 1926.—During the week ended December 25, 1926, 6 cases of plague were reported at Tivaouane, interior of Senegal.

Yellow fever.—During the same period, three fatal cases of yellow fever, two European and one Syrian, were reported in Senegal, and one fatal case in the French Sudan.

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 lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended February 4, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
Chosen	Sept. 1-30	231	143	
French Settlements in India	Sept. 26-Oct. 30	35	30	
India:				
Calcutta	Nov. 21-Dec. 11	97	78	
Rangoon	Dec. 5-11	1		
Japan:				
Hiogo	Nov. 14-20	3		
Russia	Aug. 1-31	1		
Siam	Nov. 28-Dec. 4	25	6	Apr. 1-Dec. 4, 1926: Cases, 7,792; deaths, 5,130.
Bangkok	do	1	1	
Straits Settlements	Aug. 22-Oct. 16		49	

PLAGUE

British East Africa:				
Tanganyika Territory	Nov. 21-27	6	6	
Uganda	Sept. 1-30	117	110	
China:				
Mongolia				Dec. 21, 1926: About 500 cases reported.
Nanking	Dec. 5-18			Prevalent.
Greece:				
Athens	Dec. 1-31	9	1	Including Piraeus.
India:				
Madras Presidency	Nov. 21-Dec. 4	186	100	
Java:				
Batavia	Dec. 5-11	21	19	Province.
Nigeria	Sept. 1-30	305	277	
Russia	May 1-June 30	44		
Do	July 1-Aug. 31	19		
Tunisia	Nov. 1-30	188		
Turkey:				
Constantinople	Dec. 15-25	1		
Union of South Africa:				
Cape Province	Dec. 5-11	1	1	Native. On farm in Middelburg district.
Orange Free State	do	12	2	Bothaville district, one case European; in Hoopstad district, one case, native. Fatal. On farms.
West Africa:				
Senegal—				
Tivaouane	Dec. 19-25	6	2	Interior of Senegal.

SMALLPOX

Algeria:	Oct. 21-Nov. 20			Cases, 317.
Algiers	Dec. 11-20	2		
Brazil:				
Bahia	Nov. 21-Dec. 18	9	5	
Pernambuco	Dec. 5-11	1	1	
Sao Paulo	Oct. 4-24	2	1	
British East Africa:				
Tanganyika Territory	Oct. 31-Nov. 20	2		
Zanzibar	Oct. 1-31	23	12	
Canada:				
Alberta				Jan. 9-15, 1927: Cases, 10.
Calgary	Jan. 11-17	4		
Edmonton	Dec. 1-31	4		
Manitoba				Jan. 9-15, 1927: Cases, 3.
Winnipeg	Jan. 16-22	1		
Ontario				Jan. 9-15, 1927: Cases, 36.
Toronto	Jan. 9-15	10		
Saskatchewan				Jan. 9-15, 1927: Cases, 6.

[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 February 4, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Chungking	Nov. 28–Dec. 11			Present.
Foochow	Dec. 19–25			Do.
Manchuria—				
Harbin	Dec. 16–22	1		
Nanking	Dec. 12–25			Do.
Chosen	Sept. 1–30	9	4	
France	Oct. 1–31	99		
Paris	Dec. 11–20	5		
French Settlements in India	Sept. 26–Nov. 30	43	43	
Great Britain:				
England and Wales	Dec. 12–Jan. 1	962		
Sheffield	Dec. 19–25	22		
Do	Dec. 26–Jan. 1	16		
Greece:				
Athens	Dec. 1–31	14	2	
India:				
Bombay	Dec. 5–18	11	8	
Calcutta	Nov. 21–Dec. 11	81	60	
Madras	Dec. 12–25	16	1	
Rangoon	Dec. 5–11		1	
Italy	Sept. 12–Oct. 23	8		
Java:				
Surabaya	Nov. 21–27	2		
Luxemburg	Nov. 1–30	1		
Mexico	July 1–Aug. 31		331	
San Luis Potosi	Jan. 9–15		6	
Torreon	Dec. 26–Jan. 1		1	
Do	Jan. 2–8		4	
Nigeria	Aug. 1–Sept. 30	61	3	
Portugal:				
Lisbon	Dec. 26–Jan. 1	3		
Russia	May 1–June 30	705		
Do	July 1–Aug. 31	629		
Siam	Nov. 28–Dec. 4	6	3	Apr. 1–Dec. 4, 1926: Cases, 697; deaths, 261.
Bangkok	do	5	3	
Tunisia	Oct. 31–Nov. 20	6		
Union of South Africa:				
Cape Province—				
Caledon district	Dec. 5–11			Outbreaks. On farm.
Steynsburg district	do			Outbreaks.

TYPHUS FEVER

Algeria	Oct. 21–Nov. 20	10		
Bulgaria	Oct. 1–31	1	1	
Chile:				
Valparaiso	Dec. 19–25	1		
Chosen	Sept. 1–30	10		
Gold Coast	do	1	1	
Greece:				
Athens	Dec. 1–31	11	2	
Italy	Sept. 5–Oct. 23	2		
Lithuania	Oct. 1–31	5		
Mexico	July 1–Aug. 31		46	
Mexico City	Jan. 2–8	4		Including municipalities in Federal District.
Nigeria	Sept. 1–30	1		
Rumania	Oct. 1–31	42	3	
Russia	May 1–June 30	6,043		
Do	July 1–Aug. 31	2,364		
Turkey:				
Constantinople	Dec. 12–25	3		
Union of South Africa:				
Cape Province—				
Port St. Johns district	Dec. 5–11			Outbreak. On farm.

YELLOW FEVER

West Africa:				
French Sudan	Dec. 19–25	1	1	European.
Senegal	do	3	3	European, 2; Syrian, 1. Occurring at Diourbel, Foundiougne, and Rufisque.

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

Reports Received from January 1 to 28, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Chungking	Nov. 14-20			Present.
Tsingtao	Nov. 14-Dec. 11			Do.
French Settlements in India	Aug. 29-Oct. 2	93	64	
India	Oct. 10-Nov. 13			Cases, 7,093; deaths, 4,170.
Calcutta	Oct. 31-Dec. 4	124	100	
Rangoon	Nov. 21-Dec. 4	3	3	
Indo-China	July 1-31			Cases, 2,204; deaths, 1,350. European, 1.
Saigon	Oct. 31-Nov. 13	2	2	
Province—				
Annam	July, 1926	215	178	July, 1925: Cases, none.
Cambodia	do	571	352	One European, fatal. July, 1925: Cases, 3.
Cochin-China	do	390	317	July, 1925: Cases, 6; deaths, 2.
Kwang-Chow-Wan	do	220		July, 1925: Cases, 22; deaths, 15.
Laos	do	24	21	July, 1925: One case.
Tonkin	do	784	482	July, 1925: Cases, 3; deaths, 1.
Philippine Islands:				
Manila	Oct. 31-Nov. 6	1		
Siam	do			Case, 1.
Do	Apr. 1-Nov. 20			Cases, 7,714; deaths, 5,080.
Bangkok	Oct. 31-Nov. 20	6	1	
Straits Settlements	July 25-Aug. 21		11	

PLAGUE

Algeria:				
Algiers	Reported Nov. 26	1		
Oran	Nov. 21-Dec. 10	32	22	
Tarafaraoul	Nov. 1-Dec. 9	10	9	Near Oran.
Brazil:				
Rio de Janeiro	Nov. 28-Dec. 4	2	2	
Canary Islands:				
Atarfe	Dec. 20	1	1	Vicinity of Las Palmas.
Ceylon:				
Colombo	Nov. 14-Dec. 4	2	1	Two plague rodents.
China:				
Nanking	Oct. 31-Nov. 20			Prevalent.
Ecuador:				
Guayaquil	Nov. 1-Dec. 15	18	5	Rats taken, 37,963; found infected, 131.
Egypt	Jan. 1-Dec. 9			Cases, 149.
Alexandria	Nov. 19-Dec. 2	2		
Kafr el Sheikh	Dec. 3-9	2		
Tanta District	Nov. 19-Dec. 20	3		
Greece	Nov. 1-30	10	1	Athens and Piræus.
Athens	do		3	
Patras	Nov. 28-Dec. 4		1	
Pravi	Nov. 27	1	1	Province of Drama-Kavalla.
India	Oct. 10-Nov. 13			Cases, 7,985; deaths, 4,660.
Bombay	Nov. 21-27	1	1	
Madras	Oct. 17-23	83	45	
Do	Nov. 1-7	75	32	
Rangoon	Nov. 14-Dec. 4	7	6	
Indo-China	July 1-31			Cases, 24; deaths, 10.
Province—				
Cambodia	July, 1926	6	6	July, 1925: Cases, 16; deaths, 13.
Cochin-China	do	8	4	July, 1925: No case.
Kwang-Chow-Wan	do	10		July, 1925: Cases, 22; deaths, 15.
Java:				
Batavia	Nov. 7-Dec. 4	27	26	Province.
Surabaya	Oct. 24-Nov. 6	8	8	
Madagascar:				
Province—				
Analalava	Oct. 16-31	1	1	Bubonic.
Itasy	do	2	2	
Maevatanana	do	10	10	
Moramanga	do	21	15	
Tamatave	do	3	1	
Tananarive	do			Cases, 85; deaths, 79.
Tananarive Town	do	13	13	

[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 from January 1 to 28, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Nigeria	Aug. 1-31	187	164	
Peru	Nov. 1-30			Cases, 24; deaths, 4.
Departments—				
Cajamarca	do			Present.
Ica—				
Chincha	do	1		
Lambayeque	do			Present in Province.
Chiclayo	do	3		
Lima	do			Cases, 30; deaths, 4. Present in Cajatambo and Chancay Provinces.
Canete Province	do	10	3	
Chancay Province	do	3		
Lima Province	do	7	1	
Portuguese West Africa:				
Angola—				
Benguela	Oct. 16-31	8	4	
Portugal:				
Lisbon	Nov. 23-26	3	2	In suburb of Balem.
Senegal	July 1-31	178	162	
Dlourbel	Nov. 20-30	12	1	
Syria:				
Beirut	Nov. 11-Dec. 10	2		
Union of South Africa:				
Cape Province—				
De Aar District	Nov. 21-27	1		Native.
Hanover District	Nov. 14-20	1		Native. On farm.
Orange Free State—				
Hoopstad District	Nov. 7-13	1	1	Do.

SMALLPOX

Algeria	Sept. 21-Oct. 20	160		
Arabia:				
Aden	Dec. 12-18	1		Imported.
Belgium	Oct. 1-10	1		
Brazil:				
Bahia	Oct. 30-Nov. 20	3	3	
Para	Oct. 31-Nov. 6		1	
Pernambuco	Oct. 17-Dec. 4	56	2	
Rio de Janeiro	Nov. 14-Dec. 25	140	64	
Sao Paulo	Aug. 23-Oct. 3	10	8	
British South Africa:				
Northern Rhodesia	Nov. 27-Dec. 3			Cases, 200. In natives.
Canada	Dec. 5-Jan. 1			Cases, 155.
Do	Jan. 2-8	17		
Alberta	Dec. 5-Jan. 1	132		
Do	Jan. 2-8	6		
Calgary	Nov. 28-Dec. 25	12		
Do	Jan. 2-8	3		
Manitoba	Dec. 5-Jan. 1	9		
Do	Jan. 2-8	1		
Winnipeg	Dec. 19-25	1		
Do	Jan. 2-15	2		
Ontario	Dec. 5-Jan. 1	96		
Do	Jan. 2-8	10		
Kingston	Jan. 1-7	1		
Ottawa	Dec. 12-31	5		
Do	Jan. 9-15	1		
Toronto	Dec. 14-25	14		
Do	Jan. 1-8	15	1	
Saskatchewan	Dec. 5-Jan. 1	18		
Do	Jan. 2-8	1		
China:				
Chungking	Nov. 7-27			Present.
Foochow	Nov. 7-13			Do.
Hankow	Nov. 6-30			Do.
Manchuria—				
Mukden	Dec. 5-11	1		
Swatow	Nov. 21-27			Do.
Chosen	Aug. 1-31	33	10	
Seoul	Nov. 1-30	2		
Egypt:				
Cairo	June 11-Aug. 26	27	4	
Estonia	Oct. 1-30	2		

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

Reports Received from January 1 to 28, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
France	Sept. 1-30	66		
Paris	Dec. 1-10	2	2	
French Settlements in India	Aug. 29-Sept. 25	40	40	
Germany:				
Stuttgart	Nov. 28-Dec. 4	7		
Gold Coast	Aug. 1-31	41	5	
Great Britain:				
England and Wales	Nov. 14-Dec. 11			Cases, 1,300.
Newcastle-on-Tyne	Dec. 5-11	2		
Sheffield	Nov. 28-Dec. 18	22		
Greece	Nov. 1-30	20		
India	Oct. 10-Nov. 13			Cases, 3,967; deaths, 988.
Bombay	Nov. 7-Dec. 4	11	8	
Calcutta	Oct. 31-Dec. 4	61	38	
Madras	Nov. 21-Dec. 11	7	1	
Rangoon	Nov. 28-Dec. 4	1		
Indo-China	July 1-31			Cases, 29; deaths, 10.
Province—				
Annam	July, 1926	6	3	July, 1925: Cases, 39; deaths, 7.
Cambodia	do	11	4	July, 1925: Cases, 62; deaths, 18.
Cochin-China	do	6	1	July, 1925: Cases, 12; deaths, 7.
Laos	do	3	1	July, 1925: Cases, none.
Tonkin	do	3	1	July, 1925: Cases, 31; deaths, 3.
Iraq:				
Baghdad	Oct. 31-Nov. 20	3	2	
Basra	Nov. 7-13	1	1	
Italy	Aug. 29-Sept. 11	4		
Jamaica	Nov. 26-Dec. 25	34		Reported as alastrim.
Japan:				
Kobe	Nov. 14-20	1		
Yokohama	Nov. 27-Dec. 3	2		
Java:				
Batavia	do	2		Province.
Surabaya	Oct. 24-Nov. 13	8	1	
Mexico:				
Chihuahua	Dec. 31			Several cases; mild.
Ciudad Juarez	Dec. 14-27		2	
Mexico City	Nov. 21-Dec. 25	6		Including municipalities in Federal District.
Do	Dec. 26-Jan. 8	1		Do.
San Luis Potosi	Nov. 12-Dec. 18		3	
Torreon	Nov. 28-Dec. 25		7	
Peru:				
Arequipa	Dec. 1-31			Present.
Poland	Oct. 11-30			Cases, 30.
Portugal:				
Lisbon	Nov. 22-Dec. 25	40	4	
Portuguese West Africa:				
Angola	Oct. 1-15			Present in Congo district.
Rumania	Jan. 1-Sept. 30	7	1	
Siam	Apr. 1-Nov. 27			Cases, 691; deaths, 258.
Bangkok	Oct. 31-Nov. 27	13	3	
Straits Settlements:				
Singapore	Oct. 31-Nov. 20	2		
Tunisia	Oct. 1-20	1		
Union of South Africa:				
Cape Province—				
Stutterheim district	Nov. 21-27			Outbreaks.
Natal—				
Durban district	Nov. 7-27	9		Including Durban municipality. Total from date of outbreak; cases, 62; deaths, 16.
Orange Free State	Nov. 14-27			Outbreaks.
Bothaville district	Nov. 21-27			Do.
Transvaal	Nov. 7-20	2		Europeans.
Johannesburg	Nov. 14-20	1		
Yugoslavia	Nov. 1-30	1	1	

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

Reports Received from January 1 to 28, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Sept. 21-Oct. 20	12		
Bulgaria	July 1-Sept. 30	221	24	
Chile:				
Valparaiso	Nov. 21-Dec. 18	5		
China:				
Antung	Nov. 22-Dec. 5	4		
Chefoo	Oct. 24-Nov. 6			Present.
Chosen	Aug. 1-31	5		
Seoul	Nov. 1-30	1		
Greece	do			Cases, 12.
Athens	do	4		
Italy	Aug. 29-Sept. 11	1		
Lithuania	Sept. 1-30	12	2	
Mexico:				
Mexico City	Dec. 5-11	3		Including municipalities in Federal District.
Palestine:				
Beisan	Dec. 21-27	1		
Haifa	Nov. 23-Dec. 13	5		
Jaffa	Nov. 23-Dec. 20	6		
Nazareth	Nov. 16-Dec. 20	7		
Peru:				
Arequipa	Dec. 1-31			Present.
Poland	Oct. 11-Nov. 13			Cases, 82; deaths, 8.
Rumania	Aug. 1-Sept. 30	72	3	
Russia	Aug. 1-31	1,156		
Tunisia	Oct. 1-20	3		
Union of South Africa	Oct. 1-30			Cases, 71; deaths, 8.
Cape Province	do	47	7	
Do	Nov. 14-Dec. 4			Outbreaks.
East London	Nov. 21-27	1		Native. Imported.
Natal	Oct. 1-31	1		
Orange Free State	do	22	1	
Transvaal	do	1		
Yugoslavia	Nov. 1-30	9		

YELLOW FEVER

Gold Coast	Aug. 1-31	7	2	
Senegal:				
Diourbel	Dec. 6	1	1	
Rufisque	Nov. 27	1	1	In European.
Upper Volta:				
Gaoua district	Oct. 25	2		