Public Health Reports

Vol. 55 • OCTOBER 11, 1940 • *No. 41*

RHEUMATIC HEART DISEASE IN PHILADELPHIA HOSPITALS [1]

A Study of 4,653 Cases of Rheumatic Heart Disease, Rheumatic Fever, Sydenham's Chorea, and Subacute Bacterial Endocarditis, Involving 5,921 Admissions to Philadelphia Hospitals From January 1, 1930, to December 31, 1934

V. DISTRIBUTION BY LOCALITY OF RHEUMATIC CONDITIONS IN PHILADELPHIA

By O. F. HEDLEY, *Surgeon, United States Public Health Service*

As compared with other diseases of equal or even less public health significance, rheumatic heart disease, despite its ubiquitous distribution over the civilized world, has been the object of comparatively few epidemiological investigations. This is especially true of studies of prevalence and distribution in various localities. Such piecemeal information as is now available has been gained for the most part as a result of studies in hospitals and clinics. In the United States few inquiries have been conducted by public health workers, or under the auspices of official or unofficial public health agencies.

This lack of appreciation of rheumatic heart disease as a public health problem is reflected in the leading text and reference books of public health, preventive medicine, and epidemiology. Most authors either pursue a policy of nonrecognition toward the problem in its entirety or at most devote only a few lines or paragraphs to its consideration. Its significance is often obscured because it is grouped with other forms of arthritis, with failure to perceive that the arthritic manifestations of rheumatic fever are for the most part only temporarily disabling and relatively unimportant.

Students of epidemiology should have a special interest in rheumatic fever and chorea for historical reasons. Thomas Sydenham, whose name is so closely associated with chorea minor, one of the most important and widely distributed rheumatic manifestations, was a pioneer in the field of epidemiology. Greenwood (*1*) pays glowing tribute to this "English Hippocrates," citing his insight into the nature and characteristics of epidemic diseases. Many of Sydenham's views have stood the test of time, unshaken by the advent of the test tube, more refined methods of statistical analysis, and a myriad of

[1] From the Division of Infectious Diseases, National Institute of Health.

instruments of precision. Goodall (*2*) also concurred in high praise of Sydenham as an epidemiologist.

The name of Edward Jenner has become so closely associated with the discovery of vaccination against smallpox that sight has been lost of the versatility of this great man. The writer (*3*) recently directed attention to source material indicating that Jenner was among the first to observe a relationship between rheumatic fever and heart disease, and suggested that claim to the priority of this concept might possibly be due him.

One of the reasons for the paucity of investigations of the mass effects of rheumatic cardiac conditions and for the lack of interest among public health workers is that, with few exceptions, rheumatic fever and chorea are not included among the notifiable diseases. Morbidity reports systematically afford the epidemiologist a mine of material from which to extract nuggets of knowledge. While it is not considered within the scope of the present investigation to propose a methodology for combatting rheumatic heart disease as a public health problem, it is sufficient to state that certain European cities, especially in Great Britain, have pioneered in making rheumatic infections notifiable among school children. Until the outbreak of the present hostilities these cities had schemes in operation for periodic examination and supervision of children with rheumatic cardiac disease.

The results of the present study are without doubt conditioned by the fact that it is based on admissions to hospitals rather than on general morbidity reports; as a consequence it is not based on a representative selection. Any study of hospital cases tends to deal largely with the stratum of society commonly treated on the hospital wards. Although there is general agreement that rheumatic conditions occur with greater frequency among the poorer classes, there is nothing to suggest that these diseases are rare among the better-to-do. Studies by the writer (*4*) and by Paul and Leddy (*5*) indicate that rheumatic heart disease occurs among college students with considerable frequency. It seems evident that many of the rejections among young persons in good economic circumstances applying for relatively large amounts of life insurance must be due to this cause. Rheumatic heart disease is the outstanding valvular heart disease among young persons; valvular heart disease is the type of heart disease most often responsible for rejection or increased ratings among young applicants for life insurance. Since rheumatic heart disease is the end result of rheumatic fever and chorea, it seems probable that these diseases know no social barriers.

When rheumatic fever, Sydenham's chorea, or rheumatic heart disease occur among persons in favorable economic circumstances, hospital treatment is not usually indicated. The prime desideratum

in the treatment of these conditions is rest in bed. Since prolonged rest in bed is usually required, hospital treatment would prove too expensive for all but the extremely wealthy. Aside from possible greater restriction of physical activities and more restful surroundings, treatment usually can be carried out satisfactorily in a well-regulated household. Serious emergencies requiring immediate medical attention are infrequent. At the Children's Heart Hospital in Philadelphia there has not been a sudden death in over 15 years. In children epistaxis is the most severe sudden complication commonly encountered.

This study of the distribution of rheumatic fever, Sydenham's chorea, and rheumatic heart disease in Philadelphia, based on home addresses of hospital cases, is made with full recognition of these limitations. It should be borne in mind that ward patients are admitted from nearly every section of the city. Hence it should be possible to determine by this method the relative frequency, at least among hospital patients, of these diseases in various parts of Philadelphia.

Over two-thirds of the population of Philadelphia probably would require hospitalization for any prolonged or catastrophic illness such as rheumatic heart disease. According to the National Health Survey of 1935–36, 65.9 percent of 32,360 families enumerated were on relief or had incomes less than $1,500 annually (*6*). Members of these families are for the most part medically indigent and commonly obtain medical care in out-patient clinics, from which they are sent to the hospital wards for treatment in case of serious rheumatic conditions. In addition to this group, the National Health Survey indicated that 15.9 percent of the families had incomes of from $1,500 to $2,000 a year. Persons in this economic bracket belong to a marginal group, and are often treated as ward patients on a part-pay or full-pay basis.

REVIEW OF LITERATURE

Thomson (*7*), on the basis of over 800 cases of rheumatic fever and chorea reported by school and hospital physicians, concluded that in Birmingham, England, these diseases were most frequent along the water fronts and that neither density of population, poverty of housing, nor the incidence of other infectious diseases accounted satisfactorily for variations in the incidence of these diseases in different parts of the city. His studies tended to confirm the view often expressed among British writers that rheumatic infection is primarily a disease of the respectable poor, occurring most often in the families of artisans, policemen, and other skilled workers, rather than among the destitute and squalidly poor.

Paul (*8*) cites Shrubsall (*9*) as stating that rheumatism in children in London is distributed along the course of old streams. Ingerman and Wilson (*10*) noted that most of 185 patients from 2 clinics came from homes within 2 or 3 blocks of a river. They mention an unpublished report of the New York Association for the Prevention and Relief of Heart Disease, which showed that rheumatism was least frequent in New York City in districts most distant from the water fronts, with a progressive increase on approaching the water fronts.

Coombs (*11*) observed that in Bristol, England, an extension of the city by the incorporation of several partially rural, or at least imperfectly urbanized, areas did not appreciably increase mortality from rheumatic infection. Density of population and poverty were to such a large extent inseparable that, despite the fact that certain areas had a disproportionately high incidence of fatal heart disease, he was unable to establish which factor was of paramount importance. He was unable to show any association between altitude, geological formation, and proximity to covered or uncovered watercourses and the incidence of fatal rheumatic heart disease. Aside from a strong suggestion that rheumatic fever is a greater problem in urbanized communities he was unable to show any relationship to locality. Later Coombs (*12*) reported a study in Bristol based on clinical cases occurring during 1927–31. Aside from the fact that rheumatic heart disease was 5 times more common in the city than in the adjoining country, no other positive relationships were found.

Miller (*13*) noted that in the Paddington area of London many cases of rheumatic heart disease developed in houses with wet walls; many patients were basement dwellers. Designated visitors, some of whom were untrained, almost uniformly reported that the houses were damp. Later, in a report to the British Medical Association, Miller stated that 60 percent of the cases under study lived in damp houses when first attacked. Langmead (*15*) was cited as suggesting that proximity to subterranean rivers, as well as canals, influences the distribution of rheumatism in London.

Coates and Thomas (*16*), in a small series of 50 cases picked at random from school children in Bath, England, noted that over 60 percent lived in houses less than 100 feet above sea level and over 90 percent in houses less than 200 feet above sea level. The altitude in Bath varies from under 100 feet to over 500 feet. They stated that these figures were "remarkable and require no comment."

In a very exhaustive survey conducted under the auspices of the British Medical Research Council (*17*) it was found that in London 92.8 percent of 400 families with one or more cases of rheumatic infection were living at less than 50 feet above sea level as compared with only 78.0 percent of 100 control families. The difference was regarded as significant. It was also noted that 36.5 percent of the

rheumatic families as compared with only 27.0 percent of control families lived within half a mile of a river or canal.

Maddox (*18*), in a study based upon the records of several hospitals in Sydney, Australia, was unable to establish a definite relationship to proximity to water courses or to damp areas. In a study based on school health records (*19*), he stated that rheumatic fever was observed to be fairly evenly distributed over New South Wales, while rheumatic heart disease was found with greater frequency on the tablelands and slopes than on the coastal regions. A higher incidence of rheumatic heart disease was indicated in a mountain range not far from the coast; however, certain coastal regions characterized by heavy salt-marshes were severely affected.

This review of the literature reflects the widely diverse conclusions of many investigators.

It is extremely difficult to dissociate these closely interrelated factors from poverty. Poor persons of necessity are more likely to live in the oldest and dampest sections of a city adjacent to or in close proximity to the water front, or along the banks of streams and canals. Measures designed to eradicate slums and otherwise elevate the standards of living among the poor would probably have a favorable influence on a disease whose trend is probably downward (*20*). Long range observations over a number of years should be made on the effects of slum clearance and rehousing projects, taking into consideration the possibilities that persons formerly living in slums may not occupy the new dwellings and that the rentals may be so high that the standard of living of occupants may deteriorate in order to meet these rentals.

RHEUMATIC FEVER

A number of spot maps[2] showing the home location of cases admitted to hospitals, and maps showing the mean annual number of cases per 100,000 population in each ward were prepared. These maps were prepared not only for rheumatic fever, but also for Sydenham's chorea, and nonfatal and fatal rheumatic heart disease. Since many statements concerning rheumatic fever are also applicable to these conditions, and in order to avoid repetition, rheumatic fever will be considered in somewhat greater detail.

[2] A number of maps indicate the mean annual number of admissions or deaths per 100,000 population for the various diseases according to city wards. Consideration was given to the use of smaller subdivisions, census tracts. This was not considered feasible. The city of Philadelphia has been divided into 404 census tracts, many of which are very thinly populated. Except on the basis of total cases of rheumatic heart disease, the number of cases in each category was too small to compute mean annual rates in such a large number of subdivisions. Furthermore, owing to the fact that some of the thinly populated census tracts showed a disproportionately large number of cases, the alternatives were either arbitrarily to eliminate census tracts with small populations or to indicate results which were obviously open to question.

Attention is invited to the fact that economic conditions vary to a large degree within the city wards. Wards 21 and 22, for example, are occupied by persons in the most affluent and the most poverty-stricken circumstances. This should be constantly borne in mind in interpreting these results.

The large numbers in circles indicate the ward numbers, not cases. Ward boundaries were not usually drawn unless they appeared significant.

For the sake of uniformity, the home address given at the time of the first hospital admission during the period under study was used, except in fatal cases where the home residence at time of death was used. This obviates difficulties arising from more than one admission, often from the same residence, of any patient. Of the 4,653 cases of rheumatic fever, Sydenham's chorea, rheumatic heart disease, and subacute bacterial endocarditis, 3,804, or 81.8 percent, were admitted only once and consequently had only one home address. In most of the cases admitted more than once only one home address was indicated. Those who moved continued as a rule to reside in the same neighborhood. Figure 1, obtained through the courtesy of the Philadelphia Housing Association, suggests that the map of Philadelphia is a sort of ethnological checkerboard. Although families paying rentals move with the average frequency that tenants change residences, they do not usually move very great distances. In most instances they continue to live in proximity to persons of the same nationality or racial strain.

The hospital records showed that of 1,324 cases of rheumatic fever admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934, the home addresses of 1,183 were located in Philadelphia. The remainder either lived outside the city, or the address was unknown or obviously incorrect. As there were few admissions from orphanages and other institutions, the location of these institutions did not constitute an important problem. Of these 1,183 cases of rheumatic fever, 753 also had rheumatic heart disease, while in 430 instances heart disease was not detected.

Figure 2 is a spot map showing the home location of these 1,183 cases of rheumatic fever. This map indicates that with the exception of a greater concentration of cases in South Philadelphia, the section in the lower third of the map between the Delaware and Schuylkill Rivers, there is a fairly even dispersion over the remainder of the city. Slight concentrations are noted in Manayunk (ward 21), in the midsection of Philadelphia just east of Fairmount Park (wards 28, 29, 32, and 38), and in West Philadelphia southwest of Fairmount Park (ward 24).

Figure 3 shows the distribution of rheumatic fever by city wards, based on the mean annual number of cases per 100,000 population according to the United States Census of 1930. The largest number was indicated in wards 1, 4, 5, 6, 9, 11, 12, and 13. These wards are located in a very old and extremely poor part of Philadelphia. With the exception of ward 9, which is occupied mostly by commercial establishments and had a population of only 1,642 persons according to the United States Census of 1930, all of these wards are near the Delaware River.

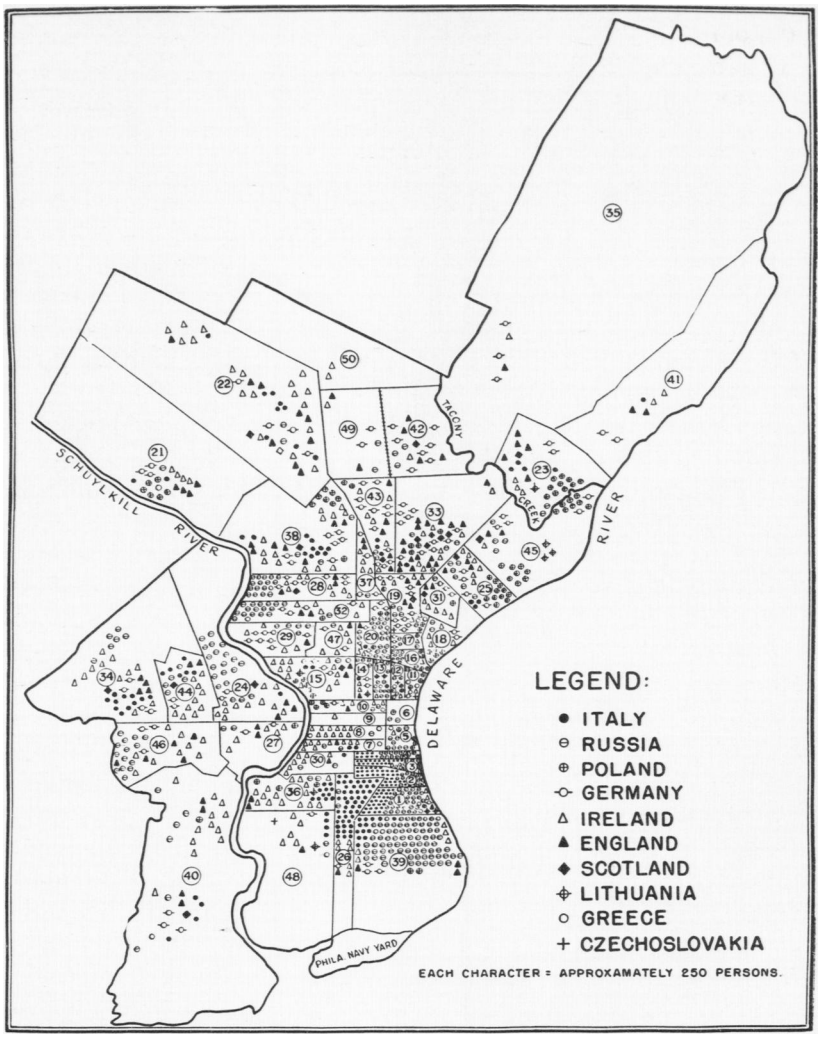

FIGURE 1.—Map of Philadelphia indicating the distribution of persons of foreign birth, based on the U. S. Census of 1930.

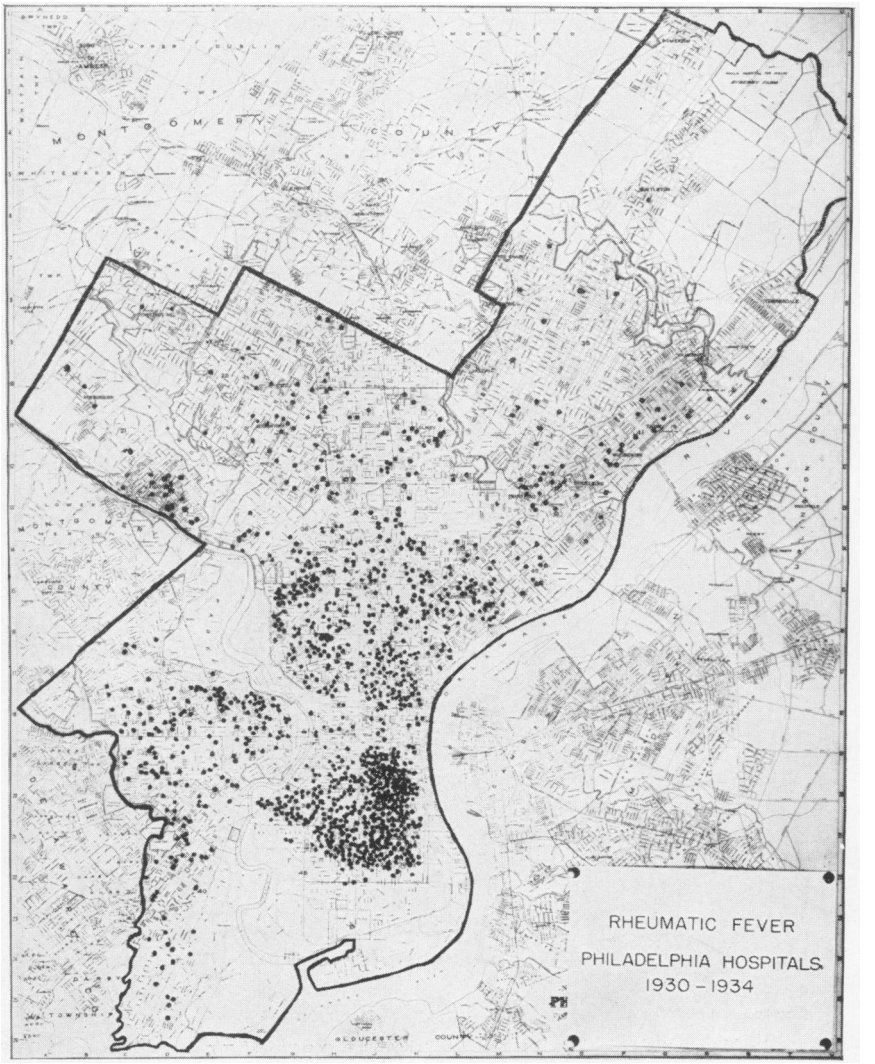

FIGURE 2.—Home location of 1,183 cases of rheumatic fever admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934.

Considering the city as a whole, the largest number of hospital cases per 100,000 population was admitted from South Philadelphia. This is one of the oldest sections, is flat, and contains many persons living under extremely unfavorable economic conditions. The high incidence is doubtless influenced by the accessibility of hospital facilities. A number of large hospitals, including the Pennsylvania

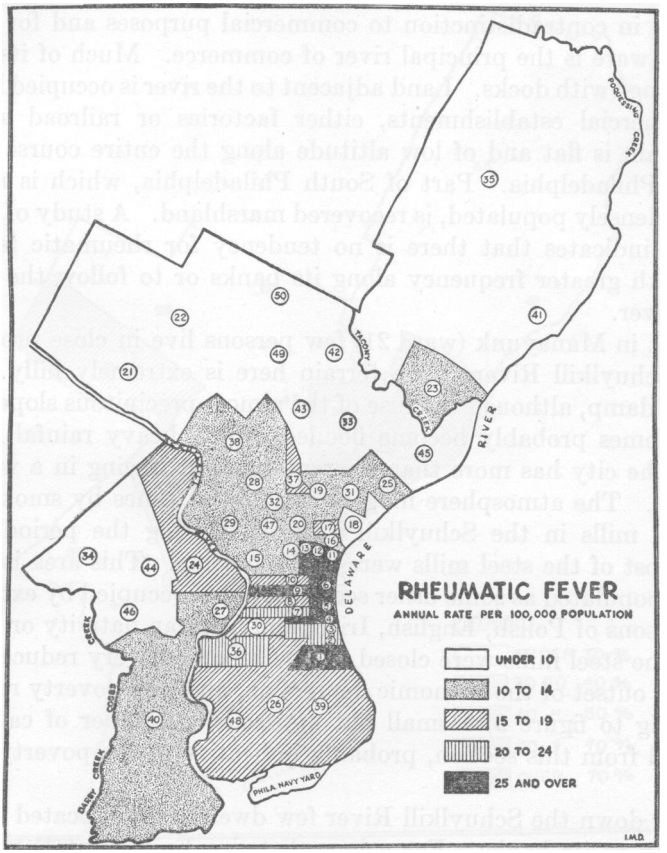

FIGURE 3.—Distribution by city wards of 1,183 cases of rheumatic fever admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934, based on the mean annual number of cases per 100,000 population. Population based on U. S. Census of 1930.

Hospital, Graduate Hospital, Jefferson Hospital, and the Children's Hospital are located in or near this area, while it is in close proximity to the Hospital of the University of Pennsylvania, Philadelphia General Hospital, and the Presbyterian Hospital, which are located in West Philadelphia just across the Schuylkill River.

Figures 2 and 3 seem to indicate that proximity to watercourses does not influence admissions to hospitals for rheumatic fever. With the exception of a large number of cases per 100,000 population in wards 1, 4, 5, 6, and 11, the situation in other wards along the banks

of rivers varies considerably. In any event, these maps do not suggest a tendency for the distribution of rheumatic fever in Philadelphia to follow the banks of streams, as noted in several cities in Great Britain (*13, 14, 15, 19*) and in New York City (*10*).

This is due in part to the topography, the density and degree of poverty of the population, and the extent to which land along the banks of the Schuylkill and Delaware Rivers is used for residential purposes, in contradistinction to commercial purposes and for parks. The Delaware is the principal river of commerce. Much of its water front is lined with docks. Land adjacent to the river is occupied largely by commercial establishments, either factories or railroad sidings. The terrain is flat and of low altitude along the entire course of the river in Philadelphia. Part of South Philadelphia, which is not extremely densely populated, is recovered marshland. A study of figures 2 and 3 indicates that there is no tendency for rheumatic fever to occur with greater frequency along its banks or to follow the course of this river.

Except in Manayunk (ward 21) few persons live in close proximity to the Schuylkill River. The terrain here is extremely hilly. It is far from damp, although because of the almost precipitous slopes some of the homes probably become flooded during heavy rainfall. This part of the city has more than average sunlight, facing in a westerly direction. The atmosphere may be vitiated at times by smoke from the steel mills in the Schuylkill Valley. During the period under study most of the steel mills were not operating. This area is not as densely populated as some other sections, but is occupied by extremely poor persons of Polish, English, Irish, and German nativity or extraction. The steel mills were closed or operated on a very reduced scale from the outset of the economic depression, and dire poverty resulted. According to figure 2, a small but appreciable number of cases was admitted from this section, probably indicative of the poverty which prevails.

Lower down the Schuylkill River few dwellings are located in close proximity to its banks. For a long distance Fairmount Park is situated between the river and residential areas. These areas are for the most part occupied by persons in better than average economic circumstances, with the exceptions of ward 24 in West Philadelphia and wards 28 and 32 along its eastern border, occupied largely by Jewish persons and some Irish and Negroes living under poor but not squalid conditions. Slight aggregations of rheumatic fever in these sections are indicated in figure 2. These parts of Philadelphia are flat but not low, since the banks of the Schuylkill form a plateau on either side of the river along this part of its course.

Reference is made to figure 1 for an explanation of the aggregations of rheumatic fever in hospitals mentioned in the preceding paragraph.

Each symbol in figure 1 equals approximately 250 persons. These areas are occupied largely by Jewish persons of Russian birth or extraction. Since the death rates from rheumatic heart disease were no higher among the Jewish population than among gentiles (see Part III of this series of articles), the higher rate of admissions is probably due to a greater tendency to seek hospitalization.

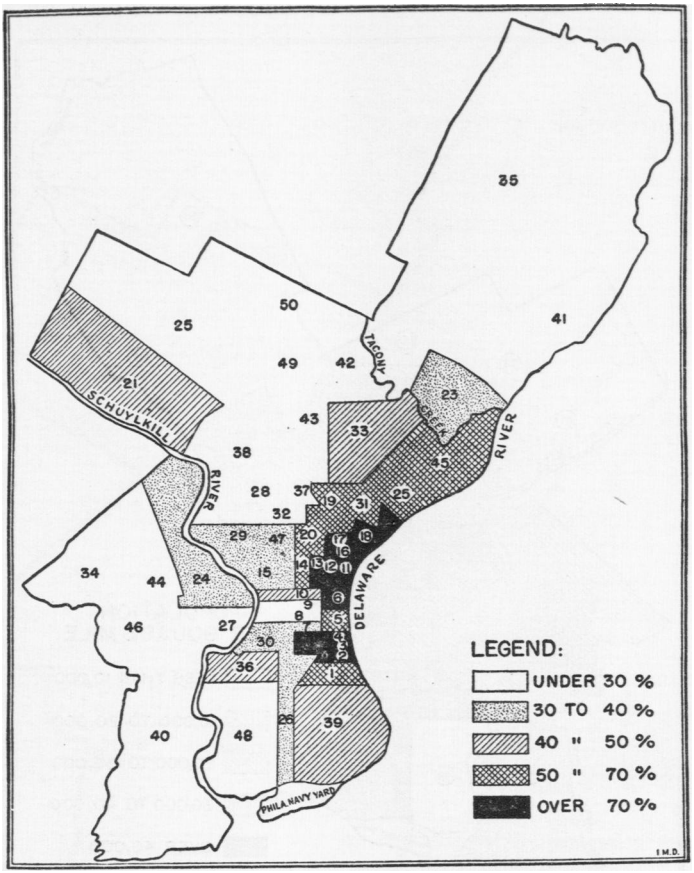

FIGURE 4.—Distribution by wards of the percentage of dwellings renting for less than $30 a month, according to the U. S. Census of 1930.

Further down the Schuylkill River the banks become flat and somewhat marshy. Few homes are situated in close proximity to its banks, along which are located some railroads, the University of Pennsylvania, commercial establishments, oil tanks, and a large area of undeveloped land.

Figure 4 is a map showing the percentage of low rental dwellings in each ward, and is in a measure an indication of the degree of poverty. This map is based on the percentage of dwellings which rented for less than $30 per month in 1930. The data were obtained through

the courtesy of the Philadelphia Housing Association. Comparing figures 3 and 4 it is noted that although a high incidence of rheumatic fever was often noted in wards with the highest percentage of low rentals, the relationship was not invariable. Wards 2, 3, 16, 17, and 18, in which over 70 percent of the buildings rented for less than $30 a month, were not among the wards with the highest number of admissions for rheumatic fever. This may be accounted for in part

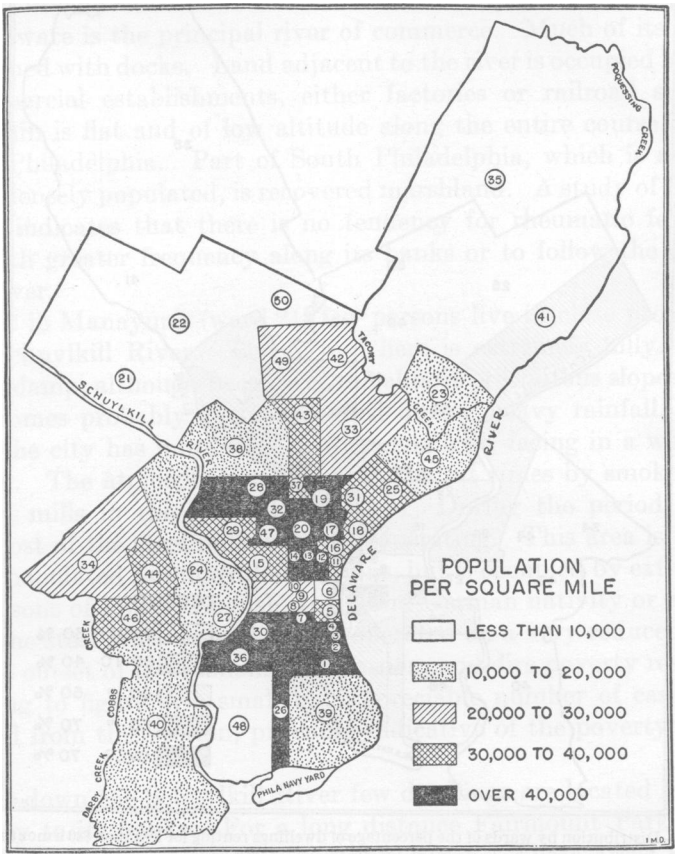

FIGURE 5.—Population of Philadelphia per square mile according to wards, based on the U. S. Census of 1930.

by the racial strains of the inhabitants of these wards. Polish people, for instance, do not ordinarily seek admission to hospitals as readily as certain other racial groups.

Conversely, in wards 1 and 9, in which the numbers of hospital cases of rheumatic fever per 100,000 population were extremely high, the greatest degree of poverty as indicated by low rentals did not seem to prevail. Many wards with over 50 percent of houses renting for less than $30 a month did not have a disproportionately high incidence of rheumatic fever.

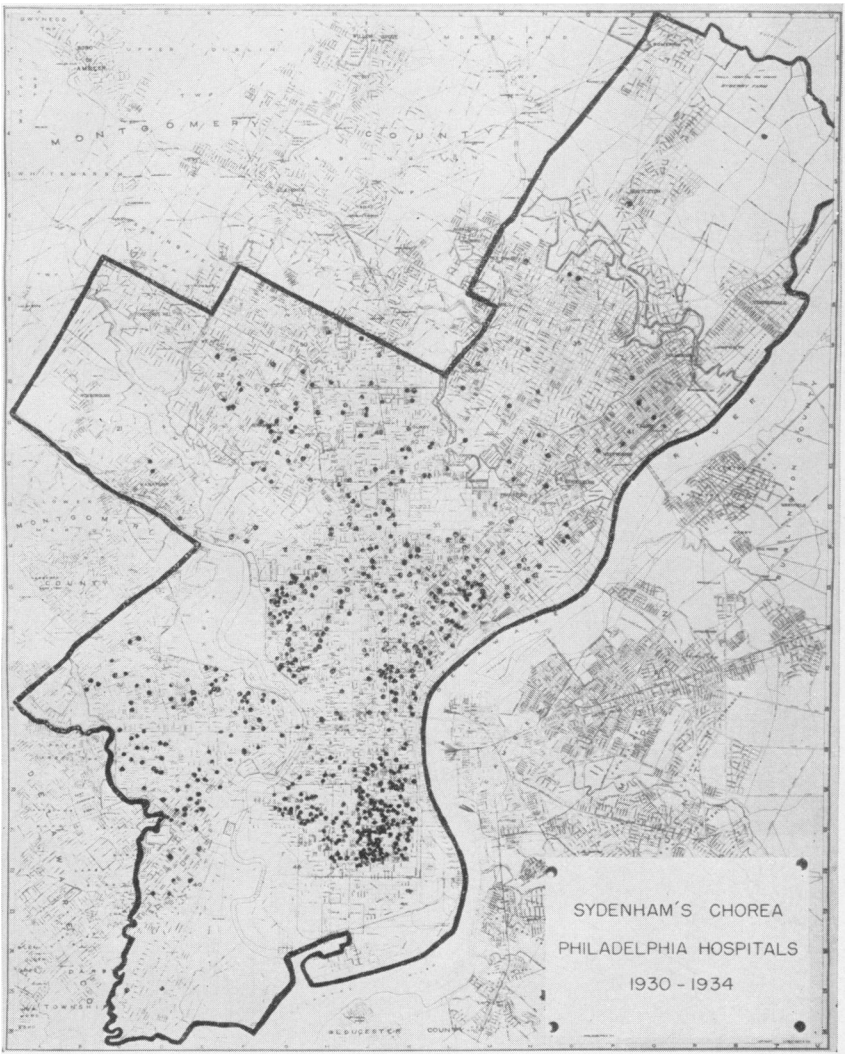

FIGURE 6.—Home location of 608 cases of Sydenham's chorea admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934.

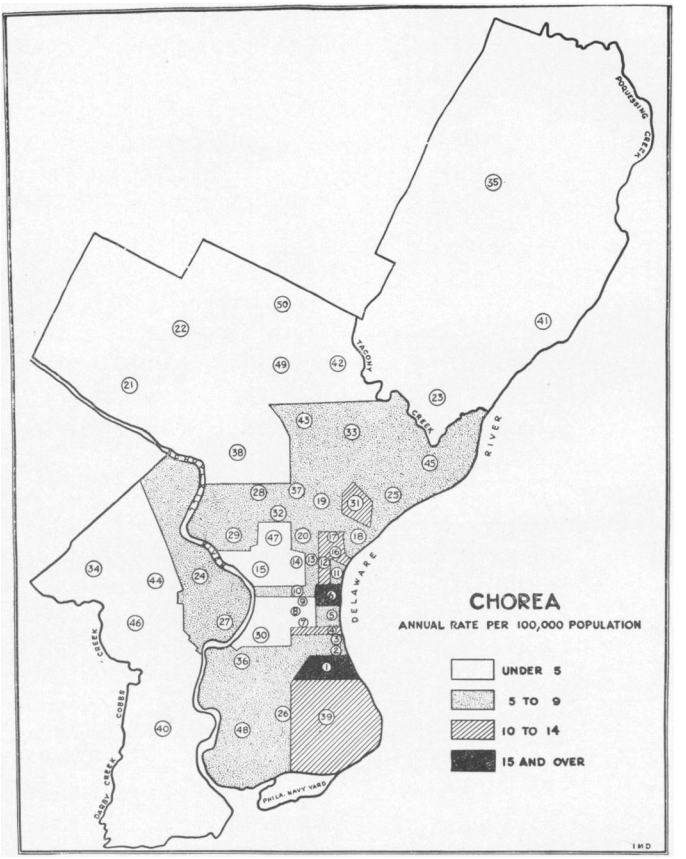

FIGURE 7.—Distribution by city wards of 608 cases of Sydenham's chorea admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934, based on the mean annual number of cases per 100,000 population. Population based on U. S. Census of 1930.

Comparison of figures 3 and 4 indicates that the distribution of poverty as indicated by low rentals more nearly follows the course of the Delaware River than does the distribution of rheumatic fever. Studies suggesting a relationship between proximity to water courses and rheumatic fever should be interpreted with the fact in view that poor people tend to live along the water front.

The population per square mile as ascertained by the United States Census of 1930 is shown in figure 5, which was also obtained through the courtesy of the Philadelphia Housing Association. Comparison with figure 3 suggests that density of population is not per se a factor of prime importance. A number of wards with the greatest density of population do not show the greatest number of cases in hospitals of rheumatic fever per 100,000 population. Several factors may be in part responsible. Wards 20, 28, 30, 36, and 47 are occupied largely by colored persons, who constitute a somewhat abnormal group because of recent migration. In parts of some of the other wards, such as wards 5, 6, 11, and 16, the actual density of population is greater than figure 5 indicates, because these wards are largely occupied by industrial establishments. The comparatively small numbers of persons residing in these wards often live under the most squalid circumstances and in a state of chronic overcrowding. Ward 46 in West Philadelphia, a ward with many apartment houses, has a population of 30,000 to 40,000 per square mile. The economic conditions are above average and the rate of admission for rheumatic fever is among the lowest. A low admission rate for rheumatic fever is also indicated in ward 44, with 30,000 to 40,000 population in less favorable, but not squalidly poor economic conditions.

SYDENHAM'S CHOREA

Figure 6 is a spot map showing the home location of 608 cases of chorea, of which 251 were associated with rheumatic heart disease, and 357 were instances of simple Sydenham's chorea. The distribution of cases was not dissimilar to that of rheumatic fever (figure 2) except that chorea was more evenly distributed. There was probably a relatively smaller number of cases of chorea in South Philadelphia, taking into consideration the total of each disease.

The mean annual number of hospital cases of chorea per 100,000 population by city wards is shown in figure 7. This figure also suggests that, although chorea is only slightly over half as frequent as rheumatic fever, its distribution is more general and there is less tendency for it to occur with greater frequency in certain wards. Chorea was somewhat more common in the eastern half of South Philadelphia and as far north along the Delaware River as ward 17. There was no marked tendency for chorea to occur with greater frequency along

the courses of the Delaware and Schuylkill Rivers. The disease was less common in wards occupied largely by Negroes.

Comparing figure 7 with figures 4 and 5, no very positive relationship is suggested between hospital admissions for Sydenham's chorea and poverty as indicated by low rentals, and overcrowding as indicated by density of population. As in the instance of rheumatic

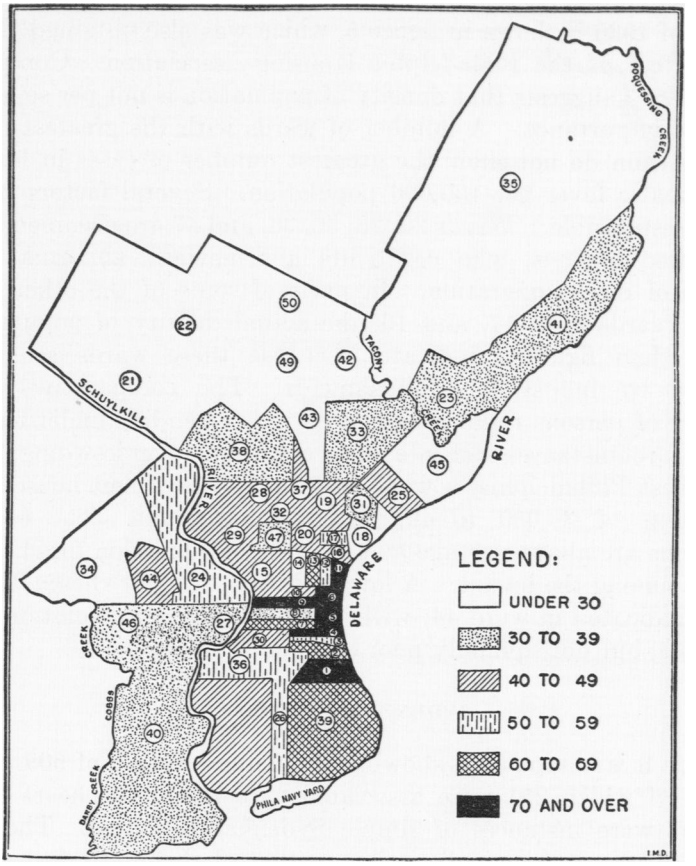

FIGURE 8.—Distribution by city wards of 3,991 cases of rheumatic heart disease, rheumatic fever, and Sydenham's chorea, admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934, based on the mean annual number of cases per 100,000 population. Population based on U. S. Census of 1930.

fever, admissions to hospitals were low in all of the wards in which economic conditions are better than average, such as wards 35, 42, 49, and 50.

ALL RHEUMATIC CONDITIONS

The mean annual number of admissions per 100,000 population by wards for 3,991 cases of rheumatic heart disease, rheumatic fever, and Sydenham's chorea admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934, is shown in figure 8. With the exception of the better residential areas and wards 14, 18, and 45, admissions

for this group of diseases were very widely distributed. Wards 14 and 18 are in the poorest parts of Philadelphia. Ward 45 is occupied largely by the families of skilled laborers, often persons engaged in the textile industry.

The largest number of hospital admissions per 100,000 population is indicated in the eastern half of South Philadelphia. Wards 1, 4, 5, 6, and 11, located in South Philadelphia and north along the Delaware River, and ward 9 in the midcity, had the highest rates. These wards, in the oldest part of Philadelphia, are extremely poor and congested, and with a low altitude. They are occupied for the most part by white persons. Hospital facilities are no more available in these wards than in a number of other parts of the city. Other wards with an equal degree of poverty do not have as high admission rates for rheumatic conditions. Furthermore, with the exception of these wards and some wards in South Philadelphia, these diseases did not occur more frequently in wards along the rivers.

RHEUMATIC HEART DISEASE AMONG PERSONS UNDER 20 YEARS OF AGE

Figure 9 is a spot map showing the home distribution of 1,824 nonfatal cases of rheumatic heart disease among persons under 20 years of age. With the exception of a large number of cases in South Philadelphia east of Broad Street, a fairly even distribution is indicated in parts of the city inhabited by persons in the poorer economic groups. Comparatively few cases are noted in the northern and northeastern sections and in parts of West Philadelphia, sections of the city populated for the most part by persons of better-than-average economic status.

The large number of cases in South Philadelphia is attributable to several factors. (The large black area in fig. 9 comprises 98 cases.) The section south of Broad Street is perhaps the oldest part of Philadelphia. It is low in altitude. Housing conditions are bad, rentals low (fig. 4), and the area is quite congested (fig. 5). There are also more large hospitals and health agencies in this part of the city. The large dark area is populated largely by Jewish persons of Russian extraction and to a less extent by persons of Italian extraction (fig. 1). As mentioned in the instance of rheumatic fever, certain racial groups are more prone to avail themselves of hospital facilities.

This figure also suggests little tendency for this disease to follow the course of rivers. Aside from South Philadelphia no clusters of admissions of significant size were noted. Rheumatic heart disease among persons under 20 years of age did not occur as frequently as might be anticipated from their poor economic circumstances in wards occupied to any great extent by Negroes. This applies especially to wards 30, 27, 24, 14, 15, 20, 32, and 47.

FATAL CASES

Figure 10 is a spot map showing the home location at time of death of 603 fatal cases of rheumatic heart disease. This map indicates a more general distribution of fatal cases than of the home location of admissions for rheumatic fever, Sydenham's chorea, rheumatic heart disease among persons under 20 years of age, and all rheumatic conditions in Philadelphia. Comparatively more fatal cases, considering that the series is smaller, are indicated in the better-to-do residential sections. This suggests that other manifestations are more likely to occur among the underprivileged than are deaths from rheumatic heart disease, which, while also more frequent among the underprivileged, occur with relatively greater frequency among the better-to-do.

This suggests an analogy between rheumatic heart disease and pulmonary tuberculosis. Both of these conditions occur with greater frequency among the poor. Fulminating pulmonary tuberculosis, such as miliary tuberculosis, is rather infrequent among persons in better circumstances, while fibroid phthisis is more likely to occur among persons under better economic surroundings. Extremely acute manifestations of rheumatic infection, such as rheumatic fever, Sydenham's chorea, or fulminating pancarditis, are relatively infrequent among the better-to-do; slowly progressive, fibrosing mitral stenosis, while still less common than among the poverty stricken, is more likely to occur than these overtly acute rheumatic phenomena. In both rheumatic heart disease and tuberculosis these differences are conditioned by better treatment, ability to obtain more rest, less arduous occupations, and other considerations. It should also be borne in mind that many better-to-do persons with rheumatic heart disease probably acquire the disease while living under less favorable circumstances.

Figure 11 indicates a wide distribution of deaths in hospitals from rheumatic heart disease in Philadelphia, with a higher incidence in the wards in which clinical manifestations of rheumatic infection are most common. The highest rates per 100,000 population are noted in the eastern half of South Philadelphia and in the midsection of the city, and are maximal in wards 4, 5, and 6. Only in these areas do deaths from this cause tend to occur with greatest frequency in wards adjacent the water front. Comparing this figure with figures 4 and 5, no close relationship to poverty as expressed by low rentals or density of population is suggested.

SUMMARY

A review of the literature indicates a considerable lack of agreement concerning the roles of proximity to watercourses and dampness due to low altitude in the causation of rheumatic fever and chorea. The consensus of most investigations suggests that these diseases are

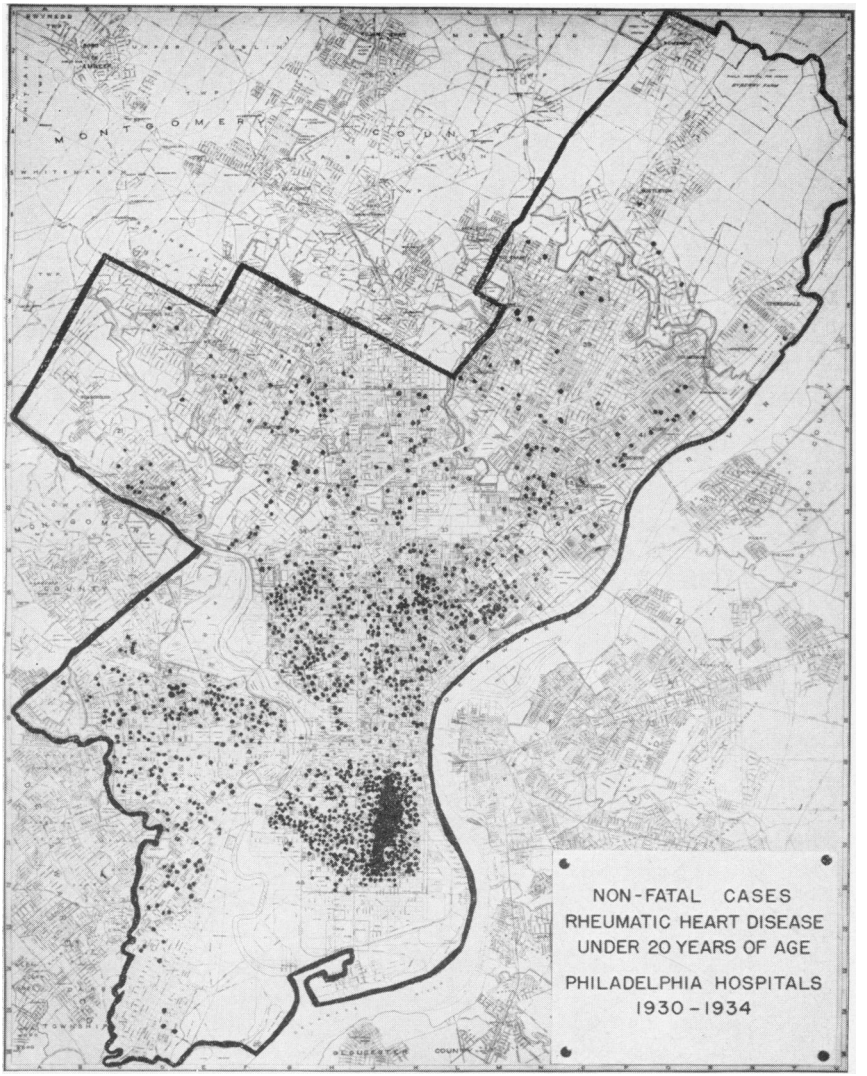

FIGURE 9.—Home distribution of 1,824 nonfatal cases of rheumatic heart disease among persons under 20 years of age admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934.

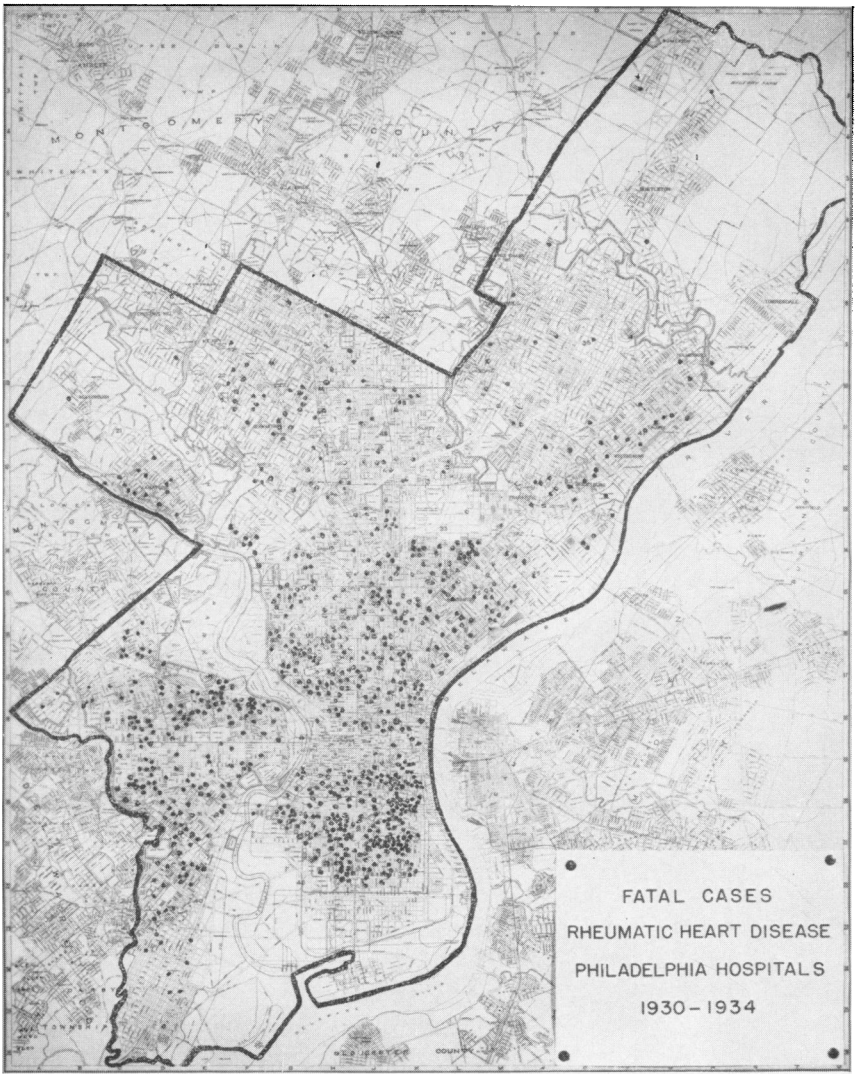

FIGURE 10.—Home location at time of death of 603 fatal cases of rheumatic heart disease admitted to Philadelphia hospitals from January 1, 1930, to December 31, 1934.

distinctly more prevalent in areas occupied by the underprivileged than the better-to-do.

Rheumatic fever, Sydenham's chorea, and nonfatal and fatal rheumatic heart disease among hospital patients in Philadelphia tended to occur with greatest frequency in the sections of the city occupied to a large extent by the poor. This relationship was not, however, invariable. Some of the city wards in which the rentals were lowest and the

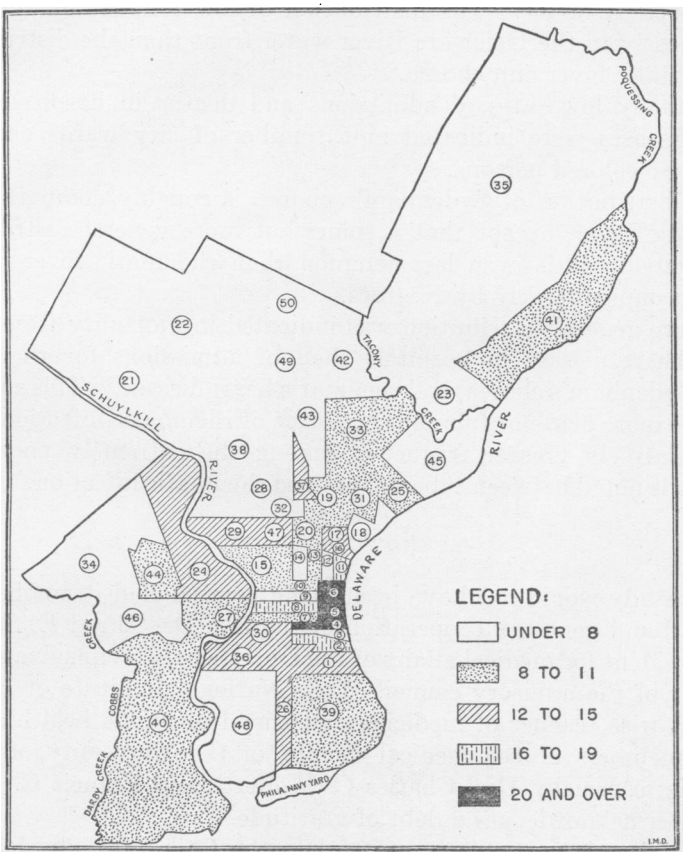

FIGURE 11.—Distribution by city wards of 603 fatal cases of rheumatic heart disease, based on home address at time of death, among admissions to Philadelphia hospitals from January 1, 1930, to December 31, 1934, based on mean annual number of deaths per 100,000 population. Population based on U. S. Census of 1930.

density of population greatest did not have the greatest number of hospital admissions or deaths per 100,000 population. A low rate of admissions and deaths was noted in every city ward inhabited for the most part by persons living under reasonably favorable economic circumstances. This is doubtless due in no small measure to the fact that persons in the better-to-do economic brackets do not regularly seek admission to hospitals for the treatment of medical conditions.

It is difficult to escape the impression that the conditions under study occur with the greatest frequency in sections of the city occupied by poverty-stricken persons.

These diseases tended to occur with greatest frequency in the eastern half of South Philadelphia and in a section of the midcity near the Delaware River.

These studies do not suggest that proximity to a watercourse is an important factor. The distribution of low rentals corresponded more closely to the Delaware River water front than the distribution of rheumatic fever and chorea.

Relatively low rates of admissions and deaths in hospitals from these diseases were indicated in a number of city wards occupied largely by colored persons.

The distribution of Sydenham's chorea is roughly comparable to rheumatic fever, except that a somewhat more general distribution is indicated. It is even less common than rheumatic fever in city wards occupied largely by Negroes.

A more general distribution was indicated in mortality from rheumatic heart disease in hospitals than of admissions for rheumatic fever, Sydenham's chorea, and rheumatic heart disease. This suggests that the more acute or fulminating forms of rheumatic infection occur with relatively greater frequency among the extremely poor. An analogy is noted between tuberculosis and rheumatic infection.

ACKNOWLEDGMENTS

This study would not have been made possible had it not been for the kind and generous cooperation of the late Dr. Alfred E. Stengel, vice president for medical affairs of the University of Pennsylvania and member of the advisory council of the National Institute of Health. To that wise teacher of medicine and friend of public health and to many members of the medical faculty of the University of Pennsylvania, especially Drs. Charles C. Wolferth and Francis C. Wood, the writer acknowledges a debt of gratitude.

The writer is particularly grateful to the College of Physicians of Philadelphia for access to its splendid library. This library serves as a pattern of all that a medical library should be; its quiet, congenial atmosphere and the ready availability of its wide range of medical literature make study a pleasure. The attitude of friendliness and helpfulness of its staff is rarely equalled and never excelled.

Permission to review and abstract the clinical records which form the basis of these studies was granted without delay by every hospital which was approached. The record librarians were uniformly prompt and cooperative. The writer also wishes to thank Mr. Bernard J. Newman, director of the Philadelphia Housing Association, for permission to use several maps prepared by that organization.

A number of members of the Public Health Service furnished assistance in many ways. The writer is deeply grateful to Medical Director A. M. Stimson for reviewing the manuscripts and for his sympathetic understanding over a number of years. To Principal Statistician Selwyn D. Collins, he is grateful for his painstaking analysis of the statistical material, and for a number of constructive suggestions. Miss Inez Demonet, medical artist of the National Institute of Health, is responsible for the many attractive illustrations. Acknowledgment is also made of the loyal, efficient, and cheerful services of the office personnel, Miss Margaret E. Hook and Mrs. Christine A. Hibsman.

REFERENCES

(1) Greenwood, Major: Sydenham as an epidemiologist. Proc. Royal. Soc. Med., **12**: 55 (1918–19). (Epidemiology and state medicine.)
(2) Goodall, E. W., and Washbourn, J. W.: Text-book of Infectious Diseases, 3d ed. of Goodall and Washbourn's Manual of Infectious Diseases; rev. and in large part rewritten by E. W. Goodall. H. K. Lewis and Co., London, 1928.
(3) Hedley, O. F.: Contributions of Edward Jenner to modern concepts of heart disease. Am. J. Pub. Health, **28**: 1165 (1938).
(4) Hedley, O. F.: Incidence of rheumatic heart disease among college students in the United States. Pub. Health Rep., **53**: 1635 (1938).
(5) Paul, J. R., and Leddy, P. A.: The social incidence of rheumatic heart disease. A statistical study in Yale University students. Am. J. Med. Sci., **184**: 597 (1932).
(6) Preliminary reports, the National Health Survey. Population series. Bulletin A. Division of Public Health Methods, National Institute of Health, U. S. Public Health Service, Washington, 1938.
(7) Thomson, A. P.: Study of distribution of rheumatic infection in children in Birmingham. Arch. Dis. Childhood, **3**: 20 (1928).
(8) Paul, J. R.: The epidemiology of rheumatic fever. A preliminary report with special reference to environmental factors in rheumatic heart disease and recommendations for future investigations for the American Heart Association, 1930. Metropolitan Life Insurance Co., New York, 1930.
(9) Shrubsall, F. C.: London County Council. Ann. Report of the Council, 1925. III. Public Health. Published by the London County Council, 1926. P. 126.
(10) Ingerman, Eugenia, and Wilson, May G.: Rheumatism: Its manifestations in childhood today. J. Am. Med. Assoc., **82**: 759 (1924).
(11) Coombs, Carey F.: Rheumatic Heart Disease. Wm. Wood and Co., New York City, 1924.
(12) Coombs, Carey F.: Thirty years progress in the study of rheumatic heart disease. Bristol Medico-Chirurg. J., **50**: 93 (1933).
(13) Miller, Reginald: Discussion on the etiology and treatment of heart disease in early life; with special reference to the prevention of chronic cardiac insufficiency. Brit. Med. J., **2**: 702 (1923).
(14) Miller, Reginald: Report on the environmental and other predisposing causes of rheumatic infection. Supplement to Brit. Med. J., **2**: 5 (1926).
(15) Langmead, F. S.: The rheumatic school child. Lancet, **1**: 941 (1920).
(16) Coates, Vincent, and Thomas, R. E.: Rheumatic infection in childhood. Lancet, **2**: 326 (1925).
(17) Medical Research Council, Great Britain. Child Life Investigations. Social conditions and acute rheumatism. Special report series No. 114. His Majesty's Stationery Office, London, 1927.
(18) Maddox, Kenneth: Metropolitan and rural incidence and distribution of acute rheumatism and rheumatic heart disease in New South Wales. Part III. The distribution of rheumatic fever in the metropolis of Sydney. Australia Med. J., **1**: 464 (1937).

(19) Maddox, Kenneth: Metropolitan and rural incidence and relation of acute rheumatism and rheumatic heart disease in New South Wales. Part III. Distribution of rheumatic heart disease in New South Wales. Australia Med. J., 1: 425 (1937).
(20) Hedley, O. F.: Trends, geographical, and racial distribution of mortality from heart disease among persons 5–24 years of age in the United States during recent years (1922–1936). Pub. Health Rep., 54: 2271 (1939).

RICKETTSIA DIAPORICA: ITS PERSISTENCE IN THE TISSUES OF *ORNITHODOROS TURICATA* [1]

By GORDON E. DAVIS, *Bacteriologist, United States Public Health Service*

In a continuation of studies on ticks of the genus *Ornithodoros* as vectors of infectious agents, it has been found that *Rickettsia diaporica* may persist in the tissues of *O. turicata* for at least 1,001 days but is not transmitted during the process of feeding.

On June 21, 1937, 38 ticks in the late nymphal stages engorged on a guinea pig ill with the original Montana strain of American "Q" fever (nine-mile fever). They were subsequently tested at irregular intervals (1) for transmission of *R. diaporica* and (2) for the presence of this organism in the tissues. The former tests were made by allowing the tick to engorge completely on guinea pigs and to detach voluntarily, thereby insuring the wetting of the bite wound with coxal fluid, the latter by injecting, subcutaneously, saline suspensions of ground ticks. Temperatures of all test animals were taken daily. If death ensued, autopsies were performed to determine the character of any gross lesions. If the animal survived, it was tested for immunity by injecting controlled doses of infective spleen tissue.

Test feedings on guinea pigs.—Four ticks died without being tested and 2 were injected without test feedings. A total of 88 test feedings were made with the remaining 32 ticks. The earliest tests were approximately 7 weeks, and the latest 20 months, following the infective feeding. In no instance did the host guinea pig show evidence of infection.

Tests by injection of a saline suspension of the macerated tick into guinea pigs.—Five additional ticks died and were not tested by injection. The results of injecting the remaining 29 ticks are shown in table 1. The tick number, the number of days after the infective feeding, the number of days after the last feeding, the total number of feedings, and the sex and stage are given. Twenty-two ticks (5 nymphs, 7 males, and 10 females) produced typical infections, while 7 ticks (2 nymphs, 4 males, and 1 female) failed to produce the infection. The earliest and latest "positive" injections were made at 0 and 1,001 days, respectively, while the earliest and latest "negative" injections were at 82 and 900 days, respectively.

[1] From the Rocky Mountain Laboratory, Hamilton, Mont., Division of Infectious Diseases, National Institute of Health.

An attempt to recover R. diaporica from the progeny of female ticks (table 2).—Progeny were tested as follows: From 1 female that died and was not injected—114 larvae by feeding, 70 by injection; 12 nymphs by feeding, 9 by injection; from 6 females that were "positive" when injected—1,804 larvae by feeding, 833 by injection; 556 nymphs by feeding, 129 by injection; from one female that was "negative" when injected—261 larvae by feeding, 92 by injection; 213 nymphs by feeding, 76 by injection.

TABLE 1.—*The persistence of R. diaporica in the tissues of O. turicata*

Tick No.	Injected, days after infective feeding	Injected, days after last feeding	Total test feedings	Stage or sex	Tick No.	Injected, days after infective feeding	Injected, days after last feeding	Total test feedings	Stage or sex
Positive tests:					Positive tests—continued				
1	0	0	0	nymph	37	791	17	5	female
11	51	51	0	nymph	3	827	159	7	female
2	71	21	1	female	26	987	112	5	female
12	82	1	1	nymph	9	1,001	434	5	female
31	82	1	1	nymph					
25	86	0	2	nymph					
10	99	40	1	male	Total 22			64	
32	124	15	2	female					
13	207	17	3	female	Negative tests:				
24	267	2	3	male	18	82	1	1	nymph
20	301	191	2	female	6	88	0	2	male
22	413	3	6	female	17	99	5	2	nymph
16	488	4	3	male	27	594	4	5	male
7	585	3	4	male	35	728	530	2	male
38	623	10	5	female	21	823	339	5	male
5	651	164	3	male	15	900	63	7	female
14	698	214	2	male					
23	738	254	3	male	Total 7			24	

None of the test guinea pigs showed evidence of infection.

The infectivity of tick excrement.—At irregular intervals the excreta from a tick-storage vial was washed out with a small amount of physiologic saline and injected subcutaneously into a guinea pig. Eight such tests were made. All material was from ticks which produced typical infections when injected and 6 of these tests were positive. The shortest and longest periods after feeding, when tests were made, were less than an hour and 16 days, respectively.

DISCUSSION

In a previous report (*1*) it was shown that: (1) *O. turicata* may sustain *Bact. tularense* in its tissues for at least 674 days but does not transmit this organism during the process of feeding; (2) that the organism was not transmitted to the progeny; and (3) that the virulence of the organism was not adversely affected by its long residence in the tick or by prolonged fasting of the tick.

TABLE 2.—*Tests of progeny of O. turicata that ingested infective blood*

Number of females	Larvae		1st to 4th stage nymphs	
	Fed	Injected	Fed	Injected
	Progeny tested from female that died and was not injected			
1	114	70	12	9
	Progeny tested from females "positive" when injected			
6	1,804	833	556	129
	Progeny tested from female "negative" when injected			
1	261	92	213	76

These new data show that this tick may also sustain *R. diaporica* for as long as 1,001 days, as determined by the injection of tick tissue into guinea pigs, but, as with *Bact. tularense*, does not transmit *diaporica* during the process of feeding. Neither was the organism transmitted through the egg to the next generation. Tick excrement, when injected, produces a typical infection.

No evidence of the phenomenon of "reactivation" as reported by Spencer and Parker (*2*) for the spotted fever rickettsia was encountered with *R. diaporica* in *O. turicata*, as 7 ticks injected 112, 159, 164, 191, 214, 254, and 434 days, respectively, following the last feeding produced typical infections with death on the tenth, eighth, eleventh, ninth, thirteenth, tenth, and sixth days, respectively. The average day of death for 22 guinea pigs reported in table 1 was the tenth day, with a minimum of 6 days and a maximum of 18.

SUMMARY

1. *Rickettsia diaporica* may survive in the tissues of *Ornithodoros turicata* for at least 1,001 days but is not transmitted during the process of feeding; neither is it transmitted through the egg to the next generation.

2. The virulence of the organism is not adversely affected by its long residence in the tick or by prolonged fasting of the tick.

3. Tick excrement is infective.

REFERENCES

(*1*) Davis, Gordon E.: *Bacterium tularense:* Its persistence in the tissues of the argasid ticks, *Ornithodoros turicata* and *O. parkeri*. Pub. Health Rep., **55**: 66–7 680 (1940).

(*2*) Spencer, R. R., and Parker, R. R.: Rocky Mountain spotted fever: Infectivity of fasting and recently fed ticks. Pub. Health Rep., **38**: 333–339 (1923).

HOME CARE OF SICK [1]

General Statement.

A majority of the persons who are sick in the United States today are being cared for in their homes. Some knowledge of the general principles of the care of the sick is highly desirable when, for economic or other reasons, skilled nursing service cannot be secured. When home care is intelligently applied, it not only promotes the comfort and welfare of the patient, but it can serve the physician in attendance effectively as the source of much helpful information on the progress of the case. Because special care will be prescribed in many instances by the attending physician, only such general measures as are applicable to all cases will be considered in this leaflet.

The average home does not lend itself conveniently to the care of a very sick patient. Every effort should be made to provide hospital care for seriously ill persons.

Persons Caring for the Sick.

Persons caring for the sick should maintain a cheerful and sympathetic attitude at all times. Only clothing that can be laundered and kept scrupulously clean should be worn. The hands should be washed with soap and running water immediately after each handling of the patient. When running water is not available an assistant may pour water over the hands of the attendant.

Under no circumstances should an attempt be made to *diagnose* or to *treat* the patient. Any suggestions offered by "well meaning" visitors should be ignored.

It is a good practice to write down the physician's orders so that details will not be forgotten.

Observations That Are Helpful to the Physician.

When there is illness in the home, the physician will appreciate a written record of observations made during his absence.

These observations should include:

1. Temperature—morning, afternoon, and evening.
2. Quality and duration of sleep.
3. Number and kind of bowel movements.
4. Amount of urine passed in 24 hours.
5. Items and amount of food eaten.
6. Amount of liquids taken (including water, fruit juices, tea, milk, etc.).
7. Attitude of patient (irritable, fearful, cheerful, contented, etc.).

Selection of Room.

When possible, the patient should be placed in a room not used by another member of the family. The room should be well lighted, and easily ventilated, and near the bathroom and toilet, if such facilities

[1] This material is available in leaflet form and a limited number of copies may be obtained by addressing the Surgeon General, U. S. Public Health Service, Washington, D. C.

are available. All unnecessary furniture and hangings should be removed. The windows should be well screened and provided with adjustable window shades. The room should be thoroughly cleaned and the dust removed daily with a damp cloth.

Attention should be given to the patient's preferences concerning the temperature and lighting of the room. Members of the household should cooperate in maintaining quiet and in affording the patient privacy. In cases of serious illness, any discussion of the disease in the patient's presence should not be permitted.

Sick Room Equipment.

In addition to a comfortable bed, the minimum equipment for a sick room should include:

1. A complete set of toilet articles for the patient, including comb, brush, toothbrush, wash basin, soap, wash cloth, towels; bedpan or chamber should be furnished if the patient's condition requires.
2. A clinical thermometer and cotton or tissues for wiping the thermometer before and after using. Cleansing with soap and water will satisfactorily disinfect a thermometer.
3. Paper napkins or tissues for nose and throat discharges and a paper bag for the used tissues.
4. A washable gown or coverall apron for the attendant to wear while in the sick room.
5. If running water is not available, an additional basin, pitcher of water, and soap and towel should be provided for the attendant's use. (The attendant should wash his hands and arms thoroughly before and after waiting on the patient.)

The Bed.

If available, a single bed equipped with a firm spring and mattress should be selected. Most home beds are too low for the care of a patient without undue strain on the attendant. The bed may be raised to the desired height by placing a block of wood under each leg. Be sure casters are removed before placing bed on blocks. It will add greatly to the patient's comfort to have the bed level.

The bedclothing should be of lightweight washable materials. Do not use heavy comforters or fancy spreads which cannot easily be laundered. The mattress should be protected by a washable pad, and for children or patients who cannot control body discharges, additional protection should be provided through the use of a rubber sheet or a piece of oilcloth. If neither is available, a useful substitute is afforded by sewing a muslin cover over about 24 double pages of newspaper.

To Change Sheet Under Patient.

1. Gently roll patient over to one side of bed.
2. Fold soiled sheet close up against the body.

3. Fold the clean sheet in narrow pleats and adjust to the mattress as close to the patient as possible, and tuck well at the side, the head and foot of bed.

4. Gently roll patient to the side of the bed covered by the clean sheet.

5. Withdraw soiled sheet, and pull the clean sheet in place.

6. Smooth sheet of wrinkles and tuck tightly on that side and at the head and foot of the bed.

All of these changes can be accomplished without uncovering the patient.

Preparation of Patient for the Day.

The face and hands should be washed, the teeth brushed, and the hair combed soon after the patient has fully awakened. A daily sponge bath is both refreshing and stimulating. Upon completion of the toilet, the patient's back should be rubbed with alcohol, especially those places on which the weight falls—the back, shoulders, heels, and elbows. This will help maintain good circulation of blood and may prevent the development at these pressure spots of "bed sores," which are very painful and heal slowly.

Diet.

The diet of a patient should be governed by the advice of the physician in attendance. Until the arrival of the physician, it is usually safe to allow the patient a soft or liquid diet, consisting of milk, eggs, milk toast, orange juice, or broth. Food served in an attractive manner helps to stimulate the appetite.

Laxatives and Enemas.

The use of laxatives and enemas should be left to the advice of the physician.

Secretions.

All secretions of the nose and throat should be collected in paper tissues and promptly burned.

Hot Water Bottle.

Never fill a hot water bottle with *boiling* water. Bottles should be half filled and the air expelled by squeezing the bottle until water comes to the top. The stopper should then be inserted. The bag should be covered with a bath towel or piece of flannel before applying it to the skin, to avoid burning the patient.

Communicable Diseases.

Most communicable diseases are more "catching" during the first days of illness, and frequently before the diagnosis has been established. It is well to consider every illness communicable until the physician has decided otherwise. Therefore, no one but the attendant should be permitted to enter the sick room.

It is advisable to wash with soap and water and to scald eating and drinking utensils after each use by the patient and to keep them separate from utensils used by other members of the family.

Where to Obtain Instructions in Nursing Care.

Every community should have a public health nursing service. One of the functions of the public health nurse is to teach home hygiene and the care of the sick. If your community has a public health nurse or nursing unit, you should avail yourself of the opportunity to secure instruction in approved methods of nursing care.

When a member of the family is ill, ask the community public health or visiting nurse to come to your home to demonstrate approved nursing methods. This nurse may assist you to a clearer understanding of the physician's orders, and she can help you in many ways to make the patient more comfortable.

PROPER CARE OF THE SICK ADDS TO THE PATIENT'S COMFORT AND WILL DO MUCH TO HASTEN RECOVERY

COURT DECISION ON PUBLIC HEALTH

City health district held to be a State agency.—(Ohio Supreme Court; *State ex rel. Mowrer* v. *Underwood et al.*, 27 N. E. 2d 773; decided May 22, 1940.) Under the statutes of Ohio the State, for the purposes of local health administration, was divided into health districts, each city constituting a city health district. The law creating such health districts repealed the then existing statutes authorizing municipalities to establish and appoint boards of health as part of their local governments. In a case where it was contended, on one side, that the department of health of the city of Akron was a department of the city government and, on the other, that said department was an agency of the State, the Ohio Supreme Court said that in its opinion the above-mentioned repeal evidenced a legislative intent to withdraw from municipalities the powers of local health administration previously granted to them and to create in each city a health district which was to be a separate political subdivision of the State, independent of the city with which it was coterminous, and to delegate to it all the health powers thus withdrawn from municipalities. "As such," said the court, "the city health district becomes an agency of the State and is governed by the laws of the State."

The court took the view that to so hold was not to interfere with municipal home rule, as the constitutional provision, authorizing municipalities to exercise all powers of local self-government and to adopt and enforce such local police, sanitary, and other similar regulations as were not in conflict with general laws, did not grant absolute

powers of self-government but limited their exercise to matters and things purely local in nature. "The protection and preservation of public health is of a state-wide concern, with respect to which the legislature has jurisdiction."

Another section of the health district act provided for the establishment of a board of health by the council of each city constituting a city health district and contained a proviso that nothing in the act should "be construed as interfering with the authority of a municipality constituting a municipal health district making provision by charter for health administration other than as in this section provided." This proviso was construed by the supreme court as authorizing a municipality constituting a city health district to make reasonable provision, by charter, for supplementing the health administration work covered by the section. The court did not agree with the contention that, by virtue of the proviso, a charter city was authorized to set up a health board "different than" that provided in the section involved.

The opinion concluded with the statement, "We hold that where the State, by legislative enactment, withdraws from cities the health powers previously granted to them and transfers them to newly created city health districts, such health districts become agencies of the State government, and their employees are governed by State law."

DEATHS DURING WEEK ENDED SEPTEMBER 28, 1940

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Sept. 28, 1940	Corresponding week, 1939
Data from 88 large cities of the United States:		
Total deaths	7,489	7,784
Average for 3 prior years	7,803	
Total deaths, first 39 weeks of year	329,691	324,092
Deaths under 1 year of age	524	489
Average for 3 prior years	495	
Deaths under 1 year of age, first 39 weeks of year	19,580	19,581
Data from industrial insurance companies:		
Policies in force	64,826,298	66,640,202
Number of death claims	10,752	12,325
Death claims per 1,000 policies in force, annual rate	8.7	9.6
Death claims per 1,000 policies, first 39 weeks of year, annual rate	9.8	10.1

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

REPORTS FROM STATES FOR WEEK ENDED OCTOBER 5, 1940

Summary

The number of cases of poliomyelitis reported for the current week was 555, as compared with 711 for the preceding week and with a 5-year (1935–39) median of 391. Although the number of cases reported currently is nearly 42 percent above the median, the sharp decline from the preceding week indicates that the peak of this disease for the current year has been reached. As compared with the preceding week, decreases were recorded in all geographic areas except the Pacific, where there was an increase in the number of cases from 28 to 30. The two North Central areas and the South Atlantic States reported 467 cases, or 84 percent of the total. Most of the States in these areas, however, reported decreases.

In addition to poliomyelitis, decreases were also recorded for meningococcus meningitis and typhoid fever, while the other 6 diseases included in the weekly table registered slight increases, in conformity with their seasonal expectancies. No unusual prevalence of any of these diseases was noted.

Of these 9 communicable diseases, the cumulative totals to date of only two—influenza and poliomyelitis—are higher than the 5-year medians, while for all except these two diseases and scarlet fever the cumulative totals are less than for the corresponding period last year.

During the current week, 3 cases of Rocky Mountain spotted fever were reported, 2 cases of undulant fever, 2 cases of encephalitis, and 64 cases of endemic typhus fever.

The Bureau of the Census reports 7,776 deaths for the current week in 88 major cities of the United States, as compared with 7,489 for the preceding week, and with a 3-year (1937–39) average of 7,698 for the corresponding week.

Telegraphic morbidity reports from State health officers for the week ended October 5, 1940, and comparison with corresponding week of 1939 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39
	Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939	
NEW ENG.												
Maine	2	0	1	1	------	------	28	5	7	0	1	0
New Hampshire	0	0	0	------	------	------	0	4	1	0	0	0
Vermont	0	0	0	------	------	------	0	10	5	2	0	0
Massachusetts	2	6	5	------	------	------	97	54	36	0	1	1
Rhode Island	2	0	0	------	------	------	1	15	0	1	0	1
Connecticut	0	2	2	1	1	1	5	3	4	0	0	1
MID. ATL.												
New York	15	10	11	[1] 8	[1] 4	[1] 8	93	38	45	1	0	5
New Jersey	11	3	7	2	6	7	29	6	10	0	1	1
Pennsylvania	7	18	20	------	------	------	148	26	34	1	1	2
E. NO. CEN.												
Ohio	21	38	38	16	4	1	16	19	19	2	1	1
Indiana [2]	8	14	17	7	1	13	1	2	4	1	0	0
Illinois	10	17	23	2	3	11	25	13	13	2	0	1
Michigan	12	3	17	5	17	1	60	4	24	0	3	3
Wisconsin	2	1	4	14	19	17	124	27	27	2	1	1
W. NO. CEN.												
Minnesota	2	1	6	2	1	1	3	0	5	0	0	0
Iowa	3	9	8	1	------	1	13	5	3	0	0	0
Missouri	6	7	19	------	2	28	1	0	3	0	0	1
North Dakota	2	1	2	20	------	------	2	0	1	0	0	0
South Dakota	4	0	1	------	------	------	4	3	2	0	0	0
Nebraska	0	0	3	------	------	------	10	10	1	1	1	0
Kansas	8	3	6	1	3	3	3	30	4	1	1	1
SO. ATL.												
Delaware	0	1	1	------	------	------	1	0	2	0	0	0
Maryland [2] [3]	7	3	9	1	5	3	5	2	3	0	1	2
Dist. of Col	0	3	7	------	------	------	0	0	0	0	1	1
Virginia [4]	16	70	64	30	28	------	19	6	8	0	2	2
West Virginia [3]	10	21	21	7	5	8	1	1	1	2	1	1
North Carolina [2]	44	99	107	2	1	4	13	15	15	0	0	1
South Carolina [2]	20	15	18	139	106	106	6	0	0	0	0	0
Georgia [2]	30	45	40	15	24	------	2	3	0	0	0	0
Florida [2]	6	5	8	1	2	1	0	2	2	0	1	0
E. SO. CEN.												
Kentucky	15	28	32	------	4	5	16	17	13	1	1	1
Tennessee [4]	12	35	48	14	4	10	81	6	2	0	1	2
Alabama [3]	14	32	44	10	12	12	5	9	1	1	0	0
Mississippi [2] [3]	15	24	23	------	------	------	------	------	------	1	0	0
W. SO. CEN.												
Arkansas	17	18	25	14	11	11	0	1	1	0	0	0
Louisiana [2]	9	13	18	------	5	5	1	3	3	0	0	0
Oklahoma	14	12	21	15	17	32	3	0	1	0	2	2
Texas [2]	44	27	48	143	97	97	15	23	16	2	2	1
MOUNTAIN												
Montana	2	13	1	27	3	2	33	12	12	1	0	0
Idaho	0	0	0	------	------	1	3	1	1	0	1	0
Wyoming [4]	0	0	0	2	------	------	0	62	11	0	0	0
Colorado	5	16	6	7	11	------	19	12	10	0	1	1
New Mexico	8	3	3	------	------	------	11	2	8	0	0	0
Arizona	1	1	1	61	46	24	17	1	2	0	1	0
Utah [3]	0	1	0	2	1	------	1	3	3	0	0	0
Nevada	6	------	------	------	------	------	0	------	------	0	------	------
PACIFIC												
Washington	4	0	1	------	------	------	4	100	15	0	1	0
Oregon	4	0	2	9	8	13	7	20	7	0	0	0
California	12	12	34	20	23	18	35	77	71	1	2	0
Total	432	630	740	599	474	506	961	652	682	23	29	49
40 weeks	[5] 10,782	15,438	18,437	172,612	154,626	143,529	233,429	351,834	351,834	1,298	1,554	4,548

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended October 5, 1940, and comparison with corresponding week of 1939 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39
	Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939		Oct. 5, 1940	Oct. 7, 1939	
NEW ENG.												
Maine	0	0	0	2	24	11	0	0	0	0	0	3
New Hampshire	0	1	1	1	1	1	0	0	0	0	0	0
Vermont	0	6	2	4	4	5	0	0	0	0	0	0
Massachusetts	2	6	6	35	25	57	0	0	0	1	2	2
Rhode Island	0	0	0	1	3	4	0	0	0	0	0	0
Connecticut	1	0	1	7	13	20	0	0	0	5	3	3
MID. ATL.												
New York	6	77	43	101	83	145	0	0	0	10	17	20
New Jersey	1	10	9	30	33	33	0	0	0	2	7	7
Pennsylvania	11	28	12	85	120	142	0	0	0	15	15	26
E. NO. CEN.												
Ohio	44	12	7	121	186	142	0	0	0	12	24	24
Indiana [3]	23	3	3	44	57	83	1	13	1	2	0	3
Illinois	27	7	23	144	116	159	2	0	1	11	21	21
Michigan	84	38	25	100	114	117	0	0	0	4	7	7
Wisconsin	36	10	6	51	69	85	1	0	1	1	3	3
W. NO. CEN.												
Minnesota	23	40	4	28	32	53	2	1	0	0	0	0
Iowa	70	14	9	28	49	42	0	5	2	1	5	5
Missouri	24	0	1	24	41	42	0	0	1	21	11	11
North Dakota	3	0	0	11	8	12	3	0	1	1	0	2
South Dakota	10	6	1	9	12	14	1	0	0	3	0	1
Nebraska	20	1	1	15	9	9	3	0	0	2	0	0
Kansas	27	4	4	34	76	76	0	0	0	6	3	3
SO. ATL.												
Delaware	0	1	0	2	6	4	0	0	0	0	2	2
Maryland [2 3]	2	2	2	18	24	29	0	0	0	4	8	10
Dist. of Col	0	1	1	4	8	8	0	0	0	1	0	1
Virginia [4]	20	1	2	24	32	34	0	0	0	6	13	15
West Virginia [3]	48	3	3	29	46	78	0	0	0	2	7	10
North Carolina [2]	3	4	3	61	72	68	0	0	0	14	3	14
South Carolina [3]	0	3	1	22	5	5	0	0	0	11	5	7
Georgia [2]	2	6	2	29	24	22	0	0	0	14	15	13
Florida [3]	1	0	0	7	4	4	0	0	0	0	1	1
E. SO. CEN.												
Kentucky	10	7	3	50	43	43	1	0	0	11	18	19
Tennessee [4]	2	1	1	70	40	45	0	0	0	16	6	22
Alabama [2]	0	1	1	15	29	19	0	0	0	7	3	9
Mississippi [2 3]	1	1	1	14	6	15	0	0	0	3	1	7
W. SO. CEN.												
Arkansas	1	2	0	17	9	9	0	0	0	13	17	16
Louisiana [2]	4	0	0	2	3	11	0	0	0	10	12	12
Oklahoma	3	4	2	14	9	19	1	1	1	5	22	17
Texas [2]	7	14	2	16	21	32	0	0	0	16	49	30
MOUNTAIN												
Montana	2	2	0	13	11	18	0	0	7	0	1	3
Idaho	3	0	0	9	4	4	0	0	1	1	0	1
Wyoming [4]	0	1	0	4	3	12	0	0	0	0	3	0
Colorado	1	12	8	11	17	17	0	9	2	3	8	4
New Mexico	1	8	0	4	6	6	0	0	0	7	7	13
Arizona	0	0	0	4	4	4	0	0	0	0	1	2
Utah [3]	2	10	1	1	8	10	0	0	0	2	3	2
Nevada	0	------	------	0	------	------	0	------	------	2	------	------
PACIFIC												
Washington	20	1	2	18	21	22	1	0	3	2	8	3
Oregon	2	1	1	8	19	23	0	0	0	0	1	1
California	8	42	18	95	83	102	0	4	3	5	12	12
Total	555	391	391	1,436	1,632	2,181	16	33	33	252	344	455
40 weeks	6,918	[5] 5,290	5,290	125,612	124,297	174,922	2,036	8,846	8,374	7,693	10,434	11,619

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended October 5, 1940, and comparison with corresponding week of 1939 and 5-year median—Con.

Division and State	Whooping cough	
	Week ended	
	Oct. 5, 1940	Oct. 7, 1939
NEW ENG.		
Maine	17	7
New Hampshire	2	6
Vermont	1	31
Massachusetts	117	62
Rhode Island	7	16
Connecticut	64	24
MID. ATL.		
New York	201	286
New Jersey	95	61
Pennsylvania	358	225
E. NO. CEN.		
Ohio	256	99
Indiana [2]	15	33
Illinois	109	197
Michigan	318	41
Wisconsin	96	149
W. NO. CEN.		
Minnesota	23	51
Iowa	23	10
Missouri	18	15
North Dakota	12	26
South Dakota	4	4
Nebraska	5	5
Kansas	33	5
SO. ATL.		
Delaware	26	1
Maryland [2 3]	74	54
Dist. of Col	1	14
Virginia [4]	25	26
West Virginia [3]	21	12
North Carolina [2]	139	47
South Carolina [2]	23	13
Georgia [2]	5	11
Florida [2]	3	3
E. SO. CEN.		
Kentucky	108	58
Tennessee [4]	27	32
Alabama [2]	18	34
Mississippi [2 3]	----------	----------
W. SO. CEN.		
Arkansas	7	3
Louisiana [2]	3	3
Oklahoma	12	0
Texas [2]	85	39
MOUNTAIN		
Montana	1	1
Idaho	1	2
Wyoming [4]	0	1
Colorado	8	10
New Mexico	23	8
Arizona	9	16
Utah [3]	9	33
Nevada	0	----------
PACIFIC		
Washington	17	11
Oregon	10	28
California	240	116
Total	2,669	1,929
40 weeks	125,572	143,682

[1] New York City only.
[2] Typhus fever, week ended October 5, 1940, 64 cases as follows: Indiana, 1; Maryland, 1; North Carolina, 1; South Carolina, 8; Georgia, 20; Florida, 1; Alabama, 9; Mississippi, 2; Louisiana, 6; Texas, 15.
[3] Period ended earlier than Saturday.
[4] Rocky Mountain spotted fever, week ended October 5, 1940, 3 cases as follows: Virginia, 1; Tennessee, 1; Wyoming, 1.
[5] Owing to errors in transmission, 1 case of diphtheria was reported in New Jersey for the week ended September 21, 1940, instead of 3 cases, and 9 cases of poliomyelitis, instead of no cases, were reported in Ohio for the week ended April 15, 1939.

WEEKLY REPORTS FROM CITIES

City reports for week ended September 21, 1940

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	118	46	14	142	309	380	2	325	72	1,009	------
Current week [1]	52	38	13	203	239	331	4	297	65	1,090	------
Maine:											
Portland	0	------	0	0	2	0	0	0	0	4	17
New Hampshire:											
Concord	0	------	0	0	0	0	0	0	0	0	9
Nashua	0	------	0	0	0	1	0	0	0	0	2
Vermont:											
Barre	------	------	------	------	------	------	------	------	------	------	------
Burlington	0	------	0	0	0	0	0	0	0	0	9
Rutland	0	------	0	0	1	0	0	0	0	0	4
Massachusetts:											
Boston	0	------	0	4	8	6	0	5	3	54	197
Fall River	0	------	0	0	2	0	0	1	0	0	24
Springfield	0	------	0	1	1	5	0	0	0	0	34
Worcester	0	------	0	18	3	1	0	1	0	1	58
Rhode Island:											
Pawtucket	0	------	0	0	0	1	0	0	0	0	10
Providence	0	------	0	6	0	0	0	2	1	4	54
Connecticut:											
Bridgeport	0	2	2	1	0	0	0	1	0	4	36
Hartford	0	------	0	0	2	0	0	1	0	0	36
New Haven	0	------	0	0	1	0	0	0	1	18	36
New York:											
Buffalo	0	------	0	1	6	8	0	6	0	1	113
New York	9	2	1	28	54	38	0	58	10	105	1,383
Rochester	0	------	0	0	1	0	0	1	0	21	67
Syracuse	0	------	0	0	2	2	0	0	0	6	41
New Jersey:											
Camden	0	------	0	3	1	2	0	0	0	0	23
Newark	0	------	0	12	5	11	0	8	0	33	99
Trenton	0	------	0	0	1	1	0	0	2	0	27
Pennsylvania:											
Philadelphia	1	1	1	50	8	17	0	17	1	100	383
Pittsburgh	0	------	1	1	10	7	0	6	0	46	152
Reading	0	------	0	1	0	0	0	0	0	22	11
Scranton	1	------	------	0	------	0	0	------	0	1	------
Ohio:											
Cincinnati	2	------	0	0	0	6	0	5	0	13	120
Cleveland	0	13	3	0	8	8	0	6	2	68	190
Columbus	0	------	0	0	2	4	0	1	0	19	77
Toledo	0	------	0	1	2	11	0	0	0	12	68
Indiana:											
Anderson	0	------	0	0	0	1	0	1	0	0	6
Fort Wayne	0	------	0	0	2	0	0	0	0	1	21
Indianapolis	1	------	1	0	5	4	0	3	2	13	74
Muncie	1	------	0	0	2	0	0	0	0	1	15
South Bend	0	------	0	0	1	0	0	1	0	0	17
Terre Haute	0	------	0	1	0	0	0	0	1	0	11
Illinois:											
Alton	0	------	0	0	0	0	0	0	1	1	7
Chicago	9	2	1	15	14	66	0	24	2	62	643
Elgin	0	------	0	0	0	1	0	0	0	2	10
Springfield	0	------	0	1	2	3	0	0	0	0	19
Michigan:											
Detroit	3	1	0	29	1	31	0	17	2	143	220
Flint	0	------	0	0	5	1	0	1	0	7	23
Grand Rapids	0	------	1	2	0	4	0	1	0	36	48
Wisconsin:											
Kenosha	0	------	0	0	0	0	0	0	0	0	7
Madison	0	------	0	2	0	0	0	0	0	2	6
Milwaukee	0	------	0	9	0	5	0	2	0	8	89
Racine	0	------	0	0	0	0	0	0	0	0	14
Superior	0	------	0	0	0	1	0	0	0	1	6
Minnesota:											
Duluth	0	------	0	0	0	0	4	0	1	0	26
Minneapolis	0	------	0	3	2	10	0	2	2	13	88
St. Paul	0	------	0	1	2	1	0	2	1	10	65

[1] Figures for Barre and Raleigh estimated; reports not received.

City reports for week ended September 21, 1940

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0	------	-------	0	------	2	0	------	0	0	-------
Des Moines	0	------	0	1	0	9	0	0	1	0	28
Sioux City	0	------	-------	0	------	1	0	------	0	0	-------
Waterloo	1	------	-------	0	------	1	0	------	1	0	-------
Missouri:											
Kansas City	0	------	0	1	4	4	0	6	1	12	99
St. Joseph	0	------	0	0	5	0	0	1	0	0	24
St. Louis	5	------	0	0	3	12	0	0	1	17	166
North Dakota:											
Fargo	0	------	0	0	1	2	0	0	0	1	5
Grand Forks	0	------	-------	0	------	0	0	------	0	1	-------
Minot	1	------	0	1	0	0	0	0	0	1	6
South Dakota:											
Aberdeen	0	------	-------	0	------	0	0	------	0	0	-------
Sioux Falls	0	------	0	0	0	0	0	0	0	0	8
Nebraska:											
Lincoln	0	------	-------	0	------	1	0	------	0	4	-------
Omaha	0	------	0	1	3	2	0	1	0	0	45
Kansas:											
Lawrence	0	------	0	0	0	0	0	0	0	0	2
Topeka	0	------	0	0	5	3	0	0	0	1	21
Wichita	0	------	0	0	3	0	0	0	0	7	27
Delaware:											
Wilmington	0	------	0	1	0	1	0	0	1	3	15
Maryland:											
Baltimore	3	1	0	0	4	4	0	17	2	62	181
Cumberland	0	------	0	0	1	0	0	1	0	0	12
Frederick	0	------	0	0	1	0	0	0	0	0	7
Dist. of Col.:											
Washington	1	------	0	0	2	3	0	19	4	7	153
Virginia:											
Lynchburg	0	------	0	0	0	0	0	0	0	1	7
Norfolk	0	------	0	2	2	0	0	1	0	3	21
Richmond	0	------	0	0	0	4	0	2	0	0	56
Roanoke	0	------	0	0	0	0	0	0	1	12	16
West Virginia:											
Charleston	0	------	-------	0	------	1	0	------	1	0	-------
Huntington	0	------	-------	0	------	1	0	------	1	0	-------
Wheeling	0	------	0	0	0	0	0	0	0	4	22
North Carolina:											
Gastonia	2	------	-------	0	------	0	0	------	0	0	-------
Raleigh	------	------	-------	------	------	------	------	------	------	------	-------
Wilmington	1	------	0	0	0	0	0	0	0	0	14
Winston-Salem	4	------	0	0	1	2	0	2	0	16	18
South Carolina:											
Charleston	0	1	0	0	1	1	0	0	3	0	19
Florence	0	4	0	0	1	0	0	0	1	0	6
Greenville	0	------	0	0	0	1	0	1	0	1	15
Georgia:											
Atlanta	1	1	0	0	3	1	0	4	0	3	71
Brunswick	0	------	-------	0	------	0	0	------	0	0	-------
Savannah	0	2	0	0	0	2	0	1	0	0	29
Florida:											
Miami	0	1	1	0	2	1	0	1	0	0	23
Tampa	1	------	0	1	1	0	0	0	0	0	22
Kentucky:											
Ashland	0	------	0	0	0	0	0	0	0	0	1
Covington	0	------	0	0	0	1	0	1	1	0	11
Lexington	0	------	0	3	0	0	0	2	1	1	17
Louisville	1	------	0	1	1	5	0	2	0	14	76
Tennessee:											
Knoxville	0	------	0	0	0	2	0	1	0	0	25
Memphis	0	------	0	0	0	6	0	5	3	2	82
Nashville	0	------	0	0	2	5	0	2	1	3	47
Alabama:											
Birmingham	0	------	0	0	2	3	0	2	0	0	55
Mobile	0	2	1	0	1	4	0	1	4	0	21
Montgomery	0	------	-------	0	------	0	0	------	0	1	-------
Arkansas:											
Fort Smith	0	------	-------	0	------	0	0	------	0	0	-------
Little Rock	0	2	0	1	2	0	0	1	0	2	-------
Louisiana:											
Lake Charles	0	------	0	0	1	1	0	1	0	0	7
New Orleans	0	------	0	0	12	0	0	13	0	3	148
Shreveport	1	------	0	0	2	1	0	1	2	0	23
Oklahoma:											
Oklahoma City	0	2	0	0	3	0	0	0	0	0	41
Tulsa	0	------	0	0	0	1	0	0	0	10	12

City reports for week ended September 21, 1940

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas:											
Dallas	2	------	0	0	0	1	0	0	3	1	48
Fort Worth	0	------	0	0	1	0	0	3	0	2	41
Galveston	0	------	0	0	1	0	0	0	0	0	24
Houston	2	------	0	2	4	1	0	5	5	0	67
San Antonio	1	1	0	1	5	1	0	6	0	5	49
Montana:											
Billings	0	------	0	0	0	1	0	0	0	0	3
Great Falls	0	------	1	0	1	0	0	1	0	1	10
Helena	0	------	0	0	0	0	0	0	0	0	4
Missoula	0	------	0	0	0	0	0	0	0	0	2
Idaho:											
Boise	0	------	0	0	2	1	0	0	0	0	4
Colorado:											
Colorado Springs	0	------	0	0	0	2	0	0	0	0	14
Denver	0	------	0	4	1	6	0	4	0	3	80
Pueblo	0	------	0	0	0	0	0	0	0	0	9
New Mexico:											
Albuquerque	0	------	0	0	1	0	0	0	0	0	15
Utah:											
Salt Lake City	0	------	0	0	0	0	0	0	1	18	20
Washington:											
Seattle	1	------	0	1	2	2	0	6	0	2	104
Spokane	0	------	0	0	1	0	0	0	0	2	29
Tacoma	0	------	0	0	0	2	0	0	0	0	32
Oregon:											
Portland	3	------	0	1	5	2	0	2	0	3	78
Salem	0	------	--------	0	-------	0	0	-------	0	0	--------
California:											
Los Angeles	3	6	0	2	4	8	0	15	1	54	349
Sacramento	1	1	0	0	2	4	0	0	0	2	24
San Francisco	0	------	0	1	5	1	0	7	0	31	164

State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths	
Massachusetts:			
Boston	0	1	1
New York:			
Buffalo	1	0	0
New York	1	0	6
New Jersey:			
Newark	0	0	2
Pennsylvania:			
Philadelphia	1	0	8
Pittsburgh	0	0	2
Ohio:			
Cincinnati	0	0	8
Cleveland	0	0	2
Columbus	0	0	2
Toledo	0	0	1
Indiana:			
Anderson	0	0	1
Fort Wayne	0	0	4
South Bend	0	0	4
Illinois:			
Alton	0	0	1
Chicago	1	0	18
Elgin	0	0	1
Springfield	0	0	1
Michigan:			
Detroit	0	0	9
Flint	0	0	3
Grand Rapids	0	0	6
Wisconsin:			
Madison	0	0	5
Racine	0	0	1
Minnesota:			
Duluth	0	0	1
Minneapolis	0	0	1
Iowa:			
Des Moines	0	0	7
Sioux City	0	0	3
Waterloo	0	0	4
Missouri:			
Kansas City	0	1	10
St. Joseph	1	0	2
St. Louis	0	0	2
South Dakota:			
Sioux Falls	0	0	1
Nebraska:			
Lincoln	0	0	2
Omaha	0	0	5
Kansas:			
Topeka	0	0	3
Virginia:			
Richmond	0	0	2
West Virginia:			
Charleston	0	0	2
Huntington	0	0	2
Louisiana:			
Shreveport	0	0	4
Oklahoma:			
Oklahoma City	0	0	1
Texas:			
Dallas	0	0	3
Montana:			
Great Falls	0	0	1
Colorado:			
Denver	0	0	1
New Mexico:			
Albuquerque	0	0	1
Utah:			
Salt Lake City	0	0	1
Washington:			
Seattle	0	0	8
Spokane	0	0	1
Tacoma	0	0	1
Oregon:			
Portland	0	0	1
California:			
Los Angeles	0	0	4

Encephalitis, epidemic or lethargic.—Cases: Rochester, 1; St. Louis, 1; Washington, 1; Atlanta, 1.
Pellagra.—Cases: Mobile, 1; Los Angeles, 2.
Typhus fever.—Cases: New York, 1; Charleston, S. C., 3; Savannah, 5; Tampa, 1; Birmingham, 1; Mobile, 3; New Orleans, 1; Dallas, 3; Houston, 1. Deaths: Savannah, 1.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended August 24, 1940.—During the week ended August 24, 1940, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis				4	4		1			9
Chickenpox		2		9	59	26	22	2	2	122
Diphtheria		1		13	2	3	1	5		25
Dysentery				1						1
Influenza					10				17	27
Measles		4		5	71	14	17	11	2	124
Mumps		2		1	28		1	3	2	37
Pneumonia		1			13			1	7	22
Poliomyelitis					5					5
Scarlet fever		2	1	43	31	13		4	6	100
Tuberculosis	1	21	16	66	77	3	2	2		188
Typhoid and paratyphoid fever			2	15	15					32
Whooping cough			4	194	72	15	41	4	6	336

CUBA

Provinces—Notifiable diseases—4 weeks ended August 17, 1940.—During the 4 weeks ended August 17, 1940, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	2		1	9		9	21
Diphtheria		7		1		1	9
Hookworm disease		88				1	89
Leprosy	2	1					3
Malaria	11	1		3		20	35
Measles	4	1				3	8
Scarlet fever		1					1
Tuberculosis	26	25	20	45	18	37	171
Typhoid fever	20	104	14	39	37	45	259
Yaws						2	2

259727°—40——3

FINLAND

Communicable diseases—4 weeks ended July 13, 1940.—During the 4 weeks ended July 13, 1940, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	234	Poliomyelitis	34
Dysentery	4	Scarlet fever	605
Influenza	1,463	Typhoid fever	19
Lethargic encephalitis	1	Undulant fever	1
Paratyphoid fever	188		

SCOTLAND

Vital statistics—Quarter ended June 30, 1940.—Following are vital statistics for Scotland for the quarter ended June 30, 1940:

	Number	Rate per 1,000 population		Number	Rate per 1,000 population
Marriages	12,972	10.4	Deaths from—Continued.		
Births	23,285	18.6	Malaria	1	
Deaths	16,001	12.8	Measles	72	.06
Deaths under 1 year of age	1,568	[1] 67	Nephritis, acute and chronic	345	
Deaths from:			Pneumonia (all forms)	701	.56
Appendicitis	80		Poliomyelitis	1	
Cancer	2,005	1.60	Puerperal sepsis	10	
Cerebrospinal fever	138	.11	Scarlet fever	10	.01
Cerebral hemorrhage	1,099		Senility	530	
Cirrhosis of the liver	41		Suicide	106	
Diabetes mellitus	205		Syphilis	13	
Diarrhea and enteritis (under 2 years)	157		Tetanus	5	
Diphtheria	127	.10	Tuberculosis (all forms)	1,069	.85
Dysentery	10		Typhoid and paratyphoid fever	7	
Heart disease	3,635		Whooping cough	24	.02
Influenza	95	.08			
Lethargic encephalitis	29				

[1] Per 1,000 live births.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—A cumulative table giving current information regarding the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS of September 27, 1940, pages 1796–1799. A similar table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

China.—During the week ended September 21, 1940, cholera has been reported in China as follows: Hong Kong, 196 cases; Macao, 149 cases.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Area.—A rat found on September 11, and another found on September 12, 1940, near Paauhau, in Paauhau area, Hamakua District, Island of Hawaii, T. H., have been proved positive for plague.

×