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THE UNEXPLORED FIELD OF PREVENTIVE MEDICINE IN PRIVATE PRACTICE¹

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The United States Public Health Service is a medical organization. Its commissioned corps is composed entirely of doctors of medicine recruited from the ranks of the general profession. Its paramount duty may be said to be the conservation and improvement of the health of the inhabitants of this country, to the extent that the powers and facilities conferred and afforded by Congress make this possible. In performing this duty this Service makes use of medical knowledge, the heritage of the centuries of patient and careful observation and experiment which our professional forebears have handed down to us and which we are all endeavoring to perfect and expand. I have made these statements to emphasize the fact that in appearing before this section as a representative of the Public Health Service I come as a medical man representing a medical body—one which shares the traditions, the training, the aspirations and, it must be confessed, the difficulties of the medical profession.

The point of view is different, but similar. The Public Health Service sees a sick nation and seeks to cure it; the practitioner sees a sick patient and endeavors to cure him. The difference of approach lies in the difference in material. When a sick person applies to a physician for treatment there may appear but little to do with regard to that particular patient and his immediate illness except to try to restore him to health. A sick nation, however, is made up of millions of persons only a proportion of whom are at any one time in the ordinary sense sick, but the rest of whom are constantly exposed to the danger of becoming ill. The national problem therefore includes not only the restoration of the sick to health, but also the prevention of disease among those who at the time may be healthy.

The first part of this program has been left largely and wisely to the private practitioner. The sick person is an individual and

¹ Chairman's address, read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927, and printed in the *Journal*, vol. 89, No. 7, August 13, 1927, pp. 492-493.

requires individual treatment. The preventive part of the program, however, has been assumed to a great extent in this country by public health agencies for two principal reasons: First, that the general practitioner in America has not been trained to think and act in terms of preventive medicine; and, second, that many of the necessary measures can be applied only by the concerted action brought by a central official organization.

Public health organizations owe their origin to the medical profession. To it also they owe a large part of the scientific information on which they base their methods. To the observations and reports of medical men in practice they are constantly indebted for knowledge of the occurrence, the prevalence, and the nature of the diseases which they attempt to combat; but, unfortunately, such is the tradition, the custom, the accepted mechanism of health practice in this country that only to a slight extent have they utilized or attempted to make use of the enormous potential power of the practicing element of the medical profession in the cause of preventive medicine.

It must be acknowledged that public health agencies can clearly foresee limitations to what can be accomplished by concerted action through official agencies. The limits have by no means been reached, but there is no good reason for delaying the application of any potential help which would not introduce conflicting elements. And it would appear that, if the 150,000 physicians in practice in this country could be enlisted in a serious effort to improve and conserve the health of the millions of patients and the families of patients with whom they come in contact, a tremendous impetus could be given to the cause of preventive medicine. It would seem as if under these circumstances we should hold preventable disease, as it were, between two millstones; the one breaking up the large lumps or masses, the other grinding away at the individual particles.

We are all aware that some not insignificant attempts have been made by members and by associations of the medical profession to increase the interest of practicing physicians in the prevention of disease as distinguished from its cure. Some of these attempts have unfortunately been associated with other projects about which considerable controversy has arisen. I need only mention a few topics to indicate what is meant. Such captions as "state medicine," "contract practice," and "life extension" can hardly be mentioned without arousing various and conflicting emotions in the minds of a medical audience. And yet with each of the movements represented by these captions some element of disease prevention by practicing physicians has been associated. My address has nothing to do with a discussion of these factors. The opportunities for preventive work to which I would call attention are not

necessarily associated with any movement, organization, or development affecting the profession. They concern the individual practitioner alone, and I speak as one physician to another.

I have mentioned that limitations to what can be accomplished by official mass health work are in sight. There is still much to do in the extension and consolidation of current useful activity, and doubtless new methods will develop as time goes on; but always there will remain the fact that the collective health status of the Nation will depend to a very considerable extent on what the individual citizen does as regards his own health and that of his children. Extensive attempts have been made by health organizations to excite the interest of the citizen in the protection of his health. All the ingenious machinery of the leaflet, the poster, the illustrated lecture, the health exhibit, and the radio broadcast have been utilized. The visiting health nurse and the consultation clinic are familiar illustrations of the organized attempt to bring information to the public. But it would appear that what would seem *a priori* to be the most fruitful source of advice in matters of personal and domestic hygiene had, in general, been deplorably neglected.

The doctor of medicine, while dealing with an art which may be criticized by mathematicians as inexact, nevertheless has devoted much of the time of his training period to fundamental natural sciences and is accustomed to think in terms of biology, chemistry, and physics. He is also, next to the priest, the man of all men who comes most intimately into the confidence of the people. Unfortunately for the present purpose, he has been trained to think more about disease than about health; but there is no more adaptable person in all the world than the physician, and if he can be persuaded of its desirability he can soon learn to enlarge his point of view.

It may justly be inquired what incentives there are which would induce physicians to expand their point of view and become more interested and more active in the prevention of disease. There are several which readily occur to me, and doubtless others exist. The most important incentive is the opportunity for service to humanity. This appeal has never been made to physicians in vain. The second incentive which may be mentioned is the fair promise of increasing remuneration. It is believed that a false sense of delicacy and false interpretation of ethics is what has stood in the way of developments along this line rather than the unwillingness of patients to pay for advice in advance of actual illness. The third item which I will mention is hardly so much an incentive as a compulsion. If I read the signs of the times aright, the time is not far distant when the public is going to demand protective advice from the physician. The time is coming, I think, when a physician will be severely criticized for

failure to offer advice on hygienic matters when he has had a chance to make the necessary observations. His reply that he was employed to treat a case of rheumatism, not to criticize the family diet, will come to be considered inadequate.

These observations may appear visionary or chimerical. In support of their soundness I submit the evidence that in other countries, further developed along these lines than we are, simply because they have had longer experience, the state of things which I have sketched is already the accepted order. In some instances it goes even further. The official health organization still has important functions, but the bulk of the health work is done by the practicing physician, who is held morally and often legally responsible for its proper performance. I am not arguing for an increased intimacy of official relationship between the physician and the Government. I very seriously doubt its desirability. I merely wish to invite attention to a great service to humanity which the profession can perform, and which it seems probable that it will be called on to extend before many years have passed.

The time assigned permits me to discuss but briefly two important additional questions in connection with my subject. First, Is the medical profession equipped at the present time to offer sound, dependable, and consistent advice on all the questions of domestic and personal hygiene which may be propounded by those seeking advice? Frankly, I do not see how it can be, or could be expected to be. Little attention has been paid to this aspect of medicine in the colleges up to within the most recent years, and hardly anywhere at the present time can the formal instruction in a purely medical course be described as fully adequate. Nevertheless, there are many sources of reliable information, and, as has been said, the physician is an adaptable person; a physician who can no longer learn is of dubious value to the public in any medical capacity. Many physicians, of course, are already fully equipped to take up this work, and have themselves made some of the most valuable contributions to preventive medicine.

The second question is, What would be the scope of the activities contemplated? There seems to be no good reason for limiting this so long as it can be kept within the subject matter on which a physician can be expected to speak with authority and out of the field which is strictly the province of public-health authority. It would be proper, I should think, for the family physician to examine into the sanitary condition of the home itself, and to call attention to obvious health hazards intrinsic therein, as well as to become familiar with the physical and mental status and habits of the members of the family. On the other hand, questions dealt with by local sanitary law should be referred to the health authorities.

The Public Health Service has felt so strongly that an immense power for good was not being adequately utilized that it is very desirous of helping along a process of evolution which, although much hindered and delayed, appears to be ultimately inevitable. It has considered whether the publication of a "check list of opportunities for domestic health practice" would be acceptable to the profession and in any considerable demand by it. It would seem possible, with suitable counsel, to prepare such a list which should be convenient for reference by physicians desirous of developing this branch of medical activity.

It would be a fair question to ask in just what ways the practicing physician can contribute more to the prevention of disease than he is doing at present. It is believed that ways would become sufficiently apparent if the mental attitude were changed to include the idea. A few illustrations will show some of the procedures that readily occur. One of the first and easiest steps would be the full carrying out of one of the oldest tenets of medicine, which is to treat the patient rather than the disease. This presupposes a thorough examination of the patient and the discovery of any incipient disease or predisposition which he may have in addition to, or associated with, the particular complaint which brings him to the physician. This examination should include not only the physical body, but also the whole man—his habits and his mental worries and how he deals with them. It is not to be supposed that every physician will be a competent psychiatrist; nevertheless, present-day training should be sufficient, taken in conjunction with the intimate relation of confidence that should exist between physician and patient, to lay the basis for some very effective work in mental hygiene.

Thus far I have considered what may be done in the office and with office patients. When the physician visits the family, an immense field of preventive medicine becomes opened to his productive cultivation. It is my impression that the old-fashioned family physician knew far more about his families and their members as regards both their physical condition and their mental comfort than is the case nowadays. Undoubtedly, an enlightened return to this more intimate relationship would be better for the public and also, as I think, for the physician. Is there any good reason why the discovery of defects in the children of families in which a physician attends the adult members should be left to the school medical examination, if there happens to be one? Should not the family physician have detected and treated these in their incipience? And so with the adult members of families in which the children have been attended by so-called family physicians. Must their dietary diseases, their hernias, their tuberculosis, their mental maladjust-

ments go unrecognized until the patient himself or his relatives or employers or society in general complains of them?

The alarming extent to which defects and disease do go unrecognized until it is too late to accomplish anything more than palliation is sufficient evidence that somebody has failed. It is easy to blame it on the ignorance or carelessness of the individual, but I believe that much of this wastage could fairly be laid at the door of the physician who has neglected abundant opportunities for service, and also for legitimate and compensable medical practice.

CITY HEALTH OFFICERS, 1927

Directory of Those in Cities of 10,000 or More Population

Directories of the city health officers in the cities of the United States having a population of 10,000 or more have been published in the Public Health Reports¹ for each year from 1916 to 1926, for the information of health officers and others interested in public-health activities. These directories have been compiled from data furnished by the health officers. The cities included in this directory are those having 10,000 or more population.

The asterisk (*) indicates that the officer so designated has been reported to be a "whole-time" health officer. For this purpose a "whole-time" officer is defined as "one who does not engage in the practice of medicine or any other business, but devotes all his time to official duties."

City	Name of health officer	Official title
Alabama:		
Anniston.....	C. Hal. Cleveland, M. D.....	City health officer.
Bessemer.....		Do.
Birmingham.....	*Judson Davie Dowling, M. D.....	County health officer.
Dothan.....	*L. Roy Poole, M. D.....	City health officer.
Florence.....	*W. D. Hubbard, M. D.....	City and county health officer.
Gadsden.....	*W. H. Harper, M. D.....	County health officer.
Mobile.....	*C. A. Mohr, M. D.....	County and city health officer.
Montgomery.....	*J. L. Bowman, M. D.....	Do.
Selma.....	*L. Tennent Lee, M. D.....	
Tuscaloosa.....		
Arizona:		
Douglas.....	Geo. M. Dunne, M. D.....	City health officer.
Phoenix.....	H. K. Beauchamp, M. D.....	Do.
Tucson.....	A. G. Schnabel, M. D.....	Do.
Arkansas:		
Fort Smith.....	*James E. Johnson, M. D.....	District health officer.
Helena.....	*W. B. Bruce, M. D.....	City health officer.
Hot Springs.....	*J. F. Merritt, M. D.....	City and county health officer.
Jonesboro.....	E. J. Horner, M. D.....	City health officer.
Little Rock.....	*Austin T. Barr, M. D.....	Do.
North Little Rock.....	James A. Summers, M. D.....	Do.
Pine Bluff.....	*F. Michael Smith, M. D.....	Do.
California:		
Alameda.....	Arthur Hieronymus, M. D.....	Health officer and city physician.
Alhambra.....	*S. J. Stewart, M. D.....	District medical director.
Bakersfield.....	Peter Joseph Cuneo, M. D., L. L. B.	City health officer.
Berkeley.....	*James R. Scott, M. D., Ph. D.	Do.
Chico.....	Charles E. Tovee.....	Do.
Eureka.....	John N. Chain, M. D., B. S.....	City physician.

¹ Reprints Nos. 346, 416, 494, 539, 599, 702, 767, 876, 930, 1025, and 1103 from the Public Health Reports.

City	Name of health officer	Official title
California—Continued.		
Fresno	C. Mathewson, M. D.	City health officer.
Glendale	*E. M. Miller, M. D.	Health officer.
Long Beach	*G. E. McDonald, M. D.	City health officer.
Los Angeles	*George Parrish, M. D.	Health commissioner.
Modesto	J. W. Morgan, M. D.	Health officer.
Oakland	Frank L. Kelly, M. D., Dr. P. H.	Do.
Pasadena	*Warren F. Fox, M. D.	Health officer and city physician.
Pomona	*Eugene F. Fontaine, M. D.	Medical director.
Richmond	Charles Robert Blake, M. D.	Commissioner of health.
Riverside	*William B. Wells, M. D.	Do.
Sacramento	William Walter Cress, M. D.	City health officer.
San Bernardino	Ivan Lewis Finkelberg, M. D.	Do.
San Diego	*Alex M. Lesem, M. D.	Health officer and superintendent.
San Francisco	*William C. Hassler, M. D., Ph. G.	Health officer and registrar.
San Jose	*Henry C. Brown, M. D.	Health officer.
Santa Ana	*V. G. Presson, M. D.	County health officer.
Santa Barbara	*Wm. H. Eaton, M. D.	Health officer.
Santa Cruz	Norman R. Sullivan, M. D.	City health officer.
Santa Monica		
Stockton	*John J. Sippy, M. D.	District health officer.
Vallejo	F. A. Peterson, M. D.	Health officer.
Colorado:		
Boulder	J. H. Bush, M. D.	Director of public health.
Colorado Springs	O. R. Gillett, M. D.	City health officer.
Denver	*George A. Collins	Manager of health and charity.
Greeley	Burgett Woodcock, M. D.	City physician.
Pueblo	*W. E. Buck, M. D.	Chief, department of health.
Trinidad	G. W. Robinson, M. D.	City physician.
Connecticut:		
Ansonia	Frederick C. Goldstein, M. D.	Health officer.
Bridgeport	*William Hall Coon, M. D.	Do.
Bristol	Benjamin B. Robbins, M. D.	City health officer.
Danbury	Everett J. S. Scofield, M. D.	Do.
Derby	Thomas F. Plunkett, M. D.	Do.
East Hartford	Harvey B. Goddard, M. D.	Health officer.
Enfield	Frank F. Simonton, M. D.	Do.
Fairfield	*Laurence E. Poole, M. D., Dr. P. H.	Health officer and school physician.
Greenwich	Albert E. Austin, M. D.	Health officer.
Hartford	*Charles Porter Botsford, M. D.	Superintendent of health.
Manchester	D. C. Y. Moore, M. D.	Chairman, board of health.
Meriden	H. De Forest Lockwood, M. D.	Health officer.
Middletown	Thomas P. Walsh, M. D.	Do.
Milford	Willis S. Putney, M. D.	Town health officer.
Naugatuck		
New Britain	*Richard W. Pullen, M. D.	Superintendent of health.
New Haven	*John L. Rice, M. D., B. S.	Health officer.
New London	*Benjamin N. Pennell, D. V. S.	Do.
Norwalk	Robert E. Perdue, M. D.	Do.
Norwich	Edward J. Brophy, M. D.	Do.
Orange	Willis N. Butrick	Health officer.
Shelton	William S. Randall, M. D., Ph. B.	City health officer.
Stamford	*Raymond D. Fear, M. D., Dr. P. H.	Health commissioner.
Stonington (Mystic)	D. Edward Taylor, M. D.	City health officer.
Stratford	DeRuyter Howland, M. D.	Town health officer.
Torrington		
Wallingford		
Waterbury	*Edw. J. Godfrey, M. D.	City health officer.
West Hartford	James E. Davis, M. D.	Health officer.
Windham	F. E. Wilcox, M. D.	Town health officer.
Willimantic	W. P. S. Keating, M. D.	City health officer.
Delaware:		
Wilmington	Fred F. Armstrong, M. D.	Secretary, board of health.
District of Columbia:		
Washington	*William C. Fowler, M. D.	Health officer.
Florida:		
Jacksonville	*Noble A. Upchurch, M. D.	City health officer.
Key West		
Miami	*W. A. Claxton, M. D., C. M.	Chief, division of health.
Oriando	Sylvan McElroy, M. D.	City physician.
Pensacola	W. D. Nobles, M. D.	Health officer.
St. Petersburg	W. W. Harden, M. D.	Health commissioner.
Tampa	*Ernest C. Levy, M. D.	City health officer.
West Palm Beach	W. E. Van Landingham, M. D.	Do.
Georgia:		
Albany	*Hugo Robinson, M. D., Ph. G.	Health commissioner.
Athens	*B. B. Bagby, M. D.	Do.
Atlanta	*J. P. Kennedy, M. D.	City health officer.
Augusta	Eugene E. Murphey, M. D.	President, board of health.
Brunswick	*H. L. Akridge, M. D.	Commissioner of health.

City	Name of health officer	Official title
Georgia—Continued.		
Columbus.....	R. L. Williams, M. D.....	Health officer and city physician.
La Grange.....	*S. C. Rutland, M. D.....	Commissioner of health.
Macon.....	*J. D. Applewhite, M. D.....	City and county health officer.
Rome.....	*B. V. Elmore, M. D.....	Commissioner of health.
Savannah.....	*Victor H. Bassett, M. D.....	City health officer.
Valdosta.....	*Gordon T. Crozier, M. D.....	Do.
Waycross.....	*George E. Atwood, M. D., Dr. P. H.	Commissioner of health.
Idaho:		
Boise.....	*Van F. Peterson.....	City health officer.
Pocatello.....	Harold H. Hughart, M. D.....	City physician.
Twin Falls.....	George C. Halley, M. D.....	Health officer.
Illinois:		
Alton.....	D. F. Duggan, M. D.....	Health commissioner.
Aurora.....	Geo. W. Haan, M. D.....	Do.
Belleville.....	B. H. Portundo, M. D.....	Public health officer.
Berwyn.....	*P. E. Wright, M. D.....	Health director.
Bloomington.....	*Charles E. Shultz, M. D.....	Do.
Blue Island.....	*L. A. Burkhardt.....	Health commissioner.
Cairo.....	C. L. Weber, M. D.....	Health officer and city physician.
Canton.....		
Centralia.....	Gilford Nelson Welch, M. D., O. P. T. M.	City physician.
Champaign.....	W. E. Schowengerdt, M. D.....	Health officer.
Chicago.....	*Herman N. Bundesen, M. D., D. Sc.	Commissioner of health.
Chicago Heights.....	E. F. Hay, M. D.....	City physician.
Cicero.....	J. I. Wood, M. D.....	Health commissioner.
Collinsville.....	R. H. Greaves, M. D.....	Health officer.
Danville.....	W. C. Dixon, M. D.....	Commissioner of health.
Decatur.....	*Sam H. Wilson.....	Health officer.
East Moline.....	*J. Henry Fowler, M. D.....	Do.
East St. Louis.....	*A. P. Lauman.....	Commissioner of health.
Elgin.....	*A. L. Mann, M. D.....	Executive officer, health department.
Evanston.....	*John W. H. Pollard, M. D., B. L.	Commissioner of health.
Forest Park.....	Wm. C. Masslow, M. D.....	Do.
Freeport.....	Robert J. Burns, M. D.....	Do.
Galesburg.....	*Fred M. Giddings.....	Health officer.
Granite City.....	L. D. Darner, M. D.....	Do.
Harvey.....	M. R. Morse, M. D.....	Do.
Herrin.....	J. B. Baker.....	Do.
Jacksonville.....	*Warner H. Newcomb, M. D.....	County health officer.
Joliet.....	*Ed. J. Higgins, M. D.....	Commissioner of health.
Kankakee.....	C. K. Smith, M. D.....	Health officer.
Kewanee.....	H. N. Heflin, M. D.....	Commissioner of health.
La Salle.....	*Arlington Ailes, M. D., C. P. H.	Health commissioner.
Lincoln.....	*Wesley Denny.....	Health officer.
Marion.....	H. D. Harris, M. D.....	Do.
Mattoon.....	O. W. Ferguson, M. D.....	City health officer.
Maywood.....	R. L. Reynolds, M. D.....	Health commissioner.
Moline.....	E. A. Edlen, M. D.....	City physician.
Mount Vernon.....	Geo. O. Culli, M. D.....	Do.
Murphysboro.....	Ray B. Essick, M. D.....	City health physician.
Oak Park.....	Frank S. Needham, M. D.....	Commissioner of health.
Ottawa.....	Enos E. Palmer, M. D., B. S.....	Health officer.
Pekin.....	L. R. Clary, M. D.....	Do.
Peoria.....	Joel A. Eastman, M. D.....	Health commissioner.
Quincy.....	*Thomas W. Rhodes, M. D., Ph. G.	Health officer.
Rock Island.....	J. R. Hollowbush, M. D.....	City physician.
Rockford.....	*N. O. Gunderson, M. D.....	Commissioner of health.
Springfield.....	H. H. Tuttle, M. D.....	Superintendent of health.
Streator.....	D. S. Conley, M. D.....	City physician.
Urbana.....	W. F. Burris, M. D.....	Chairman, board of health.
Waukegan.....	Howard C. Hoag, M. D.....	City health officer.
West Frankfort.....	C. E. Koons, M. D.....	Do.
Indiana:		
Anderson.....	E. M. Conrad, M. D.....	Secretary, board of health.
Bloomington.....		
Clinton.....	Ott Casey, M. D.....	Do.
Connorsville.....	J. H. Clark, M. D.....	Do.
Crawfordsville.....	Thomas Z. Ball, M. D.....	City health officer.
East Chicago.....	M. A. Given, M. D.....	Secretary, board of health.
Elkhart.....	Allen A. Norris, M. D.....	Do.
Elwood.....	Harry W. Fitzpatrick, M. D.....	Secretary, health department.
Evansville.....	William E. Barnes, M. D., B. Sc.	Secretary, board of health.
Fort Wayne.....	D. R. Benninghoff, M. D.....	Health officer.
Frankfort.....		
Gary.....	B. W. Harris, M. D.....	Do.
Hammond.....	William A. Buchanan, M. D.....	Secretary, board of health.
Huntington.....	R. F. Frost, M. D.....	Do.
Indianapolis.....	*H. G. Morgan, M. D.....	Do.

City	Name of health officer	Official title
Indiana—Continued.		
Jeffersonville	*Davis L. Field, M. D.	Secretary, board of health.
Kokomo	T. C. Cochran, M. D.	Health officer.
La Fayette	Earl Van Rued, M. D.	Secretary, board of health.
La Porte		
Logansport	*Fred G. Six	Health officer.
Marion	F. A. Priest, M. D.	Secretary, board of health.
Michigan City	Nelle C. Reed, M. D.	Health officer.
Mishawaka	B. J. Wyland, M. D.	Secretary, board of health.
Muncie	Earle S. Green, M. D.	City health commissioner.
New Albany	H. B. Shacklett, M. D.	Secretary, board of health.
Newcastle	Clyde C. Bitler, M. D.	Do.
Peru	Omer U. Carl, M. D.	Do.
Richmond	Richard Schillinger, M. D.	Do.
South Bend	J. B. Berteling, M. D.	Do.
Terre Haute	Geo. T. Johnson, M. D., B. C.	Health officer.
Vincennes	R. G. Moore, M. D.	Secretary, board of health.
Wabash	P. G. Moore, M. D.	Health officer.
Whiting	E. L. Dewey, M. D.	Secretary, board of health.
Iowa:		
Boone	William Woodburn, M. D.	Health officer.
Burlington	George H. Steidle, M. D., B. Sc.	Do.
Cedar Rapids	John Redmond, M. D.	City physician.
Clinton	H. R. Sugg, M. D.	Health officer.
Council Bluffs	A. A. Robertson, M. D.	Do.
Davenport	*Theodore J. Meyer	City health commissioner.
Des Moines	*Harley L. Saylor, M. D.	Director of health.
Dubuque	*D. C. Steelsmith, M. D., C. P. H.	Sanitary police.
Fort Dodge	*E. S. Welch	
Fort Madison		
Iowa City	Francis L. Love, M. D.	Health officer.
Keokuk	Bruce L. Gilfillan, M. D.	Physician to board of health.
Marshalltown	Matthew U. Chesire, M. D.	City physician.
Mason City	M. J. Fitzpatrick, M. D.	Health physician.
Muscatine		
Ottumwa	Friedrich A. Hecker, M. D.	City physician.
Sioux City	*W. D. Hayes, C. P. H.	Commissioner of public health.
Waterloo	J. R. Thompson, M. D.	Health officer.
Kansas:		
Arkansas City	B. C. Geeslin, M. D.	President, board of health.
Atchison		
Chanute	M. A. Duncan, M. D.	Health officer.
Coffeyville	Walter H. Wills, M. D.	City physician and health officer.
El Dorado	*Tom. A. Jackson	Health officer.
Emporia	*J. S. Fulton, M. D.	Field agent, board of health.
Fort Scott	C. L. Mosley, M. D., B. S.	Assistant collaborating epidemiologist, U. S. P. H. S.
Hutchinson	Guy R. Walker, M. D.	City physician.
Independence	Chester O. Shepard, M. D.	Do.
Kansas City	*S. David Henry, M. D., B. S.	Director of health.
Lawrence	E. R. Keith, M. D.	Health officer.
Leavenworth	D. R. Sterett, M. D.	City health officer.
Newton	O. W. Roff, M. D.	Do.
Parsons	L. B. Kackley, M. D.	Do.
Pittsburg	H. J. Veatch, M. D., B. S.	Do.
Salina	S. T. Blades, M. D.	Do.
Topeka	*Jos. A. Kinnaman, M. D., B. Sc.	Do.
Wichita	*J. E. Wolfe, M. D.	Director of public welfare.
Kentucky:		
Ashland		
Covington	J. P. Riffe, M. D.	Health officer.
Henderson	*F. C. Campbell, M. D.	County health officer.
Lexington	*Chas. H. Voorhies, M. D.	Health officer.
Louisville	Griffin C. Kelly, M. D., B. S.	City health officer.
Newport	John Todd, M. D.	Do.
Owensboro	*R. M. Hathaway, M. D.	Director of health.
Paducah	J. C. Morrison, M. D.	City health officer.
Louisiana:		
Alexandria	J. A. Packer, M. D.	President, board of health.
Baton Rouge	Thomas J. McHugh, M. D.	City health officer.
Lake Charles	J. G. Martin, M. D.	Do.
Monroe	D. I. Hirsch, M. D.	Health officer.
New Orleans	*William Henry Robin, M. D.	Superintendent of public health.
Shreveport	*Arthur G. Heath, M. D.	President, board of health.
Maine:		
Auburn	*L. J. Dumont, M. D.	Health officer.
Augusta	George A. Coombs, M. D.	Do.
Bangor	*Harry D. McNeil, M. D.	Do.
Bath	*Chester S. Kingsley	City sanitarian.
Biddeford	*John W. Mahoney	Health officer.
Lewiston	*L. J. Dumont, M. D.	Do.
Portland	*Thomas Tetreau, M. D.	Do.
Sanford	*William H. Kelly, M. D.	Do.
South Portland	Reginald T. Lombard, M. D.	Do.
Waterville	*William J. Young, M. D.	Do.
Westbrook		

City	Name of health officer	Official title
Maryland:		
Annapolis		
Baltimore	*C. Hampson Jones, M. D., C. M.	Commissioner of health and registrar of vital statistics.
Cumberland	*Harvey H. Weiss, B. Sc.	Health officer and registrar.
Frederick	*E. C. Kefauver, M. D.	Health officer.
Hagerstown	Perry F. Prather, M. D.	County health officer.
Massachusetts:		
Adams		
Amesbury	*Charles B. Kingsbury	Agent, board of health.
Arlington	*William H. Bradley	Do.
Athol	Marion B. Sibley, M. D.	Secretary, board of health.
Attleboro	William O. Hewitt, M. D.	Health officer.
Belmont	*Henry Berger, jr., C. P. H.	Agent, board of health.
Beverly	*Alonzo O. Woodbury	Do.
Boston	*Francis X. Mahoney, M. D., D. V. S.	Health commissioner.
Braintree	Harry F. Vinton	Agent, board of health.
Brockton	Joseph H. Lawrence, M. D.	Health officer.
Brookline	Francis P. Denny, M. D.	Do.
Cambridge	Simon B. Kelleher, M. D.	Medical inspector.
Chelsea	*John F. Welch	Health officer.
Chicopee	*Gertrude M. DeWitt	Agent, board of health.
Clinton	*Frederick E. Murphy	Do.
Danvers	*Hugo Nappé, R. N.	Health officer.
Dedham	Edward Knobel, M. D. V.	Chairman, health department.
Easthampton	Clemence C. Buckner	Agent, board of health.
Everett	*William F. Hogan	Do.
Fall River	*Ernest M. Morris, M. D.	Health Commissioner.
Fitchburg	*Fred R. Brigham	Agent, board of health.
Frammingham	*Everett B. Johnson, S. B.	Do.
Gardner	*William P. O'Donnell	Do.
Gloucester	George S. Rust, M. D.	Physician, board of health.
Greenfield	*George P. Moore	Agent, board of health.
Haverhill	*George T. Lennon	Do.
Holyoke	*J. Sidney Wright	Do.
Lawrence	Peter L. McKallagat, M. D.	Chairman, board of health.
Leominster	B. P. Sweeney, M. D.	Do.
Lowell	*Francis J. O'Hare	Agent, board of health.
Lynn	William T. Hopkins, M. D.	Commissioner of public health.
Malden	H. L. Richardson	Clerk, board of health.
Marlboro	*John J. Cassidy	Agent, board of health.
Medford	William N. Lanigan, M. D.	Medical inspector.
Melrose	Clarence P. Holden, M. D.	Chairman, board of health.
Methuen	*Albert Slack	Clerk, board of health.
Milford	James Birmingham	Agent, board of health.
Milton	*Paul W. Kimball, M. D.	Do.
Natick		
New Bedford	*Wm. G. Kirschbaum	Agent and executive officer.
Newburyport	*William Thurston	Agent, board of health.
Newton	*Francis Geo. Curtis, M. D.	Chairman, board of health.
North Adams	*Douglas W. Hyde, S. E.	Agent, board of health.
Northampton	George R. Turner	Do.
Northbridge	Daniel C. Duggan	Chairman, board of health.
Norwood	*James J. Mulvehill, D. V. D.	Agent, board of health.
Palmer	J. P. Schneider, M. D.	Chairman, board of health.
Peabody	*Percy F. Murray	Agent, board of health.
Pittsfield	*Willys M. Monroe, M. D.	Health officer.
Plymouth	Walter D. Shurtleff, M. D.	Do.
Quincy	Edmund B. Fitzgerald, M. D.	Health commissioner.
Revere	Francis Licata, M. D.	Chairman, board of health.
Salem	*John J. McGrath	Agent, board of health.
Saugus	Charles E. Light	Chairman, board of health.
Somerville	Frank L. Morse, M. D.	Medical inspector.
Southbridge	*Albert R. Brown	Agent, board of health.
Springfield	*Jacob R. Sackett	Do.
Taunton	William H. Bennett, M. D.	Chairman, board of health.
Wakefield	David Taggart	Health officer.
Waltham	C. B. Fuller, M. D.	Director, public welfare.
Watertown	*John W. Tapper	Agent, board of health.
Webster	John H. McCoy	Sanitary inspector.
West Springfield	John J. Lysaght	Agent, board of health.
Westfield	Robert M. Marr, M. D.	Chairman, board of health.
Weymouth		
Winchester	*Maurice Dinneen	Agent, board of health.
Winthrop	*William D. Childress	Do.
Woburn	*Edward T. Gorman	Agent and secretary.
Worcester	*T. F. Kenney, M. D.	Director, board of health.
Michigan:		
Adrian	Emily S. Stark, M. D.	Health officer.
Alpena	D. A. Cameron, M. D.	Do.
Ann Arbor	John A. Wessinger, M. D.	Do.
Battle Creek	*A. A. Hoyt, M. D.	Do.
Bay City	G. W. Moore, M. D.	City physician.
Benton Harbor	Carl A. Mitchell, M. D.	Director of public health.

City	Name of health officer	Official title
Michigan—Continued.		
Cadillac.....	John F. Gruber, M. D.....	Health officer.
Detroit.....	*Henry F. Vaughan, D. P. H.....	Commissioner of health.
Escanaba.....	Harry T. Defnet, M. D.....	Health officer.
Flint.....	*C. V. Merritt, M. D.....	Do.
Grand Rapids.....	*Clyde C. Slemmons, M. D.....	Do.
Hamtramck.....	Frank J. Cyman, M. D.....	Do.
Highland Park.....	W. N. Braley, M. D.....	Do.
Holland.....		
Ironwood.....	*Louis Dorpat, M. D.....	Do.
Ishpeming.....	*George G. Barnett, M. D.....	Do.
Jackson.....	*Floyd R. Town, M. D.....	Do.
Kalamazoo.....	*Alvin H. Rockwell, M. D.....	Do.
Lansing.....	*S. R. Hill, M. D.....	Health director.
Marquette.....	*Lowell L. Youngquist, M. D., B. Sc.....	Health officer.
Monroe.....	James A. Humphrey, M. D.....	Do.
Mount Clemens.....	Edward G. Folsom, M. D.....	Do.
Muskegon.....	R. J. Harrington, M. D.....	Do.
Muskegon Heights.....	William S. Chapin, M. D.....	Do.
Owosso.....	R. C. Mahaney, M. D.....	Do.
Pontiac.....	*C. A. Neafe, M. D., M. S. P. H.....	Director of public health.
Port Huron.....	L. R. Gaddis, M. D.....	Do.
River Rouge.....	Harvey S. Broderson, M. D.....	Health officer
Saginaw.....	*William H. Pickett, M. D., C. P. H.....	Do.
Sault Ste Marie.....	*John J. Griffin, M. D.....	Do.
Traverse City.....	George A. Holliday, M. D., D. D. S.....	Do.
Wyandotte.....	Alfred C. Drouillard, M. D.....	Do.
Minnesota:		
Albert Lea.....	Donald S. Branham, M. D., B. S.....	Do.
Austin.....	Clifford C. Leck, M. D.....	Do.
Brainerd.....	R. A. Belse, M. D.....	Chairman, board of health.
Duluth.....	Lincoln A. Sukeforth, M. D.....	Director of public health.
Faribault.....	Frederick U. Davis, M. D.....	Health commissioner.
Hibbing.....	Thos. A. Estrem, M. D.....	Health officer.
Mankato.....	E. L. Schield, M. D., M. S.....	Health commissioner.
Minneapolis.....	*Francis E. Harrington, M. D., B. S., LL. D.....	Do.
Rochester.....	C. H. Mayo, M. D. ¹	Health officer.
St. Cloud.....	*Paul Scherer.....	Sanitary officer.
St. Paul.....	*Benj. F. Simon, M. D.....	Health officer.
Virginia.....	R. P. Pearsall, M. D.....	Do.
Winona.....	William V. Lindsay, M. D.....	Do.
Mississippi:		
Biloxi.....	G. F. Carroll, M. D.....	Do.
Columbus.....	L. B. Morris, M. D., B. S.....	Do.
Greenville.....	*A. J. Ware, M. D.....	City and county health officer.
Hattiesburg.....		
Jackson.....	*C. C. Applewhite, M. D.....	Director, county health unit.
Laurel.....	*Wm. B. Harrison, M. D.....	Do.
Meridian.....	T. J. Houston, M. D.....	City health officer.
Natchez.....	W. H. Aikman, M. D.....	Do.
Vicksburg.....		
Missouri:		
Cape Girardeau.....	*Lee Atchison.....	Do.
Carthage.....	W. E. Steele.....	Do.
Columbia.....	W. A. Norris, M. D.....	City health commissioner.
Hannibal.....	*Eugene M. Lucke, M. D.....	Field agent.
Independence.....	H. A. Schroeder, M. D.....	City physician.
Jefferson City.....	Hugh G. Dallas, M. D.....	Do.
Joplin.....	*M. B. Harutun, M. D.....	Commissioner of health.
Kansas City.....	*Ernest W. Cavaness, M. D., B. Sc., B. L., B. S.....	Director of health.
Moberly.....	Jesse Maddox, M. D.....	City health officer.
St. Joseph.....	William W. Gray, M. D.....	Do.
St. Louis.....	*Max C. Starkloff, M. D.....	Health commissioner.
Sedalia.....	*C. T. Robison.....	Sanitary officer.
Springfield.....	*Lon Sharp.....	Commissioner of health.
Webster Groves.....	Arthur W. Westrup, M. D.....	Health commissioner.
Montana:		
Anaconda.....	W. E. Long, M. D.....	Health officer.
Billings.....	Albert E. Stripp, M. D.....	City health officer.
Butte.....	Joseph J. Kane, M. D.....	Do.
Great Falls.....	*Thomas F. Walker, M. D.....	Do.
Helena.....	*Arthur Jordan, M. D.....	Field agent U. S. P. H. S.
Missoula.....	*F. D. Pease, M. D.....	Health officer.

¹ A full-time deputy health officer, D. C. Lothead, M. D. C. M., D. P. H., is employed.

City	Name of health officer	Official title
Nebraska:		
Grand Island	J. G. Woodin, M. D.	City physician.
Lincoln	M. F. Arnholt, M. D.	Superintendent of health.
North Platte	Josiah B. Redfield, M. D.	City physician.
Omaha	A. S. Pinto, M. D.	Health commissioner.
Nevada:		
Reno	A. F. Adams, M. D., Ph. G.	Secretary board of health.
New Hampshire:		
Berlin	*Eli A. Marcoux, B. S.	Health officer.
Claremont	William P. Prescott	Do.
Concord	*Charles Palmer	Do.
Dover	*Wm. E. Whiteley	Executive officer.
Keene	*Fred C. Nims	Health officer.
Laconia	Richard W. Robinson, M. D.	Secretary board of health.
Manchester	*Howard A. Streeter, M. D.	Health officer.
Nashua	P. S. McLaughlin, M. D.	Chairman board of health.
Portsmouth	George A. Tredick, M. D.	Health officer.
Rochester		
New Jersey:		
Asbury Park	*Budd H. Obert	Health officer and registrar of vital statistics.
Atlantic City	Samuel L. Salasin, M. D.	Health officer.
Bayonne	William W. Brooke, M. D.	Do.
Belleville	*Eugene T. Berry	Do.
Bloomfield	*Joseph C. Salie, P. H. G., D. O.	Do.
Bridgeton	*Charles E. Bellows, Ph. G.	Sanitary inspector.
Camden	*Arthur L. Stone, M. D.	Director of public health.
Carteret	Herbert L. Strandberg, M. D.	Health officer.
Clifton	Jeremiah P. Quinlan	Do.
Collingswood	Ralph N. Wright, M. D.	Medical inspector.
Dover	*John G. Taylor	Health officer.
East Orange	*F. J. Osborne, S. B.	Do.
Elizabeth	*Louis J. Richards, B. S.	Do.
Englewood	*John A. Manson	Sanitary inspector.
Garfield	Chas. B. Bleasby, M. D.	Health officer.
Gloucester	J. Alonzo Beak, M. D.	Do.
Hackensack	*L. Van D. Chandler	Do.
Harrison	*John T. McClure	Do.
Hoboken	Joseph F. X. Stack, M. D.	Commissioner of health.
Irvinton	*Paul C. Schotte, Ph. D.	Health officer.
Jersey City	*James Hogan, M. D., C. P. H.	Do.
Kearny	*Amos Field, jr.	Do.
Lodi	Henry H. Brexcoort, M. D.	Health inspector.
Long Branch	*R. Clifford Erickson	Health Officer.
Millville	F. Vernon Ware, M. D.	Do.
Montclair	*Carl T. Pomeroy, C. P. H.	Do.
Morristown	*John F. Kilkenny	Do.
New Brunswick	E. Irving Cronk, M. D.	Health officer and registrar of vital statistics.
Newark	*Charles V. Craster, M. D., D. P. H.	Health officer.
Nutley	*Eugene H. Sullivan, R. N.	Do.
Orange	*Lenore Young Wylie, R. N.	Health officer and registrar of vital statistics.
Passaic	John N. Ryan, M. D.	Health officer.
Paterson	*Fred P. Lee, M. D.	Do.
Perth Amboy	*Charles S. Thompson, D. V. S.	Do.
Phillipsburg	Alma L. Williston, M. D.	Do.
Plainfield	*N. J. Randolph Chandler	Do.
Rahway	*Fred M. Williams	Do.
Ridgefield Park	William F. Reynolds, D. V. M.	Sanitary inspector.
Rutherford	*Marine Dunn	Do.
Summit	Henry P. Dengler, M. D.	Executive officer.
Trenton	*Alton S. Fell, M. D.	Health officer.
Union City	*Frank A. Frederick	Do.
West New York	*Randolph Kunze	Chief inspector.
West Orange	*David E. Buckley	Health officer.
Westfield	*Andrew Carney	Executive officer.
New Mexico:		
Albuquerque	*G. W. Luckey, M. D.	County health officer.
New York:		
Albany	James W. Wiltse, M. D.	Health officer.
Amsterdam	Julius Schiller, M. D.	Do.
Auburn	Thomas C. Sawyer, M. D.	Do.
Batavia	Emery F. Will, M. D.	Do.
Beacon	Charles B. Dugan, M. D., Ph. B.	Do.
Binghamton	Chalmer J. Longstreet, M. D.	Do.
Buffalo	*Francis E. Fronczak, M. D., LL. B., D. P. H.	Health commissioner
Cohoes	E. M. Bell, M. D.	Health officer.
Corning	Henry E. Elwood, jr., M. D.	Do.
Cortland	A. C. Knapp, M. D.	Do.
Dunkirk	George E. Ellis, M. D.	Do.
Elmira	Reeve B. Howland, M. D.	Do.
Endicott	Dorr W. Hardy, M. D.	Do.

City	Name of health officer	Official title
New York—Continued.		
Freeport	Wm. H. Runcie, M. D.	Health officer.
Fulton	C. L. Fessenden, M. D.	Do.
Geneva	C. W. Grove, M. D.	Do.
Glens Falls	*Virgil D. Selleck, M. D.	Do.
Hoversville	Alexander L. Johnson, M. D.	Do.
Herkimer		
Hornell	George E. Taylor, M. D.	Do.
Hudson	Charles R. Skinner, M. D., B. S.	Do.
Ilion	Frank B. Conterman, M. D.	Do.
Ithaca	*Lewell T. Genung, M. D.	Do.
Jamestown	William M. Sill, M. D.	Superintendent of public health.
Johnson City	Rollin O. Crosier, M. D.	Health officer.
Johnstown	Guy Vail Wilson, M. D.	Do.
Kingston	Daniel Connelly, M. D.	Do.
Lackawanna	Anthony S. Culkowski, M. D.	Do.
Little Falls	Augustus B. Santry, M. D.	Do.
Lockport	T. Edwin O'Brien, M. D.	Do.
Middletown	H. J. Shelley, M. D.	Do.
Mt. Vernon	Frank W. Shipman, M. D.	Commissioner of health.
New Rochelle	*Edwin H. Codding, M. D.	Health officer.
New York	Louis I. Harris, M. D., D. P. H.	Commissioner of health.
Newburgh	Thomas J. Burke, M. D.	Health officer.
Niagara Falls	E. E. Gillick, M. D.	Do.
North Tonawanda	H. C. Lapp, M. D.	Do.
Ogdensburg	John W. Benton, M. D.	Do.
Olean	W. E. McDuffie, M. D.	Do.
Oneida	Donald H. Conterman, M. D., B. S.	Do.
Oneonta		
Ossining		
Oswego	Harry S. Albertson, M. D.	Do.
Peekskill	Fred A. Snowden, M. D.	Do.
Port Chester	W. J. Sheehan, M. D.	Do.
Port Jervis	G. Otto Fobe, M. D.	Do.
Poughkeepsie	*William H. Conger, M. D.	Do.
Rensselaer	Earle W. Wilkins, M. D.	Do.
Rochester	*George Washington Goler, M. D., D. Sc.	Do.
Rome	Roy J. Marshall, M. D.	Do.
Salamanca	P. H. Bourne, M. D.	Do.
Saratoga Springs	Charles B. Small, M. D.	Do.
Schenectady	J. H. Collins, M. D.	Commissioner of health.
Syracuse	Herman G. Weiskotten, M. D.	Do.
Tonawanda		
Troy	Wm. N. Campaigne, M. D.	Health officer.
Utica	Hugh H. Shaw, M. D.	Do.
Watertown	*L. M. Coulter, M. D., C. M.	Do.
Watervliet	Charles A. Birmingham, M. D., C. M.	Commissioner of health.
White Plains	Edwin G. Ramsdell, M. D.	Health officer.
Yonkers	Clarence W. Buckmaster, M. D., C. P. H.	Commissioner of health.
North Carolina:		
Asheville	*Daniel C. Sevier, M. D.	Health officer.
Charlotte	*W. A. McPhaul, M. D.	City and county health officer.
Concord	*Quint E. Smith, C. E.	Sanitary inspector.
Durham	*J. H. Epperson, M. B.	Superintendent of health.
Gastonia	Mc. G. Anders, M. D.	City physician.
Goldsboro		
Greensboro	*C. Curtis Hudson, M. D.	Health officer.
High Point	S. S. Coe, M. D.	City physician.
Kinston	*Robert S. McGeachy, M. D.	County health officer.
New Bern	*D. E. Ford, M. D.	Health officer.
Raleigh	*A. C. Bulla, M. D.	Do.
Rocky Mount		
Salisbury	*Chas. Wallace Armstrong, M. D.	City and county health officer.
Wilmington	*John H. Hamilton, M. D.	County health officer.
Wilson	*L. J. Smith, M. D.	Health officer.
Winston-Salem	*R. L. Carlton, M. D.	Do.
Ohio:		
Akron	*Melville D. Ailes, M. D., LL. B., B. Sc.	Director of health.
Alliance	Earl Mussleman, M. D.	Health commissioner.
Ashland	E. L. Clem, M. D.	Director of public welfare.
Ashtabula	A. J. Pardee, M. D.	City health officer.
Barberton	W. A. Mansfield, M. D.	Health commissioner.
Bollefontaine	A. J. McCracken, M. D.	Do.
Bucyrus	A. H. McCrory, M. D.	Do.
Cambridge	C. L. Vorhies, M. D.	Do.
Campbell	J. S. Mariner, M. D.	Do.
Canton	Frank M. Sayre, M. D.	Do.
Chillicothe	*G. E. Robbins, M. D.	Commissioner of health.
Cincinnati	*William H. Peters, M. D.	Health commissioner.
Cleveland	*Harry L. Rockwood, M. D.	Do.
Cleveland Heights	*Robert Lockhart, M. D.	Director of health.

City	Name of health officer	Official title
Ohio—Continued.		
Columbus.....	*James A. Beer, M. D., B. Sc.	Commissioner of health.
Conneaut.....	Inez Hyatt, M. D.	Health commissioner.
Coshocton.....	*D. M. Criswell, M. D.	Do.
Cuyahoga Falls.....	*R. H. Markwith, M. D.	Do.
Dayton.....	*A. O. Peters, M. D.	Commissioner of health.
East Cleveland.....	George W. Stober, M. D.	Director of health.
East Liverpool.....	Edward W. Miskall, M. D.	Health commissioner.
Elyria.....	G. E. French, M. D.	Do.
Findlay.....	*Edw. W. Misamore, M. D.	Do.
Fostoria.....	Thos. M. Bridges.	Do.
Fremont.....	E. L. Vermilya, M. D.	Do.
Hamilton.....	Wilmer E. Griffith, M. D., B. S.	Do.
Ironton.....		
Kenmore.....	*R. H. Markwith, M. D.	Do.
Lakewood.....	Wallace J. Benner, M. D.	Do.
Lancaster.....	Clifford B. Snider, M. D., M. Sc.	Do.
Lima.....	James B. Poling, M. D.	Do.
Lorain.....	Valloyd Adair, M. D.	Do.
Mansfield.....	*Charles L. Schafer, M. D.	Acting health commissioner.
Marietta.....	J. B. McClure, M. D.	Health commissioner.
Marion.....	*W. J. Weiser, M. D.	Do.
Martins Ferry.....	*Charles Keller	Do.
Massillon.....	*John H. Williams.	Do.
Middletown.....	*G. D. Lummis, M. D.	Do.
New Philadelphia.....	*Joseph Blickensderfer, M. D.	Do.
Newark.....	W. H. Knauss, M. D., B. Sc.	Do.
Niles.....	W. A. Werner, M. D.	Do.
Norwood.....	Lewis O. Saur, M. D.	Do.
Piqua.....	J. G. Freshour, M. D.	Do.
Portsmouth.....	Oral D. Tatje, M. D., B. P. H.	Do.
Salem.....	Thomas T. Church, M. D.	Do.
Sandusky.....	*F. M. Houghtaling, M. D.	Do.
Springfield.....	*Oscar M. Craven, M. D.	Director of public health.
Steubenville.....	*John A. Madigan	Health commissioner.
Tiffin.....	J. A. Gosling, M. D.	Do.
Toledo.....	Robt. H. Elrod, M. D.	Do.
Warren.....	M. T. Knoppenberger, M. D.	Do.
Youngstown.....	H. E. Welch, M. D.	Do.
Zanesville.....	David J. Evans, M. D.	Do.
Oklahoma:		
Ardmore.....	A. Y. Easterwood, M. D., B. S.	City health officer.
Bartlesville.....	Elizabeth Chamberlain, M. D.	City superintendent of health.
Chickasha.....	Arthur W. Nunnery, M. D.	Do.
Enid.....	R. C. Baker, M. D.	Do.
Guthrie.....	William C. Miller, M. D.	County superintendent of health.
McAlester.....	*Charles M. Pearce, M. D.	Do.
Muskogee.....	I. C. Wolfe, M. D.	City health officer.
Oklahoma City.....	*Walter H. Miles, M. D.	Health director.
Okmulgee.....		
Sapulpa.....	P. K. Lewis, M. D.	Superintendent of health.
Shawnee.....	T. C. Sanders, M. D.	Do.
Tulsa.....	D. A. Beard, M. D.	Do.
Oregon:		
Astoria.....	Nellie S. Vernon, M. D.	City and county health officer.
Eugene.....	S. M. Kerron, M. D.	City health officer.
Portland.....	John G. Abele, M. D.	Do.
Salem.....	*Walter H. Brown, M. D.	Do.
Pennsylvania:		
Allentown.....	*J. Treichler Butz, M. D., D. D. S.	Health officer.
Altoona.....	*T. G. Herbert.	Chief, bureau of health.
Ambridge.....	*Louis Herrmann	Health officer.
Beaver Falls.....	*Nelson W. Osmond	Do.
Berwick.....	*C. E. Ross.	Do.
Bethlehem.....	*J. E. Brader	Do.
Braddock.....	*James E. Wills.	Do.
Bradford.....	*Carl L. Peterson	Do.
Bristol.....	John M. Wright	Do.
Butler.....	*J. Fred Leetch	Do.
Cannonsburg.....	*J. M. Templeton	Do.
Carbondale.....	*Daniel Munley	Sanitary officer.
Carlisle.....	*John T. Glass	Health officer.
Carnegie.....	Joseph Lewis	Do.
Carrick.....		
Chambersburg.....	*Frank J. Croft	Do.
Charleroi.....	*W. M. Darby	Health inspector.
Chester.....	*Mark G. Murtaugh	Health officer.
Clairton.....	*W. F. Connelly	Do.
Coatesville.....	Charles V. Peace, V. M. D.	Do.
Columbia.....	George M. Rodenhauser	Do.
Connellsville.....	*John Irwin	Sanitary officer.
Dickson City.....	*Frank J. Meehan	Health officer.
Donora.....	*John W. Harrington	Do.
Du Bois.....	L. W. Quinn, M. D.	Do.
Dunmore.....	William Rinaldi	Do.

City	Name of health officer	Official title
Pennsylvania—Continued.		
Duquesne	*Emil Elmgren	Health officer.
Easton	J. James Condran, M. D.	Do.
Elwood City	*Louis Young	Do.
Erie	James R. Smith, M. D.	Do.
Farrell	*W. C. Heinze	Do.
Franklin	Charles H. Brown, M. D.	Medical health officer.
Greensburg	*T. Ray Hunter	Health officer.
Harrisburg	John M. J. Raunick, M. D.	Director.
Hazleton	*P. J. Bonner	Health officer.
Homestead	*James L. King	Do.
Jeanette	*Charles E. Walter	Chief health officer.
Johnstown	L. W. Jones, M. D.	Health officer.
Kingston	*J. F. Seward	Do.
Lancaster	*Benj. F. Charles	Do.
Lansford	David Davis	Do.
Latrobe	W. T. Osborne	Do.
Lebanon	F. E. Witmer, M. D.	Do.
Lewistown	H. E. Fetterolf	Do.
McKees Rocks	*B. V. Anderson	Do.
McKeesport	*Daniel F. Marsh	Do.
Mahanoy	*John Sullivan	Do.
Meadville	John Laley	Do.
Monesson	*Francis E. Gibson	Do.
Mount Carmel	W. F. Stine	Do.
Nanticoke	*H. J. Abbott	Do.
New Castle	William L. Steen, M. D.	Do.
New Kensington		
Norristown	*Chas. E. White	Do.
North Braddock	*Paul V. Hamilton	Do.
Oil City	*W. J. Lewis	Do.
Old Forge	Joseph Filice	Do.
Olyphant	Dennis O'Connor	Do.
Philadelphia	*Wilmer Krusen, M. D.	Director, department of public health.
Phoenixville	Allen L. Bevan	Health officer.
Pittsburgh	*Richard G. Burns, M. D.	Director of public health.
Pittston	*Michael A. McHale	Health officer.
Plymouth	H. G. Templeton, M. D.	Do.
Pottstown	*A. John André	Do.
Pottsville	*David A. Thomas	Do.
Punxsutawney	J. Frank Boney	Do.
Reading	*Ira James Hain, M. D.	Do.
Seranton	J. D. Lewis, M. D.	Director of public health.
Shamokin	*Fred Beiser	Health officer.
Sharon	*Louis C. Brainard	Sanitary officer.
Shenandoah		
Steelton	*E. G. Butler	Health officer.
Sunbury	*Victor A. Koble	Do.
Swissvale	*W. H. Rushworth	Do.
Tamaqua	Lamont Perrine	Do.
Taylor	E. E. Edwards, M. D.	Do.
Tyrone	John J. Patterson	Do.
Uniontown	*W. C. Hall	Do.
Vandergrift	*J. Elmer Spang	Do.
Warren	*Ralph N. Brown	Do.
Washington	*Thos. W. Henderson	Do.
Waynesboro	*Percy H. Snowberger	Do.
West Chester	*Enoch P. Hershey	Do.
Wilkes-Barre		
Wilkinsburg	*J. M. Snyder	Do.
Williamsburg	E. T. Clark	Health officer.
Williamsport	R. F. Trainer, M. D.	Do.
Windber	S. W. McMullen	Do.
Woodlawn	*J. E. Tanner	Do.
York	J. Frenk Small, M. D.	Director of public health.
Rhode Island:		
Bristol		
Central Falls	Adolph R. V. Fenwick, M. D.	Superintendent of public health.
Cranston	Daniel S. Latham, M. D.	Do.
Cumberland	Stephen A. Kenney, M. D.	Health officer.
East Providence	W. H. T. Hamill, M. D.	Do.
Newport	Edward V. Murphy, M. D.	Commissioner of health.
Pawtucket	Florian A. Ruest, M. D.	Superintendent of health.
Providence	Charles Value Chapin, M. D., L. L. D., Sc. D.	Do.
Warwick	Ralph Fred Lockwood, M. D.	Health officer.
West Warwick	Daniel S. Harrop, M. D.	Do.
Westerly	Samuel C. Webster, M. D., Ph. G.	Superintendent of health.
Woonsocket	Adelbert H. Monty, M. D.	Health officer.
South Carolina:		
Anderson	*E. R. Van De Grift, D. V. M.	Do.
Charleston	*Leon Banov, M. D.	Do.
Columbia	R. T. Jennings, M. D.	Do.
Florence	*P. H. Brigham, M. D., D. D. S.	Health commissioner.

City	Name of health officer	Official title
South Carolina—Continued.		
Greenville.....	*Irving S. Barksdale, M. D.....	Commissioner of health.
Spartanburg.....	.....	.....
Sumter.....	*John R. Sumter.....	Health officer.
South Dakota:		
Aberdeen.....	*Paul V. McCarthy, M. D.....	City and county health officer.
Sioux Falls.....	W. E. Donahoe, M. D.....	Health officer.
Watertown.....	H. M. Freeburg, M. D.....	Superintendent, county board of health.
Tennessee:		
Chattanooga.....	*C. B. Crittenden, M. D.....	Director of health.
Jackson.....	Hermon Hawkins, M. D.....	City physician.
Johnson City.....	J. T. McFaddin, M. D.....	Do.
Knoxville.....	*Marvin F. Haygood, M. D., C. P. H.	City health officer.
Memphis.....	*J. J. Durrett, M. D., Ph. G.....	Superintendent of health.
Nashville.....	*John Overton, M. D.....	City health officer.
Texas:		
Abilene.....	Scott W. Hollis, M. D.....	City and county health officer.
Amarillo.....	*R. M. Walker, M. D.....	City health officer.
Austin.....	*Lee E. Edens, M. D.....	Director of public health.
Beaumont.....	Dru McMickin, M. D.....	City health officer.
Brownsville.....	W. E. Spivey, M. D.....	Do.
Cleburne.....	James D. Osborn, M. D.....	Do.
Corpus Christi.....	M. J. Perkins, M. D.....	Do.
Corsicana.....	Wm. R. Sneed, M. D.....	City physician.
Dallas.....	*N. W. Andrews, M. D.....	Director of public health.
Del Rio.....	B. F. Orr, M. D.....	City health officer.
Denison.....	Alex W. Acheson, M. D.....	Health officer.
Eastland.....	E. R. Townsend, M. D.....	Do.
El Paso.....	*Richard A. Wilson, M. D.....	Do.
Fort Worth.....	*L. H. Martin, M. D.....	Director of public health.
Galveston.....	Walter Kleberg, M. D.....	City health officer.
Houston.....	*Arthur H. Flickwir, M. D.....	Do.
Laredo.....	.....	.....
Marshall.....	.....	.....
Orange.....	J. E. Reeves, M. D.....	Do.
Palestine.....	John M. Colley, M. D.....	Do.
Paris.....	.....	.....
Port Arthur.....	J. P. Reed, M. D.....	Do.
Ranger.....	John B. Stackable, M. D.....	City physician.
San Angelo.....	A. C. DeLong, M. D.....	City health officer.
San Antonio.....	W. A. King, M. D.....	Health officer.
Sherman.....	A. L. Ridings, M. D.....	Do.
Temple.....	.....	.....
Texaskana.....	Wm. Hibbitts, M. D.....	City physician.
Tyler.....	Albert Woldert, M. D., Ph. G.....	City health officer.
Waco.....	T. E. Tabb, M. D.....	Do.
Wichita Falls.....	*L. I. Lucey, M. D., D. V. M.....	Director of sanitation.
Utah:		
Logan.....	P. W. Eliason, M. D.....	City physician.
Provo.....	Arnold E. Robison, M. D., B. S.	Do.
Ogden.....	N. H. Savage, M. D.....	Do.
Salt Lake City.....	W. Christopherson, M. D.....	Health commissioner.
Vermont:		
Barre.....	M. D. Lamb, M. D.....	Health officer.
Bennington.....	*Jos. M. Ayres.....	Do.
Burlington.....	*James W. Courtney, M. D.....	Do.
Rutland.....	Geo. Rustedt, M. D.....	Do.
Virginia:		
Alexandria.....	*Wm. Clyde West, M. D.....	Do.
Charlottesville.....	*George B. Young, M. D.....	Do.
Danville.....	*R. W. Garnett, M. D.....	Do.
Lynchburg.....	*Mosby G. Perrow, Ph. D.....	Director public welfare.
Newport News.....	*D. St. Clair Campbell, M. D., C. M.	Do.
Norfolk.....	*Powhatan S. Schenck, M. D.....	Health commissioner.
Petersburg.....	Robert Alston Martin, M. D.....	Health officer.
Portsmouth.....	*Lonsdale J. Roper, M. D.....	Director of public welfare.
Richmond.....	*W. Brownley Foster, M. D., B. S.	Do.
Roanoke.....	*Coleman B. Ransone, M. D., L. I.	Health officer.
Staunton.....	J. F. Fulton, M. D.....	Do.
Suffolk.....	*Challis H. Dawson, M. D.....	Director health department.
Washington:		
Aberdeen.....	Arthur Skarperud, M. D., B. S.	City health officer
Bellingham.....	.....	.....
Bremerton.....	T. H. Holmes, M. D.....	Do.
Everett.....	J. Spencer Purdy, M. D.....	Do.
Hoquiam.....	Harry C. Watkins, M. D.....	Do.
Seattle.....	*E. T. Hanley, M. D.....	Commissioner of health.
Spokane.....	*Ralph Hendricks, M. D.....	Commissioner of public affairs.
Tacoma.....	*Herman S. Judd, M. D.....	Director of health.

City	Name of health officer	Official title
Washington—Continued.		
Vancouver	Ralph L. Lieser, M. D., Ph. G.	City health officer.
Walla Walla	*Geo. H. T. Sparling, M. D.	City and county health officer.
Yakima	*H. H. Smith, M. D.	Do.
West Virginia:		
Bluefield	*David B. Lepper, M. D., C. P. H.	Director of health.
Charleston	J. B. Lohan, M. D.	Health commissioner.
Clarksburg	*Robert Linn Osborn, M. D.	City physician.
Fairmont	*J. A. Jamison, M. D.	City health officer.
Huntington	J. E. Rader, M. D.	President, board of health.
Martinsburg	James A. Duff, M. D.	County health commissioner.
Morgantown	*Harry H. Pierce, M. D.	Health Officer.
Moundsville	*D. Berman, M. D., D. P. H.	City and county health officer.
Parkersburg	*Theodore R. Meyer, M. D.	City health commissioner.
Wheeling	*William Hay McLain, M. D.	City and county health commissioner.
Wisconsin:		
Appleton	Frank P. Dohearty, M. D.	City health officer.
Ashland	C. O. Hertzman, M. D.	Health commissioner.
Beloit	*Lewis M. Field, M. D.	Health officer.
Eau Claire	J. F. Farr, M. D.	Executive officer.
Fond du Lac	A. C. Dana, M. D.	Health commissioner.
Green Bay	*T. J. Oliver, M. D.	Commissioner of health.
Janesville	Fred B. Welch, M. D.	City health officer.
Kenosha	*Gustave Windesheim, M. D.	Director of health.
La Crosse	*Anthony M. Murphy	Acting health commissioner.
Madison	*Louis Faerberach, M. D.	Health officer.
Manitowoc	Max Staehle, M. D.	Commissioner of health.
Marinette	S. Burglund, M. D.	Health commissioner.
Milwaukee	*John P. Koehler, M. D.	Commissioner of health.
Oshkosh	*Edward Joseph Campbell, M. D.	Health commissioner.
Racine	*William Waldo Bauer, M. D.	Health officer.
Sheboygan	*Joseph C. Eifers, M. D.	Commissioner of public health.
Stevens Point	F. A. Southwick, M. D.	Health commissioner.
Superior	P. G. McGill, M. D.	Do.
Waukesha	Frank M. Scheele, M. D.	Do.
Wausau	*L. F. Bugbee	Health officer.
West Allis	*Samuel C. McCorkle, M. D.	Health commissioner.
Wyoming:		
Casper	*H. Garst, M. D., Ph. G.	Director of health.
Cheyenne	N. C. Nelson, M. D.	County health officer.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Report of the Cooperative Public Health Work in Jamaica During 1926. B. E. Washburn. Government Printing Office, Kingston, 1927. 23 pages. (Abstract by N. R. Stoll.)

This report, while it deals in some detail with the results of antihookworm campaigns in Jamaica, places emphasis as well upon other phases of the public-health program, especially in relation to their development following successful antihookworm work. In 1926 "The Jamaica hookworm commission, in the campaigns conducted by its two units in the parishes of St. Mary, St. Andrew, and Portland, examined 20,591 persons for intestinal parasites. Of these, 15,569 (76 per cent) were found to be infected with hookworms; 38,459 treatments were administered to 13,236 patients; and 10,675 of those treated were cured. Treatment campaigns are conducted only in areas which have been sanitated. The sanitation staff supervised the erection of 4,106 sanitary privies of standard type during the year. The success of these campaigns has been of assistance to the Government by developing a general interest in the establishment of a permanent island-wide system of active public-health work."

The "intensive method" of Howard is employed in the antihookworm work. Laboratory examinations are made by Willis salt floatation, with the dilution egg counting method used to find out the degree of infection in about 10 per cent of the cases. Treatment consists of oil of chenopodium as first drug and thymol a week later. These drugs are given in capsule form.

The Jamaica hookworm commission began work in 1919. The results to date have "shown eight things in an unmistakable manner: (1) That hookworm disease is prevalent in all parts of Jamaica and that the disease is an important economic factor in the life of the Colony; (2) that hookworm disease can be controlled by treatment and sanitation. In the Vere area the percentage of infection was reduced from 48 to 6 per cent; (3) that all diseases, but especially typhoid and dysentery, are decreased in prevalence following a hookworm campaign; (4) that treatment for hookworm disease results in a noticeable increase in the working capacity of individual laborers; (5) that rural Jamaicans, as well as those living in the towns, are eager to learn about disease prevention and will attend health lectures and demonstrations in great numbers. More than 99.8 per cent of the population (more than 110,000 people) of the areas covered by the hookworm campaigns cooperated and were examined; (6) that hookworm control and the maintenance of a system of sanitary latrines have a marked financial value. The Lionel Town Hospital had, during 1918 and 1919, an average daily number of patients, from all causes, of 78. Following the hookworm campaign in the district during 1920 this average daily number dropped to 72 in 1920, to 57 in 1921, to 52 in 1922, and to 45 in 1923; (7) that hookworm disease retards the advancement of school children, while treatment makes them more efficient in their school work; (8) that the people can be educated and made willing to cooperate in sanitary campaigns."

Investigations of Chemical Reactions Involved in Water Purification. A. M. Buswell, et al. (1920-1925.) Illinois State Water Survey, Urbana, Ill. Bulletin No. 22, pp. 1-133.

"The investigations were carried out by four workers, each reporting his results in a thesis for an advanced degree in chemistry in the University of Illinois. * * * It is believed that these investigations, together with those carried on in other laboratories during the last five years, have definitely established several important points: (1) The amounts of residual alum in filtered water under ordinary conditions are inconsequential and are never sufficient to cause any physiological effect. No economic loss can be inferred from the presence of such slight traces of alum in distribution mains; (2) the saving that results from adjusting the pH to an optimum point is due to the greater efficiency of the alum used rather than to the prevention of unused alum going into the distribution mains. This efficiency consists largely in the formation of better alum floc, which is the first prerequisite in the purification process. It is, therefore, generally desirable to adjust the hydrogen-ion concentration of a natural water to an optimum point; (3) the optimum point is not the same for all waters and can be determined in a given case only by taking account of all the factors (physical as well as chemical) entering into the purification process and by considering all the circumstances of the case. An operator may find that the optimum point for his plant varies with seasonal changes in temperature, turbidity, hardness, and other factors; (4) the use of pH determinations in the operation of a filter plant affords a guide to more efficient results only when there is no confusion of purposes. For example, other things being equal, pH 5.5 may afford most rapid formation of floc, pH 6.2 may be most effective for removal of color, pH 5.9 to 6.8 may give least residual alum, and pH 7.1 may be best for removal of turbidity. It is, therefore, unwise to attempt to accomplish too many different purposes at one time. Separate treatment may yield better results; (5) the great complexity of the reactions involved in water purification is just beginning to be appreciated. Progress requires the utmost cooperation of engineers, chemists, and operators in the handling of problems of design and dosage. Great econo-

mies are yet to be effected. Continued research, looking toward solutions of these problems, is indispensable from the point of view of the general public."

A bibliography of 130 references is included.

New Water Supply of Kinston, N. C. John E. Weyher. *Public Works*, vol. 58, No. 3, March, 1927, pp. 93-94. (Abstract by R. J. Faust.)

In 1922, Kinston, N. C., a city of 12,000 population, felt the need of augmenting their well-water supply. Naturally they turned to wells and drilled two 8-inch wells to a depth of 350 feet, with a resulting capacity of 150 gallons per minute. Pumping of these wells damaged several adjacent artesian wells not owned by the city and resulted in a lawsuit and judgment against the city. The total cost to the city of developing this supply was \$65,000.

In 1925 a Layne & Bowler well was constructed with a 38-inch outer casing, a 24-inch central casing, and an 18-inch inner casing, set to 90, 190, and 300 feet depths, respectively. This well produced 871 gallons per minute by test with a 46-foot draw-down. The total cost to the city was \$29,000.

The success of the latter well assured Kinston of a ground-water supply and prevented the installation of a water-filtration plant.

Trained Personnel Versus "Hired Hands" Method of Filter Plant Operation. G. F. Catlett. *Proceedings Ninth Texas Water Works Short School*. January 24-29, 1927, pp. 109-113. (Abstract by E. S. Tisdale.)

Operation and supervision are frequently the weakest features of the modern water-purification plant. The influence, "for better or for worse," of the commercial companies in the early days with regard to design and operation is mentioned. Marked progress has been made in the past few years in putting water purification on a scientific basis. The State of North Carolina is taken as an example to show the deplorably bad conditions which existed before the sanitary engineering division of the State health department started its improvement program and the remarkable betterment which has resulted in both design and operation of water-treatment plants in the last eight years through a cooperative educational program carried on by the State health department. Specifications of a thoroughly competent filter-plant superintendent are given. Since the demand for trained men in North Carolina exceeded the supply, a systematic plan of developing men for this type of work was undertaken by the State health department. Personal visits to the filter plant, where instructions were given, were more productive of results than instructions by correspondence and annual meetings of filter-plant operators, although these systems also are used to bring about improvement in operating practice.

A trained operator has almost completely superseded the "hired help" type in North Carolina. A trained man obtains better efficiency from his plant, produces a water which is safe at all times, and does not allow his filter-plant equipment to depreciate so rapidly. The plan pays dividends from every standpoint.

Supervising Water Improvements in California. C. G. Gillespie. *Proceedings Ninth Texas Water Works Short School*. January 24-29, 1927, pp. 115-120. (Abstract by E. S. Tisdale.)

This paper summarizes the efforts of the State of California to safeguard public water supplies. Reduced funds have made necessary a curtailment of this much-needed work. Only 25 per cent of the time of the engineering bureau of the State health department can be devoted to public water supply supervision. The disinfection of all public supplies, which was adopted about 1915, accounted for a marked drop in the typhoid death rate from 13.3 to 2.9 per 100,000.

Sewage-disposal problems constitute a major activity of the sanitary engineering division, only a minimum amount of time being available to supervise waterworks over the State. The development of a fine spirit of devotion and conscientiousness in their work by waterworks operators, which spirit has been fostered by the State sanitary engineers, is the key to the good water furnished by the plants. It has been found that orthotolidin outfits for the control of free chlorine are a big help in holding disinfection within proper limits.

Effect of Certain Factors on the Behavior of Digestion Tanks. Willem Rudolfs. Proceedings of Ninth Texas Water Works Short School, pp. 356-366. (Abstract by H. H. Rashid.)

In order to eliminate odor and avoid impairing digestion, certain facts should be taken into consideration. The freshness of sewage is of primary importance, as the decomposition of soluble materials gives rise to a variety of compounds, including organic acids, which are broken down further by the proper bacteria already present in sewage but not in sufficient numbers to take care of the acids as rapidly as they are produced. When stale sewage thus enters the tank, the microorganisms responsible for the decomposition of these acids are partially inhibited by the acid accumulation. In a new tank started without seed material (ripe sludge), foaming may occur at the outlet and where most finer particles are deposited. When a tank is overloaded, a complete rest is indispensable.

Periodical drawing of sludge in order to keep the ratio between ripe sludge and fresh solids does not greatly disturb the biological balance, and the proper course is to draw the sludge continuously and in proportion to the incoming fresh solids. Calculation shows that the effective sludge capacity of a tank should be a minimum of 2.6 to 2.8 cubic feet per capita, but with an efficient system of sludge removal this can be reduced to 1.4 to 1.5. Formation of scum is due to slight acidity of the tank, and the trouble is overcome by the addition of lime, while the addition of acid (alum) causes the poor sludge to float so that it can be drained and dried rapidly. The breaking and hosing of scum brings only a temporary and short relief, while stirring is beneficial, inasmuch as it effects thorough mixing of the finely divided material. Too much stirring, however, is detrimental. The exclusion of air which is introduced by submerging scum is essential, as the active organisms are anaerobic, and the decomposition products of both aerobic and anaerobic organisms are quite often detrimental to the activities of each other. Separate sludge digestion is undoubtedly the next step in sewage disposal; it is easier to operate, and less expensive. The digestion of activated sludge is practicable, but the proper optimum conditions for activated sludge have yet to be determined. Lime speeds up the rate of digestion, prevents scum, and increases the sludge digestion capacity, while artificial heat is not an economical proposition. Mr. John R. Downes, in discussing the problem of freshness of solids, asserts that the accumulation of acids in stale sewage brings down the pH. below 7.0, or even more, with the result of digestion troubles. Sufficient tank area to maintain constant balance of ripe sludge and fresh sewage is essential, while periodical reversal of flow of sewage perfects distribution. Black froth, due to the accumulation of ripe sludge and increase in alkalinity, is eliminated by drawing the sludge, while gray acid foam, due to acid decomposition products, is avoided by the addition of lime. Heating of separate sludge digestion tanks is economically accomplished by placing a heating coil in the sludge where the sludge at the bottom will take a uniform temperature dependent upon the quantity of heat.

Recent Improvements and Criticisms of Imhoff Tanks. Dr. Karl Imhoff. Proceedings of Ninth Texas Water Works Short School, pp. 369-371. (Abstract by H. H. Rashid.)

The upper part of the sedimentation chamber should be given the largest surface area, because depths of over 6 feet can not be included in the computation of the detention period. One hour detention period is enough, but longer periods may be desirable, especially when contact aerators will be provided for. The sludge digestion chamber should be as deep as possible, but should have a minimum of water surface.

Gas traps should be built in all large Imhoff tank installations. The construction costs are very slight as the already present slant partition walls for the separation of the sedimentation chamber from the sludge digestion serve as gas retainers. The amount of gas is about 8 liters per head per day, which can be increased at higher temperature to threefold. Imhoff tanks the septic chambers of which have become too small may be provided with secondary sludge digestion tanks into which the half digested sludge can be pumped. In the meantime, the sludge from the secondary tank is allowed to return into the Imhoff tank. In winter there is the additional advantage that the cold separate sludge digestion chamber is heated by the warm Imhoff sludge. Contact aerators (that is to say, submerged structures into which air is supplied from below) have, to date, proved themselves very economical. The disadvantages of Imhoff tanks as compared with the single story sludge digestion tanks are, briefly, as follows: Construction is deeper, forming during the ripening period or later damages the stabilization, and the impossibility of artificially heating the septic chamber. Among the advantages are the following: The automatic continuous flow of sludge from sedimentation chambers; the even distribution of fresh sludge into septic chambers; the septic chambers are naturally kept warm by the flowing effluent; the installation of gas traps is cheaper, owing to the presence of slanted partitions; the relatively small amount of CO₂ in the gas; and the simplicity of operation.

Sewage Investigation at the New Jersey Agricultural Experiment Station. Willem Rudolfs. Proceedings of Ninth Texas Water Works Short School, pp. 352-355. (Abstract by H. H. Rashid.)

The agricultural experiment station of New Jersey is conducting an investigation of the biology of sewage disposal. The results already obtained disclose that the number of digestive bacteria in sludge does not increase in proportion to the concentration of solids. Therefore, there must be established and maintained the optimum number of organisms dealing with the proper decomposition process. The optimum digestion (liquefaction) takes place at a definite reaction—pH 7.3 to 7.6. The addition of a small quantity of salts precipitates sewage solids and aids digestion. Small quantities of chemicals are likewise beneficial to adjust the relative activity of bacteria and protozoa, from both the stimulating and inhibiting points of view. The groups of bacteria responsible for liquefaction are hampered by air, and sealing tanks are desirable. The addition of alum helps de-watering, and the determination of protozoa and pH as an index of tank behavior is practicable and simple. Temperature affects sludge digestion markedly. The optimum temperature is around 80° F. The increase of temperature in the sludge digestion tank from 58° F. to 80° F. reduces the time for digestion by nearly one-half. Among other results not yet published are the effect of length of Imhoff tanks on the chemical composition of sludge, the effect of trade waste on sludge digestion, simulation of protozoa by bacteria, filter fly study, and the use of catalyzers. In addition to these problems there are several others designed for gaining information and developing more effective methods for sewage purification which will be undertaken in the future.

Disposal of Trade Sewage. C. H. Currie. *Municipal and County Engineering*, vol. 72, No. 5, May, 1927, pp. 249-251. (Abstract by Arthur P. Miller.)

The writer points out the importance of proper disposal of trade sewage, indicating that this phase of sanitation is becoming more and more necessary. One of the most serious problems in trade waste sewages is the nature and concentration of these wastes. Until lately, little has been known of the various chemical and biological activities taking place in trade wastes, but more recently continued study of the different lines of this work has shown that each trade sewage presents an individual problem in itself.

Three general ways of handling trade sewage are as follows: (1) By fine screening, followed by sufficient dilution to prevent undue stream pollution; (2) partial treatment to destroy acid-forming bacteria or so to change the trade sewage as to make it equivalent to ordinary domestic sewage, thereby permitting it to be run into the municipal sewer systems; (3) complete treatment of trade sewage so that the effluent can be wasted into any stream or storm sewer.

The writer devotes some space to pointing out the fact that it is ill advised to force a part-time industry to spend so much on trade sewage treatment as to cause that industry either to abandon its work or to move to another locality.

Study of each particular problem will probably reveal methods of treating wastes which will be economically possible. For example, a particular sugar beet company experimented with trickling beds of stone for producing a stable effluent. One of the materials used in the beds was crushed granite, the cost of which for a complete plant would have been \$90,000, and another material was cinders, the similar cost of which would have been only \$20,000. If the cinders prove to be as satisfactory as granite and also fulfill the other requirements, there will be saved, approximately, \$70,000.

Combination Waterworks and Sewage Disposal Plant Operators. E. W. Steel. *Proceedings of Ninth Texas Water Works Short School*, pp. 113-115. (Abstract by E. S. Tisdale.)

In Texas, as in other States, sewage disposal plant troubles are due primarily to poor operation, because in many instances untrained and uneducated persons are charged with the supervision of such plants.

It is recommended that some of the scientific knowledge and the sense of responsibility of the waterworks superintendent be utilized to correct this trouble. In many cities, by giving the waterworks superintendent an assistant and making him responsible for sewage plant supervision, this problem might be solved. Three simple tests for the control of sewage treatment plants are briefly described. A plea is entered for keeping operation records and for operating more intelligently all sewage treatment plants.

DEATHS DURING WEEK ENDED AUGUST 27, 1927

Summary of information received by telegraph from industrial insurance companies for week ended August 27, 1927, and corresponding week of 1926. (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug. 27, 1927	Corresponding week 1926
Policies in force.....	66, 922, 144	65, 161, 176
Number of death claims.....	10, 508	10, 210
Death claims per 1,000 policies in force, annual rate.....	8. 2	8. 2

Deaths from all causes in certain large cities of the United States during the week ended August 27, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Aug. 27, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 27, 1927 ¹
	Total deaths	Death rate ¹		Week ended Aug. 27, 1927	Corresponding week 1926	
Total (65 cities).....	5,357	10.0	10.2	630	724	56
Akron.....	37			1	8	11
Albany ²	33	14.3	8.3	4	1	83
Atlanta.....	62			9	13	
White.....	30			6	4	
Colored.....	32	(³)		3	9	
Baltimore ²	150	11.5	10.8	29	25	90
White.....	130		9.5	22	17	85
Colored.....	50	(³)	18.4	7	8	109
Birmingham.....	65	15.8	13.8	16	13	
White.....	28		13.9	8	7	
Colored.....	7	(³)	13.8	8	6	
Boston.....	166	10.9	12.3	26	45	73
Bridgeport.....	21			4	3	74
Buffalo.....	108	10.2	11.4	17	8	71
Cambridge.....	21	8.8	7.7	2	3	36
Camden.....	29	11.4	9.2	3	7	52
Canton.....	32	14.8	10.0	6	4	142
Chicago ²	568	9.6	9.1	50	61	43
Cincinnati.....	116	14.7	16.4	11	15	69
Cleveland.....	164	8.7	9.0	26	21	69
Columbus.....	70	12.5	11.7	8	10	74
Dallas.....	24	6.0	10.0	3	8	
White.....	15		8.3	1	8	
Colored.....	9	(³)	21.2	2	0	
Dayton.....	31	9.0	11.2	4	0	66
Denver.....	77	13.8	11.3	7	8	
Des Moines.....	27	9.4	5.7	6	2	100
Duluth.....	16	7.3	9.7	1	2	22
El Paso.....	12	10.1	11.0	7	3	
Erie.....	20			2	2	39
Fall River ²	17	6.7	9.6	4	2	71
Flint.....	24	8.8	6.5	7	5	114
Fort Worth.....	23	7.3	8.2	2	5	
White.....	18		8.2	1	5	
Colored.....	5	(³)	8.2	1	0	
Grand Rapids.....	21	6.9	6.4	1	0	15
Houston.....	53			5	2	
White.....	34			3	2	
Colored.....	19	(³)		2	0	
Indianapolis.....	74	10.3	13.1	11	12	86
White.....	63		11.8	10	8	90
Colored.....	11	(³)	22.5	1	4	61
Jersey City.....	61	9.9	6.6	9	4	67
Kansas City, Kans.....	26	11.6	9.4	1	0	19
White.....	21		9.2	1	0	22
Colored.....	5	(³)	10.2	0	0	0
Kansas City, Mo.....	83	11.3	11.8	11	13	
Knoxville.....	21	10.7		0		
White.....	19			0		
Colored.....	2	(³)		0		
Los Angeles.....	199			17	15	49
Louisville.....	69	11.2	12.4	7	9	60
White.....	50		10.7	5	7	49
Colored.....	16	(³)	22.2	2	2	140
Lowell.....	30	14.2	8.5	6	2	116
Lynn.....	31	15.4	7.5	3	2	79
Memphis.....	63	18.4	18.0	4	9	
White.....	36		13.3	2	5	
Colored.....	27	(³)	26.5	2	4	
Milwaukee.....	98	9.6	7.5	7	16	33
Minneapolis.....	73	8.6	11.1	7	9	39
Nashville ²	38	14.4	20.9	4	8	
White.....	19		18.1	1	6	
Colored.....	19	(³)	28.1	3	2	
New Bedford.....	20	8.7	13.5	1	5	17
New Haven.....	22	6.2	15.2	2	5	28

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended August 27, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Aug. 27, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 27, 1927
	Total deaths	Death rate		Week ended Aug. 27, 1927	Corresponding week 1926	
New Orleans.....	125	15.4	18.3	14	17	-----
White.....	71		12.8	6	5	-----
Colored.....	54	(⁶)	34.0	8	12	-----
New York.....	1,008	8.8	9.1	113	126	47
Bronx Borough.....	122	6.9	7.1	8	10	25
Brooklyn Borough.....	349	8.0	7.9	54	54	56
Manhattan Borough.....	390	11.2	11.8	41	45	48
Queens Borough.....	109	7.0	7.0	8	16	34
Richmond Borough.....	38	13.5	16.0	2	1	37
Newark, N. J.....	89	11.0	11.5	10	25	50
Oakland.....	51	10.0	8.6	2	7	23
Oklahoma City.....	25			2	3	-----
Omaha.....	47	11.2	12.8	6	6	67
Paterson.....	29	10.5	6.6	4	3	71
Philadelphia.....	359	9.2	9.2	47	40	63
Pittsburgh.....	134	10.9	12.0	28	23	98
Portland, Oreg.....	43			8	2	84
Providence.....	50	9.3	10.0	4	7	34
Richmond.....	37	10.0	11.9	2	12	26
White.....	25		9.3	2	4	40
Colored.....	12	(⁶)	18.0	0	8	0
Rochester.....	54	8.7	10.4	10	5	84
St. Louis.....	124	7.7	9.9	9	21	-----
St. Paul.....	34	7.1	8.6	2	1	18
Salt Lake City.....	25	9.6	11.4	2	0	30
San Antonio.....	61	15.1	11.4	8	6	-----
San Diego.....	39	17.7	13.7	4	1	85
San Francisco.....	140	12.7	10.7	10	8	62
Schenectady.....	18	10.1	13.5	4	6	119
Seattle.....	50			2	4	21
Somerville.....	18	9.2	9.9	2	6	72
Spokane.....	18	8.6	8.1	1	4	25
Springfield, Mass.....	20	7.1	10.1	1	3	15
Syracuse.....	39	10.3	12.1	3	3	39
Toledo.....	48	8.2	9.2	6	7	58
Trenton.....	31	11.8	12.1	2	4	35
Washington, D. C.....	93	9.0	10.8	5	15	29
White.....	58		9.5	4	7	34
Colored.....	35	(⁶)	14.4	1	8	18
Waterbury.....	16			4	5	94
Wilmington, Del.....	24	9.9	7.6	3	4	74
Worcester.....	56	15.0	10.0	8	9	96
Yonkers.....	18	7.9	6.7	1	2	23
Youngstown.....	25	7.7	12.3	6	11	84

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

³ Data for 64 cities.

⁴ Data for 60 cities.

⁵ Deaths for week ended Friday, Aug. 26, 1927.

⁶ In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

MEASLES—continued	Cases
Maine.....	6
Maryland ¹	9
Massachusetts.....	29
Michigan.....	11
Minnesota.....	4
Missouri.....	9
Montana.....	1
Nebraska.....	1
New Jersey.....	6
New Mexico.....	2
New York ¹	22
North Carolina.....	134
Oklahoma ²	10
Oregon.....	10
Pennsylvania.....	104
Rhode Island.....	1
South Carolina.....	37
South Dakota.....	3
Tennessee.....	49
Texas.....	6
Utah ¹	2
Washington.....	29
West Virginia.....	7
Wisconsin.....	66

MENINGOCOCCUS MENINGITIS

Alabama.....	1
California.....	1
Florida.....	1
Illinois.....	6
Massachusetts.....	1
Michigan.....	1
Missouri.....	1
North Carolina.....	1
Oklahoma ¹	1
Oregon.....	1
Pennsylvania.....	4
Tennessee.....	3
West Virginia.....	1
Wisconsin.....	5

POLIOMYELITIS

Arkansas.....	1
California.....	58
Colorado.....	1
Connecticut.....	19
Delaware.....	1
Florida.....	1
Georgia.....	3
Illinois.....	25
Indiana.....	7
Iowa ¹	3
Kansas.....	9
Louisiana.....	1
Maine.....	6
Massachusetts.....	60
Michigan.....	15
Minnesota.....	9
Mississippi.....	1
Missouri.....	6
Nebraska.....	3
New Jersey.....	23
New Mexico.....	5
New York ¹	19
North Carolina.....	3

POLIOMYELITIS—continued	Cases
Ohio ⁴	73
Oklahoma ²	5
Oregon.....	7
Pennsylvania.....	49
Rhode Island.....	2
South Carolina.....	2
South Dakota.....	1
Texas.....	28
Utah ¹	1
Washington.....	7
West Virginia.....	16
Wisconsin.....	4

SCARLET FEVER

Alabama.....	19
Arizona.....	2
Arkansas.....	5
California.....	36
Colorado.....	11
Connecticut.....	3
Delaware.....	1
Florida.....	2
Georgia.....	16
Illinois.....	74
Indiana.....	26
Iowa ¹	10
Kansas.....	43
Louisiana.....	3
Maine.....	13
Maryland ¹	14
Massachusetts.....	69
Michigan.....	87
Minnesota.....	32
Mississippi.....	15
Missouri.....	32
Montana.....	8
Nebraska.....	15
New Jersey.....	19
New Mexico.....	8
New York ¹	39
North Carolina.....	35
Oklahoma ²	12
Oregon.....	5
Pennsylvania.....	114
Rhode Island.....	7
South Carolina.....	14
South Dakota.....	4
Tennessee.....	26
Texas.....	25
Utah ¹	2
Vermont.....	6
Washington.....	11
West Virginia.....	46
Wisconsin.....	47
Wyoming.....	3

SMALLPOX

Alabama.....	1
California.....	7
Florida.....	4
Illinois.....	4
Indiana.....	12
Iowa ¹	2
Michigan.....	23

¹ Week ended Friday.

² Exclusive of New York City.

³ Exclusive of Oklahoma City and Tulsa.

⁴ Week ended Sept. 6.

SMALLPOX—continued		Cases	TYPHOID FEVER—continued		Cases
Missouri.....		4	Maine.....		9
North Carolina.....		6	Maryland ¹		37
Oklahoma ²		11	Massachusetts.....		13
Oregon.....		9	Michigan.....		25
South Carolina.....		5	Minnesota.....		2
South Dakota.....		3	Mississippi.....		32
Texas.....		1	Missouri.....		24
Utah ¹		5	Montana.....		3
Washington.....		10	Nebraska.....		4
West Virginia.....		8	New Jersey.....		16
Wisconsin.....		11	New Mexico.....		10
			New York ²		21
			North Carolina.....		56
			Oklahoma ³		94
			Oregon.....		9
			Pennsylvania.....		96
			Rhode Island.....		7
			South Carolina.....		104
			South Dakota.....		2
			Tennessee.....		74
			Texas.....		22
			Utah ¹		5
			Washington.....		8
			West Virginia.....		57
			Wisconsin.....		7
			Wyoming.....		1

Reports for week ended August 27, 1927

DIPHTHERIA		Cases	POLIOMYELITIS		Cases
District of Columbia.....		2	District of Columbia.....		1
North Dakota.....		2	North Dakota.....		2

INFLUENZA		Cases	SCARLET FEVER		Cases
District of Columbia.....		1	District of Columbia.....		3
			North Dakota.....		25

MEASLES		Cases	TYPHOID FEVER		Cases
North Dakota.....		5	District of Columbia.....		5

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>July, 1927</i>										
Kansas.....	4	35	30	1	205	1	15	102	41	59
Maine.....	0	13	3		163		0	88	0	6
Mississippi.....	1	43	821	10,580	468	2,389	2	30	18	321
Montana.....	9	7	8		25		3	47	11	17
New Hampshire.....		11	49				1	20	0	1
New York.....	19	1,142		30	1,383		38	766	28	107
North Carolina.....	1	62			1,481		1	71	46	331
Oregon.....	5	41	48	4	274		2	33	55	23
Virginia.....	5	76	439	183	363	73	0	73	27	272
Washington.....	5	66	20		677		1	80	125	25

¹ Week ended Friday. ² Exclusive of New York City. ³ Exclusive of Oklahoma City and Tulsa.

<i>July, 1927</i>		Cases		Cases
Chicken pox:			Paratyphoid fever:	
Kansas.....	46		Kansas.....	13
Maine.....	44		New York.....	4
Mississipl.....	155		Oregon.....	3
Montana.....	23		Poliomyelitis:	
New York.....	1,246		Mississippi.....	2
North Carolina.....	58		Puerperal septicaemia:	
Oregon.....	50		Mississippi.....	26
Virginia.....	118		New York.....	11
Washington.....	125		Rabies in animals:	
Dengue:			Mississippi.....	12
Mississippi.....	12		New York.....	5
Dysentery:			Oregon.....	1
Mississippi (amoebic).....	101		Rabies in man:	
Mississippi (bacillary).....	1,542		Mississippi.....	1
New York.....	8		Rocky Mountain spotted or tick fever:	
Oregon.....	1		Montana.....	3
Virginia.....	819		Oregon.....	1
Washington.....	1		Scabies:	
German measles:			Oregon.....	4
Kansas.....	8		Septic sore throat:	
Maine.....	26		Kansas.....	1
Montana.....	4		Maine.....	1
New York.....	165		Montana.....	4
North Carolina.....	8		New York.....	7
Washington.....	66		North Carolina.....	2
Hookworm disease:			Oregon.....	6
Mississippi.....	384		Tetanus:	
Virginia.....	10		Kansas.....	2
Impetigo contagiosa:			Maine.....	2
Oregon.....	7		New York.....	23
Lethargic encephalitis:			Trachoma:	
Montana.....	1		Mississippi.....	4
New York.....	8		Oregon.....	2
Oregon.....	2		Tularaemia:	
Washington.....	8		Montana.....	2
Mumps:			Vincent's angina:	
Kansas.....	50		Kansas.....	3
Maine.....	10		Maine.....	6
Mississippi.....	253		New York.....	54
Montana.....	3		Whooping cough:	
New York.....	842		Kansas.....	403
Oregon.....	23		Maine.....	148
Washington.....	71		Mississippi.....	1,122
Ophthalmia neonatorum:			Montana.....	59
Maine.....	1		New York.....	1,342
Mississippi.....	11		North Carolina.....	1,432
New York.....	10		Oregon.....	58
North Carolina.....	2		Virginia.....	966
			Washington.....	107

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 29,530,000. The estimated population of the 93 cities reporting deaths is more than 23,860,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 20, 1927, and August 21, 1926

	1927	1926	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
42 States.....	985	769	-----
99 cities.....	454	352	469
Measles:			
41 States.....	804	1,158	-----
99 cities.....	191	244	-----
Poliomyelitis:			
42 States.....	317	109	-----
Scarlet fever:			
42 States.....	936	957	-----
99 cities.....	277	263	225
Smallpox:			
42 States.....	177	130	-----
99 cities.....	26	13	23
Typhoid fever:			
42 States.....	1,051	1,474	-----
99 cities.....	215	228	211
<i>Deaths reported</i>			
Influenza and pneumonia:			
93 cities.....	276	320	-----
Smallpox:			
93 cities.....	0	0	-----

City reports for week ended August 20, 1927

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

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

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland.....	75,333	0	1	1	0	0	0	0	0
New Hampshire:									
Concord.....	22,546	0	0	0	0	0	0	0	1
Manchester.....	83,097	0	0	0	0	1	0	0	0
Vermont:									
Barre.....	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston.....	779,620	8	28	32	1	0	30	5	14
Fall River.....	128,993	0	2	2	1	0	1	1	1
Springfield.....	142,065	0	1	0	0	1	1	2	0
Worcester.....	190,757	0	3	2	0	0	0	0	0
Rhode Island:									
Pawtucket.....	69,760	0	0	1	0	0	0	0	1
Providence.....	267,918	0	3	6	0	0	1	0	0
Connecticut:									
Bridgeport.....	(¹)	0	3	3	1	1	0	0	2
Hartford.....	160,197	0	3	1	1	0	1	0	0
New Haven.....	178,927	0	2	0	0	0	2	0	2

¹ No estimate made.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chick-en pox, cases re-ported	Diphtheria		Influenza		Meas-les, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expectancy	Cases re-ported	Cases re-ported	Deaths re-ported			
MIDDLE ATLANTIC									
New York:									
Buffalo.....	538, 016	4	10	12	0	0	15	3	5
New York.....	5, 873, 356	12	92	105	8	4	15	10	49
Rochester.....	316, 786	0	4	5	0	0	1	0	1
Syracuse.....	182, 003	1	2	1	0	0	9	1	0
New Jersey:									
Camden.....	128, 642	1	2	4	0	0	0	0	1
Newark.....	452, 513	5	5	5	2	0	1	9	3
Trenton.....	132, 020	0	2	2	0	0	0	0	1
Pennsylvania:									
Philadelphia.....	1, 979, 364	3	32	38	0	1	1	20	15
Pittsburgh.....	631, 563	0	11	17	0	0	23	1	18
Reading.....	112, 707	1	2	1	0	0	5	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	409, 333	0	6	2	0	1	0	1	8
Cleveland.....	936, 485	4	19	25	1	0	1	14	5
Columbus.....	279, 836	0	2	2	0	0	0	0	0
Toledo.....	287, 380	0	5	0	0	0	0	4	1
Indiana:									
Fort Wayne.....	97, 846	0	1	1	0	0	0	0	2
Indianapolis.....	358, 819	3	3	7	0	0	1	2	7
South Bend.....	80, 091	0	0	0	0	0	0	0	0
Terre Haute.....	71, 071	0	1	0	0	0	0	0	1
Illinois:									
Chicago.....	2, 995, 239	32	46	57	3	2	11	13	14
Springfield.....	63, 923	0	1	0	0	0	0	0	0
Michigan:									
Detroit.....	1, 245, 824	3	31	23	1	0	0	4	7
Flint.....	130, 316	1	4	1	0	0	0	0	4
Grand Rapids.....	153, 693	2	2	0	0	0	2	2	2
Wisconsin:									
Kenosha.....	50, 891	0	1	0	0	0	0	2	0
Madison.....	46, 385	0	1	0	0	0	0	1	1
Milwaukee.....	509, 192	4	8	7	0	0	4	4	2
Racine.....	67, 707	0	1	0	0	0	0	0	0
Superior.....	39, 671	0	1	2	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	110, 502	0	0	0	0	0	0	0	0
Minneapolis.....	425, 435	9	13	1	0	0	2	0	2
St. Paul.....	246, 001	3	11	5	0	0	1	0	5
Iowa:									
Davenport.....	52, 469	0	1	1	0	0	0	0	0
Des Moines.....	141, 441	0	2	1	0	0	0	0	1
Sioux City.....	76, 411	0	1	0	0	0	3	0	0
Waterloo.....	36, 771	0	0	0	0	0	0	0	0
Missouri:									
Kansas City.....	367, 481	0	2	4	0	0	1	1	2
St. Joseph.....	78, 342	1	0	0	0	0	0	0	0
St. Louis.....	821, 543	1	19	9	0	0	2	4	0
North Dakota:									
Fargo.....	26, 403	0	1	0	0	0	0	0	0
Grand Forks.....	14, 811	0	1	0	0	0	0	0	0
South Dakota:									
Aberdeen.....	15, 036	1	0	1	0	0	0	1	0
Sioux Falls.....	30, 127	0	0	0	0	0	0	0	0
Nebraska:									
Lincoln.....	60, 941	2	1	1	0	0	1	2	1
Omaha.....	211, 768	0	5	0	0	0	0	0	2
Kansas:									
Topeka.....	55, 411	1	1	2	0	0	2	0	0
Wichita.....	88, 367	0	1	1	0	0	0	1	1

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	122, 049	0	1	0	0	0	0	0	0
Maryland:									
Baltimore.....	796, 296	1	12	16	0	0	3	5	10
Cumberland.....	33, 741	0	0	0	0	0	0	0	0
Frederick.....	12, 035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington.....	497, 906	2	4	8	1	0	1	0	4
Virginia:									
Lynchburg.....	30, 395	0	1	2	0	0	0	0	0
Norfolk.....	(¹)	0	1	0	0	0	0	0	2
Richmond.....	186, 403	0	6	0	0	0	1	0	2
Roanoke.....	58, 208	2	2	1	0	0	0	0	1
West Virginia:									
Charleston.....	49, 019	0	1	0	0	1	0	0	0
Wheeling.....	56, 298	0	0	0	0	0	0	0	1
North Carolina:									
Raleigh.....	30, 371	1	0	0	0	0	0	0	0
Wilmington.....	37, 061	0	0	0	0	0	2	0	0
Winston-Salem.....	69, 031	0	1	0	0	0	2	4	1
South Carolina:									
Charleston.....	73, 125	0	1	0	6	0	0	0	4
Columbia.....	41, 225	0	1	2	0	4	0	0	
Greenville.....	27, 311	0	0	0	0	0	0	0	1
Georgia:									
Atlanta.....	(¹)	1	2	5	4	2	1	0	2
Brunswick.....	16, 809	0	0	0	0	0	0	0	0
Savannah.....	93, 134	0	0	0	3	0	1	0	0
Florida:									
Miami.....	69, 754	0		2	1	0	0	0	0
St. Petersburg.....	26, 847		0			0		0	0
Tampa.....	94, 743	0	1	0	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	58, 309	0	0	1	0	0	0	0	0
Lexington.....	46, 895	0		0	0	0	0	0	0
Louisville.....	305, 985	0	2	0	0	0	0	0	3
Tennessee:									
Memphis.....	174, 533	0	3	3	0	0	1	0	1
Nashville.....	136, 220	0	1	2	0	0	0	0	2
Alabama:									
Birmingham.....	205, 670	0	2	4	2	1	0	1	0
Mobile.....	65, 955	0	0	0	0	1	0	0	1
Montgomery.....	46, 481	3	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	31, 643	0	0	0	0	0	2		
Little Rock.....	74, 216	0	1	0	0	0	3	0	1
Louisiana:									
New Orleans.....	414, 493	0	5	6	10	7	1	0	6
Shreveport.....	57, 857	1	1	0	0	0	5	0	1
Oklahoma:									
Oklahoma City.....	(¹)	0	1	3	1	0	0	0	2
Tulsa.....	124, 478	0		1	0		0	1	
Texas:									
Dallas.....	194, 450	0	3	6	0	0	0	0	1
Galveston.....	48, 375	0	0	0	0	0	0	0	0
Houston.....	164, 954	0	2	5	0	0	0	0	1
San Antonio.....	198, 069	0	0	1	0	0	1	0	6
MOUNTAIN									
Montana:									
Billings.....	17, 971	0	0	0	0	0	0	0	0
Great Falls.....	29, 863	0	1	0	0	0	0	0	0
Helena.....	12, 037	0	0	0	0	0	0	0	1
Missoula.....	12, 068	0	0	0	0	0	0	0	0

¹ No estimate made.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN—continued									
Idaho:									
Boise.....	23, 042	1	0	0	0	0	0	1	0
Colorado:									
Denver.....	280, 911	5	9	3	0	0	0	1	2
Pueblo.....	43, 787	0	2	0	0	0	1	0	0
New Mexico:									
Albuquerque.....	21, 000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City.....	130, 948	8	2	2	0	0	1	4	1
Nevada:									
Reno.....	12, 665	0	0	1	0	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	(1)	2	3	1	0	0	17	3	0
Spokane.....	108, 897	0	2	0	0	0	0	0	0
Tacoma.....	104, 455	1	1	0	0	0	1	0	2
Oregon:									
Portland.....	282, 383	0	4	5	0	0	1	0	5
California:									
Los Angeles.....	(1)	3	25	18	2	0	2	3	13
Sacramento.....	72, 260	1	2	0	0	0	2	0	0
San Francisco.....	557, 530	9	13	4	0	0	5	3	6

Division, State, and city	Scarlet fever:		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland.....	0	0	0	0	0	0	1	0	0	0	13
New Hampshire:											
Concord.....	0	0	0	0	0	0	0	0	0	0	11
Manchester.....	0	1	0	0	0	2	0	0	0	0	24
Vermont:											
Barre.....	0	0	0	0	0	3	0	0	0	0	7
Massachusetts:											
Boston.....	15	16	0	0	0	8	3	4	1	23	192
Fall River.....	1	0	0	0	0	3	1	1	0	1	16
Springfield.....	1	0	0	0	0	0	0	3	0	2	25
Worcester.....	2	2	0	0	0	2	0	0	0	3	36
Rhode Island:											
Pawtucket.....	0	0	0	0	0	0	0	0	0	0	19
Providence.....	2	2	0	0	0	1	1	3	1	2	52
Connecticut:											
Bridgeport.....	2	1	0	0	0	2	0	0	0	0	20
Hartford.....	1	1	0	0	0	1	1	1	0	12	27
New Haven.....	1	0	0	0	0	4	3	1	0	1	48
MIDDLE ATLANTIC											
New York:											
Buffalo.....	4	5	0	0	0	15	2	2	1	14	112
New York.....	24	25	0	0	0	90	40	25	4	102	1, 067
Rochester.....	3	7	0	0	0	1	1	0	0	0	64
Syracuse.....	3	1	0	0	0	2	1	0	0	0	43
New Jersey:											
Camden.....	1	0	0	0	0	0	0	0	0	2	20
Newark.....	4	3	0	0	0	7	2	1	0	59	72
Trenton.....	0	0	0	0	0	8	1	0	0	1	28
Pennsylvania:											
Philadelphia.....	17	15	0	0	0	28	12	6	0	32	356
Pittsburgh.....	8	5	0	0	0	6	2	6	1	7	142
Reading.....	0	2	0	0	0	0	2	0	0	4	26

¹ No estimate made.

² Pulmonary tuberculosis only.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	3	7	0	0	0	15	3	5	2	9	107
Cleveland.....	10	11	0	0	0	14	5	8	0	14	147
Columbus.....	2	10	0	0	0	5	1	0	0	18	67
Toledo.....	4	2	1	0	0	5	3	2	0	23	37
Indiana:											
Fort Wayne.....	0	4	0	0	0	2	1	0	0	4	30
Indianapolis.....	2	7	1	5	0	9	1	1	0	14	87
South Bend.....	1	0	0	0	0	0	1	0	0	2	8
Terre Haute.....	0	2	0	0	0	2	0	0	0	0	15
Illinois:											
Chicago.....	23	37	1	1	0	49	7	6	0	156	550
Springfield.....	0	2	0	1	0	0	1	2	0	0	18
Michigan:											
Detroit.....	22	16	2	4	0	22	6	4	0	98	230
Flint.....	3	10	0	0	0	2	0	1	0	1	26
Grand Rapids.....	2	3	0	0	0	1	0	0	0	3	25
Wisconsin:											
Kenosha.....	0	2	1	0	0	0	0	0	0	4	8
Madison.....	0	1	0	0	0	0	0	0	0	4	4
Milwaukee.....	6	4	1	0	0	6	1	1	0	37	87
Racine.....	1	0	0	0	0	1	0	0	0	14	8
Superior.....	1	2	0	0	0	0	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	4	3	1	0	0	0	1	2	1	6	16
Minneapolis.....	11	10	1	0	0	0	1	1	0	0	65
St. Paul.....	5	1	1	0	0	4	1	0	0	4	72
Iowa:											
Davenport.....	0	0	0	0	0	0	0	0	0	0	0
Des Moines.....	2	3	0	11	0	1	0	5	0	0	0
Sioux City.....	1	0	1	0	0	0	0	0	0	3	0
Waterloo.....	1	0	0	0	0	0	0	0	0	0	0
Missouri:											
Kansas City.....	2	4	0	0	0	6	3	3	0	6	70
St. Joseph.....	1	1	0	3	0	0	1	1	0	1	0
St. Louis.....	6	6	0	1	0	12	8	9	1	24	150
North Dakota:											
Fargo.....	1	1	0	0	0	0	0	0	0	0	1
Grand Forks.....	1	2	0	0	0	0	0	0	0	0	0
South Dakota:											
Aberdeen.....	0	0	0	0	0	0	0	0	0	0	0
Sioux Falls.....	1	0	0	0	0	0	0	0	0	0	0
Nebraska:											
Lincoln.....	1	0	0	0	0	0	0	0	0	0	11
Omaha.....	1	0	1	0	0	1	1	0	0	0	40
Kansas:											
Topeka.....	1	1	0	0	0	1	1	0	0	15	8
Wichita.....	1	5	1	1	0	1	2	3	0	8	34
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	0	0	0	0	0	0	0	0	0	0	14
Maryland:											
Baltimore.....	6	5	0	0	0	18	10	12	1	39	190
Cumberland.....	0	2	0	0	0	0	1	1	0	0	11
Frederick.....	0	0	0	0	0	0	0	0	0	0	0
District of Colum- bia:											
Washington.....	3	5	0	1	0	9	5	4	1	1	105
Virginia:											
Lynchburg.....	0	0	0	0	0	1	1	1	0	1	10
Norfolk.....	0	4	0	0	0	1	2	0	0	2	3
Richmond.....	2	1	0	0	0	2	2	2	0	0	39
Roanoke.....	0	1	0	0	0	1	1	2	0	0	17
West Virginia:											
Charleston.....	0	1	0	0	0	0	2	0	0	0	20
Wheeling.....	1	0	0	0	0	0	1	2	0	1	12
North Carolina:											
Raleigh.....	1	0	0	0	0	2	0	0	0	7	10
Wilmington.....	0	0	0	0	0	0	1	0	0	0	10
Winston-Salem.....	0	0	1	0	0	0	3	2	0	9	15

City reports for week ended August 20, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	0	1	0	0	3	2	5	0	0	27
Columbia	0	0	0	0	0	2	1	1	0	0	10
Greenville	0	0	0	0	0	2	0	0	0	0	7
Georgia:											
Atlanta	3	4	1	1	0	1	4	10	0	4	62
Brunswick	0	0	0	0	0	0	0	1	0	0	3
Savannah	0	0	1	0	0	4	1	1	0	0	35
Florida:											
Miami	0	0	0	0	0	0	0	0	0	0	0
St. Petersburg	0	0	0	0	0	0	0	0	0	0	17
Tampa	0	0	0	0	0	2	0	1	0	1	23
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	1	0	0	1	1	2	0	0	29
Lexington	0	0	0	0	0	2	0	0	0	0	16
Louisville	1	0	0	0	0	3	5	4	0	4	65
Tennessee:											
Memphis	0	0	0	5	0	6	7	2	2	0	74
Nashville	1	0	0	0	0	2	7	12	3	0	37
Alabama:											
Birmingham	3	2	1	0	0	7	5	21	3	4	69
Mobile	0	0	1	0	0	4	1	0	0	0	21
Montgomery	1	2	0	0	0	0	1	2	0	0	0
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	0	0	0	3	0	0	0
Little Rock	0	1	0	0	0	2	2	1	0	0	0
Louisiana:											
New Orleans	1	3	0	0	0	11	5	8	1	5	151
Shreveport	0	1	0	0	0	2	2	2	1	0	30
Oklahoma:											
Oklahoma City	1	2	0	0	0	0	2	4	0	0	26
Tulsa	0	0	0	0	0	0	2	2	0	0	0
Texas:											
Dallas	2	0	0	1	0	1	4	1	0	1	49
Galveston	0	0	0	0	0	0	0	1	0	0	13
Houston	0	1	0	0	0	5	0	2	0	0	65
San Antonio	0	0	0	0	0	3	2	1	0	0	64
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	0	0	0	0	2	3
Great Falls	0	0	0	0	0	0	1	0	0	0	5
Helena	0	1	0	0	0	0	0	0	0	0	4
Missoula	0	2	0	0	0	0	1	0	0	0	4
Idaho:											
Boise	0	1	0	0	0	0	0	0	0	0	4
Colorado:											
Denver	3	0	1	0	0	14	3	0	0	0	62
Pueblo	0	0	0	0	0	4	1	1	0	2	13
New Mexico:											
Albuquerque	1	0	0	0	0	3	1	4	0	0	6
Utah:											
Salt Lake City	1	3	0	2	0	3	1	1	0	17	26
Nevada:											
Reno	0	1	0	0	0	0	1	1	0	0	3
PACIFIC											
Washington:											
Seattle	3	2	1	0	0	0	3	3	0	19	0
Spokane	3	0	1	0	0	0	1	0	0	0	0
Tacoma	1	2	1	1	0	3	1	1	0	3	25
Oregon:											
Portland	3	1	5	1	0	2	1	1	0	16	68
California:											
Los Angeles	6	6	3	0	0	23	4	4	1	22	200
Sacramento	1	1	0	3	0	1	2	0	0	0	15
San Francisco	5	5	0	1	0	4	2	4	0	6	95

City reports for week ended August 20, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston.....	1	2	1	0	1	0	1	21	5
Springfield.....	0	0	0	0	0	0	0	1	1
Worcester.....	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence.....	0	1	0	0	0	0	1	0	0
Connecticut:									
Hartford.....	0	1	0	0	0	0	0	1	0
New Haven.....	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
Buffalo.....	0	0	0	0	0	0	0	3	0
New York.....	2	2	4	3	0	1	7	48	6
Rochester.....	0	0	0	0	0	0	0	1	0
New Jersey:									
Newark.....	0	0	0	0	0	0	1	4	0
Pennsylvania:									
Philadelphia.....	0	0	0	0	2	1	0	2	0
Pittsburgh.....	1	0	0	0	0	0	0	5	0
Reading.....	0	0	0	0	0	0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	0	0	0	0	0	0	0	4	1
Cleveland.....	1	0	0	0	0	0	0	3	0
Illinois:									
Chicago ¹	4	2	1	1	0	0	3	6	1
Springfield.....	0	0	0	0	0	0	0	1	1
Michigan:									
Detroit.....	0	0	0	0	0	0	1	1	0
Flint.....	0	0	0	0	0	0	1	2	0
Grand Rapids.....	0	0	0	0	0	0	1	2	0
Wisconsin:									
Milwaukee.....	1	0	0	0	0	0	1	5	0
Superior.....	0	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis.....	3	0	0	0	0	0	1	0	0
Iowa:									
Des Moines.....	1	1	0	0	0	0	0	0	0
Missouri:									
Kansas City.....	1	0	0	1	0	0	0	5	1
St. Louis.....	1	0	0	0	0	0	0	0	0
Nebraska:									
Omaha.....	0	0	0	0	0	0	0	1	0
Kansas:									
Wichita.....	0	0	0	0	0	0	0	3	0
SOUTH ATLANTIC									
Maryland:									
Baltimore.....	0	1	0	1	0	0	2	1	0
Virginia:									
Richmond.....	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling.....	0	0	0	0	0	0	0	5	0
North Carolina:									
Winston-Salem.....	0	0	0	0	0	2	0	0	0
South Carolina:									
Charleston.....	0	0	0	0	1	2	0	0	0
Georgia:									
Atlanta.....	0	0	0	0	1	0	0	0	0
Savannah ²	0	0	0	0	1	0	0	0	0
Florida: ²									
Miami.....	0	0	0	0	1	0	0	0	0

¹ Rabies (human); 1 case and 1 death at Chicago, Ill., and 1 death at Nashville, Tenn.² Typhus fever: 1 case at Savannah, Ga., and 2 cases at Tampa, Fla.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Kentucky:									
Lexington.....	0	0	0	0	0	0	0	0	2
Louisville.....	0	0	0	0	0	0	0	2	0
Tennessee:									
Memphis.....	0	0	0	0	0	1	1	0	0
Nashville ¹	0	0	0	0	0	0	0	1	0
Alabama:									
Birmingham.....	0	0	0	0	1	2	0	0	0
Montgomery.....	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock.....	0	0	0	0	0	4	0	0	0
Louisiana:									
New Orleans.....	0	0	1	0	3	2	0	2	0
Shreveport.....	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City.....	0	0	0	0	0	1	0	1	0
Texas:									
Dallas.....	0	0	0	0	0	1	0	1	0
Houston.....	1	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver.....	1	0	0	0	0	0	0	0	0
New Mexico:									
Albuquerque.....	0	0	0	0	0	0	0	1	1
Utah:									
Salt Lake City.....	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle.....	0	0	0	0	0	0	1	1	0
Oregon:									
Portland.....	4	1	0	0	0	0	0	0	0
California:									
Los Angeles.....	1	0	0	0	0	1	0	1	2
Sacramento.....	1	0	1	0	0	0	1	1	0
San Francisco.....	1	0	0	0	1	0	0	5	0

For footnote, see p. 2275.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended August 20, 1927, compared with those for a like period ended August 21, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, July 17 to August 20, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926¹

DIPHTHERIA CASE RATES

	Week ended—									
	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
101 cities.....	90	92	80	94	78	78	69	90	68	90
New England.....	33	63	40	91	40	63	31	70	47	111
Middle Atlantic.....	109	106	103	104	88	92	62	97	59	94
East North Central.....	98	108	83	102	104	80	101	94	87	94
West North Central.....	95	54	85	56	52	42	56	67	83	43
South Atlantic.....	34	87	20	89	43	65	48	82	60	62
East South Central.....	10	25	21	31	10	31	57	25	21	51
West South Central.....	39	126	39	71	39	92	26	92	64	75
Mountain.....	64	99	91	117	118	135	73	180	146	50
Pacific.....	174	65	118	121	102	76	104	107	62	64

MEASLES CASE RATES

101 cities.....	164	108	108	58	70	48	59	28	44	34
New England.....	108	197	83	169	83	93	68	63	52	84
Middle Atlantic.....	108	92	63	45	42	43	33	28	27	35
East North Central.....	279	90	191	47	113	29	84	19	72	15
West North Central.....	184	48	93	40	58	34	67	22	28	23
South Atlantic.....	127	141	114	69	47	38	80	14	35	27
East South Central.....	124	25	93	46	41	10	31	15	36	5
West South Central.....	13	55	9	59	9	55	4	21	9	42
Mountain.....	173	99	128	63	137	45	64	36	18	18
Pacific.....	212	280	121	65	121	144	94	60	78	71

SCARLET FEVER CASE RATES

101 cities.....	82	64	73	63	61	51	51	58	48	49
New England.....	85	100	118	107	104	51	68	93	73	51
Middle Atlantic.....	75	50	52	39	38	36	30	39	29	31
East North Central.....	89	75	84	87	79	75	55	73	46	81
West North Central.....	127	79	143	79	101	62	119	75	119	56
South Atlantic.....	35	41	34	40	39	27	30	33	39	42
East South Central.....	93	31	62	41	31	51	47	36	36	20
West South Central.....	82	46	39	25	13	25	21	59	17	50
Mountain.....	64	99	36	153	64	126	36	117	36	81
Pacific.....	91	92	86	65	83	60	86	63	78	42

SMALLPOX CASE RATES

101 cities.....	6	10	5	5	8	6	7	4	2	5
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	1	0	0	0	1	0
East North Central.....	8	13	6	9	9	9	1	5	2	6
West North Central.....	14	12	4	6	14	0	4	4	4	8
South Atlantic.....	6	12	2	4	11	9	11	5	6	4
East South Central.....	10	36	21	10	16	5	26	0	5	25
West South Central.....	13	8	4	13	13	17	21	0	0	4
Mountain.....	27	117	9	27	9	18	73	9	0	18
Pacific.....	8	21	32	10	24	21	32	24	5	13

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.

² Norfolk, Va., not included.

³ Seattle, Wash., and Spokane, Wash., not included.

⁴ Detroit, Mich., and Wichita, Kans., not included.

⁵ Detroit, Mich., not included.

⁶ Wichita, Kans., not included.

Summary of weekly reports from cities, July 17 to August 20, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
101 cities.....	18	20	30	21	26	25	35	25	41	38
New England.....	9	16	14	9	12	7	17	30	17	30
Middle Atlantic.....	9	8	23	13	19	13	24	15	34	20
East North Central.....	6	9	10	11	12	9	20	14	17	19
West North Central.....	12	14	22	16	18	26	24	22	48	33
South Atlantic.....	47	50	54	36	65	58	99	45	93	82
East South Central.....	134	122	243	117	181	183	140	97	186	219
West South Central.....	30	55	47	55	43	50	47	88	43	80
Mountain.....	46	27	36	72	27	45	73	36	73	27
Pacific.....	8	16	11	24	29	13	29	10	24	31

INFLUENZA DEATH RATES

	Week ended—									
	3	3	2	3	2	2	1	3	3	4
95 cities.....	3	3	2	3	2	2	1	3	3	4
New England.....	2	0	0	2	0	0	0	2	0	2
Middle Atlantic.....	2	4	1	4	2	1	1	2	1	2
East North Central.....	4	2	1	1	1	0	0	2	3	2
West North Central.....	2	2	0	0	0	2	2	6	2	0
South Atlantic.....	4	2	2	2	4	6	0	4	2	6
East South Central.....	5	15	5	10	0	5	10	5	0	10
West South Central.....	9	0	22	9	4	4	13	13	26	30
Mountain.....	9	9	0	0	9	9	0	0	0	0
Pacific.....	4	3	4	3	11	3	0	3	7	0

PNEUMONIA DEATH RATES

	Week ended—									
	54	56	48	49	54	47	50	55	54	46
95 cities.....	54	56	48	49	54	47	50	55	54	46
New England.....	33	59	33	49	54	33	31	77	40	49
Middle Atlantic.....	64	86	41	56	56	46	62	57	68	47
East North Central.....	47	55	47	42	42	44	35	41	35	36
West North Central.....	40	21	57	17	51	44	25	44	49	24
South Atlantic.....	57	75	51	44	68	53	57	72	87	53
East South Central.....	98	46	62	46	52	51	52	66	36	66
West South Central.....	53	65	71	86	97	69	106	56	66	69
Mountain.....	64	45	55	36	64	54	82	63	82	36
Pacific.....	35	72	71	79	57	62	39	55	78	72

¹ Norfolk, Va., not included.

² Seattle, Wash., and Spokane, Wash., not included.

³ Detroit, Mich., and Wichita, Kans., not included.

⁴ Detroit, Mich., not included.

⁵ Wichita, Kans., not included.

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

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
			Total.....	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England.....	12	12	2,211,080	2,245,900	2,211,000	2,245,900
Middle Atlantic.....	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central.....	16	16	7,650,200	7,810,000	7,650,200	7,810,600
West North Central.....	12	10	2,585,500	2,626,000	2,470,600	2,510,000
South Atlantic.....	21	20	2,799,500	2,873,100	2,787,700	2,835,700
East South Central.....	7	7	1,008,300	1,023,600	1,008,300	1,023,500
West South Central.....	8	7	1,213,809	1,243,300	1,181,500	1,210,400
Mountain.....	9	9	572,100	580,000	572,100	580,000
Pacific.....	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended August 13, 1927.—The following report for the week ended August 13, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Small-pox		Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra.....	0	0	125	108	1	1	Dutch East Indies:						
Persia:							Surabaya.....	0	0	0	0	1	-----
Mohammerah.....	0	0	16	12	0	0	Banjermasin.....	0	0	0	0	25	-----
Abadan.....	0	0	27	22	0	0	Menado.....	0	0	0	0	1	-----
Ahwaz.....	0	0	8	7	0	0	Siam: Bangkok.....	0	0	1	0	0	0
Minab.....	0	0	-----	123	0	0	French Indo-China:						
British India:							Haiphong.....	0	0	1	1	0	0
Bombay.....		3		11	5	3	Turane.....	0	0	2	2	0	0
Negapatam.....		0		1	0	0	China:						
Madras.....		0		72	4	0	Amoy.....	0	0	5	-----	0	0
Calcutta.....		0		13	6	5	Shanghai.....	0	0	-----	2	0	0
Bassein.....		5		0	0	0	Canton.....	0	0	7	4	0	0
Rangoon.....		3		1	6	2	Macao.....	0	0	-----	2	0	0
Straits Settlements:							Hong Kong.....	0	0	0	0	1	1
Singapore.....	0	0	0	0	1	1	Japan: Nagasaki.....	0	0	0	0	1	1

¹ Deaths from cholera reported on Aug. 12.

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

ASIA

Arabia.—Jeddah, Aden, Perim, Bahrein.
Persia.—Bender-Abbas, Bushire, Lingah.
India.—Karachi, Chittagong, Cochin, Tuticorin, Vizagapatam, Moulmein.
Ceylon.—Colombo.
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Penang.
Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang, Samarinda.
Sarawak.—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

French Indo-China.—Saigon and Cholon.
China.—Tientsin, Tsingtao.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.
Kwantung.—Port-Arthur, Dairen.
Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.
 New Caledonia.—Noumea.
 Fiji.—Suva.
 Hawaii.—Honolulu.
 Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez, Port Said, El Tor.
 Anglo-Egyptian Sudan.—Port Sudan, Suakin.
 Eritrea.—Massaua.
 French Somaliland.—Djibouti.
 British Somaliland.—Berbera.
 Italian Somaliland.—Mogadiscio.
 Kenya.—Mombasa.

Zanzibar.—Zanzibar.
 Tanganyika.—Dar-es-Salaam.
 Seychelles.—Victoria.
 Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.
 Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
 Reunion.—Saint Denis.
 Mauritius.—Port Louis.
 Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia.—Kamaran.
 Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended July 30: *Kerikal* and *Pondicherry*, nil.
 Week ended August 6: *Pondicherry*, cholera, 3 cases, 3 deaths.

Movement of infected ships:

Safageh (Egypt).—The oil-tanker *War-Mektar* arrived from Abadan on August 4: infected with cholera.

CANADA

Communicable diseases—Week ended August 20, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in seven Provinces of Canada for the week ended August 20, 1927, as follows:

Disease	Newa Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza.....	4			1	2			7
Poliomyelitis.....			1		1			2
Smallpox.....				27	5	6	7	45
Typhoid fever.....	4	13	27	14	2	1	2	63

Communicable diseases—Quebec—Week ended August 20, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended August 20, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	1	Scarlet fever.....	28
Diphtheria.....	32	Smallpox.....	1
German measles.....	2	Tuberculosis.....	17
Influenza.....	1	Typhoid fever.....	27
Measles.....	5	Whooping cough.....	5
Poliomyelitis.....	1		

Typhoid fever—Chatham, Ontario.—An outbreak of typhoid fever has been reported at Chatham, Ontario, Canada, about 50 miles from Detroit. On August 26, 81 cases were said to have been

officially reported. The source of infection is believed to have been a typhoid carrier employed in a dairy. The Pasteurizing process in this dairy was found to be defective.

Milk was formerly shipped from Chatham to Detroit for butter making, but the Detroit city health department has prohibited the importation of milk or cream from the infected locality until all dairies from which the products are shipped have been inspected and new permits issued.

Precautions against the spread of the disease are being taken.

Typhoid fever—Montreal—January 2—August 27, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 7, 1927	106	19
Jan. 15, 1927	4	3	May 14, 1927	367	16
Jan. 22, 1927	1	2	May 21, 1927	770	26
Jan. 29, 1927	3	1	May 28, 1927	353	38
Feb. 5, 1927	1	0	June 4, 1927	239	37
Feb. 12, 1927	0	0	June 11, 1927	128	36
Feb. 19, 1927	1	2	June 18, 1927	86	—
Feb. 26, 1927	1	1	June 25, 1927	75	23
Mar. 5, 1927	9	1	July 2, 1927	66	21
Mar. 12, 1927	203	4	July 9, 1927	52	10
Mar. 19, 1927	383	14	July 16, 1927	39	4
Mar. 26, 1927	568	22	July 23, 1927	22	9
Apr. 2, 1927	649	48	July 30, 1927	23	10
Apr. 9, 1927	386	40	Aug. 6, 1927	16	5
Apr. 16, 1927	178	38	Aug. 13, 1927	20	5
Apr. 23, 1927	126	42	Aug. 20, 1927	14	4
Apr. 30, 1927	106	28	Aug. 27, 1927	8	3

CZECHOSLOVAKIA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in the Republic of Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	4	—	Puerperal fever	35	8
Cerebrospinal meningitis	16	9	Scarlet fever	1,200	13
Diphtheria	438	27	Trachoma	219	—
Dysentery	25	2	Typhoid fever	490	29
Malaria	168	—	Typhus fever	28	—
Paratyphoid fever	26	2			

EGYPT

Communicable diseases—Two weeks ended July 29, 1927.—During the two weeks ended July 29, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	63	—	Typhoid fever	193	—
Smallpox	2	—	Typhus fever	4	—

UNION OF SOUTH AFRICA

Plague rodent—Smallpox—Typhus fever—Week ended July 16, 1927.—Following the discovery of plague-infected Peba gerbilles on the farm Mimosa, another carcass, also of a Peba gerbille, found on June 30 close to the village of Nieuwe Rust, about 40 miles northwest of Van Rhynsdorp, showed the presence of *Bacillus pestis*.

In the Roodepoort area, during the course of active operations to clear of rodents the locality in which the plague-infected carcass was found on June 23, several carcasses of veld rodents were found, but all were decomposed, dried up, and useless for bacteriological examination.

A fresh outbreak of smallpox was reported in Libode district, Cape Province, during the week. Smallpox was also reported present in the districts of Idutywa, Cape Province, and Pilgrims Rest, Transvaal.

Two sporadic cases of typhus fever were reported as having occurred in Port Elizabeth. It was reported present in four districts in Cape Province and two districts in Natal, as well as in Johannesburg, Transvaal. Fresh outbreaks were reported as having occurred in Middleburg and Tsolo districts, Cape Province.

YUGOSLAVIA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	135	19	Rabies.....	1	1
Cerebrospinal meningitis.....	7	4	Scarlet fever.....	507	81
Diphtheria.....	72	13	Tetanus.....	34	14
Dysentery.....	265	24	Typhoid fever.....	304	28
Leprosy.....	1	1	Typhus fever.....	11	4
Measles.....	463	10	Whooping cough.....	243	1

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

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

Reports Received During Week Ended September 9, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy.....	July 17-23.....			Present.
Swatow.....	do.....	20		
India.....	July 3-9.....	7		Cases, 9,996; deaths, 5,556.
Bombay.....	July 10-16.....		2	
Calcutta.....	June 19-July 16.....	120	77	
Madras.....	July 24-30.....	208	106	
Rangoon.....	July 3-16.....	1	1	
India, French Settlements in.....	May 29-June 18.....	5	5	

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 September 9, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French).....	June 21-July 10.....			Cases, 2,147.
Annam.....	do.....	320		
Cambodge.....	do.....	38		
Cochin-China.....	do.....	305		
Saigon.....	July 8-14.....	3		
Tonkin.....	do.....	1,484		
Philippine Islands:				
Manila.....	July 17-23.....	1		
Province—				
Bulacan.....	June 26-July 2.....	1	1	
Siam.....	July 10-16.....	27	20	
Bangkok.....	do.....	1		

PLAGUE

British East Africa:				
Kenya.....	June 19-July 2.....	42		
Uganda.....	June 12-18.....	100	93	
China:				Present.
Amoy.....	July 17-23.....			
Ecuador:				Rats taken, 23,221; found plague-infected, 6.
Guayaquil.....	July 1-31.....	5		
Egypt:				
Minia.....	Aug. 8-9.....	4		
Greece.....	June 1-30.....	3	2	
India.....	July 3-9.....			Cases, 116; deaths, 87.
Bombay.....	July 10-16.....	1	2	
Madras.....	July 3-9.....	39	16	
Rangoon.....	July 3-23.....	11	11	
Indo-China (French)				
Kwang-Chow-Wan.....	June 21-July 10.....	11		
do.....	do.....	5		
Java:				Province.
Batavia.....	July 10-16.....	20	20	
Nigeria.....	Mar. 1-May 31.....	228	177	
Syria:				
Beirut.....	June 11-July 10.....	3		
Tunisia.....	June 1-July 10.....	13		
On vessel.....	July 10-16.....	3		On Norwegian vessel at Gavle, 125 miles north of Stockholm.

SMALLPOX

Algeria.....	June 11-July 10.....	315		
British East Africa:				
Tanganyika.....	June 12-18.....	2		
Zanzibar.....	May 1-31.....	12	5	
British South Africa:				
Northern Rhodesia.....	July 17-23.....	2		
Canada.....	Aug. 14-20.....			Cases, 45.
Alberta.....	do.....	7		
Calgary.....	do.....	1		
Manitoba.....	do.....	5		
Winnipeg.....	do.....	2		
Ontario.....	do.....	27		
Ottawa.....	Aug. 27-Nov. 2.....	9		
Quebec.....	Aug. 14-20.....	1		
Saskatchewan.....	do.....	6		
Moose Jaw.....	do.....	5		
China:				Present.
Foochow.....	June 26-July 16.....			
Manchuria—				
Changchun.....	July 24-30.....	1		
Fushun.....	do.....	1		
Mukden.....	do.....	1		
Chosen.....	May 1-31.....	97	27	
Egypt.....	July 23-29.....	2		
Cairo.....	Apr. 8-15.....	1	1	
France.....	June 1-30.....	50		
Gold Coast.....	May 1-31.....	11	3	

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

Reports Received During Week Ended September 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain:				
England and Wales	Aug. 7-13			Cases, 127.
do.	do.	1		
Newcastle-on-Tyne	July 31-Aug. 6	2		
Sheffield	June 1-30	14		
Greece	July 3-9			Cases, 2,870; deaths, 838.
India:				
Bombay	July 10-16	18	11	
Calcutta	June 19-July 10	73	55	
Karachi	July 10-16	1		
Madras	July 24-30	8	1	
Rangoon	July 3-23	24	5	
India, French Settlements in	May 22-June 18	29	23	
Indo-China (French)	June 11-July 20	78		
Java:				
Batavia	July 10-16	1		
Mexico:				
Monterey	Mar. 1-31		162	
Morocco	July 1-31	6	4	
Nigeria	June 1-30	59		
Nigeria	May 1-31	517	162	
Poland	June 26-July 2	2		
Siam	July 10-16			Cases, 10; deaths, 3.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Algeria	June 11-July 20	136	10	
Bulgaria	May 11-June 20	55	4	
Chile:				
Valparaiso	July 31-Aug. 6		1	
Chosen	May 1-31	182	12	
Czechoslovakia	June 1-30	28		
Egypt:				
Alexandria	July 30-Aug. 5	8	3	
Cairo	Apr. 8-22	8	3	
Greece	June 1-30	2		
Lithuania	May 1-June 30	182	20	
Mexico	Mar. 1-31		62	
Morocco	June 11-July 10	287		
Palestine:				
Haifa	July 24-Aug. 8	4		
Jaffa	Aug. 2-8	1		
Jerusalem	June 28-July 4	1		
Nazareth	July 19-25	1		
Safad	June 21-Aug. 8	5		
Poland	June 26-July 2	22	2	
Rumania	May 29-June 25	236	14	
Tunisia	June 11-July 20	21		
Yugoslavia	July 1-31	11	4	

YELLOW FEVER

Gold Coast	May 1-31	37	15	
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Reports Received from June 25 to September 2, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	Present.
Canton	May 1-July 16	12	5	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do.	Reported Aug. 19			
Swatow	May 15-July 16	66	12	

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

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

Reports Received from June 25 to September 2, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India.....	Apr. 17-July 2.....	7	3	Cases, 79,573; deaths, 47,075.
Bombay.....	May 8-July 2.....	396	247	
Calcutta.....	May 8-June 18.....	1	1	
Karachi.....	May 29-June 4.....	5	3	
Madras.....	June 19-25.....	15	11	
Rangoon.....	May 8-June 25.....	10	3	
India, French Settlements in.	Mar. 30-June 30.....			Cases, 8,998.
Indo-China (French).....	Apr. 1-June 20.....			
Annam.....	do.....	1,147		
Cambodge.....	do.....	197		
Cochin-China.....	do.....	1,049		
Saigon.....	June 4-July 7.....	6	4	
Tonkin.....	Apr. 1-June 30.....	6,606		
Iraq:				
Basra.....	Reported July 25.....	9	7	
Persia:				
Abadan.....	July 19-31.....		166	
Mohammerah.....	do.....		61	
Nasseri.....	do.....		10	
Philippine Islands:				
Bulacan Province.....	June 7-July 8.....	2	1	
Leyte Province—				
Barugo.....	June 29.....	1	1	
Carigara.....	June 23.....	1	1	Final diagnosis not received.
Palo.....	May 18.....	1		
Siam.....	May 1-July 9.....			Cases, 181; deaths, 98.
Bangkok.....	do.....	38	12	
On vessel:				
Steamship Adrastus.....	Reported Aug. 6.....	1	1	At Yokohama, Japan.

PLAGUE

Argentina.....	Jan. 1-June 30.....			Cases, 71; deaths, 44.
Buenos Aires.....	Apr. 10-May 7.....	4	3	
Cordoba.....	Jan. 11-Mar. 23.....	60	29	
Corrientes.....	June 1.....	1	1	
Entre Rios.....	Mar. 29-Aug. 1.....	3	1	
Santa Fe.....	Apr. 23-May 16.....	4	3	
Territory—				
Chaco—				
Barranqueras.....	May 29.....	2	2	
Formosa.....	June 25.....	3	2	
Pampa.....	Reported July 6.....	2		
City—				
Merou.....	Reported July 14.....			Present.
Rosario.....	May 7.....	1	1	
Santa Fe.....	May 16.....	4	2	
Azores:				
Ribeira Grande.....	June 12-18.....			9 miles from port.
St. Michaels Island.....	May 15-July 30.....	3		
British East Africa:				
Kenya.....	Apr. 24-June 11.....	18	14	
Nairobi.....	May 22-28.....	6		
Tanganyika.....	Mar. 29-May 28.....		37	
Uganda.....	Jan. 1-Feb. 23.....	138	121	
Do.....	Mar. 27-June 11.....	266	207	
Canary Islands:				
Leguna district—				
Tefina.....	June 17.....	1		
Ceylon:				
Colombo.....	May 1-July 2.....	17	11	Plague rats, 4.
China:				
Amoy.....	July 3-16.....			Present in surrounding country.
Ecuador:				
Guayaquil.....	June 1-30.....			Rats taken, 25,069; found infected, 23.
Egypt.....	May 21-July 8.....			Cases, 7; deaths, 2.
Alexandria.....	June 4-10.....	1		
Biba.....	do.....	1		At Nana.
Beni-Souef.....	June 4-July 13.....	5	2	
Dakhalia.....	June 24-July 9.....	6	1	
Port Said.....	June 24-July 21.....	4	1	
Tanta district.....	June 4-10.....	1		

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

Reports Received from June 25 to September 2, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Greece	May 1-31	1	1	
Athens	June 1-Aug. 6	2		Including Piræus.
Mytilene	Aug. 9	1		
Patras	May 30-Aug. 6	6	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2		
Pasaulo	July 26-Aug. 1		4	
India	Apr. 17-July 2			Cases, 21,584; deaths, 8,166.
Bombay	May 8-June 25	71	63	
Madras	May 1-July 16	166	79	
Rangoon	May 8-July 2	27	24	
Indo-China (French)	Apr. 1-June 20	21		
Kwang-Chow-Wan	May 21-June 10	57		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-July 9	158	159	Province.
East Java and Madura	May 22-June 18	23	23	
Pasoeroan Residency	May 9			Outbreak reported at Nagdiwono.
Surabaya	Apr. 17-May 7	24	24	Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Madagascar:				
Province—				
Ambositra	Mar. 16-June 15	73	67	
Antisarabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-May 31	45	45	
Moramanga	May 16-June 15	20	19	
Tananarive	Mar. 16-May 31	196	170	
Tananarive Town	do	22	20	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 17			Cases, 442; deaths, 259.
Baol	June 2-July 31	45	23	
Cayor Frontier	July 4-31	126	74	
Dakar	June 20-July 30	80	60	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 30	163	117	
Thies District	do	27	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Tunisia	Apr. 21-May 31	131		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-14	2	2	Native.
On vessel:				
Steamship Avoroff	June 24-30	1		On Greek war ship at port of Athens.
Steamship Ransholm	Aug. 5	3		At Gelle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria	Apr. 21-June 10			Cases, 333.
Algiers	May 11-June 30	8		
Oran	May 21-July 31	38		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Rio de Janeiro	May 22-July 29	7	8	

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

Reports Received from June 25 to September 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya.....	Apr. 24-May 14.....	7	14	
Tanganyika.....	Mar. 29-May 7.....	22	22	
Zanzibar.....	Apr. 1-30.....	7	2	
British South Africa:				
Northern Rhodesia.....	Apr. 30-July 15.....	104	2	
Canada:				
Alberta.....	June 5-Aug. 13.....			Cases, 323.
Calgary.....	June 12-Aug. 13.....			Cases, 85.
British Columbia—				
Vancouver.....	May 23-29.....	2		
Manitoba.....	June 5-Aug. 13.....			Cases, 20.
Winnipeg.....	June 12-Aug. 20.....	15		
Ontario.....	June 5-Aug. 13.....			Cases, 125.
Ottawa.....	June 12-Aug. 20.....	91		
Sarnia.....	Aug. 7-13.....	1		
Toronto.....	June 19-July 23.....	9		
Quebec.....	do.....	13		
Saskatchewan.....	June 12-Aug. 13.....			Cases, 46.
Regina.....	July 17-Aug. 6.....	3		
Ceylon.....	May 1-7.....			Cases, 3; deaths, 1.
China:				
Amoy.....	May 8-28.....	1		
Do.....	July 3-16.....			Present in surrounding country.
Antung.....	July 4-31.....	3		
Chefoo.....	May 8-14.....			Present.
Foochow.....	May 8-June 11.....			Do.
Hong Kong.....	May 8-July 9.....	17	16	
Manchuria—				
Anshan.....	May 22-28.....	1		
Changchun.....	May 15-July 9.....	7		
Dairen.....	May 2-June 20.....	9	5	
Fushun.....	May 15-June 5.....	9		
Harbin.....	June 13-July 10.....	4		
Kai-Yuan.....	July 3-9.....	2		
Mukden.....	May 22-July 9.....	5		
Penshin.....	July 3-9.....	1		
Seupingkal.....	May 8-July 9.....	3		
Tientsin.....	May 8-July 16.....	17		
Chosen:				
Chinnampo.....	Feb. 1-Apr. 30.....			Cases, 354; deaths, 84.
Fusan.....	Apr. 1-May 31.....	2		
Gensan.....	Apr. 1-30.....	1		
Gensan.....	May 1-31.....	1		
Seishin.....	Apr. 1-30.....	1		
Curacao.....	May 29-June 4.....	1		Alastrim.
Ecuador:				
Guayaquil.....	June 1-30.....	2		
Egypt:				
Alexandria.....	May 7-July 15.....			Cases, 19; deaths, 3.
Alexandria.....	May 21-June 17.....	4	1	
Cairo.....	Jan. 22-Apr. 1.....	11	2	
France:				
Paris.....	Apr. 1-May 31.....			Cases, 128.
Paris.....	May 21-June 30.....	11	2	
Gold Coast.....	Mar. 1-Apr. 30.....	22	4	
Great Britain:				
England and Wales.....	May 22-Aug. 6.....			Cases, 2,351.
Bradford.....	May 29-June 11.....	2		
Cardiff.....	June 19-July 2.....	4		
Leeds.....	July 17-30.....	2		
Liverpool.....	do.....	1		
London.....	May 15-June 18.....	2		
Newcastle on Tyne.....	June 12-Aug. 6.....	4		
Sheffield.....	June 12-July 23.....	23		
Scotland—				
Dundee.....	May 29-July 2.....	5		
Greece:				
Saloniki.....	July 12-18.....		1	
Guatemala:				
Guatemala City.....	June 1-30.....		9	
Guatemala City.....	June 4-10.....	9		
Guinea (French):				
India.....	Apr. 17-July 2.....			Cases, 57,347; deaths, 14,866.
Bombay.....	May 28-July 2.....	164	110	
Calcutta.....	May 8-June 18.....	270	206	
Karachi.....	May 15-June 25.....	8	5	
Madras.....	May 22-July 16.....	15	5	
Rangoon.....	May 8-July 2.....	132	41	

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

Reports Received from June 25 to September 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in.....	Mar. 20-May 21.....	145	88	Cases, 236.
Indo-China (French).....	Mar. 21-June 10.....			
Saigon.....	May 14-20.....	1	1	
Iraq:				Reported as alastrim. Cases, 19.
Baghdad.....	Apr. 10-16.....	2		
Basra.....	Apr. 10-July 16.....	2	1	
Italy.....	Apr. 10-May 21.....	13		Reported as alastrim. Cases, 19.
Jamaica.....	May 29-July 30.....	24		
Japan.....	Apr. 3-May 7.....			
Nagasaki City.....	June 20-July 31.....	24	6	Reported as alastrim. Cases, 19.
Taiwan Island.....	May 21-31.....	1		
Java:				
Batavia.....	May 22-28.....	1		Reported as alastrim. Cases, 19.
East Java and Madura.....	Apr. 24-30.....	1		
Latvia.....	Apr. 1-30.....	1		
Mexico:				Present.
Durango.....	June 1-30.....		1	
La Oroya.....	Apr. 1-June 30.....			
San Luis Potosi.....	May 20-Aug. 13.....		11	Present.
Tampico.....	June 1-July 31.....	1	2	
Torreón.....	Aug. 7-13.....	1	1	
Morocco.....	Apr. 1-May 31.....	94		Present.
Netherlands India:				
Borneo:				
Holoe Soengei.....	Apr. 21.....			Epidemic in two localities. Epidemic outbreak. Do.
Pasir Residency.....	Apr. 30-May 6.....			
Samarinda Residency.....	May 21-27.....			
Nigeria.....	Mar. 1-Apr. 30.....	1,560	351	Epidemic in two localities. Epidemic outbreak. Do.
Persia:				
Teheran.....	Feb. 21-Apr. 20.....		5	
Poland.....	Apr. 19-June 25.....	12	1	Epidemic in two localities. Epidemic outbreak. Do.
Portugal:				
Lisbon.....	May 29-July 23.....	14	1	
Senegal:				Epidemic in two localities. Epidemic outbreak. Do.
Medina.....	July 4-10.....	7		
Siam.....	May 1-July 9.....			
Bangkok.....	May 15-July 16.....	11	4	Cases, 93; deaths, 19.
Spain:				
Valencia.....	May 29-June 4.....	2		
Straits Settlements.....	June 12-18.....			Cases, 3.
Singapore.....	Apr. 1-May 28.....	4	2	
Sumatra:				
Medan.....	June 5-11.....	2		Cases, 3.
Switzerland:				
Berne.....	June 26-July 2.....	1		
Tunisia.....	Apr. 1-June 10.....			Cases, 10.
Tunis.....	June 1-10.....	1		
Union of South Africa:				
Cape Province—				Cases, 10.
Elliott District.....	May 11-June 10.....			
Idutywa District.....	July 3-9.....			
Kalanga District.....	May 11-June 10.....			Outbreaks. Do. Do. Do.
Transvaal—				
Barberton District.....	May 1-7.....			

TYPHUS FEVER

Algeria.....	Apr. 21-June 10.....			Cases, 263; deaths, 29.
Algiers.....	May 11-July 31.....	26		
Oran.....	May 21-July 31.....	32		
Bulgaria.....	Mar. 1-May 10.....			Cases, 151; deaths, 14.
Sofia.....	June 4-Aug. 5.....	2		
Chile:				
Antofagasta.....	Apr. 16-May 31.....	1		Cases, 151; deaths, 14.
Concepcion.....	May 29-June 4.....		1	
La Calera.....	Apr. 16-May 31.....	1		
Ligua.....	Mar. 16-31.....	2		Cases, 151; deaths, 14.
Puerto Montt.....	Apr. 16-May 31.....	1		
Santiago.....	do.....	5	1	
Talcahuano.....	July 10-16.....		1	Cases, 151; deaths, 14.
Valparaiso.....	Apr. 16-July 16.....	4		

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

Reports Received from June 25 to September 2, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-June 30	15	1	
Gensan	do	2		
Seoul	Apr. 1-June 30	30	2	
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-July 29			Cases, 112; deaths, 18.
Alexandria	May 21-July 29	11	3	
Cairo	Jan. 15-Apr. 1	22	5	
Estonia	Apr. 1-30			Case, 1.
Greece:				
Athens	June 1-30		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-May 31	17		
Lithuania	Feb. 1-Apr. 30	121	17	
Mexico	Feb. 1-28			Deaths, 26.
Mexico City	May 29-Aug. 6	26		Including municipalities in
San Luis Potosi	July 31-Aug. 6		1	Federal District.
Morocco	Apr. 1-June 10	528		
Palestine:	May 24-June 6			Cases, 3.
Haifa	do	2		
Mahmaim	May 17-23	1		In Safad district.
Safad	May 17-June 20	3		
Peru:				
Arequipa	Apr. 1-30		1	
Poland	Apr. 10-July 25	954	96	
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 14	687	47	
Tunisia	Apr. 22-June 10			Cases, 137.
Tunis	July 5-11	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native.
Cape Province	Apr. 1-July 9	42	5	In Europeans, cases, 2.
Albany District	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Grey District	May 1-7			Do.
Kentani District	June 26-July 2			Do.
Qumbu District	May 1-7			Do.
Umzimkulu District	June 26-July 2			Do.
Natal	Apr. 1-July 9	7	3	
Impendhle District	June 5-11			Do.
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-16	18	5	
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-30	8	5	
Liberia:				
Monrovia	May 29-July 8	4	5	Cases, 5; deaths, 2.
Senegal	May 27-July 31			
Dakar	July 9	1		
Do	Aug. 8	2	2	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 8	2	1	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	