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NEWER METHODS OF CONTROLLING DIPHTHERIA.

The excellent results obtained by Park with routine Schick tests and the subsequent active immunization of susceptible individuals with toxin-antitoxin mixtures should lead to the wider use of these procedures for the administrative control of diphtheria. The attention of State and municipal health officers is therefore called to the article on page 1063 describing the outfits supplied by various manufacturers of biological products for making Schick tests and for actively immunizing with toxin-antitoxin mixtures. The widespread use of the procedures mentioned, especially where diphtheria is at all prevalent, would constitute a distinct advance in the present methods of controlling this disease.

WORK OF RED CROSS ORGANIZATIONS IN RELATION TO THE PREVENTIVE MEDICINE OF THE FUTURE.[1]

By Sir Arthur Newsholme, K. C. B.

It is difficult to give, as I am invited to do, in brief space and without the detailed reports of proceedings in which I took part, a clear conception of the conclusions reached at the extremely important International Conference of Red Cross Societies which was held in Cannes during April of this year.

I shall endeavor, however, to state the conception which gave rise to the conference and to give some of the conclusions reached by the experts in a number of departments of medicine on which are being based the initial steps for the organization of a new departure in Red Cross work.

It is unnecessary to remind actual Red Cross workers of the vast amount of beneficent work, rendered possible by the gifts of possibly half of the American population, which has been carried out by your agencies in the various belligerent countries. The record of saving of life, of alleviation of suffering, and, in other instances, of prevention of greater suffering is one calling for gratitude and congratulation. This work has been rendered possible by an unrivaled com-

[1] Address delivered at a meeting called by the American Red Cross, Washington, D. C., May 2, 1919.

bination of trained and of relatively untrained workers. The trained workers were indispensable; but without the invaluable assistance of intelligent previously untrained voluntary workers, a vast mass of suffering would have been left unalleviated and unrelieved.

This work, in the main, has been directed toward the healing of the sick and wounded, but not entirely so; for most interesting and valuable work has been done among the civilian population of the belligerent countries in providing medical assistance, in special work for the treatment of tuberculosis, in securing medical assistance and advice for mothers and their children, and in caring for those who have been rendered homeless by ruthless war. In America also, Dr. Clark informs me, around military camps in States in which public health administration is imperfect, an organization has been evolved, through cooperation between the Federal Public Health Service and the American Red Cross, by means of which territories about camps have been "cleaned up," the risks of malaria and other communicable diseases, including venereal diseases, have been minimized, a good milk supply has been assured, and elementary sanitation established. It is evident, therefore, that already the Red Cross, when local sanitary arrangements were imperfect or in abeyance, has taken upon itself the burden of the emergency preventive measures as well as of measures of relief.

In so doing it has acted wisely. Preventive work is always more productive in results than relief work. It is also more economical. It is wiser as well as more humane to erect a parapet along the top of a dangerous cliff than to provide an ambulance at its base.

I do not, however, wish to give countenance to the notion that prevention and treatment of disease must be regarded in antithesis. The two are parts of a whole and not distinct and separate. This may be illustrated by two of the most serious diseases to which humanity is subject, tuberculosis and syphilis. Of these, tuberculosis is probably the chief producer of dependent widows and orphans, while syphilis, on the authority of Sir William Osler, must be regarded as third among the killing diseases. For the prevention of both of these diseases treatment forms an indispensable measure. Every arrangement conducing to the comfort or recovery of the tuberculosis patient diminishes the risk of massive infection in his family; and the prompt treatment of syphilis by arsenobenzol preparations is the most effective means for securing the patient's immediate disinfection as well as his progress toward cure.

And even when the elementary personal infection is absent, it can be argued with justice that the prompt and efficient medical treatment and nursing of the sick not only diminish the duration of individual disability, but prevent the impoverishment and enfeeblement of other members of the same family.

But for an increasing proportion of the total sickness of humanity, total prevention is now possible, and I need scarcely cite the almost complete disappearance of typhus in western nations in peace time, the rapid decline of enteric fever, and the improvement in regard to a large number of other diseases. The number of preventable diseases is being steadily increased, as investigation progresses, and as our knowledge of the already ascertained laws of health increases and becomes disseminated among the general population.

It was, therefore, a happy inspiration of Mr. Davison, the president of the American Red Cross, which led to his calling together the international conference of Red Cross Societies at Cannes, with a view to considering means by which the world-wide activities of Red Cross workers might be utilized for the prevention of illness as well as for the treatment of sick and wounded mankind. It is a vision of the future, which, I think, will have a great influence on the welfare of mankind, if, as I am confident will be the case, the conception fires the souls of the multitude of Red Cross workers and contributors in every civilized country, and leads them to determine against demobilization of their forces and to continue their beneficent activities against the horrors of peace, which, in the aggregate, are even more serious to mankind than those of war.

The statement that the devastations produced by disease in times of peace are even greater than the loss of life from war, may be illustrated by the experience of England and Wales. In the four years, 1911–1914, immediately preceding the World War, 2,036,466 persons died in England and Wales, while, according to official figures, the total loss of men, during the four and one-fourth years of war, was 835,743, including 161,800 presumed dead. The war figures give the entire loss for the British Empire; but it can not be far from the truth to state that war on the gigantic scale of the war from which we have just emerged has killed in Great Britain about one-third as many as have died in the civilian population in a corresponding period. I do not lose sight of the fact that a large proportion of the civilian deaths occur in ripe old age, and that 28 per cent of the total civilian deaths occur among children under 5, while those destroyed by war are adults and the most virile of our race. But the greater part of the deaths in childhood, as well as in adult life, before old age is reached, are preventable; and in the future will be prevented, given adequate research, intelligent and unsparing application of knowledge already in our possession, and an avoidance of the public parsimony which in relation to public health constitutes the most serious form of extravagance. That is the ideal which Mr. Davison and his collaborators place before us; and it was to devise plans to this end and to enlist the continued cooperation of all Red Cross workers that the conference was called at Cannes.

The conference held a number of general meetings in which the general policy to be pursued was discussed, and then divided itself into sections dealing with the following subjects: Preventive medicine, child welfare, tuberculosis, malaria, venereal diseases, nursing, information, and statistics. These sections were not selected as covering the entire ground of preventive medicine, but as forming branches of work in which early investigation and action appeared to be most desirable.

But first of all the lines of general policy were discussed. It is evident that, although measures for the prevention of disease constitute a definite governmental function, neglect of which is treason to the communal welfare, even in the more advanced countries our governing bodies have not lived up to their potentialities. In scarcely a single sphere of its work can it be said of any government or of any local authority that what could be done to prevent disease and to avoid human suffering has been completely accomplished. To say this is merely to express the imperfections of humanity, singly, or the greater imperfections of committees and councils intrusted with the public purse and the public weal.

There is, and I think always will be, ample scope for supplementation of official work by voluntary workers, for the experimentation in new and promising work which it is so difficult to initiate in official circles, and for the undertaking of necessary work by devoted volunteers when public opinion and officialdom refuse to undertake it.

This disposes of the argument that Red Cross activities in the prevention of disease merely prevent the development of official work. The true object of all voluntary workers is to stimulate official public-health work, and, when in any sphere the latter is fully developed, to welcome the disappearance or reduction of voluntary nonofficial work, or seek the new means of social help which are always waiting for devoted workers to initiate.

The conference agreed that the new work of the Red Cross would naturally divide itself into two parts, an international bureau and national organizations. The duties of these and their relation to each other will be more clearly seen in the light of experience. The international bureau in the scheme proposed for the consideration of the conference, and which received general approval, would act as a great center for collecting information on various public-health subjects, and for digesting it and, subsequently, for distributing it by means of special publications, or periodical journals, or on application from those requiring specialized information. It would also act as a means of educating the general public on urgent problems affecting its welfare; and it would be utilized as a center, organizing in less favored communities missions which would undertake local investigations and remedial work. These surveys and activities

would be intended rather as demonstration centers than as permanent organizations, the intention being to withdraw them as soon as the necessary work could be carried on by local Red Cross or other organizations.

It was suggested that the central bureau should comprise a number of branches dealing with epidemic diseases, tuberculosis, venereal diseases, child welfare, nursing, and other subjects; collating and analyzing information and distributing it through the medium of the National Red Cross of each country.

Such a central bureau, it will, I think, be agreed, will be of the greatest value to all social and public-health workers, while not clashing with any existent agency.

The proposed organization of Red Cross agencies for preventive work has already received an imprimatur in the draft of the league of nations; and it would be appropriate that its headquarters should be near, if not side by side with, the future home of that league. If it receives the full development for which we hope, it will form, perhaps, a chief instrument in securing peace and continued happiness for mankind.

The relation of the central bureau to National Red Cross societies will be one of mutual cooperation. The central bureau will provide information and facilities for national work; the actual work will need to be carried out in each country nationally and in the main from funds supplied by that country.

It is not intended that the National Red Cross shall undertake, much less compete with, work already being carried out either by local authorities or by existing voluntary work. If, for instance, there is a society concerning itself with child welfare, or the prevention of tuberculosis, or of venereal diseases, the National Red Cross would naturally give such assistance as it could through its voluntary workers in this special work, while leaving untouched existing arrangements. If no such societies existed the National Red Cross might advantageously assist in their formation, retiring as soon as the separate organization was working.

In countries in which official and existent voluntary agencies scarcely exist, more active work of the Red Cross organization will be called for; in such countries assistance may be needed from the central international bureau.

Evidently there are many points of central and national administration requiring and now receiving fuller and more detailed information, and all that need now be said is that it appears to me certain that international and national Red Cross organizations which will concern themselves with the prevention of disease as well as with the relief of suffering will be formed, and that they will have great influence in hastening the reduction of human disease.

The second week's deliberations of the conference at Cannes were filled with meetings of committees of experts and more formal sectional meetings, at which lines of policy on certain specific subjects were formulated for the later deliberations of Red Cross societies in Geneva.

It is unnecessary to summarize in detail the scientific recommendations reached in various subjects. It may suffice, as indicating the wide scope of the field of work about to be surveyed, that among the more urgent problems of preventive medicine, priority was given to advocacy of combined efforts for the prevention of the major ills of mankind, of the provision of laboratory assistance in the diagnosis of disease, and of securing more accurate vital statistics and improvements in public-health legislation.

In child-welfare work, the importance of health visiting, of child-welfare centers, of an improved midwifery service, and of continuous observation of children under school age as well as of scholars was emphasized.

In regard to tuberculosis, stress was laid on the essential points that measure against this disease. The scope of this work must embrace the whole of the sick lifetime of the patient, and must include, when necessary, measures for obviating the results arising from the fact that the partially recovered patient commonly is unable to earn an economic wage.

In the prevention of venereal diseases a similarly wide outlook was advocated, including the necessary social and moral as well as medical measures against their spread.

In the preceding brief statement I have endeavored to indicate the main outlines of the proposals considered by the Cannes conference. My statements are merely those of a participant in the conference; and it is evident that outside of the momentous decision to endeavor to retain the forces of Red Cross organizations and to secure their assistance in the great impending struggle against disease no final decisions have been made. The growth of the central and of each of the national organizations in the desired direction must necessarily occupy time, though I believe development will be rapid once the great ideal is visualized clearly by Red Cross workers in each country.

I have referred in an earlier part of these remarks to the imperfections of governments, central and local, in the control of disease. These imperfections indicate one of the most promising fields in which voluntary agencies like the Red Cross can assist toward greater efficiency. Both local and central authorities are elected by the people themselves and the laws and regulations for the promotion of the public health—and what is even more important, the enforcement of existing regulations—depend for their efficiency

on public opinion which we can all assist in forming. The natural tendency on the part of the social enthusiast who has been disappointed in his efforts at reform is either to retire from the fight or to organize a voluntary organization having the same end in view. This last may sometimes be the best line to pursue, though in that case endeavor should be made to secure friendly relationship with, if not also the active cooperation of, the local authority. But often the most hopeful plan is to fight the local elections and to secure the election on local governing bodies of men and women who will give those bodies no peace until the necessary reforms are secured.

If we are to be helpful we must be kindly and charitable in our criticism of local authorities. Nothing has made it so difficult to secure good men and women to undertake the burden of local government as the undiscriminating and uncharitable criticism aimed at those engaged in it. Criticism of members of our central and local governing bodies is not seldom deserved; but critics are too often those who will give no assistance in the work which, with insufficient knowledge, they vilify. When we hear of scandal in administration, let us have a sense of proportion, remembering grosser corruption, evidenced for instance in Pepy's Diary, and especially remembering that the best way to remove corruption is by taking a part ourselves in the work of central or local government, or by steadily upholding those who are doing so with integrity.

The onlooker, whether it be on voluntary or on official work for the commercial good, has his duty to perform as well as the worker. It is his duty to make himself acquainted with local conditions and with local administrations, even though he takes no part in it. A chief need at the present time is an interested study by every adult of all the phases of local administration in each district; and in my view, Red Cross organizations will be rendering inestimable service to the community if they succeed in educating the public conscience to this effect. Increased local patriotism is urgently needed if the prospective fight against disease by the Red Cross societies is to succeed, and if the further triumphs of preventive medicine within our reach are to be secured. To this end enthusiasm will need to be infused into public health administration as well as into the work of voluntary agencies; and it is only by developing all the possbilities of our governing bodies as well as of voluntary societies and by securing the closest cooperation between the two that the new ideal of the Red Cross organization can be realized.

PUBLIC HEALTH SERVICE PROGRAM FOR NATION-WIDE CONTROL OF VENEREAL DISEASES.[1]

By C. C. PIERCE, Assistant Surgeon General, United States Public Health Service.

Due to the inadequacy of statistics, before our country entered the great world war, but few knew of the wide distribution of venereal diseases, and those few were mostly persons in the medical profession. However, when the United States took up arms against Germany, an opportunity was given to focus attention upon the necessity for an intensive campaign against the venereal infections. When the first call was made for men from all parts of the United States, the medical officers of the Army and Navy were enabled to make physical examinations of these men and to collect a great mass of statistics throughout the United States relating to the health status of both white and colored soldiers. Thus data were provided on which definite statements could be based in regard to the prevalence of these diseases, and the results were such as to bring the necessity for venereal disease control before the medical men of the Army and Navy, as well as other health authorities. The urgent need for some concerted action on the part of all the citizens of the United States to help eradicate the conditions existing was made convincingly apparent.

The Public Health Service immediately offered its cooperation to the various State boards of health in a campaign to control these diseases, suggesting the establishment in each State of a bureau of venereal diseases to have general supervision over all phases of this important work. The plan was to have an officer of the Public Health Service stationed in each of the various States for the purpose of cooperating with the State boards of health in establishing a fourfold work as follows:

1. Securing the reporting of venereal infections in accordance with State laws or State boards of health regulations.

2. Carrying on repressive measures, including the isolation and treatment in detention hospitals of infected persons who are unable or unwilling to take the necessary measures to prevent themselves from becoming a menace to others.

3. Establishment of free clinics for the treatment of venereal diseases, and extending the facilities for early diagnosis and treatment by providing proper laboratories to make exact diagnosis and examination to determine when patients might be released as noninfectious.

4. To carry on a general educational campaign to inform the public as well as infected individuals regarding the nature of these diseases and the manner in which they are spread.

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[1] Read at the meeting of the Alabama Medical Association at Mobile, Ala., Apr. 15, 1919.

On July 1, 1918, the President issued an Executive order placing all public health activities conducted by Federal agencies under the supervision of the Public Health Service. On July 9, Congress passed an act entitled "An Act Making appropriations for the support of the Army for the fiscal year ending June thirtieth, nineteen hundred and nineteen," under chapter 15 of which act, known as the Chamberlain-Kahn bill, there was created an Interdepartmental Social Hygiene Board and a Division of Venereal Diseases in the United States Public Health Service.

The Interdepartmental Social Hygiene Board is the agency charged with the disbursement of appropriations carried in this act of Congress, with the exception of $200,000 appropriated for the establishment and maintenance of the Division of Venereal Diseases in the Public Health Service.

In compliance with the President's order and the provisions of the above-mentioned act, the United States Public Health Service, through its Division of Venereal Diseases, is engaged in an active and thorough campaign against venereal diseases in civil communities throughout the United States, working through State boards of health and utilizing medical, educational, and law-enforcement measures.

Section 6 of the act provides for the allotment to State boards of health of $1,000,000 each year for two fiscal years, beginning with the fiscal year commencing July 1, 1918, for venereal disease control. This appropriation was divided pro rata among the States and the District of Columbia, and allotments were made to the States during the fiscal year beginning July 1, 1919, that agreed to comply with certain regulations promulgated by the Secretary of the Treasury. These regulations in brief are as follows:

1. The various States, in order to receive the sum to which they are entitled, must have a law or State board of health regulation requiring the reporting of all venereal diseases.

2. An officer of the Public Health Service shall be assigned to each State receiving an allotment for the general purpose of cooperating with the State health officer in supervising the venereal disease control work in the State.

3. Local or legislative funds that may be available shall be used by State or city health authorities having jurisdiction for extension of the work, and such funds must not be conserved through the expenditure of the funds that are allotted by Congress through the United States Public Health Service.

4. In extension of the educational measures the State's health authorities and its bureau of venereal diseases shall exert their efforts and influence for the organization of a State venereal disease committee for furthering the comprehensive plan for nation-wide venereal disease control.

5. The State health authorities shall take such measures as may be practicable for the purpose of securing such additional legislation as may be required for the development of control of the spread of venereal infections.

6. The State allotment shall be expended along general standard lines for all States and in accordance with an accounting system to be forwarded by the Interdepartmental Social Hygiene Board. This provides that 10 per cent shall be devoted to administration, 50 per cent to treatment, 20 per cent each to repressive measures and to educational measures. (This distribution is provisional and subject to modification after conference and agreement between each State and the United States Public Health Service to best meet the needs of the particular State.)

During the fiscal year beginning July 1, 1919, the payment of the State's allotment is conditioned upon the expenditure of a like amount by the State in the prevention of venereal diseases. It might be mentioned here that 18 States have already had the necessary laws passed to enable them to participate in the Federal funds.

The duties of the Division of Venereal Diseases, as specified by the law, are:

1. To study and investigate the cause, treatment, and method of prevention of venereal diseases.

2. To cooperate with State boards of health in carrying on measures to prevent the spread of venereal infections.

3. To promulgate and enforce interstate quarantine regulations governing the travel of venereally infected persons.

The Division of Venereal Diseases in the Bureau of the Public Health Service is adapting its activities during the present year very largely to the work of cooperation with State boards of health in instituting venereal disease control measures. At the venereal disease clinics maintained by the service in extra-cantonment zones, some opportunity is given to study and investigate the cause, treatment, and method of spread of venereal diseases, and in accordance with the third designated duty, regulations for interstate travel of venereally infected persons were promulgated by the Secretary of the Treasury on November 19, 1918. These regulations are known as Amendment No. 7 to Interstate Quarantine Regulations. The following is a brief summary of the regulations governing the travel of venereally infected persons:

Under section 1 of this amendment any person infected with syphilis, gonorrhea, or chancroid, who wishes to engage in interstate travel, must first obtain a permit in writing from the local health officer under whose jurisdiction he resides. This permit shall state that, in the opinion of the health officer, such travel is not dangerous to the public health. Section 2 requires that any person infected

with syphilis, gonorrhea, or chancroid, desiring to change his residence from one State to another, must first obtain his release, in writing, from the local health officer, and he shall inform the local health officer as to the place where he intends to reside. He shall agree in writing to report in person to the proper health officer having jurisdiction over the community to which he intends to move. In this manner, proper supervision to prevent the spread of venereal infections from one State to another will be made possible.

In the work of cooperating with the State boards of health the standardization of educational methods has received much attention, and educational measures have been developed through the preparation of literature, lectures, moving-picture films, lantern slides, exhibit cards, and placards advertising clinics.

The division is cooperating with the State boards of health and other State officials, as well as with unofficial organizations of allied purpose and good standing. It also works in close cooperation with the Surgeons General of the Army and Navy, with the Commissions on Training Camp Activities of the War and Navy Departments, and with the American Red Cross. In each State which accepts the cooperation of this division (44 States have already accepted their allotment), a commissioned officer of the Public Health Service is assigned for venereal disease control work for the State board of health; or a physician, selected by the State health authorities and approved and recommended for appointment by the Surgeon General of the United States Public Health Service, is appointed an acting assistant surgeon in the Public Health Service, and assigned for the general purpose of cooperating with the State health officer and supervising the work of venereal disease control in that State. He thus becomes the joint appointee and representative of both the State board of health and the Public Health Service; he shall report to both and shall carry out the wishes and policies of both. If any conflict become apparent, he shall report the same to both offices for adjustment. This officer is designated as the service representative of the State bureau of venereal diseases.

The following is a general outline of the policy of the State bureaus of venereal diseases, agreed upon by the Public Health Service and the various State boards of health:

It is the aim and purpose of the State bureau to reduce the prevalence of the venereal diseases as much and as rapidly as possible by the detection and treatment of all carriers not otherwise under treatment and by preventing the exposure of other persons to these infectious cases. There must therefore be a thorough campaign for prompt medical treatment, combined with the application of all measures that experience has shown to be helpful, such as education, law enforcement, and follow-up work. The moral problems which are involved are recognized as being very important, and all organiza-

tions, properly qualified to attack them, will be encouraged in every way possible. Every effort should be made to exercise the greatest intelligence, energy, and thoroughness in developing this extremely important work.

It is the purpose of the State venereal disease control officer to build up a strong State-wide organization that will become more and more self-sustaining as time goes on. The interest and support should be secured from the local board of health, the local medical profession, city officials, the local bar association, chambers of commerce, boards of trade, the press, religious bodies, women's clubs, educators, large employers of labor, labor organizations, hospital managements and boards, local district nursing organizations, local druggists' organizations, farmers' organizations in surrounding counties, and all other organizations interested in public health and social hygiene. Every opportunity should be taken to inform the public on the venereal disease problem and the means necessary for its solution. The hearty backing of the people of the State will make it possible to pass and enforce needed laws and ordinances, and to secure funds for clinics, hospitals, detention homes, and the necessary educational and law-enforcement work. Experience has proved that it frequently takes but a single meeting with the officials and leading citizens of a town to secure the funds necessary to organize a clinic and begin work.

Venereal clinics will be organized under the direct supervision of the State venereal disease control officer, who will forward to the Public Health Service all data relative to the establishment and operation of the clinics thus organized. These clinics should have a very close relation to the county health officer and the local medical profession, and to the community in general. The standards for venereal disease clinics are to be determined jointly by the State health officer and the State venereal disease control officer representing the Public Health Service. Instructions in regard to the operation of the approved venereal disease clinic have been furnished to all physicians in direct charge of a clinic being operated cooperatively by the Public Health Service and the various State boards of health. It is not believed necessary to explain in detail the methods outlined for the proper management of a venereal disease clinic. However, the work carried on includes treatment, educational measures, and social service follow-up work. At the time of the patient's first visit, he is given a circular of information regarding the serious nature of the venereal diseases and intended to impress the patient with the necessity of exercising the proper care to prevent the infection from being passed on to others.

In order to stress one of the most important phases of the venereal disease control work, particular attention is invited to the necessity for the prompt reporting of cases of venereal diseases by physicians to the State Board of Health. As physicians are required to report other communicable diseases, such as smallpox, typhoid, and scarlet fever, so can and should they report gonorrhea, syphilis, and chancroid. In attacking venereal diseases as a public health problem, the work is designed to be carried on as near as possible as it would be for any other communicable disease. It is known to the medical pro-

fession that these diseases are spread by certain causative organisms passing from an infected individual to a well person. When the cause of the disease is known and its method of spread can be recognized, the precautions to be taken to prevent spread may be developed.

One reason that venereal diseases have not in the past received the attention from health officers which their seriousness warrants, is that many complicated factors enter into the conditions favoring the spread of these infections. In the case of smallpox or malarial fever, there is no shame or moral stigma attached to the acquirement of the disease. But in the case of syphilis and gonorrhea, which spread very largely through illegitimate practices, there is usually a certain amount of moral stigma attached to their acquirement. However, if the health officers will not let the question be complicated by social, moral, and economic considerations, except as they have a direct bearing upon the subject, the actual control of those already infected can be successfully carried out.

In conclusion, it is desired to make mention of the splendid cooperation from various organizations which has been received by the Public Health Service in its program for the control of venereal diseases. When the work was first organized, an association of retail druggists representing about 8,000 of the 47,000 retail druggists of the United States offered its cooperation in this important work. A card was prepared, approved by the druggists' organization, and mailed out to druggists all over the United States, by the Public Health Service. This card was in the nature of an appeal to the druggists to support the venereal disease control work being carried on, by pledging themselves to discontinue the sale of venereal disease nostrums and also to refuse to prescribe remedies for the self-treatment of venereal diseases. The response to this appeal was most gratifying. The druggists not only agreed to cooperate in the manner indicated above, but also agreed to hand to each customer applying for a remedy ordinarily used for the self-treatment of venereal diseases, a circular advising the sufferer to seek competent professional service, either at the hands of a practicing physician or at one of the numerous venereal disease clinics established for the treatment of these cases. This action on the part of the druggists has resulted in increasing the number of persons applying to physicians for treatment of venereal diseases, and as some physicians do not care to treat venereal diseases, a circular letter has been issued by the Public Health Service to all of the physicians in the United States, asking that they carry out certain measures to assist in bringing venereally infected persons under proper treatment.

The physicians were also asked to cooperate with the State board of health authorities in promptly reporting their cases of venereal diseases as provided by law. The response on the part of the medical

profession of the United States has been most gratifying to the Bureau and to the State boards of health. As many physicians desired to help in this important public health work, the Public Health Service and various State boards of health have had reprinted a manual for the treatment of venereal diseases, first issued to the medical officers of the Army. This manual has been revised for civilian use, and a chapter on gonorrhea in women inserted therein. All physicians agreeing to cooperate with the service and State boards of health in the venereal disease control program are being furnished a copy of this manual, either from the Bureau or from their State board of health. This action on the part of the physicians of the country will have a very wholesome tendency toward standardizing the treatment of venereal diseases in accordance with the methods approved by the leading venereal disease experts of the country.

It was said, up to the first of the present year, that the people were not yet ready to support such a campaign as is now being carried on. Quite to the contrary, it has everywhere been found that the people are intensely interested in this problem; that they are astounded at the facts shown by the draft as to the prevalence of venereal diseases in the civilian population; and that they are now determined that the venereal diseases shall be checked and their great prevalence reduced as far as possible. The support of the people in this work is absolutely assured.

THE SALIVA IN PELLAGRA.

Attention is invited to the technical paper printed on page 1068 embodying the results of laboratory investigations carried on by the Public Health Service at its pellagra hospital in Spartanburg, S. C. This paper gives some interesting data on the character of the saliva in patients suffering from pellagra.

It is well known that in pellagra the condition of the mouth, and especially of the tongue, is of considerable significance in establishing a correct diagnosis. In true pellagra the tongue is vividly red and more or less swollen. The literature also speaks of salivation as a symptom of pellagra.

The very careful quantitative studies made in these investigations showed that, though there were cases of increased salivary flow, the salivation spoken of by the patients was often apparent rather than real and was seemingly due to some inhibition of swallowing combined with a peculiar, ropy change in the saliva which made its presence in the mouth more obvious. A tendency toward a greater quantity of solids in the saliva of pellagra patients was also observed.

The investigations indicate that the diastatic power of the saliva of pellagra patients is at least as great as that of normal people. In no case, whether the flow of saliva was scanty or very copious, was the diastatic power lacking.

While the amount of mucus precipitated from saliva by acetic acid was greater for the saliva of the pellagra patients than for the controls, the increase is apparently unrelated to the severity of the symptoms, either general or oral.

The study of the sulphocyanate content of the saliva disclosed that this is much less marked in the case of pellagra patients than it is in the saliva of normal people. Since it is generally admitted that the sulphocyanate arises from the metabolism of protein and the detoxicating action of the system, whereby poisonous cyanides are converted into the relatively innocuous sulphocyanate, the investigators believe that in the pellagra patients there is both a lessened protein intake and a detoxicating power feebler than normal.

The reaction of the saliva in pellagra is somewhat more alkaline than is that of normal saliva.

THE SCHICK TEST AND ACTIVE IMMUNIZATION AGAINST DIPHTHERIA.

One of the pioneers in the introduction of diphtheria antitoxin into this country, and in other measures for the administrative control of diphtheria, the New York City Health Department is taking steps to secure the adoption of two additional measures for the control of this disease, namely, the employment of the Schick test in order to discover susceptible individuals and the active immunization of such individuals by means of toxin-antitoxin mixtures.

In their WEEKLY BULLETIN of March 15, the New York authorities call attention to the fact that, although there has been a continuous reduction in the death rate from diphtheria, "the mortality from this disease is still much higher than it should be, when we consider the armamentarium at hand for preventive and curative work." In New York City, despite the excellent results of antitoxin treatment, diphtheria still causes over 1,000 deaths annually, approximately 20 per 100,000 population. Rates only a little less than this prevail in Rhode Island, Pennsylvania, Kentucky, North Carolina, Massachusetts, and Michigan.

As a result of extensive studies by means of the Schick test conducted under the direction of Dr. W. H. Park, mainly among the charges of various child-caring institutions, it has been found that

susceptibility to diphtheria is present in about the following proportions:

Age:	Per cent susceptible.
Under 3 months	15
3 to 6 months	30
6 months to 1 year	60
1 to 2 years	70
2 to 3 years	60
3 to 5 years	40
5 to 10 years	30
10 to 20 years	20
Over 20 years	15

THE SCHICK REACTION.

"The Schick reaction is a convenient and reliable clinical test, by which the antitoxic immunity of an individual to diphtheria can be determined. A fresh solution of diphtheria toxin is prepared for this purpose of such strength that 0.1 cc. or 0.2 cc. represents 1/50 of the minimum lethal dose of toxin for a 250-gram guinea pig. This amount is injected with a good syringe, preferably a 1 cc. 'Record' and a fine steel or platinum-iridium needle, *intracutaneously* on the flexor surface of the forearm or arm. A good guide for the insertion of the needle into the proper layer of the skin is to be able to see the oval opening of the needle through the superficial layers of the epidermis. A properly made injection is recognized by a distinct wheal-like elevation, which shows the prominent openings of the hair follicles. The result of the test should be read at the end of 24, 48, 72, and 96 hours.

"The reaction that appears at the site of injection may be either positive, negative, pseudo, or combined positive and pseudo.

"The *positive* reaction represents the action of an irritant toxin upon tissue cells that are not protected by antitoxin. It indicates, therefore, an absence of immunity to diphtheria. A trace of redness appears slowly at the site of injection in from 12 to 24 hours, and usually a distinct reaction in the course of 24 to 48 hours. The reaction reaches its height on the third or fourth day, and gradually disappears, leaving a definitely circumscribed scaling area of brownish pigmentation, which persists for 3 to 6 weeks. At its height the positive reaction consists of a circumscribed area of redness and slight infiltration, which measures from 1 to 2 cm. in diameter. The degree of redness and infiltration varies to a great extent with the relative susceptibility of the individual. The positive reaction is seen in about 7 to 10 per cent of the new-born, 30 per cent during the first year of life, 35 decreasing to 15 per cent between 2 and 14 years, and 10 per cent of adults.

"In the *negative* reaction the skin at the site of injection remains normal. The negative reaction definitively indicates an immunity to

diphtheria if the test-toxin is of full strength, has been freshly diluted, and the injection has been made into the proper layer of the skin. A negative reaction obtained in a child that has reached the age of 3 years indicates that it has an immunity which is probably permanent. Of 1,000 carefully observed individuals, not one developed clinical diphtheria, even though they were exposed to the disease, and some were carriers of virulent diphtheria bacilli.

"The *pseudo-reaction* represents a local anaphylactic response of the tissue cells to the protein substance of the autolyzed diphtheria bacilli, which is present in the toxic broth used for the test. Like other anaphylactic skin phenomena, the reaction is of an urticarial nature, appears early within 6 to 18 hours, reaches its height in 36 to 48 hours, and disappears on the third or fourth day, leaving a poorly defined small area of brownish pigmentation and generally no scaling. At its height the pseudo-reaction shows varying degrees of infiltration, and appears as a small central area of dusky redness with a second areola, which gradually shades off into the surrounding skin. The reaction may also have a rather uniform red appearance, and be two or three times the size of true reaction. A control test, made by injecting toxin heated to 75° C. for 5 minutes, gives a similar reaction which passes through the same clinical course. Individuals who give a pseudo-reaction only, have antitoxin and are immune to diphtheria. The false reaction is seen in relatively few of the older children, but in a much larger number of adults, in whom it is of importance to recognize and control it both by the injection of heated toxin and by observing the clinical course of the reaction.

"The *combined* reaction represents the positive and the pseudo-reaction in the same individual. The central area of redness is larger and better defined, the amount of infiltration is also more marked. The reaction is recognized by noting the evidence of a true reaction, a definitive area of scaling brownish pigmentation, after the pseudo-element has disappeared in the test. In addition, a similar though weaker reaction is obtained in a control test made with heated toxin. The control represents only the pseudo-reaction. The combined reaction indicates an absence of immunity to diphtheria.

"The Schick test is of practical value in determining the immunity to diphtheria of the public in general, but especially of the child population in schools, hospitals, institutions, and in homes during an outbreak of diphtheria. It will save a considerable amount of antitoxin and avoid unnecessary sensitization of more than 65 per cent of the exposed individuals. The test is also of distinct value in the active immunization of susceptible individuals against diph-

theria with mixtures of toxin-antitoxin, and in the diagnosis of clinically doubtful cases of diphtheria."—Text of a circular of information issued by the department of health, city of New York.

As supplied by most manufacturers, the Schick test outfit consists of a tube of diphtheria toxin and a vial containing a measured amount of sterile salt solution. By mixing the contents of the capillary tube with the saline a solution is obtained which is ready to be injected into the skin.

The following is the text of directions given by a manufacturer for the use of the Schick test outfit:

"Break off one end of the capillary tube, push the broken end carefully through the neck of the rubber bulb until it punctures the diaphragm within and enters the cavity of the bulb; then break off the other end of the tube. Hold the bulb between thumb and middle finger, place the index finger over the opening in the larger end of the bulb and expel the toxin into the 10 cc. of saline. Rinse out the capillary tube by drawing up saline several times, then cork the bottle and shake the diluted toxin. Inject 0.1 cc. or 0.2 cc., representing 1/50 M. L. D. for the guinea pig, *intracutaneously* on the flexor surface of the forearm or arm. The contents of the bottle are sufficient for about 35 tests. On account of the fairly rapid deterioration, it is not advisable to use the diluted toxin after 12 to 24 hours. The outfit must be kept very cold to prevent deterioration.

"A uniform technique in the intracutaneous injection is essential in the Schick test. A good guide for the insertion of the needle into the proper layer of the epidermis is to be able to see the oval opening of the needle through the superficial layers of cells. A definite wheal-like elevation, with the distinct markings of the openings of the hair follicles, shows that the injection has been made properly and that the fluid is confined to a small area of the epidermis. Here it will exert its irritant action, if the individual tested is not immune to diphtheria.

"Syringes and needles: Preferably a 1 cc. 'Record' tuberculin syringe and a fine platinum-iridium or steel needle. An ordinary hypodermic syringe with a fine steel needle may be used in emergencies."

ACTIVE IMMUNIZATION.

After discovering susceptible individuals by means of the Schick test, the question at once arises as to how best to immunize these individuals. The protection afforded by injections of diphtheria antitoxin is of very short duration, three or four weeks being the usual period. Far more lasting is the protection afforded by active immunization. During the past three years Park and his coworkers have employed active immunization with toxin-antitoxin mixtures in the case of over 4,000 susceptibles (including 1,000 infants under 1 week old), without the subsequent occurrence of a single case of

diphtheria. Park summarizes his observations as to the value of this active immunization as follows:

The procedure is absolutely harmless. No reaction develops in infants, while in older children and adults a moderate swelling of the arm may appear and last for from one to three days.

One injection gives immunity to 80 per cent of those previously susceptible; two injections give immunity to 90 per cent; and three injections to 97 per cent.

The immunity conferred lasts for at least three years and probably much longer.

No diphtheria has occurred in those so far immunized.

In order to facilitate active immunization by practicing physicians, several establishments making biological products put up small vials containing a mixture of diphtheria toxin-antitoxin. This mixture is used undiluted. The dose is 1 cc. injected subcutaneously in the arm at the insertion of the deltoid. The injection is repeated at weekly intervals until three injections have been given. For children under 1 year of age the dose is 0.5 cc. In the younger children the local and constitutional symptoms following the injections of toxin-antitoxin are much less marked than in older children and adults. The difference is due to a greater susceptibility of the older children to the diphtheria bacillus protein, which is present in the mixture of toxin-antitoxin.

Determining the Effect of Active Immunization.

The development of an active immunity is determined at the end of three months by means of the Schick test. It has been found that the development of antitoxin in many individuals is often a slow process requiring from 8 to 12 weeks before a sufficient amount is produced to inhibit the Schick reaction. The number of successfully immunized individuals who will show a negative Schick retest after three injections of toxin-antitoxin will be, in different groups, from 90 to 99 per cent.

Indications for Active Immunization with Toxin-Antitoxin.

The use of toxin-antitoxin for active immunization may be considered under two heads.

1. *As a general prophylactic measure.*—The most suitable age period for testing and immunizing is between 6 months and 2 years. At this time of life the percentage of positive Schick reactions is largest and the susceptibility to diphtheria as well as the mortality from the disease is greatest. Children of this age period can be reached in the homes, in infant asylums, in the milk stations, and day nurseries. The children of the next age period are included in the preschool groups. These children can be reached in the public

schools, in orphan asylums, and in the various other institutions. Among adults, those who come in contact with diphtheria and are constantly exposed and in danger should also be tested and immunized with toxin-antitoxin if found to give a positive Schick reaction. Included in this group are especially physicians, nurses, and hospital attendants in contagious disease hospitals.

2. *To control an outbreak of diphtheria.*—As the immunity arising from an injection of toxin-antitoxin does not develop until the lapse of from 2 to 12 weeks, active immunization can not be utilized to protect persons from exposure within that period. In institutions, however, where small outbreaks of diphtheria have occurred, or where diphtheria is more or less constantly present and clinical cases and bacillus carriers steadily appear, the use of antitoxin alone has often been insufficient to stamp out the disease, but the combined application of the Schick test and active immunization with toxin-antitoxin has given successful and encouraging results. Toxin-antitoxin immunization should not be used with antitoxin immunization in the same individual, as the surplus antitoxin tends to prevent the development of an active immunity.

BIOCHEMICAL STUDIES OF THE SALIVA IN PELLAGRA.

By M. X. Sullivan, Biochemist, and K. K. Jones, Food Analyst, Pellagra Hospital, United States Public Health Service, Spartanburg, S. C.

It is well established that in pellagra the alimentary tract is involved. Of the digestive tract, the oral cavity is of considerable importance in the diagnosis of pellagra, since the condition of the tongue is of much significance. The true pellagra tongue is vividly red and more or less swollen. Other parts of the oral cavity are likewise involved.

Since the oral cavity is of importance in the diagnosis of pellagra, a reconnoissance survey of the mixed saliva of individual pellagrins was started to determine wherein, if at all, the saliva, from a biochemical standpoint, differs from that of normal individuals. The study of the saliva included the rate of flow, the specific gravity, the total solids, the ash, the diastatic power, mucin, sulphocyanate, and abnormal constituents such as urea, uric acid, phenols, and indican.

The patients were inmates of the pellagra hospital of the United States Public Health Service at Spartanburg, S. C. Cases of pellagra reported by the medical staff as uncomplicated were taken for study. The work began April 12, 1917, and continued to June 19, and covered all practically uncomplicated cases of pellagra in the hospital during that period. During the time the saliva study was going on, only six of the patients, cases 294, 297, 303, 325, 327, and 338 were

considered severe cases of pellagra; the rest were mild cases, or were improving rapidly. The patients were on a fixed ration, and the actual consumption within the ration was carefully recorded from day to day. Barring complicating ailments, the treatment in the hospital was altogether dietary.

With one or two exceptions where special diets were used, the rations employed were diets F, G, or B. On admission, the patients, as a rule, were placed on diet G or F and, subsequently, on diet B. These diets were as follows:

Food.	Diet F.	Diet G.	Diet B.	Food.	Diet F.	Diet G.	Diet B.
	Grams.	*Grams.*	*Grams.*		*Grams.*	*Grams.*	*Grams.*
Beef	100	100	100	Grits	50	50	.....
Milk	cc. 400	cc. 400	cc. 1,000	Turnip tops, spinach, collards, or cabbage	50	50	.....
Egg	.....	.....	100	Beets or turnips	50	50	.....
Ham	25	25	.....	Prunes or apples	60	50	50
Wheat bread	300	300	300	Black-eyed field pea	50	.....	.....
Butter	45	45	45	Pork fat	20	.....	.....
Orange juice	cc. 50	cc. 50	cc. 50	Sugar	20	20	20
Irish potato	100	100	150	Coffee	cc. 150	cc. 150	cc. 150
Mush	50	50	50				

When possible, the saliva was collected shortly after the patient had entered the hospital, and then once or twice a week until June 19. In some cases considerable time elapsed between the admission of the patient and the taking of the first sample of saliva. This delay was due either to the patient's condition or to the nondetermination as to whether or not there were complicating ailments. Three of the hospital staff served as controls.

The rate of flow was determined by the time (in minutes) required to deliver 50 cc. of saliva; the total solids by drying to constant weight at 100° C.; the ash, in the customary way, in platinum; the mucin, by precipitating with 1 per cent acetic acid; the sulphocyanate, by 5 per cent ferric chloride and 1 per cent hydrochloric acid in the spot plate and in test tubes, and in selected cases by the Rupp and Schied,[1] Thiel,[2] iodometric method; phenol and uric acid by Folin and Denis's[3] phenol and uric acid reagents; indican by means of Obermayer's reagent; the diastatic power by determining gravimetrically by Fehling's solution, the sugar formed by 1 cc. of saliva acting on 25 cc. of a 1 per cent starch paste at 50° C. for 15 minutes. In view of the fact that Hunter, Givens, and Lewis[4] found that 52 per cent of the patients studied by them showed an entire absence of free HCl in the gastric contents, the question as to whether or not the diastatic power of the saliva was lacking became of greater interest.

[1] Berichte d. d. chem. Gesell. XXXV, 2191, 1902.
[2] Ibidem, 2766.
[3] Jour. Biol. Chem. 12, 239, 1912.
[4] Bull. 102, Part II. Hygienic Laboratory, U. S. P. H. S., Treasury Department, 1916.

Rate of flow.

The rate of flow was determined under the stimulus of chewing paraffin. In order to avoid any effect that the taking of food might have on the rate or the constituents of the saliva, all collections were made between 10 and 11 a. m., or from three to three and one-half hours after breakfast and from one to two hours before the midday meal. Before beginning the collection of the saliva, the mouth and teeth were washed with a small amount of water and also with the first few cc. of saliva formed under the stimulus of chewing paraffin. The rate of flow was found to vary greatly from individual to individual, and even in the same individual from time to time.

Leaving out of consideration case 296, who had a very scanty flow—practically none—the rate of flow of 38 hospital patients at the start of the testing varied from 10 to 126 minutes, with an average of 29.9 minutes. Leaving out case 525, who was in a weak condition, and required 63 minutes to give 25 cc., or 126 minutes (estimated) to give 50 cc., the average for 37 patients for the first test made in each case was 27.4 minutes. Of the 13 cases under study for at least three weeks, with more or less improvement in general health, the rate of flow varied from 13 to 39 minutes for 50 cc., with an average of 26.5 minutes. The rate of flow of eight normal people, as determined by 57 tests, made from 1 to 17 times on the individual, was found to vary from 14 to 50 minutes, with an average of 26.6 minutes.

The pellagrins may be grouped into two classes: (*a*) Those who had more or less soreness of the mouth and tongue at the time the first test was made, and (*b*) those who, irrespective of a previous history of such symptoms, had no mouth symptoms at the time of testing. In the 15 cases with mouth symptoms, the rate varied from 10 to 35 minutes, with an average of 21.7 minutes. In the 23 cases with no mouth symptoms, the rate varied from 15 to 126 minutes, with an average of 35.2 minutes. Four of the cases with definite tongue and mouth symptoms (cases 297, 300, 323, and 332) gave 50 cc. in 10, 12, 12, and 14 minutes, respectively. One case, number 298, with no history of mouth symptoms, gave 50 cc. of a grayish, viscous saliva in 15 minutes. In general, however, it would seem that the quantity of saliva secreted is increased at the time the tongue and mouth are involved. The relation between the rapid rate of flow and soreness of the tongue and mouth is brought out clearly by case 303. On April 20, one day after admission to the hospital, the tongue, though thickened, was not sore; nor was the mouth. The rate of flow was 27 minutes. On May 1 and May 4, the tongue was red and sore, and the rate of flow was 13 minutes and 15 minutes, respectively. On June 5, the tongue was normal and the rate was 22 minutes for 50 cc. The connection between a sore, over-red tongue and the rate of

flow is not as definite, however, as it might be, for cases were found (such as case 300) where the rapid rate of flow persisted long after the mouth symptoms had disappeared. Again, the patient may have tongue and mouth symptoms with a fairly slow rate of flow, as obtained in cases 294 and 327 where 35 and 34 minutes, respectively, were required to deliver 50 cc. Leaving out the four cases with mouth symptoms and very rapid flow, the average for the other 11 cases with sore mouth was 25.3 minutes for 50 cc.

Considering the great variation in the flow of the saliva in normal people, the study of the salivary flow in the cases of pellagra at this hospital simply warrants the conclusion that, in general, the rate of flow of the cases studied varies on the whole within normal limits. In occasional cases, with mouth symptoms, the flow may be abnormally fast. In other cases, it may be abnormally slow.

The saliva of many of the pellagrins was more turbid, more ropy, and more viscous than that of the controls—suggestive of sympathetic saliva described by Schulz.[1] With improvement in the general condition of the patient, the ropy, or viscous quality of the mixed saliva became less marked. Since the rate of flow as determined by the time to give a definite amount of saliva did not agree with the patient's belief that there was an increased amount of saliva in the mouth or with the observer's judgment on this point from the amount of spitting made by the patient, the conclusion must be drawn that the salivation spoken of in the literature as occurring in pellagra is not always a true salivation with a greater volume of saliva, but, rather, is often an apparent salivation due to some inhibition of swallowing combined with a physical change in the saliva from a nonropy, or slightly ropy, thin flowing type such as occurs in normal people to a more ropy kind which makes the presence of saliva in the buccal cavity more obvious.

The Specific Gravity of the Mixed Saliva in Pellagra.

According to Hammarsten and Hedin,[2] the specific gravity of mixed saliva varies from 1.002 to 1.008. According to Fleckseder[3] the clear saliva varies from 1.0025 to 1.004. The specific gravity of the unfiltered saliva of the controls as determined here by means of a Boot vacuum space specific gravity bottle was found to vary from 1.0019 to 1.0039, with an average for a month's testing of 1.0029. The determination of the specific gravity was made immediately after the saliva was collected.

The variation for 22 cases of pellagra in which the specific gravity was determined was from 1.0024 to 1.0078 with an average for all

[1] C. Oppenheimer. Handbuch der Biochemie des Menschen und der Tiere. III, I, 44, 1910.
[2] A Textbook of Physiological Chemistry, 8th ed., translated by Mandel, 1915, 455.
[3] Zeitschrift f. Heilkunde, Abtheil f. interne Medizin 7, 230, 1906.

determinations of 1.004. As compared with the controls, the specific gravity of the saliva of pellagrins tends to be slightly higher, but still within normal limits.

The Total Solids of the Saliva in Pellagra.

The dry matter of mixed human saliva, according to Schulz[1] varies from 0.5 to 1 per cent or between 5 and 10 parts per thousand. The average of the first determination for the controls was 4.79 parts per thousand. The average of the first determinations for the pellagrins was 6.79 parts per thousand. The average for those with mouth symptoms was 6.70 parts per thousand; of those without mouth symptoms, 6.88 parts per thousand. The average of three controls for 16 distinct sets of analyses over a period of two months was 5.05 parts per thousand; of 22 pellagrins, 6,67 parts per thousand. The total solids of the saliva of four pellagrins were the same as, or only slightly above, that of the three controls. Of the other 18 cases the average total solids were 6.97 parts per thousand. The saliva of pellagrins, then, had a tendency toward a greater quantity of total solids than the saliva of the controls had. From the beginning of the experiment to the end no rule was observed in the increase, or decrease, in the total solids, so food changes played little part.

The Ash of the Saliva.

The ash of the controls at the beginning of the experiment was 2.4, 2, and 2.3 parts per thousand. The ash of one pellagrin who had been in the hospital four months and showed but slight, if any, evidence of pellagra, was 2.3 parts per thousand. Three other of the pellagrins showed 2.4, 2.4, and 2.6 parts per thousand, respectively. In the other 18 cases of pellagra studied in the hospital, the ash was higher than it was in the controls, and varied from 3.2 to 5.1, with an average of 3.63 parts per thousand. Taking all cases, the average of the first determination is practically the same for those with mouth symptoms as for those without—3.4 and 3.25 parts per thousand, respectively. Throughout the experiment the saliva of the hospital patients tended to have a higher ash content than the saliva of the controls. The average of the controls for 13–14 determinations over a period of two months was 2.68 parts per thousand. The individual averages of the pellagrins in from 3 to 11 determinations varied from 2.31 to 4.75 parts per thousand, with a general average of 3.48 parts per thousand.

Organic Matter of the Saliva.

The difference between the total solids and ash was called organic matter. The variation in the controls for the first determination was from 2.19 to 2.97 parts per thousand, with an average of 2.69. The organic matter of the saliva of 22 pellagrins in the first determination

[1] Handbuch der Biochemie des Meuschen und der Tiere. Oppenheimer 111, Theil 1, 27, 1910.

varied from 1.63 to 5.72 parts per thousand, with an average of 3.39. The average of all determinations during the two months was 2.37 parts per thousand for the controls, 3.19 parts per thousand for the hospital patients.

The Diastatic Power of the Saliva in Pellagra.

The diastatic power was measured by determining the quantity of sugar formed by 1 cc. of natural mixed saliva acting upon 25 cc. of starch paste for 14 minutes. The starch paste was made by stirring cornstarch with cold water, adding the mixture to boiling water while stirring, boiling for two minutes, and cooling in an ice box for a time and then at room temperature. Then the volume was made such that 100 cc. of the paste contained 1 gram of starch.

Evans [1] considers that for salivary amylase the optimum concentration of starch is about 3 per cent and the optimum temperature 46° C. The reaction, he says, comes to equilibrium when 81 per cent of the starch has been converted to maltose. Kjeldahl, referred to and verified by Fleckseder,[2] found that with 0.5 to 2 cc. of saliva acting on 100 cc. of a 1 per cent starch paste for 15 minutes, the amount of reducing sugar formed is directly proportional to the amount of active amylase. According to Slosse and Limbosch [3] the rate of digestion by ptyalin increases from 40° C. to 58° C., and then rapidly falls off. At 70° C. it is stopped altogether.

In our work 25 cc. of freshly made starch paste were placed in a 50 cc. beaker and brought to 50° C. in a water bath maintained at that temperature. Six beakers properly labeled with the case number or name were placed in the bath at a set. When the desired temperature, 50° C., had been secured, 1 cc. of the respective saliva was added at intervals of one minute. At the end of 14 minutes' digestion each beaker was placed on a hot plate and the contents of the beaker were brought rapidly to approximately 85° C. to destroy the sugar-forming enzyme. Precautions were taken to keep the conditions the same for each and every case. The digestion mixtures were allowed to cool and were then filtered through paper. The paper was then thoroughly washed and the volume of the filtrate and washings brought to exactly 50 cc. in volumetric flasks. The reducing power of 10 cc. of the solution was estimated gravimetrically, using Soxhlet's modification of Fehling's solution, with attention paid to details of preparation of solutions, asbestos mats, and time of boiling, as given in Bulletin 107 (revised), United States Department of Agriculture, 1908, pages 42, 241, and 242. The solutions of copper and alkaline tartrate were filtered through well-treated asbestos until clear, and were always freshly made. Fifteen cc. of the mixed

[1] J. Physiol. 44, 191, 1912.
[2] Zeitschr. f. Heilkunde, Abtheil. f. interne Medizin. 7, 242, 1906.
[3] Arch. intern. Physiol. 6, 635; C. A. 2, 3238, 1908.

Fehling's solution were diluted to 30 cc., 10 cc. of the solution under examination added, the mixture brought to boiling in four minutes, boiled for two additional minutes, and filtered hot. The agreement between duplicates was close.

With these precautions the gravimetric Fehling method was found to give exact analysis with 1 per cent c. p. dextrose solution. The reducing power of 1 cc. of saliva was found to be negligible. Twenty-five cc. of the starch paste was treated in the same way as the saliva starch-paste mixture, and the reducing power of the clear filtrate determined. The reducing power of the 25 cc. of starch paste varied from 0 to 0.010, with an average of 0.002 grams of Cu_2O.

The results given in Table I in terms of cuprous oxide precipitated from the Fehling's solution show that there is great variation in the diastatic power from individual to individual and in the same individual from time to time. In this respect the controls vary as well as the pellagrins. The conclusion can be drawn, however, that the diastatic power of the saliva of pellagrins is at least as great as that of normal people. Mouth symptoms, such as sore or highly reddened tongue, or burning in the buccal cavity, cause no consistent variation in the diastatic power of the saliva. In no case, whether the flow was very scanty or very copious, was the diastatic power lacking.

TABLE I.—*Diastatic power of 1 cc. of saliva in mgs. of Cu_2O.*

Case.	Date admitted.	Condition at start of experiment.	Date of test.									Average.
			Apr. 12.	Apr. 16.	Apr. 20.	Apr. 24.	May 8.	May 22.	May 29.	June 5.	June 19.	
Control 1			172	98	182	137	121	143	148	.....	113	139.3
Control 2			148	135	187	133	168	157	173	140	160	155.6
Control 3			172	286	185	129	149	150	159	130	.....	170.0
270	Oct. 25, 1916	Mild	158	203	.....	.....	.....	.....	.....	.....	.....	180.5
281	Dec. 5, 1916	.....do	168	203	203	149	166	182	196	121	.....	174.0
294	Apr. 3, 1917	Severe; sl. M. S.[1]	177	162	183	.....	.....	.....	.....	.....	.....	174.0
297	Apr. 11, 1917	Severe; M. M. S.[2]	147	175	165	161	134	79	.....	.....	.....	143.5
298	Apr. 12, 1917	Mild	.....	191	179	250	154	176	.....	.....	.....	190.0
303	Apr. 19, 1917	Severe; M. M. S.[2]	.....	.....	181	153	170	150	130	111	.....	149.2
301	Apr. 16, 1917	Mild	.....	.....	199	180	181	195	.....	.....	.....	188.8
300	.....do.....	Mild; sl. M. S.[1]	.....	.....	.....	162	145	183	.....	144	143	155.4
307	Apr. 25, 1917	Mild	.....	.....	.....	.....	176	184	177	101	.....	159.5
313	May 2, 1917	.....do	.....	.....	.....	.....	.....	204	126	89	.....	139.7
302	Apr. 18, 1917	.....do	.....	.....	.....	.....	.....	197	156	.....	.....	176.5
304	Apr. 20, 1917	.....do	.....	.....	.....	.....	.....	166	.....	.....	.....	166.0
318	May 2, 1917	.....do	.....	.....	.....	.....	.....	182	164	135	157	159.5
312	May 1, 1917	.....do	.....	.....	.....	.....	.....	237	244	228	121	207.5
309	Apr. 30, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	218	179	159	.....	185.3
299	Apr. 13, 1917	Mild	.....	.....	.....	.....	.....	211	150	175	.....	178.7
319	May 12, 1917	.....do	.....	.....	.....	.....	.....	221	157	151	156	171.3
323	May 22, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	213	83	114	116	131.5
327	May 27, 1917	Severe; M. M. S.[2]	.....	.....	.....	.....	.....	.....	158	164	148	156.7
325	May 26, 1917	Severe; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	175	180	.....	177.5
326	May 27, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	197	.....	.....	197.0
324	May 24, 1917	Mod.; M. M. S.[2]	.....	.....	.....	.....	.....	.....	163	206	91	153.3
332	June 4, 1917	Marked; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	.....	215	124	169.5
330	June 2, 1917	Mild	.....	.....	.....	.....	.....	.....	.....	.....	169	169.0
339	June 15, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	.....	.....	134	134.0
329	June 1, 1917	Mild	.....	.....	.....	.....	.....	.....	.....	.....	139	139.0
331	June 4, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	.....	.....	147	147.0
322	May 20, 1917	Mild	.....	.....	.....	.....	.....	.....	.....	.....	154	154.0
333	June 6, 1917	Mild; sl. M. S.[1]	.....	.....	.....	.....	.....	.....	.....	.....	147	147.0
338	June 13, 1917	Severe; M. M. S.[2]	.....	.....	.....	.....	.....	.....	.....	.....	178	178.0

[1] Sl. M. S.—slight mouth symptoms. [2] M. M. S.—marked mouth symptoms.

Simon,[1] using Violette's modification of Fehling's solution, found the salivary diastatic power lessened in cachetic and infectious diseases, and concluded that the diastatic activity of the saliva is decreased in disease. Salkowski,[2] referred to by Simon, found an increased diastatic power in a case of angina tonsillaris catarrhalis and also in salivation by mercury. Hatta[3] concluded that the salivary diastase did not seem to be directly influenced by the kind of food, and that it showed no characteristic fluctuation in any of the diseases studied. Purjesz,[4] likewise, could find no definite relationship between the amylolytic power of the saliva and diseased conditions outside the oral cavity. In pellagra, certainly, as judged by the hospital patients, it would seem that the diastatic power varies little from that of normal people. A number of the pellagrins gave a history of a relatively low protein, high carbohydrate diet on entrance to the hospital. The change to a relatively high protein diet in the hospital produced no consistent change in the rate of salivary digestion *in vitro*. This finding is an agreement with that of Carlson and Crittenden,[5] who found no evidence that, in man, even years of exclusion of meats and greatly increased carbohydrate in the food would appreciably increase the ptyalin concentration.

Mucin.

In the beginning of the saliva study mucin was precipitated by pouring 25 cc. of saliva into 100 cc. of 95 per cent alcohol. This method, however, was abandoned because it was concluded that the alcohol precipitated other matter than mucin. Accordingly, about three weeks after the start of the study of the saliva, mucin was precipitated by adding 25 cc. of saliva to 50 cc. of 1 per cent acetic acid. The average mucin precipitated from the saliva of three controls by this method varied in 9 to 10 determinations from 84.4 to 104.8 mgs. per 100 cc. with a general average of 91.7 mgs. The average mucin of the saliva of 21 hospital patients varied from 68 to 202 mgs. per 100 cc. with an average of 126 mgs. Only four of the cases were classed as severe cases of pellagra. Of these severe cases the mucin averaged 109.6 mgs. per 100 cc.

When the pellagrins were grouped into those who at the start of the testing, or during it, had some soreness of the mouth and tongue, and those who showed no mouth symptoms, it was found that the former group averaged 115.3 mgs. per 100 cc., while the latter averaged 132.4 mgs. The mucin precipitated from saliva by dilute acetic acid is, then, greater for the saliva of pellagrins than for the controls, but the increased amount of mucin is not tied up with the severity of the general pellagra symptoms or with the mouth symptoms.

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[1] J. Physiol. path. gén. 9, 261, 1907.
[2] Virchow's Archiv. CIX, 35, 1887.
[3] Jour. Amer. Med. Assoc. 66, 930, 1916.
[4] Wien. klin. Wochschr. 26, 1307, 1914.
[5] Proc. Soc. Exp. Biol. Med. 7, 52, 1909-10.

Sulphocyanates.

Sulphocyanate is an almost constant constituent of human saliva. In starting the study of the sulphocyanates, it was intended to make use of the iodometric method utilized by Rupp and Schied [1] and improved by Thiel,[2] a quantitative method which Gies and his collaborators[3] found very satisfactory. On making qualitative tests with the salivas with ferric chloride, followed by dilute hydrochloric acid, it was found that the saliva of normal people gave a striking pink or blood-red color with the reagents, while the saliva of the pellagra patients gave a slight yellow, or barely perceptible shade of pink.

The striking contrast of the saliva of pellagrins with that of normal people in the reaction with the ferric chloride brought us to the conclusion that this test would allow us to test out the sulphocyanate reaction in a great many cases and to decide definitely whether or not sulphocyanate is, in general, decreased in pellagra. By the ferric-chloride hydrochloric-acid test on the spot plate the senior author found it possible to detect very readily the presence of 0.4 mgs. of potassium sulphocyanate in 100 cc. of distilled water or saliva, so that it is certain that a saliva which gives no reddish shade of color with the ferric chloride and hydrochloric acid on the spot plate has less than 0.0004 per cent of sulphocyanate calculated as potassium sulphocyanate.

By means of test tubes and color comparison with water, ferric chloride, and hydrochloric acid, 0.000025 per cent or one part of potassium sulphocyanate can be detected in 4,000,000 parts of distilled water, as Perlzweig and Gies [4] claim.

It was intended to make as many tests as possible with the qualitative and roughly quantitative ferric chloride and hydrochloric acid reagents to determine whether or not the saliva of pellagrins is predominantly lacking in sulphocyanate as compared with nonpellagrins and then to utilize the precise Rupp-Schied-Thiel method to make a quantitative expression of the difference between the saliva of pellagrins and that of normal people. As stated above, however, the contrast between the reaction of the saliva of pellagrins and that of normal people was found so striking that the ferric chloride-hydrochloric acid test alone was employed for the comparison.[5]

A small amount of fresh saliva was placed in the cup of a porcelain spot plate, a drop or two of 5 per cent ferric chloride added, the mixture stirred with a drop or two of 2 per cent hydrochloric acid. Ferric chloride gives a red color with a number of substances, such as formic,

[1] Berichte d. d. chem. Gesell. XXXV, 2191, 1902.

[2] Ibidem. 2766.

[3] Gies and Kahn, Dental Cosmos LV, 40, 1913. Gies, Lieb, and Kahn, Ibidem. LVI, 175, 1914.

[4] Biochem. Bull. IV, 206, 1915.

[5] In a number of cases studied subsequently to the work detailed herein, the Rupp-Schied-Thiel method was used, and although the patients were well on the road to recovery and some were about to be discharged, the sulphocyanate content of the saliva was found, in general, less than in normal people.

acetic, diacetic, and certain phenolic acids, but not in acid solutions. Large amounts of organic acids, such as tartaric and lactic, may obscure the reaction with ferric chloride, but not small quantities in the presence of hydrochloric acid. To put it briefly, nothing other than sulphocyanate, which gives the red color with ferric chloride in the presence of hydrochloric acid, has ever been found in normal or pathological saliva. The addition of hydrochloric acid is necessary also, because, as found by the senior author, occasionally a saliva is found which will give no sulphocyanate color with ferric chloride until hydrochloric acid is added.

In addition to the spot-plate method, the reaction with ferric chloride and hydrochloric acid was performed in small beakers and small test tubes. The test-tube method is the most delicate. By arranging a series of tubes containing from 200 parts per million to 1 part per million of potassium sulphocyanate, in gradations of 10 down to 10 parts per million and in gradations of 2 down from 10 parts to 1 part per million, the test can be made a rapid and, approximately, a quantitative test. The spot plate gives an idea of the standards to be used. To 5 cc. of several standards and to 5 cc. of the saliva, 0.5 cc. of a 5 per cent ferric chloride solution and 0.5 cc. of 1 per cent hydrochloric acid are added. By comparison with the standard sulphocyanate colors so developed, an approximate determination of the sulphocyanate calculated as the potassium salt can be arrived at.

Of 40 cases of pellagra, tested in the hospital, 32 gave no perceptible pink or red color with ferric chloride with or without the addition of hydrochloric acid; 4 gave only a faintly positive test such as given by 10 parts per million of sulphocyanate; and 4 gave a decidedly positive test varying, as judged by potassium sulphocyanate standards, from 20 parts per million to 90 parts per million. Of the patients giving a strong, positive reaction for sulphocyanate, cases 329 and 330 were mild cases of pellagra in well-nourished condition; case 322 had been in the hospital one month before the test was made, and was in good condition; while case 519 was a residual case of strong physique.

Of 50 normal people tested, male and female, black and white, members of the hospital staff, attendants, and visitors to the hospital, 46 were decidedly positive. Compared under similar conditions with freshly made standard colors, representing known concentrations of potassium sulphocyanate, the variation of the sulphocyanate of the saliva of 10 normals was from 20 parts to 160 parts per million with an average of 60 parts per million, or 0.006 per cent

Though but roughly quantitative, the study of the sulphocyanate by the reaction with ferric chloride and hydrochloric acid showed that, in general, the saliva of pellagrins contains a lessened amount of sulphocyanate than normal saliva does. Probably none of the

salivas are absolutely free from sulphocyanate, since a number of salivas which gave but a faint tinge of orange on addition of ferric chloride and hydrochloric acid in test tubes gave a good red color with the reagents on concentrating to one-fifth, or more, of the original volume. The fact obtains, however, that the saliva of pellagrins contains much less sulphocyanate than the saliva of normal people.

Since it is generally admitted that the sulphocyanate arises from the metabolism of protein and the detoxicating action of the system whereby poisonous cyanides are converted into the relatively innocuous sulphocyanate[1] the explanation for lessened sulphocyanate in the saliva of the pellagra patients is believed to lie in a lessened protein intake and a detoxicating power feebler than normal. The senior author has found, in fact, that, in general, in pellagra the total nitrogen of the urine is much less than normal. That the low protein intake, or assimilation, is not the only explanation is readily shown by the fact that even on the fairly high protein diet in the hospital the salivary sulphocyanate of the patients is greatly less than normal, and further, one powerfully built, alert, and active normal person living on a generous protein diet rarely showed more than a trace of sulphocyanate in his saliva over a period of three months and in many tests. The question is still under study.

Phenols and Uric Acid.

The saliva of 3 controls and of 16 patients was tested twice over a week's interval with Folin and Denis's phenol reagent and uric acid reagent. All the saliva gave a more or less blue color with the phenol reagent. As determined by means of a Duboscq colorimeter, the phenol of the saliva of pellagrins was sometimes greater than normal, sometimes less. The color with the uric acid reagent was always slight, but much more evident for the saliva of the pellagra patients than for the three controls.

Indican.

While making a routine test of the urine of patients, Dr. C. H. Waring, assistant surgeon, found the urine of case 313 to be very high in indican. Accordingly, tests were made of the saliva by means of Obermayer's reagent and chloroform. Once the chloroform was blue with indigo blue and once red with indigo red. No other saliva showed the presence of appreciable amounts of indican. It may be noted that shortly after the discovery of indican in his saliva, case 313 was judged to be suffering from tuberculosis also, from which disease he died about a month later. What part the tuberculosis played in the presence of indican in the saliva can not be told.

[1] For the pharmacological action of sulphocyanate see Gies, Lieb, and Kahn. Dental Cosmos LVI, 175, 1914.

Subsequent to ending the study of the saliva as outlined in the previous pages, the question of the reaction came up. Accordingly, the reaction was determined, using methyl orange and $\frac{n}{10}H_2SO_4$. All the available little complicated cases, 19 in number, in the hospital during the period July 19 to July 22 were utilized. The reaction varied from 0.07 to 0.23 per cent NA_2CO_3, with an average of all determinations for the four days of 0.14 per cent NA_2CO_3. For each case it was rather constant over the four days.

These patients had been in the hospital for periods varying from 3 to 54 days. The average alkalinity for seven patients who had been in the hospital less than a week was 0.154 per cent NA_2CO_3; for six patients under treatment from 9 to 22 days, 0.133 per cent NA_2CO_3; for six under treatment 25 to 54 days 0.135 per cent NA_2CO_3. It would seem that the hospital treatment, which was altogether dietary, had little effect on the reaction of the saliva.

Chittenden and Ely [1] give the alkalinity of normal saliva as 0.08 per cent NA_2CO_3, Chittenden and Smith [2] as 0.097, and Schlesinger [3] as 0.032 per cent. It is certain that the alkalinity of the saliva of the hospital patients is greater than that given by the authorities quoted. (A comparative study of the saliva of pellagrins and of normal persons is being made.) The data on the reaction is given in Table II.

TABLE II.—*Reaction of the saliva of pellagrins in percentage of sodium carbonate.*

Case.	Percentage of sodium carbonate.				Case average.	Days under treatment.
	July 19.	July 20.	July 21.	July 22.		
356	0.16	0.172	0.17	0.17	0.1655	5
344	.14	.136	.11	.13	.129	22
333	.11	.103	.14	.12	.118	43
328	.14	.160	.14	.15	.1475	51
337	.19	.172	.15	.17	.17	6
240	.15	.14	.13	.14	.14	22
357	.14	.14	.14	.14	.14	3
339	.12	.126	.13	.13	.1265	34
359	.09	.088	.09	.09	.09	3
338	.18	.176	.15	.17	.169	6
325	.20	.198	.18	.19	.192	54
351	.12	.118	.11	.12	.117	18
358	.12	.13	.13	.13	.1275	3
354	.11	.114	.10	.11	.1085	9
340	.15	.135	.....	.14	.1416	33
347	.17	.146	.13	.15	.149	22
355	.21	.212	.23	.22	.218	6
349	.15	.162	.16	.14	.153	20
341	.10	.078	.07	.08	.082	25
Daily average	.145	.1424	.1361	.1416	.1413	.....

[1] Amer. Chem. Jour. IV, 329, 1882.
[2] Transact. Connecticut Acad. 6, 343, 1885.
[3] Virchows Arch. cxxv, 146, 340, 1891.

Summary.

The rate of flow of the saliva of patients at the Pellagra Hospital was found to be occasionally very rapid, occasionally very slow, but in general it was within normal limits.

The specific gravity of the saliva of pellagra patients tends to be higher than that of the controls.

The total solids, ash, organic matter, and mucin of the saliva are greater for the pellagrins than for the controls, but bear no relation to the mouth symptoms.

The diastatic power of the saliva of pellagrins varies within the limits established by the controls.

The sulphocyanate content is much less marked in the saliva of the pellagra patients than in that of normal people.

The reaction of the saliva in pellagra is somewhat more alkaline than is that of normal saliva.

DEATHS DURING WEEK ENDED MAY 3, 1919, IN CITIES.

The table following shows the registered deaths from all causes and from pneumonia (all forms) and influenza combined, in certain large cities of the United States during the week ended May 3, 1919.

The data are taken from the "Weekly Health Index," May 6, 1919, issued by the Bureau of the Census, Department of Commerce.

Registered deaths and annual death rates per 1,000 population in certain large cities of the United States, week ended May 3, 1919—Deaths from all causes, and from pneumonia (all forms) and influenza combined.

City.	Population July 1, 1918, estimated.	Total deaths, all causes.	Annual death rate per 1,000.	Annual death rate for preceding years.[1]	Influenza and pneumonia (all forms).	
					Number of deaths.	Annual death rate per 1,000.
Albany, N. Y.	112,565	33	15.3	C 13.4	11	5.1
Atlanta, Ga.	201,732	58	15.0	C 18.9	.....	.....
Baltimore, Md.	[2] 669,981	223	17.4	A 19.1	25	1.9
Boston, Mass.	785,245	259	17.2	A 17.5	43	2.9
Buffalo, N. Y.	473,229	123	13.6	C 14.7	.....	.....
Cambridge, Mass.	111,432	26	12.2	A 14.6	.....	.....
Chicago, Ill.	2,596,681	695	14.0	A 16.1	88	1.8
Cincinnati, Ohio.	418,022	121	15.5	C 18.3	12	1.5
Cleveland, Ohio.	810,396	212	13.6	C 14.2	45	2.9
Columbus, Ohio.	225,296	65	15.0	C 14.1	5	1.2
Dayton, Ohio.	130,655	32	12.8	C 13.2	5	2.0
Denver, Colo.	.....	53	.....	.....	.....	.....
Fall River, Mass.	128,392	40	16.2	C 16.2	.....	.....
Grand Rapids, Mich.	135,450	42	16.2	C 14.6	.....	.....
Indianapolis, Ind.	289,577	86	15.5	C 23.0	.....	.....
Kansas City, Mo.	313,785	99	16.5	C 16.8	21	3.5
Los Angeles, Calif.	568,495	132	12.1	A 13.0	14	1.3
Louisville, Ky.	242,707	62	13.3	C 14.4	7	1.5
Lowell, Mass.	109,981	33	15.8	A 15.5	3	1.4
Memphis, Tenn.	154,759	63	21.2	C 20.9	4	1.3
Milwaukee, Wis.	453,481	123	14.1	A 14.6	51	5.9
Minneapolis, Minn.	383,442	89	12.1	C 13.7	.....	.....
Nashville, Tenn.	119,215	46	20.1	C 21.4	9	3.9
Newark, N. J.	428,684	106	12.9	C 14.2	.....	.....
New Haven, Conn.	154,865	30	10.1	C 19.5	.....	.....
New Orleans, La.	382,273	120	16.4	A 18.2	.....	.....
New York, N. Y.	5,215,879	1,455	14.5	C 15.8	259	2.6
Oakland, Calif.	214,206	47	11.4	A 10.0	.....	.....
Omaha, Nebr.	180,264	41	11.9	C 11.6	.....	.....
Philadelphia, Pa.	1,761,371	472	14.0	[3] 16.6	64	1.9
Pittsburgh, Pa.	596,303	194	17.1	C 22.0	58	5.1
Portland, Oreg.	.....	68	.....	.....	10	.....
Providence, R. I.	263,613	71	14.0	C 12.7	9	1.8
Richmond, Va.	160,719	45	14.6	C 19.8	4	1.3
Rochester, N. Y.	264,856	76	15.0	C 12.6	19	3.7
St. Louis, Mo.	770,951	185	12.4	C 18.0	24	1.6
St. Paul, Minn.	257,699	75	15.2	C 14.6	.....	.....
San Francisco, Calif.	478,530	150	16.3	C 14.6	24	2.6
Seattle, Wash.	.....	74	.....	.....	19	.....
Spokane, Wash.	.....	28	.....	.....	.....	.....
Syracuse, N. Y.	161,404	56	18.1	C 16.5	7	2.3
Toledo, Ohio.	262,234	62	12.3	A 14.5	10	2.0
Washington, D. C.	401,681	116	15.1	A 16.7	5	.7
Worcester, Mass.	173,650	65	19.5	C 16.8	.....	.....

[1] "A" indicates that the rate given is the average annual death rate per 1,000 population for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates that the rate is the annual death rate per 1,000 population for the corresponding week of 1918.
[2] Population estimated as of July 1, 1919.
[3] Rate is based on statistics of 1915, 1916, and 1917.

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.

EXTRA-CANTONMENT ZONES—CASES REPORTED WEEK ENDED MAY 10.

CAMP DIX ZONE, N. J.

	Cases.
Tuberculosis:	
Pemberton Township	1

FAYETTEVILLE SANITARY DISTRICT, N. C.

Chancroid	1
Gonorrhea	4
Influenza	1
Measles	2
Smallpox	3
Syphilis	1

CAMP FUNSTON ZONE, KANS.

Chicken pox:	
Manhattan	6
Diphtheria:	
Manhattan	1
Ogden	2
Gonorrhea:	
Junction City	3
Manhattan	3
Mumps:	
Manhattan	6
Junction City	1
Ogden	5
Pellagra:	
Manhattan	1
Pneumonia, broncho:	
Randolph	1
Scarlet fever:	
Manhattan	2
Junction City	1
Ogden	1
Leonardville	3
Smallpox:	
Skiddy	1

GAS AND FLAME SCHOOL ZONE, GA. AND ALA.

Chicken pox:	
Columbus	1
Gonorrhea:	
Columbus	8
Muscogee County	9
Phoenix City	1
Alabama	1
Measles:	
Columbus	2

GAS AND FLAME SCHOOL ZONE, GA. AND ALA.—con.

	Cases.
Smallpox:	
Bibb City	3
Columbus	2
Muscogee County	4
Syphilis:	
Alabama	3
Columbus	4
Muscogee County	4
Phoenix City	1
Tuberculosis:	
Columbus	1
Whooping cough:	
Columbus	1
Muscogee County	2

CAMP GORDON ZONE, GA.

Atlanta:	
Cerebrospinal meningitis	1
Chancroid	2
Chicken pox	15
Diphtheria	1
Gonorrhea	40
Influenza	2
Measles	12
Mumps	4
Pneumonia	3
Scarlet fever	3
Smallpox	23
Syphilis	34
Tuberculosis	5
Typhoid fever	1
Whooping cough	3

CAMP A. A. HUMPHREYS ZONE, VA.

Alexandria:	
Gonorrhea	3
Smallpox	1
Syphilis	1

CAMP JACKSON ZONE, S. C.

Columbia:	
Chicken pox	9
Diphtheria	1
Influenza	1
Mumps	3
Scarlet fever	1
Smallpox	7

CAMP JACKSON ZONE, S. C.—continued.

Columbia—Continued.	Cases.
Tuberculosis	1
Whooping cough	4
Government clinic:	
Gonorrhea	19
Syphilis	4

CAMP LEE ZONE, VA.

Petersburg:	
Diphtheria	1
Gonorrhea	6
Syphilis	2
Tuberculosis	1
Whooping cough	2

CAMP MERRITT ZONE, N. J.

Chicken pox:	
Englewood	5
Diphtheria:	
Tenafly	1
German measles:	
Englewood	1
Measles:	
Haworth	13
Scarlet fever:	
Tenafly	1

PICRIC ACID PLANT ZONE, GA.

Brunswick:	
Mumps	1
Pneumonia	1
Syphilis	2
Typhoid fever	2

CAMP POLK ZONE, N. C.

Chicken pox:	
Durham	3
New Light Township	1
Raleigh	5
Diphtheria:	
Raleigh	1
Gonorrhea:	
Durham	5
Measles:	
Durham	7
Mumps:	
Durham	2
Raleigh	1
Scarlet fever:	
Raleigh	1
Smallpox:	
Durham	2
White Oak Township	2
Syphilis:	
Durham	1
Tuberculosis:	
Durham	4
Raleigh	1
Whooping cough:	
Durham	16
Durham Township	2
Raleigh	1

PORTSMOUTH AND NORFOLK COUNTY HEALTH DISTRICT, VA.

Chicken pox:	Cases.
Norfolk	3
Portsmouth	1
Diphtheria:	
Norfolk	1
Measles:	
Portsmouth	2
Norfolk	2
Port Norfolk	3
Scarlet fever:	
Portsmouth	2
Smallpox:	
Norfolk County	1
Portsmouth	6

CAMP SHERMAN ZONE, OHIO.

Chillicothe:	
Mumps	1
Government clinic:	
Gonorrhea	3
Syphilis	1

SOUTHER FIELD ZONE, GA.

No cases of communicable diseases reported.

CAMP TRAVIS ZONE, TEX.

San Antonio:	
Cerebrospinal meningitis	1
Chicken pox	1
Diphtheria	3
Gonorrhea	6
Leprosy	1
Measles	2
Mumps	1
Syphilis	5
Tuberculosis	2

CAMP UPTON ZONE, N. Y.

Brook Haven:	
Measles	1
Pneumonia	1
Septic sore throat	1
Tuberculosis	2
Typhoid fever	1

WILMINGTON SANITARY DISTRICT, N. C.

Sea Gate:	
Tuberculosis	1
Typhoid fever	1
Wilmington:	
Gonorrhea	17
Measles	1
Mumps	2
Pellagra	1
Pneumonia	1
Scarlet fever	1
Syphilis	7
Tuberculosis	1

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES.

The following data are taken from telegraphic reports received in the office of the Surgeon General of the United States Army for the week ended May 2, 1919. Reports from the American Expeditionary Forces are delayed in transmission, and the "current week" for troops in the American Expeditionary Forces is not the same period as "current week" for troops in the United States.

	Current week.	Last week.
Annual admission rate per 1,000 (all causes)	728.60	521.04
All troops in United States	1,468.57	810.39
American Expeditionary Forces	445.53	420.82
Annual admission rate per 1,000 (disease only)	655.27	462.10
All troopes in United States	1,316.11	698.79
American Expeditionary Forces	402.47	380.13
Noneffective per 1,000 on day of report	41.80	42.54
All troops in United States [1]	57.76	52.96
American Expeditionary Forces	35.72	38.94
Annual death rate per 1,000 (all causes)	6.25	6.84
All troops in United States [1]	9.39	8.98
American Expeditionary Forces	5.05	6.10
Annual death rate per 1,000 (disease only)	4.83	4.49
All troops in United States [1]	7.56	7.01
American Expeditionary Forces	3.79	3.62

[1] Sick and death rates among troops in the United States will continue to be relatively high, as the numerical strength of troops in the United States continues to decline from week to week as a result of demobilization. Well men only are eligible for discharge, while the sick and otherwise disabled are retained in service for further treatment. The continued influx of sick and wounded (properly chargeable to commands overseas) is another factor tending to increase rates in the United States and to diminish correspondingly similar rates overseas.

Cases of special diseases reported during the week ended May 2, 1919.

Camp.	Pneumonia.	Dysentery.	Malaria.	Venereal diseases. Total.	Venereal diseases. New infections.	Influenza.	Measles.	Meningitis.	Scarlet fever.	Annual admission rate per 1,000 (disease only).	Noneffective rate per 1,000 on day of report.
Bowie	1		2	26	6					4,071.12	187.63
Bragg			1							551.38	13.05
Custer	1			4	4					659.69	35.31
Devens	14			35		16	1	1		736.74	43.28
Dix	4			23			2		3	1,024.84	84.50
Dodge	3			6	4				3	982.65	77.84
Funston				5						381.32	45.96
Gordon	3			18		5				3,348.29	91.70
Grant				42	4				2	1,687.82	76.10
A. A. Humphreys				5	2				1	648.56	31.54
Jackson	1		2	13						2,007.39	115.81
Kearny				3	1					1,524.03	134.81
Henry Knox				4						799.99	38.46
Lee	1			26	8		1		1	1,449.99	102.11
Lewis	3			19	2		2		1	1,951.61	108.90
Meade	1			5				1	8	1,991.29	77.80
Pike			1	30	3					1,732.36	126.70
Shelby				17	14					3,045.82	86.79
Sherman	2			27	22	2			1	1,303.82	105.44
Zachary Taylor	2			6	3	1			1	1,843.12	123.94
Travis	1		1	6	3	1				970.38	72.00
Upton	1			43	7	9				568.51	30.68
Northeastern Department				1						534.83	25.21
Eastern Department	1		1	20	4	5				533.00	19.12
Southeastern Department				11	2					712.82	23.95
Central Department	5			5						888.02	19.02
Southern Department	5			52	5	3			1	824.45	54.40
Western Department	1			7	6	2	2			688.74	19.13
Aviation camps	4		1	24		2				784.22	41.58

Cases of special diseases reported during the week ended May 2, 1919—Continued.

Camp.	Pneumonia.	Dysentery.	Malaria.	Venereal diseases. Total.	Venereal diseases. New infections.	Influenza.	Measles.	Meningitis.	Scarlet fever.	Annual admission rate per 1,000 (disease only.	Noneffective rate per 1,000 on day of report.
Port of embarkation:											
Hoboken	13	1	.....	16	7	24	3	2	1	3,721.68	93.23
Newport News	24	.....	.....	61	11	17	.....	3	1	5,287.39	103.40
Fort Monroe	1	.....	.....	8	.....	1	.....	.....	.....	604.18	25.30
Alcatraz Disciplinary Barracks	1	.....	.....	.....	.....	.....	.....	.....	.....	971.96	37.38
Leavenworth Disciplinary Barracks	.....	.....	.....	1	.....	.....	.....	.....	.....	1,104.27	42.78
Columbus Barracks	.....	.....	.....	2	2	.....	.....	.....	.....	931.89	38.53
Jefferson Barracks	.....	.....	.....	2	.....	.....	.....	.....	.....	2,424.47	111.70
Fort Logan	.....	.....	.....	2	2	.....	.....	.....	.....	1,999.99	46.43
Fort McDowell	1	.....	.....	1	.....	1	.....	.....	.....	1,832.89	44.38
Fort Sill	.....	.....	.....	1	1	.....	1	.....	.....	541.98	19.49
Fort Slocum	.....	.....	.....	.....	.....	.....	.....	.....	.....	677.08	24.73
Fort Thomas	.....	.....	.....	3	3	.....	.....	.....	.....	1,634.28	36.19
West Point	.....	.....	.....	.....	.....	.....	.....	.....	.....	530.93	16.21
Arsenals	.....	.....	.....	3	.....	1	.....	.....	.....	559.21	33.02
Miscellaneous small stations	.....	.....	1	4	.....	.....	.....	.....	.....	500.39	29.66
Total	89	1	10	589	126	90	12	7	24	1,468.57	57.76

Number of deaths at large camps in the United States week ended May 2, 1919.

Camp.	Strength.	Deaths. All causes.	Deaths. Disease only.	Camp.	Strength.	Deaths. All causes.	Deaths. Disease only.
Bowie	3,768	1	1	Sherman	13,604	1	1
Bragg	1,226	.....	.....	Taylor	9,140	1	1
Custer	5,833	.....	.....	Travis	4,930	1	1
Devens	21,885	2	2	Upton	27,447	2	1
Dix	13,048	.....	.....	Northeastern Department	3,014	1	1
Dodge	7,091	3	3	Eastern Department	16,005	.....	.....
Funston	5,591	1	1	Southeastern Department	7,222	.....	.....
Gordon	5,125	.....	.....	Central Department	4,626	2	2
Grant	9,027	1	1	Southern Department	31,415	4	3
Humphreys	2,726	.....	.....	Western Department	13,597	1	1
Jackson	6,217	1	1	Aviation camps	17,248	3	.....
Kearny	3,412	.....	.....	Ports of embarkation:			
Henry Knox	1,820	.....	.....	Hoboken	46,158	6	1
Lee	8,069	1	1	Newport News	23,802	4	4
Lewis	5,249	2	1	All others	87,629	38	34
Meade	11,494	.....	.....				
Pike	5,343	.....	.....	Total	426,056	77	62
Shelby	3,295	1	1				

Annual admission rate per 1,000 for certain diseases.

Disease.	Troops in United States. Current week.	Troops in United States. Last week.	American Expeditionary Forces. Current week.	American Expeditionary Forces. Last week.	Disease.	Troops in United States. Current week.	Troops in United States. Last weel.	American Expeditionary Forces. Current week.	American Expeditionary Forces. Last week.
Pneumonia	10.86	6.76	10.25	12.03	Typhoid	0.12	0.0	0.84	0.38
Dysentery	.12	.24	.23	.12	Measles	1.46	2.09	3.04	2.73
Malaria	1.22	1.60	.37	.38	Meningitis	.85	.61	.84	.89
Venereal	71.65	63.49	40.01	37.14	Scarlet fever	2.92	2.70	.60	.89
Paratyphoid	.0	.0	.09	.12	Influenza	10.98	12.42	.....	.....

CURRENT STATE SUMMARIES.

Telegraphic Reports for Week Ended May 10, 1919.

Alabama.—State totals: Typhoid fever 5, malaria 5, smallpox 21, measles 64, scarlet fever 5, diphtheria 2, whooping cough 19, pulmonary tuberculosis 11, cerebrospinal meningitis 1, mumps 6, chicken pox 4.

Arkansas.—State totals: Malaria 64, chicken pox 42, whooping cough 25, smallpox 21, measles 17, tuberculosis 13, pellagra 5, meningitis 4, scarlet fever 3, influenza 4.

California.—Influenza: Cases reported 277. Smallpox 43, of which in Oakland 6, San Francisco 7, Long Beach 7, Los Angeles 13, Eureka 3, San Bernardino County 2, Salinas 1, Hollister 1, Tulare County 1, Los Angeles County 1, and Dinuba 1. Typhoid fever: San Francisco 3, Los Angeles 8, San Bernardino 2, Riverside 1, Blythe 1. Orange County reports 1 case of cerebrospinal meningitis.

Connecticut.—Cerebrospinal meningitis: New Haven 1, Hartford 1. State total: Influenza 31.

Florida.—State totals: Typhoid fever 8, smallpox 2, diphtheria 2, malaria 8, influenza 11, dysentery 3, mumps 13, chicken pox 12.

Georgia.—State totals: Acute infectious conjunctivitis 5, hookworm 10, cerebrospinal meningitis 5, chicken pox 44, diphtheria 3, dysentery 3, dysentery (amebic) —, German measles 3, gonorrhea 142, influenza 39, malaria 89, measles 45, mumps 52, paratyphoid fever 2, pneumonia (acute lobar) 46, poliomyelitis 1, scarlet fever 15, septic sore throat 18, smallpox 113, syphilis 68, tuberculosis (pulmonary) 28, tuberculosis (other than pulmonary) 3, typhoid fever 20, typhus fever 1, whooping cough 30.

Illinois.—Diphtheria: Cases reported 142, of which in Chicago 121, Springfield 5. Scarlet fever: Cases reported 122, of which in Chicago 71, Oglesby 6, Rockford 6, Havana 5, Dixon 4. Smallpox: Cases reported 87, of which in Ullin precinct (Pulaski County) 15, Peoria 9, Rock Island 8, Galesburg 7, Decker Township (Richland County) 7, Pekin 5, Bloomington 4, Dubois Township (Washington County) 4, Aurora 3, Norris City 3. Meningitis: Chicago 5, Batavia 1. Poliomyelitis: Chicago 3. Lethargic encephalitis: Cases reported 5, of which in Bloomingdale 1, Ramsey 1, Tunnel Hill Township (Johnson County) 1, Bath Township (Mason County) 1, Springfield 1. Influenza: Cases reported 34, of which in Chicago 19. Gonorrhea 216, syphilis 94.

Indiana.—Scarlet fever reports by towns: Elkhart, Roann, South Bend, Huntington, and La Fayette. Smallpox reports by counties: Grant, Owen, Elkhart, Kosciusko, Jay, and Clay. Diphtheria reports by counties: Elkhart 6, Kosciusko 5, Hendricks 7, Montgomery 1, Grant 1, Porter 1, Randolph 2, Wabash 1. Typhoid fever reports by

counties: Kosciusko 1, Lake 1, Noble 1, Bartholomew 1. Mumps are epidemic in Lebanon and Lagrange. Measles reported by counties: Tipton, Clay, Owen, and Elkhart. Syphilis 32, gonorrhea 66, chancroid 4.

Iowa.—Chancroid: Sioux City 2, Spencer 1. Chicken pox: Dubuque 1. Diphtheria: Carroll 1, Des Moines 6, Dubuque 1, Fort Des Moines 1, Hawarden 1, Iowa Falls 1, Kellerton 1, Sioux Center 2. Gonorrhea: Cedar Rapids 3, Davenport 16, Des Moines 2, Dubuque 1, Forest City 1, Guthrie Center 1, Madrid 1, Sioux City 8, Spencer 3. Mumps: Fort Des Moines 1, Northwood 6. Scarlet fever: Ankeny 1, Burlington 3, Cedar Rapids 1, Des Moines 11, Dubuque 1, Goodell 2, Indianola 1, Kellerton 1, Mason City 5, Perry 7, Seymour 1, Vinton 1. Smallpox: Boone 8, Cedar Rapids 7, Davenport 2, Des Moines 2, Dubuque 3, Fort Dodge 3, Iowa Falls 1, Lester 1, Mason City 9, Ottumwa 6, Perry 4, Red Oak 1, Walker 1. Syphilis: Davenport 4, Des Moines 2, Iowa City 1, Sioux City 3. In rural districts of the following counties. Diphtheria: Calhoun 1, Poweshiek 1, Tama 2. Scarlet fever: Blackhawk 1, Boone 1, Chickasaw 2, Dallas 1, Des Moines 2, Muscatine 4, Palo Alto 3. Smallpox: Benton 1, Carroll 1, Clinton 1, Marshall 1.

Kansas.—Meningitis reported by cities: Girard 1, Burr Oak 1, Kansas City 1. State totals: Smallpox 66, diphtheria 20, scarlet fever 45, influenza 224.

Louisiana.—Meningitis 1, smallpox 51, typhoid 21, diphtheria 10, gonorrhea 116, syphilis 41, chancroid 9.

Maine.—Chickenpox: Rockport 2, Hanover 2. Diphtheria: Oldtown 2, Pittsfield 1, Van Buren 1. Gonorrhea: Bath 11, Lewiston 3, Brighton 1, Greenville 1, Saint George 1, Sanford 1, Skowhegan 1, Waterville 1, Westbrook 1, Bangor 1, Rumford 1, Portland 6. Scarlet fever: Bangor 1, Bath 1, Hersey 1, Portland 9, Waldoboro 4. Smallpox: Bath 1, Island Falls 1. Syphilis: Augusta 3, Bangor 2, Portland 5, Bath 3, Hallowell 2, Biddeford 1, Brewer 1, Lewiston 1. Tuberculosis: Gardiner 2, South Portland 2, Westbrook 2, Portland 3, Lewiston 2, South Thomaston 1, Biddeford 1, Brewer 1, Machias 1, Mexico 1, Dover 1, Benton 1, Harpswell 1, Orland 1, Parsonfield 1. Typhoid fever: Fort Fairfield 1, Portland 2. Whooping cough: South Berwick 5. Influenza: Sanford 2.

Massachusetts.—Unusual prevalence of measles, Fall River reporting 51 and Worcester 46. Diphtheria: Norfolk 6, Lowell 16. Chickenpox: Framingham 21, Pittsfield 21. Whooping cough: Haverhill 25.

Minnesota.—Smallpox (new foci): Dakota County (Invergrove Township) 1, Grant County (Herman village) 1, Redwood County (Paxton Township) 1, Winona County (Winona City) 1, Freeborn County (Albert Lea city) 3. Syphilis 25, gonorrhea 51, chancroid 3, cerebrospinal meningitis 1.

New Jersey.—Cases reported: Influenza 55, pneumonia 98. Unusual prevalence of measles reported in Trenton (Mercer County), Haworth (Bergen County). Unusual prevalence chickenpox reported in South Orange Township (Essex County). Smallpox reported from Beverly (Burlington County), Pensauken Township (Camden County), and Wildwood Crest (Cape May County).

New York.—Reports, exclusive of New York City: Typhoid fever 20, measles 510, scarlet fever 162, whooping cough 55, diphtheria 122, smallpox 6, of which in Collins 3, Niagara Falls 1, Blooming Grove 1, Orangeville 1. Cerebrospinal meningitis: Troy 1, White Plains 1. Pneumonia: Cases reported 130. Voluntary reports: Syphilis 190, gonorrhea 45.

North Carolina.—State totals: Whooping cough 113, measles 322, diphtheria 20, scarlet fever 9, septic sore throat 3, smallpox 90, chickenpox 52, typhoid fever 25, epidemic meningitis 4, bronchopneumonia 17, lobar pneumonia 17, cholera infantum 1, dysentery (bacillary) 7, lethargic encephalitis 1, gonorrhea 83, syphilis 37, chancroid 10, syphilis and gonorrhea 2, gonorrhea and chancroid 1. Influenza: Cleveland County 12, Cumberland County 1, Gaston County 1.

Ohio.—Lethargic encephalitis: Franklin County 1, Columbus 1. Measles epidemic in Findlay. Scarlet fever: Lima 15, Cincinnati 39. Smallpox: Toledo 17, Middletown 13.

Oregon.—Portland reports 35 cases and 2 deaths from influenza, Coos County 27, and Tillamook 17.

Virginia.—Smallpox: Dickinson County 1, Norfolk 1, Alexandria 2, Middlesex 2.

Washington.—Unusual prevalence of disease. Measles: Seattle 61, Bremerton 14, Tacoma 17. Smallpox in a mild form prevalent throughout the State.

ANTHRAX.

Massachusetts Report for April, 1919.

During April, 1919, one case of anthrax was reported in Massachusetts.

New York, N. Y., Week Ended Apr. 26, 1919.

During the week ended April 26, 1919, there were reported in New York, N. Y., one case of anthrax and one death from that disease.

CEREBROSPINAL MENINGITIS.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Camp Gordon zone, Ga.	1	Camp Travis zone, Tex.	1

CEREBROSPINAL MENINGITIS—Continued.

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Florida:		Massachusetts—Continued.	
Citrus County	1	Middlesex County—Continued.	
Jacksonville	2	Sudbury (town)	1
Hillsboro County	1	Watertown (town)	1
Okeechobee County	1	Plymouth County—	
Sumter County	1	Brockton	1
Total	6	Suffolk County—	
Massachusetts:		Boston	13
Essex County—		Chelsea	1
Beverly	1	Worcester County—	
Hampshire County—		Gardner (town)	1
Worthington (town)	1	Northboro (town)	1
Middlesex County	3	Worcester	2
Everett	2	Total	33
Hudson (town)	1	Oklahoma:	
Malden	1	Caddo County	1
Newton	1		
Somerville	2		

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md		1	Mason City, Iowa	1	
Beverly, Mass	1	1	Milwaukee, Wis	1	1
Boston, Mass	4	4	Minneapolis, Minn	1	2
Buffalo, N. Y	1		Mobile, Ala	1	
Chicago, Ill	2		New Bedford, Mass		1
Cincinnati, Ohio	1	1	New Orleans, La	1	1
Detroit, Mich	1		New York, N. Y	6	
Duluth, Minn	1	1	Oakland, Calif	1	
Elizabeth, N. J	1		Philadelphia, Pa	1	1
Everett, Mass	1		Pittsburgh, Pa	1	
Galveston, Tex	1		Portland, Oreg		1
Harrisburg, Pa	1		Providence, R. I	1	
Hartford, Conn	2		St. Louis, Mo	1	
Kansas City, Mo	1		San Antonio, Tex	2	1
Lexington, Ky		1	Scranton, Pa	2	
Little Rock, Ark	1		Trenton, N. J	1	1
Los Angeles, Calif	3		Washington, D. C	1	

CHANCROID.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C	1	Camp Gordon zone, Ga	2

DIPHTHERIA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Camp Funston zone, Kans	3	Camp Polk zone, N. C	1
Camp Gordon zone, Ga	1	Portsmouth and Norfolk County health district, Va	1
Camp Jackson zone, S. C	1	Camp Travis zone, Tex	3
Camp Lee zone, Va	1		
Camp Merritt zone, N. J	1		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1097.

GONORRHEA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C.	4	Camp Lee zone, Va.	6
Camp Funston zone, Kans.	6	Camp Polk zone, N. C.	5
Gas and flame school zone, Ga. and Ala.	19	Camp Sherman zone, Ohio	3
Camp Gordon zone, Ga.	40	Camp Travis zone, Tex.	6
Camp A. A. Humphreys zone, Va.	3	Wilmington sanitary district, N. C.	17
Camp Jackson zone, S. C.	19		

INFLUENZA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C.	1	Camp Jackson zone, S. C.	1
Camp Gordon zone, Ga.	2		

LEPROSY.

New Orleans, La., and San Francisco, Calif.

During the week ended April 26, 1919, two deaths from leprosy were reported; one at New Orleans, La., and one at San Francisco, Calif.

LETHARGIC ENCEPHALITIS.

Cases Reported for Week Ended May 10, 1919.

	Cases.		Cases.
Alabama:		Massachusetts:	
State at large (week ended May 3)	1	Everett (week ended May 3)	1
Illinois:		North Carolina:	
Bloomingdale	1	State at large	1
Chicago (week ended May 3)	1	Ohio:	
Ramsey	1	Columbus	1
Springfield	1	Franklin County	1
Tunnel Hill (Johnson County)	1	Oklahoma:	
Mason County (Bath Township)	1	State at large (April report)	2

Oklahoma Report for April, 1919.

During April, 1919, two cases of lethargic encephalitis were reported in Pittsburg County, Okla.

MALARIA.

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Florida:		Florida—Continued.	
Alachua County	3	Pasco County	2
Bradford County	3	Polk County	1
Citrus County	5	St. Johns County	2
Columbia County	1	St. Lucie County	2
Miami	2	Seminole County	1
Duval County	2	Sumter County	1
Jacksonville	1	Suwannee County	3
Pensacola	2	Taylor County	1
Gadsden County	6		
Hillsboro County	1	Total	67
Tampa	2		
Jackson County	2	Massachusetts:	
Lafayette County	5	Middlesex County—	
Lake County	1	Wayland (town)	1
Levy County	3	Suffolk County—	
Manatee County	3	Boston	2
Marion County	9		
Orange County	3	Total	3

MALARIA—Continued.

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.	1		Newark, N. J.	1	
Boston, Mass.	2		New Orleans, La.	2	2
Camden, N. J.	1		Palestine, Tex.	3	
Chicago, Ill.		1	Paterson, N. J.	1	
East Chicago, Ind.	1		Tuscaloosa, Ala.	3	
Montgomery, Ala.	1				

MEASLES.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C.	2	Portsmouth and Norfolk County health district, Va.	7
Gas and Flame school zone, Ga. and Ala.	2	Camp Travis zone, Tex.	2
Camp Gordon zone, Ga.	12	Camp Upton zone, N. Y.	1
Camp Merritt zone, N. J.	13	Wilmington sanitary district, N. C.	1
Camp Polk zone, N. C.	7		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1097.

PELLAGRA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Case.		Case.
Camp Funston zone, Kans.	1	Wilmington sanitary district, N. C.	1

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Florida:		Oklahoma—Continued.	
Jacksonville	1	Kiowa County	1
Hillsboro County	2	Love County	1
Lake County	1	McCurtain County	1
Okaloosa County	1	McIntosh County	10
Putnam County	1	Mayes County	2
Walton County	4	Payne County	1
Total	10	Pottawatomie County	1
Oklahoma:		Pushmataha County	1
Atoka County	1	Sequoyah County	5
Creek County	1	Stephens County	3
Garvin County	1	Total	29

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Lexington, Ky.		1	Raleigh, N. C.		1
Mobile, Ala.		1	Spartanburg, S. C.		1
New York, N. Y.		1	Tuscaloosa, Ala.	1	
Philadelphia, Pa.	1		Winston-Salem, N. C.	1	

PNEUMONIA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Camp Gordon zone, Ga.	3	Wilmington sanitary district, N. C.	1
Picric acid plant zone, Ga.	1		

PNEUMONIA—Continued.

City Reports for Week Ended Apr. 26, 1919.

Place.	Lobar.		All forms.	
	Cases.	Deaths.	Cases.	Deaths.
Akron, Ohio	1			
Atlanta, Ga	1	3		
Atlantic City, N. J	1			
Baltimore, Md	27	17		
Baton Rouge, La			3	1
Belleville, N. J	1			
Berkeley, Calif	1			
Binghamton, N. Y	5			
Bloomfield, N. J			1	
Boston, Mass	21	14		
Brookline, Mass	2			
Cambridge, Mass	3	1		
Camden, N. J	4			
Chelsea, Mass	2	1		
Chicago, Ill			223	63
Cleveland, Ohio	30	27		
Cumberland, Md	2	1		
Dallas, Tex	5			
Dayton, Ohio	5	5		
Detroit, Mich	5	24	7	37
Duluth, Minn	5	2		
Elizabeth, N. J	2	2		
Elmira, N. Y	1			
El Paso, Tex	8			
Englewood, N. J	2			
Everett, Mass	5	1		
Fall River, Mass	3	1		
Fitchburg, Mass	1			
Fort Worth, Tex	3	3		
Grand Rapids, Mich	11	1		
Hackensack, N. J			1	1
Haverhill, Mass	2			
Highland Park, Mich	1			
Holyoke, Mass	2	3		
Independence, Mo			1	1
Ithaca, N. Y	1			
Jamestown, N. Y	1			
Johnstown, N. Y	1	1		
Kalamazoo, Mich	2	1		
Kansas City, Kans			4	
Kansas City, Mo			11	9
Kearny, N. J	3	1		
Lackawanna, N. Y	5	1		
Leominster, Mass	1	1		
Little Rock, Ark	3	1		
Long Beach, Calif	1	1		
Los Angeles, Calif	7	2	7	5
Louisville, Ky	1	3		
Lowell, Mass	1	1		
Lynn, Mass	3	1		
Manchester, N. H	2	2		
Manitowoc, Wis	1	1		
Marlboro, Mass	1			
Marquette, Mich	2			
Methuen, Mass	1			
Morgantown, W. Va	4			
Morristown, N. J	1			
Mount Vernon, N. Y	1		3	
Newark, N. J	30	5		
New Britain, Conn	1			
New York, N. Y			114	213
Northampton, Mass	2	1		
Oakland, Calif	2	1	2	5
Oak Park, Ill	1	3		
Oshkosh, Wis	1	1		
Parkersburg, W. Va	1	1		
Paterson, N. J	18			
Philadelphia, Pa	78	49		
Pittsburg, Kans	1			
Port Chester, N. Y	1			
Portsmouth, Va	3	4		
Poughkeepsie, N. Y	1			
Reno, Nev	1	2		
Rochester, N. Y	15	7		
Rome, N. Y	1			
San Antonio, Tex	1			
San Diego, Calif			2	1
San Francisco, Calif	5	6		
Santa Cruz, Calif	1			
Saratoga Springs, N. Y	1			
Schenectady, N. Y	3	2		
Somerville, Mass	3	3		
Springfield, Mass	5	2		
Stockton, Calif	1	2		
Trenton, N. J	1	1		
Wakefield, Mass	1	1		
Watertown, Mass	1			
Westfield, Mass	1			
Wichita, Kans	1	1		
Winston-Salem, N. C	1			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for April, 1919.

Place.	New cases reported.
Florida:	
Polk County	1
Massachusetts:	
Essex County—	
Lawrence	1
Middlesex County—	
Lowell	1
Plymouth County—	
Abington (town)	1
Massachusetts—Continued.	
Suffolk County—	
Boston	1
Total	4
Oklahoma:	
Pottawatomie County	1
Stephens County	1
Total	2

New York, N. Y., Week Ended Apr. 26, 1919.

During the week ended April 26, 1919, one case of poliomyelitis was reported in New York, N. Y.

RABIES IN ANIMALS.

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Place.	Cases.
Akron, Ohio	1	Memphis, Tenn	2
Cincinnati, Ohio	4	New York, N. Y	1
El Paso, Tex	1	Rochester, N. Y	1
Lawrence, Kans	1		

RABIES IN MAN.

Austin, Tex., Week Ended Apr. 26, 1919.

One death from rabies was reported at Austin, Tex., during the week ended April 26, 1919.

SCARLET FEVER.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Camp Funston zone, Kans	7	Camp Polk zone, N. C	1
Camp Gordon zone, Ga	3	Portsmouth and Norfolk County health district, Va	2
Camp Jackson zone, S. C	1	Wilmington sanitary district, N. C	1
Camp Merritt zone, N. J	1		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1097.

SMALLPOX.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C	3	Camp Jackson zone, S. C	7
Camp Funston zone, Kans	1	Camp Polk zone, N. C	4
Gas and Flame school zone, Ga. and Ala	9	Portsmouth and Norfolk County health district, Va	7
Camp Gordon zone, Ga	23		
Camp A. A. Humphreys zone, Va	1		

State Reports for April, 1919—Vaccination Histories.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Arizona:						
Maricopa County—Phoenix	5	.....	.....	.....	3	2
Apache County—St. Johns	2	.....	1	.....	1	.....
Total	7	.....	1	.....	4	2
Florida:						
Pinellas County	5	.....	2	.....	3	.....
Massachusetts:						
Essex County—Gloucester	1	.....	.....	.....	1	.....
Hampden County—Springfield	2	.....	.....	.....	2	.....
Suffolk County—Boston	3	.....	.....	.....	3	.....
Total	6	.....	.....	.....	6	.....

SMALLPOX—Continued.

State Reports for March and April, 1919.

Place.	Cases.	Deaths.
Oklahoma (April):		
Adair County	3	
Atoka County	2	
Blaine County	8	
Caddo County	8	
Cleveland County	10	
Comanche County	4	
Creek County	22	
Custer County	2	
Dewey County	4	
Ellis County	10	
Garvin County	2	
Grady County	13	
Greer County	4	
Haskel County	3	
Kiowa County	8	
Le Flore County	5	
Lincoln County	5	
Logan County	9	
Love County	2	
McClain County	2	
McCurtain County	16	
McIntosh County	13	
Murray County	4	
Noble County	38	
Oklahoma County	3	
Payne County	84	
Pushmataha County	2	
Sequoyah County	1	
Stephens County	15	
Tillman County	1	
Tulsa County	31	
Washita County	2	
Woods County	1	
Woodward County	10	
Total	347	
Vermont (March):		
Caledonia County	3	

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.
Aberdeen, S. Dak	2	
Adrian, Mich	3	
Ann Harbor, Mich	1	
Atlanta, Ga	27	
Austin, Tex	4	
Baltimore, Md	2	
Baton Rouge, La	1	
Beaumont, Tex	1	
Bedford, Ind	4	
Bellingham, Wash	1	
Beloit, Wis	2	
Birmingham, Ala	1	
Bluefield, W. Va	4	
Boulder, Colo	4	
Camden, N. J	1	
Canton, Ill	5	
Cedar Rapids, Iowa	10	
Chanute, Kans	9	
Chicago, Ill	2	
Cincinnati, Ohio	4	
Clarksburg, W. Va	2	
Cleveland, Ohio	7	
Coffeyville, Kans	1	
Columbia, S. C	1	
Council Bluffs, Iowa	8	
Dallas, Tex	28	
Danville, Ill	1	
Davenport, Iowa	10	
Dayton, Ohio	2	
Detroit, Mich	6	
Duluth, Minn	2	
El Paso, Tex	1	
Eureka, Calif	1	
Everett, Wash	6	
Fort Wayne, Ind	3	
Fort Worth, Tex	3	
Great Falls, Mont	2	
Greeley, Colo	1	
Green Bay, Wis	5	
Greenville, S. C	1	
Hammond, Ind	2	
High Point, N. C	1	
Hoboken, N. J	1	
Hoquiam, Wash	1	
Hutchinson, Kans	1	
Independence, Mo	8	
Indianapolis, Ind	5	
Kalamazoo, Mich	2	
Kansas City, Kans	4	
Kansas City, Mo	7	
Knoxville, Tenn	3	
Kokomo, Ind	4	
La Fayette, Ind	2	
Leavenworth, Kans	3	
Lincoln, Nebr	16	
Long Beach, Calif	3	
Los Angeles, Calif	1	
Madison, Wis	2	
Manitowoc, Wis	1	
Marinette, Wis	2	
Marshalltown, Iowa	5	
Mason City, Iowa	5	
Milwaukee, Wis	16	
Minneapolis, Minn	12	
Missoula, Mont	2	
Mobile, Ala	9	
Montgomery, Ala	2	
Muskogee, Okla	3	
Nashville, Tenn	3	
Newport, Ky	1	
New York, N. Y	4	
Norfolk, Va	3	
Oakland, Calif	5	
Ogden, Utah	2	
Oklahoma City, Okla	12	
Omaha, Nebr	31	
Oshkosh, Wish	12	
Palestine, Tex	2	
Parsons, Kans	2	
Pekin, Ill	8	
Peoria, Ill	1	
Philadelphia, Pa	1	
Pine Bluff, Ark	1	
Piqua, Ohio	1	
Pontiac, Mich	1	
Portland, Oreg	36	
Quincy, Ill	1	
Roanoke, Va	12	
St. Louis, Mo	4	
St. Paul, Minn	21	
Salt Lake City, Utah	16	
San Francisco, Calif	4	
Seattle, Wash	23	
Sioux City, Iowa	5	
Sioux Falls, S. Dak	1	
Spokane, Wash	1	
Stillwater, Minn	1	
Tacoma, Wash	5	
Terre Haute, Ind	4	
Toledo, Ohio	7	
Topeka, Kans	3	
Tulsa, Okla	8	
Washington, D. C	9	
Wichita, Kans	7	
Winston-Salem, N. C	29	
Yakima, Wash	4	
Youngstown, Ohio	15	

SYPHILIS.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.
Fayetteville sanitary district, N. C.	1
Gas and Flame school zone, Ga. and Ala.	12
Camp Gordon zone, Ga.	34
Camp A. A. Humphreys zone, Va.	1
Camp Jackson zone, S. C.	4
Camp Lee zone, Va.	2
Picric acid plant zone, Ga.	2
Camp Polk zone, N. C.	1
Camp Sherman zone, Ohio.	1
Camp Travis zone, Tex.	5
Wilmington sanitary district, N. C.	7

TETANUS.

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.		1	New York, N. Y.	1	
New Bedford, Mass.	2	1	Philadelphia, Pa.	1	1

TUBERCULOSIS.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.
Camp Dix zone, N. J.	1
Gas and Flame school zone, Ga. and Ala.	1
Camp Gordon zone, Ga.	5
Camp Jackson zone, S. C.	1
Camp Lee zone, Va.	1
Camp Polk zone, N. C.	5
Camp Travis zone, Tex.	2
Camp Upton zone, N. Y.	2
Wilmington sanitary district, N. C.	2

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1097.

TYPHOID FEVER.

Cases Reported in Extra-Cantonment Zones, Week Ended May 10, 1919.

	Cases.
Camp Gordon zone, Ga.	1
Picric acid plant zone, Ga.	2
Camp Upton zone, N. Y.	1
Wilmington sanitary district, N. C.	1

State Reports for March and April, 1919.

Place.	New cases reported.
Arizona (April):	
Maricopa County—	
Phoenix	2
Florida (April):	
Alachua County	1
Brevard County	3
Broward County	2
Dade County	3
Miami	5
De Soto County	3
Duval County	1
Jacksonville	4
Escambia County	1
Hillsboro County	1
Tampa	17
Jackson County	1
Jefferson County	2
Lee County	1
Levy County	1
Manatee County	1
Monroe County—	
Key West	5
Orange County	3
Florida (April)—Continued.	
Palm Beach County	2
Pinellas County	1
Polk County	3
Putnam County	4
St. Johns County	12
Volusia County	21
Total	98
Massachusetts (April):	
Berkshire County—	
Adams (town)	2
Pittsfield	1
Bristol County—	
Fall River	3
New Bedford	1
Essex County—	
Haverhill	2
Lawrence	6
Lynn	1
Methuen	1
Newburyport	2
Franklin County—	
Northfield (town)	1

TYPHOID FEVER—Continued.

State Reports for March and April, 1919—Continued.

Place.	New cases reported.
Massachusetts (April)—Continued.	
Middlesex County—	
Cambridge	1
Everett	1
Hudson (town)	1
Malden	1
Medford	1
Natick (town)	1
Somerville	3
Watertown (town)	1
Woburn	1
Norfolk County—	
Brookline (town)	1
Quincy	1
Suffolk County—	
Boston	9
Worcester County—	
Milford (town)	2
Worcester	1
Total	45
Oklahoma (April):	
Atoka County	1
Canadian County	2
Creek County	5
Delaware County	2
Kiowa County	1
Le Flore County	11
Lincoln County	1
Logan County	1
McIntosh County	2
Mayes County	2
Murray County	3
Noble County	2
Nowata County	1
Okfuskee County	1
Payne County	15
Sequoyah County	1
Stephens County	2
Tulsa County	2
Washita County	1
Total	56
Vermont (March):	
Addison County	1
Franklin County	1
Lamoille County	1
Total	3
Vermont (April):	
Bennington County	1
Essex County	1
Total	2

City Reports for Week Ended Apr. 26, 1919.

Place.	Cases.	Deaths.
Baltimore, Md.	4	
Baton Rouge, La.		1
Beaver Falls, Pa.	1	
Beloit, Wis.	1	
Birmingham, Ala.	2	
Boston, Mass.	1	
Buffalo, N. Y.		1
Camden, N. J.	1	
Chester, Pa.	2	
Chicago, Ill.	4	
Cincinnati, Ohio.	1	
Covington, Ky.	4	1
Dallas, Tex.	1	
Detroit, Mich.	1	
East Chicago, Ind.		3
Elizabeth, N. J.	1	
Galveston, Tex.	2	
Grand Rapids, Mich.	3	2
Hammond, Ind.		1
Hibbing, Minn.	2	
Houston, Tex.	1	
Kalamazoo, Mich.	1	
Los Angeles, Calif.	3	
Louisville, Ky.	1	
Macon, Ga.	1	
Malden, Mass.	1	
Memphis, Tenn.	9	
Milwaukee, Wis.	1	
Missoula, Mont.		1
Mobile, Ala.	2	
Montclair, N. J.	1	
Newburyport, Mass.	2	
New Orleans, La.	1	
New York, N. Y.	4	2
Niagara Falls, N. Y.	1	1
Philadelphia, Pa.	8	1
Pittsburgh, Pa.	1	
Providence, R. I.	1	
Racine, Wis.	2	
Reading, Pa.	1	
Richmond, Va.	1	
Rocky Mount, N. C.	1	
Sacramento, Calif.		1
St. Louis, Mo.	4	1
San Antonio, Tex.	1	
Seattle, Wash.	1	
Somerville, Mass.	1	
Springfield, Ill.	2	
Stockton, Calif.	2	
Superior, Wis.	2	
Toledo, Ohio.	1	
Trenton, N. J.		1
Tulsa, Okla.	2	
Walla Walla, Wash.	1	
Washington, D. C.	4	
Wilmington, Del.	1	
Wilmington, N. C.	8	1
Winston-Salem, N. C.	1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for March and April, 1919.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
Arizona (April)	1	4	.....	Oklahoma (April)	21	108	41
Florida (April)	35	106	13	Vermont (March)	16	296	61
Massachusetts (April)	532	1,045	714	Vermont (April)	10	355	47

City Reports for Week Ended Apr. 26, 1919.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Adams, Mass	14,406	2	2	.....	.....	.....	.....	.....	.....	.....
Adrian, Mich	11,570	1	.....	.....	.....	.....	.....	.....	.....	.....
Akron, Ohio	93,604	22	.....	.....	90	.....	2	.....	5	.....
Alameda, Calif	28,433	3	4	.....	3	.....	.....	.....	1	.....
Allentown, Pa	65,109	.....	.....	.....	40	.....	4	.....	2	.....
Altoona, Pa	59,712	.....	2	.....	.....	.....	1	.....	.....	.....
Anderson, Ind	24,230	5	.....	.....	.....	.....	.....	.....	.....	1
Ann Arbor, Mich	15,041	8	.....	.....	.....	.....	1	.....	1	1
Ansonia, Conn	16,954	4	.....	.....	.....	.....	.....	.....	1	.....
Appleton, Wis	18,005	2	.....	.....	.....	.....	.....	.....	.....	.....
Arlington, Mass	13,073	4	.....	.....	.....	.....	.....	.....	.....	.....
Asbury Park, N. J	14,629	6	.....	.....	3	.....	.....	.....	.....	.....
Ashtabula, Ohio	22,008	7	.....	.....	1	.....	.....	.....	.....	1
Atlanta, Ga	196,144	44	.....	.....	8	.....	3	.....	.....	6
Atlantic City, N. J	59,515	12	.....	.....	1	.....	2	.....	13	.....
Attleboro, Mass	19,776	4	2	.....	.....	.....	.....	.....	.....	.....
Austin, Tex	35,612	9	.....	.....	.....	.....	2	.....	.....	2
Bakersfield, Calif	17,543	.....	.....	.....	.....	.....	1	.....	.....	.....
Baltimore, Md	594,637	233	35	3	50	.....	200	2	58	36
Bangor, Me	26,958	.....	.....	.....	.....	.....	1	.....	.....	.....
Baton Rouge, La	17,544	10	.....	.....	2	.....	.....	.....	.....	.....
Battle Creek, Mich	30,159	.....	3	.....	17	.....	2	.....	.....	.....
Bayonne, N. J	72,204	.....	4	.....	1	.....	3	.....	5	.....
Beacon, N. Y	11,674	3	.....	.....	.....	.....	.....	.....	.....	.....
Beatrice, Nebr	10,437	1	.....	.....	.....	.....	.....	.....	.....	.....
Beaumont, Tex	28,851	5	.....	.....	.....	.....	.....	.....	.....	1
Beaver Falls, Pa	13,749	.....	.....	.....	.....	.....	1	.....	.....	.....
Bedford, Ind	10,613	2	.....	.....	.....	.....	.....	.....	.....	.....
Bellaire, Ohio	14,575	7	1	.....	.....	.....	.....	.....	1	.....
Belleville, N. J	12,797	.....	2	.....	.....	.....	1	.....	.....	.....
Beloit, Wis	18,547	4	.....	.....	5	.....	6	.....	.....	.....
Benton Harbor, Mich	11,099	2	.....	.....	2	.....	1	.....	1	.....
Berkeley, Calif	60,427	11	.....	.....	1	.....	.....	.....	1	.....
Berlin, N. H	13,892	5	.....	.....	.....	.....	.....	.....	.....	.....
Beverly, Mass	22,128	6	.....	.....	.....	.....	.....	.....	1	1
Biddeford, Me	17,760	4	.....	.....	.....	.....	.....	.....	.....	.....
Billings, Mont	15,123	.....	1	.....	.....	.....	3	.....	.....	.....
Binghampton, N. Y	54,864	16	.....	.....	1	.....	2	.....	.....	.....
Birmingham, Ala	189,716	42	.....	.....	8	.....	.....	.....	11	6
Bloomfield, N. J	19,013	.....	.....	.....	1	.....	.....	.....	2	.....
Bluefield, W. Va	16,123	.....	.....	.....	.....	.....	2	.....	.....	.....
Boise, Idaho	35,951	8	.....	.....	2	.....	3	.....	.....	.....
Boston, Mass	767,813	246	27	3	17	.....	40	2	42	29
Braddock, Pa	22,060	.....	3	.....	1	.....	2	.....	.....	.....
Brazil, Ind	10,472	1	.....	.....	4	.....	.....	.....	.....	1
Bridgeport, Conn	124,724	34	4	3	9	.....	3	.....	2	3
Bristol, Conn	16,318	4	.....	.....	.....	.....	.....	.....	.....	.....
Brockton, Mass	69,152	14	.....	.....	1	.....	10	.....	5	1
Brookline, Mass	33,526	8	.....	.....	6	.....	2	.....	.....	.....
Brunswick, Ga	10,984	3	.....	.....	4	.....	.....	.....	.....	1
Buffalo, N. Y	475,781	144	43	2	66	.....	15	.....	29	17
Burlington, Iowa	25,144	6	.....	.....	.....	.....	2	.....	.....	.....
Butler, Pa	28,677	.....	.....	.....	.....	.....	3	.....	.....	.....
Butte, Mont	44,057	.....	.....	.....	.....	.....	3	.....	.....	.....
Cadillac, Mich	10,158	1	.....	.....	.....	.....	.....	.....	.....	1
Cairo, Ill	15,995	1	2	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass	114,293	27	2	.....	10	.....	5	.....	7	5

[1] Population Apr. 15, 1910.

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

City Reports for Week Ended Apr. 26, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Camden, N. J.	108,117	.....	3	.....	.....	.....	2	.....	7	.....
Canton, Ill.	13,674	1	.....	.....	.....	.....	.....	.....	.....	.....
Canton, Ohio.	62,566	13	.....	.....	8	.....	1	.....	2	2
Carbondale, Pa.	19,597	.....	.....	.....	.....	.....	.....	.....	5	.....
Carlisle, Pa.	10,795	.....	.....	.....	4	.....	.....	.....	.....	.....
Cedar Rapids, Iowa.	38,033	.....	.....	.....	.....	.....	3	1	.....	.....
Chanute, Kans.	12,968	3	.....	.....	1	.....	.....	.....	.....	.....
Charleston, S. C.	61,041	21	.....	.....	.....	.....	.....	.....	.....	3
Charlotte, N. C.	40,759	12	.....	.....	15	.....	2	.....	5	1
Chelsea, Mass.	48,405	13	.....	.....	2	.....	2	.....	4	2
Cheyenne, Wyo.	[1] 11,320	.....	1	.....	5	.....	.....	.....	.....	1
Chicago, Ill.	2,547,201	622	64	6	963	8	54	2	467	78
Chicopee, Mass.	29,950	16	3	.....	.....	.....	.....	.....	4	1
Chillicothe, Ohio.	15,625	2	1	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ohio.	414,248	127	2	3	18	.....	35	.....	18	20
Cleveland, Ohio.	692,259	.....	19	2	67	1	7	1	31	31
Clinton, Mass.	[1] 13,075	4	1	1	1	.....	1	.....	.....	1
Coatesville, Pa.	14,998	.....	.....	.....	9	.....	.....	.....	.....	.....
Coffeyville, Kans.	18,331	.....	.....	.....	.....	.....	.....	.....	1	1
Cohoes, N. Y.	25,292	8	1	.....	.....	.....	.....	.....	.....	2
Colorado Springs, Colo.	38,965	17	.....	.....	.....	.....	6	.....	9	9
Columbia, S. C.	35,165	.....	.....	.....	.....	.....	.....	.....	1	.....
Columbus, Ohio.	220,135	74	1	.....	2	.....	2	.....	5	8
Concord, N. H.	22,858	11	.....	.....	.....	.....	.....	.....	.....	1
Connellsville, Pa.	15,876	.....	.....	.....	7	.....	1	.....	1	.....
Corpus Christi, Tex.	10,789	.....	1	.....	.....	.....	.....	.....	.....	.....
Council Bluffs, Iowa.	31,838	9	5	.....	.....	.....	.....	.....	.....	.....
Covington, Ky.	59,623	13	2	.....	.....	.....	1	.....	2	3
Cumberland, Md.	26,686	1	1	.....	8	.....	5	.....	2	.....
Dallas, Tex.	129,738	26	2	.....	1	.....	1	.....	5	.....
Danbury, Conn.	22,931	4	.....	.....	.....	.....	.....	.....	.....	.....
Danvers, Mass.	10,037	2	.....	.....	.....	.....	.....	.....	2	2
Danville, Ill.	32,969	4	.....	.....	1	.....	.....	.....	.....	.....
Danville, Va.	20,183	5	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa.	49,618	.....	2	.....	.....	.....	1	.....	.....	.....
Dayton, Ohio.	128,939	30	2	.....	2	.....	2	.....	4	.....
Decatur, Ill.	41,483	6	1	.....	.....	.....	.....	.....	3	2
Dedham, Mass.	10,618	.....	2	.....	.....	.....	1	.....	.....	.....
Denver, Colo.	268,439	68	12	1	3	.....	6	.....	.....	23
Des Moines, Iowa.	104,052	.....	1	.....	4	.....	21	.....	7	.....
Detroit, Mich.	619,648	214	67	5	78	1	71	1	36	21
Dover, N. H.	13,276	5	.....	.....	.....	.....	.....	.....	.....	.....
Du Bois, Pa.	14,994	.....	1	.....	1	.....	6	.....	.....	.....
Dubuque, Iowa.	40,096	.....	1	.....	.....	.....	.....	.....	.....	1
Duluth, Minn.	97,077	29	3	1	20	2	.....	1	6	1
Durham, N. C.	26,160	2	.....	.....	14	.....	.....	.....	1	.....
East Chicago, Ind.	30,286	10	.....	.....	.....	.....	.....	.....	.....	.....
East Cleveland, Ohio.	13,864	.....	.....	.....	1	.....	1	.....	.....	.....
Easton, Pa.	30,854	.....	.....	.....	6	.....	.....	.....	2	.....
East Orange, N. J.	43,761	10	.....	.....	1	.....	1	.....	4	2
East Providence, R. I.	18,485	.....	.....	.....	.....	.....	2	.....	.....	.....
Eau Claire, Wis.	18,887	.....	.....	.....	25	.....	.....	.....	1	.....
Elizabeth, N. J.	88,830	.....	4	.....	2	.....	12	.....	1	3
Elmira, N. Y.	38,272	6	1	.....	1	.....	.....	.....	3	.....
El Paso, Tex.	69,149	44	.....	.....	.....	.....	11	.....	.....	7
Englewood, N. J.	12,603	1	.....	.....	.....	.....	.....	.....	.....	.....
Erie, Pa.	76,592	.....	1	.....	5	.....	.....	.....	.....	.....
Eureka, Calif.	15,142	2	.....	.....	.....	.....	.....	.....	.....	.....
Evanston, Ill.	29,304	9	1	.....	144	.....	.....	.....	.....	.....
Evansville, Ind.	76,984	16	4	.....	1	.....	3	.....	1	2
Everett, Mass.	40,160	9	1	.....	1	.....	3	.....	.....	1
Fairmount, W. Va.	16,111	.....	.....	.....	2	.....	.....	.....	.....	.....
Fall River, Mass.	129,828	28	4	2	52	.....	2	.....	5	6
Fargo, N. Dak.	17,872	8	1	.....	12	.....	4	.....	.....	.....
Farrell, Pa.	10,190	.....	2	.....	.....	.....	.....	.....	.....	.....
Findlay, Ohio.	14,858	4	.....	.....	4	.....	.....	.....	.....	.....
Fitchburg, Mass.	48,119	7	.....	.....	.....	.....	1	.....	.....	.....
Fond du Lac, Wis.	21,486	8	.....	.....	.....	.....	6	.....	.....	.....
Fort Scott, Kans.	10,564	4	.....	.....	.....	.....	.....	.....	.....	.....
Fort Wayne, Ind.	78,014	17	1	.....	15	.....	.....	.....	2	3
Fort Worth, Tex.	109,597	22	1	1	5	.....	5	.....	2	2
Fostoria, Ohio.	10,959	1	.....	.....	.....	.....	.....	.....	.....	.....

[1] Population Apr. 15, 1910.

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

City Reports for Week Ended Apr. 26, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Framingham, Mass	14,149	5	.....	.....	1	.....	.....	.....	1	1
Frederick, Md	11,225	7	.....	.....	.....	.....	5	.....	.....	.....
Freeport, Ill	19,844	6	.....	.....	.....	.....	.....	.....	.....	1
Fremont, Nebr	10,080	4	.....	.....	.....	.....	.....	.....	.....	2
Fremont, Ohio	11,054	2	.....	.....	3	.....	.....	.....	.....	.....
Fresno, Calif	36,314	10	.....	.....	.....	.....	.....	.....	5	3
Galveston, Tex	42,650	11	.....	.....	.....	.....	.....	.....	.....	1
Geneva, N. Y	13,915	6	.....	.....	.....	.....	.....	.....	.....	.....
Gloversville, N. Y	22,314	.....	.....	.....	4	.....	.....	.....	2	.....
Grand Forks, N. Dak	16,342	5	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids, Mich	132,861	41	6	1	7	.....	2	.....	10	2
Great Falls, Mont	[1] 13,948	11	1	.....	2	.....	3	.....	1	.....
Green Bay, Wis	30,017	8	1	1	.....	.....	.....	.....	.....	.....
Greenfield, Mass	12,251	6	5	.....	.....	.....	.....	.....	1	.....
Greensboro N. C	20,171	7	.....	.....	.....	.....	.....	.....	.....	2
Greensburg, Pa	15,881	.....	.....	.....	7	.....	.....	.....	.....	.....
Greenville, S. C	18,574	.....	.....	.....	2	.....	.....	.....	2	.....
Greenwich, Conn	19,594	.....	1	.....	.....	.....	5	.....	.....	1
Hackensack, N. J	17,412	7	2	.....	1	.....	1	.....	1	1
Hammond, Ind	27,016	12	.....	.....	.....	.....	.....	.....	.....	.....
Hancock, Mich	12,578	3	.....	.....	.....	.....	.....	.....	.....	.....
Harrisburg, Pa	73,276	.....	5	.....	133	.....	2	.....	.....	.....
Hartford, Conn	112,851	39	2	.....	6	.....	3	.....	5	3
Haverhill, Mass	49,180	16	4	.....	1	.....	.....	.....	2	2
Hazleton, Pa	28,981	.....	.....	.....	1	.....	1	.....	.....	.....
Highland Park, Mich	33,859	8	12	.....	2	.....	3	.....	.....	.....
High Point, N. C	13,439	2	.....	.....	3	.....	.....	.....	.....	.....
Hoboken, N. J	78,324	16	5	.....	2	.....	.....	.....	6	3
Holland, Mich	12,459	2	.....	.....	.....	.....	.....	.....	.....	.....
Holyoke, Mass	66,503	20	1	.....	.....	.....	4	.....	2	3
Homestead, Pa	23,071	.....	.....	.....	1	.....	.....	.....	1	.....
Houston, Tex	116,878	26	1	.....	.....	.....	.....	.....	3	1
Hudson, N. Y	12,898	5	.....	.....	.....	.....	.....	.....	.....	.....
Hutchinson, Kans	21,461	.....	.....	.....	2	.....	.....	.....	1	.....
Independence, Mo	11,964	10	.....	.....	26	.....	.....	.....	1	.....
Indianapolis, Ind	283,622	77	5	2	51	.....	17	.....	16	6
Ironton, Ohio	14,079	3	.....	.....	.....	.....	.....	.....	.....	1
Ironwood, Mich	15,095	3	.....	.....	2	.....	.....	.....	.....	1
Ithaca, N. Y	16,017	10	.....	.....	2	.....	2	.....	2	1
Jamestown, N. Y	37,431	14	.....	.....	1	.....	2	.....	3	.....
Jersey City, N. J	312,557	.....	30	.....	12	.....	7	.....	13	.....
Johnstown, N. Y	10,678	4	.....	.....	.....	.....	.....	.....	1	1
Johnstown, Pa	70,473	.....	1	.....	1	.....	.....	.....	1	.....
Joplin, Mo	33,400	3	.....	.....	.....	.....	.....	.....	2	.....
Kalamazoo, Mich	50,408	.....	3	1	10	.....	5	.....	3	1
Kankakee, Ill	14,270	.....	.....	.....	2	.....	.....	.....	.....	.....
Kansas City, Kans	102,096	.....	3	.....	9	.....	2	.....	4	.....
Kansas City, Mo	305,816	93	6	2	53	1	7	1	1	8
Kearny, N. J	24,325	5	2	1	.....	.....	2	.....	1	1
Keene, N. H	10,725	5	.....	.....	.....	.....	.....	.....	.....	.....
Kenosha, Wis	32,833	7	2	.....	44	.....	3	.....	2	.....
Knoxville, Tenn	59,112	.....	.....	.....	15	.....	2	.....	1	1
Kokomo, Ind	21,929	20	1	.....	.....	.....	3	.....	.....	.....
Lackawanna, N. Y	16,219	5	4	.....	12	.....	.....	.....	.....	.....
La Crosse, Wis	31,833	13	1	.....	.....	.....	.....	.....	.....	.....
La Fayette, Ind	21,481	4	.....	.....	1	.....	3	.....	.....	.....
Lakewood, Ohio	23,813	11	1	.....	.....	.....	.....	.....	3	3
Lancaster, Ohio	16,086	5	.....	.....	1	.....	.....	.....	.....	.....
Lancaster, Pa	51,437	.....	.....	.....	12	.....	1	.....	1	.....
Lawrence, Kans	13,477	3	.....	.....	.....	.....	.....	.....	.....	.....
Leavenworth, Kans	[1] 19,363	.....	7	2	.....	.....	.....	.....	.....	.....
Lebanon, Pa	20,947	.....	.....	.....	23	.....	.....	.....	1	.....
Leominster, Mass	21,365	7	.....	.....	13	.....	.....	.....	.....	.....
Lexington, Ky	41,997	12	.....	.....	14	.....	.....	.....	.....	1
Lima, Ohio	37,145	12	3	.....	18	.....	17	.....	1	2
Lincoln, Nebr	46,957	11	3	.....	.....	.....	3	.....	.....	.....
Little Rock, Ark	58,716	3	.....	.....	.....	.....	6	.....	4	.....
Lockport, N. Y	20,028	7	.....	.....	66	.....	.....	.....	3	.....
Logansport, Ind	21,338	12	.....	.....	.....	.....	.....	2	.....	.....
Long Beach, Calif	29,163	26	.....	.....	.....	.....	.....	.....	1	.....
Long Branch, N. J	15,733	3	.....	.....	.....	.....	1	.....	2	.....
Lorain, Ohio	38,266	5	.....	.....	2	.....	.....	.....	1	.....

[1] Population Apr. 15, 1910.

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

City Reports for Week Ended Apr. 26, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Los Angeles, Calif.	535,485	.....	13	.....	7	.....	14	.....	37	23
Louisville, Ky.	240,808	74	5	.....	9	.....	13	.....	3	7
Lowell, Mass.	114,366	41	4	1	15	.....	2	.....	5	3
Lynchburg, Va.	33,497	10	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass.	104,534	26	2	.....	30	.....	3	.....	4	2
McKeesport, Pa.	48,299	.....	.....	.....	.....	.....	2	.....	.....	.....
Macon, Ga.	46,099	18	.....	.....	.....	.....	.....	.....	1	2
Madison, Wis.	31,315	14	1	.....	9	.....	2	.....	.....	2
Mahanoy City, Pa.	17,709	.....	.....	.....	.....	.....	1	.....	.....	.....
Malden, Mass.	52,243	14	3	.....	.....	.....	2	.....	.....	2
Manchester, Conn.	15,859	3	.....	.....	.....	.....	2	.....	3	.....
Manchester, N. H.	79,607	23	1	.....	2	.....	4	.....	5	2
Manitowoc, Wis.	13,931	1	.....	.....	.....	.....	.....	.....	.....	.....
Mankato, Minn.	[1] 10,365	4	1	.....	.....	.....	.....	1	.....	.....
Marinette, Wis.	[1] 14,610	1	.....	.....	.....	.....	2	.....	.....	.....
Marion, Ind.	19,923	10	1	.....	.....	.....	5	1	1	.....
Marlboro, Mass.	15,285	4	.....	.....	.....	.....	.....	.....	1	.....
Marquette, Mich.	12,555	9	.....	.....	3	.....	.....	.....	.....	.....
Martinsburg, W. Va.	12,984	.....	.....	.....	8	.....	1	.....	.....	.....
Martins Ferry, Ohio.	10,135	1	.....	.....	.....	.....	.....	.....	1	1
Mason City, Iowa.	14,938	8	1	.....	.....	.....	.....	.....	.....	.....
Meadville, Pa.	13,968	.....	.....	.....	1	.....	.....	.....	2	.....
Medford, Mass.	26,681	7	2	.....	.....	.....	.....	.....	.....	1
Melrose, Mass.	17,724	2	.....	.....	.....	.....	.....	.....	1	1
Memphis, Tenn.	151,877	41	4	.....	69	.....	4	.....	6	7
Meriden, Conn.	29,431	.....	1	.....	.....	.....	4	.....	.....	1
Methuen, Mass.	14,320	4	1	.....	.....	.....	1	.....	1	.....
Middletown, N. Y.	15,890	.....	.....	.....	1	.....	.....	.....	3	.....
Middletown, Ohio.	16,384	7	.....	.....	.....	.....	.....	.....	.....	4
Milford, Mass.	14,280	2	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis.	445,008	129	15	3	6	.....	21	.....	15	9
Minneapolis, Minn.	373,448	102	10	2	28	.....	41	1	19	9
Missoula, Mont.	19,075	4	.....	.....	2	.....	.....	.....	.....	.....
Mobile, Ala.	59,201	15	.....	.....	2	1	.....	.....	.....	3
Moline, Ill.	27,976	1	1	.....	.....	.....	2	.....	.....	.....
Monessen, Pa.	23,070	.....	.....	.....	.....	.....	1	.....	1	.....
Montclair, N. J.	27,087	.....	.....	.....	2	.....	3	.....	1	.....
Montgomery, Ala.	44,039	7	.....	.....	1	.....	2	.....	1	3
Morgantown, W. Va.	14,444	3	.....	.....	.....	.....	.....	.....	1	.....
Morristown, N. J.	13,410	.....	.....	.....	1	.....	.....	.....	.....	.....
Mount Carmel, Pa.	20,709	.....	1	.....	6	.....	1	.....	2	.....
Mount Vernon, N. Y.	37,991	7	.....	.....	.....	.....	.....	.....	.....	.....
Muscatine, Iowa.	17,713	.....	.....	.....	1	.....	.....	.....	.....	.....
Nanticoke, Pa.	23,811	.....	1	.....	1	.....	2	.....	.....	.....
Nashua, N. H.	27,541	10	1	.....	.....	.....	1	.....	.....	1
Nashville, Tenn.	118,136	42	.....	.....	26	.....	.....	.....	5	5
Natick, Mass.	10,140	6	.....	.....	.....	.....	.....	.....	1	.....
Newark, N. J.	418,789	107	38	2	4	.....	23	.....	37	18
New Bedford, Mass.	121,622	39	.....	.....	14	.....	8	1	4	3
New Britain, Conn.	52,385	13	.....	.....	17	.....	.....	.....	.....	.....
New Brunswick, N. J.	25,855	.....	.....	.....	.....	.....	3	.....	.....	.....
Newburgh, N. Y.	29,893	8	.....	.....	1	.....	.....	.....	2	1
Newburyport, Mass.	15,291	3	.....	.....	1	.....	.....	.....	1	.....
New Castle, Pa.	41,915	.....	.....	.....	.....	.....	2	.....	1	.....
New Haven, Conn.	152,275	36	13	1	9	.....	4	.....	6	3
New London, Conn.	21,199	17	2	.....	1	.....	.....	.....	1	.....
New Orleans, La.	377,010	.....	9	.....	19	.....	4	1	16	11
Newport, Ky.	32,133	6	.....	.....	.....	.....	1	.....	.....	.....
Newport, R. I.	30,585	13	.....	.....	.....	.....	6	.....	.....	2
Newton, Mass.	44,345	13	3	.....	1	.....	1	.....	1	.....
New York, N. Y.	5,737,492	1,489	327	31	160	3	122	6	304	150
Niagara Falls, N. Y.	38,466	14	.....	.....	1	.....	.....	.....	3	2
Norfolk, Va.	91,148	.....	1	.....	2	.....	.....	.....	.....	2
Norristown, Pa.	31,969	.....	.....	.....	83	.....	2	.....	.....	.....
North Adams, Mass.	[1] 22,019	11	.....	.....	.....	.....	.....	.....	1	1
Northampton, Mass.	20,006	7	.....	.....	2	.....	1	.....	1	.....
North Attleboro, Mass.	11,248	3	.....	.....	.....	.....	.....	.....	.....	.....
North Braddock, Pa.	15,684	.....	2	.....	1	.....	.....	.....	4	.....
North Tonowanda, N. Y.	14,060	5	.....	.....	21	.....	.....	.....	.....	1
Norwalk, Conn.	27,332	.....	.....	.....	.....	.....	1	.....	1	2
Norwich, Conn.	21,923	1	.....	.....	1	.....	1	.....	3	1
Norwood, Ohio.	23,269	1	1	.....	.....	.....	1	.....	.....	.....

[1] Population Apr. 15, 1910.

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

City Reports for Week Ended Apr. 26, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Oakland, Calif.	206,405	46	2	.....	3	.....	5	.....	7	4
Oak Park, Ill.	27,816	12	.....	.....	24	.....	4	.....	.....	.....
Ogden, Utah	32,343	5	.....	.....	.....	.....	.....	.....	.....	.....
Oil City, Pa.	20,162	.....	.....	.....	56	.....	.....	.....	1	.....
Oklahoma City, Okla.	97,588	25	1	.....	3	.....	10	1	.....	1
Olean, N. Y.	16,927	6	.....	.....	.....	.....	.....	.....	.....	.....
Omaha, Nebr.	177,777	34	2	.....	35	.....	9	.....	.....	3
Orange, Conn.	14,393	15	2	.....	.....	.....	3	.....	4	1
Oshkosh, Wis.	36,549	10	3	.....	.....	.....	.....	.....	1	1
Palestine, Tex.	12,075	.....	.....	.....	.....	.....	.....	.....	1	.....
Parkersburg, W. Va.	21,059	6	.....	.....	2	.....	1	.....	.....	.....
Parsons, Kans.	15,952	.....	.....	.....	.....	.....	.....	.....	2	.....
Pasadena, Calif.	49,620	10	.....	.....	.....	.....	.....	.....	4	2
Passaic, N. J.	74,478	15	1	.....	2	.....	1	.....	1	2
Paterson, N. J.	140,512	.....	8	.....	2	.....	2	.....	15	.....
Peekskill, N. Y.	19,034	2	.....	.....	.....	.....	.....	.....	.....	.....
Peoria, Ill.	72,184	21	2	.....	.....	.....	1	.....	.....	.....
Perth Amboy, N. J.	42,646	7	3	.....	.....	.....	.....	.....	1	.....
Philadelphia, Pa.	1,735,514	527	108	13	140	1	78	2	114	78
Phillipsburg, N. J.	15,879	5	.....	.....	1	.....	.....	.....	2	2
Pine Bluff, Ark.	17,777	.....	1	.....	.....	.....	.....	.....	1	.....
Piqua, Ohio	14,275	1	.....	.....	.....	.....	.....	.....	1	.....
Pittsburgh, Pa.	586,196	.....	15	.....	14	.....	5	.....	28	.....
Pittsburg, Kans.	18,340	3	.....	.....	.....	.....	.....	.....	.....	.....
Pittsfield, Mass.	39,678	21	.....	.....	.....	.....	2	.....	6	1
Pittston, Pa.	18,975	.....	.....	.....	.....	.....	1	.....	.....	.....
Plainfield, N. J.	24,330	1	2	.....	.....	.....	.....	.....	.....	.....
Plattsburg, N. Y.	13,111	6	1	.....	.....	.....	.....	.....	1	1
Plymouth, Pa.	19,439	.....	.....	.....	1	.....	.....	.....	1	.....
Pontiac, Mich.	18,006	12	4	.....	.....	.....	2	.....	2	2
Port Chester, N. Y.	16,727	.....	.....	.....	.....	.....	3	.....	.....	.....
Portland, Me.	64,720	15	3	.....	1	.....	8	.....	.....	2
Portland, Oreg.	308,399	61	2	.....	.....	.....	8	.....	7	6
Portsmouth, N. H.	11,730	.....	.....	.....	.....	.....	.....	.....	1	.....
Portsmouth, Va.	40,693	13	.....	.....	.....	.....	.....	1	6	1
Pottsville, Pa.	22,717	.....	1	.....	9	.....	.....	.....	.....	.....
Poughkeepsie, N. Y.	30,786	9	2	.....	.....	.....	4	.....	1	.....
Providence, R. I.	259,895	61	6	1	1	.....	8	1	.....	12
Pueblo, Colo.	56,084	.....	1	.....	1	.....	.....	.....	.....	.....
Quincy, Ill.	36,832	9	.....	.....	1	.....	2	.....	.....	.....
Quincy, Mass.	39,022	9	1	.....	.....	.....	1	.....	2	.....
Racine, Wis.	47,465	16	1	.....	.....	.....	.....	.....	1	4
Rahway, N. J.	10,361	7	.....	.....	.....	.....	1	.....	.....	1
Raleigh, N. C.	20,274	7	1	.....	1	.....	.....	.....	1	1
Reading, Pa.	111,607	.....	4	.....	32	.....	2	.....	.....	.....
Redlands, Calif.	14,573	1	.....	.....	.....	.....	.....	.....	1	.....
Reno, Nev.	15,514	4	.....	.....	.....	.....	.....	.....	.....	.....
Richmond, Va.	158,702	49	1	.....	25	.....	1	.....	6	7
Riverside, Calif.	20,496	5	.....	.....	.....	.....	2	.....	.....	1
Roanoke, Va.	46,282	11	.....	.....	50	.....	8	.....	.....	2
Rochester, N. Y.	264,714	84	4	1	3	3	21	.....	10	6
Rockford, Ill.	56,739	12	.....	.....	46	.....	4	.....	.....	.....
Rocky Mount, N. C.	12,673	5	.....	.....	.....	.....	.....	.....	.....	1
Rome, N. Y.	24,259	.....	3	.....	.....	.....	.....	.....	2	.....
Rutland, Vt.	15,038	6	.....	.....	.....	.....	.....	.....	.....	.....
Sacramento, Calif.	68,984	28	.....	.....	.....	.....	2	.....	7	8
Saginaw, Mich.	56,469	19	1	.....	.....	.....	2	.....	1	5
St. Cloud, Minn.	12,013	.....	1	.....	25	.....	2	.....	.....	.....
St. Louis, Mo.	768,630	192	29	2	60	1	29	1	25	13
St. Paul, Minn.	252,465	64	21	2	65	2	8	.....	38	5
Salem, Mass.	49,346	14	3	.....	.....	.....	5	.....	1	2
Salem, Oreg.	21,274	10	.....	.....	.....	.....	.....	.....	.....	1
Salt Lake City, Utah	121,623	29	5	.....	1	.....	3	.....	2	1
San Angelo, Tex.	[1] 10,321	4	.....	.....	.....	.....	.....	.....	.....	1
San Antonio, Tex.	128,215	12	2	.....	2	.....	.....	.....	14	11
San Diego, Calif.	56,412	22	3	1	.....	.....	2	.....	4	3
Sandusky, Ohio	20,226	8	3	.....	2	.....	.....	.....	3	.....
Sanford, Me.	11,217	4	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco, Calif.	471,023	144	5	.....	1	.....	7	.....	37	21
San Jose, Calif.	39,810	.....	.....	.....	.....	.....	1	.....	.....	.....
Santa Barbara, Calif.	15,360	5	.....	.....	.....	.....	.....	.....	.....	.....
Santa Cruz, Calif.	15,150	4	.....	.....	.....	.....	.....	.....	.....	.....

[1] Population Apr. 15, 1910.

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

City Reports for Week Ended Apr. 26, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Saratoga Springs, N. Y.	13,839	3	.....	.....	.....	.....	.....	.....	2	1
Saugus, Mass.	10,210	6	3	.....	.....	.....	.....	.....	1	1
Sault Ste. Marie, Mich.	14,130	4	.....	.....	.....	.....	.....	.....	1	1
Schenectady, N. Y.	103,774	19	1	.....	.....	.....	3	.....	5	1
Scranton, Pa.	149,541	.....	1	.....	1	.....	2	.....	3	.....
Seattle, Wash.	366,445	.....	4	.....	39	.....	19	.....	.....	.....
Shamokin, Pa.	21,274	.....	3	.....	.....	.....	1	.....	.....	.....
Sioux Falls, S. Dak.	16,887	1	.....	.....	2	.....	.....	.....	.....	.....
Somerville, Mass.	88,618	20	5	.....	3	.....	7	.....	2	1
South Bend, Ind.	70,967	17	1	.....	13	.....	.....	.....	.....	1
Southbridge, Mass.	14,465	1	1	.....	.....	.....	.....	.....	.....	.....
Spartanburg, S. C.	21,985	6	1	.....	.....	.....	.....	.....	1	1
Spokane, Wash.	157,656	.....	.....	.....	5	.....	7	.....	.....	.....
Springfield, Ill.	62,623	19	1	.....	.....	.....	.....	.....	.....	2
Springfield, Mass.	108,668	32	3	1	1	.....	4	.....	4	2
Springfield, Mo.	41,169	16	.....	.....	.....	.....	.....	.....	.....	2
Springfield, Ohio.	52,296	18	.....	.....	26	.....	1	.....	9	6
Steelton, Pa.	15,759	.....	1	.....	5	.....	.....	.....	1	.....
Steubenville, Ohio.	28,259	12	.....	.....	.....	.....	.....	.....	.....	.....
Stockton, Calif.	36,209	18	.....	.....	.....	.....	.....	.....	2	1
Streator, Ill.	14,313	4	.....	.....	.....	.....	.....	.....	.....	.....
Sunbury, Pa.	16,661	.....	1	.....	2	.....	.....	.....	.....	.....
Superior, Wis.	47,167	8	.....	.....	.....	.....	.....	.....	.....	.....
Syracuse, N. Y.	158,559	34	3	.....	1	.....	5	.....	3	2
Tacoma, Wash.	117,446	.....	1	.....	3	.....	3	.....	.....	.....
Taunton, Mass.	36,610	15	1	.....	24	.....	1	.....	3	1
Terre Haute, Ind.	67,361	19	1	.....	2	.....	.....	.....	3	2
Tiffin, Ohio.	12,962	.....	.....	.....	.....	.....	.....	.....	1	.....
Toledo, Ohio.	202,010	70	.....	.....	20	.....	9	1	13	9
Topeka, Kans.	49,538	10	1	.....	2	.....	.....	.....	1	3
Trenton, N. J.	113,974	38	2	.....	39	.....	2	.....	9	7
Troy, N. Y.	78,094	32	24	.....	.....	.....	3	.....	2	5
Tulsa, Okla.	32,507	.....	1	.....	.....	.....	.....	.....	.....	.....
Tuscaloosa, Ala.	10,824	5	1	.....	1	.....	.....	.....	4	.....
Uniontown, Pa.	21,600	.....	1	.....	.....	.....	.....	.....	.....	.....
Utica, N. Y.	89,272	30	2	1	22	.....	2	.....	5	.....
Vallejo, Calif.	13,803	8	.....	.....	.....	.....	.....	.....	.....	1
Vancouver, Wash.	13,805	.....	.....	.....	1	.....	.....	.....	1	.....
Virginia, Minn.	15,954	.....	1	.....	.....	.....	.....	.....	.....	.....
Wakefield, Mass.	12,947	3	.....	.....	.....	.....	2	.....	.....	1
Walla Walla, Wash.	26,067	.....	.....	.....	1	.....	2	.....	.....	.....
Waltham, Mass.	31,011	18	1	.....	.....	.....	2	.....	1	1
Washington, D. C.	369,282	.....	22	5	25	.....	19	.....	24	11
Washington, Pa.	22,076	.....	.....	.....	.....	.....	2	.....	.....	.....
Waterbury, Conn.	89,201	4	4	.....	21	1	4	1	4	2
Watertown, Mass.	15,188	2	.....	.....	.....	.....	.....	.....	.....	.....
Watertown, N. Y.	30,404	14	3	.....	1	.....	1	.....	.....	.....
Wausau, Wis.	19,666	1	.....	.....	1	.....	.....	.....	.....	.....
West Chester, Pa.	13,403	.....	1	.....	1	.....	9	.....	.....	.....
Westfield, Mass.	18,769	3	.....	.....	.....	.....	4	.....	.....	1
West Hoboken, N. J.	44,386	3	.....	.....	1	.....	.....	.....	2	1
West New York, N. J.	19,613	3	1	.....	1	.....	1	.....	.....	.....
West Orange, N. J.	13,964	3	.....	.....	1	.....	6	.....	1	.....
Wheeling, W. Va.	43,657	9	.....	.....	1	.....	1	.....	.....	.....
White Plains, N. Y.	23,331	5	.....	.....	.....	.....	.....	.....	.....	1
Wichita, Kans.	73,597	23	.....	.....	3	.....	.....	.....	.....	2
Wilkes-Barre, Pa.	73,334	.....	1	.....	99	.....	2	.....	4	.....
Wilkinsburg, Pa.	23,899	.....	.....	.....	1	.....	1	.....	.....	.....
Williamsport, Pa.	34,123	.....	.....	.....	6	.....	1	.....	.....	.....
Wilmington, Del.	95,369	32	.....	.....	.....	.....	4	.....	.....	4
Wilmington, N. C.	30,400	8	.....	.....	.....	.....	.....	.....	10	1
Winchester, Mass.	10,812	2	.....	.....	.....	.....	.....	.....	.....	.....
Winona, Minn.	[1]18,583	9	.....	.....	.....	.....	.....	.....	.....	.....
Winston-Salem, N. C.	33,136	6	.....	.....	35	.....	1	.....	2	1
Winthrop, Mass.	13,105	.....	2	.....	4	.....	.....	.....	.....	.....
Woburn, Mass.	16,076	6	.....	.....	.....	.....	.....	.....	.....	1
Worcester, Mass.	166,106	56	8	1	60	.....	1	1	6	8
Yonkers, N. Y.	103,066	29	6	.....	12	.....	4	.....	.....	5
York, Pa.	52,770	.....	2	.....	.....	.....	5	.....	2	.....
Youngstown, Ohio.	112,282	49	6	.....	72	1	4	.....	2	2
Zanesville, Ohio.	31,320	19	.....	.....	1	.....	.....	.....	.....	.....

[1] Population Apr. 15, 1910.

FOREIGN.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	Apr. 1-10, 1919.		Remaining under treatment Apr. 10, 1919.	Disease.	Apr. 1-10, 1919.		Remaining under treatment Apr. 10, 1919.
	New cases.	Deaths			New cases.	Deaths	
Broncho-pneumonia	.....	.....	[1] 4	Malaria	13	.....	[2] 21
Influenza	3	3	[1] 8	Paratyphoid fever	3	.....	3
Leprosy	.....	.....	17	Typhoid fever	17	3	[3] 53

[1] Excluding those remaining in hospital.
[2] From the interior 19.
[3] From the interior 22.

FINLAND.

Smallpox—Typhus Fever—January-February, 1919.

During the month of January, 1919, 279 cases of smallpox and 24 cases of typhus fever were reported in Finland. The cases of smallpox were distributed throughout the eight Provinces of Finland, the greatest prevalence, viz, 126 cases, being reported from the Province of Viborg, on the Gulf of Finland. The cases of typhus occurred in the Province of Abo Och Björneborg, and were reported from one provincial district. During the month of February, 1919, 234 cases of smallpox were reported. The cases occurred in six Provinces, with the greatest prevalence, viz, 118 cases, in the Province of Viborg. There were reported during the month of February 29 cases of typhus fever, of which 19 were notified in provincial districts of the Province of Abo Och Björneborg, and 10 cases in the Province of Nyland.

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

Reports Received During Week Ended May 16, 1919.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Manila	Mar. 22-29	4	4	
Provinces				Mar. 23-29, 1919: Cases, 81; deaths, 53.
Batangas	Mar. 23-29	8	11	
Bohol	do	27	14	
Iloilo	do	5	3	
Laguna	do	10	8	
Misamis	do	10	3	
Pampanga	do	18	15	
Pangasinan	do	3	2	

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

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

Reports Received During Week Ended May 16, 1919—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Feb. 23–Mar. 15	13	11	
Ecuador:				
Guayaquil	Mar. 16–31	4	2	

SMALLPOX.

Austria				Dec. 1, 1918–Jan. 11, 1919: Cases, 68. Jan. 12–Feb. 8, 1919: Cases, 57.
Vienna	Dec. 1–Jan. 11	6		
Bohemia				Feb. 1919: Reported prevalent.
Gablonz	Mar. 1–31	26		March, 1919: Cases, 57.
Canada:				
Nova Scotia—				
Halifax	Apr. 20–26	25		
Quebec—				
Montreal	do	1		
Quebec	do	4		
China:				
Amoy	Mar. 11–24		3	
Foochow	Mar. 9–22			Present.
Hongkong	Feb. 23–Mar. 29	3	2	
Egypt:				
Alexandria	Mar. 26–Apr. 1	4	3	
Finland:				
Provinces				Jan. 1–31, 1919: Cases, 279.
Abo Och Björneborg	Jan. 1–31	47		
Kuopio	do	47		
Nyland	do	2		
St. Michael	do	51		
Tavastehus	do	4		
Uleaborg	do	1		
Vasa	do	1		
Viborg	do	126		
Provinces				Feb. 1–28, 1919: Cases, 234.
Abo Och Björneborg	Feb. 1–28	23		
Kupio	do	54		
Nyland	do	15		
St. Michael	do	20		
Tavastehus	do	4		
Viborg	do	118		
Germany				Dec. 8, 1918–Jan. 11, 1919: Cases, 177. Additional cases reported later, 54, for week ended Jan. 11.
Aix-la-Chapelle (district)	Dec. 8–Jan. 11	17		
Cassel	do	10		
Danzig	do	3		
Doristhal	do	8		District of Gumbinnen.
Dresden	do	71		26 additional cases reported later at Dresden.
Halle	do	5		
Hanover	do	7		Among interned Russians.
Königsberg	do	15		
Kottowitz	do	5		
Meyrode	do	6		
Riesa	do	4		District of Dresden.
Germany				Jan. 12–Feb. 15, 1919: Cases, 442.
Dresden	Jan. 12–Feb. 15	176		
Italy:				
Andria	Mar. 10–16	1		Province of Bari.
Barletta	Mar. 3–9	2		Do.
Lecce Province	Feb. 17–23	2		
Naples	Mar. 10–16	2		
Japan:				
Nagasaki	Mar. 31–Apr. 6	3		
Manchuria:				
Dairen	Mar. 25–31	1		
Newfoundland:				
Outports	Apr. 19–25	21		In 8 localities.
Philippine Islands:				
Manila	Mar. 23–29	3	3	3 varioloid.

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

Reports Received During Week Ended May 16, 1919—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria				Dec. 1, 1918-Jan. 11, 1919: Cases, 125. Jan. 12-Feb. 8, 1919: Cases, 157.
Vienna	Dec. 1-Jan. 11	110		Occurring almost exclusively in repatriated soldiers and their contacts.
	Jan. 12-Feb. 8	119		
Egypt:				
Alexandria	Mar. 26-Apr. 1	66	19	
Finland:				
Provinces—				
Abo Och Björneborg	Jan. 1-31	24		
Do	Feb. 1-28	19		
Nyland	do	10		
Hungary				Nov. 4-26, 1918: Cases, 16. Nov. 27, 1918-Jan. 12, 1919: Cases, 210.
Budapest	Nov. 4-26	14		
Do	Nov. 27-Jan. 12	159		
Tyrnau	Nov. 4-26	1		
Szatmarnemeti	do	1		Present in county of Bihar.

YELLOW FEVER.

Ecuador:				
Guayaquil	Mar. 16-31	1	1	
Puna	do	4	4	

Reports Received from Dec. 28, 1918, to May 9, 1919.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo	Nov. 17-30	4	5	
Germany:				
Berlin	To Oct. 5	17	11	
Bremen	Oct. 13-19	1		On a barge.
Marienwerder				1 case in October, 1918, on a barge in canal.
India:				
Bombay	Aug. 18-Dec. 28	1,351	1,031	
Do	Dec. 29-Mar. 8	9,681	8,503	
Calcutta	Sept. 20-Dec. 21		241	Report for Nov. 23, 1918, missing.
Do	Dec. 29-Mar. 8		869	
Karachi	Jan. 26-Mar. 22	3	3	
Madras	Oct. 5-Dec. 28	264	164	Oct. 27-Nov. 2, 1918: Cases, 9; deaths, 4.
Do	Jan. 5-Mar. 8	426	296	
Rangoon	Oct. 5-Dec. 21	35	35	
Do	Dec. 29-Feb. 22	15	11	
Indo-China				July 1-Oct. 31, 1918: Cases, 753; deaths, 472.
Anam	July 1-Aug. 31	37	30	
Cambodia	July 1-Oct. 31	324	171	
Cochin China	do	436	337	
Saigon	Oct. 7-Dec. 22	75	45	
Do	Dec. 3-Mar. 9	328	195	
Kwang-Chow-Wan	July 1-31	50	34	
Tonkin	July 1-Oct. 31	6		
Java:				
East Java				Oct. 7-Dec. 31, 1918: Cases, 381; deaths, 323. Jan. 1-28, 1919: Cases, 291; deaths, 176.
Surabaya district	Oct. 7-Dec. 31	655	423	
Do	Jan. 1-28	133	84	
Mid-Java				Sept. 25-Dec. 18, 1919: Cases, 3,282; deaths, 2,014. Jan. 24-Feb. 20, 1919: Cases, 1,183; deaths, 928.
Samarang	Sept. 26-Oct. 16	120	111	
West Java				Oct. 3-Dec. 11, 1918: Cases, 412; deaths, 238. Dec. 27, 1918-Jan. 23, 1919: Cases, 10; deaths, 3.
Batavia	Oct. 3-Dec. 11	291	148	
Do	Dec. 27-Jan. 23	8	2	
Cheribon	Jan. 3-9	1		
Mesopotamia:				
Bagdad	Oct. 11-18	8		

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Manila	Sept. 22-Dec. 28	209	135	
Do	Dec. 29-Mar. 21	21	9	
Provinces				Nov. 2-Dec. 28, 1918: Cases, 1,986; deaths, 1,515. Dec. 29, 1918-Mar. 21, 1919: Cases, 1,220; deaths, 861.
Albay	Dec. 15-21	1	1	
Ambos Camarines	Feb. 15-21	10	2	
Bataan	Nov. 17-Dec. 28	38	32	
Batangas	Nov. 2-Dec. 28	258	230	
Do	Dec. 29-Mar. 21	63	44	
Bohol	Nov. 2-Dec. 28	29	24	
Do	Dec. 29-Mar. 14	61	51	
Bulacan	Oct. 12-Dec. 28	51	8	
Do	Dec. 29-Feb. 21	42	26	
Capiz	Dec. 22-28	7	5	
Do	Jan. 5-25	28	14	
Cavite	Oct. 27-Dec. 21	207	115	
Do	Dec. 29-Jan. 25	17	16	
Cebu	Nov. 10-Dec. 21	50	27	
Do	Jan. 12-18	13	12	
Ilocos Sur	Dec. 8-28	17	8	
Do	Dec. 29-Feb. 15	56	38	
Iloilo	Oct. 27-Dec. 21	112	78	
Do	Jan. 5-Mar. 21	181	115	
Laguna	Oct. 27-Dec. 28	18	11	
Do	Dec. 29-Mar. 21	132	91	
Lanao	Jan. 5-11	8	4	
Mindoro	Nov. 21-30	7	14	
Misamis	Oct. 27-Nov. 2	6	5	
Do	Nov. 17-Dec. 28	75	48	
Do	Jan. 5-Mar. 21	184	85	
Nueva Ecija	Jan. 12-25	9	6	
Occidental Negros	Feb. 2-Mar. 21	8	5	
Oriental Negros	Nov. 2-Dec. 7	32	18	
Do	Jan. 5-Feb. 8	35	22	
Pampanga	Nov. 24-Dec. 14	4	4	
Do	Jan. 5-Mar 21	33	23	
Pangasinan	Nov. 2-Dec. 28	930	652	
Do	Dec. 29-Mar. 21	164	127	
Rizal	Oct. 27-Nov. 2	3	1	
Do	Nov. 24-30	16	5	
Samar	Dec. 15-21	8	1	
Sorsogon	Nov. 17-23	8	4	
Do	Jan. 19-Feb. 8	44	36	
Tayabas	Nov. 2-Dec. 28	64	31	
Do	Nov. 10-Dec. 28	54	25	
Do	Dec. 29-Feb. 15	69	62	
Union	Nov. 2-Dec. 28	18	14	
Zamboanga	Dec. 8-28	27	19	
Do	Jan. 5-Feb. 8	25	21	
Poland:				
Plonsk district	Oct. 2-Nov. 27	5	.....	
Warsaw	Sept. 29-Oct. 26	5	1	
Russia:				
Petrograd	To July 16	3,388	1,054	
Do	July 17-Sept. 11	3,479	1,455	In civil and miiitary hospitals. In military hospitals, July 5-Aug. 21, 1818: Cases, 884; deaths, 783. In municipal hospitals, Oct. 1, 1918: Cases, 279.
Ukrania—				
Ekaterinaslav	Sept. 1-20	7	6	
Odessa	....do	25	.....	Sept. 1-20, 1918: 11 cases on s. s. Helena.

PLAGUE.

Ceylon:				
Colombo	Oct. 27-Nov. 2	1	1	
Do	Feb. 9-Mar. 15	12	9	
China:				
Amoy	Nov. 24-Dec. 8	.....	.....	Present.
Chungking	Dec. 1-7	.....	.....	Do.
Hing-Ning district	Mar. 15	.....	.....	Do.
Hongkong	Oct. 1-Dec. 28	4	4	
Do	Jan. 1-31	5	4	

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Duran	Feb. 16–Mar. 15	2	1	
Guayaquil	July 1–Dec. 31	20	7	
Do	Jan. 1–Mar. 15	50	14	
Taura	Dec. 16–31	1	1	
Egypt				Jan. 1–Nov. 21, 1918: Cases, 357; deaths, 153. Jan. 1–Mar. 20, 1919: Cases, 87; deaths, 66.
Cities—				
Alexandria	Mar. 23	1	1	
Suez	Jan. 31–Mar. 26	32	18	
Provinces—				
Assiout	Feb. 24–Mar. 23	11	8	1 septicemic.
Girgeh	Feb. 22–Mar. 22	7	5	2 pneumonic.
Minieh	Feb. 21–27	2	2	1 pneumonic.
India				Sept. 23–Dec. 28, 1918: Cases, 24,279; deaths, 18,369. Dec. 29, 1918–Mar. 1, 1919: Cases, 25,506; deaths, 19,401.
Bombay	Aug. 18–Dec. 28	41	29	
Do	Jan. 12–Mar. 8	6	6	
Calcutta	Dec. 22–28		1	
Do	Jan. 12–Mar. 8		43	
Karachi	Oct. 19–Dec. 28	17	17	
Do	Dec. 29–Mar. 22	18	16	
Madras	Dec. 8–28	26	17	
Do	Dec. 29–Mar. 8	131	61	
Madras Presidency	Oct. 13–Dec. 28	1,152	774	Oct. 27–Nov. 2, 1918: Cases, 142; deaths, 38.
Do	Dec. 29–Mar. 8	2,562	1,726	
Rangoon	Oct. 5–Dec. 21	84	81	
Do	Dec. 29–Feb. 22	107	100	
Indo-China				July 1–Oct. 31, 1918: Cases, 161; deaths, 145.
Anam	July 1–Oct. 31	42	36	
Cambodia	do	72	72	
Cochin-China	do	65	35	
Saigon	Oct. 7–Nov. 24	5	1	
Do	Jan. 13–Mar. 9	10	8	
Kwang-Chow-Wan	July 1–31	1	1	
Java:				
East Java				Oct. 7–Nov. 18, 1918: Cases, 109; deaths, 109. Jan. 1–14, 1919: Cases, 69; deaths, 69.
Surabaya (district)	Oct. 7–Dec. 31	92	92	
Do	Jan. 1–14	34	34	
Mid-Java				Sept. 25–Oct. 16, 1918: Cases, 14; deaths, 14. Jan. 30–Feb. 11, 1919: Cases, 110; deaths, 110.
Samarang	Sept. 25–Oct. 16	6	6	
Mesopotamia:				
Bagdad	Nov. 16–29	5	2	
Do	Feb. 22–28	6	4	
Siam:				
Bangkok	Sept. 21–Oct. 12	6	5	
Do	Jan. 19–Feb. 22	7	6	
Venezuela:				
Caracas	Dec. 30	1		
On vessel:				
S. S. Japan	Jan. 14	1	1	At Suez quarantine station from Bombay.

SMALLPOX.

Algeria:				
Algiers	Oct. 1–Dec. 31	2	1	
Brazil:				
Rio de Janeiro	Dec. 1–28	46	19	Oct. 6–12, 1918: Cases, 15; deaths, 10.
Do	Dec. 30–Jan. 25	25	11	
Sao Paulo	Mar. 3–9		1	
British East Africa:				
Mombasa	Sept. 1–Nov. 30	6	1	
Canada:				
New Brunswick—				
Campbellton	Dec. 22–28	1		
Do	Jan. 5–18	2		
St. John	Nov. 8–14	3		
Do	Jan. 26–Feb. 22	6		
Nova Scotia—				
Bear River	Dec. 29–Jan. 4			Present.
Bigbee	Jan. 10			Do.
Halifax	Dec. 7–28	10		
Do	Jan. 5–Apr. 19	196		
Middleton	Dec. 29–Jan. 4			Do.
Sydney	Jan. 5–Mar. 8	4		
Do	Mar. 23–Apr. 5	8		

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Ontario—				
North Bay	Jan. 19-25	1		
Ottawa	Jan. 12-Apr. 12	13		
Toronto	Feb. 2-15	2		
Do	Mar. 16-22	1		
Prince Edward Island—				
Charlotte Town	Feb. 27-Apr. 16	2		
Quebec—				
Montreal	Jan. 24-Dec. 21	2		
Do	Jan. 12-Mar. 8	30		
Paspebiac	do	8		
Quebec	Dec. 15-21	1		
Do	Dec. 29-Mar. 15	14		
Ceylon:				
Colombo	Jan. 12-Mar. 15	3		
China:				
Amoy	Oct. 13-Dec. 28			Present.
Do	Jan. 5-Mar. 10			Do.
Antung	Feb. 10-16	1		
Do	Feb. 24-Mar. 2	1		
Canton	Nov. 17-23			Do.
Do	Feb. 9-15			Do.
Changsha	Mar. 16-23	3		
Chungking	Nov. 10-Dec. 28			Do.
Do	Jan. 5-Mar. 27			Do.
Foochow	Nov. 24-Dec. 28			Do.
Do	Dec. 29-Feb. 8			Do.
Honkong	Dec. 15-21	1	1	
Do	Feb. 2-8	1		
Do	Feb. 16-22	4		
Nanking	Dec. 1-28			Do.
Do	Dec. 29-Mar. 27			Do.
Shanghai	Jan. 20-26	1		
Tsingtau	Mar. 3-9	1		
Chosen (Korea):				
Chemulpo	Nov. 1-Dec. 31	15	4	
Do	Jan. 1-31	6	1	
Colombia:				
Barranquilla	Apr. 6-12		1	
Denmark:				
Copenhagen	Nov. 9-Dec. 28	12		
Do	Dec. 29-Jan. 19	15		
Egypt:				
Alexandria	Dec. 17-23	1	1	
Do	Jan. 22-Mar. 25	10	3	
France:				
Bordeaux	Feb. 8-13		1	
Brest	Feb. 2-8	1		
Paris	Mar. 2-27	6	2	
Germany				Nov. 24-Dec. 7, 1918: Cases, 34.
Dresden	Nov. 24-Dec. 7	18		
Halle	do	4		
Friedland	do	1		
Königsberg	do	8		In persons evacuated from the Ukraine.
Schkeuditz	do	1		
Tilsit	do	1		
Torgau	do	1		
Great Britain:				
Liverpool	Jan. 26-Mar. 15	7		Of these, 2 from vessels.
London	Mar. 9-15	5	1	
Greece:				
Saloniki	Feb. 2-15		3	
India:				
Bombay	Aug. 18-Dec. 28	35	8	
Do	Dec. 29-May 8	269	104	
Calcutta	Sept. 29-Dec. 28		17	Report for week ended Nov. 23, 1918, missing.
Do	Dec. 29-Mar. 8		170	
Karachi	Sept. 29-Dec. 28	13	4	
Do	Dec. 29-Mar. 22	107	41	
Madras	Oct. 5-Dec. 28	62	40	
Do	Dec. 29-Mar. 8	148	70	
Rangoon	Oct. 20-Dec. 21	32	6	
Do	Dec. 29-Feb. 22	386	135	

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China:				
Anam	July 1-Oct. 31	146	67	
Cambodia	Aug. 1-Oct. 31	165	74	July 1-Oct. 31, 1918: Cases, 620; deaths, 254.
Cochin-China	July 1-Oct. 31	400	112	
Saigon	Oct. 7-Dec. 22	20	5	
Do	Dec. 30-Mar. 9	64	11	City and vicinity.
Tonkin	July 1-Oct. 31	20	1	
Italy:				
Genoa	Jan. 9-Mar. 15	4	2	
Messina	Mar. 2-16	3	.....	Cases reported in several localities in Province.
Palermo	Jan. 31-Apr. 1	30	.....	
Turin	Jan. 27-Mar. 2	8	2	
Japan:				
Kobe	Oct. 26-Dec. 28	186	46	
Do	Dec. 29-Mar. 22	499	165	
Nagoya	Mar. 2-15	2	.....	
Taihoku	Jan. 15-Mar. 18	146	18	Island of Formosa.
Yokohama	Jan. 20-26	1	.....	
Java:				
East Java	.....	.....	.....	Oct. 7-Dec. 31, 1918: Cases, 22; deaths, 1. Jan. 1-21, 1919: Cases, 3; deaths, 3.
Surabaya (district)	Oct. 7-Dec. 31	16	.....	
Do	Jan. 1-7	1	.....	
Do	Jan. 15-21	2	2	
Mid-Java	.....	.....	.....	Sept. 25-Dec. 18, 1918: Cases, 172; deaths, 3. Jan. 24-30, 1919: Case, 1.
West Java	.....	.....	.....	Oct. 2-Dec. 11, 1918: Cases, 809; deaths, 263. Dec. 27, 1918—Feb. 27, 1919: Cases, 207; deaths, 43.
Batavia	Oct. 2-Dec. 11	185	151	
Do	Dec. 27-Feb. 27	41	25	
Lithuania	.....	.....	.....	Sept. 1-Oct. 16, 1918: Cases, 44.
Manchuria:				
Dairen	Jan. 15-21	1	.....	
Do	Feb. 22-Mar. 7	2	2	
Mesopotamia:				
Bagdad	Oct. 11-Dec. 27	308	97	
Do	Dec. 28-Feb. 2	8	.....	
Mexico:				
Ciudad Juarez	Nov. 24-30	1	.....	
Do	Mar. 29-Apr. 5	1	.....	
Mexico City	Sept. 22-Dec. 28	23	.....	
Do	Dec. 29-Mar. 22	12	.....	
Vera Cruz	Feb. 10-Apr. 12	2	1	
Newfoundland:				
St. Johns	Dec. 6-20	4	.....	
Do	Dec. 29-Mar. 14	21	.....	
Do	Mar. 22-Apr. 18	12	.....	Outports, 12 cases.
Outports—				
Avondale	....do	4	.....	
Blaine Harbor	Dec. 14-20	2	.....	
Bay of Islands	Jan. 11-17	6	.....	
Do	Feb. 15-21	10	.....	
Bay Roberts	Dec. 21-27	1	.....	
Bonavista	Jan. 26-31	1	.....	
Brigus Junction	Mar. 1-28	3	.....	
Bryants Cove	Dec. 7-13	3	.....	
Burin	....do	4	.....	
Coleys Point	Dec. 14-20	1	.....	
Curling	Jan. 26-31	3	.....	
Frenchmans Cove	Feb. 1-7	1	.....	
Humbermouth	Mar. 15-21	.....	.....	Present.
Kings Cove	Jan. 18-Mar. 14	2	.....	
Little Paradise	Feb. 9-14	1	.....	
McIvers	Feb. 1-7	15	.....	
Merasheen	....do	.....	.....	Present.
Mercers Cove	Feb. 9-14	1	.....	
Middle Arm	Feb. 1-7	40	.....	Bay of Islands.
Mortons Harbor	Mar. 8-14	1	.....	
Musgrove Harbor	Dec. 7-13	4	.....	
Do	Jan. 11-17	6	.....	Feb. 7, 1919: Present.
Paradise	Dec. 7-13	60	.....	Placentia Bay.
Petitforte	Feb. 15-21	1	.....	
Saddle Hill	....do	1	.....	Harbor Grace.
Springdale	Feb. 1-Mar. 7	7	.....	
St. Georges	Feb. 1-Mar. 28	32	.....	Other outports Mar. 29-Apr. 11, 1919: 14 cases.
St. Jacques	Jan. 18-24	2	.....	

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Panama				Aug. 1–31, 1918: Cases, 133, occurring at Colon, Panama, and points in the interior. Jan. 1–25, 1919: Cases, 28.
Colon	Dec. 15–21	1		
Do	Dec. 29–Feb. 9	8		
Philippine Islands:				
Manila	Nov. 2–16	5	3	
Do	Dec. 29–Mar. 22	34	17	Varioloid, 13.
Portugal:				
Lisbon	Nov. 16–Dec. 28	843		
Oporto	Mar. 9–23	43	22	
Portuguese East Africa:				
Lourenco Marques				July 1–Oct. 31, 1918: 45 fatal cases.
Siberia:				
Vladivostok	Nov. 1–3	4		
Do	Jan. 17–23		1	
Do	Feb. 1–Mar. 15	16	1	
Spain:				
Barcelona	Jan. 9–Feb. 11		5	
Do	Feb. 19–Mar. 11	2		
Bilbao	Jan. 1–Feb. 20	6		
Cadiz	Oct. 1–Dec. 31	18		
Do	Jan. 1–31		17	
Madrid	Sept. 1–Oct. 31	153		
Do	Jan. 1–Feb. 28		74	
Seville	Nov. 1–Dec. 31		8	
Do	Jan. 1–31		3	
Valencia	Nov. 10–Dec. 21	40	9	
Do	Dec. 29–Jan. 25	93	10	
Do	Feb. 16–Mar. 8	160	17	
Straits Settlements:				
Penang	Oct. 6–12	1		
Singapore	Feb. 2–22	3		
Sweden:				
Stockholm	Feb. 2–8		1	
Union of South Africa:				
Cape Town	Aug. 1–30	1		
Do	Dec. 21–Jan. 31	1		
Johannesburg	Aug. 1–Oct. 31	12		Nov. 1–30, 1918: Cases, 4.

TYPHUS FEVER.

Algeria:				
Algiers	Nov. 1–30	1		
Austria-Hungary:				
Hungary	Sept. 2–8	2		Sept. 9–Nov. 3, 1918: Cases, 94; deaths, 8.
Budapest	Sept. 9–Nov. 3	59	2	
Pressburg	do	11	1	
Brazil:				
Ceara	Sept. 14–21	1		
Rio de Janeiro	Dec. 15–22	2		
Do	Dec. 29–Feb. 15	28	3	
São Paulo	Jan. 13–19	3		
Bulgaria:				
Aeteven	Mar. 10			Present.
Rustchuk	do			Do.
China:				
Antung	Dec. 2–15	2		
Do	Jan. 6–Mar. 30	2	1	
Chosen (Korea):				
Seoul	Jan. 1–31	2		
Colombia:				
Barranquilla	Nov. 8–Dec. 28		3	
Do	Jan. 5–Mar. 8	2	3	
Egypt:				
Alexandria	Oct. 14–Dec. 31	85	36	
Do	Jan. 1–Mar. 25	325	92	Confined to one quarter of city and mostly to natives. Oct. 20–Nov. 7, 1918: Cases, 12; deaths, 1.
France:				
Marseilles	Mar. 1–31		31	Apr. 26, 1919, present in two civil and two military prisons.

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Germany				
Breslau	Sept. 29–Oct. 19	12	8	
Gumbinnen district	Oct. 20–Nov. 7	1		
Dresden	do	1		
Grieſswald	do	1		
Godullahutte	do	1		
Königsberg	Sept. 29–Oct. 19	3	1	
Königshutte	Oct. 20–Nov. 7	1	1	
Magdeburg	do	2		
Mostalten	Sept. 29–Oct. 19	7	2	District of Allenstein.
Oppeln district	Oct. 20–Nov. 7	5		
Great Britain:				
Cork	Feb. 2–22	4		
Glasgow	Dec. 22–28	5		
Do	Jan. 5–Feb. 8	9	1	
Do	Mar. 9–15	1		
Greece:				
Athens	Mar. 8	2	2	
Saloniki	Sept. 29–Dec. 21		34	
Do	Dec. 29–Feb. 15		78	
Italy:				
Bari	Feb. 3–9	19		In soldiers returning from Black Sea.
Naples	do	3		Do.
Taranto	do	2		
Japan:				
Nagasaki	Nov. 10–Dec. 29	13	4	
Do	Dec. 30–Mar. 16	30	4	
Java:				
East Java				Oct. 7–21, 1918: Cases, 5.
Surabaya	Oct. 7–21	4		
Mid-Java				Sept. 25–Oct. 16, 1918: Cases, 3.
West Java				Oct. 2–23: Cases, 31; deaths, 6.
Batavia	Oct. 2–23	15	4	
Lithuania				Sept. 1–Oct. 26, 1918: Cases, 539; deaths, 26.
Macedonia:				
Drama	Mar. 17			Present.
Epirus	Mar. 21			Do.
Kavala	Mar. 17	300		Estimated.
Mesopotamia:				
Bagdad	Oct. 5–Dec. 27	2		
Do	Dec. 28–Jan. 31	4		
Mexico:				
Aguascalientes	Feb. 2–23		3	
Do	Mar. 24–Apr. 13		3	
Guadelajara	Nov. 1–Dec. 31	4	1	
Do	Jan. 1–Feb. 28	2	2	
Mexico City	Sept. 22–Dec. 28	434		
Do	Dec. 29–Mar. 29	341		
Netherlands:				
Amsterdam	Dec. 8–14	1		
Do	Jan. 12–18	4		
Delft	Feb. 26			Present.
Harlem	do			Do.
Leiden	do			Do.
Limburg	do	5	1	Mining district.
Rotterdam	Feb. 2–Mar. 22	493	87	Jan. 30–Feb. 27, 1919: Cases, 462; deaths, 46.
Schiedam	Feb. 26			Present. Sept. 29–Oct. 26, 1918: Cases, 572; deaths, 50.
Poland:				
Lodz	Sept. 29–Oct. 26	55	8	
Warsaw	do	111	13	
Portugal:				
Braga	Mar. 24			
Oporto	Mar. 8–15	184		
Russia:				
Archangel	Jan. 15–Mar. 1	197	43	
Ukraine				Apr. 5, 1919: Reported to be spreading.
Serbia				Do.
Belgrade	Feb. 5	62		Among soldiers and prisoners.
Siberia:				
Vladivostok	Sept. 1–Dec. 30	43		
Do	Jan. 17–Mar. 15	143	15	

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

Reports Received from Dec. 28, 1918, to May 9, 1919—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Huelva	Oct. 1-31		2	
Madrid	Dec. 1-31		1	
Union of South Africa:				
Port Elizabeth	Sept. 14-28			Present among natives in several interior towns.

YELLOW FEVER.

Brazil:				
Bahia	Jan. 12-18	2		
Pernambuco	Oct. 1-Nov. 30	2	1	
Colombia:				
Cartagena	Jan. 29-Feb. 4		4	
Ecuador:				
Babahoyo	Nov. 1-30	1		
Do	Mar. 1-15	1		
Catarama	Feb. 1-15	1		
Chobo	Jan. 1-15	1		
Daule	do	1	1	
Duran	Nov. 1-Dec. 31	3	2	
Do	Jan. 16-Mar. 15	5	1	
Guayaquil	July 1-Dec. 31	328	177	
Do	Jan. 1-Mar. 15	123	67	
Hacienda Vainilla	Feb. 16-28	1		
Milagro	Nov. 1-15	1		
Do	Feb. 1-Mar. 15	2	1	
Naranjal	Nov. 1-15	1	1	
Do	Jan. 1-15	1	1	
Naranjito	Nov. 1-15	1	1	
Do	Jan. 1-Feb. 28	2	2	
Payo (Hacienda)	Nov. 1-15	1		
Punta de Piedra	Nov. 1-30	1		
Salvador:				
San Salvador	Jan. 9	1		
On vessel:				
S. S. Jamaica	Jan. 30	1		At quarantine station, Canal Zone, Panama.