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## POSTVACCINAL ENCEPHALITIS\*

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The occasional occurrence of acute nervous manifestations following acute infections, such as smallpox, chicken pox, measles, mumps, etc., has been known for a long time; and there is an impression among many that they are relatively on the increase. These ailments, to which the so-called encephalitis which occasionally follows vaccination also belongs, constitute a group strikingly similar in their epidemiology, symptomatology, and pathology.

Encephalitis as a complication of vaccination against smallpox first came into prominence in Europe in 1922, when 11 cases developed in London. Four of these cases, all fatal, were admitted to the London hospital, where the pathologist, Doctor Turnbull, recognized them as pathologically similar to a case which had come to his attention in 1912.

The following year, 1923, some 53 cases were recognized in England. Holland was also severely hit. To date, England has reported nearly 100 cases, Holland nearly 150, and Germany 34. Sporadic cases have also occurred in Portugal, France, Switzerland, Poland, Austria, Czechoslovakia, Italy, and other countries.

In Germany there has been 1 case to approximately every 700,000 vaccinations; in England 1 to 48,000, and in Holland 1 to 4,000. The importance of the complication in England is attested by the fact that it has been made the subject for study by two eminent commissions. In Holland, moreover, it has led to the temporary suspension of compulsory vaccination. Bijl and some others are inclined to think that postvaccinal encephalitis is a new disease entity. On the other hand, Gins cites Sacco as referring to nervous complications after vaccinations as long as 100 years ago. Comby, Gins, and others have also reconstructed a number of probable cases from 1905 to 1921.

### SYMPTOMS AND DIAGNOSIS

The symptoms in this complication usually appear suddenly and have their onset in 70 per cent of the cases from the tenth to thir-

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teenth day, inclusive, following vaccination. That is, they appear when the vaccination, usually primary, is at its height.

The symptoms as recorded for different cases vary somewhat, but four symptoms are quite constantly noted, namely,

1. Fever (104° F. or higher in severe cases);
2. Vomiting;
3. Headache;
4. Stupor or coma.

The stupor may develop within a few hours after the onset of the symptoms and is always present in fatal cases.

Symptoms of meningeal irritation are usually present in conscious cases, absent in others. Convulsions are common in young children, as are also cramps or spasms. Trismus has been occasionally observed and is worthy of note as it may lead to confusion of the ailment with tetanus. Varying degrees of paresis or paralysis are noted in some cases. The eye muscles usually escape. The Babinsky is usually positive, a point considered as of high diagnostic significance. The spinal fluid usually shows little or no change to chemical, microscopical, or bacteriological studies. The pressure may be slightly increased, however, and cell counts as high as 200 to 400 have been observed.

Death, which follows in from 30 to 40 per cent of the cases, usually occurs from the third to the tenth day following the onset of symptoms. Recovery, when it takes place, is usually rapid and complete; however, some degree of crippling has been noted in a few cases.

Microscopic examinations of the central nervous system in fatal cases reveal perivascular areas of demyelination and cellular infiltration scattered throughout the white matter of the brain, and usually of the cord also. These lesions are similar to, if in fact, not indistinguishable from, those encountered in the encephalitis that occurs after smallpox, measles, chicken pox, and the like.

#### EPIDEMIOLOGY

In England and Holland the tendency of postvaccinal encephalitis to occur mainly in villages and rural populations of definitely restricted areas, to the exclusion of other areas and large cities, where vaccinations were concurrently performed, has led to the assumption of some "local" or "place" factor in the complication. The fact that multiple cases in families have not been uncommon has been held by some to point in the same direction, while others have interpreted this as indicating an hereditary predisposition to the ailment. The complication has usually, but not always, followed a primary "take." Girls are more often affected than boys (the opposite of postvaccinal tetanus). The patients have varied in age from a few

months to 22 years; however, cases below one year or over 8 years of age are rare.

In Holland, England, and Germany, multiple insertion methods of vaccination, which give severe "takes," are employed. Reports, however, indicate that the vaccinations which have been followed by postvaccinal encephalitis have not been exceptionally severe. The complication has not been confined to virus from any one vaccine establishment nor to any particular batches of virus. In fact, its occurrence seems to be independent of the type of virus.

Holland, for a period, gave up the use of her usual virus and substituted in its place a strain of rabbit brain virus such as had been used successfully in Spain for some years. Out of approximately 40,000 vaccinations with this strain, 11 cases of postvaccinal encephalitis have been reported. A strain of virus from Denmark, tubed and ready for use, was next secured (Denmark has been free from recognized postvaccinal encephalitis). While only a few vaccinations were performed with this virus, cases of encephalitis have occurred following its use.

#### CAUSE

The cause of postvaccinal encephalitis is unknown, an immense amount of epidemiological and laboratory work having failed to elucidate the subject. Attempts to infect animals with the brain of fatal cases or with spinal fluid have failed. Several theories have, however, been offered:

1. That the complication is a result of the vaccination activating some known or unknown infectious agent present in the virus or, more likely, in the vaccinated individual, in a quiescent or carrier state. This view is held by most European authorities.
2. That it is due to the vaccine virus itself. This view is favored by Luksch, Leiner, McIntosh, Jarge, Gorter, Van Hederween, and others.
3. That it is due to some state of local anaphylaxis, or hyperergy, has been suggested by Glanzman, Rivers, and others.

#### PREVENTION

(1) Those who attribute the complication to the presence of some type of concurrent virus advise against vaccinating other than perfectly well individuals, and think that vaccination should not be performed in the absence of smallpox, when poliomyelitis or encephalitis lethargica is prevalent.

(2) In England, the Rolleston Committee has advised against the multiple insertion for vaccinations, and has recommended substituting for it a single, small, superficial insertion patterned after the "American method."

(3) Practically all authorities stress the importance of performing primary vaccinations during the first year of life, since at this period postvaccinal encephalitis is relatively much less common.

#### OCCURRENCE OF POSTVACCINAL ENCEPHALITIS IN THE UNITED STATES

In so far as the age factor is concerned, the custom in this country of performing primary vaccinations at the sixth or seventh year would seem to predispose our population to the complication. Cases have, moreover, occurred. Wilson and Ford, and Fulgham and Beykirk have reported 3 cases in this country which were confirmed by pathological studies. Other possible cases based on clinical and epidemiological grounds have been reported from Connecticut, Rhode Island, New York, Maryland, Illinois, California, Washington, and the District of Columbia.

It seems, therefore, that this complication is occasionally found in the United States, and, as health officers, we should all be on the lookout for the occurrence of symptoms pointing to the central nervous system in persons recently vaccinated. Should such cases come to your attention, they should be considered worthy of the most careful investigation. The Public Health Service is anxious to learn of such cases should they occur and would be glad to render any assistance possible in the study of them.

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### PAN AMERICAN SANITATION

Extracts from a report by Dr. JOHN D. LONG, *Representative of the Pan American Sanitary Bureau*

In accordance with a resolution adopted by the Eighth Pan American Sanitary Conference, held in Lima, Peru, in October, 1927, Dr. John D. Long was named Traveling Representative of the Pan American Bureau in August, 1928. He sailed from New York on August 25, 1928, and returned to Washington on May 12, 1929, after a tour of South American countries. The following extracts are taken from his report dealing with sanitary conditions in the countries visited:

#### BRAZIL

*Yellow fever.*—An epidemic of yellow fever was present in the City of Rio de Janeiro and vicinity at the time of the visit there, September 7, 1928. There were at that time several cases of yellow fever in the hospital for infectious diseases, one of which was typical and in the first days of the attack. The other cases were convalescent. Fumigation was being employed to kill mosquitoes in infected houses.

The preparation utilized was made by the Department of Health in accordance with the following formula:

	Gms. or c. c.
Methyl salicylate.....	1
Carbon tetrachloride.....	50
Kerosene to make.....	1, 000

For spraying purposes a nebulizer, such as is used in painting automobile bodies, was employed. The apparatus consisted of a portable air tank connected with an electric motor and an air compressor. Electricity for operating the motor was obtained from the house current. That the preparation is quite efficient was evidenced by the fact that some mosquitoes inclosed in wire cages died within two or three minutes. Several cockroaches loose in the room died within four or five minutes.

Data and graphs exhibited by the officials indicated that the mosquito index for the entire city was, on the average, 5 per cent, and that of *Aedes calopus (aegypti)* less than 2 per cent. These data were apparently quite exact, as there was at the time only an occasional case of yellow fever, not more than one or two cases per week. The approach of the rainy season was feared; and, apparently, judging from subsequent developments, this fear was well grounded. Reports of cases are now being received with regularity and in accordance with the provisions of the Pan American Sanitary Code.

*Plague.*—At that time no plague was being reported in Rio de Janeiro and had not been reported present for several months. At the request of Dr. Barros Barreto, the Chief Health Officer of the Canal Zone has supplied the Brazilian authorities with data and photographs relating to the handling of cargo and merchandise on the docks of the canal, for the purpose of preventing the importation of plague.

#### ARGENTINA

At Buenos Aires an inspection of the port was made and the construction of the warehouses used for storing grain and cereals was studied, as well as the methods employed to load and unload steamers.

From January 1 to August 1, 1928, 6,000 rats had been examined, 60 of which (1 per cent) were found infected. The infected rats were found in 12 different places, or foci, all in the port, in grain warehouses or vicinity.

An executive decree was promulgated in November, 1928, requiring the routine fumigation of all vessels, both foreign and coastwise, the fending off from the wharf a distance of 1½ meters, a general use of rat guards on all lines, and either the raising of the gang plank or the use of brilliant lights at the gangway at night.

## URUGUAY

The Pan American Sanitary Code was ratified by Uruguay on the last day of the session of congress in the fall of 1928, and promulgated a short time afterwards.

It is understood that the sanitary regulations have been modified so as to require routine fumigation of all vessels, the fending off from the wharf a distance of 1½ meters, the use of rat guards on all lines, and the placing of bright lights on all gangways connecting the vessel with the shore at night. Also, the campaign against rats has been intensified by increased operations in poisoning and trapping.

## CHILE

Sanitary conditions in Chile have improved greatly during the last four years. Previous to 1925, the average general death rate during 50 years was approximately 30.8 per thousand inhabitants. The average infant mortality rate during the same period was 280 deaths per thousand live births. The official figures of the Census Bureau of Chile indicate that, for the year 1928, the general mortality rate was 23.7 per thousand, while the infant mortality rate was 170 per thousand births. Taking as a basis an estimated population of 4,000,000 inhabitants this reduction indicates that the number of persons dying in 1928 was 28,400 less than would have been the case had the average rate for previous years obtained.

This result is due chiefly to three things: First, good drinking water; second, pasteurized milk; and third, visiting nurses.

In 35 cities with an aggregate population of approximately 1,875,000, duplicate chlorinating apparatus for the purification of drinking water has been installed. There are dairies in the principal cities which sell pasteurized milk.

The School of Public Health Nurses graduated 30 nurses last year who have been distributed in more than 15 cities.

It is proposed to notify the Pan American Sanitary Bureau that the Ports of Valparaiso, Antofogasta, Iquique, and Arica, Chile, may be classed as clean ports, class A, in accordance with the requirements of Article 31 of the Pan American Sanitary Code, as soon as they can be provided with certain elements which are lacking. The President dictated peremptory instructions prohibiting the use of sewage for irrigating gardens and garden products which are ordinarily consumed without being cooked.

## BOLIVIA

Information has been received to the effect that the Pan American Sanitary Code was approved by the President and his Cabinet and transmitted to the National Congress for ratification. The congress convenes in August.

It is understood that the Government is studying the expediency of creating a ministry of health or a director generalcy of national sanitation. The possibility of chlorinating the water of La Paz is being studied, and there was in preparation a proposed law authorizing a water supply in the principal cities of the country.

#### PERU

A new decree has been promulgated which creates a national anti-plague service in the public health service and outlines its duties and functions. Sanitary conditions in Peru are constantly improving, due especially to the installation of new water supplies, the extension and increase in existing supplies and the construction of new sewer systems. The larger part of the important cities now have installations of this nature or are in the process of obtaining them.

#### ECUADOR

The method of procedure in the diagnosis of plague in rats is to be modified in the interest of increased efficiency. In the future, no rat will be declared plague infected without inoculation of a guinea pig with material from a gland or the spleen of the suspicious rat.

In collaboration with the sanitary authorities a draft of regulations was prepared for the control of bubonic plague, which it is understood, will soon be approved. It is believed that the Pan American Sanitary Code will be ratified at the present session of Congress.

During the course of investigation it was revealed that there are in Ecuador, several epidemiological factors relating to the dissemination of plague which appear to be different from those observed in other countries. In Guayaquil, during certain months of the year, there are many cases of the disease; in other months, none. It seems probable that well-made epidemiological studies will reveal hitherto unknown factors, and that with the efficacious application of measures based on such studies, it will be possible to convert Guayaquil, within a relatively short time, from an epidemic to a sporadic focus, with great benefit to Ecuador itself and to other countries with which she maintains commercial relations.

#### OTHER COUNTRIES

It is understood that the President of Paraguay will submit to the National Assembly during 1929 the Pan American Sanitary Code, for the purpose of ratification.

At the request of the President of Paraguay, a memorandum of the more important sanitary needs of the country was prepared.

Upon request of the Government of Panama, a draft of a sanitary code was prepared, which was approved by the President, the Secretary of Agriculture, and the Secretary of Public Works. This will be transmitted to the National Assembly at its next session to enact into law:

## THE SEASONAL AND REGIONAL INCIDENCE OF TYPES OF MALARIA PARASITES

By M. A. BARBER, *Special Expert*, and W. H. W. KOMP, *Sanitary Engineer*,  
*United States Public Health Service*

In 1924 Barber and Mayne<sup>1</sup> published the results of an analysis of about 5,000 positive cases of malaria with regard to the seasonal incidence of *P. falciparum* and *P. vivax* in the Southern United States. A marked predominance of *vivax* appeared in the spring months and of *falciparum* in the autumn. As regards the cause of the predominance of the one type or the other, the spring relapse of *vivax* and the more rapid propagation of *falciparum* in the autumn appeared to be the more important factors; but these alone did not fully explain all the findings.

In the present paper we have continued this investigation, making use of additional data and new points of approach to the problem. We have limited the cases to those examined by ourselves and have distinguished clinical and latent cases. In addition, we have included the results obtained by the repeated examination of a group of positives.

The cases of the present group came from the following States, all situated below the 37th parallel: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and Tennessee. The larger proportion of the cases came from the alluvial plain of the Mississippi Valley known as the Delta. In all, we have analyzed 1,517 cases, of which about 23 per cent were also included in the 1924 analysis of Barber and Mayne.

Quartan cases, of which we found only about 1 per cent, are omitted from the list. The few cases of mixed *falciparum* and *vivax* are counted twice, once for each type. So we deal in our analysis with only the two chief types of malaria parasites. Positives obtained at the reexamination of the same person were included if they occurred in different months. We classified as "clinical," all cases submitted by physicians for diagnosis and, in addition, those of persons whom we found ill with malaria or convalescent in schoolrooms or dwellings. All other cases, consisting largely of those obtained in school and house-to-house surveys, were classified as "latent."

All cases were microscopically determined. We examined the majority of the blood specimens in thick films, but in many we confirmed the diagnosis by a thin-film examination. Crescents were found in 41 per cent of the cases of *falciparum*, and large schizonts in a vast majority of those of *vivax*, so that any error in diagnosis was in the main limited to specimens in which only rings were found.

<sup>1</sup> Barber, M. A., and Mayne, Bruce: The Seasonal Incidence of Types of Malaria Parasites in the Southern United States. *South. Med. Jour.* 1924, XVII, No. 8, pp. 583-590.



Since we examined all specimens personally, the error in diagnosis was more or less constant and would not greatly affect the results where the percentage incidence of a type of parasite is compared in months or groups. We realize that an investigation of this kind can not be wholly freed from sources of error, and that the results must be measured by a yardstick rather than by a millimeter rule.

In Table 1 the results of our analysis of the 1,517 cases are classified by months. In Table 2 the same cases are arranged in three and six month groups. In both only positive cases are included and the monthly incidence of types is expressed in terms of the percentage of *vivax* obtaining among all positives of a given month or group of months. The percentage of *falciparum* is in every case 100 per cent minus the *vivax* percentage shown.

TABLE 1.—Incidence of *P. vivax* by months

Month	White						Colored						Both races					
	Clinical		Latent		Clinical and latent		Clinical		Latent		Clinical and latent		Clinical		Latent		Clinical and latent	
	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax
January.....	1	100	0	0	1	100	0	0	12	50	12	50	1	100	12	50	13	54
February.....	4	75	8	63	12	66	7	45	53	32	60	28	11	55	61	36	72	39
March.....	11	65	87	51	98	51	2	0	114	37	116	35	13	50	201	45	214	43
April.....	22	98	54	76	76	83	2	100	121	30	123	32	24	96	175	45	199	51
May.....	23	91	30	87	53	90	1	100	12	83	13	85	24	92	42	66	66	88
June.....	27	85	8	89	35	91	11	45	37	46	48	46	38	79	45	53	83	65
July.....	21	62	8	88	29	76	63	41	74	26	137	33	84	46	82	32	166	39
August.....	52	63	18	78	70	67	34	32	88	40	122	38	86	51	106	46	192	48
September.....	33	51	22	73	55	60	25	24	47	38	72	32	58	40	69	56	127	44
October.....	53	26	79	30	132	29	29	14	73	24	102	21	82	22	152	30	234	26
November.....	19	40	7	30	26	34	2	0	115	30	117	28	21	33	122	30	143	30
December.....	0	0	0	0	0	0	0	0	8	50	8	50	0	0	8	50	8	50
Total.....	266	61	321	58	587	59	176	33	764	34	930	34	442	50	1,075	42	1,517	44

In Tables 1 and 2 we note in the white race a marked predominance of *vivax* in the spring months and of *falciparum* in the autumn, wherever numbers are large enough to be of significance. In the colored race a seasonal predominance of either type is hardly appreciable except in the comparison of quarter and half-year periods. There a spring predominance of *vivax* and an autumn predominance of *falciparum* appear, but are much less prominent than in the white race. In the last column of Table 1, where clinical and latent cases of both races are combined, the percentage of *vivax* is seen to rise rapidly from February to May, then to decline in November. In the white race alone the maximum percentage of *vivax* is found in June.

TABLE 2.—Incidence of *P. vivax* by 3 and 6 month periods

Months	White						Colored						Both races					
	Clinical		Latent		Clinical and latent		Clinical		Latent		Clinical and latent		Clinical		Latent		Clinical and latent	
	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax	Total cases	Per cent vivax
January.....	16	63	95	52	111	53	9	33	179	39	188	38	25	53	274	43	299	44
February.....																		
March.....																		
April.....	72	93	92	83	164	87	14	57	170	40	184	39	86	87	262	53	348	61
May.....																		
June.....																		
July.....																		
August.....	106	60	48	77	154	65	122	35	209	34	331	34	228	46	257	42	485	44
September.....																		
October.....																		
November.....	72	30	86	30	158	30	31	13	196	29	227	26	103	24	282	30	385	28
December.....																		
Total.....	266	61	321	58	587	59	176	33	764	34	930	34	442	50	1,075	43	1,517	44
First half year.....	88	88	187	66	275	73	23	50	349	38	372	39	111	80	536	48	647	53
Second half year.....	178	47	134	47	312	47	153	31	405	31	558	31	331	40	539	35	870	37
Total.....	266	61	321	58	587	59	176	33	764	34	930	34	442	50	1,075	43	1,517	44

There is not much difference between the clinical and latent groups as regards the seasonal incidence of types of parasites except that the spring predominance of *vivax* in the white race is more pronounced in the clinical than in the latent cases. The incidence of *vivax* in the all-month totals of either race is about the same in the clinical as in the latent. The total number of latent cases is more than double that of clinical, since we obtained so large a proportion of our material in school and neighborhood surveys.

The relatively high incidence of *falciparum* in the colored race is striking. In the totals we find only 34 per cent of *vivax* (or 66 per cent of *falciparum*) in the colored race as compared with 59 per cent of *vivax* (41 per cent of *falciparum*) in the white. The incidence of *falciparum* in the colored race is greater in every month of the year except December, in which month no white cases occurred. This predilection of *falciparum* for the colored race was noted by Barber and Mayne (loc. cit.), who found it in every one of several population groups analyzed.

In Table 3 we have shown the results of an experiment in which we approached the problem of the seasonal incidence of types from a different direction, that of the reexamination of a group of positives. We selected a group of 51 negro school children from four schools in different parts of Leflore County, Miss. The ages of the children ranged from 6 to 17, and both sexes were included. All were positive

in March or April, 1928. We took new blood specimens at monthly intervals from this group, beginning the reexamination in June and continuing to the following April. Not every child could be found at every visit—the average number per visit was 39.2—but we obtained 471 individual examinations of which 196 were positive. All the microscopic examinations were made by the senior author. The children received no special treatment for malaria during the year.

The results showed, in a marked degree, variations in the type of parasite exhibited by the same individual at different examinations. Of the total 51 children, 23 showed such variation. If we include only those cases which gave 5 or more positives we have 14 which varied and only 2 which remained constant. Reinfection during the summer may have accounted for a part of these apparent changes of type; but if we include only those examinations made from December on we may virtually eliminate this factor, since reinfections during the winter and early spring are unlikely in this region. During that period, however, 9 varied in type and only 2 remained constant.

Errors in diagnosis of the type of parasite can not, of course, be excluded. But if we take only cases which showed crescents or *vivax*, the latter almost always exhibiting larger schizonts, we still find that 18 out of the total 51 varied in type during the year.

We do not consider these results as evidence of the presence of a single variable type of parasite, but rather of the frequency of mixed infections. It is probable that mixed infections occur at some period during the year in a large proportion of the positive cases found in this part of the country. The presence or predominance in the peripheral blood of one type or another would determine the diagnosis. A seasonal incidence of types among mixed infections would mean, then, that one type or another is prominent or in abeyance at different periods of the year.

The monthly incidence of *vivax* among all positive cases is shown at the bottom of Table 3. The numbers examined in each month are so small that we can properly consider only the seasonal trend of the results. The percentage of *vivax* tends to rise during the summer and to decline during the autumn; in the spring of 1929 it is relatively high. In these respects it follows roughly the seasonal curve of *vivax* in the whole group (Tables 1 and 2). However, it is low (8 per cent) at the first examination in March or April, 1928, and high (57 and 63 per cent, respectively) in the same months of 1929.

It is probable that conditions in this smaller group are complicated by another factor, that of the decline of a local or county-wide epidemic, which probably occurred during the summer of 1927. This might explain the high percentage of *falciparum* in the early spring of 1928 and its subsequent decline during the latter part of the following year, for *falciparum* is the less resistant type and would be

the first to disappear. The effect of local epidemics on the incidence of the type of malaria parasite would vary in different groups. Among persons accustomed to a liberal use of quinine, *falciparum* would tend to disappear earlier than in a group like this one—plantation negroes little disposed to the use of quinine except in the form of occasional doses of chill tonics. The whole series of cases (Tables 1 and 2) comprises many different types of population and the examinations of several different years, so that the effect of local epidemics on the combined results would be obscured.

TABLE 8.—Incidence of types of malaria parasites in a group of cases reexamined at monthly intervals

[Explanation of symbols: T, P. vivax; E, P. falciparum rings; C, crescents; Q, quartan]

Locality	Children examined	Month examined and result													
		1928						1929							
		Check No.	Age	March	June	July	August	September	October	November	December	January	February	March	April
Hog Bayou.....	1	14	Negative.	Negative.	E.	Negative.	Negative.	T.	T.	C.	T.	Negative.	Negative.	Negative.	15
	2	15	do.	do.	E.	do.	do.	do.	do.	C.	do.	do.	do.	do.	15
	3	5	T.	T.	E.	T+C	F.	E.	C.	do.	do.	do.	do.	do.	27
	4	11	Negative.	Negative.	Negative.	E+C	E.	E.	E.	E.	E.	E.	E.	T.	15
	5	13	do.	do.	C.	E	Negative.	E	E.	E.	E.	E.	E.	T.	15
	6	7	E.	E.	Negative.	E	Negative.	E	E.	E.	E.	E.	E.	E.	15
	7	9	C.	E.	Negative.	E	E.	E.	E.	E.	E.	E.	E.	E.	15
	8	8	E.	E.	do.	Negative.	E	E.	E.	E.	E.	E.	E.	E.	15
	9	10	E.	Negative.	Negative.	E	E.	E.	E.	E.	E.	E.	E.	E.	15
	10	14	T.	do.	do.	E+C	E.	E.	E.	E.	E.	E.	E.	E.	15
	11	12	do.	do.	do.	E	E.	E.	E.	E.	E.	E.	E.	E.	15
	12	17	E.	do.	do.	Negative.	E.	E.	E.	E.	E.	E.	E.	E.	15
	13	13	E.	do.	do.	Negative.	E.	E.	E.	E.	E.	E.	E.	E.	15
	14	14	E.	Negative.	E.	do.	E.	do.	E.	Negative.	T.	do.	do.	do.	33
	15	9	E.	do.	do.	do.	C.	do.	E.	E.	E.	T.	do.	do.	33
			Number examined.....	15	13	14	12	14	13	11	11	14	15	15	
			Per cent positive.....	100	31	50	33	64	85	64	64	86	27	33	
Sidon.....	1	7	E.	Negative.	E.	E.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	12
	2	6	E.	E.	Negative.	Negative.	Negative.	do.	do.	do.	do.	do.	do.	do.	8
	3	7	E.	E.	T.	Negative.	do.	do.	do.	do.	do.	do.	do.	do.	30
	4	4	E.	C.	Negative.	Negative.	E.	E.	E.	E.	E.	E.	E.	E.	10
	5	14	E.	do.	E.	T	E.	E.	E.	E.	E.	E.	E.	E.	10
	6	6	E.	do.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	12
	7	8	E.	do.	E.	C	E.	E.	E.	E.	E.	E.	E.	E.	12
	8	11	E.	do.	E.	do.	Negative.	do.	do.	do.	do.	do.	do.	do.	12
	9	9	E.	do.	Negative.	Negative.	do.	do.	do.	do.	do.	do.	do.	do.	12
	10	10	E.	E.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	12
	11	9	E.	E.	E+C	E.	do.	do.	do.	do.	do.	do.	do.	do.	12
	12	13	E.	Negative.	Negative.	do.	do.	do.	do.	do.	do.	do.	do.	do.	12
	13	15	C.	do.	E.	do.	E.	E.	E.	E.	E.	E.	E.	E.	12
	14	8	E.	do.	do.	T	do.	do.	do.	do.	do.	do.	do.	do.	8
	15	9	E.	E+C	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	8
				Number examined.....	16	15	16	12	14	12	13	7	14	12	8
			Per cent positive.....	100	40	50	50	42	42	8	14	30	8	8	

TABLE 3.—Incidence of types of malaria parasites in a group of cases reexamined at monthly intervals—Continued

[Explanation of symbols: T, P. vivax; E, P. falciparum rings; C, crescents; Q, quartan]

Locality	Month examined and result														
	1928						1929								
Children examined	Check No.	Age	March	June	July	August	September	October	November	December	January	February	March	April	
Oakwood.....	1	14	C	E	Negative.	Negative.	C	Negative.	E+C	Negative.	Negative.	Negative.	Negative.	T.	
	2	11	E+C	E	T+C	T	C	E+C	E+C	do.	do.	do.	E	T.	
	3	14	C	E	T	E	C	Negative.	Negative.	do.	do.	do.	E		
	4	13	E	E	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	do.	Negative.	
	5	6	T	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	Negative.	
	6	18	C	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	7	7	E	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	8	10	E	Negative.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	9	11	C	T	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	10	8	E	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	11	9	E	T	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	12	9	E+C	E	Negative.	Negative.	Negative.	do.	do.	do.	do.	do.	do.	do.	Negative.
Number examined.....			12	10	12	11	8	10	4	5	5	5	5	5	
Per cent positive.....			100	80	25	45	35	50	25	0.0	0.0	40	40	40	
Swiftown.....	1	16	E	Negative.	E	C	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	
	2	7	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	3	14	E	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	4	9	C	Negative.	Negative.	C	do.	do.	do.	do.	do.	do.	do.	do.	
	5	14	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	6	9	T	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	7	10	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	8	13	E	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	
Number examined.....			8	8	5	4	8	6	5	6	6	5	6		
Per cent positive.....			100	12	40	75	25	17	0.0	0.0	0.0	0.0	0.0		
Grand totals:															
Number examined in 4 localities.....			51	46	47	30	44	41	33	29	29	34	40	33	
Per cent positive.....			100	41	43	48	36	54	27	28	28	29	18	21	
Per cent of P. vivax among positives.....			8	11	15	37	12	14	0.0	50	50	50	57	68	

Thus far we have considered only cases found in the Mississippi Valley or in States to the eastward of it. The Rio Grande Valley of Texas and New Mexico presents another phase of the problem in that *vivax* greatly predominates there at all seasons of the year. In the course of surveys made in that valley during 1926, 1927, and 1928 we found 365 positive cases, of which all were *vivax* except 25 cases of *falciparum* and 1 of quartan. Practically all of the 25 cases of *falciparum* (13 of which showed crescents) were found during one summer, that of 1927, in a restricted area of Dona Ana County, N. Mex. During the following year only one *falciparum* case appeared in the same locality.

The predominance of *vivax* in the Rio Grande Valley is the more remarkable, since most of our positive cases were found in summer and autumn when *falciparum* is abundant in the southern States situated farther east. In the lower Rio Grande Valley in Texas the climate is almost tropical and in most of the valley the summers are very warm. The elevation of the more malarious regions varies from sea level to 5,600 feet. The population consists chiefly of Anglo-Saxons, Spanish Americans, and Indians. A large proportion of the positive cases were found among Spanish Americans and Indians, none among negroes. The species of *Anopheles* vary in different parts of the valley; the most important vectors of malaria are probably *A. quadrimaculatus* in the lower part of the valley and *A. maculipennis* in the upper. The locality in which the outbreak of *falciparum* occurred is situated about 4,000 feet above the sea; it is warm in the summer and abounding in *A. maculipennis* and *A. pseudopunctipennis*. It appeared that the general predominance of *vivax* in this valley can not be ascribed to climate or to the species of mosquito. It is probable that the region was "seeded down" with that type of malaria and that *falciparum* has not obtained a permanent foothold. There are various examples in other parts of the world of regions where one type of malaria predominates apparently quite regardless of season or climate. The cases from the Rio Grande Valley are not included in the list classified in Tables 1 and 2.

#### DISCUSSION

Several factors may be concerned in the seasonal incidence of malaria parasites:

1. *P. vivax* is undoubtedly more resistant to treatment or other antimalaria influence than *falciparum*, and would be the type most likely to survive the winter. This may explain the conspicuous predominance of *vivax* in the spring among the white cases and the absence of such predominance among the negro cases. White people usually receive more treatment for disease and are generally better

housed and fed. Negroes are apparently less susceptible to the effects of a parasitic infection and are generally less able financially to seek medical aid. There is, in this country at least, no evidence of a purely racial predisposition to any type of malaria.

2. The propagation of *falciparum* may be more rapid during the later months of the year. In the populations we examined this would be due to the higher temperatures of summer and autumn, favoring the growth of *falciparum* in the mosquito, rather than to a lack of crescents in the spring. We have seen that a large number of *falciparum* cases may survive the winter, at least in the colored race, and continue far into the next summer. Table 4 shows that the percentage of crescent carriers among such *falciparum* cases may be large in spring or early summer. The total number of *falciparum* cases in the first six months is 1,010 with 32 per cent crescent carriers; in the last six months, 2,270 with 43 per cent carriers—not a conspicuous difference in percentage. *Anopheles* in the southern States do not become numerous before May; but there is no reason to suppose that *A. quadrimaculatus*, the commonest vector in the region covered by our investigation, is a better carrier of one type of parasite than of another.

TABLE 4.—Monthly incidence of crescent carriers among *falciparum* cases

	January	February	March	April	May	June	July	August	September	October	November	December	All months
Total number of <i>falciparum</i> cases.....	6	44	127	97	8	29	85	99	71	174	101	4	845
Number of cases with crescents.....	3	19	33	35	5	6	25	44	35	73	48	2	346
Per cent crescent carriers among total <i>falciparum</i> cases.....	50	44	26	36	63	21	30	44	50	42	47	50	41

3. It has been alleged that there is something in the season *per se* which favors the relapse of one type or of another. Certain observations in this country lend color to this view. In years when the transmission of malaria has been checked or almost wholly prevented by drought or other conditions unfavorable to mosquito breeding, the autumn predominance of *falciparum* appears as in ordinary years.

In our investigation the more conspicuous results—(a) the marked predominance in the white race of *vivax* in the spring and of *falciparum* in the autumn, and (b) the high incidence in the colored race of *falciparum* at all seasons—may be adequately explained by the first two factors mentioned, i. e., the greater vitality of *vivax* and the more rapid propagation of *falciparum* under autumn conditions. Possibly they may be explained by the first factor alone. The Rio Grande cases form a group by themselves; the predominance of *vivax* there



seems to be due to the fact that *falciparum* has never become fully established in that region. Among the 1,517 cases collected in the southeastern States only 44 per cent were *vivax*.

The results of our investigation agree in essential respects with those of Barber and Mayne (loc. cit.). In our cases, however, there was much less evidence of a seasonal incidence of types of parasite in the colored race than in theirs.

#### SUMMARY

1. In the southeastern United States there is a marked predominance among malaria cases in the white race of *vivax* in the spring months and of *falciparum* in the autumn.

2. In the colored race there is less indication of a seasonal incidence of types of parasites, but the incidence of *falciparum* is higher in all months than in the white race.

3. A large proportion of the cases present mixed infections of *falciparum* and *vivax* at some time during their history.

4. The greater resistance of *vivax* to treatment or to other anti-malaria influence is probably the most important factor in determining the seasonal variations of *vivax* and *falciparum* in the white race and of the high incidence of *falciparum* in the colored.

5. *Falciparum* apparently has not become well established in the Rio Grande Valley of Texas and New Mexico. *Vivax* is the most predominant type there at all seasons of the year.

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### COURT DECISION RELATING TO PUBLIC HEALTH

*Statutory provisions concerning sale of nonalcoholic beverages manufactured in other States held invalid.*—(Wisconsin Supreme Court; *Fitger Co. et al. v. Kremer, Dairy and Food Commissioner*, 226 N. W. 310; decided June 24, 1929.) Subsection 9 of section 98.12 of the Wisconsin Statutes, 1927, provided as follows:

No soft drink or other nonalcoholic beverage, except apple cider, not manufactured in this State shall be sold or offered for sale within the State unless the same is first inspected and registered with the dairy and food commissioner. Such inspection of one sample of each such soft drink or nonalcoholic beverage and registration shall be made annually, and an inspection fee of \$25 for each such soft drink or other nonalcoholic beverage having a distinguishing flavor or name shall be paid by the manufacturer to the dairy and food commissioner for each inspection. The provisions of this subsection shall not apply to soft drinks or other nonalcoholic beverages manufactured in States where no inspection or license for their sale is required.

An action was brought against the State dairy and food commissioner by a Minnesota corporation and a Wisconsin corporation to have the said subsection declared void and to restrain the said com-

missioner from attempting to enforce the subsection in question. The supreme court decided that the statute was invalid because it (a) discriminated against the products and industries of some of the States in favor of the products and industries of other States, (b) denied to the States discriminated against the privileges and immunities of citizens of the several States, and (c) imposed an unjustifiable burden upon interstate commerce.

The following is quoted from the court's opinion:

\* \* \* This provision of the statutes indicates upon its face that it was not enacted for the bona fide purpose of insuring pure and unadulterated products to the people of this State. It does not apply to products coming from those States where no inspection or license for their sale is required. While the products from those States are immune from inspection, products coming from other States making some effort to insure pure and unadulterated beverages are subject to the burden imposed by this law upon their attempted sale in this State. If discrimination were to be indulged, it would seem that a bona fide effort to promote the health of the people of this State would prompt a discrimination in favor rather than against products coming from those States regulating their manufacture. But this statute exempts from its burdens the products coming from those States where no supervision is exercised and no effort is made to insure their purity. Plainly the law is not an attempt to promote the health of the people of this State.

\* \* \* The law reveals no legitimate exercise of the police power of the State. It can not be sustained.

Concerning the striking out of the exemption provision only, on the theory that it was an independent and separable provision, the court said:

\* \* \* But the history of the passage of the act leaves no room for such a conclusion. As originally introduced it did not contain the exemption provision. That came in as an amendment to the original bill, and the court can not say that it was not an inducement to the passage of the law.

## DEATHS DURING WEEK ENDED AUGUST 10, 1929

*Summary of information received by telegraph from industrial insurance companies for the week ended August 10, 1929, and corresponding week of 1928. (From the Weekly Health Index, August 14, 1929, issued by the Bureau of the Census, Department of Commerce)*

	Week ended Aug. 10, 1929	Corresponding week, 1928
Policies in force.....	74, 262, 469	71, 589, 745
Number of death claims.....	11, 837	11, 992
Death claims per 1,000 policies in force, annual rate.....	8.3	8.8

Deaths from all causes in certain large cities of the United States during the week ended August 10, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index, August 14, 1929, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Aug. 10, 1929		Annual death rate per 1,000 corresponding week, 1928	Deaths under 1 year		Infant mortality rate week ended Aug. 10, 1929 <sup>2</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Aug. 10, 1929	Corresponding week, 1928	
Total (65 cities).....	5,783	10.1	11.7	585	683	51
Akron.....	33			3	1	31
Albany <sup>4</sup> .....	29	12.6	14.8	1	1	20
Atlanta.....	77	15.8	18.0	14	11	145
White.....	41			8	6	
Colored.....	36	( <sup>5</sup> )	( <sup>5</sup> )	6	5	
Baltimore <sup>4</sup> .....	198	12.5	14.9	21	36	67
White.....	151			19	26	76
Colored.....	47	( <sup>5</sup> )	( <sup>5</sup> )	2	10	32
Birmingham.....	67	15.8	18.3	10	16	91
White.....	35			4	9	60
Colored.....	32	( <sup>5</sup> )	( <sup>5</sup> )	6	7	137
Boston.....	150	9.8	13.0	16	22	44
Bridgeport.....	33			5	3	86
Buffalo.....	190	12.2	12.9	10	20	43
Cambridge.....	16	6.7	9.6	2	3	36
Camden.....	18	7.0	13.1	2	4	35
Canton.....	10	4.5	8.5	1	1	24
Chicago <sup>4</sup> .....	591	9.8	10.6	65	58	58
Cincinnati.....	121			9	17	53
Cleveland.....	145	7.5	9.3	20	19	59
Columbus.....	83	14.5	12.9	8	4	75
Dallas.....	49	11.8	13.0	9	7	
White.....	36			7	6	
Colored.....	13	( <sup>5</sup> )	( <sup>5</sup> )	2	1	
Dayton.....	33	9.4	13.6	8	3	127
Denver.....	57	10.1	11.6	6	4	58
Des Moines.....	26	8.9	12.4	2	4	36
Detroit.....	260	9.9	8.7	34	18	55
Duluth.....	20	9.0	13.0	3	8	72
El Paso.....	24	10.7	13.8	6	2	
Erie.....	28			4	2	82
Fall River <sup>4</sup> .....	22	8.6	11.3	3	3	56
Flint.....	15	5.3	13.0	6	8	73
Fort Worth.....	34	10.4	8.6	6	2	
White.....	27			4	1	
Colored.....	7	( <sup>5</sup> )	( <sup>5</sup> )	2	1	
Grand Rapids.....	31	9.9	7.0	0	2	0
Houston.....	58			7	8	
White.....	40			5	7	
Colored.....	18	( <sup>5</sup> )	( <sup>5</sup> )	2	1	
Indianapolis.....	85	11.6	14.2	11	8	88
White.....	68			10	7	93
Colored.....	17	( <sup>5</sup> )	( <sup>5</sup> )	1	1	60
Jersey City.....	58	9.3	11.9	11	11	85
Kansas City, Kans.....	29	12.8	13.3	2	4	44
White.....	24			2	4	50
Colored.....	5	( <sup>5</sup> )	( <sup>5</sup> )	0	0	0
Kansas City, Mo.....	95	12.7	10.6	7	10	59
Knoxville.....	20	9.9	12.9	3	3	66
White.....	18			3	2	73
Colored.....	2	( <sup>5</sup> )	( <sup>5</sup> )	0	1	0
Los Angeles.....	273			23	23	67
Louisville.....	103	16.3	15.2	7	11	57
White.....	77			5	10	47
Colored.....	26	( <sup>5</sup> )	( <sup>5</sup> )	2	1	126
Lowell.....	17			1	2	23
Lynn.....	19	9.4	11.4	1	1	27
Memphis.....	61	16.8	19.5	5	6	59
White.....	34			2	2	38
Colored.....	27	( <sup>5</sup> )	( <sup>5</sup> )	3	4	94
Milwaukee.....	37	8.4	8.6	7	9	31
Minneapolis.....	72	8.3	9.1	6	5	37
Nashville.....	46	17.2	13.1	12	4	194
White.....	33			11	2	230
Colored.....	13	( <sup>5</sup> )	( <sup>5</sup> )	1	2	63
New Bedford.....	25			3	2	64
New Haven.....	28	7.8	7.0	1	2	15

Footnotes at end of table.

*Deaths from all causes in certain large cities of the United States during the week ended August 10, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928—Continued*

City	Week ended Aug. 10, 1929		Annual death rate per 1,000 corresponding week, 1928	Deaths under 1 year		Infant mortality rate week ended Aug. 10, 1929 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Aug. 10, 1929	Corresponding week, 1928	
New Orleans.....	153	18.6	18.3	15	12	74
White.....	82			4	3	28
Colored.....	71	( <sup>2</sup> )	( <sup>2</sup> )	11	9	185
New York.....	1,101	9.6	11.7	92	122	38
Bronx Borough.....	130	7.1	10.1	16	17	47
Brooklyn Borough.....	359	8.1	9.9	30	35	80
Manhattan Borough.....	444	13.3	16.3	37	60	45
Queens Borough.....	134	8.2	8.4	7	7	29
Richmond Borough.....	34	11.8	17.3	2	3	36
Newark, N. J.....	97	10.7	10.9	9	8	47
Oakland.....	41	7.8	9.3	1	4	11
Oklahoma City.....	33			2	7	40
Omaha.....	38	8.9	11.7	2	3	23
Paterson.....	17	6.1	9.7	3	4	53
Philadelphia.....	356	9.0	11.0	28	46	40
Pittsburgh.....	118	9.2	13.0	13	26	45
Portland, Oreg.....	59			1	2	11
Providence.....	52	9.5	11.3	11	14	97
Richmond.....	51	13.7	16.4	4	9	56
White.....	29			2	2	42
Colored.....	22	( <sup>3</sup> )	( <sup>3</sup> )	2	7	82
Rochester.....	67	10.7	11.8	4	8	34
St. Louis.....	182	11.2	12.8	15	14	51
St. Paul.....	49			4	5	41
Salt Lake City <sup>4</sup> .....	16	6.1	12.5	2	3	31
San Antonio.....	61	14.6	16.8	9	17	-----
San Diego.....	31			2	2	38
San Francisco.....	134	12.0	12.2	3	7	19
Schenectady.....	13	7.3	7.3	1	1	32
Seattle.....	64	8.7	7.9	4	1	42
Somerville.....	11	5.6	6.6	1	3	36
Spokane.....	14	6.7	13.4	2	1	52
Springfield, Mass.....	24	8.4	8.0	2	4	33
Syracuse.....	41	10.8	9.7	2	3	24
Tacoma.....	19	9.0	13.7	0	0	0
Toledo.....	71	11.9	12.0	10	7	98
Trenton.....	38	14.3	15.8	2	3	36
Utica.....	19	9.5	9.5	3	3	76
Washington, D. C.....	95	9.0	13.5	7	11	41
White.....	58			4	4	34
Colored.....	37	( <sup>5</sup> )	( <sup>5</sup> )	3	7	57
Waterbury.....	12			4	4	102
Wilmington, Del.....	15	6.1	11.0	4	3	104
Worcester.....	35	9.3	10.1	4	7	50
Yonkers.....	26	11.2	9.9	3	4	70
Youngstown.....	26	7.8	9.3	3	5	43

<sup>1</sup> Annual rate per 1,000 population.

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

<sup>3</sup> Data for 73 cities.

<sup>4</sup> Deaths for week ended Friday.

<sup>5</sup> 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, 33; 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 August 10, 1929, and August 11, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 10, 1929, and August 11, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928
<b>New England States:</b>								
Maine.....	2	3		1	10	40	0	0
New Hampshire.....		2			23	6	0	0
Vermont.....	2	1			1	4	0	1
Massachusetts.....	48	46		2	49	90	5	1
Rhode Island.....	2	2				57	0	0
Connecticut.....	16	11		2	11	39	2	0
<b>Middle Atlantic States:</b>								
New York.....	121	113	16	11	123	230	19	44
New Jersey.....	39	58	2		25	66	7	2
Pennsylvania.....	80	71			123	253	7	1
<b>East North Central States:</b>								
Ohio.....	41	17	8	10	48	66	8	3
Indiana.....	5	11		10	8	18	1	0
Illinois.....	112	72	5	2	122	29	11	7
Michigan.....	58	52		3	58	61	19	5
Wisconsin.....	31	14	14	8	117	19	3	1
<b>West North Central States:</b>								
Minnesota.....	13	14		1	17	5	1	1
Iowa.....	5	5			9		1	0
Missouri.....	15	23	1			16	8	2
North Dakota.....	2	1		1	17	3	0	2
South Dakota.....	7			9	2	13	0	2
Nebraska.....	1	2		5	30		1	0
Kansas.....	9	8		2	28	5	1	1
<b>South Atlantic States:</b>								
Delaware.....	1	1					0	0
Maryland <sup>1</sup> .....	4	10		2	6	6	0	1
District of Columbia.....	6	12	1			4	0	0
Virginia.....								
West Virginia.....	8	8	2	13	5	2	4	1
North Carolina.....	51	17			1	24	0	0
South Carolina.....	23	15	126	233		5	0	0
Georgia.....	12	9	17	46	3	3	0	0
Florida.....	18	5	1	38			2	1

<sup>1</sup> New York City only.

<sup>2</sup> Week ended Friday.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 10, 1929, and August 11, 1928—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928
<b>East South Central States:</b>								
Kentucky.....	6						0	0
Tennessee.....	8	6		5	1	8	0	0
Alabama.....	21	23	6	44	6	14	0	3
Mississippi.....	15	8						
<b>West South Central States:</b>								
Arkansas.....	4	4		4	1	4	0	0
Louisiana.....	17	9	4	8	3	1	2	0
Oklahoma <sup>1</sup> .....	10	18	9	20	2	1	0	1
Texas.....	33	9	6	24	5	6	0	0
<b>Mountain States:</b>								
Montana.....	4	3			33	1	1	2
Idaho.....					1		0	0
Wyoming.....	1	8				1	2	0
Colorado.....	6	2		1	3	11	0	1
New Mexico.....	2	6				4	0	0
Arizona.....	1			1			3	9
Utah <sup>2</sup> .....		1	1		1	2	1	2
<b>Pacific States:</b>								
Washington.....	6	11	1		14	9	0	1
Oregon.....	5	3		2	20	6	1	0
California.....	32	56	8	4	17	11	5	2

Division and State	Polio myelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928
<b>New England States:</b>								
Maine.....	0	0	2	7	0	0	2	5
New Hampshire.....	1	3	4	4	0	0	0	0
Vermont.....	0	1	0	3	3	0	0	0
Massachusetts.....	1	43	44	47	0	0	10	14
Rhode Island.....	2	0	6	9	0	0	2	1
Connecticut.....	2	3	16	7	0	0	0	2
<b>Middle Atlantic States:</b>								
New York.....	25	56	66	54	1	0	45	40
New Jersey.....	1	3	24	25	0	0	7	8
Pennsylvania.....	8	10	76	72	2	1	46	62
<b>East North Central States:</b>								
Ohio.....	4	5	41	40	15	2	30	36
Indiana.....	0	1	27	35	18	14	3	31
Illinois.....	1	1	91	49	15	9	29	34
Michigan.....	7	0	84	63	30	18	8	12
Wisconsin.....	1	1	18	41	13	22	3	3
<b>West North Central States:</b>								
Minnesota.....	0	6	36	32	0	0	3	5
Iowa.....	0	2	6	6	8	3	4	3
Missouri.....	2	0	12	13	2	10	17	20
North Dakota.....	0	13	2	16	7	0	3	0
South Dakota.....	0	0	1	9	6	1	0	1
Nebraska.....	0	2	12	7	8	8	2	1
Kansas.....	0	3	21	37	9	22	27	15
<b>South Atlantic States:</b>								
Delaware.....	0	1	0	1	0	0	3	0
Maryland <sup>3</sup> .....	0	26	19	3	0	0	17	26
District of Columbia.....	1	1	3	4	0	0	1	3
Virginia.....	21	1						
West Virginia.....	2	6	12	12	2	5	15	27
North Carolina.....	11	0	37	29	7	13	44	95
South Carolina.....	2	1	10	0	0	1	72	70
Georgia.....	0	0	16	4	0	0	25	55
Florida.....	0	0	1	2	0	0	9	7

<sup>1</sup> Week ended Friday.

<sup>2</sup> Figures for 1929 are exclusive of Oklahoma City and Tulsa.

<sup>3</sup> 25 cases were reported Aug. 12, 1929.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 10, 1929, and August 11, 1928—Continued*

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928	Week ended Aug. 10, 1929	Week ended Aug. 11, 1928
	<b>East South Central States:</b>							
Kentucky.....	0	7	27	21	0	0	37	3
Tennessee.....	6	3	7	12	1	1	76	99
Alabama.....	2	2	15	4	0	1	30	91
Mississippi.....	1	1	8	4	0	1	39	61
<b>West South Central States:</b>								
Arkansas.....	0	0	7	2	0	0	29	30
Louisiana.....	0	0	3	1	0	1	29	41
Oklahoma <sup>1</sup> .....	2	1	16	2	5	9	63	64
Texas.....	0	0	18	15	13	11	24	18
<b>Mountain States:</b>								
Montana.....	0	3	5	1	3	10	3	3
Idaho.....	0	4	1	1	11	6	1	0
Wyoming.....	0	0	2	4	3	1	2	1
Colorado.....	0	1	0	10	0	0	0	2
New Mexico.....	0	0	4	4	2	0	11	3
Arizona.....	0	0	1	0	2	0	0	2
Utah <sup>2</sup> .....	0	1	8	3	0	0	1	0
<b>Pacific States:</b>								
Washington.....	1	12	5	5	0	10	2	4
Oregon.....	1	5	4	13	7	18	8	4
California.....	4	4	76	37	31	13	17	22

<sup>1</sup> Week ended Friday.

<sup>2</sup> Figures for 1929 are exclusive of Oklahoma City and Tulsa.

### 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	Men- ingo- coccus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>May, 1929</i>										
Hawaii.....	33	50	50		78		1	7		9
<i>June, 1929</i>										
Florida.....	1	23	12	277	115	4	1	10	0	13
Hawaii.....	18	29	26		70		1			3
Indiana.....	9	54	29		1,441		1	564	382	12
New Hampshire.....		10	2				0	44	0	0
<i>July, 1929</i>										
Arizona.....	4	6			6		1	6	14	11
Arkansas.....	2	11	9	971	36	225	0	16	12	74
Georgia.....	5	21	30	981	13	82	2	31	3	182
Indiana.....	3	44	2		184		1	160	166	19
Maine.....	2	8	3		145		1	35	0	15
Michigan.....	133	354	6	4	955		9	550	268	24
North Dakota.....	3	20			109		0	15	13	4
Vermont.....	4				24		6	12	5	1
Wyoming.....	4	3			23		0	17	40	4

May, 1929

	Cases
Hawaii:	
Chicken pox.....	25
Conjunctivitis, follicular.....	10
Dysentery, amebic.....	1
Hookworm disease.....	2
Impetigo contagiosa.....	2
Leprosy.....	8
Mumps.....	19
Tetanus.....	3
Trachoma.....	7
Whooping cough.....	176

June, 1929

Chicken pox:	
Florida.....	16
Hawaii.....	6
Indiana.....	223
Conjunctivitis, follicular:	
Hawaii.....	6
Dysentery:	
Florida.....	3
Hookworm disease:	
Hawaii.....	1
Impetigo contagiosa:	
Hawaii.....	5
Leprosy:	
Hawaii.....	4
Mumps:	
Florida.....	9
Hawaii.....	11
Indiana.....	10
Paratyphoid fever:	
Florida.....	2
Plague:	
Hawaii.....	1
Septic sore throat:	
Indiana.....	1
Tetanus:	
Hawaii.....	3
Trachoma:	
Hawaii.....	3
Indiana.....	1
Typhus fever:	
Florida.....	7
Undulant fever:	
Florida.....	1
Whooping cough:	
Florida.....	90
Hawaii.....	95
Indiana.....	166

July, 1929

Anthrax:	
Maine.....	1
Chicken pox:	
Arizona.....	3
Arkansas.....	28
Georgia.....	9
Indiana.....	35
Maine.....	33
Michigan.....	406
North Dakota.....	48
Vermont.....	50
Wyoming.....	14
Conjunctivitis, acute infectious:	
Georgia.....	1
North Dakota.....	3

	Cases
Dengue:	
Georgia.....	2
Dysentery:	
Georgia.....	73
German measles:	
Maine.....	15
Hookworm disease:	
Arkansas.....	2
Georgia.....	6
Lethargic encephalitis:	
Georgia.....	1
Maine.....	1
Michigan.....	2
North Dakota.....	1
Mumps:	
Arizona.....	4
Arkansas.....	45
Georgia.....	27
Indiana.....	2
Maine.....	16
Michigan.....	197
North Dakota.....	6
Vermont.....	15
Wyoming.....	8
Ophthalmia neonatorum:	
Arkansas.....	3
Paratyphoid fever:	
Arkansas.....	2
Georgia.....	6
Maine.....	6
Rabies in man:	
Michigan.....	1
Rocky Mountain spotted or tick fever:	
Wyoming.....	12
Septic sore throat:	
Georgia.....	20
Maine.....	2
Michigan.....	8
Tetanus:	
Maine.....	4
Trachoma:	
Arizona.....	20
Arkansas.....	17
North Dakota.....	1
Trench mouth:	
Indiana.....	1
Tularaemia:	
Georgia.....	1
Wyoming.....	3
Typhus fever:	
Georgia.....	3
Undulant fever:	
Arizona.....	1
Vincent's angina:	
Maine.....	8
North Dakota.....	11
Whooping cough:	
Arizona.....	8
Arkansas.....	129
Georgia.....	172
Indiana.....	149
Maine.....	69
Michigan.....	1,020
North Dakota.....	50
Vermont.....	80
Wyoming.....	11



## 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 31,440,000. The estimated population of the 90 cities reporting deaths is more than 29,985,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

*Weeks ended August 3, 1929, and August 4, 1928*

	1929	1928	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	911	805	
93 cities.....	404	378	366
Measles:			
45 States.....	1,376	2,055	
93 cities.....	286	580	
Meningococcus meningitis:			
45 States.....	147	75	
93 cities.....	68	38	
Poliomyelitis:			
46 States.....	109	195	
Scarlet fever:			
46 States.....	921	960	
93 cities.....	242	268	269
Smallpox:			
46 States.....	313	189	
93 cities.....	39	21	19
Typhoid fever:			
46 States.....	875	877	
93 cities.....	115	123	150
<i>Deaths reported</i>			
Influenza and pneumonia:			
90 cities.....	328	335	
Smallpox:			
90 cities.....	0	0	

*City reports for week ended August 3, 1929*

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding 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 non-epidemic 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			
<b>NEW ENGLAND</b>									
Maine:									
Portland.....	78,600	2	0	0		0	0	0	1
New Hampshire:									
Concord.....	(1)	0	0	0		0	2	0	0
Manchester.....	85,700	0	0	0		0	0	0	0

<sup>1</sup> No estimate of population made.

## City reports for week ended August 3, 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			
NEW ENGLAND—CON.									
Vermont:									
Barre.....	( <sup>1</sup> )		0						
Massachusetts:									
Boston.....	799,200	11	26	17		0	13	19	5
Fall River.....	134,300	1	2	0		0	0	0	0
Springfield.....	149,800	0	1	0		0	0	9	1
Worcester.....	197,600	0	2	3		0	4	0	0
Rhode Island:									
Pawtucket.....	73,100	0	0	0		0	0	0	0
Providence.....	286,300	0	3	1		0	8	0	5
Connecticut:									
Bridgeport.....	( <sup>1</sup> )	0	3	0		0	2	3	1
Hartford.....	172,300	0	2	3		0	12	2	2
New Haven.....	187,900	1	0	0		0	2	0	4
MIDDLE ATLANTIC									
New York:									
Buffalo.....	555,800	0	7	7		0	6	0	11
New York.....	6,017,500	31	112	93	4	1	36	30	74
Rochester.....	328,200	0	4	1	1	0	1	6	4
Syracuse.....	199,300	9	2	0		0	1	1	1
New Jersey:									
Camden.....	135,400	0	3	2		0	1	1	2
Newark.....	473,600	17	7	21	2	1	3	12	6
Trenton.....	139,000	0	1	1		0	7	0	4
Pennsylvania:									
Philadelphia.....	2,064,200	12	32	10	3	2	13	6	19
Pittsburgh.....	673,800	6	12	4		0	4	1	3
Reading.....	115,400	0	1	0		0	1	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	413,700	0	4	2		0	2	0	5
Cleveland.....	1,010,300	25	18	16	2	1	12	1	11
Columbus.....	299,000	3	2	5		0	9	0	0
Toledo.....	313,200	6	4	2		0	27	1	0
Indiana:									
Fort Wayne.....	105,300	0	1	1		0	1	0	0
Indianapolis.....	382,100	0	3	3		0	4	2	1
South Bend.....	86,100	0	0	0		0	0	0	1
Terre Haute.....	73,500	0	0	0		0	0	0	0
Illinois:									
Chicago.....	3,157,400	24	47	81	10	2	53	5	41
Springfield.....	67,200	2	0	0	1	1	3	0	0
Michigan:									
Detroit.....	1,378,900	12	26	38		2	30	5	11
Flint.....	148,800	7	2	0		0	4	0	0
Grand Rapids.....	164,200	2	1	1		0	1	0	0
Wisconsin:									
Kenosha.....	56,500	0	0	0		0	2	0	0
Madison.....	50,500	2	0	0		0	4	1	0
Milwaukee.....	544,200	17	8	8		0	7	6	3
Racine.....	74,400	2	1	0		0	0	1	0
Superior.....	( <sup>1</sup> )	0	1	0		0	3	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	116,800	3	0	0		0	1	2	0
Minneapolis.....	455,900	7	9	2		0	2	3	1
St. Paul.....	( <sup>1</sup> )	2	7	1		0	0	2	4
Iowa:									
Davenport.....	( <sup>1</sup> )	0	0	4			2	0	
Des Moines.....	151,900	0	1	0			1	0	
Sioux City.....	80,000	0	0						
Waterloo.....	37,100	0	0	0			0	1	
Missouri:									
Kansas City.....	391,000	0	2	0		0	1	1	4
St. Joseph.....	78,500	0	1	0		0	1	0	0
St. Louis.....	848,100	0	19	9			0	2	

<sup>1</sup> No estimate of population made.

## City reports for week ended August 3, 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			
<b>WEST NORTH CENTRAL—continued</b>									
<b>North Dakota:</b>									
Fargo.....	(1)	0	0	0	0	0	0	0	1
Grand Forks.....	(1)	2	0	0	0	0	0	0	0
<b>South Dakota:</b>									
Aberdeen.....	(1)	0	0	0	0	0	2	0	0
Sioux Falls.....	(1)	0	0	0	0	0	0	0	0
<b>Nebraska:</b>									
Omaha.....	222,800	0	2	0	0	0	2	0	1
<b>Kansas:</b>									
Topeka.....	62,800	0	0	0	0	0	6	2	0
Wichita.....	99,300	0	1	0	0	0	6	0	2
<b>SOUTH ATLANTIC</b>									
<b>Delaware:</b>									
Wilmington.....	128,500	0	1	0	0	0	1	0	3
<b>Maryland:</b>									
Baltimore.....	830,400	3	11	4	1	1	11	8	8
Cumberland.....	(1)	0	0	0	0	0	0	0	1
Frederick.....	(1)	0	0	0	0	0	0	0	0
<b>District of Columbia:</b>									
Washington.....	552,000	5	5	6	0	2	0	3	3
<b>Virginia:</b>									
Lynchburg.....	38,600	0	0	1	0	0	12	0	0
Norfolk.....	184,200	0	0	1	0	0	0	2	2
Richmond.....	194,400	0	3	5	0	0	0	1	1
Roanoke.....	64,600	0	0	0	0	0	0	0	0
<b>West Virginia:</b>									
Charleston.....	55,200	1	0	0	0	1	0	0	0
Wheeling.....	(1)	1	1	0	1	0	0	2	2
<b>North Carolina:</b>									
Raleigh.....	(1)	0	0	2	0	0	0	0	0
Wilmington.....	39,100	0	0	1	0	0	0	0	0
Winston-Salem.....	80,000	0	1	1	0	0	0	0	1
<b>South Carolina:</b>									
Charleston.....	75,900	0	0	0	21	0	0	3	3
Columbia.....	50,600	0	1	0	0	0	2	2	2
<b>Georgia:</b>									
Atlanta.....	255,100	0	2	2	0	1	1	3	3
Brunswick.....	(1)	0	0	0	0	0	0	0	0
Savannah.....	99,900	0	1	1	1	0	0	0	0
<b>Florida:</b>									
Miami.....	156,700	0	1	0	0	0	0	0	4
St. Petersburg.....	53,300	0	0	0	0	0	0	0	0
Tampa.....	113,400	0	0	2	0	0	0	0	0
<b>EAST SOUTH CENTRAL</b>									
<b>Kentucky:</b>									
Covington.....	59,000	0	0	0	0	0	0	0	0
<b>Tennessee:</b>									
Memphis.....	190,200	1	2	3	0	0	0	1	1
Nashville.....	139,600	0	1	1	1	0	0	4	4
<b>Alabama:</b>									
Birmingham.....	222,400	0	2	1	3	1	0	4	4
Mobile.....	69,600	0	0	0	1	0	0	1	1
Montgomery.....	63,100	0	0	0	0	0	0	0	0
<b>WEST SOUTH CENTRAL</b>									
<b>Arkansas:</b>									
Fort Smith.....	(1)	0	0	0	0	0	0	0	0
Little Rock.....	79,200	0	0	0	0	0	0	0	0
<b>Louisiana:</b>									
New Orleans.....	429,400	0	4	2	0	2	0	4	4
Shreveport.....	81,300	0	0	0	0	0	0	4	4
<b>Oklahoma:</b>									
Oklahoma City.....	(1)	1	1	1	5	0	0	0	0
Tulsa.....	170,500	0	0	1	0	2	0	0	0

† No estimate of population made.

City reports for week ended August 3, 1929—Continued

Division, State, and city	Population July 1, 1928, estimated	Chick- en por, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mump- es, cases re- ported	Pneu- monia, deaths re- ported
			Cases, esti- mated expec- tancy	Cases re- ported	Cases re- ported	Deaths re- ported			
<b>WEST SOUTH CENTRAL—</b>									
continued									
<b>Texas:</b>									
Dallas.....	217,890	2	3	12		1	0	0	1
Fort Worth.....	170,600	0	1	2		0	0	0	1
Galveston.....	50,600	0	0	0		0	0	0	0
Houston.....	( <sup>1</sup> )	0	2	5		0	0	0	6
San Antonio.....	218,100	0	1	6		1	0	0	5
<b>MOUNTAIN</b>									
<b>Montana:</b>									
Billings.....	( <sup>1</sup> )	0	0	0		0	0	0	0
Great Falls.....	( <sup>1</sup> )	1	0	0		0	0	0	0
Helena.....	( <sup>1</sup> )	0	0	0		0	0	0	0
Missoula.....	( <sup>1</sup> )	0	0	0		0	0	0	1
<b>Idaho:</b>									
Boise.....	( <sup>1</sup> )	1	0	0		0	0	0	1
<b>Colorado:</b>									
Denver.....	294,200	5	9	1		1	2	12	3
Pueblo.....	44,200	2	0	0		0	0	0	0
<b>New Mexico:</b>									
Albuquerque.....	( <sup>1</sup> )	0	0	0	1	1	0	0	1
<b>Utah:</b>									
Salt Lake City.....	138,000	6	2	0		0	1	24	2
<b>Nevada:</b>									
Reno.....	( <sup>1</sup> )	0	0	0		0	0	0	0
<b>PACIFIC</b>									
<b>Washington:</b>									
Seattle.....	383,200	6	3	1			4	4	
Spokane.....	109,100	0	1	0			6	0	
Tacoma.....	110,500	3	2	1		0	2	1	1
<b>Oregon:</b>									
Portland.....	( <sup>1</sup> )	0	5	2		0	4	0	2
Salem.....	( <sup>1</sup> )	0	0	0		0	0	2	0
<b>California:</b>									
Los Angeles.....	( <sup>1</sup> )	12	26	11	2	0	3	9	13
Sacramento.....	75,700	0	2	0		0	0	1	0
San Francisco.....	585,300	6	9	6	1	0	3	4	2

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expec- tancy	Cases re- ported	Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		
<b>NEW ENGLAND</b>											
<b>Maine:</b>											
Portland.....	1	2	0	0	0	0	1	0	0	0	18
<b>New Hampshire:</b>											
Concord.....	0	0	0	0	0	0	0	0	0	0	11
Manchester.....	0	0	0	0	0	0	0	0	0	0	7
<b>Vermont:</b>											
Barre.....	0		0				0				
<b>Massachusetts:</b>											
Boston.....	17	16	0	0	0	15	3	0	0	43	183
Fall River.....	1	1	0	0	0	4	0	2	0	10	25
Springfield.....	1	0	0	0	0	2	0	0	0	0	21
Worcester.....	2	1	0	0	0	1	0	0	0	18	33
<b>Rhode Island:</b>											
Pawtucket.....	0	2	0	0	0	0	0	0	0	0	15
Providence.....	2	1	0	0	0	3	1	1	0	8	50
<b>Connecticut:</b>											
Bridgeport.....	2	1	0	0	0	4	0	1	0	0	23
Hartford.....	2	1	0	0	0	0	1	1	0	4	35
New Haven.....	1	3	0	0	0	2	1	0	0	1	44

<sup>1</sup> No estimate of population made.

## City reports for week ended August 8, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- cul- osis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
<b>MIDDLE ATLANTIC</b>											
New York:											
Buffalo.....	5	3	0	0	0	6	1	0	0	13	101
New York.....	34	23	0	0	0	101	23	16	1	63	1,289
Rochester.....	3	0	0	0	0	2	1	0	0	14	59
Syracuse.....	2	1	0	0	0	0	0	1	0	14	37
New Jersey:											
Camden.....	1	0	0	0	0	2	1	1	0	3	31
Newark.....	4	4	0	0	0	1	1	0	1	80	110
Trenton.....	0	2	0	0	0	0	1	0	0	5	33
Pennsylvania:											
Philadelphia.....	19	9	0	0	0	34	2	5	1	107	372
Pittsburgh.....	9	7	0	0	0	3	2	0	0	34	138
Reading.....	0	1	0	0	0	0	0	0	0	10	26
<b>EAST NORTH CENTRAL</b>											
Ohio:											
Cincinnati.....	3	5	0	1	0	4	2	0	0	8	123
Cleveland.....	11	6	1	0	0	13	3	1	0	84	238
Columbus.....	2	1	0	0	0	7	1	0	0	15	65
Toledo.....	2	0	1	0	0	4	2	0	0	22	53
Indiana:											
Fort Wayne.....	0	0	0	7	0	0	0	0	0	1	18
Indianapolis.....	2	14	1	1	0	6	1	0	0	6	83
South Bend.....	1	0	0	0	0	0	0	0	0	0	12
Terre Haute.....	0	0	0	0	0	0	0	0	1	3	20
Illinois:											
Chicago.....	30	31	0	1	0	33	5	10	3	136	635
Springfield.....	1	0	0	0	0	0	0	1	0	1	15
Michigan:											
Detroit.....	24	23	1	0	0	25	5	2	0	76	290
Flint.....	4	4	1	10	0	2	0	1	0	3	21
Grand Rapids.....	2	3	0	0	0	0	0	0	0	12	23
Wisconsin:											
Kenosha.....	0	0	0	0	0	0	0	0	0	4	10
Madison.....	1	0	0	0	0	0	0	0	0	2	
Milwaukee.....	6	4	1	0	0	2	1	0	0	80	104
Racine.....	1	0	0	0	0	0	0	0	0	1	10
Superior.....	2	1	0	0	0	0	0	0	0	2	8
<b>WEST NORTH CENTRAL</b>											
Minnesota:											
Duluth.....	4	1	1	0	0	0	0	0	0	2	17
Minneapolis.....	12	5	0	0	0	1	0	2	0	1	80
St. Paul.....	6	6	1	0	0	3	3	4	0	40	31
Iowa:											
Davenport.....	0	1	0	6			0	0		2	
Des Moines.....	2	1	0	0			0	0		0	21
Sioux City.....	0						0				
Waterloo.....	0	1	0	2			0	0		8	
Missouri:											
Kansas City.....	2	1	0	0	0	9	3	0	1	6	91
St. Joseph.....	0	1	0	1	0	0	0	0	0	0	22
St. Louis.....	7	2	0	0	0	12	5	5	0	29	235
North Dakota:											
Fargo.....	1	0	0	0	0	0	0	1	0	0	16
Grand Forks.....	0	0	0	2			0	0		0	
South Dakota:											
Aberdeen.....	0	0	0	1			0	0		6	
Sioux Falls.....	1	0	0	3			0	1		0	6
Nebraska:											
Omaha.....	1	0	0	0	0	4	0	0	0	2	60
Kansas:											
Topeka.....	1	0	0	0	0	0	0	1	0	8	23
Wichita.....	1	1	1	0	0	1	1	3	0	4	27

City reports for week ended August 3, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
<b>SOUTH ATLANTIC</b>											
Delaware:											
Wilmington	0	0	0	0	0	4	0	0	0	1	35
Maryland:											
Baltimore	5	4	0	0	0	17	8	1	2	52	198
Cumberland	0	0	0	0	0	1	0	1	0	0	12
Frederick	0	0	0	0	0	0	0	0	0	0	5
District of Col.:											
Washington	3	4	1	0	0	14	3	5	0	11	141
Virginia:											
Lynchburg	0	0	0	0	0	0	1	0	0	39	13
Norfolk	0	0	0	0	0	2	1	0	0	3	
Richmond	1	1	0	0	0	2	2	0	0	6	45
Roanoke	1	0	1	0	0	0	0	0	0	0	23
West Virginia:											
Charleston	1	0	0	0	0	0	0	1	0	0	15
Wheeling	1	0	0	0	0	0	0	0	0	1	11
North Carolina:											
Raleigh	0	0	0	0	0	0	1	1	0	0	13
Wilmington	0	0	0	0	0	0	0	0	0	0	9
Winston-Salem	0	0	0	0	0	2	1	0	0	23	13
South Carolina:											
Charleston	0	1	0	0	0	0	1	1	0	0	24
Columbia	0	0	0	0	0	1	2	1	0	18	29
Georgia:											
Atlanta	2	3	1	0	0	3	3	0	1	6	48
Brunswick	0	0	0	0	0	0	0	0	0	0	7
Savannah	0	2	0	0	0	1	1	1	0	1	35
Florida:											
Miami	0	1	0	0	0	2	0	0	0	0	23
St. Petersburg	0	0	0	0	0	0	0	0	0	0	8
Tampa	0	0	0	0	0	1	0	0	0	0	15
<b>EAST SOUTH CENTRAL</b>											
Kentucky:											
Covington	0	0	0	1	0	0	0	0	0	0	20
Tennessee:											
Memphis	1	0	0	0	0	3	8	9	1	18	60
Nashville	0	2	0	0	0	3	6	5	2	4	52
Alabama:											
Birmingham	1	1	1	0	0	6	5	5	0	7	68
Mobile	0	0	0	0	0	2	1	1	0	0	28
Montgomery	0	2	0	0	0	0	2	2	1	0	
<b>WEST SOUTH CENTRAL</b>											
Arkansas:											
Fort Smith	1	0	0	0	0	0	0	0	0	0	
Little Rock	0	0	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans	2	5	0	0	0	16	4	9	2	2	128
Shreveport	0	0	0	0	0	0	2	0	0	0	32
Oklahoma:											
Oklahoma City	0	0	1	0	0	0	3	0	0	1	34
Tulsa	0	2	0	1	0	0	2	5	0	8	
Texas:											
Dallas	2	3	1	1	0	1	4	3	1	23	43
Fort Worth	1	7	0	1	0	1	3	1	0	0	25
Galveston	0	0	0	0	0	3	0	0	0	0	11
Houston	1	0	0	0	0	3	2	0	0	0	60
San Antonio	0	1	0	0	0	7	1	2	1	0	64
<b>MOUNTAIN</b>											
Montana:											
Billings	0	0	0	0	0	1	0	0	0	0	1
Great Falls	0	0	0	0	0	0	0	1	0	9	11
Helena	0	0	0	0	0	0	0	0	0	0	3
Missoula	0	0	0	0	0	0	0	0	0	0	3
Idaho:											
Boise	0	0	0	0	0	1	0	0	0	0	10

## City reports for week ended August 3, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
<b>MOUNTAIN—CON.</b>											
Colorado:											
Denver.....	2	0	0	0	0	6	2	0	0	13	71
Pueblo.....	0	0	0	0	0	1	0	0	0	0	8
New Mexico:											
Albuquerque..	0	1	0	0	0	1	0	1	0	0	20
Utah:											
Salt Lake City	1	1	0	3	0	3	1	0	0	13	39
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	2
<b>PACIFIC</b>											
Washington:											
Seattle.....	2	1	1	3			1	1		19	
Spokane.....	1	0	1	0			0	0		3	
Tacoma.....	1	2	1	11	0	1	1	1	0	8	19
Oregon:											
Portland.....	2	0	5	1	0	1	0	0	2	0	66
Salma.....	0	0	0	0	0	0	0	0	0	0	
California:											
Los Angeles...	10	10	4	0	0	18	4	4	1	66	195
Sacramento...	1	1	0	0	0	0	1	2	1	0	25
San Francisco..	5	6	1	0	0	11	2	0	0	0	133

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>NEW ENGLAND</b>									
Massachusetts:									
Worcester.....	1	0	0	0	0	0	0	0	0
Connecticut: <sup>1</sup>									
Bridgeport.....	1	0	0	0	0	0	0	0	0
<b>MIDDLE ATLANTIC</b>									
New York:									
New York.....	11	6	2	3	0	0	13	2	0
Rochester.....	0	0	0	0	0	0	0	1	0
New Jersey:									
Camden.....	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia...	3	2	0	0	3	1	0	1	0
Pittsburgh.....	3	1	0	1	0	0	1	0	1
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Cincinnati.....	1	1	0	0	0	0	0	0	0
Cleveland.....	3	1	8	0	0	0	1	0	1
Toledo.....	1	1	0	0	0	0	0	0	0
Illinois:									
Chicago.....	11	8	0	1	0	0	2	0	0
Michigan:									
Detroit.....	13	15	1	0	0	0	0	7	0
Flint.....	1	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee.....	0	2	0	0	0	0	1	0	0

<sup>1</sup> Typhus fever, 4 cases: 1 case at Hartford, Conn., 2 cases at Savannah, Ga., and 1 case at Mobile, Ala.

## City reports for week ended August 3, 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
<b>WEST NORTH CENTRAL</b>									
<b>Minnesota:</b>									
Duluth.....	0	1	0	0	0	0	0	0	0
Minneapolis.....	6	0	0	0	0	0	1	0	0
<b>Missouri:</b>									
Kansas City.....	1	1	0	0	0	0	0	0	0
St. Louis.....	2	0	0	0	0	0	0	0	0
<b>Kansas:</b>									
Wichita.....	0	1	0	0	0	0	0	0	0
<b>SOUTH ATLANTIC</b>									
<b>Maryland:</b>									
Baltimore.....	0	0	0	0	2	0	0	0	0
<b>District of Columbia:</b>									
Washington.....	1	1	1	1	1	0	0	0	0
<b>Virginia:</b>									
Lynchburg.....	0	0	0	0	0	0	0	1	0
Norfolk.....	0	0	0	0	0	1	0	0	0
Richmond.....	0	0	0	0	0	1	0	1	0
Roanoke.....	0	0	0	0	0	0	0	8	2
<b>North Carolina:</b>									
Winston-Salem.....	0	0	0	0	0	1	0	1	0
<b>South Carolina:</b>									
Charleston.....	0	0	0	0	2	1	0	0	0
Columbia.....	0	0	0	0	0	5	0	0	0
<b>Georgia:<sup>1</sup></b>									
Atlanta.....	0	0	0	0	0	1	0	0	0
Brunswick.....	0	0	0	0	0	1	0	0	0
<b>Florida:</b>									
Tampa.....	0	0	0	0	1	0	0	0	0
<b>EAST SOUTH CENTRAL</b>									
<b>Tennessee:</b>									
Memphis.....	0	0	0	1	0	0	0	0	0
<b>Alabama:<sup>1</sup></b>									
Birmingham.....	1	0	0	0	1	0	0	0	0
Montgomery.....	0	0	0	0	1	0	0	0	0
<b>WEST SOUTH CENTRAL</b>									
<b>Louisiana:</b>									
New Orleans.....	1	0	0	0	1	1	0	0	0
Shreveport.....	0	0	0	0	0	2	0	0	0
<b>Oklahoma:</b>									
Tulsa.....	1	0	0	0	0	0	0	0	0
<b>Texas:</b>									
Dallas.....	0	0	0	0	0	1	0	0	0
<b>MOUNTAIN</b>									
<b>Idaho:</b>									
Boise.....	0	1	0	0	0	0	0	0	0
<b>Colorado:</b>									
Denver.....	0	0	0	0	0	0	0	1	0
<b>Utah:</b>									
Salt Lake.....	1	2	0	0	0	0	0	0	0
<b>PACIFIC</b>									
<b>Washington:</b>									
Seattle.....	1	0	0	0	0	0	0	0	0
<b>California:</b>									
Los Angeles <sup>2</sup> .....	2	0	0	0	0	0	1	0	0
Sacramento.....	3	1	0	0	0	0	1	0	0
San Francisco.....	1	0	0	0	0	0	1	0	0

<sup>1</sup> Typhus fever, 4 cases: 1 case at Hartford, Conn., 2 cases at Savannah, Ga., and 1 case at Mobile, Ala.<sup>2</sup> Dengue: 1 case at Los Angeles, Calif.



The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended August 3, 1929, compared with those for a like period ended August 4, 1928. The population figures used in computing the rates are approximate estimates, authoritative figure 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 30 to August 3, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928*<sup>1</sup>

## DIPHTHERIA CASE RATES

	Week ended—									
	July 6, 1929	July 7, 1928	July 13, 1929	July 14, 1928	July 20, 1929	July 21, 1928	July 27, 1929	July 28, 1928	Aug. 3, 1929	Aug. 4, 1928
98 cities.....	90	88	88	85	74	70	68	68	67	65
New England.....	70	62	80	80	82	46	59	46	55	57
Middle Atlantic.....	101	148	99	116	76	90	75	81	67	67
East North Central.....	127	79	119	82	105	76	103	64	99	73
West North Central.....	77	29	69	53	59	53	21	59	24	66
South Atlantic.....	34	55	43	63	30	50	28	67	47	55
East South Central.....	27	21	41	7	27	35	27	49	34	28
West South Central.....	75	16	87	41	76	57	103	69	101	41
Mountain.....	26	27	26	71	17	35	9	62	9	35
Pacific.....	45	49	42	72	42	54	32	57	47	84

## MEASLES CASE RATES

98 cities.....	196	327	150	267	100	165	70	130	49	99
New England.....	210	722	188	777	148	504	102	651	98	527
Middle Atlantic.....	76	456	51	350	47	204	27	126	35	79
East North Central.....	474	266	351	214	210	145	149	83	83	84
West North Central.....	113	172	104	117	61	63	58	29	38	14
South Atlantic.....	73	256	49	134	43	98	17	75	11	59
East South Central.....	27	56	14	224	7	77	7	98	7	28
West South Central.....	71	20	63	24	5	44	28	60	8	0
Mountain.....	148	354	104	239	61	186	70	80	26	97
Pacific.....	142	38	157	26	112	20	80	54	45	30

## SCARLET FEVER CASE RATES

98 cities.....	88	74	84	52	64	56	59	42	40	46
New England.....	90	122	84	87	57	78	57	57	64	53
Middle Atlantic.....	46	59	41	37	35	33	19	27	24	28
East North Central.....	173	95	160	71	103	88	110	56	62	58
West North Central.....	38	90	79	35	61	72	77	61	36	68
South Atlantic.....	60	65	64	34	69	29	60	38	28	38
East South Central.....	54	35	48	49	54	14	27	14	34	35
West South Central.....	24	36	43	28	71	32	59	20	37	77
Mountain.....	44	27	35	62	78	44	26	27	9	27
Pacific.....	140	61	92	74	67	79	67	71	50	67

<sup>1</sup> 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.

<sup>2</sup> Barre, Vt., Kansas City, Mo., and San Antonio, Tex., not included.

<sup>3</sup> Seattle and Spokane, Wash., not included.

<sup>4</sup> Barre, Vt., Sioux City, Iowa, and Fort Smith, Ark., not included.

<sup>5</sup> Barre, Vt., not included.

<sup>6</sup> Kansas City, Mo., not included.

<sup>7</sup> Sioux City, Iowa, not included.

<sup>8</sup> San Antonio, Tex., not included.

<sup>9</sup> Fort Smith, Ark., not included.

Summary of weekly reports from cities, June 30 to August 3, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928  
Continued

SMALLPOX CASE RATES

	Week ended—									
	July 6, 1929	July 7, 1928	July 13, 1929	July 14, 1928	July 20, 1929	July 21, 1928	July 27, 1929	July 28, 1928	Aug. 3, 1929	Aug. 4, 1928
98 cities.....	15	6	8	7	14	4	8	2	7	4
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	41	6	18	7	32	3	16	1	13	7
West North Central.....	13	16	15	12	23	14	21	4	7	0
South Atlantic.....	2	8	2	0	2	6	0	0	0	2
East South Central.....	20	7	7	7	7	14	7	35	7	21
West South Central.....	12	4	16	4	0	4	8	0	4	0
Mountain.....	35	44	35	89	44	18	9	18	26	35
Pacific.....	25	15	10	31	35	10	22	3	35	10

TYPHOID FEVER CASE RATES

	10	14	14	17	18	18	18	22	19	21
98 cities.....	10	14	14	17	18	18	18	22	19	21
New England.....	5	9	5	14	9	7	29	11	11	5
Middle Atlantic.....	6	9	7	9	10	12	7	17	11	17
East North Central.....	4	4	7	11	8	7	8	5	10	10
West North Central.....	13	8	10	16	23	12	13	23	32	8
South Atlantic.....	32	21	7	38	32	31	37	36	22	42
East South Central.....	48	91	156	70	143	140	102	140	149	154
West South Central.....	8	65	87	65	71	89	71	105	57	61
Mountain.....	17	9	9	9	52	0	44	27	9	0
Pacific.....	7	26	2	22	5	18	7	17	20	27

INFLUENZA DEATH RATES

	2	9	3	6	3	5	3	5	3	6
91 cities.....	2	9	3	6	3	5	3	5	3	6
New England.....	0	9	2	5	0	9	2	5	0	2
Middle Atlantic.....	3	10	2	3	2	4	2	2	2	6
East North Central.....	1	3	3	4	3	5	4	6	4	3
West North Central.....	0	12	0	6	0	3	3	3	0	3
South Atlantic.....	2	6	4	8	6	8	4	6	4	15
East South Central.....	15	31	7	8	0	0	0	23	15	0
West South Central.....	4	25	4	25	20	4	4	12	8	12
Mountain.....	0	18	26	18	0	9	9	9	9	0
Pacific.....	0	0	0	10	3	3	0	0	0	10

PNEUMONIA DEATH RATES

	63	73	55	61	57	58	50	44	54	53
91 cities.....	63	73	55	61	57	58	50	44	54	53
New England.....	50	51	29	67	70	55	32	34	43	57
Middle Atlantic.....	67	89	62	72	65	60	57	51	61	60
East North Central.....	56	67	50	54	40	57	28	29	47	31
West North Central.....	63	55	51	40	39	40	51	31	26	70
South Atlantic.....	69	61	58	52	54	50	60	71	45	52
East South Central.....	74	69	30	54	52	61	52	54	96	38
West South Central.....	114	56	85	71	74	54	89	58	81	87
Mountain.....	61	53	44	62	96	80	61	80	61	62
Pacific.....	33	78	56	54	66	81	26	10	52	79

<sup>1</sup> The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimatee as of July 1, 1929 and 1928, respectively.

<sup>2</sup> Barre, Vt., Kansas City, Mo., and San Antonio, Tex., not included.

<sup>3</sup> Seattle and Spokane, Wash., not included.

<sup>4</sup> Barre, Vt., Sioux City, Iowa, and Fort Smith, Ark., not included.

<sup>5</sup> Barre, Vt., not included.

<sup>6</sup> Kansas City, Mo., not included.

<sup>7</sup> Sioux City, Iowa, not included.

<sup>8</sup> San Antonio, Tex., not included.

<sup>9</sup> Fort Smith, Ark., 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	29,095,100	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	1,786,900	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 27, 1929.*—The Department of Pensions and National Health reports cases of certain communicable diseases in the Dominion of Canada for the week ended July 27, 1929, as follows:

Province	Cerebro-spinal fever	Lethargic encephalitis	Smallpox	Typhoid fever
Prince Edward Island.....				
Nova Scotia.....		1		
New Brunswick.....				1
Quebec.....				24
Ontario.....			14	5
Manitoba.....	1			12
Saskatchewan.....	1			
Alberta.....				
British Columbia.....				5
Total.....	2	1	14	47

*Quebec Province—Communicable diseases—Week ended August 3, 1929.*—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended August 3, 1929, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	2	Mumps.....	3
Chicken pox.....	12	Scarlet fever.....	43
Diphtheria.....	32	Smallpox.....	1
Erysipelas.....	4	Tuberculosis.....	63
German measles.....	1	Typhoid fever.....	11
Measles.....	35	Whooping cough.....	51

## DENMARK

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

Disease	Cases	Disease	Cases
Broncho-pneumonia.....	2,083	Paratyphoid fever.....	74
Cerebrospinal meningitis.....	7	Puerperal fever.....	15
Chicken pox.....	39	Scabies.....	631
Diphtheria.....	274	Scarlet fever.....	113
Erysipelas.....	196	Tetanus.....	4
Influenza.....	5,943	Tuberculosis.....	357
Jaundice.....	62	Typhoid fever.....	2
Lethargic encephalitis.....	12	Undulant fever <sup>1</sup> .....	46
Measles.....	381	Whooping cough.....	833
Mumps.....	2,196		

<sup>1</sup> Reported from State serum laboratory.

Population, 3,537,805.



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

**CHOLERA—Continued**

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

Place	Week ended—											
	May, 1929			June, 1929					July, 1929			
	11	18	25	1	8	15	22	29	6	13	20	27
Indo-China (see also table below):												
Prompenn.....												
C	2	16	3	6	2	2	2	5	2	2		
D	1	9	1	4	4	1	1	2	1	1		
C	6	10		19	43	73	55	17	9	6		
C	3	2	20	15	29	53	49	8	8	4		
D	195	397	619	113	121	67	122	189	214	49		
Siam.....	138	117	269	107	78	53	59	95	112	38		
C	1	3										
D	1	2										
C	4	29	2		14		11					
D	4	1			8		3					
C	4	19			7		8		6			
D	50	61	38	20	9	8	9	6	2			
Bangkok.....	43	36	21	17	4	4	5	2		1		
C	9	1										
D	9	1										
Charoengso.....	3	17										
C	3	7										
D	3	1										
Dhaunapuri.....	2											
C	2											
D												
Lobpur.....												
C												
D												
Nagara Pathom.....		36										
C		13										
D		20										
Pradhumdham.....	1	10										
C												
D	1											
Singhapuri.....	6											
C	7											
D	10											
Smud Prakar.....												
C												
D	8											
On vessel:												
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Place	Janu-ary, 1929	Febru-ary, 1929	March, 1929	April, 1929			May, 1929			June, 1929			July 1-10, 1929
				1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30	
				2									
S. S. Erinpura, at Madras.....	C												
S. S. Meda, at Colombo from Calcutta.....	C												
S. S. Saka Maru, at Calcutta.....	C												
S. S. Tilawa, at Penang from Singapore.....	C	P											
S. S. Tokushima, at Hong Kong.....	D												
<b>PLAGUE</b>													
Indo-China (French) (see also table above):													
	Annam.....	C		6									2
Cambodia.....	C	79	69	29									55
Cochin-China.....	C	690	223	183									146
Tonkin.....	C												

**PLAGUE**

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			Aug. 3, 1929		
					11-18	18-25	25-31	1-8	8-15	15-22	22-29	29-6	6-13		13-20	20-27
Algeria: Philippeville.....	C															
Argentina:																
Buenos Aires.....	C		2	1												
Rosario.....	D		2													
JuJuy Province—Petrico.....	C	3														
Rosario.....	C	1		5												
Azores: St. Michael's Island.....	C	1														
Belgian Congo: Djugu.....	C	1	4													
Djugu.....	D	1	1													
Brazil:																
Para.....	C	1														
Porto Alegre.....	C															
British East Africa (see also table below):																
Uganda.....	C	152	112	130	231	87	86	117	160	255	357					
	D	149	108	124	219	81	86	100	142	193	259					



























Place	Janu-ary, 1929	Feb-ru-ary, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	Aug., 1929	Sept., 1929	Oct., 1929	Nov., 1929	Dec., 1929
Indo-China (see table below).												
Ireland (Irish Free State):												
Cavan County—Carrickmacross.....	C				1							
Cork County.....	C											
Donegal County.....	C											
Inishowen.....	C				1							
Stranorlar.....	C											
Dublin.....	D											
Kerry County—	C											
Dingle.....	C				2							
Killarney.....	C				2							
Tyross County, Strabane. <sup>1</sup>	C											
Latvia (see table below).												
Lithuania (see table below).												
Mexico (see also table below):												
Aguascalientes.....	D	11	5	4	4	5	3	6	2	4	2	4
Mexico City, including municipalities in Federal District.....	D	3	4	1	1	1	1	1	1	1	2	2
Morocco.....	D	20	17	10	28	1	4	1	1	2	5	5
Norway: Oslo.....	D											
Palestine.....	C	222	202	203	314	80	56	43	78	35	31	2
Poland.....	C	15	18	20	25	7	3	1	2	2	2	2
Portugal:	D											
Lisbon.....	C											
Oporto.....	C	173	211	220	135	65	62	62	36	30	1	1
Rumania.....	D	23	28	16	10	9	12	3	3	3	25	1
Tunisia.....	C	2	3	20	19	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	P	P	P
Natal.....	C	P	P	P	P	P	P	P	P	P	P	P
Orange Free State.....	C	P	P	P	P	P	P	P	P	P	P	P
Transvaal.....	C	1										
Yugoslavia (see table below).												

  

Place	Janu-ary, 1929	Feb-ru-ary, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	Aug., 1929	Sept., 1929	Oct., 1929	Nov., 1929	Dec., 1929
Canada: Ontario.....	C	4	3	2	1	1						
Chosen: Seoul.....	C	6	7	41	25	18						
Czechoslovakia.....	D	1	1	1	1							
Greece: Athens.....	D	13	4	4	2	1						
Indo-China: Tonkin.....	D	5	4	2	2	7						
Latvia.....	C		1	10	7							
Lithuania.....	C	32	24	62	101	63	27					
Mexico (see also table above):												
Sonora.....	D	3	3	1	7	5	4					
Turkey.....	D	1	1	11	3	7	10					
Yugoslavia.....	D	16	13	7	19	19	3					
Yugoslavia.....	D	2	2	7	1	1						

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

**YELLOW FEVER**

[C indicates cases; D, deaths; F, 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															
Brasil:																			
Bahia.....	C		1																1
Guaratingueta.....	D		1																1
Para.....	D			5															
Pernambuco.....	D		11																
Porto Alegre.....	D		11																
Rio de Janeiro 1.....	D	16	92	232	180	17	7	5	2	0	0	0	0	0	0	0	0	0	0
	D	17	67	132	94	18	11	3	3	2	2	1	1	1	1	1	1	1	1
Sao Paulo.....	D	1																	
Colombia:																			
Simacota.....	C																		4
Socorro 1.....	C																		6
Liberia: Monrovia.....	D	3	7	10	2							1	3	4	4	4	4	4	4
On vessel:	D	2	4	4															1
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.