PUBLIC HEALTH REPORTS

VOL. 44 AUGUST 9, 1929 NO. 32

ENDEMIC TYPHUS OF THE SOUTHEASTERN UNITED STATES

THE REACTION OF THE WHITE RAT

By KENNETH F. MAXCY, *Passed Assistant Surgeon, United States Public Health Service*

The susceptibility of the white rat to typhus virus from Old World sources has been established by Nicolle and his co-workers (1924, 1925, 1926). Briefly, they reported that white rats inoculated with passage virus showed no fever, but the virus was present in the brain 10 to 13 days later as evidenced by inoculation of brain emulsion into guinea pigs. This type of reaction was termed "infection inapparente." Virus was successfully transmitted from rat to rat through 12 generations. The infection resulted in immunity lasting for several months.

Kuczynski (1927) observed that the white rat produced agglutinins for *Proteus* X_{19} after inoculation with Old World typhus virus as well as after inoculation with the virus of Rocky Mountain spotted fever. Mooser (1929) reported that male white rats inoculated with an emulsion of tunica from his strain of Mexican typhus (tabardillo) showed a sharp rise in temperature after the same incubation period as in the case of the control guinea pigs, and developed a positive Weil-Felix reaction.

The experiments which are herewith reported were undertaken with a view to ascertaining the susceptibility of the rat to a strain of endemic typhus obtained in the southeastern United States. Particular interest attached to the question of whether there could be demonstrated in this species the minute, pleomorphic, Gram-negative intracellular organisms which are found in the mesothelial cells lining the tunica vaginalis of guinea pigs infected with this strain. (Maxcy, 1929.) These microorganisms were first observed by Mooser (1928) in guinea pigs infected with Mexican typhus (tabardillo), and have been found by Pinkerton (1929) to be present in guinea pigs infected with a strain of passage virus from Old World sources. They apparently belong to the "Rickettsia" group as defined by Cowdry (1926), and specifically resemble *R. prowazeki*, found in the cells lining the gut wall of human lice *P. vestimenti*, by da Rocha Lima, Wolbach, Weigl, and others.

MATERIAL AND METHODS

The white rats used in these experiments were from the colony maintained at the hygienic laboratory in connection with the study of pellagra. The antecedents and environmental conditions under which they had been reared were therefore known. Although they showed wide daily variation in body temperature, excess above 38.5° C. appeared to be abnormal, and this base line for fever curves has been used in the charts.

The endemic strain of passage virus "Wil" was originally obtained from a case of endemic typhus at Wilmington, N. C., and its manifestations in guinea pigs have been fully described. (Maxcy, 1929.) Infective material from the scrotum was obtained by killing the animal within 48 hours of the onset of fever, removing one testis with its fat body, but without the parietal tunica, to a mortar containing about 20 cubic centimeters of 0.8 per cent sodium chloride solution, and agitating without crushing for a few minutes. One cubic centimeter of a 1 to 10,000 dilution of such a suspension injected intraperitoneally will usually infect a guinea pig. It is referred to as testicular washings. (T. W.)

RESULTS

In the first experiment, 16 white male rats, weighing approximately 170 grams, were divided into three groups. The first group of four were inoculated intraperitoneally April 13 with 1 cubic centimeter each of a 1:20 dilution of testicular washings from guinea pig Wil 397. This material showed no growth in plain broth in Smith tubes. That it contained typhus virus was evident from the following observations: Guinea pig Wil 397 had reacted with fever after a 5-day incubation period. At post-mortem, the gross pathology was that usually found in endemic typhus, and the minute, Rickettsialike microorganisms were found in smear preparations made from the tunica. At the time when the rats were inoculated, the same material (testicular washings from Wil 397) was injected into 2 fresh, nonimmune guinea pigs, 2 guinea pigs immune to strain Wil through a previous attack, and 1 rabbit. The nonimmunes reacted typically; the immunes showed no reaction throughout an observation period of 23 days; the rabbit developed agglutinins for *Proteus* X_{19} (*Proteus* X_{19} O-type antigen) up to a dilution of 1:80 on the fourteenth day.

The six rats in the second, or control, group were inoculated intraperitoneally on April 20 with testicular washings from a normal, noninfected guinea pig.

The third group of six rats received, on April 22, infective material, like the first, but from another guinea pig. Each was injected intraperitoneally with 1 cubic centimeter of a 1:20 dilution of testic-

ular washings from animal Wil 401. This material showed no growth in plain broth in a Smith tube. The following observations indicated the presence of the virus: Wil 401 was killed 13 days after inoculation and on the first day of a febrile reaction. The usual findings were present at post-mortem (Maxcy, 1929) and the Rickettsialike microorganisms were demonstrated in smears from the tunica. Two fresh nonimmune guinea pigs and two guinea pigs immune to strain Wil through a previous attack were inoculated with the same testicular washings used for the rats. The former reacted typically; the latter remained normal throughout a period of 24 days.

The first and third groups of rats, therefore, were inoculated with guinea pig testicular washings proved to contain the virus. The second group was inoculated in similar manner with testicular washings from a normal guinea pig. All three groups were kept in adjacent cages and observed for temperature elevation or other signs of illness.

Beginning on the fifth day after inoculation, rats were killed at intervals as shown in Table 1. They were inspected for gross pathology, smear preparations were made from the surface of the tunica vaginalis and stained with Giemsa, and organ emulsions were injected into guinea pigs to ascertain the presence or absence of the virus. These guinea pigs were then observed for the characteristic fever and scrotal redness and swelling, and subsequently tested for immunity to the passage strain of Wilmington virus.

TABLE 1.—*Summary of results of first experiment with white rats*

Group	Rat No.	Number of days after inoculation when killed	Guinea pig test for virus in—				Rickettsiæ in preparations from tunica
			Blood	Spleen	Tunica	Brain	
I							
Apr. 12	1	5	+	+	----------	----------	Present.
	2	6	+	+	+	----------	Do.
	3	7	+	+	+	----------	None found.
	4	8	+	+	+	+	Do.
II							
Control Apr. 20	5	5	0	0	0	----------	None.
	6	6	0	----------	0	----------	Do.
	7	7	0	----------	0	----------	Do.
	8	9	----------	----------	0	0	Do.
	9	12	----------	----------	0	0	Do.
	10	16	----------	0	----------	0	Do.
III							
Apr. 22	12	5	+	----------	+	----------	Present.
	13	8	+	+	+	----------	Do.
	15	9	----------	+	+	+	None found.
	14	12	----------	0	0	0	Do.
	17	16	----------	+	----------	+	Do.
	16	20	----------	0	----------	+	Do.

The two groups inoculated with infective material showed little, if any, outward evidence of illness. There was a slight rise in temperature between the third and sixth days, but thereafter it ranged about

the normal. The rats in Group II which were injected intraperitoneally with testicular washings from a normal guinea pig also showed a slight temperature elevation about the fourth to the sixth day. The interpretation of the temperature elevation was therefore uncertain and further observations were made, to which reference will be made later in this paper.

In Giemsa stained preparations made by scraping the surface of the tunica vaginalis of the rats inoculated intraperitoneally with infective material and killed arbitrarily on the fifth (rats Nos. 1 and 12), sixth (No. 2), and eighth (No. 13) days thereafter, the typical, minute, intracellular diplobacilli were found. These microorganisms have been so fully described in guinea pigs by Mooser and by Pinkerton that it is unnecessary to go into the details of their morphology here. The most striking feature was that they were present in these smears from rats in tremendous numbers. Almost every high-power field contained one or more parasitized cells, and frequently there appeared to be clumps of cells which were being extensively invaded.

In the preparations made on the fifth day the organisms were almost entirely intracellular; in those made on the sixth and eighth days they were almost entirely extracellular. Since the parasitized cells become filled with the rapidly multiplying organisms, swell, and are easily ruptured, the extracellular forms may be explained in part by the manipulation in making the preparation. There were, however, so many more extracellular forms in the later preparations than in the earlier, that such an explanation does not seem entirely adequate. It seemed as if the increase that had begun within the cells was being continued even after liberation from them.

In general, when the organisms were within a cell, they were inclined to be coccoid or very short "diplobacilli." Those which were lying free tended to be longer and were more commonly bacilliform.

In the preparations made from the other rats in the infected groups, killed on the seventh (No. 4), ninth (No. 15), twelfth (No. 14), sixteenth (No. 17), and twentieth (No. 16) days after intraperitoneal inoculation, no microorganisms of any description could be found. The initial multiplication of organisms on the tunica had apparently been completed, and the virus, in its visible form at least, was no longer present in this location in sufficient concentration to be microscopically demonstrable.

The character of the exudate on the tunica of infected rats was similar to that reported in infected guinea pigs. During the early stages there were large numbers of the mesothelial cells which line the tunica, many of which were swollen and in various stages of disintegration, nuclear fragments, connective tissue cells, mononuclear phagocytes, and a few polymorphonuclears. A little later the swollen

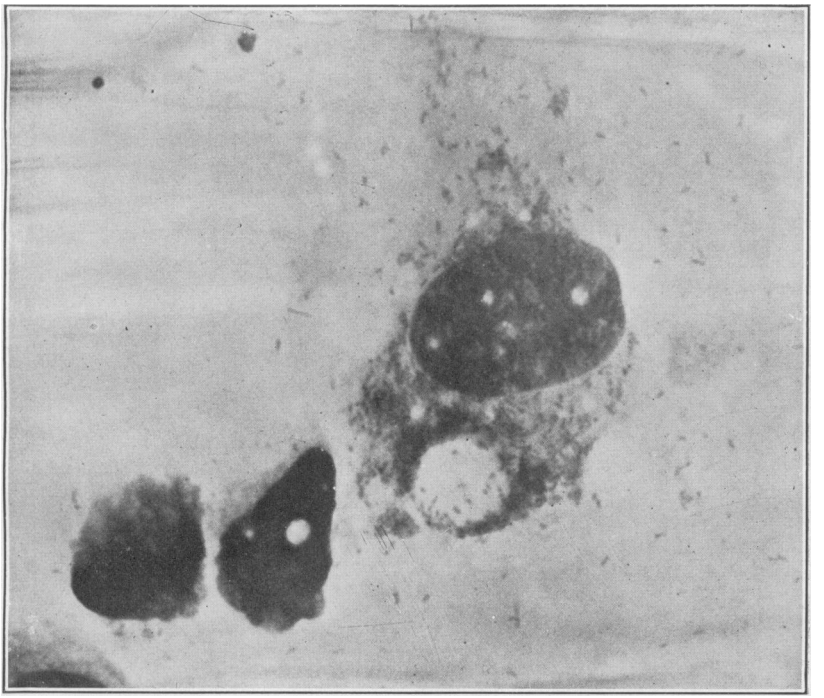

FIGURE 1.—Preparation from the tunica vaginalis of white rat Wil 2, showing disintegrating mesothelial cell containing large numbers of Rickettsialike microorganisms in the cytoplasm and a few strewn about near by. (Zeiss 2 mm. 1.4 N. A. Homal IV. × 2,000)

mesothelial cells disappeared, there were not so many damaged cells and nuclear fragments; connective tissue cells, mononuclear phagocytes, lymphocytes, and polymorphonuclears were more numerous. The process subsided very quickly, with very little organization. Only occasionally were adhesions formed. The reaction was much less intense and was more transitory than was the case in guinea pigs.

The search of preparations made from the tunica of rats in the control group, inoculated with normal, noninfective, guinea pig tissue, was entirely negative for microorganisms. There were very few cells present and these were practically all the normal appearing mesothelial cells from the surface of the tunica.

The reaction of infected rats was usually evident upon careful inspection of the exposed testes, although there was no redness and swelling of the scrotum such as is seen in guinea pigs. When the surface of the tunica was scraped with a knife edge, it was found to be moist, and a thin layer of exudate was present. In contrast, when the tunica of one of the noninfected rats was scraped, it was dry, and it was found difficult to obtain material for a preparation. In one of the infected rats there was slight engorgement of the blood vessels of the testis; in one there were definite punctate hemorrhages in the tunica near the lower pole; in one, killed on the twentieth day, there were extensive subcapsular hemorrhages and delicate adhesions gluing together the parietal and visceral layers of the tunica. In general, however, it might be said that the involvement of the tunica might easily have been overlooked unless particular attention had been paid to it.

Aside from the reaction within the scrotum, there was no gross pathological change noted except with regard to the spleen. This was slightly larger and of a darker red than normal during the acute infection.

As shown in the table, although the Rickettsialike organisms could not be found in preparations from the infected rats after the eighth day, the virus survived in the tissues for a considerably longer period, as demonstrated by the reaction of guinea pigs inoculated intraperitoneally with blood and tissue emulsions and by subsequent immunity tests. Thus, the brain of rat No. 16, killed on the twentieth day after inoculation, was still infective for a guinea pig. Moreover it was noted that passage through the rat apparently enhanced the virus so that it produced a more severe reaction in the guinea pig than was shown by strain controls. Two guinea pigs, one inoculated with blood from rat Wil 1, and the other with testicular washing from rat Wil 2, showed a marked fever reaction lasting 10 to 12 days, and lesions characteristic of typhus were found in the brain of both when killed on the sixteenth day.

That the virus which survived within these tissues was associated with the Rickettsialike microorganisms is proved by the fact that brain and spleen emulsion from rat Wil 13, injected into guinea pigs produced the typical reaction in these animals, and the characteristic Rickettsialike microorganisms were found in the mesothelial cells of the tunica of these guinea pigs. Tunica washings from the guinea pig inoculated with brain from rat Wil 13, injected into a rabbit, produced agglutinins for *Proteus* X_{19} (O antigen) which reached a titer of 1:160 on the sixteenth day. The same material injected into fresh guinea pigs produced the usual picture, whereas guinea pigs immune through a previous attack of the Wilmington virus showed no reaction.

In view of Nicolle's statement that typhus infection in rats is afebrile, and Mooser's finding that rats inoculated with an emulsion of tunica from his Mexican strain showed a sharp rise in temperature after the same incubation as that in the guinea pigs inoculated at the same time, and our own somewhat equivocal observations that a similar febrile reaction occurred as well in control rats inoculated with noninfective material, a further experiment was conducted to elucidate this point.

In this experiment, six white rats, weighing about 125 grams, were inoculated intraperitoneally with virus (blood and testicular washings) from guinea pig Wil 442. Six other rats from the same lot were inoculated in exactly similar manner with blood and testicular washings from a normal guinea pig. The two groups were placed in adjoining cages and were kept under the same conditions. Temperatures were recorded twice each day. On the eleventh day after inoculation, all rats were sacrificed and brain emulsion from each was injected into a guinea pig and a white rat.

The temperature observations are shown in Chart 1. That all the animals in the first group were successfully infected was established by the reaction of guinea pigs inoculated with the rat-brain emulsion and subsequently tested for immunity to the passage strain Wil. All six of these rats showed a slight elevation of temperature. Those inoculated with blood virus reacted slightly later, seventh to the ninth day, as compared with those inoculated with testicular washings, fifth to sixth day. A similar difference in incubation period occurs in guinea pigs inoculated with blood as compared with virus from testicular washings.

In the control group, inoculated with blood and testicular washings from a normal guinea pig, there was also a slight temperature elevation, occurring on the sixth day. This elevation was perhaps not quite so well marked as that shown by the rats in the infected group but it suggested that at least part of the reaction of the infected group was due to the injection of heterologous protein.

In order to test this hypothesis, 11 white rats which had been inoculated intraperitoneally with brain emulsion from the rats killed in the preceding experiment were observed for fever. In the first group were six rats which had been inoculated with approximately two-tenths of a whole infected rat brain—homologous tissue containing virus.

In the control group were five rats, each of which had been inoculated with approximately two-tenths of the brain of a normal, non-infected rat—homologous tissue not containing virus. On the

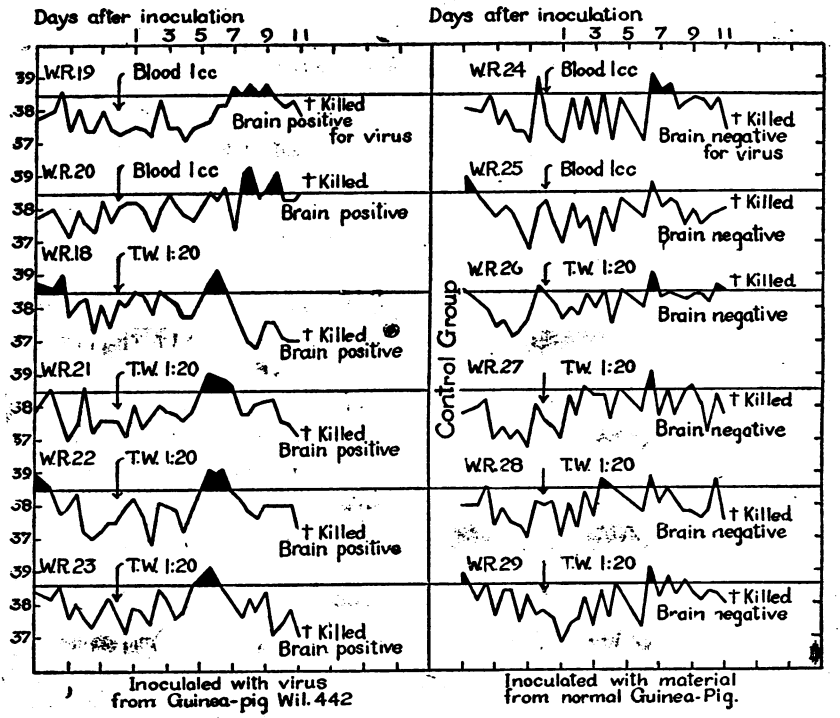

CHART 1.—Temperature chart of white rats inoculated with tissues containing endemic typhus virus, from a guinea pig, Wil strain (left), and control group (right) inoculated in the same manner with tissues from a normal guinea pig

twelfth and thirteenth days after inoculation, all were sacrificed and brain emulsion from each rat was injected into guinea pigs. All the guinea pigs inoculated with brain from the rats in the first group developed typical typhus, while those inoculated with brain from the rats in the control group remained normal.

The temperature observations are shown in Chart 2. It is apparent that the infected rats showed a febrile elevation consistently from the fourth to the sixth day after inoculation. The rats inoculated with normal rat brain showed no significant elevation, with one possible exception—WR*26* A. In other words, when homologous tissue containing virus was injected, the febrile reaction was devel-

oped in the infected rats in contrast to the noninfected controls which remained practically afebrile.

SUMMARY

These observations are interpreted, therefore, as indicating that the temperature rise which occurred in rats three to six days after intraperitoneal injection of tissues containing the Wilmington virus, were due, at least in part, to the virus itself. Subsequent to this time, and quite regularly up to the thirteenth day, although the animal was afebrile and gave no outward evidence of infection, the virus was

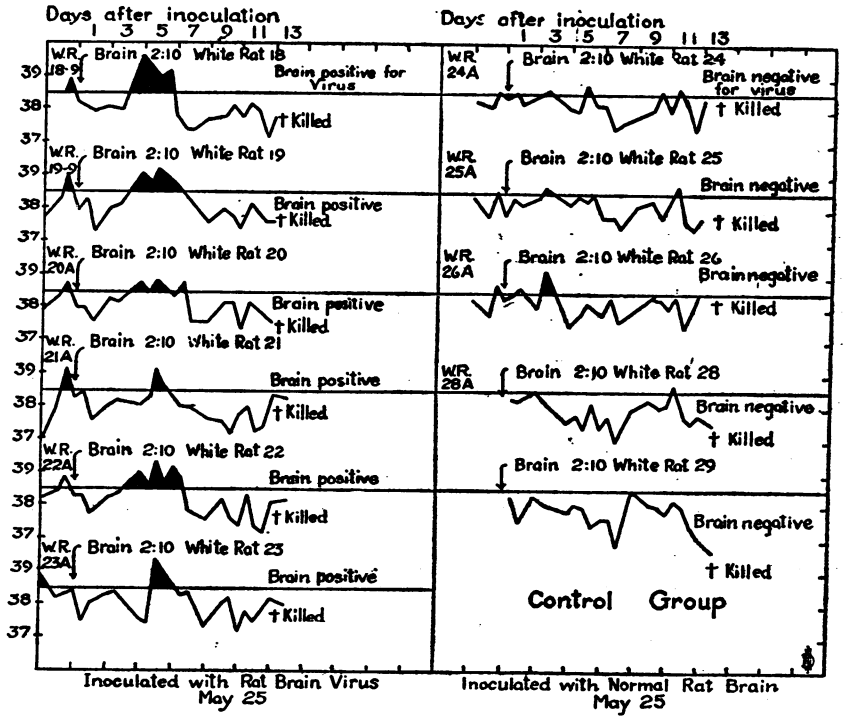

CHART 2.—Temperature chart of white rats inoculated with brain emulsion from infected rats (left) and control group (right) inoculated with brain emulsion from normal rats

present and widely distributed in his body. It was demonstrated to be still present in the brain as late as the twentieth day after inoculation. The fever curve in rats, therefore, does not afford an indication of the course of the infection such as is usually the case in guinea pigs and monkeys. The infection in the rat was, except for a brief period at the time of onset, afebrile and inapparent.

During this same brief febrile period at the beginning of the infection, it was found that the cells lining the tunica vaginalis were being extensively invaded with the minute, Rickettsialike microorganisms

which have been demonstrated to be associated with the virus. These were at first almost entirely intracellular and apparently multiplying rapidly. After a day or two, however, they were largely extracellular. Thereafter, they disappeared entirely from this location.

It seems not unlikely that the febrile reaction may have been in part associated with this rapid multiplication of the virus in the tunica. After this local reaction had subsided and the virus had become generally distributed in the various tissues, the fever disappeared and the infection ran an inapparent course.

These studies have shown that the white rat is a susceptible host to the Wilmington strain of typhus from the southeastern United States, and affords a particularly favorable species in which to study the Rickettsialike microorganisms.

REFERENCES

Cowdry, E. V.: (1926) Rickettsiæ and disease. Arch. Path. and Lab. Med. Chicago, vol. 2, pp. 59–90.

da Rocha-Lima, H.: (1919) Ueber die aetiologie des Fleckfiebers. Berlin. Klinik, Heft 325, pp. 1–26.

Kuczynski, Max H.: (1927) Die Erreger des Fleck- und Felsenfiebers. Biologische und Pathogenetische Studien. 256 pp. Julius Springer, Berlin.

Maxcy, Kenneth F.: (1929) Endemic typhus fever of the southeastern United States: Reaction of the guinea pig. Pub. Health Rep., vol. 44, No. 11, pp. 589–600.

Mooser, H.:

(1928) Experiments relating to the pathology and the etiology of Mexican typhus (tabardillo). J. Infect. Dis., Chicago, vol. 43, pp. 241–260 and 261–272.

(1929) Tabardillo, an American variety of typhus. J. Infect. Dis., Chicago, vol. 44, pp. 186–193.

Nicolle, Charles:

(1924) Contribution a la connaissance des infections inapparentes. (Exemples tirés de l'étude expérimentale du typhus exanthématique) Compt. Rend. Acad. d. sci., Par., vol. 179, pp. 375–377.

(1926) Contribution nouvelle a la connaissance du typhus expérimental chez les murides. Arch. de l'Inst. Pasteur de Tunis, vol. 15, pp. 267–275.

Nicolle, Charles and Lebailly, C.: (1919) Les infections expérimentales inapparentes. Exemples tirés de l'étude du typhus exanthématique. Arch. de l'Inst. Pasteur de Tunis, vol. 11, pp. 1–5.

Pinkerton, Henry: (1929) Rickettsialike organisms in the scrotal sac of guinea pigs with European typhus. J. Infect. Dis. (Chicago), vol. 44, pp. 337–346.

Wolbach, S. B., Todd, J. L., and Palfrey, F. W.: (1922) The etiology and pathology of typhus. Harvard University Press, Cambridge, Mass., 222 pp.

OUTLINE OF PROJECT FOR THE STUDY OF NEGRO HEALTH IN TENNESSEE[1]

By E. L. BISHOP, M. D., C. P. H., *Tennessee State Commissioner of Health*

GENERAL PLAN

The general plan for the study of negro health in Tennessee contemplates three types of study, logically related to each other in such a way as to throw light on the three fundamental questions: I. What is the state of health of the negro population? II. What are the underlying causes? III. What can be done about it?

Question I. What is the state of the negro health is being studied statistically from the records of the department of public health covering a period of a dozen years. It is hoped that the statistical study will also give rise to some tentative ideas of the underlying factors.

Question II. What are the causes of high morbidity and mortality among negroes is to be attacked in the field by two types of personnel working together from the points of view of what may be called medical epidemiology and social epidemiology. The selection of topics and areas for field investigation will be determined by the results of the statistical study.

Question III. What can be done to improve the situation will require study by persons experienced in public health administration working through the department of public health. Particularly in such matters as the provision of hospital and clinic facilities the needs of the colored population must inevitably receive separate consideration, yet there must be coordination in order to avoid duplication of personnel and equipment as far as possible. While the problems of whites and negroes may be similar from a medical point of view, it is obvious that the social situation requires that there be carefully planned adaptations of public health service in its several branches to the needs of the colored population.

HISTORY

The first phase of work under Question I, involving the statistical study of mortality, morbidity, and natality experience, is nearing completion. In 1927 Fisk University decided to devote a part of its research fund to the answer of this question. The sum of $6,500 was finally so appropriated, this money being a grant from the Laura Spelman Rockefeller Memorial. In February, 1928, a trained statistician began the compilation of statistical data in the offices of the State department of public health. Cooperation of the State depart-

[1] Read at the Twenty-seventh Annual Conference of State and Territorial Health Officers with the Public Health Service, Washington, D. C., June 3, 1929.

ment of health was, of course, essential, and the department has taken an active part in the study. Originally the plan was to confine the study to the simple statistical tabulation, but the commissioner of health has insisted that this be expanded to comprehend investigation of the second and third questions above outlined. The State health department has provided office space, considerable clerical service, and supplies, thus bearing some of the financial burden and making possible a more thorough piece of work. A preliminary summary of results will be ready for use in the early summer of 1929, when field epidemiological research begins. A grant was made by the Julius Rosenwald Fund providing for training of a member of the faculty of the Meharry Medical College through special studies in New York last summer. Additional training is being given this physician by the State epidemiologist, who has supervised a course of study during the past winter.

It is obvious that many public health problems have an economic and social background. For this reason Fisk University is requesting a grant from the Laura Spelman Rockefeller Memorial to finance the full-time work of a negro investigator trained in social science. This investigator will collaborate with the epidemiological research staff, and particularly in the investigation of the tuberculosis problem. Tentative plans for this social research in the field are to be prepared by the social science department of Fisk University.

Another agency interested in this study is the department of preventive medicine, School of Medicine, Vanderbilt University, which will cooperate in the study of malaria and in an investigation of the ascariasis problem. In the latter study, Vanderbilt School of Medicine and the State department of health will have the active assistance of a trained group of investigators from the department of parasitology of Johns Hopkins School of Hygiene. The United States Public Health Service will give consultation service and active assistance in malaria studies. Thus, it is clear that the best talent available is being assembled for service in a coordinated study of these health problems with a view of integration of the activity of all agencies concerned into a major project more comprehensive than any yet attempted under the leadership of a State public health agency. Hitherto field studies particularly have consisted of more or less isolated projects; but it is believed that by coordination much of the overhead of such studies may be reduced. For this reason, we plan to attack several problems simultaneously, or almost simultaneously, with a view to study required in answering questions two and three referred to under the heading "General plan."

FINANCIAL AND ADMINISTRATIVE

It is apparent that an undertaking so comprehensive as the above demands considerable outlay of funds. Six weeks ago the State

department of public health reviewed its own resources and resources already made available by other agencies. It was found that unless additional financial assistance could be obtained several problems of vital importance to the negro race must be omitted from the study. For example, tuberculosis would receive relatively little attention; yet the colored tuberculosis death rate is twice that of the white race. Infant mortality would be completely neglected; yet the colored infant mortality rate constitutes a major negro health problem. Venereal diseases would receive but little study; yet this is a significant negro health problem. Of course, these problems could not be neglected; and in an effort to obtain the needed funds the general plan and objectives of the study were submitted for the consideration of the Rosenwald Fund. This fund acted favorably upon the proposed cooperative project, and the study begins June 1, 1929, with a total budget of $69,500 for the ensuing year.

The following is the general scheme:

1. *Direction.*—The entire study will be under one directing head. It is planned to assign the State epidemiologist, a specially trained person, to this work and under his direction include all provision for contingent expenses. The total expense of this element, which involves field as well as administrative work, represents 13 per cent of the budget. Three-fourths of this 13 per cent is borne by the State and one-fourth by cooperating agencies.

2. *Tuberculosis.*—The budget estimate for this phase of the study represents 22 per cent of the total. The State department of health assumes responsibility for about one-third of this amount; the remainder is from other sources. It provides for two associate epidemiologists, one white and one colored, together with the necessary travel expenses for the prosecution of this study, and includes $4,500 for clinical and hospital studies of this problem. By the close of the year several thousand clinical examinations, followed through from 6 to 18 months, should be available for analysis. Hospital studies already begun will be continued.

3. *Infant mortality.*—The part of the budget assigned for this phase of the study calls for approximately 15 per cent of the total amount available for the whole study. Under existing financial provisions, the State department of public health is unable to assume any of this cost. It does, however, provide the use of existing child hygiene facilities. The personnel for this part of the study includes an associate epidemiologist, one white public health nurse and one colored public health nurse, together with necessary provision for travel.

4. *Venereal diseases.*—It is planned to assign to the study of venereal diseases one associate epidemiologist and to secure if possible the assignment of another associate epidemiologist from one of the partici-

pating agencies. The salary and travel of a public health nurse specially trained in venereal disease work is also provided for in the budget, together with the necessary travel for the other personnel. The total provision for this part of the study absorbs 13 per cent of the budget. The State department of health provides one-half of the funds for this part of the program.

5. *Malaria.*—The studies in the epidemiology and control of malaria are financed by approximately 28 per cent of the total budget. It is a little difficult to estimate exact costs on this work. Certain most valuable phases are carried by the office of malaria investigation of the United States Public Health Service, and these costs are not at present available. The malaria study is, however, a major activity which is being carried out in that section of the State wherein resides the largest relative percentage of negroes; for the counties having the highest malaria incidence are counties which have the highest percentage of negro population. It is, therefore, fundamentally important to a study of negro health problems and is adequately financed. It is estimated that the State department of health bears about half the cost of this work.

6. *Statistical service.*—To obtain the full significance of the data obtained in this study, it is necessary to furnish competent statistical service. The amount allotted for this represents about 4 per cent of the total budget. The necessary funds are supplied by one of the participating agencies mentioned above.

7. *Clerical service.*—No accurate estimate of the cost of clerical service can be made at this time, but it seems conservative to fix the amount at not less than 5 per cent of the total budget. The State department of health is assuming responsibility for this service.

SUMMARY

A group of problems involving major differences as between the races have been selected for study. It is thought wise to study several problems simultaneously in order that overhead cost may be kept at a minimum and essential information secured for translation into service as soon as possible. It is believed that the information obtained in this study will be of great value, not only to Tennessee but to other States with similar problems. The several projects involve a total budget of $69,500. Of this sum, the State department of public health is assuming responsibility for $27,800, $42,700 coming from the Rosenwald Fund, the United States Public Health Service, and the National Tuberculosis Association. Figures given in detail are in some instances approximation, as the nature of certain contributions makes exact estimate impossible at this time.

The effective period for the study is from June 1, 1929, to May 31, 1930. This first year is to be devoted to major field research ac-

tivity. It is believed that most of the essential data can be collected within the 12-month period, though in all probability certain areas must be kept under observation for a longer period of time. Field research is necessarily expensive; but four problems are to be attacked simultaneously, and the total budget is entirely reasonable when this fact is realized. The second year's activity should be financed at much lower cost, since this will be the period during which analysis of field observations will be in progress and much of the personnel essential to the first year's activity would be absorbed by the State department of health in its control activity. This would proportionately decrease the amount of funds needed from outside agencies.

RECENT STATE MORTALITY STATISTICS[a]

For the information of public health officials and others interested, the rates in the following tables have been computed from monthly mortality data furnished by the State health departments for the latest month for which records are available. For purposes of comparison, the mortality records for a few preceding years are given, the rates being those for the month corresponding to the latest month for which the 1928 or 1929 rate is available.

Monthly State mortality statistics

[All rates are on an annual basis, and, with the exception of mortality from all causes, infant mortality, and congenital malformations and diseases of early infancy, are per 100,000 population]

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
ALL CAUSES, ANNUAL RATE PER 1,000 POPULATION													
Alabama (total)	11.1	10.8	11.9	13.4	19.6	12.6	11.4	11.2	11.9	12.4	10.9	11.0	12.3
White	8.7	8.7	9.3	11.1	17.3	11.2	10.0	9.0	9.2	9.5	8.8	8.6	------
Colored	15.7	14.8	16.6	17.5	26.9	17.2	15.7	15.3	16.9	17.8	15.1	15.4	------
California	12.5	13.2	16.6	21.2	16.8	15.7	15.4	15.2	------	14.5	------	------	------
Connecticut	9.4	10.1	10.2	11.4	15.9	14.8	12.2	10.4	------	12.5	11.9	14.9	12.9
Hawaii	11.0	12.4	11.0	12.9	13.3	15.2	14.6	14.6	------	12.2	------	------	------
Indiana	11.1	11.2	11.2	16.7	17.7	14.0	13.4	12.4	------	13.6	12.3	14.7	13.5
Iowa	9.8	9.7	9.4	14.4	14.6	12.2	11.0	10.7	10.4	10.9	------	------	------
Kansas	10.0	9.8	10.8	18.0	------	------	------	------	------	------	------	------	------
Kentucky	11.5	10.5	10.4	11.7	------	------	------	------	------	------	------	------	------
Louisiana	11.5	11.5	11.9	15.7	------	------	------	------	------	------	------	------	------
Michigan	10.6	10.9	11.3	16.2	17.0	12.9	13.2	12.7	13.2	------	------	------	------
Minnesota	8.1	8.6	8.8	12.5	13.6	9.1	9.7	9.3	9.2	10.7	------	------	------
Mississippi	10.7	10.7	11.4	16.7	23.1	14.0	13.0	11.8	------	------	------	------	------
Nebraska	8.0	8.3	8.8	14.8	12.3	------	------	------	------	------	------	------	------
New Jersey	9.7	10.6	10.8	13.2	47.3	14.0	13.2	12.1	11.3	13.2	11.4	12.0	12.0
New York[1]	11.7	12.1	12.4	13.8	20.3	15.6	14.1	13.5	------	14.4	13.8	16.3	16.3
North Carolina	11.0	10.8	11.1	17.5	16.2	15.7	12.6	11.7	11.9	11.7	------	------	------
Pennsylvania	10.4	10.9	11.5	15.8	19.4	14.0	12.9	11.7	------	13.7	13.2	15.7	13.8
Rhode Island	------	------	------	------	19.1	------	------	------	------	------	------	------	------
South Dakota	7.1	7.5	8.1	14.1	------	------	------	------	------	------	------	------	------
Tennessee	11.2	10.9	11.3	16.1	19.2	14.4	13.8	11.3	10.7	12.0	11.7	------	------
Virginia	------	------	------	13.1	19.1	13.5	12.0	10.3	9.8	------	------	------	------
Wisconsin	------	------	------	------	14.5	11.8	11.2	11.1	10.6	------	------	------	------

[1] Exclusive of New York City.
[a] From the Office of Statistical Investigations, United States Public Health Service.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
INFANT MORTALITY, PER 1,000 LIVE BIRTHS													
Alabama (total)	64	69	61	72	125	92	86	69	78	76	66	60	------
White	57	62	49	60	100	79	79	62	66	59	55	48	------
Colored	79	82	85	95	171	117	97	80	99	113	86	85	------
California	55	58	69	76	66	73	74	69	------	59	------	------	------
Connecticut	42	59	39	56	74	85	69	61	------	86	66	91	80
Hawaii	91	87	80	113	100	120	129	117	------	------	------	------	------
Indiana	64	60	54	81	97	83	70	60	63	69	56	78	63
Iowa	50	42	53	44	103	75	37	61	48	54	------	------	------
Kansas	58	55	56	60	------	------	------	------	------	------	------	------	------
Louisiana	69	79	68	73	------	------	------	------	------	------	------	------	------
Michigan	58	66	69	86	112	71	71	67	69	------	------	------	------
Minnesota	38	50	41	56	83	66	48	51	49	------	------	------	------
Nebraska	50	62	45	80	79	------	------	------	------	------	------	------	------
New Jersey	56	56	67	68	93	70	71	70	------	------	------	------	------
New York [1]	60	62	63	70	87	81	77	70	------	75	73	88	84
Pennsylvania	66	66	65	90	118	95	81	69	------	84	75	104	80
Rhode Island	------	------	------	------	100	------	------	------	------	------	------	------	------
South Dakota	50	53	70	59	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	145	98	89	61	86	------	------	------	------
Virginia	------	------	56	72	140	91	78	61	------	------	------	------	------
Wisconsin	51	55	59	72	105	68	69	89	60	75	------	------	------
CONGENITAL MALFORMATIONS AND DISEASES OF EARLY INFANCY (159–163), PER 1,000 LIVE BIRTHS													
Alabama (total)	28	29	21	23	37	27	31	27	34	35	30	24	25
White	27	29	20	27	39	28	32	29	34	33	30	26	------
Colored	29	28	25	18	39	26	28	24	34	38	30	25	------
California	29	28	31	24	35	33	31	33	------	28	------	------	------
Iowa	29	26	35	35	48	34	36	35	31	33	------	------	------
Kansas	33	31	34	27	------	------	------	------	------	------	------	------	------
Louisiana	30	31	25	25	------	------	------	------	------	------	------	------	------
Michigan	32	24	37	39	45	37	34	35	38	------	------	------	------
Minnesota	26	33	25	20	37	35	30	33	32	------	------	------	------
Nebraska	29	27	37	34	30	------	------	------	------	------	------	------	------
New York [1]	35	38	39	40	43	43	41	38	------	39	42	45	43
Pennsylvania	28	33	34	37	41	38	33	34	------	37	37	36	37
Rhode Island	------	------	------	------	45	------	------	------	------	------	------	------	------
South Dakota	34	32	38	28	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	36	28	27	20	26	------	------	------	------
TYPHOID FEVER (1)													
Alabama (total)	19.4	13.8	9.5	6.0	1.3	1.4	2.2	5.7	5.5	4.6	8.8	4.2	15.3
White	12.3	10.5	8.7	4.2	.7	2.3	2.1	2.9	4.2	.7	3.6	2.2	------
Colored	32.7	19.8	10.9	9.2	2.6	------	2.6	10.9	7.9	11.0	18.4	7.9	------
California	4.8	3.1	1.1	1.0	1.0	2.6	2.1	1.6	------	1.1	------	------	------
Connecticut	------	------	------	------	.7	------	------	------	------	.7	------	------	------
Hawaii	13.9	3.4	3.5	------	------	3.7	13.5	3.5	------	13.9	------	------	------
Indiana	8.8	9.3	7.7	3.0	1.5	.4	.4	3.4	1.5	1.5	1.9	3.8	------
Iowa	4.0	1.0	2.5	3.4	1.5	1.1	.5	2.6	1.0	.5	------	------	------
Kansas	6.6	3.8	2.0	1.3	------	------	------	------	------	------	------	------	------
Kentucky	28.6	27.7	29.1	13.4	6.5	5.1	3.7	------	------	------	------	------	------
Louisiana	25.0	14.5	12.5	7.8	------	------	------	------	------	------	------	------	------
Michigan	2.4	2.8	1.6	1.3	1.5	.9	.3	1.9	2.1	------	------	------	------
Minnesota	1.0	.4	------	.4	------	.4	------	.5	.4	------	------	------	------
Mississippi	15.6	12.5	10.9	7.9	6.6	2.9	6.6	4.1	------	------	------	------	------
Nebraska	3.5	.8	1.7	3.3	3.3	------	------	------	------	------	------	------	------
New Jersey	2.5	2.5	2.9	.9	.6	1.0	.3	.3	1.9	------	------	------	------
New York [1]	2.4	4.9	3.1	1.7	1.0	.9	.4	.6	------	1.1	------	------	------
North Carolina	9.9	10.0	5.8	7.2	2.4	1.8	2.4	2.1	3.2	2.4	------	------	------
Pennsylvania	4.0	3.9	2.1	1.3	1.4	2.0	.8	.4	------	1.0	2.1	2.7	2.0
South Carolina	28.1	25.9	14.4	12.6	3.2	9.1	3.2	3.9	10.1	5.7	23.6	------	------
South Dakota	8.6	3.3	------	6.7	------	------	------	------	------	------	------	------	------
Tennessee	30.6	18.4	21.4	8.9	2.4	2.1	2.8	2.9	5.2	4.7	12.3	------	------
Virginia	10.4	6.9	6.1	2.3	2.7	.5	.9	.9	5.9	------	------	------	------
Wisconsin	1.2	.8	1.2	.8	.4	1.3	2.0	1.2	.4	1.2	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
MEASLES (7)													
Alabama (total)	0.5	1.8	0.9	3.2	3.9	3.4	3.9	5.7	3.2	17.9	8.8	16.1	2.4
White	.7	2.1	1.4	4.2	5.6	4.7	5.6	7.2	4.2	22.4	8.0	22.9	------
Colored	------	1.3	------	1.3	1.3	1.5	1.3	6.7	1.3	9.2	10.5	3.9	------
California	------	.3	------	.3	------	.6	1.3	------	------	1.1	------	------	------
Connecticut	.8	------	.7	2.2	3.6	4.8	7.2	7.4	------	4.5	------	------	------
Hawaii	3.5	3.4	------	3.4	3.4	3.7	3.4	------	------	------	------	------	------
Indiana	------	------	.8	1.1	3.0	4.9	10.4	13.4	7.0	5.2	1.9	33.2	------
Iowa	------	------	------	------	1.0	.5	1.9	2.5	1.9	.5	------	------	------
Kansas	------	------	------	------	------	------	------	------	------	------	------	------	------
Kentucky	1.9	4.6	1.4	.9	1.4	4.1	3.7	------	------	------	------	------	------
Louisiana	------	------	.6	1.8	------	------	------	------	------	------	------	------	------
Michigan	.3	.5	1.1	1.3	1.3	1.1	5.1	7.7	9.2	------	------	------	------
Minnesota	------	.4	------	1.3	5.2	2.6	5.2	5.8	4.3	1.3	------	------	------
Mississippi	1.4	2.6	4.8	4.6	5.3	12.4	18.4	7.5	------	------	------	------	------
Nebraska	------	------	------	.8	------	------	------	------	------	------	------	------	------
New Jersey	.3	.6	1.0	.9	.9	2.4	1.8	2.2	.6	------	------	------	------
New York [1]	.4	.6	1.3	1.5	5.8	4.4	5.0	3.6	------	5.7	------	------	------
North Carolina	.8	.4	1.2	2.0	1.2	2.7	.4	.8	.8	21.2	------	------	------
Pennsylvania	.4	.9	2.3	2.8	7.4	7.0	6.5	6.0	------	10.4	3.6	25.8	9.3
Rhode Island	------	------	------	------	18.1	------	------	------	------	------	------	------	------
South Carolina	------	1.3	.7	------	------	------	------	------	.6	12.0	7.7	------	------
Tennessee	1.0	------	.5	.5	------	------	.9	1.0	.5	13.2	7.6	------	------
Virginia	------	------	.9	2.7	2.7	1.0	3.2	2.4	3.7	------	------	------	------
Wisconsin	------	------	1.2	.4	2.0	2.2	2.4	7.0	6.0	1.6	------	------	------
SCARLET FEVER (8)													
Alabama (total)	------	0.5	1.4	------	1.7	1.4	1.7	------	------	------	------	0.9	0.9
White	------	.7	2.2	------	2.8	2.3	2.1	------	------	------	------	1.5	------
Colored	------	------	------	------	------	------	2.6	------	------	------	------	------	------
California	0.5	1.0	1.9	2.1	1.8	2.6	2.6	3.7	------	0.8	------	------	------
Connecticut	------	------	------	------	2.2	------	2.9	.7	------	2.3	------	------	------
Hawaii	------	------	------	------	------	------	------	------	------	3.5	------	------	------
Indiana	.4	2.2	1.9	2.6	6.3	5.7	4.4	3.8	4.4	4.8	3.0	1.9	------
Iowa	------	1.5	2.0	7.3	2.4	4.3	2.9	3.5	1.9	.5	------	------	------
Kansas	1.3	1.9	5.3	2.6	------	------	------	------	------	------	------	------	------
Kentucky	1.9	5.5	3.3	.9	5.5	6.1	5.1	------	------	------	------	------	------
Louisiana	------	------	3.1	.6	------	------	------	------	------	------	------	------	------
Michigan	.3	1.0	2.7	5.9	4.4	5.4	5.4	7.7	3.3	------	------	------	------
Minnesota	.4	2.6	1.3	1.7	6.1	2.2	3.9	2.7	2.2	2.6	------	------	------
Mississippi	.7	2.0	------	------	------	------	------	------	------	------	------	------	------
Nebraska	------	3.3	.9	2.5	6.7	------	------	------	------	------	------	------	------
New Jersey	1.0	.9	.6	1.8	1.5	1.4	1.2	2.2	1.5	------	------	------	------
New York [1]	------	.4	2.8	1.7	4.5	3.7	3.1	2.6	------	2.8	------	------	------
North Carolina	1.7	.8	1.7	1.6	2.4	1.8	1.2	2.9	2.4	1.2	------	------	------
Pennsylvania	.5	2.8	2.0	3.1	4.8	3.3	3.0	3.3	------	3.8	3.9	3.0	3.0
Rhode Island	------	------	------	------	3.3	------	------	------	------	------	------	------	------
South Carolina	------	.6	.7	1.9	1.3	------	------	------	1.3	------	------	------	------
South Dakota	1.7	1.7	1.7	3.3	------	------	------	------	------	------	------	------	------
Tennessee	.5	2.8	1.9	2.8	1.4	4.7	3.3	2.9	2.8	.5	.9	------	------
Virginia	------	------	2.8	2.3	1.4	1.0	1.8	------	.5	------	------	------	------
Wisconsin	.4	1.6	3.3	3.6	2.4	4.4	3.6	5.4	.4	3.2	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
WHOOPING COUGH (9)													
Alabama (total)	6.2	4.1	6.2	6.9	9.1	10.1	7.0	10.4	10.1	7.3	25.3	17.5	14.3
White	4.3	1.4	5.8	5.6	8.4	5.4	4.2	7.2	7.0	2.8	23.3	19.2	------
Colored	9.5	9.2	6.8	9.2	11.9	20.0	13.2	16.3	15.8	15.8	30.3	14.5	------
California	8.8	5.4	6.4	10.9	7.0	4.3	7.2	8.3	------	9.1	------	------	------
Connecticut	3.8	5.8	2.3	2.9	6.5	4.0	2.9	.7	------	10.6	------	------	------
Hawaii	7.0	6.7	------	20.2	30.4	37.4	40.5	83.7	------	------	------	------	------
Indiana	3.4	1.1	.8	5.6	7.0	6.2	6.3	6.5	7.0	7.0	5.2	13.9	------
Iowa	2.5	1.9	2.0	5.3	5.3	3.2	6.3	8.0	4.8	4.9	------	------	------
Kansas	4.0	4.5	3.3	2.6	------	------	------	------	------	------	------	------	------
Kentucky	5.7	4.2	4.8	7.4	10.6	13.8	8.8	------	------	------	------	------	------
Louisiana	7.5	7.8	5.6	7.8	------	------	------	------	------	------	------	------	------
Michigan	4.8	3.3	3.2	10.0	7.2	7.7	4.6	7.2	8.2	------	------	------	------
Minnesota	1.3	2.6	3.6	6.5	9.1	6.1	4.3	4.9	5.2	2.6	------	------	------
Mississippi	2.7	3.9	6.8	5.9	11.2	10.2	11.2	14.3	------	------	------	------	------
Nebraska	1.7	4.2	------	5.0	3.3	------	------	------	------	------	------	------	------
New Jersey	4.5	4.0	2.5	4.9	13.3	6.8	6.2	5.7	4.0	------	------	------	------
New York [1]	3.9	2.3	2.8	1.7	6.2	5.0	5.4	4.3	------	4.6	------	------	------
North Carolina	3.7	4.8	2.9	4.4	9.2	8.4	5.2	7.5	9.6	7.6	------	------	------
Pennsylvania	6.2	4.9	7.4	12.0	12.4	8.4	5.2	4.8	------	4.7	5.4	15.8	7.2
Rhode Island	------	------	------	------	3.3	------	------	------	------	------	------	------	------
South Carolina	3.3	7.6	2.6	7.6	3.2	9.1	7.6	13.1	17.1	8.8	12.8	------	------
South Dakota	6.9	6.7	3.5	------	------	------	------	------	------	------	------	------	------
Tennessee	6.3	3.8	3.9	5.2	10.4	6.8	4.2	6.3	7.5	8.0	16.1	------	------
Virginia	------	------	.9	6.4	18.3	9.1	6.9	6.1	8.2	------	------	------	------
Wisconsin	2.9	2.8	.8	3.2	2.4	3.5	3.2	6.6	5.6	4.4	------	------	------
DIPHTHERIA (10)													
Alabama (total)	10.0	17.4	23.7	17.9	10.0	3.9	4.3	2.8	2.3	3.2	1.4	1.4	3.3
White	13.0	23.1	30.4	24.5	13.3	5.4	4.9	2.9	2.8	4.9	1.5	2.2	------
Colored	4.1	6.6	10.9	5.3	5.3	1.5	4.0	2.7	1.3	4.0	1.3	------	------
California	3.5	4.4	5.1	5.4	4.9	3.7	1.8	3.7	------	5.6	------	------	------
Connecticut	5.3	5.1	6.0	8.0	3.6	4.0	2.9	3.7	------	1.5	------	------	------
Hawaii	10.5	13.5	7.0	6.7	3.4	11.2	13.5	20.9	------	10.5	------	------	------
Indiana	4.6	7.8	10.0	10.0	5.9	5.7	3.7	5.0	3.3	3.3	4.5	1.1	------
Iowa	1.0	4.4	5.0	4.4	------	------	.5	2.0	1.5	1.5	1.0	------	------
Kansas	2.0	7.1	5.3	7.1	------	------	------	------	------	------	------	------	------
Kentucky	14.3	26.3	25.7	17.5	12.5	10.2	5.1	------	------	------	------	------	------
Louisiana	4.4	11.5	14.4	16.3	------	------	------	------	------	------	------	------	------
Michigan	7.2	8.7	9.3	12.8	12.1	8.5	12.6	10.3	11.3	------	------	------	------
Minnesota	2.2	1.7	3.1	5.2	2.2	2.2	3.0	2.2	2.6	2.2	------	------	------
Mississippi	9.5	11.8	12.9	15.1	6.6	5.8	2.0	2.0	------	------	------	------	------
Nebraska	1.7	5.0	6.1	4.2	5.0	------	------	------	------	------	------	------	------
New Jersey	6.0	7.1	11.8	14.2	20.0	13.0	10.2	10.5	10.5	------	------	------	------
New York [1]	3.1	2.3	4.6	3.8	4.5	3.4	3.7	2.4	------	5.2	------	------	------
North Carolina	11.2	18.4	29.4	26.4	16.8	10.2	4.8	4.1	1.6	2.0	------	------	------
Pennsylvania	4.2	6.0	10.9	10.8	10.3	7.1	9.2	6.8	------	9.2	10.4	9.1	11.7
Rhode Island	------	------	------	------	6.6	------	------	------	------	------	------	------	------
South Carolina	11.1	20.2	22.2	24.6	6.3	4.9	6.9	2.0	4.4	2.5	2.6	------	------
South Dakota	------	1.7	3.5	1.7	------	------	------	------	------	------	------	------	------
Tennessee	12.2	17.4	24.8	18.8	7.5	4.7	4.7	2.9	3.3	3.3	1.9	------	------
Virginia	5.2	10.1	15.6	12.3	8.2	4.6	7.8	1.9	1.4	------	------	------	------
Wisconsin	2.5	2.8	3.7	4.8	2.8	3.1	2.0	.8	4.4	2.8	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
INFLUENZA (11)													
Alabama (total)	18.5	25.2	37.9	164.7	762.7	236.7	117.9	53.2	43.6	83.1	22.6	48.7	43.4
White	12.3	21.0	35.5	152.8	711.4	241.3	110.0	47.1	32.2	67.3	16.8	43.6	------
Colored	30.0	33.0	42.2	185.9	973.1	261.3	150.4	64.0	77.8	112.1	34.2	57.8	------
California	7.7	29.5	127.1	254.0	91.5	47.2	40.1	23.5	------	17.1	------	------	------
Connecticut	6.0	12.4	9.0	34.3	196.6	133.5	40.9	21.5	------	29.4	35.3	131.1	56.5
Hawaii	45.3	37.1	27.9	30.4	23.6	29.9	23.6	38.3	------	31.4	------	------	------
Indiana	11.9	16.3	24.1	267.7	341.4	131.3	66.0	36.4	21.1	96.4	28.4	38.1	39.2
Iowa	15.0	19.9	16.0	256.5	312.3	101.5	57.7	28.1	28.6	67.9	------	------	------
Kansas	9.3	23.7	29.2	392.7	------	------	------	------	------	------	------	------	------
Kentucky	11.0	18.5	38.1	142.0	818.6	281.9	98.7	------	------	------	------	------	------
Louisiana	21.8	18.7	34.3	162.4	------	------	------	------	------	------	------	------	------
Michigan	8.7	10.0	13.8	157.2	237.7	76.9	39.5	24.1	21.8	------	------	------	------
Minnesota	8.0	16.4	16.1	150.1	231.9	55.4	38.9	19.2	17.7	104.2	------	------	------
Mississippi	11.5	9.2	38.7	213.7	897.9	172.5	118.3	42.8	------	------	------	------	------
Nebraska	9.5	20.1	30.2	367.9	219.9	------	------	------	------	------	------	------	------
New Jersey	4.8	7.7	11.5	45.0	164.2	59.4	25.0	15.0	10.2	23.7	11.3	14.7	12.4
New York [1]	4.1	8.8	13.7	37.5	235.4	93.2	36.6	23.1	------	27.0	20.6	70.8	32.6
North Carolina	6.6	14.0	35.2	195.2	375.5	281.3	116.2	59.2	37.3	34.1	------	------	------
Pennsylvania	12.1	14.4	21.0	172.3	357.9	95.6	55.0	26.9	------	47.1	43.9	142.0	63.2
Rhode Island	------	------	------	------	231.9	------	------	------	------	------	------	------	------
South Carolina	11.1	36.0	60.7	353.7	382.2	172.7	98.5	51.6	29.7	26.5	17.2	------	------
South Dakota	10.4	26.8	27.7	224.1	------	------	------	------	------	------	------	------	------
Tennessee	9.7	17.9	34.5	225.9	644.7	252.2	153.9	71.0	33.4	74.4	38.9	------	------
Virginia	------	------	21.7	155.0	591.2	192.9	88.2	48.7	19.2	------	------	------	------
Wisconsin	11.1	10.0	16.5	199.8	269.1	75.9	36.3	27.2	20.7	83.7	------	------	------
POLIOMYELITIS (22)													
Alabama (total)	------	0.9	------	1.8	0.4	2.4	0.4	0.9	------	0.9	0.9	1.4	------
White	------	1.4	------	2.1	.7	2.3	1.3	1.4	------	.7	.7	1.5	------
Colored	------	------	------	1.3	------	2.9	------	------	------	1.3	1.3	1.3	------
California	1.6	1.6	1.6	1.3	.3	.9	.8	.8	------	1.3	------	------	------
Connecticut	2.3	1.5	------	.7	------	------	------	------	------	------	------	------	------
Hawaii	------	3.4	------	------	------	------	------	------	------	------	------	------	------
Indiana	.4	------	1.2	.4	.7	------	.4	------	------	------	------	------	------
Iowa	2.5	------	.5	1.5	1.9	------	1.5	.5	------	1.0	------	------	------
Kansas	.7	.6	.7	.6	------	------	------	------	------	------	------	------	------
Kentucky	.5	1.4	1.4	.9	.9	1.0	.5	------	------	------	------	------	------
Louisiana	1.2	1.2	1.9	------	------	------	------	------	------	------	------	------	------
Michigan	.5	1.3	.8	.8	1.3	.3	.8	.5	.5	------	------	------	------
Minnesota	9.4	3.9	4.0	------	------	.9	------	.4	.9	.9	------	------	------
Mississippi	2.0	.7	.7	------	------	1.5	.7	1.4	------	------	------	------	------
Nebraska	.9	------	------	------	------	------	------	------	------	------	------	------	------
New Jersey	.6	1.8	1.0	------	.3	.3	.6	------	.3	------	------	------	------
New York [1]	7.6	3.6	2.0	.4	.6	.7	.2	.2	------	.2	------	------	------
North Carolina	.4	.4	1.7	.4	.4	.4	1.6	1.2	.8	1.2	------	------	------
Pennsylvania	1.5	.9	.6	1.1	.6	.7	.4	------	------	.5	------	------	0.8
South Carolina	2.0	.6	.7	------	.6	.7	.6	------	1.3	.6	2.6	------	------
South Dakota	5.2	3.3	1.7	3.3	------	------	------	------	------	------	------	------	------
Tennessee	1.9	1.9	1.5	4.2	.9	.5	.9	.5	1.9	1.9	.5	------	------
Virginia	1.9	1.4	.5	1.8	.5	------	1.4	.9	------	------	------	------	------
Wisconsin	.4	------	.4	.8	------	.4	------	------	.8	2.0	------	------	------
LETHARGIC ENCEPHALITIS (23)													
Alabama (total)	------	------	0.5	------	1.8	0.5	2.3	1.9	0.5	------	------	------	------
White	------	------	.7	------	2.8	1.6	2.8	1.4	------	------	------	------	------
Colored	------	------	------	------	------	------	1.3	2.7	1.3	------	------	------	------
California	1.6	1.3	1.6	1.8	3.4	1.4	1.0	2.4	------	2.1	------	------	------
Connecticut	.8	.7	------	.7	.7	3.2	2.2	------	------	1.5	------	------	------
Indiana	------	------	------	------	1.9	.8	1.1	1.5	.7	------	------	------	------
Iowa	1.5	1.0	.5	1.9	2.4	1.6	2.4	1.0	1.5	2.4	------	------	------
Kansas	.7	1.3	------	3.2	------	------	------	------	------	------	------	------	------
Kentucky	.5	.5	.5	------	.5	.5	------	------	------	------	------	------	------
Louisiana	.6	.6	.6	1.2	------	------	------	------	------	------	------	------	------
Michigan	1.6	2.1	1.1	1.0	1.5	1.1	1.0	1.6	2.3	------	------	------	------
Minnesota	3.1	2.2	1.3	3.0	3.5	2.2	2.2	1.8	1.7	3.9	------	------	------
Mississippi	1.4	1.3	------	------	------	.7	.7	1.4	------	------	------	------	------
Nebraska	1.7	------	.9	.8	------	------	------	------	------	------	------	------	------
New Jersey	1.9	1.8	1.3	.3	2.2	1.7	1.5	1.0	1.2	------	------	------	------
New York [1]	.7	.6	.4	1.1	1.2	.9	1.2	.7	------	.9	------	------	------
North Carolina	------	1.2	.8	.8	.4	1.8	.8	.4	.4	.4	------	------	------
Pennsylvania	.8	.5	1.5	1.0	1.3	2.0	1.0	1.2	------	1.9	------	1.8	1.8
South Carolina	2.6	.6	2.0	.6	1.3	1.4	5.1	2.0	4.4	.6	2.6	------	------
South Dakota	------	------	------	1.7	------	------	------	------	------	------	------	------	------
Tennessee	1.5	.5	.5	.5	------	1.0	------	1.5	------	.5	.5	------	------
Virginia	------	------	.9	------	2.3	.5	1.4	2.4	.5	------	------	------	------
Wisconsin	2.1	2.0	1.2	.8	.4	2.2	2.0	1.6	2.8	2.4	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
MENINGOCOCCUS MENINGITIS (24)													
Alabama (total)	------	0.5	------	------	1.4	3.9	1.5	------	0.5	------	------	------	------
White	------	------	------	------	2.1	5.4	------	------	------	------	------	------	------
Colored	------	1.3	------	------	------	1.5	4.0	------	1.3	------	------	------	------
California	0.8	1.0	2.7	7.2	11.1	10.3	14.2	12.6	------	3.7	------	------	------
Connecticut	.8	2.2	------	2.2	------	2.4	3.6	.7	------	.5	------	------	------
Hawaii	3.5	------	3.5	6.7	10.1	18.7	70.9	38.3	------	7.0	------	------	------
Indiana	.4	------	.8	1.5	1.1	------	1.1	1.9	3.0	------	------	------	------
Iowa	.5	------	------	1.5	2.4	3.8	2.9	2.0	1.5	1.0	------	------	------
Kansas	.7	.6	2.0	1.3	------	------	------	------	------	------	------	------	------
Louisiana	------	------	------	3.0	------	------	------	------	------	------	------	------	------
Michigan	2.9	4.1	3.2	4.6	6.9	12.5	29.8	37.9	41.8	------	------	------	------
Minnesota	1.3	1.3	.9	3.9	3.0	2.6	.4	2.2	1.7	3.9	------	------	------
Mississippi	------	------	.7	2.0	1.3	.7	.7	.7	------	------	------	------	------
Nebraska	------	------	3.5	------	.8	------	------	------	------	------	------	------	------
New Jersey	.3	1.5	1.9	3.1	3.4	2.4	2.5	2.2	4.6	------	------	------	------
New York [1]	------	1.3	.2	.6	.6	1.8	1.0	2.1	------	.7	------	------	------
North Carolina	------	------	------	.4	------	.4	.4	.4	1.2	------	------	------	------
Pennsylvania	.8	.5	1.1	1.3	1.7	2.8	3.1	2.2	------	2.2	------	------	1.3
Rhode Island	------	------	------	------	1.6	------	------	------	------	------	------	------	------
South Carolina	.7	------	2.6	2.5	1.3	2.8	3.2	3.9	2.5	1.9	3.8	------	------
South Dakota	1.7	------	1.7	------	------	------	------	------	------	------	------	------	------
Tennessee	.5	2.4	.5	2.8	1.9	1.0	3.9	3.4	1.9	.5	.5	------	------
Virginia	.5	------	.9	.9	1.8	1.5	1.8	1.4	2.7	------	------	------	------
Wisconsin	.8	3.6	3.7	3.6	.4	6.6	10.0	2.9	3.6	4.8	------	------	------
TUBERCULOSIS, ALL FORMS (31-37)													
Alabama (total)	77.8	74.3	80.6	73.0	76.6	83.6	80.5	91.8	88.1	84.4	101.4	88.9	103.4
White	50.7	38.5	39.1	44.9	54.7	62.9	51.9	55.0	45.6	43.5	53.9	45.8	------
Colored	128.1	141.1	158.0	125.3	129.2	134.3	146.4	159.4	167.4	160.9	192.1	165.6	------
California	113.5	118.1	129.0	146.0	137.5	147.9	149.4	138.6	------	153.8	------	------	------
Connecticut	55.8	63.5	53.5	66.4	66.0	77.1	68.2	64.5	------	77.6	76.7	91.3	89.1
Hawaii	104.0	121.5	90.6	141.7	108.0	89.6	91.2	129.0	------	108.1	------	------	------
Indiana	57.5	64.1	56.7	80.5	78.2	76.8	79.7	81.6	74.9	81.9	63.5	86.7	85.2
Iowa	40.1	24.7	31.1	38.8	34.9	38.7	35.4	40.6	37.3	45.6	------	------	------
Kansas	31.2	37.2	39.1	35.9	------	------	------	------	------	------	------	------	------
Kentucky	101.5	97.3	109.1	97.8	116.2	121.0	91.3	------	------	------	------	------	------
Louisiana	72.4	55.5	77.4	85.7	------	------	------	------	------	------	------	------	------
Michigan	59.1	58.2	64.1	69.2	80.0	72.1	72.3	80.6	85.7	------	------	------	------
Minnesota	50.1	34.6	47.8	50.2	49.3	48.4	60.1	65.3	55.8	64.0	------	------	------
Mississippi	78.1	54.6	80.2	90.1	84.2	72.1	96.0	98.5	------	------	------	------	------
Nebraska	20.7	20.1	21.6	19.2	30.9	------	------	------	------	------	------	------	------
New Jersey	66.9	73.6	63.7	65.9	76.4	84.3	84.7	84.7	76.1	86.3	80.4	93.7	96.5
New York [1]	70.0	71.8	67.2	67.1	84.8	82.2	76.3	80.6	------	88.5	92.3	101.1	111.3
North Carolina	77.9	60.9	69.2	84.2	91.0	91.0	89.4	102.7	91.4	93.8	------	------	------
Pennsylvania	62.4	58.0	55.5	67.3	79.6	69.4	66.7	68.8	------	81.9	87.1	92.7	91.9
Rhode Island	------	------	------	------	65.8	------	------	------	------	------	------	------	------
South Carolina	53.5	74.5	65.9	94.7	64.4	65.0	77.7	71.2	87.8	97.9	101.5	------	------
South Dakota	29.4	36.8	43.2	60.2	------	------	------	------	------	------	------	------	------
Tennessee	99.7	106.8	118.2	145.9	140.7	145.9	139.3	146.9	133.2	104.9	140.2	------	------
Virginia	69.0	84.1	71.3	88.3	116.1	85.6	84.1	93.6	96.9	------	------	------	------
Wisconsin	49.0	42.3	47.8	48.6	44.3	47.7	63.8	72.9	47.8	79.3	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
CANCER, ALL FORMS (43–49)													
Alabama (total)	50.3	52.3	54.0	50.5	33.1	45.9	41.3	45.0	48.2	47.3	49.8	40.2	40.0
White	52.1	54.7	59.4	48.4	38.6	49.7	46.3	55.8	52.6	44.9	53.9	39.2	.....
Colored	46.3	47.5	43.6	54.1	27.7	30.7	38.2	40.9	39.6	56.4	44.7	42.1	.....
California	144.7	143.4	141.5	164.1	151.4	129.6	135.4	140.7	.....	145.8	.....	.....	.....
Connecticut	103.3	132.8	110.1	118.2	98.3	114.4	118.4	106.0	.....	102.5	92.8	103.0	104.2
Hawaii	38.3	74.2	59.3	50.6	54.0	89.6	54.0	59.3	.....	48.8	.....	.....	.....
Indiana	94.6	90.8	105.0	100.5	100.8	98.5	90.5	101.9	110.9	90.8	102.4	93.1	94.7
Iowa	133.8	112.0	112.2	121.2	97.5	116.0	114.0	112.7	109.1	114.0	.....	.....	.....
Kansas	103.4	108.4	104.1	117.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	73.4	64.1	72.0	57.7	65.0	61.8	46.6	.....	.....	.....	.....	.....	.....
Louisiana	69.9	73.1	64.3	77.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	103.9	92.6	92.0	96.4	100.3	96.0	96.9	98.3	89.0	.....	.....	.....	.....
Minnesota	110.4	104.7	100.1	110.7	109.9	84.8	112.9	112.2	98.6	108.1	.....	.....	.....
Mississippi	52.3	49.3	50.9	53.9	37.5	56.8	45.4	51.6	.....	.....	.....	.....	.....
Nebraska	99.4	93.7	102.0	78.6	70.2	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey	101.9	112.2	104.4	119.9	100.1	116.7	115.9	105.7	110.9	120.5	101.1	95.7	99.8
New York [1]	122.0	123.7	115.5	115.5	138.1	136.0	115.4	117.9	.....	122.0	128.6	116.6	137.8
Pennsylvania	97.6	96.0	100.7	94.4	102.1	99.8	101.4	96.6	.....	102.0	98.1	99.0	95.7
Rhode Island	.....	.....	.....	.....	136.5	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina	41.4	30.3	47.0	49.3	34.1	37.8	32.2	34.6	49.3	50.5	44.7	.....	.....
South Dakota	63.9	55.2	76.0	87.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	55.0	50.8	54.0	66.4	49.4	52.9	57.4	63.2	53.6	47.5	70.6	.....	.....
Virginia	.....	.....	61.0	63.6	55.3	63.3	63.6	56.7	59.4	.....	.....	.....	.....
Wisconsin	106.7	103.7	103.0	111.2	98.1	109.0	97.3	104.7	104.9	98.1	.....	.....	.....
DIABETES (57)													
Alabama (total)	15.2	6.9	9.5	10.1	17.0	6.3	5.2	10.9	6.4	7.8	5.1	9.5	6.2
White	15.2	8.4	9.4	11.9	18.9	8.5	4.9	12.3	5.6	7.7	5.1	11.8	.....
Colored	15.0	4.0	9.5	6.6	15.8	2.9	6.6	8.2	7.9	7.9	5.3	5.3	.....
California	16.3	16.3	24.8	33.3	28.9	28.9	25.6	21.4	.....	25.9	.....	.....	.....
Connecticut	15.8	18.2	15.8	14.6	15.8	23.8	21.5	14.1	.....	19.6	.....	.....	.....
Hawaii	10.5	13.5	7.0	6.7	13.5	3.7	10.1	13.9	.....	.....	.....	.....	.....
Indiana	16.1	16.3	10.7	14.8	17.8	14.8	16.7	13.8	14.1	.....	.....	.....	.....
Iowa	17.0	20.4	17.0	29.6	29.1	18.3	16.0	18.0	21.3	19.4	.....	.....	.....
Kansas	17.2	10.3	15.3	38.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	9.5	9.2	10.0	10.2	12.9	10.2	11.1	.....	.....	.....	.....	.....	.....
Louisiana	6.9	15.1	11.9	12.7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	18.3	20.5	19.6	26.4	26.4	21.9	22.8	21.2	23.3	.....	.....	.....	.....
Minnesota	12.5	13.4	21.9	26.0	28.1	18.6	21.2	13.9	14.7	25.1	.....	.....	.....
Mississippi	5.4	6.6	3.4	14.5	11.8	5.8	10.5	6.8	.....	.....	.....	.....	.....
Nebraska	19.0	15.1	22.5	40.1	26.8	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey	21.3	21.3	23.9	26.2	33.9	27.0	22.8	24.5	22.2	.....	.....	.....	.....
New York [1]	21.5	25.0	20.4	28.2	41.6	29.8	28.1	22.9	.....	26.3	24.1	26.8	30.8
Pennsylvania	17.4	20.8	21.3	26.2	31.7	26.2	22.5	23.4	.....	25.3	23.2	24.7	18.1
Rhode Island	.....	.....	.....	.....	24.7	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina	6.5	5.7	6.5	17.7	7.0	11.2	8.8	5.2	7.6	6.9	7.7	.....	.....
South Dakota	6.9	25.1	10.4	31.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	10.2	7.5	13.6	8.5	11.8	10.4	12.2	9.2	10.4	7.1	.....	.....	.....
Virginia	.....	.....	9.0	13.3	19.7	8.6	7.8	10.9	7.8	.....	.....	.....	.....
DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE (70–86)													
Alabama (total)	93.2	87.9	106.4	109.4	92.4	95.8	100.7	108.3	111.2	.....	.....	.....	.....
White	72.4	72.9	89.1	100.9	80.6	86.9	95.3	97.0	99.5	.....	.....	.....	.....
Colored	132.2	116.0	139.0	125.3	114.7	112.4	110.8	129.4	133.2	.....	.....	.....	.....
California	126.8	137.7	154.1	181.2	161.8	150.8	142.4	143.4	.....	132.7	.....	.....	.....
Iowa	132.3	130.0	130.8	144.0	143.5	170.2	141.1	144.3	134.3	142.6	.....	.....	.....
Kansas	125.3	136.0	161.8	215.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	103.4	103.3	117.7	107.5	122.2	112.3	98.7	.....	.....	.....	.....	.....	.....
Louisiana	97.3	75.5	106.1	122.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	126.4	124.1	126.4	161.8	174.1	142.5	151.8	138.6	145.2	.....	.....	.....	.....
Minnesota	82.7	88.2	80.9	99.9	109.4	95.6	112.5	99.7	100.8	.....	.....	.....	.....
Nebraska	96.8	102.0	102.8	117.9	122.1	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey	95.8	110.9	113.7	118.9	147.6	131.0	132.2	128.3	112.5	.....	.....	.....	.....
New York [1]	136.1	139.3	136.6	148.4	194.2	175.4	170.0	150.4	.....	172.7	153.0	184.0	207.3
Pennsylvania	97.6	115.4	119.8	129.1	153.4	135.5	131.4	122.4	.....	.....	.....	.....	.....
Rhode Island	.....	.....	.....	.....	182.5	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota	77.8	88.6	82.9	130.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	105.9	104.7	117.2	103.6	106.4	.....	.....	.....	.....
Virginia	.....	.....	106.8	119.8	155.9	142.8	123.9	125.7	108.4	.....	.....	.....	.....

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
CEREBRAL HEMORRHAGE, APOPLEXY (74)													
Alabama (total)	56.4	55.1	58.8	65.6	50.9	55.1	53.9	63.7	68.4	62.9	43.8	58.7	55.8
White	42.7	39.2	51.4	65.9	45.6	52.8	57.5	54.3	58.9	56.1	43.0	46.6	------
Colored	80.4	83.1	72.2	63.3	68.6	65.7	55.4	79.0	84.4	75.2	47.4	80.2	------
California	88.9	94.1	112.2	128.7	113.5	105.6	97.7	100.9	------	94.5	------	------	------
Hawaii	13.9	84.3	76.7	67.5	60.7	71.0	40.5	48.8	------	83.7	------	------	------
Indiana	97.3	96.4	109.6	140.1	138.7	126.0	120.1	104.2	107.1	107.5	93.8	103.6	114.1
Iowa	97.2	92.6	95.7	106.2	102.8	125.6	92.6	108.7	98.4	105.7	------	------	------
Kansas	96.8	106.5	131.3	165.5	------	------	------	------	------	------	------	------	------
Kentucky	64.3	53.5	66.7	60.9	70.1	66.9	58.1	------	------	------	------	------	------
Louisiana	61.8	53.1	73.6	84.5	------	------	------	------	------	------	------	------	------
Michigan	87.5	92.3	87.5	115.2	122.1	99.1	112.1	100.2	102.3	------	------	------	------
Minnesota	59.0	67.5	63.0	74.4	81.3	69.6	84.4	71.5	77.9	------	------	------	------
Mississippi	67.9	61.8	66.6	73.0	80.9	78.6	69.7	64.5	------	------	------	------	------
Nebraska	76.9	81.1	71.7	86.1	101.2	------	------	------	------	------	------	------	------
New Jersey	72.0	80.7	86.0	90.3	107.5	98.9	97.4	90.1	85.1	------	------	------	------
New York [1]	104.2	104.4	107.2	113.2	158.2	138.5	126.8	115.6	------	135.3	115.3	138.0	154.0
Pennsylvania	68.4	80.7	92.0	94.9	112.6	98.1	92.7	88.4	------	98.9	90.0	105.0	------
Rhode Island	------	------	------	------	159.5	------	------	------	------	------	------	------	------
South Dakota	43.2	56.9	51.9	78.6	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	58.4	60.4	59.8	55.9	69.6	------	------	------	------
Virginia	------	------	70.9	82.8	108.8	102.3	90.5	90.3	71.3	------	------	------	------
DISEASES OF THE CIRCULATORY SYSTEM (87-96)													
Alabama (total)	133.8	133.6	150.8	151.5	153.8	142.9	132.7	141.4	149.2	------	------	------	------
White	106.5	113.5	124.6	128.3	136.0	120.3	110.7	119.5	113.5	------	------	------	------
Colored	185.3	171.4	200.3	195.1	187.2	185.4	174.1	182.6	216.2	------	------	------	------
California	267.3	293.8	387.8	496.7	427.7	383.4	372.4	360.2	------	318.6	------	------	------
Iowa	223.5	224.0	234.0	329.8	313.8	287.2	268.2	282.6	271.6	238.1	------	------	------
Kansas	169.7	168.8	193.6	277.2	------	------	------	------	------	------	------	------	------
Kentucky	126.8	155.4	202.5	192.3	232.4	193.5	191.9	------	------	------	------	------	------
Louisiana	184.7	193.8	202.2	274.1	------	------	------	------	------	------	------	------	------
Michigan	222.1	240.3	241.7	345.2	347.3	273.2	276.7	266.3	278.5	------	------	------	------
Minnesota	156.0	172.2	194.4	269.5	253.9	185.6	191.6	178.8	189.5	------	------	------	------
Nebraska	163.3	178.1	188.4	243.3	217.4	------	------	------	------	------	------	------	------
New Jersey	215.9	250.8	254.7	307.2	391.3	344.9	305.4	297.4	258.5	------	------	------	------
New York [1]	311.4	335.4	358.2	384.7	545.9	441.9	382.3	369.9	------	387.7	342.7	408.0	392.3
Pennsylvania	218.6	236.1	243.2	330.3	369.3	299.7	278.4	259.7	------	------	------	------	------
Rhode Island	------	------	------	------	------	347.0	------	------	------	------	------	------	------
South Carolina	283.3	263.4	284.6	384.1	262.1	292.3	291.2	269.6	296.9	341.1	275.7	------	------
South Dakota	129.6	120.4	160.7	224.1	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	162.8	159.4	160.0	136.6	149.2	------	------	------	------
Virginia	------	------	156.4	204.4	242.8	217.7	218.6	164.4	185.2	------	------	------	------
DISEASES OF THE HEART (87-90)													
Alabama (total)	122.8	121.6	138.9	140.9	138.3	125.6	117.9	132.6	140.4	132.1	109.2	107.4	96.9
White	99.2	103.0	115.2	115.6	129.7	108.6	103.0	110.8	105.1	101.6	91.8	82.0	------
Colored	166.2	155.6	182.6	187.2	175.4	175.2	163.5	171.7	205.7	188.6	146.0	152.5	------
California	223.0	245.5	344.5	442.4	372.4	338.2	329.2	317.0	------	276.7	------	------	------
Connecticut	156.0	156.8	198.3	196.3	256.1	219.2	212.4	194.3	------	196.8	180.2	198.2	170.2
Hawaii	115.0	114.7	108.1	108.0	114.7	141.9	138.5	132.5	------	83.7	------	------	------
Indiana	182.3	201.7	204.6	269.5	230.6	198.7	243.2	199.2	228.0	180.2	168.6	163.9	161.7
Iowa	195.4	190.6	209.5	292.9	281.3	254.0	233.7	251.1	239.6	215.8	------	------	------
Kansas	153.2	145.0	171.1	249.0	------	------	------	------	------	------	------	------	------
Kentucky	100.6	144.8	154.4	169.3	194.6	158.3	160.0	------	------	------	------	------	------
Louisiana	179.1	181.7	187.8	260.2	------	------	------	------	------	------	------	------	------
Michigan	187.9	215.4	205.7	299.3	347.3	235.7	240.8	238.5	240.0	------	------	------	------
Minnesota	127.4	144.5	157.8	231.4	208.9	150.5	147.5	100.1	152.7	154.4	------	------	------
Mississippi	99.9	88.7	89.7	99.3	105.9	112.8	99.3	106.7	------	------	------	------	------
Nebraska	140.8	153.9	181.5	223.3	194.8	------	------	------	------	------	------	------	------
New Jersey	193.3	229.0	233.7	278.0	361.5	324.4	277.6	276.1	236.0	------	------	------	------
New York [1]	237.2	291.3	312.0	297.1	483.7	391.7	338.9	322.0	------	342.7	301.3	356.3	338.6
Pennsylvania	196.9	214.0	222.0	301.8	336.9	273.9	248.8	232.3	------	249.0	254.0	254.0	177.0
Rhode Island	------	------	------	------	304.2	------	------	------	------	------	------	------	------
South Dakota	112.3	75.3	138.3	204.0	------	------	------	------	------	------	------	------	------
Tennessee	118.7	126.1	123.5	158.6	149.2	148.0	150.1	125.0	137.9	122.4	------	------	------
Virginia	------	------	143.6	188.4	220.4	193.4	202.6	149.3	171.0	------	------	------	------

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
DISEASES OF THE RESPIRATORY SYSTEM (97-107)													
Alabama (total)	53.0	65.4	111.1	141.4	287.8	123.1	125.4	102.6	84.7				
White	37.7	59.6	91.3	114.2	236.9	100.9	114.9	84.7	63.1				
Colored	81.7	76.5	148.5	192.5	383.7	165.9	145.1	136.2	125.3				
California	68.1	92.0	150.2	216.6	143.4	152.2	167.2	139.1		103.6			
Iowa	41.6	61.6	67.6	159.5	174.1	112.7	91.2	82.2	71.3	91.2			
Kansas	32.5	38.5	61.0	185.4									
Kentucky	62.9	85.8	130.1	152.7	311.8	197.6	134.2						
Louisiana	54.9	74.9	102.9	185.4									
Michigan	49.3	76.2	107.9	219.8	253.9	155.5	147.0	130.1	121.8				
Minnesota	39.8	56.2	78.2	153.1	163.9	74.8	83.1	74.2	71.8				
Nebraska	30.2	53.5	83.0	194.8	138.0								
New Jersey	64.0	78.3	95.8	486.9	357.5	203.0	174.1	116.9	101.4				
New York [1]	65.2	82.5	104.4	145.8	332.7	185.4	152.6	134.2		170.9	149.2	211.5	192.8
Pennsylvania	72.8	88.9	112.7	254.2	316.7	184.2	164.4	117.6					
Rhode Island					353.6								
South Dakota	31.1	68.6	69.1	145.5									
Tennessee					234.4	157.3	156.7	97.7	74.8				
Virginia			77.5	113.9	145.0	132.6	119.8	79.9	71.8				
PNEUMONIA, ALL FORMS (100,101)													
Alabama (total)	44.6	54.1	99.6	131.2	261.9	111.6	110.5	97.9	79.8	119.8	57.6	86.6	94.0
White	29.7	46.3	81.1	104.4	227.1	93.9	107.2	80.4	60.3	84.8	45.9	70.2	
Colored	72.2	68.6	133.5	180.6	366.5	160.6	133.2	129.4	116.0	184.7	81.6	115.7	
California	57.4	78.0	139.9	190.5	123.5	135.6	152.5	119.4		88.9			
Connecticut	46.7	73.7	71.6	118.9	254.7	232.0	142.8	104.5		165.1	125.8	205.2	141.6
Hawaii	118.5	134.9	97.6	141.7	145.1	254.0	158.7	247.5		195.2			
Indiana	44.1	61.5	80.1	233.2	270.3	169.5	137.9	83.5	85.6	120.5	70.6	106.3	67.7
Iowa	30.6	50.4	60.6	145.0	155.2	96.1	77.6	71.7	40.2	80.5			
Kansas	25.9	30.2	50.4	159.1									
Kentucky	52.9	78.4	108.2	132.4	285.9	180.3	116.7						
Louisiana	41.2	60.4	88.6	170.3									
Michigan	37.6	61.3	90.1	190.3	224.7	136.5	125.2	114.2	105.7				
Minnesota	32.6	51.0	70.2	147.5	156.2	71.4	72.2	68.4	65.3	76.1			
Mississippi	29.9	28.9	76.8	142.0	191.4	107.0	110.4	63.2					
Nebraska	23.3	43.5	76.0	179.0	119.6								
New Jersey	54.1	68.4	83.7	160.5	326.9	187.3	153.8	99.4	91.2	86.3	57.2	68.5	76.9
New York [1]	53.4	65.9	89.4	128.5	297.6	165.8	135.6	116.7		132.9	128.0	180.6	167.2
North Carolina	31.5	48.9	78.7	151.9	185.2	177.5	130.2	113.5	81.6	93.4			
Pennsylvania	56.2	72.8	97.1	228.6	285.1	162.0	142.8	97.7		166.0	139.0	222.0	175.0
Rhode Island					317.4								
South Carolina	56.8	58.7	95.9	164.2	140.2	125.2	130.1	90.7	77.1	111.2	116.8		
South Dakota	20.7	45.2	60.5	117.1									
Tennessee	40.4	59.3	91.9	122.4	215.1	146.4	140.7	86.6	66.4	104.5	75.3		
Virginia			64.3	98.3	131.2	120.5	104.7	68.0	60.4				
Wisconsin	38.3	58.2	79.1	164.3	161.9	120.5	88.9	84.5	78.9	116.8			
DISEASES OF THE DIGESTIVE SYSTEM (108-127)													
Alabama (total)	111.6	91.5	67.1	67.7	54.5	51.2	155.6	61.9	106.2				
White	109.4	94.6	72.4	66.6	47.7	46.6	141.6	46.3	101.6				
Colored	115.8	85.7	57.2	69.9	67.2	59.9	182.0	91.3	114.7				
California	96.7	100.8	105.0	103.6	86.3	85.6	91.2	94.5		89.2			
Hawaii	167.3	124.8	122.0	145.1	222.7	186.8	209.2	198.7		129.0			
Iowa	92.7	76.1	64.6	62.6	52.9	58.0	73.7	66.6	62.1	61.1			
Kansas	141.2	95.1	76.9	80.2									
Kentucky	171.6	107.5	89.6	57.2	53.0	52.1	55.3						
Louisiana	114.2	93.6	87.4	80.3									
Michigan	110.5	94.6	84.5	90.8	84.4	92.2	82.8	80.0	90.5				
Minnesota	58.6	64.4	57.7	58.4	56.7	59.3	62.3	63.5	67.9				
Nebraska	86.4	59.4	65.7	60.2	72.8								
New Jersey	90.7	78.6	68.5	74.6	72.7	61.1	86.3	76.1	75.8				
New York [1]	84.6	73.7	72.4	73.0	70.9	71.9	74.2	69.9		72.6	75.1	71.9	96.0
Pennsylvania	118.3	86.4	73.8	72.2	73.3	74.8	73.6	75.0					
Rhode Island					88.8								
South Dakota	79.3	61.9	70.9	87.0									
Tennessee					44.2	60.4	66.8	70.0	71.1				
Virginia			48.7	51.7	35.7	48.1	55.8	52.0	60.4				

[1] Exclusive of New York City.

Monthly State mortality statistics—Continued

	1928				1929					Corresponding month for—			
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	1928	1927	1926	1925
DIARRHEA AND ENTERITIS UNDER 2 YEARS (113)													
Alabama (total)	59.3	30.7	13.7	13.3	3.9	5.8	7.0	12.4	40.8	17.4	50.7	15.1	53.0
White	62.3	37.1	16.7	13.3	2.8	3.9	10.5	5.8	38.5	16.8	54.7	13.3	------
Colored	53.1	18.5	8.2	13.2	6.6	10.2	1.3	24.5	44.8	18.5	46.1	18.4	------
California	19.8	19.6	15.0	18.9	9.6	9.2	8.5	11.2	------	14.7	------	------	------
Connecticut	12.1	8.8	4.5	3.6	5.0	15.9	5.7	5.2	------	6.0	6.1	7.0	9.5
Hawaii	97.6	74.2	59.3	104.6	145.1	104.6	141.7	129.0	------	66.2	------	------	------
Indiana	47.1	28.2	12.6	5.2	8.2	6.6	11.9	5.7	7.4	7.8	6.4	9.4	13.7
Iowa	20.5	12.1	4.5	1.9	5.8	1.1	2.9	4.5	2.9	3.4	------	------	------
Kansas	40.4	20.5	12.6	8.3	------	------	------	------	------	------	------	------	------
Kentucky	99.1	60.0	34.3	12.5	8.3	8.2	8.3	------	------	------	------	------	------
Louisiana	26.8	24.8	23.7	3.0	------	------	------	------	------	------	------	------	------
Michigan	38.7	25.9	15.1	13.3	11.8	19.2	9.0	11.1	12.6	------	------	------	------
Minnesota	6.7	6.1	4.9	3.0	2.6	4.3	4.3	3.6	3.9	------	------	------	------
Mississippi	24.3	22.4	12.2	8.5	2.6	4.4	7.2	12.2	------	------	------	------	------
Nebraska	17.3	10.0	2.6	3.3	5.0	------	------	------	------	------	------	------	------
New Jersey	24.5	16.9	14.0	12.6	11.1	7.2	10.2	10.5	7.7	11.4	15.4	14.1	14.7
New York [1]	20.9	15.2	10.0	7.4	9.9	9.6	9.5	7.9	------	12.4	12.0	14.4	18.8
North Carolina	44.7	30.9	26.1	30.1	10.4	10.2	4.0	11.2	38.5	29.7	------	------	------
Pennsylvania	50.7	30.0	15.8	15.9	15.1	14.0	15.2	12.3	------	16.4	16.2	22.6	19.3
South Dakota	12.1	13.4	12.1	8.4	------	------	------	------	------	------	------	------	------
Tennessee	55.9	35.8	19.9	18.4	3.2	3.6	8.9	6.8	10.4	8.9	25.6	------	------
Virginia	42.1	22.9	9.0	7.3	3.7	5.6	5.5	3.3	12.3	------	------	------	------
Wisconsin	9.5	8.4	4.5	13.6	8.8	15.9	14.4	11.9	14.8	15.6	------	------	------
NEPHRITIS (128, 129)													
Alabama (total)	96.0	85.6	100.2	98.8	85.1	85.6	95.2	91.7	104.3	------	------	------	------
White	73.9	65.2	75.3	91.8	72.2	76.0	78.5	79.7	90.6	------	------	------	------
Colored	137.6	123.9	147.1	112.1	109.4	103.6	126.6	114.4	149.0	------	------	------	------
California	100.1	96.1	130.1	142.7	119.4	128.5	106.5	128.2	------	128.4	------	------	------
Connecticut	63.3	60.5	67.1	61.3	81.1	100.9	67.4	68.2	------	73.1	------	------	------
Hawaii (129)	59.3	40.5	66.2	54.0	87.7	48.6	81.0	73.2	------	83.7	------	------	------
Indiana	84.3	75.6	82.7	96.4	81.6	85.4	100.1	95.0	92.7	83.0	63.5	86.7	------
Iowa	38.1	52.4	46.6	56.3	53.8	56.9	60.1	61.6	56.7	52.4	------	------	------
Kansas	88.2	93.7	108.7	122.0	------	------	------	------	------	------	------	------	------
Kentucky	80.5	96.4	84.5	86.7	104.2	84.8	68.7	------	------	------	------	------	------
Louisiana	93.6	117.1	124.2	138.9	------	------	------	------	------	------	------	------	------
Michigan	62.5	68.2	74.7	82.3	82.1	75.4	74.9	73.4	67.4	------	------	------	------
Minnesota	50.5	52.8	39.3	71.4	71.8	56.2	56.7	54.1	49.7	54.9	------	------	------
Mississippi	81.5	112.4	95.1	117.7	102.6	115.0	107.8	112.1	------	------	------	------	------
Nebraska	31.1	46.8	53.6	57.7	60.2	------	------	------	------	------	------	------	------
New Jersey	90.4	91.5	101.3	118.9	137.7	125.5	110.6	104.4	102.6	114.6	104.6	100.8	87.3
New York [1]	92.6	100.6	99.6	116.6	137.5	129.1	122.2	124.1	------	127.0	124.2	151.1	123.0
Pennsylvania	50.7	99.9	109.3	125.6	143.3	112.5	109.8	102.3	------	122.0	114.0	123.0	112.0
Rhode Island	------	------	------	------	141.4	------	------	------	------	------	------	------	------
South Dakota	41.3	25.1	25.9	63.6	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	77.2	65.1	78.6	77.3	69.2	------	------	------	------
Virginia	------	------	94.5	112.0	104.7	107.8	109.3	89.8	74.1	------	------	------	------
PUERPERAL STATE (143-150)													
Alabama (total)	18.0	21.1	14.7	16.5	15.6	17.4	13.9	23.8	23.9	21.0	15.2	18.9	25.3
White	14.5	19.6	13.0	14.0	14.7	14.0	13.3	17.4	19.6	14.7	8.0	14.8	------
Colored	24.5	23.7	17.7	21.1	19.8	26.3	17.1	35.4	31.6	33.0	28.9	26.3	------
California	10.4	8.0	7.7	14.2	10.1	6.0	9.3	12.8	------	11.8	------	------	------
Connecticut (143-149)	5.3	9.5	6.0	8.8	6.5	16.7	10.0	4.4	------	21.1	13.0	8.6	8.7
Hawaii (146)	17.4	------	7.0	6.7	6.7	7.5	------	------	------	3.5	------	------	------
Indiana	15.3	9.3	10.3	8.9	16.7	9.9	15.9	10.7	12.2	13.3	9.0	15.1	10.3
Iowa	8.0	12.1	3.5	9.7	14.1	9.7	13.1	10.5	8.2	10.7	------	------	------
Kansas	9.9	9.6	12.6	13.5	------	------	------	------	------	------	------	------	------
Kentucky	10.5	11.5	8.6	11.1	15.2	11.7	12.9	------	------	------	------	------	------
Louisiana	19.3	30.8	20.0	24.2	------	------	------	------	------	------	------	------	------
Michigan	7.7	9.7	10.0	12.3	11.8	14.2	17.2	17.2	11.0	------	------	------	------
Minnesota	4.0	5.6	4.0	8.7	9.1	8.7	9.1	8.5	5.2	12.1	------	------	------
Mississippi	14.3	18.4	16.3	22.4	13.2	16.0	25.6	22.4	------	------	------	------	------
Nebraska	6.9	10.9	7.8	9.2	15.9	------	------	------	------	------	------	------	------
New Jersey	10.2	12.6	14.5	8.0	10.2	8.9	10.2	10.5	10.2	------	------	------	------
New York [1]	8.9	7.6	8.7	10.1	11.0	11.4	12.4	4.1	------	15.2	13.1	14.0	14.3
Rhode Island	------	------	------	------	4.9	------	------	------	------	------	------	------	------
South Dakota	12.1	1.7	12.0	10.0	------	------	------	------	------	------	------	------	------
Tennessee	------	------	------	------	18.4	12.5	17.4	20.9	16.0	------	------	------	------
Virginia	------	------	14.2	18.3	15.1	16.2	13.3	15.1	17.8	------	------	------	------

[1] Exclusive of New York City.

COURT DECISION RELATING TO PUBLIC HEALTH

Refusal of license to sell milk sustained.—(Connecticut Supreme Court of Errors; State ex rel. Shelton *v.* Edwards et al., 146 A. 382; decided May 21, 1929.) A 1923 ordinance of the city of Shelton provided for the issuance of licenses to sell milk, such licenses expiring on December 31 of each year. The city milk inspector approved applications for such licenses, if the milk, which it was desired to sell, was pure and wholesome, and the city clerk issued the licenses. A 1928 ordinance made it unlawful, *after* January 1, 1929, to sell milk unless the milk was from tuberculin-tested cattle or had been pasteurized. At the close of the year 1928 before the 1928 ordinance became effective, the relator, a retail milk dealer, sought and was refused a license for the year 1929 because of noncompliance with the requirements of the 1928 ordinance. He brought a mandamus proceeding to compel the issuance of a license to him, and this proceeding was heard after the 1928 ordinance had become effective. The judgment of the trial court, which was upheld by the supreme court of errors, was adverse to the relator. The appellate court, in its opinion, stated the relator's contention as follows:

* * * His claim then comes down to this, that since, if a license had been issued to him, he could legally have operated under it on the 1st day of January, 1929, the city officials were bound to give him a license for the entire year.

The court then proceeded to say:

* * * The writ of mandamus is a prerogative writ. It is not demandable as a matter of strict right and is subject to the exercise of a sound legal discretion, though it will not be refused when the applicant has a clear legal right and a substantial matter is involved. [Cases cited.] The most that the relator was entitled to, as a matter of strict right, was a license to sell milk on the 1st day of January, 1929, which was the only day upon which he could legally sell it. This was not what he asked for and doubtless not what he wanted. The writ will not issue to compel a technical compliance with the letter of the law. If the right sought to be enforced is or has become a mere abstract right, the enforcement of which will be of no substantial or practical benefit to the petitioner, the writ will not issue though otherwise the applicant would be entitled to it. 38 Corpus Juris, 586, 587. The license, if one had been issued to the relator upon his application, would have been a useless thing after the 1st day of January, 1929, since it is not to be presumed that he would violate the law by continuing to sell his unpasteurized milk after that date, and if he did his license was subject to immediate revocation. He was not entitled to a license to sell milk during the year 1929, which was the license he applied for, and the city officials were justified in refusing to issue such a license.

Though he had a legal right upon this application to have a license issued to him on December 31, 1928, under which he could sell milk on January 1, 1929, had he asked for it, the court would not have been justified in issuing a peremptory writ when the motion to quash was heard, which was on January 11, 1929. Such action would have been in effect an order to the officials of the city to violate an ordinance then in full force and effect. Needless to say the court will not by mandamus compel public officials to perform an act which would result in a violation of law. * * *

DEATHS DURING WEEK ENDED JULY 27, 1929

Summary of information received by telegraph from industrial insurance companies for the week ended July 27, 1929, and corresponding week of 1928. (From the Weekly Health Index, July 31, 1929, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 27, 1929	Corresponding week, 1928
Policies in force	74, 539, 596	71, 562, 043
Number of death claims	12, 239	12, 382
Death claims per 1,000 policies in force, annual rate	8. 6	9. 0

Deaths from all causes in certain large cities of the United States during the week ended July 27, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index July 31, 1929, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 27, 1929		Annual death rate per 1,000, corresponding week, 1928	Death under 1 year		Infant mortality rate, week ended July 27, 1929 [2]
	Total deaths	Death rate [1]		Week ended July 27, 1929	Corresponding week, 1928	
Total (64 cities)	6, 107	10. 8	10. 7	580	642	[3] 50
Akron	49			13	4	134
Albany [4]	32	13. 9	10. 0	5	3	99
Atlanta	91	18. 7	13. 9	10	10	104
White	43			5	3	
Colored	48	[5]	[5]	5	7	
Baltimore [4]	189	11. 9	11. 6	15	24	48
White	134			9	15	36
Colored	55	[5]	[5]	6	9	95
Birmingham	59	13. 9	16. 5	2	13	18
White	28			2	6	30
Colored	31	[5]	[5]	0	7	0
Boston	171	11. 2	11. 0	10	35	28
Bridgeport	29			2	3	35
Buffalo	98	9. 2	8. 8	7	8	30
Cambridge	26	10. 8	5. 8	2	0	36
Camden	35	13. 5	15. 1	3	7	52
Canton	14	6. 3	9. 0	1	4	24
Chicago [4]	626	10. 4	10. 2	51	51	45
Cincinnati	135			10	11	58
Cleveland	173	9. 0	8. 3	16	17	47
Columbus	60	10. 5	11. 0	7	4	66
Dallas	53	12. 7	7. 7	7	4	
White	37			6	1	
Colored	16	[5]	[5]	1	3	
Dayton	38	10. 8	9. 6	2	9	32
Denver	66	11. 7	8. 2	8	3	77
Des Moines	28	9. 6	10. 0	3	1	54
Detroit	237	9. 0	8. 0	32	33	51
Duluth	21	9. 4	6. 3	0	1	0
El Paso	26	11. 5	13. 3	6	8	
Erie	27			1	2	20
Fall River [4]	23	9. 0	6. 6	3	3	56
Flint	25	8. 8	6. 0	3	2	36
Forth Worth	35	10. 7	10. 1	6	4	
White	29			5	3	
Colored	6	[5]	[5]	1	1	
Houston	75			5	11	
White	50			5	8	
Colored	25	[5]	[5]	0	3	
Indianapolis	88	12. 0	12. 3	7	10	56
White	75			6	10	56
Colored	13	[5]	[5]	1	0	60
Jersey City	71	11. 4	10. 9	8	14	62
Kansas City, Kans	40	17. 7	10. 6	3	2	66
White	37			3	2	76
Colored	3	[6]	[6]	0	0	0
Kansas City, Mo	89	11. 9	13. 2	6	11	51
Knoxville	20	9. 9	16. 9	3	1	66
White	19			3	0	73
Colored	1	[5]	[6]	0	1	0

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended July 27, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index July 31, 1929, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended July 27, 1929		Annual death rate per 1,000, corresponding week, 1928	Death under 1 year		Infant mortality rate, week ended July 27, 1929
	Total deaths	Death rate		Week ended July 27, 1929	Corresponding week, 1928	
Los Angeles	229			13	26	38
Louisville	80	12.7	22.1	10	11	81
White	64			10	9	93
Colored	16	(5)	(5)	0	2	0
Lowell	26			4	2	91
Lynn	12	5.9	10.9	1	4	27
Memphis	64	17.6	20.3	9	9	106
White	31			6	5	114
Colored	33	(5)	(5)	3	4	94
Milwaukee	93	8.9	9.2	9	22	40
Minneapolis	94	10.8	7.7	3	4	19
Nashville	44	16.5	18.7	6	8	97
White	31			5	5	109
Colored	13	(5)	(5)	1	3	63
New Bedford	16			1	1	21
New Haven	36	10.0	8.1	0	1	0
New Orleans	138	16.8	14.9	17	10	84
White	74			8	6	156
Colored	64	(5)	(5)	9	4	151
New York	1,167	10.1	9.9	119	113	49
Bronx Borough	155	8.5	8.1	12	10	35
Brooklyn Borough	356	8.1	9.4	32	49	32
Manhattan Borough	491	14.7	12.6	60	43	73
Queens Borough	129	7.9	6.7	13	7	53
Richmond Borough	36	12.5	16.3	2	4	36
Newark, N. J	85	9.4	9.9	12	11	63
Oakland	54	10.3	10.7	3	2	33
Oklahoma City	38			3	9	60
Omaha	59	13.8	9.6	7	2	82
Paterson	22	7.9	8.3	1	1	18
Philadelphia	372	9.4	11.7	29	46	41
Pittsburgh	162	12.6	10.0	20	10	69
Portland, Oreg	59			0	2	0
Providence	51	9.3	11.1	9	5	79
Richmond	61	16.4	14.8	7	8	98
White	42			4	3	85
Colored	19	(5)	(5)	3	5	123
Rochester	63	10.0	9.7	9	5	76
St. Louis	205	12.6	14.3	16	25	54
St. Paul	53			1	2	10
Salt Lake City [4]	34	12.9	12.1	2	1	31
San Antonio	52	12.5	14.6	9	12	
San Diego	31			4	3	77
San Francisco	199	17.8	12.7	9	7	57
Schenectady	23	12.9	10.1	2	2	64
Seattle	59	8.1	11.1	5	4	53
Somerville	12	6.1	7.1	1	2	36
Spokane	15	7.2	15.3	0	0	0
Springfield, Mass	21	7.3	6.3	1	1	17
Syracuse	36	9.4	10.0	3	8	36
Tacoma	19	9.0	14.7	2	1	51
Toledo	74	12.4	10.4	8	4	75
Trenton	40	15.0	9.8	4	2	72
Utica	24	12.0	11.5	3	0	76
Washington, D. C	115	10.9	10.9	14	11	82
White	69			7	4	59
Colored	46	(5)	(5)	7	7	133
Waterbury	16			2	3	51
Wilmington, Del	20	8.1	10.2	0	2	0
Worcester	32	8.5	9.8	1	2	13
Yonkers	17	7.3	7.3	0	1	0
Youngstown	19	5.7	8.7	3	3	43

[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] Date for 72 cities.
[4] Deaths for week ended Friday.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17 Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended July 27, 1929, and July 28, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 27, 1929, and July 28, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928
New England States:								
Maine	2	1	1	3	19	77	0	1
New Hampshire		4			16	10	0	0
Vermont	1	1			3	18	0	0
Massachusetts	46	26	4	52	149	218	4	2
Rhode Island	2	5			9	199	0	0
Connecticut	13	9	4	3	18	109	2	1
Middle Atlantic States:								
New York	124	162	[1] 4	[1] 4	200	410	18	24
New Jersey	48	58		3	28	193	4	2
Pennsylvania	84	69			323	476	8	3
East North Central States:								
Ohio	50	50	9	6	195	321	3	8
Indiana	12	9			21	22	1	2
Illinois	129	73	25	52	244	47	9	7
Michigan	62	43		1	116	191	12	3
Wisconsin	20	18	11	17	275	18	2	2
West North Central States:								
Minnesota	10	20		2	38	3	2	0
Iowa	7	3			9	5	1	1
Missouri [2]	7	18		1	9	14	2	1
North Dakota	1				19	10	2	3
South Dakota					1	3	0	1
Nebraska	2				24	1	0	0
Kansas	2	7		3	51	5	0	0
South Atlantic States:								
Delaware					2		0	0
Maryland [3]	7	14	3	1	7	21	1	2
District of Columbia	6	19				17	0	0
Virginia								1
West Virginia	10	4		8	27	10	0	0
North Carolina	26	25				18	0	1
South Carolina	20	7	33	214		6	0	0
Georgia	9	2	8	25	1	4	0	0
Florida	2	14	2	28	9	4	0	0

[1] New York City only. [2] Figures for 1929 are exclusive of Kansas City. [3] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 27, 1929, and July 28, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928
East South Central States:								
Kentucky		7				20	0	0
Tennessee	1	7	6	33	10	15	0	1
Alabama	12	13	3	29	12	66	0	3
Mississippi	10	6						
West South Central States:								
Arkansas	2	2	7	2	18	17	0	0
Louisiana	19	9	10	5	2	6	2	0
Oklahoma [5]	3	9	24	29	3	5	3	1
Texas	22	9	3	10	4		0	0
Mountain States:								
Montana	6	1			14	2	1	1
Idaho	2				18	1	0	2
Wyoming					9	1	1	1
Colorado	3	10			7	16	0	1
New Mexico	3	2			5	2	2	0
Arizona	2	1				5	0	0
Utah [3]		1	4	2	1	1	1	0
Pacific States:								
Washington	9	7			24	9	1	0
Oregon	9	9		5	23	12	0	2
California	29	50	7	12	43	19	17	7

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928
New England States:								
Maine	0	4	8	9	0	0	8	6
New Hampshire	0	0	3	2	0	0	0	0
Vermont	4	1	2	1	0	0	0	1
Massachusetts	1	8	47	46	0	0	13	6
Rhode Island	0	0	4	5	0	0	3	0
Connecticut	2	1	11	5	0	0	1	1
Middle Atlantic States:								
New York	10	21	61	59	0	0	20	31
New Jersey	1	1	28	22	0	0	5	10
Pennsylvania	1	1	105	71	0	36	45	27
East North Central States:								
Ohio	3	13	98	43	58	5	28	30
Indiana	0	0	42	23	26	16	7	5
Illinois	1	3	134	59	34	20	19	25
Michigan	1	0	82	65	61	15	11	6
Wisconsin	1	1	44	45	11	11	2	2
West North Central States:								
Minnesota	2	1	33	28	3	0	4	0
Iowa	0	0	13	14	37	8	3	1
Missouri [2]	0	0	10	17	2	2	11	16
North Dakota	0	1	6	15	3	0	1	4
South Dakota	0	0	1	1	10	0	0	1
Nebraska	0	0	12	7	8	4	1	3
Kansas	2	0	30	17	20	20	13	14
South Atlantic States:								
Delaware	1	0	1	0	0	0	0	0
Maryland [3]	0	6	28	7	0	0	17	18
District of Columbia	0	0	3	6	0	0	2	1
Virginia	[4] 34							
West Virginia	1	4	12	19	4	3	24	13
North Carolina	11	4	19	17	7	20	53	72
South Carolina	1	1	6	3	2	3	50	128
Georgia	0	1	5	4	0	0	47	78
Florida	0	0	5	1	0	0	9	11

[2] Figures for 1929 are exclusive of Kansas City.
[3] Week ended Friday.
[4] Includes 33 cases reported from Roanoke City from July 5 to July 29.
[5] Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa only.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 27, 1929, and July 28, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928	Week ended July 27, 1929	Week ended July 28, 1928
East South Central States:								
Kentucky	1	4	22	7	0	0	28	28
Tennessee	3	2	4	3	6	4	80	56
Alabama	0	2	15	5	0	4	39	74
Mississippi	0	0	6	6	0	0	47	48
West South Central States:								
Arkansas	0	0	9	2	0	3	32	39
Louisiana	0	0	14	3	0	1	32	48
Oklahoma [5]	0	1	5	4	8	32	53	53
Texas	0	1	17	3	5	16	28	15
Mountain States:								
Montana	0	0	5	4	3	15	0	1
Idaho	0	0	----	0	0	3	1	0
Wyoming	0	0	1	0	8	2	2	0
Colorado	0	0	5	10	19	0	7	2
New Mexico	1	1	2	8	2	0	6	8
Arizona	0	0	----	1	5	1	0	1
Utah [3]	0	0	3	3	0	1	1	0
Pacific States:								
Washington	0	7	4	7	41	20	1	1
Oregon	1	1	4	7	13	30	3	3
California	4	7	107	57	20	15	20	10

[3] Week ended Friday.
[5] Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa only.

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	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1929										
Idaho	3	1	7	----	167	----	0	20	69	3
Kansas	14	31	4	3	1,752	1	2	178	206	24
Missouri	61	211	9	35	492	----	3	215	154	61
Montana	11	8	4	----	140	----	1	41	28	12
North Carolina	7	68	----	----	42	38	11	59	24	93
Oklahoma [1]	7	40	70	367	121	114	0	69	223	68
Oregon	2	34	37	----	604	----	1	48	94	10
Pennsylvania	32	526	----	----	3,983	1	3	952	0	79
South Dakota	1	6	4	----	117	----	0	32	0	1
Virginia	6	36	279	82	587	49	3	75	22	65
Washington	14	44	44	----	460	----	1	58	115	14
Wisconsin	21	72	31	----	4,138	----	3	383	58	15

[1] Exclusive of Oklahoma City and Tulsa.

June, 1929

Chicken pox:	Cases
Idaho	7
Kansas	152
Missouri	183
Montana	30
North Carolina	202
Oklahoma [1]	52
Oregon	125
Pennsylvania	1,630
South Dakota	14
Virginia	361
Washington	272
Wisconsin	1,106
Dysentery:	
Kansas	1
Oklahoma [1]	29
Washington	1
Dysentery and diarrhea:	
Virginia	1,116
German measles:	
Kansas	43
Montana	1

[1] Exclusive of Oklahoma City and Tulsa.

German measles—Continued.	Page
North Carolina	54
Pennsylvania	291
Washington	10
Wisconsin	40
Impetigo contagiosa:	
Kansas	1
Oregon	11
Washington	1
Lethargic encephalitis:	
Montana	1
Oregon	1
Pennsylvania	6
Washington	2
Mumps:	
Idaho	9
Kansas	195
Missouri	78
Montana	29
Oklahoma [1]	80
Oregon	89
Pennsylvania	599
South Dakota	26
Washington	204
Wisconsin	274
Ophthalmia neonatorum:	
Kansas	1
Missouri	5
North Carolina	2
Oklahoma [1]	2
Pennsylvania	13
Paratyphoid fever:	
Kansas	2
Puerperal septicemia:	
Oregon	2
Pennsylvania	9
Washington	8
Rabies in animals:	
Missouri	16
Rabies in man:	
Missouri	1
Rocky Mountain spotted or tick fever:	
Idaho	36
Montana	3
Oregon	18

Septic sore throat:	Page
Idaho	1
Missouri	5
North Carolina	7
Oklahoma [1]	18
Oregon	4
Tetanus:	
Kansas	2
Missouri	2
Oklahoma [1]	4
Pennsylvania	5
Washington	1
Trachoma:	
Missouri	25
Montana	25
Pennsylvania	2
South Dakota	1
Wisconsin	2
Tularaemia:	
Montana	1
Virginia	1
Typhus fever:	
Virginia	4
Undulant fever:	
Kansas	7
Oregon	2
Pennsylvania	1
Wisconsin	1
Vincent's angina:	
Kansas	1
Oklahoma [1]	1
Washington	11
Whooping cough:	
Idaho	34
Kansas	361
Missouri	562
Montana	13
North Carolina	1,557
Oklahoma [1]	131
Oregon	36
Pennsylvania	1,554
South Dakota	69
Virginia	965
Washington	312
Wisconsin	922

[1] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of June, 1929, by departments of health of certain States to other State health departments

Disease	California	Illinois	Kansas	Minnesota	New Jersey	New York	Washington
Actinomycosis				1			
Dysentery (amebic)				5			
Encephalitis				1			
Gonorrhea				3			
Malaria	6						
Measles				1		1	
Meningococcus meningitis				1			
Smallpox		2		1			
Syphilis			16	7			
Trachoma				2			
Tuberculosis				36			
Typhoid fever				6	1		1
Undulant fever				1			
Whooping cough				1			

PATIENTS IN INSTITUTIONS FOR THE CARE OF EPILEPTICS, OCTOBER TO DECEMBER, 1928

Reports for the fourth quarter of the year 1928 have been received by the Public Health Service from nine institutions for the care and treatment of epileptics, located in nine States. The total number of patients in these institutions on December 31, 1928, including those on parole or otherwise absent, but still on the books, was 6,565.

The first admissions were as follows:

	Male	Female	Total
October	49	41	90
November	59	32	91
December	45	22	67
Total	153	95	248

Of the new admissions during the three months, 61.7 per cent were males and 38.3 per cent females, giving a ratio of 161 males per 100 females.

On December 31, 1928, there were 3,485 male patients of the 9 institutions and 3,080 female patients, giving a ratio of 113 males per 100 females.

During the three months, 114 patients were discharged—81 males and 33 females. Fifty-five males and 39 females died. The annual death rates, based on the estimated population of the institutions the middle of November, were: Males, 63.2 per 1,000; females, 50.3 per 1,000; persons, 57.1 per 1,000.

The following table shows, for the nine institutions, the numbers of patients in hospitals and on parole, and the percentage of the total on parole at the end of each month for the fourth quarter of the year.

Epileptics in 9 hospitals and on parole from these hospitals, October to December, 1928

	Oct. 31, 1928	Nov. 30, 1928	Dec. 31, 1928
Patients in hospitals:			
Male	3,220	3,248	3,193
Female	2,939	2,951	2,906
Total	6,159	6,199	6,099
Patients on parole:			
Male	229	232	292
Female	140	140	174
Total	369	372	466
Total patients on books:			
Male	3,449	3,480	3,485
Female	3,079	3,091	3,080
Total	6,528	6,571	6,565
Per cent of total patients on parole:			
Male	6.6	6.7	8.4
Female	4.5	4.5	5.6
Total	5.7	5.7	7.1

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 95 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 30,930,000. The estimated population of the 88 cities reporting deaths is more than 29,360,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics:

Weeks ended July 20, 1929, and July 21, 1928

	1929	1928	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	885	814	----------
95 cities	439	416	530
Measles:			
45 States	3,087	3,575	----------
95 cities	595	978	----------
Meningococcus meningitis:			
45 States	131	79	----------
95 cities	57	51	----------
Poliomyelitis:			
46 States	67	71	----------
Scarlet fever:			
46 States	1,200	966	----------
95 cities	381	315	327
Smallpox:			
46 States	392	409	----------
95 cities	81	23	34
Typhoid fever:			
46 States	749	732	----------
95 cities	107	103	118
Deaths reported			
Influenza and pneumonia:			
88 cities	339	356	----------
Smallpox:			
88 cities	1	0	----------
Atlanta, Ga	1	0	----------

City reports for week ended July 20, 1929

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid ever 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 weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1920 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation 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, 1928, 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	78,600	1	1	0	-------	0	2	0	0
New Hampshire:									
Concord	(1)	0	0	0	-------	0	1	0	0
Vermont:									
Barre	(1)	-------	0	-------	-------	-------	-------	-------	-------
Massachusetts:									
Boston	799,200	42	28	24	1	0	23	21	14
Fall River	134,300	0	2	1	-------	0	0	0	0
Springfield	149,800	0	1	1	-------	0	3	1	0
Worcester	197,600	6	1	2	-------	0	13	1	1
Rhode Island:									
Pawtucket	73,100	0	1	4	-------	0	1	0	0
Providence	286,300	0	3	2	-------	0	13	0	6
Connecticut:									
Bridgeport	(1)	1	3	1	-------	0	4	0	2
Hartford	172,300	1	2	0	-------	0	4	0	8
New Haven	187,900	4	1	1	-------	0	1	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	555,800	4	7	10	-------	0	14	1	10
New York	6,017,500	60	140	89	7	2	37	98	83
Rochester	328,200	1	5	2	-------	0	8	5	4
Syracuse	199,300	9	29	0	-------	0	1	12	1
New Jersey:									
Camden	135,400	0	3	4	-------	0	0	0	1
Newark	473,600	14	8	31	3	0	9	12	5
Trenton	139,000	0	1	0	-------	0	3	0	2
Pennsylvania:									
Philadelphia	2,064,200	23	36	12	-------	1	7	7	14
Pittsburgh	673,800	11	13	8	-------	2	17	3	11
Reading	115,400	4	1	1	-------	0	1	0	4
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	413,700	2	4	2	-------	1	2	0	3
Cleveland	1,010,300	35	17	10	5	0	38	0	7
Columbus	299,000	5	2	1	-------	0	13	1	2
Toledo	313,200	12	3	3	1	1	39	10	2
Indiana:									
Fort Wayne	105,300	1	1	4	-------	0	3	0	2
Indianapolis	382,100	3	2	0	-------	0	19	0	5
South Bend	86,100	1	0	1	-------	0	0	0	1
Terre Haute	73,500	1	0	0	-------	0	0	0	0
Illinois:									
Chicago	3,157,400	47	49	104	1	1	148	4	20
Springfield	67,200	2	0	0	-------	0	4	0	0
Michigan:									
Detroit	1,378,900	0	28	34	-------	1	40	11	13
Flint	148,800	9	2	1	-------	0	5	1	1
Grand Rapids	164,200	1	2	0	-------	2	5	0	0

[1] No estimate of population made.

City reports for week ended July 20, 1929—Continued

Division, State, and city	Population July 1, 1928, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	56,500	8	1	0		0	7	1	0
Milwaukee	544,200	22	9	7		0	41	2	8
Racine	74,400	9	1	0		0	1	0	0
Superior	(1)	0	0	1		0	3	1	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	116,800	3	0	0		0	1	4	1
Minneapolis	455,900	8	9	4		0	5	0	1
St. Paul	(1)	1	6	0		0	1	1	3
Iowa:									
Davenport	(1)	0	0	5			4	0	
Des Moines	151,900	0	1	0			0	0	
Sioux City	80,000	3	0	0			0	0	
Waterloo	37,100	9	0	0			0	2	
Missouri:									
Kansas City	391,000		2						
St. Joseph	78,500	0	0	0		0	2	0	2
St. Louis	848,100	3	16	20			5	6	
North Dakota:									
Fargo	(1)	9	0	0		0	0	0	0
Grand Forks	(1)	3	0	0			3	0	
South Dakota:									
Aberdeen	(1)	0	0	0			2	2	
Sioux Falls	(1)	0	0	0			0	0	
Nebraska:									
Omaha	222,800	1	2	0		0	4	0	2
Kansas:									
Topeka	62,800	0	0	2	1	0	7	8	0
Wichita	99,300	0	0	0		0	2	1	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	128,500	0	1	4		0	0	0	3
Maryland:									
Baltimore	830,400	8	10	6		1	2	21	10
Cumberland	(1)	0	0	0		0	0	0	0
Frederick	(1)	0	0	0		0	0	0	0
District of Columbia:									
Washington	552,000	1	4	2		0	5	0	2
Virginia:									
Lynchburg	38,600	0	0	0		0	0	30	0
Norfolk	184,200	0	0	0		0	0	0	3
Richmond	194,400	2	2	1		0	5	0	2
Roanoke	64,600	0	0	0		0	0	0	0
West Virginia:									
Charleston	55,200	0	0	0		0	3	0	1
Wheeling	(1)	4	0	0		0	1	0	2
North Carolina:									
Raleigh	(1)	1	0	0		1	0	0	2
Wilmington	39,100	0	0	0		0	0	0	1
Winston-Salem	80,000	1	0	1		0	1	0	0
South Carolina:									
Charleston	75,900	0	0	0	2	0	0	0	4
Columbia	50,600	1	0	0		0	0	1	0
Georgia:									
Atlanta	255,100	0	2	1	6	1	4	0	1
Brunswick	(1)	0	0	0		0	0	0	0
Savannah	99,900	0	1	0		0	0	0	0
Florida:									
Miami	156,700	0	1	2		0	0	1	0
St. Petersburg	53,300		0						
Tampa	113,400	0	0	1		0	2	0	1

[1] No estimate of population made.

City reports for week ended July 20, 1929—Continued

Division, State, and city	Population July 1, 1928, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	59,000	0	1	0	----	0	0	0	2
Tennessee:									
Memphis	190,200	0	1	0	----	0	0	0	1
Nashville	139,600	0	1	0	----	0	1	0	1
Alabama:									
Birmingham	222,400	0	1	1	1	0	0	0	1
Mobile	69,600	0	0	2	----	0	0	0	2
Montgomery	63,100	0	0	1	----	----	0	0	----
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	(1)	0	0	0	----	----	0	0	----
Little Rock	79,200	0	0	2	----	0	0	1	1
Louisiana:									
New Orleans	429,400	0	4	4	4	4	0	0	8
Shreveport	81,300	0	0	0	----	0	0	0	2
Oklahoma:									
Tulsa	170,500	0	1	0	----	----	8	0	----
Texas:									
Dallas	217,800	1	2	6	----	0	1	0	2
Fort Worth	170,600	0	1	5	----	0	0	0	2
Galveston	50,600	0	0	0	----	0	0	0	0
Houston	(1)	0	2	4	----	0	0	0	2
San Antonio	218,100	----	1	----	----	----	----	----	----
MOUNTAIN									
Montana:									
Billings	(1)	0	0	0	----	0	1	0	0
Great Falls	(1)	2	1	0	----	0	1	9	1
Helena	(1)	0	0	0	----	0	0	0	0
Missoula	(1)	0	0	0	----	0	0	0	0
Idaho:									
Boise	(1)	0	0	0	----	0	1	0	0
Colorado:									
Denver	294,200	13	9	2	----	0	1	13	6
Pueblo	44,200	1	0	0	----	0	2	0	1
New Mexico:									
Albuquerque	(1)	0	1	0	----	0	0	1	1
Utah:									
Salt Lake City	138,000	11	2	0	----	0	1	30	2
Nevada:									
Reno	(1)	0	0	0	----	0	0	0	1
PACIFIC									
Washington:									
Seattle	383,200	6	3	1	----	----	22	17	----
Spokane	109,100	2	1	1	----	----	11	0	----
Tacoma	110,500	3	2	1	----	0	1	1	0
Oregon:									
Portland	(1)	1	4	2	----	0	8	2	4
Salem	(1)	1	1	0	----	0	----	0	0
California:									
Los Angeles	(1)	15	32	12	2	1	10	14	16
Sacramento	75,700	0	2	0	----	0	----	0	2
San Francisco	585,300	3	9	2	----	0	1	8	2

[1] No estimate of population made.

City reports for week ended July 20, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	0	4	0	0	0	0	0	0	0	0	19
New Hampshire:											
Concord	0	0	0	0	0	2	0	0	0	0	5
Vermont:											
Barre	0	----	0	----	----	----	0	----	----	----	----
Massachusetts:											
Boston	21	12	0	0	0	8	2	3	0	40	183
Fall River	1	0	0	0	0	1	0	0	0	9	17
Springfield	2	1	0	0	0	2	0	0	0	2	25
Worcester	3	2	0	0	0	2	1	1	0	25	44
Rhode Island:											
Pawtucket	1	0	0	0	0	0	0	0	0	0	19
Providence	3	2	0	0	0	1	0	0	0	6	58
Connecticut:											
Bridgeport	2	0	0	0	0	1	0	0	0	1	28
Hartford	2	1	0	0	0	2	0	0	0	5	30
New Haven	1	3	0	0	0	1	0	0	0	1	27
MIDDLE ATLANTIC											
New York:											
Buffalo	7	6	0	0	0	4	0	0	1	0	136
New York	45	27	0	0	0	101	21	13	0	87	1,139
Rochester	3	2	0	0	0	2	0	0	0	9	56
Syracuse	2	3	0	0	0	1	0	0	0	40	29
New Jersey:											
Camden	1	0	0	0	0	0	0	0	0	3	23
Newark	6	9	0	0	0	13	1	0	0	74	96
Trenton	0	1	1	0	0	4	1	0	0	2	38
Pennsylvania:											
Philadelphia	25	16	0	0	0	35	6	4	0	80	386
Pittsburgh	11	8	0	0	0	10	3	3	0	27	150
Reading	0	0	0	0	0	1	0	0	0	2	21
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	8	1	1	0	11	1	1	0	18	120
Cleveland	12	17	1	1	0	16	2	2	0	72	160
Columbus	2	2	0	9	0	2	1	1	1	38	76
Toledo	3	3	0	0	0	5	1	1	0	48	62
Indiana:											
Fort Wayne	1	1	0	6	0	0	1	1	0	1	16
Indianapolis	2	12	2	1	0	4	0	0	0	15	65
South Bend	0	0	0	0	0	0	0	0	0	0	8
Terre Haute	1	1	0	0	0	2	0	0	0	0	15
Illinois:											
Chicago	37	67	1	1	0	42	4	4	0	101	605
Springfield	0	4	0	4	0	0	0	0	0	5	28
Michigan:											
Detroit	29	35	2	0	0	22	4	1	0	123	268
Flint	4	5	0	27	0	0	0	0	0	18	19
Grand Rapids	3	5	0	0	0	1	0	0	0	17	28
Wisconsin:											
Kenosha	1	0	1	0	0	0	0	0	0	12	5
Milwaukee	8	4	0	0	0	1	0	1	0	91	95
Racine	2	0	0	0	0	0	0	0	0	4	12
Superior	1	0	1	0	0	0	0	1	0	0	13
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	2	0	0	0	1	1	0	0	5	27
Minneapolis	11	11	1	0	0	3	0	2	0	7	72
St. Paul	6	2	1	0	0	5	1	2	0	33	48
Iowa:											
Davenport	0	0	0	2	----	----	0	0	----	1	----
Des Moines	1	6	1	0	----	----	0	0	----	0	----
Sioux City	0	1	0	1	----	----	0	0	----	4	----
Waterloo	1	0	0	7	----	----	0	0	----	4	----

City reports for week ended July 20, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—con.											
Missouri:											
Kansas City	2	-------	0	-------	-------	-------	1	-------	-------	-------	-------
St. Joseph	0	0	0	0	0	0	0	0	0	0	33
St. Louis	7	6	1	0	0	5	4	6	0	57	187
North Dakota:											
Fargo	0	0	0	0	0	0	0	0	0	0	4
Grand Forks	1	0	0	0	-------	-------	0	0	-------	0	-------
South Dakota:											
Aberdeen	0	0	0	1	-------	-------	0	0	-------	2	-------
Sioux Falls	0	0	0	12	-------	-------	0	0	-------	0	-------
Nebraska:											
Omaha	1	1	1	0	0	2	0	0	0	12	-------
Kansas:											
Topeka	1	0	1	1	0	0	0	0	0	20	13
Wichita	1	4	0	1	0	1	1	0	0	2	15
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	0	0	0	0	0	0	2	19
Maryland:											
Baltimore	6	10	0	0	0	11	6	7	1	87	153
Cumberland	0	0	0	0	0	2	1	0	0	2	16
Frederick	0	0	0	0	0	0	0	0	0	0	7
District of Col.:											
Washington	5	17	0	0	0	11	3	3	1	8	99
Virginia:											
Lynchburg	0	0	0	0	0	1	1	1	0	11	5
Norfolk	1	0	0	0	0	0	1	0	0	5	-------
Richmond	1	2	0	0	0	4	2	0	0	8	44
Roanoke	1	1	0	0	0	0	1	0	0	0	15
West Virginia:											
Charleston	0	0	1	0	0	2	1	3	0	12	22
Wheeling	1	0	0	0	0	0	0	1	0	5	14
North Carolina:											
Raleigh	0	0	0	0	0	0	1	0	0	4	14
Wilmington	0	0	0	0	0	0	0	0	0	0	5
Winston-Salem	1	0	1	0	0	0	1	0	0	15	19
South Carolina:											
Charleston	0	0	0	0	0	1	1	0	0	1	21
Columbia	0	2	0	0	0	0	1	1	0	21	16
Georgia:											
Atlanta	1	2	1	1	1	7	2	1	1	46	70
Brunswick	0	0	0	0	0	0	0	0	0	0	2
Savannah	0	0	0	0	0	1	2	0	0	0	20
Florida:											
Miami	0	2	0	0	0	0	1	0	0	2	19
St. Petersburg	0	-------	0	-------	-------	-------	0	-------	-------	-------	-------
Tampa	0	2	0	0	0	3	0	0	0	1	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	1	0	0	0	2	0	1	0	0	21
Tennessee:											
Memphis	0	4	0	1	0	6	8	3	0	23	63
Nashville	0	2	0	0	0	5	5	11	1	2	49
Alabama:											
Birmingham	1	1	0	0	0	8	4	1	1	23	61
Mobile	0	0	0	0	0	1	1	0	0	4	17
Montgomery	1	0	0	0	-------	-------	2	5	-------	0	-------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	-------	-------	0	0	-------	3	-------
Little Rock	0	1	0	0	0	2	1	2	0	6	-------
Louisiana:											
New Orleans	2	10	0	0	0	8	4	8	3	6	145
Shreveport	0	0	0	0	0	3	1	3	1	0	30

City reports for week ended July 20, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—con.											
Oklahoma:											
Tulsa	0	3	0	1			3	2		12	
Texas:											
Dallas	2	4	1	0	0	5	5	2	1	11	58
Fort Worth	1	4	0	2	0	1	3	0	1	0	43
Galveston	0	0	0	0	0	1	0	0	0	0	8
Houston	1	0	0	0	0	7	2	0	1	0	61
San Antonio	0		0				1				
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	0	6
Great Falls	1	1	1	1	0	0	0	1	0	10	15
Helena	0	0	0	0	0	0	0	0	0	0	4
Missoula	0	2	1	1	0	0	0	0	0	0	5
Idaho:											
Boise	0	1	1	0	0	0	0	0	0	0	2
Colorado:											
Denver	4	5	0	0	0	8	1	0	0	13	68
Pueblo	1	0	1	0	0	0	0	3	0	0	8
New Mexico:											
Albuquerque	0	1	0	0	0	4	0	0	0	0	12
Utah:											
Salt Lake City	1	0	1	3	0	0	0	2	0	14	33
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	3	1	1	2			1	0		28	
Spokane	0	0	2	0			0	1		11	
Tacoma	1	1	2	12	0	4	0	0	0	4	20
Oregon:											
Portland	2	0	6	5	0	3	0	0	0	0	48
Salem	0	0	0	1	0	0	0	0	0	0	
California:											
Los Angeles	10	13	4	0	0	25	3	1	0	35	249
Sacramento	1	1	0	0	0	2	1	0	1	0	23
San Francisco	5	11	1	0	0	10	1	0	0	11	159

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	0	1	0	0	0	0	1	0	0
Rhode Island:									
Pawtucket	0	0	0	0	0	0	0	1	0
Providence	0	0	0	0	0	0	1	1	0
Connecticut:									
Bridgeport	0	1	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	1	0	1	0	0	0	0	0
New York[1]	12	9	7	1	0	0	3	7	2
Syracuse	0	0	0	0	0	0	0	1	1

[1] Typhus fever; 1 case at New York City, and 1 case at Tampa, Fla.

City reports for week ended July 20, 1929—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC—continued									
New Jersey:									
Newark	1	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	2	0	0	0	0	1	0	0
Pittsburgh	1	1	0	0	0	0	1	1	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	2	0	0	0	0	0	0	0	0
Cleveland	1	0	0	0	0	0	0	0	0
Toledo	3	0	0	0	0	0	0	0	0
Illinois:									
Chicago	4	4	2	0	1	1	1	1	1
Michigan:									
Detroit [1]	14	9	2	0	0	0	0	3	1
Flint	4	2	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	2	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Missouri:									
St. Louis	1	0	0	0	0	0	0	0	0
North Dakota:									
Fargo	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC [2]									
Maryland:									
Baltimore	0	0	3	3	2	1	1	0	0
Cumberland	0	0	1	1	0	0	0	0	0
District of Columbia:									
Washington	1	0	1	1	0	0	0	0	0
Virginia:									
Roanoke	0	0	0	0	0	0	0	7	1
West Virginia:									
Charleston	0	0	0	0	0	0	0	5	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	1	0	0	0	0
South Carolina:									
Charleston	0	0	0	0	0	1	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Savannah	0	0	0	0	1	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	2	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	1	0	1	1	0
Montgomery	0	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	1	0	0	0	1	1	0	0	0
Texas:									
Dallas	0	0	0	0	2	1	1	0	0
Fort Worth	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
PACIFIC									
California:									
Los Angeles	0	0	1	1	0	0	1	2	0
Sacramento	5	1	0	0	0	0	0	0	0
San Francisco	5	0	1	1	1	0	0	0	0

[1] Rabies (in man): 1 case and 1 death at Detroit, Mich.
[2] Typhus fever: 1 case at New York City, and 1 case at Tampa, Fla.
[3] Nonresidents.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended July 20, 1929, compared with those for a like period ended July 21, 1928. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have estimated aggregate populations of more than 31,000,000. The 91 cities reporting deaths have nearly 30,000,000 estimated population. 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, June 16 to July 20, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 22, 1929	June 23, 1928	June 29, 1929	June 30, 1928	July 6, 1929	July 7, 1928	July 13, 1929	July 14, 1928	July 20, 1929	July 21, 1928
98 cities	112	119	110	115	90	88	[2] 89	85	[3] 74	70
New England	72	78	95	64	70	62	[4] 88	80	[5] 82	46
Middle Atlantic	125	185	144	187	101	148	99	116	76	90
East North Central	164	118	131	116	127	79	[6] 120	82	105	76
West North Central	87	63	85	53	77	29	69	53	[7] 59	53
South Atlantic	64	61	34	40	34	55	43	63	30	50
East South Central	34	14	34	7	27	21	41	7	27	35
West South Central	67	53	71	49	75	16	87	41	[8] 76	57
Mountain	26	35	26	35	26	27	[9] 28	71	17	35
Pacific	60	72	87	74	45	49	42	72	42	54

MEASLES CASE RATES

98 cities	424	663	268	500	196	327	[2] 151	267	[3] 100	165
New England	391	934	213	911	210	722	[4] 194	777	[5] 148	504
Middle Atlantic	123	1,106	99	655	76	456	51	350	47	204
East North Central	1,009	423	619	473	474	266	[6] 354	214	210	145
West North Central	504	342	256	383	113	172	104	117	[7] 61	63
South Atlantic	129	513	137	375	73	256	49	134	43	98
East South Central	41	512	7	175	27	56	14	224	7	77
West South Central	190	45	162	32	71	20	63	24	[8] 5	4
Mountain	218	337	148	399	148	354	[9] 92	239	61	186
Pacific	364	143	214	95	142	28	157	26	112	20

SCARLET FEVER CASE RATES

98 cities	149	144	113	104	88	74	[2] 83	52	[3] 64	56
New England	158	170	120	189	90	122	[4] 78	87	[5] 57	78
Middle Atlantic	100	146	72	100	46	59	41	37	35	33
East North Central	260	181	191	116	173	95	[6] 162	71	163	88
West North Central	77	139	104	113	38	90	79	35	[7] 61	72
South Atlantic	78	98	62	73	60	65	64	34	69	29
East South Central	88	49	34	21	54	35	48	49	54	14
West South Central	91	45	43	41	24	36	43	28	[8] 71	32
Mountain	96	27	70	71	44	27	[9] 9	62	78	44
Pacific	217	161	170	87	140	61	92	74	67	79

[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, 1929 and 1928, respectively.
[2] Hartford, Conn., South Bend, Ind., and Great Falls, Mont., not included.
[3] Barre, Vt., Kansas City, Mo., and San Antonio, Tex., not included.
[4] Hartford, Conn., not included.
[5] Barre, Vt., not included.
[6] South Bend, Ind., not included.
[7] Kansas City, Mo., not included.
[8] San Antonio, Tex., not included.
[9] Great Falls, Mont., not included.

Summary of weekly reports from cities, June 16 to July 20, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928—Continued

SMALLPOX CASE RATES

	Week ended—									
	June 22, 1929	June 23, 1928	June 29, 1929	June 30, 1928	July 6, 1929	July 7, 1928	July 13, 1929	July 14, 1928	July 20, 1929	July 21, 1928
98 cities	9	7	15	10	15	6	[2] 9	7	[3] 14	4
New England	0	0	0	0	0	0	[4] 0	0	[5] 0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	18	8	38	8	41	6	[6] 19	7	32	3
West North Central	6	28	19	31	13	16	15	12	[7] 23	14
South Atlantic	6	4	2	2	2	8	2	0	2	6
East South Central	0	28	7	14	20	7	7	7	7	14
West South Central	4	24	4	8	12	4	16	4	[8] 0	4
Mountain	51	9	113	142	35	44	[9] 37	89	44	18
Pacific	32	15	15	29	26	15	10	31	35	10

TYPHOID FEVER CASE RATES

98 cities	8	7	12	16	10	14	[2] 14	17	[3] 18	18
New England	5	9	9	23	5	9	[4] 5	14	[5] 9	7
Middle Atlantic	2	1	7	8	6	9	7	9	10	12
East North Central	4	2	3	6	4	4	[6] 7	11	8	7
West North Central	19	4	15	12	13	8	10	16	[7] 23	12
South Atlantic	13	13	30	34	32	21	7	38	32	31
East South Central	54	49	34	140	48	91	156	70	143	140
West South Central	36	28	36	41	8	65	87	65	[8] 71	89
Mountain	9	0	52	27	17	9	[9] 9	9	52	0
Pacific	5	15	20	8	7	26	2	22	5	18

INFLUENZA DEATH RATES

91 cities	6	6	5	7	2	9	[2] 3	6	[3] 3	5
New England	2	5	2	5	0	9	[4] 2	5	[5] 0	9
Middle Atlantic	3	9	4	6	3	10	2	3	2	4
East North Central	8	6	4	5	1	3	[6] 3	4	3	5
West North Central	6	0	0	12	0	12	0	6	[7] 0	3
South Atlantic	6	8	4	6	2	6	4	8	6	8
East South Central	15	0	15	54	15	31	7	8	0	0
West South Central	16	4	4	12	4	25	4	25	[8] 20	4
Mountain	0	0	44	18	0	18	[9] 28	18	0	9
Pacific	7	3	3	3	0	0	0	10	3	3

PNEUMONIA DEATH RATES

91 cities	82	87	64	77	63	73	[2] 55	61	[3] 57	58
New England	54	90	59	71	50	51	[4] 32	67	[5] 70	55
Middle Atlantic	89	110	65	89	67	89	62	72	65	60
East North Central	76	59	69	63	56	67	[6] 51	54	40	57
West North Central	48	64	48	70	63	55	51	40	[7] 39	40
South Atlantic	84	94	62	71	69	61	58	52	54	50
East South Central	118	46	74	123	74	69	30	54	52	61
West South Central	85	87	69	71	114	58	85	71	[8] 74	54
Mountain	78	115	104	71	61	53	[9] 46	62	96	80
Pacific	108	84	39	81	33	78	56	54	66	81

[2] Hartford, Conn., South Bend, Ind., and Great Falls, Mont., not included.
[3] Barre, Vt., Kansas City, Mo., and San Antonio, Tex., not included.
[4] Hartford, Conn., not included.
[5] Barre, Vt., not included.
[6] South Bend, Ind., not included.
[7] Kansas City, Mo., not included.
[8] San Antonio, Tex., not included.
[9] Great Falls, Mont., not included.

Number of cities included in summary of weekly reports and aggregate population of cities of each group, approximated as of July 1, 1929 and 1928, 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	
			1929	1928	1929	1928
Total	98	91	31,568,400	31,052,700	29,995,100	29,498,600
New England	12	12	2,305,100	2,273,900	2,305,100	2,273,900
Middle Atlantic	10	10	10,809,700	10,702,200	10,809,700	10,702,200
East North Central	16	16	8,181,900	8,001,300	8,181,900	8,001,300
West North Central	12	9	2,712,100	2,673,300	1,736,900	1,708,100
South Atlantic	19	19	2,783,200	2,732,900	2,783,200	2,732,900
East South Central	6	5	767,900	745,500	704,200	682,400
West South Central	8	7	1,319,100	1,289,900	1,285,000	1,256,400
Mountain	9	9	598,800	590,200	598,800	590,200
Pacific	6	4	2,090,600	2,043,500	1,590,300	1,551,200

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended July 13, 1929.—The Department of Pensions and National Health reports cases of certain communicable diseases from eight Provinces of Canada for the week ended July 13, 1929, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal fever	1			1			1		3
Influenza				7					7
Lethargic encephalitis	2								2
Poliomyelitis								2	2
Smallpox				5				8	13
Typhoid fever		2	11	6	5	1	1		26

Quebec Province—Communicable diseases—Week ended July 20, 1929.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended July 20, 1929, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Mumps	11
Chicken pox	12	Scarlet fever	52
Diphtheria	38	Tuberculosis	66
German measles	2	Typhoid fever	20
Influenza	1	Whooping cough	14
Measles	39		

DENMARK

Communicable diseases—March, 1929.—During the month of March, 1929, communicable diseases were reported in Denmark as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia	2,847	Paratyphoid fever	5
Cerebrospinal meningitis	6	Pneumonia	427
Chicken pox	17	Poliomyelitis	2
Diphtheria	371	Puerperal fever	16
Erysipelas	239	Recurrent fever	1
German measles	2	Scabies	819
Influenza	26,943	Scarlet fever	101
Jaundice	108	Tuberculosis	271
Lethargic encephalitis	26	Typhoid fever	7
Measles	209	Undulant fever [1]	41
Mumps	2,075	Whooping cough	920

Population, 3,537,805.

[1] Reported from the State Serum Institute.

MEXICO

Vera Cruz—Deaths—June 30, 1928–June 30, 1929.—During the year ended June 30, 1929, deaths were reported in the city of Vera Cruz, Mexico, as given below:

Cause of death	Deaths	Cause of death	Deaths
Alcoholism	48	Influenza	54
Anthrax	1	Lethargic encephalitis	5
Arteriosclerosis	22	Locomotor ataxia	2
Bright's disease	5	Malaria	81
Bronchitis	34	Measles	2
Cancer	61	Nephritis	32
Cerebral congestion	11	Old age	42
Cerebral hemorrhage	20	Organic heart trouble	105
Cerebrospinal meningitis	10	Pneumonia	93
Childbirth	3	Poliomyelitis	1
Cirrhosis of the liver	49	Puerperal fever	5
Convulsions	68	Septicemia	31
Diabetes	5	Sprue	3
Diphtheria	3	Stillborn	178
Dysentery	20	Syphilis	20
Eclampsia	4	Tetanus	22
Erysipelas	3	Tuberculosis	307
Gastro-intestinal disorders	521	Typhoid fever	46
Hookworm and other worms	21	Whooping cough	8

Estimated population, 75,000.

PORTO RICO

San Juan—Communicable diseases—Five weeks ended July 20, 1929.—During the five weeks ended July 20, 1929, cases of certain communicable diseases were reported in San Juan, P. R., as follows:

Disease	Cases	Disease	Cases
Diphtheria	1	Tetanus	1
Leprosy	1	Tuberculosis	83
Malaria	8	Typhoid fever	3
Measles	9	Uncinariasis	1
Syphilis	6		

TRINIDAD

Port of Spain—Vital statistics (comparative)—June, 1929.—The following statistics for the month of June of the years 1925 to 1929 are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

Month of June

	1925	1926	1927	1928	1929
Number of births	139	128	130	158	153
Birth rate per 1,000 population	26.44	24.13	24.33	29.39	28.04
Number of deaths	134	141	114	127	143
Death rate per 1,000 population	25.49	26.58	21.33	23.44	26.21
Deaths under 1 year	23	25	21	23	31
Infant mortality rate per 1,000 births	165.4	195.3	192.3	145.6	202.6

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

From medical officers of the Public Health Service, American consuls, health section of the League of Nations, and other sources. The reports contained in the following table 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:

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929		
						11	18	25	1	8	15	22	29	6	13	20
Ceylon	C		4			2	1									
	D		4			2	1									
Colombo	C	2			1				3							
	D					1			2							
China:																
Amoy	C											3				
Canton	C			3	3	1			1	1		5	4	3	1	
	D				3	1						3	2	3	1	
Shanghai	C													1		P
Swatow	C											P				
	D											4		2		
India	C	12,566	7,627	9,046	18,521	6,979	7,973	7,379	8,285							
	D	7,912	4,425	4,997	11,069	4,469	4,996	4,935	5,911							
Bassein	D	6	6	45	118	23	13	1	1	1	1					
Bombay	C	1		6	3					1	1					
	D		1	2		1	1				1					
Calcutta	C	129	261	552	788	274	245	244	161	98	83					
	D	85	144	307	461	175	156	171	103	65	53	7	51	41	29	
Madras	C	4	9			1										
	D	5	4													
Moulmein	D		1	7	6		6	11	14	5						
Negapatam	C	18	3													
Rangoon	C	15	13	15	8	4	4									
	D	9	6	37	10	2	3	1	1	2	2	3	1			
Tuticorin	C	85	6								15		4	4	2	
	D	52	4								12	10	8		2	
India (French):																
Chandernagor	C			3	3	1		1	1	1	1		1			
	D			3	1	1		1	1	1	1		1			
Karikal	C	150	88	20	3											
	D	128	71	15	3											
Pondicherry Province	C	129	86	46			1	1	1	1	1		1			
	D	104	74	38			1	1	1	1	1		1			

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

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929		
						11	18	25	1	8	15	22	29	6	13	20
Indo-China (see also table below):																
Pnompenh	C	2	42	13	15	5	3	-------	6	2	2	2	5	2	2	-------
	D	1	36	10	9	5	1	-------	4	1	1	-------	2	1	1	-------
Saigon	C	6	-------	12	13	17	15	20	19	43	73	55	17	9	6	-------
	D	3	-------	2	8	15	9	9	4	29	53	49	8	8	4	-------
Siam	C	195	165	397	619	310	196	-------	113	121	67	122	159	214	49	-------
	D	138	117	269	404	193	136	-------	107	78	53	59	95	112	38	-------
Anthoang	C	1	3	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	1	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Ayudhaya	C	4	4	1	29	2	-------	-------	-------	14	-------	11	-------	-------	-------	-------
	D	4	4	1	19	-------	-------	-------	-------	8	-------	3	-------	-------	-------	-------
Bangkok	C	50	61	38	111	66	36	20	9	7	8	9	6	-------	2	-------
	D	43	36	21	74	34	22	17	4	2	4	5	2	-------	1	-------
Chaxoengsao	C	9	1	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	9	1	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------
Dhannapuri	C	3	3	-------	17	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	2	1	-------	7	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Lobpuri	C	-------	3	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	1	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Nagara Pathom	C	-------	2	-------	36	-------	13	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	2	-------	20	-------	10	-------	-------	-------	-------	-------	-------	-------	-------	-------
Pradhumdham	C	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Singhapuri	C	6	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	7	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Smud Prakar	C	10	P	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	8	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
On vessel:																
S. S. Angby, at Saigon-Cholon	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------
S. S. Cap. St. Jacques, at Singapore from Saigon-Cholon	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	P	-------	-------
S. S. Ekma, at Penang from Singapore	C	-------	P	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
S. S. Elephanta, at Penang from Calcutta	C	-------	-------	P	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

S. S. Erinpura, at Madras	C							2							
S. S. Media, at Colombo from Calcutta	C					1									
S. S. Saka Maru, at Calcutta	C					6									
S. S. Tilawa, at Penang from Singapore	C			P											
S. S. Tokushima, at Hong Kong	C										2				
	D										2				

Place		December, 1928	January, 1929	February, 1929	March, 1929			April, 1929			May, 1929	
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20
Indo-China (French) (see also table above):												
Annam	C					3	3		13	7	15	5
Cambodia	C	25	79	69		26	3		40	44	27	188
Cochin-China	C	697	660	223		13	170		51	37	81	42
Tonkin	C										3	2

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

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Argentina:																	
Buenos Aires	C			2	1												
	D			2													
Jujuy Province—Perico	C	3															
Rosario	C	1		31	5												
Azores: St. Michaels Island	C	1		1													
Belgian Congo: Djugu	C	1	4			2						3					
	D	1	1			3						3					
Brazil:																	
Para	C	1															
Porto Alegre	C				1												
British East Africa (see also table below):																	
Uganda	C	152	112	130	231	87	86	117	160		357						
	D	149	108	124	219	81	86	100	142		259						
Canary Islands: Laguna	C	1							1								
Ceylon: Colombo	C	6	4	4	5	2	1	1	3			1	1				
	D	5	3	1	4	2	1	1	2		1	1	1				
Plague-infected rats		2	2		1									1			
China:																	
Hainan	C	P	1														
Manchuria—																	
Mungliao District	C																P
Suyuan Province	C	P	1														
Dutch East Indies:																	
Celebes—Makassar—Plague-infected rats		1															
Java—																	
Batavia and West Java	C	74	70	64	63		16	20	22	13							
	D	73	69	65	63		16	19	21	13							
Plague-infected rats			4	5	8												
East Java and Madura	C			3													
	D			3													
Surabaya	C	6															
	D	6															
Kediri Residency	C	P															

Ecuador (see table below).																	
Egypt:																	
Alexandria	C	3				1							1	2		3	
	D	1									1			1			1
Asuan	C														1	1	
	D														1	1	
Beheira	C																2
	D																2
Beni Suef	C	3	4	2	7					3			3	1	1	1	1
	D	3	1	2	2					1			1				
Daqahliya	C						3	4	2	1							1
	D								1								
Gharbia	C													1	5	1	2
	D														1		
Girga	C													2	1		
Kena	C													1	1		
	D													1	1		
Miniah	C															4	3
Port Said	C				2	1		1	1		1	1		1	1	1	
	D				1	1		1		1				1			
Suez	C		1	2													
Greece (see table below).																	
Hawaii: Hamakua—Kukuihaele—Plague-infected rats											1						
India	C	12,600	16,570	16,011	6,884	620	378	203	193								
	D	9,815	12,064	12,592	5,623	522	344	155	184								
Bassein	D	4	3	6	3		2					1	3	1	3		
Bombay	C	2	4	8	8		1										
	D	4	4	6	6			1			1	3					
Plague-infected rats		38	38	57	81		23	9	12	10	9	7	9	6	7		
Madras Presidency	C	434	333	132	38	4	21	19	20				15				
	D	235	189	80	14		8	25	7				8				
Rangoon	C	4	4	12	11	1	1										
	D	5	4	9	15	1	2		2	1	3	2	3	3	3		
Plague-infected rats		5	11	15	10		2	2	1	1		3	2	4	2		
Indo-China (see also table below):																	
Pnompenh	C	10	5	10	8	1	4			1	1		2	5			
	D	9	3	10	8	1	2			1	1		1	5			
Saigon	C		1											5			
Tourane	C		5											3			
Iraq:																	
Baghdad	C	6	10	11	8	5	4	1	4	2	1	7	2		1		
	D	3	3	3	7	2	3					2					
Plague-infected rats		6	22	14	2		1										
Diyalah Liwa	C				7				12	P	1			1			
	D				7				7								
Naudham	C	2								1					1		
	D	1															
Plague-infected rats		1															

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Japan: Osaka—Plague-infected rats							2										
Madagascar (see also table below):																	
Tamatave	C	1							P	1	1						
	D		2	1	1						1	1		2	2		
Plague-infected rats											2	2					
Morocco	C			106	31	4	6	29	3	4		5	7	3		P	
	D			73	16	1	3			4		1					
Nigeria: Lagos	C	14	11	4	8	1	2	1	1								
	D	12	11	4	8	1	2		1								
Plague-infected rats		48	50	18	6		3	1	4								
Peru (see table below).																	
Senegal (see table below).																	
Siam	C	45	9	9	10	4	1		4	1							
	D	17	9	8	8	3			2	1							
Bangkok	C	1	1			1	1										
	D	2	1			1											
Nagara Pathom	C		3	4	2	3											
	D		2	4	2	2											
Straits Settlements: Singapore	C		1		1												
	D		1		1												
Tunisia: Tunis	C																P
Turkey: Constantinople	C											P					
Union of Socialist Soviet Republics:																	
Caucasia	C												1				
	D												1				
Ural—Kirghiz	C									P	2						
	D										2						
Union of South Africa:																	
Cape Province	C			1	2												
	D			1	1												
Orange Free State	C	6	2	3	4												
	D	1		2	1												
Transvaal	C			8													
	D			8													

Uruguay: Montevideo	C			4															
On vessel:																			
S. S. Chenonceaux, at Singapore, from Colombo	C			1															
	D			1															
S. S. Ganzan Maru, at Osaka, from Haipong	C					1													
S. S. Seigo Maru, at Osaka, from Bombay—Plague-infected rats						1													
S. S. Soudades, at Hamburg from Rosario, Argentina—Plague-infected rats					2														
S. S. Sjomand, at Alexandria, from Batoum	C	1																	
S. S. Sumatra, at Osaka, from Bombay	C				1	1													

Place		January, 1929	February, 1929	March, 1929	April, 1929	May, 1929	June, 1929
British East Africa (see also table above):							
Kenya	C	7	4	10	4	22	69
Uganda	C			121			
	D			113			
Ecuador: Guayaquil	C	25	54	26	19	2	
	D	12	22	4	5	1	
Plague-infected rats		29	27	14	13	3	1
Greece	C	3	1		1		
	D	1					
Indo-China (see also table above)	C	11		3	13		
Madagascar (see also table above)	C	233	348	196	92		
	D	224	335	194	88		
Ambositra Province	C	169	164	90	8		
	D	159	164	90	8		
Antisirabe Province	C	15	21	13			
	D	15	21	13			
Itasy Province	C	3	10	8	2		
	D	3	10	7	2		

Place		January, 1929	February, 1929	March, 1929	April, 1929	May, 1929	June, 1929
Madagascar (see also table above).—Con.							
Moramanga Province	C	22	7	5	3		
	D	21	4	5	3		
Tamatave	C	4			1		
	D	4			1		
Tananarive Province	C	208	146	120	78		
	D	192	136	119	74		
Peru	C	37	16	35			
	D	9	13	13			
Senegal:							
Baol [1]	C			6	1	21	32
	D			3	1	6	17
Dakar [1]	C				6	17	33
	D				4	11	23
Thies [1]	C		8	4	20	6	10
	D		7	3	20	3	6
Tivaouane [1]	C		12			22	93
	D		2			10	50

[1] Incomplete reports.

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

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Algeria:																	
Algiers	C			3	5	4			1	1	2	2	1	1			
Cherchell	C		21	42	1							1					
Oran	C		1	1	2		5										
Arabia: Aden	C	2		80	69	3	10	20	7	20	25	10	56	18	21		
	D			8	20	3	1	9	7	2	6	6	6	18	4		
Bermuda: Hamilton	C									1							
Brazil:																	
Porto Alegre	C								1								
Rio de Janeiro	C						1		2								
British East Africa (see also table below):																	
Tanganyika	C	13	3		3	3	1										
British South Africa: Southern Rhodesia	C	1	17	69	13		12										
Canada:																	
Alberta	C	3	5	7	8					8	3	1					
Calgary	C		1		2												
Edmonton	C	2	2	12	5						3	1					
British Columbia—Vancouver	C	56	70	64	46	8	6	7	2	1	2	4	6	4	8	2	
Manitoba	C	21	15	3	2		2		4	6							
Winnipeg and vicinity	C										2						
New Brunswick	C			5													
Nova Scotia	C	2			1												
Ontario	C	83	83	57	113		30	7	3	15	39	21	9	25	5		
Niagara Falls	C			1					3								
North Bay	C		4		3	1		7			2			2	2	2	
Ottawa	C		1									1					1
Toronto	C	1		2	1						1	4	2	5		1	1
Windsor	C				3	3				1		1	3	1			
Prince Edward Island	C	2	2														
Quebec	C	24	28	14	34	3	3	3	3	5	3	2	1	2			
Montreal	C	10	16	4	4			1				1					
Quebec	C	8		3	1		1			2							
Riviere du Loup	C				1												

Saskatchewan	C	35	70	13	13		7		7								
Moose Jaw	C			1													
Regina	C	6															
Saskatoon	C	4		1													
China:																	
Amoy	C	P	5	3	4	1	1										
Canton	C	87	86	135	85	25		13	8	5	2	6	3	5	3		
	D	2	15	15	12	2		1	1	1				1	1		
Chefoo	C				P		P										
Foochow	C	P	P	P	P												
Hong Kong	C	307	189	92	53	8	10	5	6	2	2	4	2		1		
	D	286	246	137	97	6	8	4	7	2	2	1	1	3	2		
Manchuria—																	
Changshun	C	3	2		1												
Fushun	C	5															
Harbin	C	5		1	4												
Kwantung—																	
Dairen	C	2	9	1	11	8	4	4	5	2		4			1		
	D	2	3		4		1	3	4	2		1			2		
Port Arthur	C							3									
Mukden	C	3		1													
	D	1															
Shanghai—																	
Foreigners only	C	23	11	4	1	2	2		2		2		5	1	1	P	
Including natives	D	60	41	25	16	8	6	2		1		2	2				
Swatow	D		9	33	93	23	14	13	12	9	9		6	2	6		
Tientsin	C	3	2	8	6	8	4										
Tsingtao	C		P	P	P	P	P	P	P		P	P	P				
Yunnanfu	C			P	P												
Colombia: Cartagena	D		7														
Curacao (alastrim)	C				1												
Dominican Republic	C	1															
Dutch East Indies:																	
Balikpapan	C		1	5	3		1	2	1		1						
Belawan Deli	C	26	9	7	4								1				
	D	6	6	2													
Borneo	C	30	26														
Samarinda	C	4	47	2	1								3	9			
	D		4	3									1				
Celebes—Makassar	C			6	39	16	11	9	7	5	4	5	6	6	4		
	D			2	25	9	10	8	6	4	2	4	5	3	3		
Java—Batavia and West Java	C								1								
	D									1							
Sumatra—																	
Baros	C	106	36	16													
	D	26	5	2													
Medan	C	11	9	7	2	1											
	D	5	6	3		1											
Palembang	C		9														
	D		2														

Ecuador (see table below).

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Egypt:																	
Gharbieh	C		1														
Port Said	C	1			1							1					
Suez	C				5												
France (see table below).																	
Great Britain:																	
England and Wales	C	899	1,083	1,156	1,423	277	362	298	242	272	191	166	160	153	115		
Birmingham	C				1			1									
Bradford	C	1	2	3	1		2	2		2	2						
Bristol	C	1															
Cardiff	C	4		1	1				4								
Castleford	C	48	35	56	31		5	5	2	2			1		1		
Hull	C	2															
Leeds	C	3	6	8	3						1						
Liverpool	C	1															
London	C	40	54	58	201	50	52	53	38	69	41	40	17	43	16		
London and Great Towns	C	433	425	598	888	159	198	171	128	166	190	113	64				
	D			3	6	1	1	1				1					
Newcastle-on-Tyne	C	6	6	16	3	1	10	14	12		11		9	9	4		
Nottingham	C	1		2													
Stoke-on-Trent	C	14	18	72	133	12	41	16	15	24	9	13	16	5	7		
Scotland—																	
Aberdeen	C				2												
Glasgow	C			1	19	1											
Greece (see table below).																	
Hedjas	C	153	198	84	77	23		7	10	23	19	22	19	27	8		
	D	56	40	52	52	13		4	7	11	12	16	14	21	2		
Honduras: Puerto Castilla	C						1										
India	C	12,531	14,899	19,120	22,556	5,105	4,653	3,809	3,444								
	D	3,045	3,285	3,983	5,060	1,354	1,173	838	820								
Bombay	C	158	397	441	315	54	70	34	50	38	42	36	31	28	21		
	D	78	188	206	175	30	46	22	23	22	27	27	23	18	15		
Calcutta	C	32	104	127	101	5	16	5	13	7	4	8	8	6	3		
	D	16	29	77	74	5	16	5	10	7	4	7	6	4	3		

Karachi	C	5	147	206	144	23	22	17	22	8	13	10	4	6	3		
	D	223	14	70	59	15	11	12	21	6	8	7	4	8	1		
Madras	C	35	260	392	327	69	53	37	24	21	17	28	22	25	9		
	D	6	61	88	84	14	23	11	13	2	6	8	4	6	12		
Moulmein	C	2	14	18	7		3	2	3	3			3	1	4		
	D		4	4	6		2	2	2	2			3	1	3		
Negapatam	C	26	5	9	7		1		1		2	1	3	1	1		
	D	6	4	1													
Rangoon	C	8	17	13	7	1								1	2		
	D	1	6	6	3		1							1			
Tuticorin	C	2	1		1						1						
Vizagapatam	C	8	52	26	28		1	1				2	2	2			
	D		9	5	8							1	1				
India (French):																	
Karikal	C			2	2	2		1			1	3	1				
	D			2	2	2		1			1	3	1				
Pondicherry Province	C	69	79	76	60	15	8	6	8	4		7	5				
	D	51	61	60	51	13	6	4	7	3		7	5				
India (Portuguese)	C								3	8	1				1		
Indo-China (see also table below):																	
Pnompenh	C	77	62	68	40	6	8	7	1	1	3	2	2	5	1		
	D	42	36	33	24	4	4	4		1	1			1	1		
Saigon	C	5	2	2	2		1										
	D	1					1							1			
Iraq:																	
Baghdad	C	17	7	6	6			1	2		1					1	
	D	3	5	1													
Basra	C	18	7	9	8	2	1	3	2	8		1					
	D	10	5	2	6	1		4	3	1							
Diyalah Liwa	C					48								8			
	D					13								2			
Hillah Liwa	C	20															
	D	9															
Kirkuk Liwa	C		18														
	D		4														
Mossoul	C	30	28								12	6	2	12			
	D	17	4														
Sinjar	C	61															
	D	15															
Italy:																	
Rome and vicinity	C	2															
Turin	C		1														
Ivory Coast (see table below).																	
Jamaica (outside Kingston) (alastrim)	C				1	1									7		
Japan:																	
Kobe	C		1														
Nagasaki	C	3															
	D	2															
Niigata	C						12				2						
Osaka	C		1				1										
Shimane Province	C			16	3												
Tokyo	C					1		1			1						

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Macao	D	24	75	32	20	2	2		1			2					
Mexico:																	
Acapulco	C				1		1										
	D				1		1										
Aguascalientes	D	3	3	5	9		2	1	3	5	4	3	5	3	5		
Chiapas Province	C			P													
Chihuahua	D	1															
Coahuila	D											1					
Jalisco (State): Guadalajara	D	8	8	13	12	3	3	3	6	3	3	1	4	5		1	
Juarez	D	1	1	3													
Mexico City and surrounding territory	C	2	2	1					1	3	1	2	3	3			
Oaxaca—Zacatepec	C				P						1	1	6	1			
Palomas	C		1														
Tampico	C		1	2													
Vera Cruz	D			2													
Morocco (see table below).																	
Nicaragua: Managua	C				P												
Nigeria:																	
Lagos	C			1	1	2											
Southern Provinces	C	162															
	D	31															
Norway: Stavanger	C				2												
Palestine	C								1								
Panama Canal Zone	C			P										7		13	
Poland	C	41			6		1		1								
	D	3															
Portugal:																	
Lisbon	C	4		3	4				1	1	2	2	1	3			
Oporto	C			1	2							1	1		2		
Senegal (see table below).																	
Siam	C	2	4		55	10	7	10	5	21							
	D				8	5	2	2		5							
Somaliland, British: Boales	C										5		6		1	3	
	D												4				
Somaliland, French: Jibuti	C							1	2	2	5	3	6	8	7	19	
	D								1	2	2		4	2	1	5	

Spain: Valencia	C		2	5									1					
Straits Settlements: Singapore	C	5	3	1							1							
Sudan (Anglo-Egyptian)	C	265	188	245	377	162	264	309	835	228	243	113	588	323	25	724	49	
	D	34	54	29	26	5	48	28	51	40	60	47	48	28	9	115	12	
Sudan (French) (see table below).																		
Syria (see table below).																		
Tunisia: Tunis	C		5		2						1		1	1				
Union of Socialist Soviet Republics: Vladivostok	C								2									
Union of South Africa:																		
Cape Province	C				P	P	P	P		P	P							
Transvaal	C			P	P	P	P			P								
Upper Volta	C	3	4	4	15	2				2		5	3					
On vessel:																		
S. S. Aorangi, at Sydney	C												1					
S. S. Assyria, at Suez, from Bombay	C						1											
S. S. City of Venice, at Suez, from Calcutta	C							1										
S. S. Fern, at Port Said, from Abadan	C								P									
S. S. British Birch, at Suez, from Abadan	C												1					
S. S. Keneh, at Suakim, from Jeddah	C											4						
S. S. Le Panto, at Suez, Egypt	C					4												
S. S. Lopes-Lopez, at Suez	C				1													
S. S. Malwa, at Suez	C				1													
S. S. Mancar, at Suez, from Calcutta	C				1													
Tantalus (motor ship), at Amsterdam	C			3														
S. S. Tuscania, at Glasgow, from Bombay	C				P													

Place		January, 1929	February, 1929	March, 1929			April, 1929			May, 1929			June, 1929		
				1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30
Indo-China (see also table above)	C	311	364		200	361	500	100	155	343	67				
Ivory Coast	C					4									
Senegal	C		80	17	8	45	50	7			1				
	D		8	1	3	7	15								
Sudan (French)	C				26		10	9	64	2					57
	D				3										15
Syria: Beirut	C	1	48		10	2	2	16		4		8	18	12	6

Place		January, 1929	February, 1929	March, 1929	April, 1929	May, 1929	June, 1929
Angola	C	1					
British East Africa (see also table above):							
Kenya	C			23	91	38	
Chosen: Chinampo	C		1				
Ecuador: Guayaquil	C	12	4	2	2	1	
	D	1	1				
France	C	9	3	5			

Place		January, 1929	February, 1929	March, 1929	April, 1929	May, 1929	June, 1929
Greece	C	8	5	2	4	5	
	D	1	1				
Morocco	C	7	11	8	12	39	
Persia	D	68	23	8			
Turkey	C	16	7		1		1
	D	6					

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

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Algeria:																	
Algiers	C			6	11	1				1							
Constantine Department	C	2	13	3					2	1	3	7					
Oran	C	5	2		8		12		2	1		4					
Bulgaria	C	7	39	40	28	10	7		4	1	2	1					
	D		2	5	2	1						1					
Sofia	C	1															
Chile: Concepcion	C			2			1										
China:																	
Canton	C	2															
	D	2															
Hong Kong	C	1															
Manchuria—Harbin	C			1													
Chosen (see table below).																	
Czechoslovakia (see table below).																	
Egypt:																	
Alexandria	C			1	1												
	D			1		1											
Assouan Province	C		2														
	D		2														
Beheira Province	C		13	67	50	23	84	52		13				5			
	D			9	9		18	6		6				2			
Cairo	C								2					1		1	
Daqahilya Province	C			34													
Gharbieh	C	1	2														
	D		1														
Menoufieh Province	C				35												
Port Said	C						1	1		1			1	3	1		
Greece (see table below).																	
Hungary	C								1								
Ireland (Irish Free State):																	
Cavan County—Carrickmacross	C					1											
Cork County	C		1														
Donegal County—																	
Inishower	C				1												
Stranorlar	C										1						

Dublin	C	1																
	D	1																
Kerry County—																		
Dingle	C			2	2													
Killarney	C		1		2													
Tyrone County, Strabane.[1]																		
Lithuania (see table below).																		
Mexico (see also table below):																		
Aguascalientes	D			5											1			
Mexico City, including municipalities in Federal District	C	11	7	4	4			5	3	6	2	4	2	4				
	D	3	2		1			1	1		1							
Morocco	C	20	17	19	29		1		4		2	5	5		27			
	D				4													
Norway: Oslo	C					2												
Palestine	C	3		2	1		2					2		1	1	1	1	
Poland	C	222	202	295	314	85	80	56	43	78	35	31						
	D	15	18	20	25	7	8	3	1	2		2						
Portugal:																		
Lisbon	C											1						
Oporto	C												1					
Rumania	C	173	211	220	135	55	62	62			36							
	D	23	28	30	16	10	9	12			3							
Tunisia	C	2	3	20	19	1	1	1	19	12	8	3						
Turkey (see table below).																		
Union of South Africa:																		
Cape Province	C	P	P	P	P	P	P	P		P								
Natal	C		2	P	P													
Orange Free State	C	P	P		P	P	P	P		P								
Transvaal	C	1		P	P		P	P		P								
Yugoslavia (see table below).																		

Place		January, 1929	February, 1929	March, 1929	April, 1929	May, 1929	June, 1929
Canada: Ontario	C						1
Chosen: Seoul	C	4		3	2		
Czechoslovakia	C	6	7	41	25	18	
	D		1	1		1	
Greece: Athens	C	13	4	4	2		
	D	5					
Indo-China: Tonkin	C			2			
Latvia	C			1	10		
Lithuania	C	32	24	62	101	63	27
	D	3	3	1	7	5	4
Mexico (see also table above):							
Sonora	D	1					
Turkey	C	1	8	11	3	7	
	D		1			1	
Yugoslavia	C	15	13	7		19	
	D		2			1	

[1] During the period from Apr. 14 to May 21, 1929, 18 cases of typhus fever with 4 deaths were reported in Strabane, Tyrone County, Ireland.

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

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		Jan. 13–Feb. 9, 1929	Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	Week ended— May, 1929			June, 1929					July, 1929			
						11	18	25	1	8	15	22	29	6	13	20	27
Belgian Congo: Tumba	C				1												
Brazil:																	
Bahia	C			1										1			
	D			1										1			
Guaratingueta	C		[1] 1														
	D		[1] 1														
Para	D	1		5													
Pernambuco	C			4													
Porto Alegre	D					[1] 1											
Rio de Janeiro [2]	C	16	92	252	180	24	22	17	7	5	2				1		
	D	17	67	132	94	18	11	6	3	3		2					
Sao Paulo	C	1															
	D	1															
Colombia:																	
Simacota	C																4
Socorro [3]	C													6			6
Liberia: Monrovia	C	3	7	10	2							P		4			
	D	2	4	4									1	1			
On vessel:																	
S. S. Skogland, at Porto Alegre, from Rio de Janeiro	C					1											

[1] Imported.
[2] 29 cases of yellow fever with 14 deaths were reported at Rio de Janeiro during January, 1929, mostly suburban.
[3] From June 19 to July 8, 1929, 41 cases of yellow fever with 23 deaths were reported in Socorro, Colombia.