PUBLIC HEALTH REPORTS

VOL. 48 SEPTEMBER 1, 1933 NO. 35

CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES [1]

July 16–August 12, 1933

The prevalence of certain important communicable diseases, as indicated by weekly telegraphic reports from State health departments to the United States Public Health Service, is summarized in this report. The underlying statistical data are published weekly in the Public Health Reports, under the section entitled "Prevalence of Disease."

Poliomyelitis.—The number of cases of poliomyelitis increased from 188 for the 4 weeks ended July 15 to 667 for the current 4-week period. In Massachusetts the number of cases rose from 36 to 92; in New York from 25 to 245; in New Jersey from 4 to 18; in Pennsylvania from 10 to 44; in Ohio from 9 to 28; in Illinois from 13 to 27; in Minnesota from 6 to 35; in West Virginia from 3 to 21; in Tennessee from 10 to 35.

All areas contributed to the increase, but the most appreciable increases were reported from the same regions in which the disease first appeared in epidemic form in 1931. With the exception of the rise in Tennessee, the South Central as well as the Far Western States have reported no more than the usual seasonal prevalence. The epidemic of 1930 appeared first in those regions.

For the country as a whole the number of cases (667) was 1.7 times that reported for the corresponding period last year but it was only about one fifth of the number reported in 1931. For this period in 1930 and 1929 the numbers of cases were 897 and 314, respectively.

Considering the situation in geographic areas, there were in the New England and Middle Atlantic States more than twice as many cases reported for the current period as for the corresponding period

[1] From the Office of Statistical Investigations, U.S. Public Health Service. The numbers of States included for the various diseases are as follows: Typhoid fever, 48; poliomyelitis, 48; meningococcus meningitis, 48; smallpox, 48; measles, 47; diphtheria, 48; scarlet fever, 48; influenza, 38 States and New York City. The District of Columbia is counted as a State in these reports.

These summaries include only the eight important communicable diseases for which the Public Health Service receives regular weekly reports from the State health officers. Items on lethargic encephalitis in St. Louis are printed on pp. 1071 and 1088.

of last year. The 411 cases were, however, only about one sixth of the number recorded for this period in 1931.

In the East North Central States the number of cases (66) was approximately the same as last year. There were 211 in 1931.

In the West North Central the current incidence (73 cases) represented a 100 percent increase over last year but it was approximately the same as in 1931. The epidemic of 1930 made its appearance in this region during this period and the number of cases reported in that year (122) is the highest in that region for the corresponding period in the 5 years for which data are available.

In the South Atlantic States the incidence was about normal for the current period. This region was not greatly affected by either of the recent epidemics. There was a rather high incidence of the disease in that area during this period in 1929.

In the South Central and Mountain and Pacific areas the present incidence follows very closely the average for the years 1929, 1931, and 1932. In those areas the 1930 epidemic reached its peak during this period.

Typhoid fever.—The usual seasonal increase of typhoid fever continued through the current 4-week period. Each geographic area contributed to the increase but the disease seemed to be most prevalent in the South Central regions. For the country as a whole, the number of cases reported (3,735) was only about 77 percent of the number for the corresponding period last year, but it was slightly higher than in any of the 3 preceding years.

Smallpox.—The incidence of smallpox dropped about 50 percent during the current 4-week period as compared with the preceding 4 weeks. The number of cases (200) was only about 65 percent of last year's figure. For this period in the years 1931, 1930, and 1929 the numbers of cases totaled 652, 1,394, and 1,349, respectively. Only one region, the South Atlantic, reported an increase over last year. The greatest decrease was reported from the West North Central group of States. During the entire current year the smallpox incidence has averaged only about 60 percent of that of last year.

Influenza.—For the 4 weeks ended August 12 there were 976 cases of influenza reported, as compared with 987, 832, and 525 for the corresponding period in the years, 1932, 1931, and 1930, respectively. A survey of geographic areas shows that a very favorable situation exists in all parts of the country.

Scarlet fever.—The number of cases of scarlet fever reported for the current period (4,068) was practically the same as that for the corresponding period last year. For this period in the years 1931, 1930, and 1929 there were reported 3,362, 2,962, and 4,118 cases, respectively. In each geographic area the current incidence followed the trend of last year very closely. Since the beginning of the present

year, the scarlet fever incidence has very closely approximated that of last year.

Diphtheria.—The incidence of diphtheria remained at the low level that has characterized it throughout the present year. The number of cases reported for the 4 weeks ended August 12 was 1,773, as compared with 2,170, 1,997, and 2,344 for the years 1932, 1931, and 1930, respectively. For this period in 1929 the number of cases was 3,520. All sections have shared in the favorable decline. Only the South Atlantic and South Central areas have at any time during the current year reported an increase over last year during any 4-week period, and there the increases have been slight.

Meningococcus meningitis.—The meningococcus meningitis situation continued very favorable during the current period. The number of cases reported (147) was the lowest recorded for this period in the 5 years for which data are available. The incidence in the East and West North Central geographic areas is the lowest in the 5-year period; in other areas the current cases approximated the average of recent years.

Measles.—There was a decrease of approximately 13,000 in the number of cases of measles during the current 4-week period as compared with the preceding 4 weeks. The number of cases reported (6,470) was about 85 percent of the number reported for the corresponding period last year and 90 percent of the average for the 3 preceding years. The disease was most prevalent in the South Central and Mountain and Pacific areas. In the South Central areas the number of cases (819) was eight times that for last year for the same period, and in the Mountain and Pacific areas the number (968) was twice that for last year. In the East North Central States, where the disease was unusually prevalent at this time last year, 730 cases were reported this year, as compared with 2,006 last year.

Mortality, all causes.—The average mortality rate from all causes in large cities as reported by the Bureau of the Census for the current period was 9.8 per 1,000 population (annual basis). The rate closely approximated that for last year (9.7), but it is still considerably below that for previous years for which data are available.

A NOTE ON EPIDEMIC ENCEPHALITIS IN ST. LOUIS

From Aug. 7 to 24, inclusive, there were reported in the metropolitan area of St. Louis 213 cases of epidemic encephalitis with 28 deaths, a case fatality rate of 13 percent.[1] Some of the cases date back to the latter part of July for their onset. Cases of apparently the same infection have been reported from other cities in Missouri and in neighbor-

[1] Later reports will be found on p. 1088.

ing States, but it is to be remembered that so-called epidemic, or lethargic, encephalitis and encephalitis not otherwise designated have a yearly incidence throughout the entire United States similar in magnitude to poliomyelitis as judged from mortality statistics, usually without the marked seasonal and yearly fluctuation of poliomyelitis.

Cases of lethargic encephalitis occur yearly in St. Louis, the heaviest preceding incidence having been in 1919, 1924, and 1932. Relatively fewer epidemics of this disease have been reported in the United States than in other parts of the world, the disease in the United States being apparently sporadic or endemic. Such outbreaks as have occurred in this country have been, as is usual elsewhere, in winter or early spring.

Preliminary data on age incidence show 19 percent of the cases among the 25 percent of the population which is under 15 years of age, with 10 percent case fatality in this age group. The incidence in this age group is about equally divided between those under and those over 10 years, but all 3 of the deaths in this group occurred in persons under 10. Twenty-one percent of the cases have been in the age group 15 to 34 years, which comprise 35 percent of the total population, and there has been only 3 percent case fatality in this age group. Thirty percent of the cases have been among the 27 percent of the population which is 35 to 54 years of age, with 20 percent case fatality. Another 30 percent of the cases have been among those over 55 years old, who comprise only 13 percent of the population, and the case fatality in this oldest age group has been 30 percent. In this respect also, as in seasonal occurrence, this outbreak differs from ordinary epidemic encephalitis, in which the maximum incidence tends to be in youth and the early adult years.

There have been about 83 cases in males to each 100 in females, while among the total population concerned there are 96 males to each 100 females. The excess in females has been in the ages over 35 years.

The symptomatology of the cases has differed somewhat from most other outbreaks of epidemic encephalitis in that disturbances of the motor functions of the eye are unusual, instead of being usual, and there is a more uniform, moderate meningeal involvement, with corresponding increase in the cell count on spinal puncture. The clinical picture is that of a general febrile disturbance, often with gastro-intestinal symptoms such as vomiting, constipation, or diarrhea; evidences of cerebral involvement—an apathetic or immobile facial expression, usually somnolence, stupor, coma, or delirium; usually a moderately stiff neck, with headache, which is often the first and most pronounced symptom, and other pains, as of the abdomen or legs; tremor and catatonic semirigidity are common in the more severe cases. Tendon reflexes, such as those of the elbow,

knee, ankle, and superficial reflexes, such as those elicited by stroking the abdomen, tend to be irregularly diminished or absent, and to vary from day to day. Not infrequently the plantar reflex is extensor, the toes coming up on the stroking of the outer side of the sole instead of bending down. There may or may not be a Kernig's sign. Some patients are very restless and have to be restrained. Irregular paralyses may occur, and hemiplegia, usually transient, is not uncommon. Many cases are less typical, but in the St. Louis area the doubtful cases are usually found to be positive by spinal puncture and further course, or by necropsy. The triad of symptoms is a febrile course, evidence of cerebral involvement, and mild meningeal signs. The duration of the febrile stage is irregular—the temperature may be normal in a few days. Probabilities as to sequelae cannot be stated at present. The milder cases which have recovered so far are apparently restored to good health.

Pathologically, the lesions are of the same nature as, but are at a higher level and are more diffused than, those in the usual cases of lethargic encephalitis. The cortex is involved, and there is no tendency toward special localization in the central system, such as the basal ganglia and the brain stem.

The outbreak which most closely approaches this is that which occurred on the western side of the Inland Sea in Japan in 1924, and was described by Kaneko and Aoki in 1928.[2]

The incubation period is uncertain; there are indications that it may be 5 to 12 days. The onset is usually fairly sudden, that is, covering not more than 1 to 3 days.

The suburban areas in St. Louis County surrounding the city of St. Louis have had a far greater prevalence of the disease than the city of St. Louis itself, but the city boundaries have not been changed since 1876, and much of the territory outside the city would correspond to the outlying wards of other cities.

The precautions advised in the prevention of the spread of the disease are, in general, those which are applicable in an epidemic of poliomyelitis of like intensity, including isolation of the patient for 3 weeks. Connected cases and cases in the same family are occurring about as frequently as in poliomyelitis. Two of the St. Louis patients had poliomyelitis 12 and 2 years ago, respectively. On account of the predominantly suburban incidence and the seasonal incidence it is also advised that the patients be screened. Drinking water as a major factor in the spread of the disease appears to be excluded.

[2] Ergebnisse der inneren Medizin und Kinderheilkunde, vol. 34, p. 342.

A NOTE ON THE INCIDENCE OF ENDEMIC GOITER IN NORTHEASTERN GERMANY

By ROBERT OLESEN, *Senior Surgeon, United States Public Health Service*

Thyroid surveys of comparable groups by identical procedure indicate that endemic goiter is more prevalent in certain parts of Germany than in Northern Ireland. It has been possible to make these observations during the course of routine physical examinations of applicants for immigration visas.

The present study, carried on while the writer was stationed in Berlin, included 1,976 males and 2,320 females of various ages. The

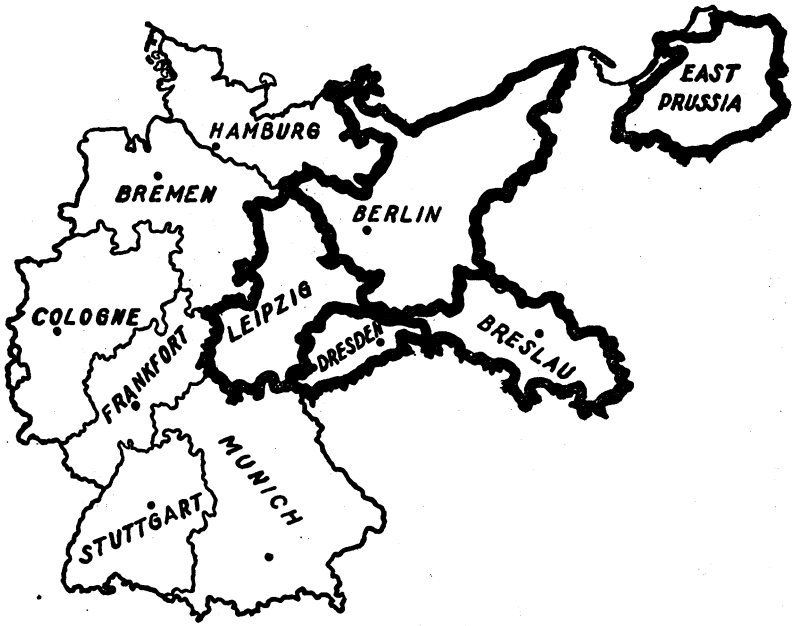


FIGURE 1.—Map showing the United States consular districts in Germany. Individuals included in this report came from the five districts shown here heavily outlined—Berlin, Leipzig, Dresden, Breslau, and East Prussia.

examinations were made between July 1, 1930, and November 1, 1931. The findings have been classified according to arbitrary standards employed on a large scale in the United States. It is possible then, to compare the results of thyroid studies made in the United States with similar studies conducted in Northern Ireland and a portion of Germany.

The individuals included in the present report were, at the time of the examinations, residents of the five consular districts of Berlin, Leipzig, Dresden, Breslau, and East Prussia. These districts are shown heavily outlined in figure 1, in order that their extent, position, and relationship to surrounding territory may be indicated. As this portion of Germany is in juxtaposition to much of Poland and Czechoslovakia, the goiter statistics for Germany may also be con-

sidered fairly representative of conditions in the adjoining sections of the bordering countries.

The method of examining and classifying thyroid enlargements in the United States has already been described in considerable detail.[1] The same procedure was employed during the examinations of applicants for visas in Germany.

RESULTS

In table 1 are shown the numbers, degrees, and percentages of the enlargements noted among the 1,976 males and 2,320 females examined. The ages of those examined ranged between 3 weeks and 91 years. Thus, 36 males and 53 females were under 5 years, while 83 males and 198 females were over 50 years of age. Larger numbers were included in the intermediate age groups.

The tabulation of results indicates that there were 326 definite thyroid enlargements among the males, a percentage incidence of 16.5. Of these 10.1 percent, while definite in character, were classified as very slight in size. Only 8 adenomatous goiters were found among the males. Among the 2,320 females there were 727 thyroid enlargements, a percentage of 31.3. Of these, 14.6 percent were classified as very slight, while 2.9 percent were definitely adenomatous in character.

In the three lower age groups, namely, from birth to 14 years, approximately the same incidence of thyroid enlargement appeared to prevail in both sexes. However, it is probable that the inclusion of greater numbers of children would have altered the result, making the affection somewhat more frequent among girls. The approximation of the incidence curves of both sexes indicates a considerable amount of endemic goiter in the general population. After the age of 15 the incidence of thyroid enlargement is consistently greater among the females of each age group.

TABLE 1.—*Numbers, degrees, and percentages of thyroid enlargement (by age groups) among 1,976 male and 2,320 female applicants for visas in Berlin, Germany*

1,976 MALES

Age group	With enlarged thyroids							Normal	Total
	Degree of enlargement					Total	Percent		
	Very slight	Slight	Moderate	Marked	Adenomatous				
Under 5	1					1	2.6	37	38
5 to 9	9	5			1	15	15.0	85	100
10 to 14	11	4				15	25.5	44	59
15 to 19	25	19				44	20.7	168	212
20 to 24	64	38	5	3	2	112	20.8	427	539
25 to 29	53	15	5		1	74	16.9	362	436
30 to 34	21	11	6		3	41	14.9	233	274
35 to 39	11	4				15	11.2	119	134
40 to 44	3	2	1			6	9.5	57	63
45 to 49	1				1	2	5.3	36	38
Over 50	1					1	1.2	82	83
Total	200	98	17	3	8	326		1,650	1,976
Percent	10.1	5.0	0.9	0.1	0.4		16.5		

[1] Endemic goiter. By Robert Olesen. Public Health Bulletin no. 192, p. 36. (1929).

TABLE 1.—*Numbers, degrees, and percentages of thyroid enlargement (by age groups) among 1,976 male and 2,320 female applicants for visas in Berlin, Germany*—Continued

2,320 FEMALES

Age group	With enlarged thyroids							Normal	Total
	Degree of enlargement					Total	Percent		
	Very slight	Slight	Moderate	Marked	Adenomatous				
Under 5	3					3	5.7	50	53
5 to 9	6	6				12	13.2	79	91
10 to 14	10	2			1	13	26.5	36	49
15 to 19	43	48	12		3	106	43.0	141	247
20 to 24	113	86	29	1	7	236	43.0	312	548
25 to 29	77	40	17	1	11	146	33.2	293	439
30 to 34	42	25	12	1	16	96	29.3	231	327
35 to 39	31	14	6		8	59	31.5	131	190
40 to 44	3	6	4		8	21	19.4	87	108
45 to 49	4	2	1		4	11	16.2	57	68
Over 50	7	4	2	1	10	24	12.0	176	200
Total	339	233	83	4	68	727		1,593	2,320
Per cent	14.6	10.1	3.6	0.1	2.9		31.3		

The statistical data are displayed graphically in figure 2. It will be seen that among boys the incidence of endemic goiter is greatest between the ages of 10 and 14 years. Thereafter there is a steady and regular decrease. Among females the incidence of goiter is highest between the ages of 15 and 24 years. After the age of 24 the goiter incidence among females is between 10 and 22 percent higher than among males of corresponding ages.

Adenomatous goiters.—Because of their potentialities for producing serious illness, the relative sizes of the 8 adenomatous goiters among the males and the 68 goiters of the same type among the females are shown in table 2. It will be noted that most of the enlargements were of definite and considerable size. Evidences of pronounced toxicity were apparent in 11 females and 1 male having adenomatous goiters.

During the examinations in Berlin, 3 females and 1 male were found to be suffering from Graves' disease. In three additional instances thyroidectomies had been performed at varying periods prior to the examinations without, however, relieving the symptoms of the disease. While the number of persons in the present series who were actually suffering from Graves' disease was comparatively small, it is believed that the disease is comparatively frequent in Germany; for frank cases are rather often seen in public.

TABLE 2.—*Degrees of thyroid enlargement among 8 males and 68 females with adenomatous goiters (by age groups) in northeastern Germany*

Age group	Males			Females					
	Very slight	Slight	Total	Very slight	Slight	Moderate	Marked	Very marked	Total
Under 5	1		1						
5 to 9									
10 to 14						1			1
15 to 19				2		1			3
20 to 24		2	2	2	3	2			7
25 to 29		1	1	3	5	2	1		11
30 to 34		3	3	3	6	5	2		16
35 to 39				1	4	3			8
40 to 44				2	4	2			8
45 to 49	1		1	2		2			4
Over 50				1	4	3	1	1	10
Total	2	6	8	16	26	21	4	1	68

Goiter and intelligence.—Additional observations were made for the purpose of determining whether a relationship exists between intelligence and thyroid status. Although many intelligence tests were applied and a number of mentally defective individuals were encountered, there was no evidence that thyroid enlargement or malfunction is commonly associated with mental inferiority. These conclusions support those previously reached during a special study of school children in Cincinnati, Ohio,[2] and also the observations made in Northern Ireland.[3]

Comparison of goiter incidence in Germany and Northern Ireland.—The results of a thyroid survey of applicants for immigration visas in Northern Ireland were presented in a previous article.[3] As the survey in northeastern Germany was made of similar groups by the same methods and one of the same examiners, it is interesting to compare the results obtained in these two countries. The percentage incidence of endemic goiter in Northern Ireland and northeastern Germany are shown in table 3. Except in a few minor details, the incidence in both sexes is definitely higher in Germany. Just why this should be so is a matter for speculation, as considerable areas of both countries are adjacent to the sea, and it might be expected that goiter would be relatively infrequent in its occurrence.

[2] Endemic goiter and intelligence. By Robert Olesen and Mabel R. Fernald. Pub. Health Rep., vol. 41, no. 21, pp. 971–986, May 21, 1926. (Reprint no. 1031.)

[3] A note on the incidence of endemic goiter in Northern Ireland. By Robert Olesen and Paul A. Neal. Pub. Health Rep., vol. 45, no. 44, pp. 2669–2672, Oct. 31, 1930. (Reprint no. 1422.)

TABLE 3.—*Percentage incidence of endemic goiter among male and female applicants for immigration visas (by age groups) in Northern Ireland and northeastern Germany*

Age group	Males		Females	
	Northern Ireland	North-eastern Germany	Northern Ireland	North-eastern Germany
Under 5	2.6	2.6	1.6	5.7
5 to 9	1.2	15.0	3.2	13.2
10 to 14	11.5	25.5	26.3	26.5
15 to 19	14.6	20.7	33.1	42.9
20 to 24	15.3	20.8	31.6	43.0
25 to 29	10.8	16.9	29.2	33.2
30 to 34	9.1	14.9	22.9	29.3
35 to 39	9.5	11.2	22.2	30.3
40 to 44	1.6	9.5	14.4	19.4
45 to 49	2.2	5.3	16.9	16.2
Over 50	.7	1.2	11.2	12.0
Percent of total number of applicants	11.8	16.5	27.4	31.3

The scope and value of thyroid surveys.—There has recently been considerable criticism of thyroid surveys, especially those confined to limited units of the population, such as school children. McCarrison [4] has so well defined the alleged defects of partial goiter surveys that his remarks on the subject may profitably be reproduced here and discussed briefly.

"Thyroid swellings in early life", says McCarrison, "are often purely physiological expressions of a healthy organ: in no less than 24 per cent of girls living in an iodine-rich and goitre-free locality the isthmus or the outline of the whole gland may be visible on deglutition. Such thyroids are often styled 'incipient goitres.' Partly because of their inclusion in goitre-surveys, but mainly because these surveys are so commonly incomplete, a goitre-bogey seems likely to be created in some parts of the world.

"In some reports of goitre-surveys confined to school-children as many as 90 per cent or more of the so-called goitres are of this 'incipient' or 'slight' kind; while not more than 2 or 3 per cent are of 'moderate size' or 'large.' When we seek for information as to the course of these slight swellings we often find that after the age of statural puberty has passed the vast majority of them have disappeared; they have represented little more than a physiological response of the gland to the needs of the organism. It is difficult to regard the data provided by such surveys as indicative of goitrigenous influences of serious import, unless they furnish other evidence whereby the endemicity of goitre can be appraised. In any community of school-children many may have thyroids the isthmus of which is visible on deglutition; while 2 or 3 per cent may be the subjects of noticeable goitres which are wholly unrelated to endemic influences.

[4] The Simple Goiters. By Robert McCarrison. Introductory remarks, p. 4. Baillière, Tindall, and Cox, London, Publishers.

Hereditary instability of the organ might itself account for this number apart altogether from other goitrigenous influences (faulty food and the like) to which children may be subjected in localities where endemic goitre is conspicuous by its absence in the general population. If the endemicity of goitre be based on such scanty criteria, then the impression might be created that few parts of the world are goitre-free; while if such surveys are viewed in the light of established knowledge regarding the course and sequelæ of the classical type of endemic goitre, one would expect to meet cretins, deaf-mutes, idiots, and goitred adults at every street-corner, and to find physical and mental deterioration to be characteristics of peoples who may in fact be amongst the most vigorous and intellectual of mankind. If, however, surveys were completed by the inclusion of adults, and if few or none of the stigmata of the classical type of endemic goitre were found, then we should know that we are dealing either with a very attenuated form of this malady, with an altogether different disease or diseases, or with no disease at all. The importance of prevalent types of goitre could then be gauged by the symptoms of thyroid disorder to which they give rise in the individual, and by the physical and intellectual damage which they cause in the community."

As the thyroid surveys in Northern Ireland and northeastern Germany included persons of all ages, it may be well to examine some of McCarrison's criticisms in the light of the findings in these countries. It is well known, of course, that the intensity of goiter symptomatology is not invariably in direct proportion to the size of the thyroid enlargement. Comparatively trivial or even unrecognized thyroid thickenings are sometimes accompanied by marked symptoms, especially when nodules are present. Therefore the criticism regarding the inclusion of slight but definite swellings does not appear to be valid.

McCarrison believes, too, that "after the age of statural puberty has passed, the vast majority of them [slight enlargements] have disappeared." Reference to figure 2, however, plainly shows a greater and maintained percentage of simple goiter up to the age of 40 years. If then the so-called slight swellings of puberty have disappeared, they have been supplanted by more lasting and presumably more serious goiters of adulthood. It was manifestly for the purpose of preventing the occurrence of simple goiter at all that prophylactic measures during puberty have been so earnestly advocated by Marine and others.

While it may be admitted that a thyroid survey confined to school children does not divulge positive evidence of goiter among adults, nevertheless such a limited study serves a valuable purpose as an indicator. Marine has pointed out that the proportional incidence

of endemic goiter among boys and girls of a given community may be used as an indication of the general incidence of the disease. Thus, when endemic goiter prevails to about the same extent in both sexes, the proportion being approximately 1 to 1, it may be expected that there is considerable goiter in all age groups. On the other hand, when the proportion of thyroid enlargements among boys and girls is as 1 to 4 or as low as 1 to 10, the general incidence of endemic goiter in the general population will be slight.

That this proportional indicator, based upon a survey of school children, is valuable can be seen by the results of the survey in Ger-

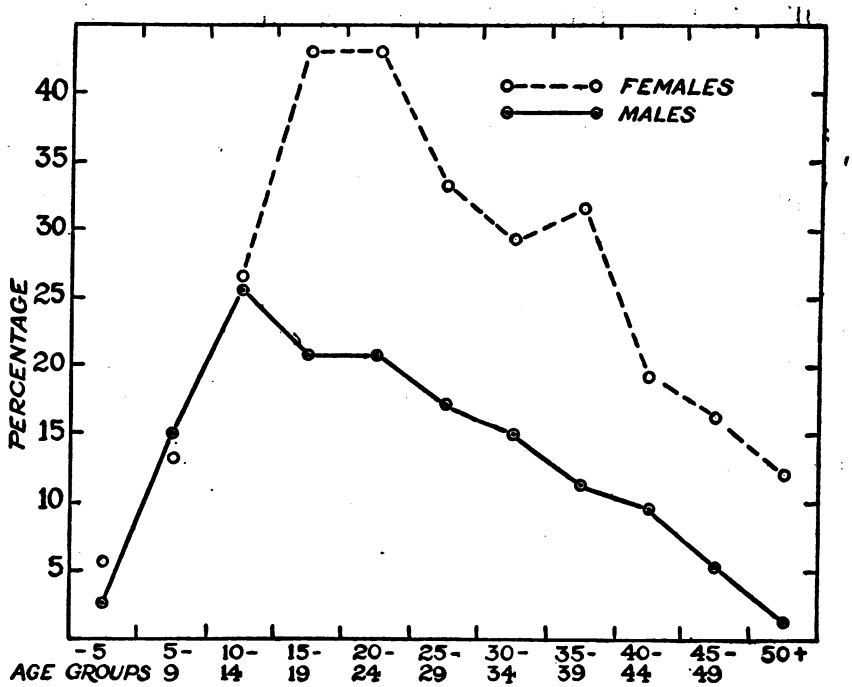


FIGURE 2.—Percentage of all degrees of thyroid enlargement among 1,976 males and 2,320 females, by age groups, examined in Berlin, Germany, during the period July 1, 1930–November 1, 1931.

many. The almost equal occurrence of thyroid enlargements among both boys and girls of the early age groups strongly suggests a considerable incidence of goiter, which is borne out by the survey results in other age groups. Therefore, it may be stated that while the thyroid survey confined to school children does not indicate the exact extent of goiter incidence in all age groups, it does offer a quick and reliable index, with opportunities for early prophylactic endeavor.

CONCLUSION

As shown by the results of the thyroid survey of persons of all ages, endemic goiter prevails to a considerable extent in northeastern Germany, expecially among girls and women. Nearly 3 percent of

the females examined had goiters of adenomatous character. Evidences of toxicity were noted in 14.7 percent of the women with adenomatous goiters.

In view of the considerable incidence of endemic goiter and the presence of toxic adenomata, especially among females, prophylactic endeavor appears to be indicated in this section of Germany. Some attention might likewise be directed to the prophylaxis of Graves' disease, which affection is also encountered.

TECHNIQUE FOR ROUTINE AND EXPERIMENTAL FEEDING OF CERTAIN IXODID TICKS ON GUINEA PIGS AND RABBITS

By Wm. L. Jellison, *Assistant Bacteriologist*, and C. B. Philip, *Associate Entomologist, United States Public Health Service*

In connection with the studies of disease transmission which are being made at the field station of the United States Public Health Service at Hamilton, Mont., it is frequently necessary to feed ticks on rabbits and guinea pigs under such conditions that the ticks cannot escape from the host animal and yet can be readily observed, removed, or otherwise manipulated. Until recently various modifications of the method used by Wolbach (1) have been employed. According to this technique the ticks were confined to the belly of the host animal under a hat-shaped brass gauze capsule, or cage, held in place by an adhesive tape girdle. The size of the capsule, the number of meshes per inch of the wire cloth, and other features have been varied according to needs.

Although this technique is simple and is useful for certain purposes, it does not permit close observation of feeding ticks nor their easy manipulation. Furthermore, it is unsatisfactory when removal or replacement of ticks at short intervals—sometimes repeatedly over considerable periods—is necessary. The consequent frequent partial or complete removal of the adhesive tape causes considerable skin irritation; and the ticks, if unattached and active, are difficult to control.

These faults have been overcome by substituting for the brass gauze capsules, tin capsules made from the threaded end rings and covers used in cardboard mailing tubes. These parts, separate from the tubes, may be obtained in quantity from supply houses.

The method in detail is as follows (plate I): (*a*) the portion of the end ring below the threads (A-1) is divided into teeth by a series of parallel cuts (A-2) and these teeth are then bent outward at right angles (A-3); (*b*) this ring is tightly fitted into a round hole toward one end of a wide adhesive tape band C (fig. 1) of sufficient length to form an overlapping girdle on the host animal. The threaded portion of the ring projects above the nonadhesive surface; (*c*) the nonad-

hesive surface of a short band (D) with a slightly smaller hole in its center is now applied to the adhesive surface of C so that the margins of the holes in the two bands are concentric and the under surface of the sharp metal flange is covered (fig. 2); (*d*) the host animal is prepared for infesting by clipping an area on the belly considerably larger than that to be covered by the capsule; (*e*) the completed girdle is secured to the animal with the capsule over the denuded belly area and the long end is passed around the body and overlapped; (*f*) the margins of the girdle are reinforced by narrow strips of adhesive tape (fig. 4) wrapped once or twice around the animal; (*g*) ticks are placed in the capsule and the cover is screwed on.

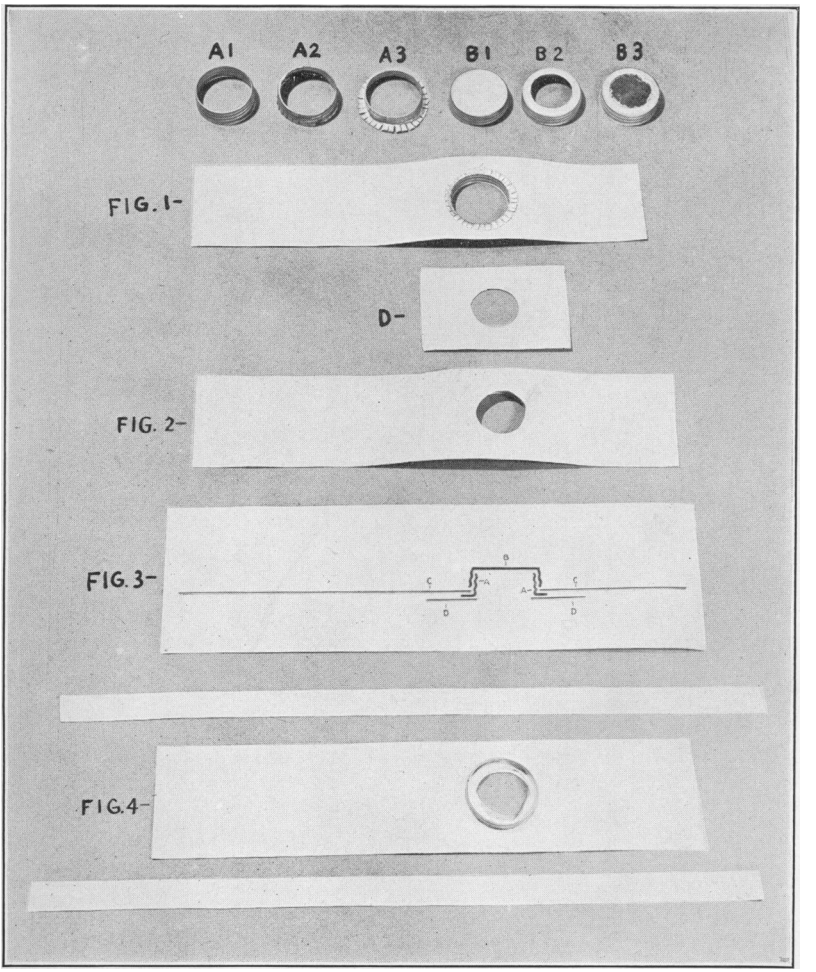
This technique can be altered to meet different conditions. The rings can be varied from small sizes useful for confining individual ticks or small numbers to the largest sizes suitable for the host animal concerned, the width of the girdle being changed to correspond. If desired, two or more rings can be inserted in the same girdle to permit the simultaneous feeding of separate lots of infected and noninfected ticks on the same host or to meet other requirements (plate II). It is usually desirable to provide for aeration by using a cover with a large hole punched in the top and covered from the inside with brass gauze. To facilitate observation, celluloid discs, with or without perforations, may be used in place of the wire gauze. They are, however, less satisfactory for ordinary use. When feeding larvae or nymphs, wisps of absorbent cotton pushed between the toothed flange of the ring and band D prevent the small ticks from becoming stuck to the adhesive surface of the upper strip of tape where it is exposed between the teeth of the flange.

Besides the ready means of access to ticks being fed experimentally, which this method affords, it has also been found to be advantageous in the engorging of immature stages of certain species that have been difficult to handle by other methods. Furthermore, by its use, adults of species showing a considerable degree of host preference, namely the brown dog tick (*Rhipicephalus sanguineus* Latreille), the winter tick (*Dermacentor albipictus* Packard), the rabbit tick (*Haemaphysalis leporis-palustus* Packard), and the bird tick (*Haemaphysalis cinnabarina* Koch), have been induced to feed on other than their normal hosts.

Under suitable conditions modifications of this technique can be employed for the feeding of ticks on larger animals—horses, cattle, sheep, dogs, and others. It has been used also in the experimental study of bloodsucking parasites other than ticks, such as lice and fleas.

REFERENCES

Wolbach, S. B.: Studies on Rocky Mountain Spotted Fever. Jour Med. Res., vol. 41, no. 1, pp. 1–197, November 1919.



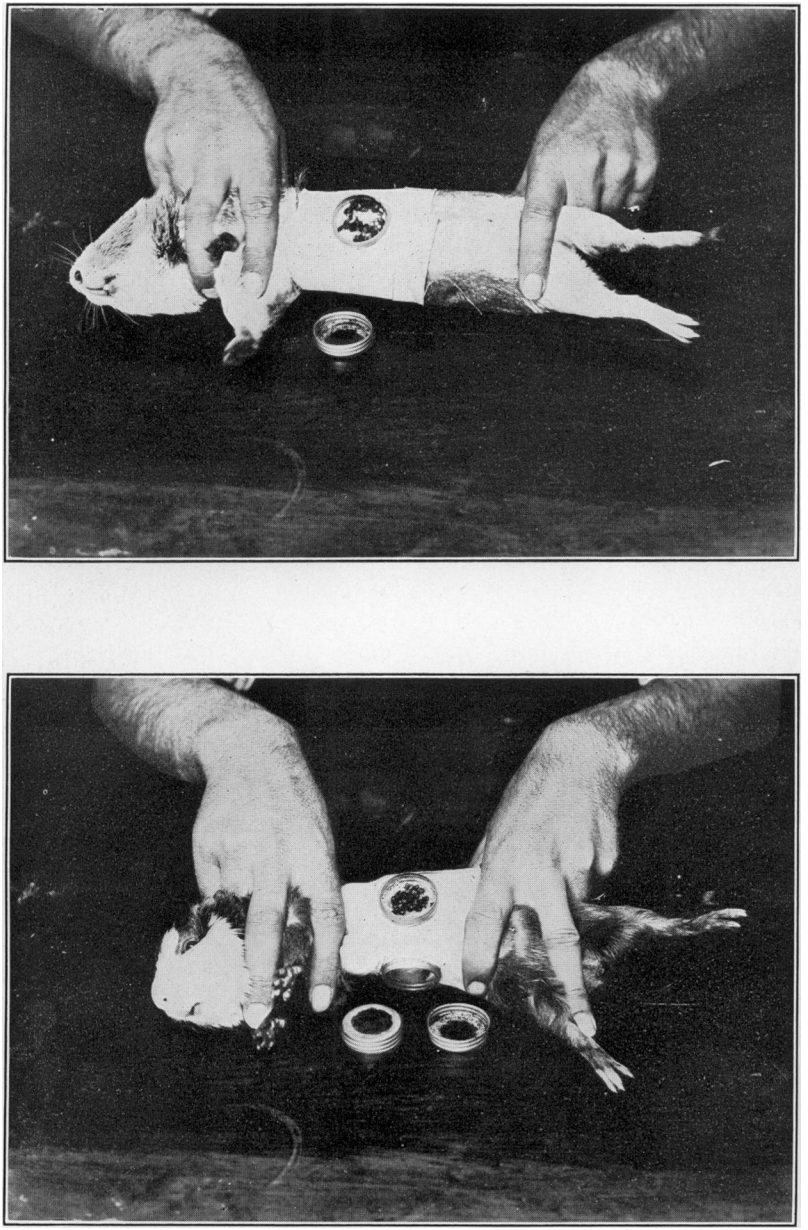
A 1, Threaded end ring from mailing tube; A 2, end ring with margin toothed; A 3, toothed margin flanged; B 1, standard mailing-tube cover; B 2, punched-out cover for insertion of celluloid or screen top; B 3, punched-out cover with screen top soldered in.

FIGURE 1.—Adhesive surface of band for girdle with flanged ring inserted. D, Short perforated band for covering sharp edge of flange.

FIGURE 2.—Band D placed over toothed flange, adhesive side up, forming continuous adhesive surface for application to the host.

FIGURE 3.—Section diagram of completed girdle (fine border line indicates adhesive surface of bands). A, Threaded and flanged ring; B, cover; C, long band for girdle; D, short band covering toothed flange.

FIGURE 4.—Nonadhesive surface of girdle with capsule in place. Narrow bands are for reinforcing margin of girdle.



Upper, Guinea pig infested with adult ticks under single capsule girdle. Screen capsule cover removed.
Lower, Guinea pig with double capsule girdle applied.

COURT DECISION RELATING TO PUBLIC HEALTH

City ordinance requiring water closets where sewer connections were possible upheld.—(Missouri Supreme Court, Div. No. 1; *City of St. Louis* v. *Hoevel Real Estate & Building Co.*, 59 S.W. (2d) 617; decided Mar. 16, 1933.) Section 2928 of the St. Louis Revised Code 1926 provided in substance that, whenever connection with a sewer was possible, all privy vaults should be filled and a water closet provided for each family, either in the house or on the lot on which the house was located. Suits were brought by the city against the defendant company to recover penalties for alleged violations of this section. The defendant owned three tenement buildings in St. Louis which were arranged for a total of 25 families. For the use of these families it maintained three privy vaults connected with the sewer. In each case it was charged that the defendant, in maintaining the said vaults, violated the above-mentioned section. In the lower courts, judgments were entered in favor of the city, and the defendant appealed to the supreme court.

One contention made by the defendant was that section 2928 conflicted with certain sections of the State and Federal Constitutions. Said section 2928 had formerly been section 1786 of the Revised Code 1914, and its constitutionality had been under consideration in the case of *St. Louis* v. *Nash* (Mo. Sup.), 260 S.W. 985, 986. In that case the enactment was held to be a valid exercise of the police power and not in conflict with the State and Federal Constitutions. It was also held that "in the exercise of police power of the State, a municipality may lawfully require a property owner to alter or reconstruct an existing building without compensation when such alteration or reconstruction is reasonably necessary to insure the public safety or to protect the public health." In the instant case the court stated that it adhered to its ruling there made.

The defendant, however, contended that the instant case was a proceeding to abate a nuisance and, for that reason, the ruling in the *Nash case* was not controlling. The only basis for the contention was the statement in the summonses that the defendant was charged in the information with violating the section by maintaining an unhealthy privy vault. The supreme court said that the defendant was tried on the information and not the summons and that the lower court correctly ruled that the information charged the defendant with violating the section by maintaining a privy vault where connection with a sewer was possible. "The condition of the vault", said the court, "was not an issue under said section. Defendant admitted ownership of the property and that it maintained thereon vaults. Connection with the sewer was possible, for defendant also admitted that the vaults were so connected. As stated, the ordinance is a valid exercise

of the police power to prevent nuisances and thereby protect the public health."

The defendant next contended that section 2928 was inconsistent with section 2922, which declared all privies and water closets without sewer connection to be nuisances unless constructed and maintained as provided in section 2923. Such latter sections were directed against privy vaults where sewer connections were not available. It was argued hat section 2928 was inconsistent with section 2922 because privies which were connected with the sewer were not included within the class declared a nuisance by section 2922. The court's answer to this was that "we must assume that section 2928 will be enforced. If so, there will be no privy vaults or water closets with available sewer connection to be classified."

Another charge of error made by the defendant was based on the trial court's refusal to permit it to show that section 2928 was enacted after the vaults were built. The supreme court answered this by saying that in the *Nash case* it had ruled that the city could lawfully require the removal of existing privy vaults and the substitution of water closets.

The judgments for the city were affirmed.

DEATHS DURING WEEK ENDED AUGUST 12, 1933

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

	Week ended Aug. 12, 1933	Corresponding week, 1932
Data from 85 large cities of the United States:		
Total deaths	6,599	6,582
Deaths per 1,000 population, annual basis	9.2	9.4
Deaths under 1 year of age	500	542
Deaths under 1 year of age per 1,000 estimated live births (81 cities)	43	44
Deaths per 1,000 population, annual basis, first 32 weeks of year	11.2	11.5
Data from industrial insurance companies:		
Policies in force	67,688,177	71,360,353
Number of death claims	12,050	11,543
Death claims per 1,000 policies in force, annual rate	9.3	8.5
Death claims per 1,000 policies, first 32 weeks of year, annual rate	10.2	9.9

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 19, 1933, and August 20, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 19, 1933, and Aug. 20, 1932

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932
New England States:								
Maine	----	3	----	----	3	3	0	1
New Hampshire	----	----	----	----	----	----	0	0
Vermont	1	----	----	----	2	2	0	0
Massachusetts	11	32	----	1	43	55	2	1
Rhode Island	2	1	----	----	----	1	0	0
Connecticut	1	4	1	----	9	17	0	0
Middle Atlantic States:								
New York	17	33	[1] 1	[1] 4	64	120	7	3
New Jersey	11	20	2	5	28	49	1	2
Pennsylvania	20	28	----	----	47	50	2	3
East North Central States:								
Ohio	9	16	1	3	10	19	1	0
Indiana	11	22	15	12	7	5	4	8
Illinois	7	39	5	11	11	22	6	5
Michigan	12	13	2	----	15	101	0	2
Wisconsin	3	7	16	13	32	21	0	2
West North Central States:								
Minnesota	9	1	2	4	78	4	1	1
Iowa [3]	5	6	----	----	----	----	0	0
Missouri	15	11	----	----	7	3	1	1
North Dakota	6	3	----	----	5	----	1	1
South Dakota	----	5	----	----	----	4	0	0
Nebraska	----	7	----	----	----	----	0	1
Kansas	6	6	----	----	5	16	0	2
South Atlantic States:								
Delaware	1	----	----	----	1	1	0	0
Maryland [3 4]	7	13	2	3	8	5	1	0
District of Columbia	4	----	----	1	3	----	0	0
Virginia [3]	39	33	----	----	22	12	0	1
West Virginia	24	17	15	----	3	61	0	1
North Carolina [3 4]	18	26	2	11	19	35	0	0
South Carolina [4]	13	9	81	89	26	7	0	0
Georgia [4]	35	22	----	31	15	20	0	1
Florida [4]	6	8	1	----	14	4	1	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 19, 1933, and Aug. 20, 1932—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932
East South Central States:								
Kentucky	21	24					0	1
Tennessee [3]	10	9	7	20	13	2	3	3
Alabama [4]	26	29	4	8	2		0	2
Mississippi [3]	24	14					0	0
West South Central States:								
Arkansas	2	12	2		14	4	0	0
Louisiana	8	18	3	9	1	1	0	1
Oklahoma [5]	12	27	11	19	1	2	0	2
Texas [4]	51	39	28	10	21	7	3	0
Mountain States:								
Montana	1	1				33	0	0
Idaho	1		3				0	0
Wyoming [3]		1			3	2	0	0
Colorado	2	6			3		0	0
New Mexico	6	3			3		0	0
Arizona		1			6		0	0
Utah [3]	1		4		15	3	1	0
Pacific States:								
Washington	3	3			11	10	1	0
Oregon		1	6	12	19	24	0	0
California	29	27	13	70	48	24	2	1
Total	490	600	227	336	637	749	38	46

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932
New England States:								
Maine	4	3	1	1	0	0	7	9
New Hampshire	0	0	4	4	0	0	0	1
Vermont	0	0	3	5	0	0	2	0
Massachusetts	45	4	59	67	0	0	3	6
Rhode Island	3	0	3	4	0	0	0	1
Connecticut	4	2	12	17	0	0	2	3
Middle Atlantic States:								
New York	137	27	55	117	0	1	50	50
New Jersey	15	19	22	20	0	0	6	10
Pennsylvania	26	88	76	80	0	0	38	68
East North Central States:								
Ohio	12	1	51	62	0	1	41	58
Indiana	1	0	18	16	0	2	17	34
Illinois	16	5	78	51	0	2	33	53
Michigan	3	3	61	48	0	3	14	14
Wisconsin	1	2	15	8	7	0	2	1
West North Central States:								
Minnesota	17	8	8	10	0	1	3	1
Iowa [3]	2	1	7	9	0	1	5	7
Missouri	3	0	23	11	0	1	25	23
North Dakota	1	1	16	1	0	1	2	4
South Dakota	3	1	4	2	0	0	5	2
Nebraska	0	1	1	13	0	1	0	0
Kansas	2	1	38	17	0	1	15	15
South Atlantic States:								
Delaware	1	0	2	1	0	0	2	3
Maryland [3 3 4]	2	0	18	10	0	0	20	47
District of Columbia	0	0	6	2	0	0	1	1
Virginia [3]	1	3	29	26	0	0	50	40
West Virginia	6	1	20	15	2	0	41	67
North Carolina [3 4]	0	0	43	24	0	0	17	42
South Carolina [4]	0	1	4	1	1	0	32	51
Georgia [4]	0	0	11	15	0	0	21	74
Florida [4]	0	0	1	2	0	0	8	4

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 19, 1933, and Aug. 20, 1932—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932	Week ended Aug. 19, 1933	Week ended Aug. 20, 1932
East South Central States:								
Kentucky	0	2	27	54	0	0	70	120
Tennessee[3]	8	1	17	20	0	1	75	81
Alabama[4]	0	0	14	22	1	0	36	36
Mississippi[2]	0	0	8	12	0	0	17	20
West South Central States:								
Arkansas	1	1	2	6	0	0	12	24
Louisiana	1	1	6	9	0	1	31	35
Oklahoma[5]	0	0	4	6	0	1	34	83
Texas[4]	0	2	21	17	3	2	95	28
Mountain States:								
Montana	1	0	2	4	0	3	7	2
Idaho	0	0	4	1	1	1	3	0
Wyoming[3]	0	2	5	1	0	1	3	0
Colorado	0	0	8	3	0	1	2	3
New Mexico	1	0	1	2	1	0	7	6
Arizona	0	0	4	1	0	0	17	1
Utah[3]	1	0	6	0	0	0	0	1
Pacific States:								
Washington	2	0	6	5	1	6	3	3
Oregon	2	0	6	3	5	8	8	3
California	1	6	51	42	3	5	10	12
Total	323	187	881	867	25	45	892	1,147

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Rocky Mountain spotted fever, week ended Aug. 19, 1933, 7 cases, as follows: Maryland, 1; Virginia, 1; North Carolina, 2; Tennessee, 1; and Wyoming, 2.
[4] Typhus fever, week ended Aug. 19, 1933, 61 cases, as follows: Maryland, 3; North Carolina, 2; South Carolina, 1; Georgia, 18; Florida, 2; Alabama, 14; Texas, 21.
[5] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June 1933										
Colorado	1	11		3	34		0	70	28	2
July 1933										
California	9	139	77	8	1,122	10	16	315	35	37
Colorado	3	11			58		1	34	8	15
Illinois	17	56	59	53	445	3	23	469	18	100
Maryland		21	14	2	49	3	8	116	0	74
Minnesota	1	35	3		291		28	69	2	6
Montana		4	1		21		1	7	1	20
New Jersey	5	71	7	1	711		14	200	0	41
New York	8	177		8	1,952		109	587	0	133
Ohio	6	68	69	8	245		18	520	7	135
Rhode Island	1	10			1		1	23	0	3
West Virginia	2	42	15		61	1	10	62	0	149

June 1933

Colorado:	Cases
Actinomycosis	1
Botulism	1
Chicken pox	297
Mumps	145
Puerperal septicemia	1
Rocky Mountain spotted fever	4
Vincent's angina	4
Whooping cough	89

July 1933

	Cases
Actinomycosis:	
Illinois	2
Anthrax:	
New Jersey	1
New York	1
Chicken pox:	
California	597
Colorado	94
Illinois	270
Maryland	50
Minnesota	86
Montana	45
New Jersey	334
New York	878
Ohio	352
Rhode Island	43
West Virginia	36
Dengue:	
California	1
Diarrhea:	
Maryland	44
Diarrhea and enteritis:	
Ohio (under 2 years)	37
Dysentery:	
California (amebic)	3
California (bacillary)	18
Illinois (amebic)	4
Illinois (bacillary)	10
Maryland	49
Minnesota (amebic)	1
New York	19
Ohio	3
West Virginia	2
Food poisoning:	
California	29
Ohio	15
German measles:	
California	34
Illinois	36
Maryland	2
New Jersey	14
New York	46
Ohio	30
Impetigo contagiosa:	
Colorado	5
Illinois	5
Maryland	6
Montana	4
Lead poisoning:	
Illinois	3
Ohio	11
Leprosy:	
California	2
Lethargic encephalitis:	
Illinois	4
Minnesota	1
New Jersey	3
New York	9
Ohio	1
Mumps:	
California	431
Colorado	54
Illinois	261
Maryland	88
Montana	1
New Jersey	226
Ohio	38
Rhode Island	11
Ophthalmia neonatorum:	
California	1
Illinois	9
Maryland	4
New Jersey	2
New York	3
Ohio	85
Paratyphoid fever:	
California	4
Colorado	1
Illinois	5
New York	6
Ohio	2
West Virginia	1
Psittacosis:	
Maryland	1
Puerperal septicemia:	
Illinois	5
Ohio	8
Rabies in animals:	
California	50
Illinois	14
Maryland	1
New Jersey	20
New York [1]	2
Rocky Mountain spotted fever:	
Colorado	2
Maryland	13
Montana	8
Septic sore throat:	
California	8
Colorado	1
Illinois	8
Septic sore throat—Con.	
Montana	2
New York [2]	157
Ohio	104
Tetanus:	
California	8
Illinois	10
New Jersey	2
New York	16
Ohio	6
Trachoma:	
California	4
Illinois	4
Montana	2
Ohio	1
Trichinosis:	
California	2
Illinois	1
New York	2
Tularaemia:	
California	2
Colorado	2
Illinois	1
Typhus fever:	
Illinois	1
Maryland	2
New York	2
Undulant fever:	
California	16
Colorado	1
Illinois	8
Maryland	1
Minnesota	1
Montana	1
New Jersey	1
New York	19
Ohio	8
Rhode Island	2
Vincent's angina:	
Illinois	60
Maryland	10
Montana	2
New York [1]	62
Whooping cough:	
California	1,138
Colorado	66
Illinois	972
Maryland	290
Minnesota	430
Montana	91
New Jersey	687
New York	1,695
Ohio	788
Rhode Island	177
West Virginia	189

[1] Exclusive of New York City.
[2] Including delayed report of 64 cases in June.

LETHARGIC ENCEPHALITIS, ST. LOUIS, MO.

According to reports received up to September 1, 1933, there had been officially reported 424 cases of lethargic encephalitis, with 54 deaths, in the city of St. Louis and suburban area since the outbreak of the present epidemic.

PLAGUE-INFECTED GROUND SQUIRRELS, SAN BENITO COUNTY, CALIF.

The Director of Public Health of California reports under date of August 18, 1933, that plague was proved by animal inoculation in 5 squirrels received at the State bacteriological laboratory August 2,

1933, from a lot of 35 squirrels shot on a ranch, 12 miles south of Tres Pinos, San Benito County, Calif., and in 1 squirrel found dead on a ranch south of Hollister, near Paicines, received August 15, 1933.

WEEKLY REPORTS FROM CITIES

City reports for week ended Aug. 12, 1933

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	-------	0	0	0	1	0	1	0	12	16
New Hampshire:											
Concord	0	-------	0	0	1	0	0	0	0	0	11
Nashua	0	-------	0	0	0	0	0	0	0	0	0
Vermont:											
Barre	0	-------	0	0	0	0	0	0	0	0	3
Burlington	0	-------	0	0	0	0	0	0	0	0	6
Massachusetts:											
Boston	4	-------	0	19	8	10	0	16	0	70	148
Fall River	0	-------	0	0	1	1	0	2	0	1	22
Springfield	0	-------	0	1	0	0	0	2	0	6	25
Worcester	0	-------	0	10	7	2	0	1	0	10	0
Rhode Island:											
Pawtucket	0	-------	0	0	0	0	0	0	0	0	9
Providence	0	-------	0	1	2	2	0	5	1	36	52
Connecticut:											
Bridgeport	0	-------	0	3	0	1	0	0	0	0	16
Hartford	0	1	0	0	0	0	0	0	1	2	27
New Haven	0	-------	0	0	3	0	0	2	0	3	46
New York:											
Buffalo	1	-------	0	6	10	2	0	5	0	35	115
New York	17	4	2	71	90	15	0	80	44	151	1,153
Rochester	0	-------	0	0	2	0	0	0	0	8	61
Syracuse	0	-------	0	0	1	1	0	0	0	11	40
New Jersey:											
Camden	1	-------	0	2	2	0	0	0	0	0	29
Newark	0	-------	0	4	4	4	0	6	0	32	71
Trenton	0	-------	0	1	3	0	0	6	0	2	37
Pennsylvania:											
Philadelphia	5	3	3	40	11	20	0	23	2	9	410
Pittsburgh	7	1	0	0	1	13	0	3	1	53	99
Reading	3	-------	0	0	1	0	0	0	0	3	33
Ohio:											
Cincinnati	0	-------	0	13	7	4	0	10	1	31	97
Cleveland	3	2	0	1	5	13	0	12	0	67	148
Columbus	2	-------	0	1	1	6	0	4	4	1	57
Toledo	0	-------	0	1	1	12	0	6	2	12	60
Indiana:											
Fort Wayne	2	-------	0	0	0	0	0	0	0	2	30
Indianapolis	1	-------	0	0	6	0	0	4	2	17	0
South Bend	0	-------	0	0	0	0	0	0	0	1	10
Terra Haute	0	-------	0	0	0	0	0	2	0	3	17
Illinois:											
Chicago	0	2	0	13	22	49	0	40	2	90	551
Michigan:											
Detroit	9	2	0	2	0	18	0	13	2	100	164
Flint	1	-------	0	1	4	3	0	1	0	9	25
Grand Rapids	0	-------	0	0	1	0	0	1	0	14	20
Wisconsin:											
Kenosha	0	-------	0	1	0	0	0	0	0	7	5
Milwaukee	1	1	1	2	1	2	0	4	0	155	73
Racine	0	-------	0	1	1	1	0	0	0	33	13
Minnesota:											
Duluth	0	-------	0	6	1	0	1	1	0	12	14
Minneapolis	1	-------	0	1	0	1	0	2	0	4	96
St. Paul	0	-------	0	0	4	2	0	2	0	29	0
Iowa:											
Des Moines	2	-------	-------	0	-------	3	0	-------	0	0	31
Sioux City	0	-------	-------	0	-------	0	0	-------	0	1	-------
Waterloo	0	-------	-------	0	-------	0	0	-------	0	0	-------
Missouri:											
Kansas City	0	-------	0	0	4	2	0	4	0	3	73
St. Joseph	1	-------	0	0	5	0	0	0	0	0	33
St. Louis	8	-------	-------	10	2	1	0	9	7	14	163

City reports for week ended Aug. 12, 1933—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
North Dakota:											
Fargo	0		0	1	0	0	0	0	0	0	8
Grand Forks	0		0	0	0	0	0	0	0	3	0
Nebraska:											
Omaha	0		0	0	4	0	0	1	1	15	51
Kansas:											
Topeka	0		0	0	1	0	0	0	0	2	6
Wichita	0		0	0	1	1	0	1	0	9	25
Delaware:											
Wilmington	1		0	1	0	0	0	1	0	2	16
Maryland:											
Baltimore	1		0	1	11	13	0	8	2	87	167
Frederick	0		0	0	0	1	0	0	0	0	1
District of Columbia:											
Washington	4		0	10	4	5	0	15	0	9	129
Virginia:											
Lynchburg	0		0	8	0	0	0	0	2	17	8
Norfolk	0		0	0	1	0	0	3	0	1	20
Richmond	0		0	1	1	3	0	3	1	6	52
Roanoke	1		0	0	0	0	0	0	3	0	18
West Virginia:											
Charleston	1		0	0	0	0	0	0	1	1	13
Huntington	1		0	0	0	2	0	0	0	0	0
Wheeling	0		0	0	0	0	0	2	4	2	16
North Carolina:											
Wilmington	0		0	0	0	2	0	1	0	0	13
Winston-Salem	1		0	0	0	1	0	0	1	7	10
South Carolina:											
Charleston	0		0	0	2	0	0	4	0	2	22
Greenville	0		0	0	3	2	0	0	0	1	13
Georgia:											
Atlanta	8	8	0	0	10	5	0	2	[1] 14	8	70
Brunswick	0		0	0	1	0	0	0	0	0	4
Savannah	3	1	0	2	1	1	0	3	0	5	26
Florida:											
Miami	0		0	0	0	0	0	1	0	2	13
Tampa	0		0	0	0	0	0	1	1	0	23
Kentucky:											
Ashland	1		0	0	0	0	0	0	0	1	0
Louisville	2		0	0	6	3	0	2	4	1	64
Tennessee:											
Memphis	0		0	4	6	0	0	2	5	6	72
Nashville	1		0	0	3	3	0	0	2	5	46
Alabama:											
Birmingham	3		0	0	1	1	0	3	4	3	68
Mobile	0		0	1	0	0	0	0	0	0	20
Montgomery	2			0		1	0		0	0	
Arkansas:											
Fort Smith	0			0		0	0		0	9	
Little Rock	0		0	1	1	0	0	0	0	0	2
Louisiana:											
New Orleans	7	1	1	1	6	0	0	12	8	0	131
Shreveport	0		0	0	2	2	0	2	2	0	8
Oklahoma: Tulsa	0			3		0	0		2	1	
Texas:											
Dallas	7		0	0	0	1	0	5	3		57
Fort Worth	1		0	0	1	1	0	0	0	0	29
Galveston	2		0	0	0	1	0	0	1	0	7
Houston	9		0	3	1	0	0	3	0	0	62
San Antonio	0		0	2	1	0	0	6	0	0	60
Montana:											
Billings	0		0	0	0	0	0	0	0	0	5
Great Falls	0		0	0	0	0	0	0	0	9	10
Helena	0		0	0	0	0	0	0	0	0	3
Missoula	0		0	0	0	0	0	0	0	0	1
Idaho:											
Boise	0		0	0	1	0	0	0	0	0	8
Colorado:											
Denver	3	16	0	1	7	1	0	6	2	6	63
Pueblo	0		0	0	1	0	0	0	0	0	10
New Mexico:											
Albuquerque	1		0	0	1	1	0	1	1	1	7

[1] 9 nonresidents.

City reports for week ended Aug. 12, 1933—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Utah:											
Salt Lake City	0	-------	0	13	1	1	0	0	1	21	25
Nevada:											
Reno	0	-------	0	0	0	0	0	0	0	0	3
Washington:											
Seattle	0	-------	-------	0	1	0	0	3	0	17	69
Spokane	0	2	2	10	1	0	0	-------	0	0	32
Tacoma	0	-------	0	0	0	1	0	0	0	2	22
Oregon:											
Portland	0	-------	0	2	2	7	1	2	0	0	71
Salem	0	-------	0	0	0	0	0	0	0	0	0
California:											
Los Angeles	6	7	1	13	9	17	4	23	0	59	267
Sacramento	3	-------	0	0	0	0	0	4	[1]2	12	24
San Francisco	1	2	1	3	2	2	0	10	1	5	15

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Iowa:			
Boston	0	0	18	Sioux City	1	1	0
Worcester	0	0	2	Missouri:			
Connecticut:				St. Louis	1	0	1
Hartford	0	0	1	North Dakota:			
New York:				Fargo	0	0	2
Buffalo	0	0	1	Delaware:			
New York	6	0	81	Wilmington	1	0	0
Rochester	0	0	2	Maryland:			
New Jersey:				Baltimore	0	0	1
Newark	0	0	1	Georgia:			
Pennsylvania:				Atlanta	2	0	1
Philadelphia	1	1	1	Tennessee:			
Pittsburgh	0	0	5	Memphis	0	1	0
Ohio:				Alabama:			
Cincinnati	1	0	0	Birmingham	0	0	1
Cleveland	1	0	1	Washington:			
Indiana:				Seattle	0	0	1
Indianapolis	2	0	0	Oregon:			
Illinois:				Portland	0	0	2
Chicago	6	0	1	California:			
Minnesota:				Los Angeles	1	0	0
Minneapolis	0	0	4	San Francisco	1	0	0

[1] Both outside.

Lethargic encephalitis.—Cases: Springfield, Mass., 1; Bridgeport, Conn., 1; New York, 2; Newark, 1; St. Louis, 31.

Pellagra.—Cases: Philadelphia, 1; Chicago, 1; Charleston, S.C., 3; Atlanta, 1; Savannah, 2; Little Rock, Ark., 1; New Orleans, 2; Dallas, Tex., 1.

Typhus fever.—Cases: Charleston, S.C., 4; Atlanta, 3; Savannah, 1; Montgomery, Ala., 2; Houston, Tex., 1. Deaths: Savannah, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended July 29, 1933.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the 2 weeks ended July 29, 1933, as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis					3	1				4
Chicken pox			2	58	172	22	30	4	73	361
Diphtheria		1	7	28	14	19			4	73
Dysentery					1					1
Erysipelas				4				3	4	11
Influenza		6		1					49	56
Measles				279	40	6	1		2	328
Mumps					54	1	12	1	13	81
Paratyphoid fever					6					6
Pneumonia		1			6		5		9	21
Poliomyelitis				4	1	1		2		8
Scarlet fever		14		34	61	19	9	6	13	156
Trachoma							1		21	22
Tuberculosis	13	3	19	132	77	6	10	1	41	302
Typhoid fever			3	46	18	4	6	3	3	83
Undulant fever					11			1	1	13
Whooping cough		4	1	176	179	96	34	5	20	515

Quebec Province—Communicable diseases—Two weeks ended August 12, 1933.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the 2 weeks ended August 12, 1933, as follows:

Disease	Cases	Disease	Cases
Chicken pox	27	Ophthalmia neonatorum	1
Diphtheria	19	Poliomyelitis	6
Dysentery	1	Puerperal septicemia	3
Erysipelas	7	Scarlet fever	36
Influenza	1	Tuberculosis	107
Lethargic encephalitis	1	Typhoid fever	60
Measles	60	Whooping cough	155

CHILE

Santiago—Typhus fever.—On August 8, 1933, according to the latest information received, there were 264 suspected cases of typhus fever with 440 confirmed cases of the same disease in Santiago, Chile. The total number of cases of typhus fever in Santiago, since May 1933 was 1,117 with 173 deaths.

JAMAICA

Communicable diseases—Four weeks ended May 20, 1933.—During the 4 weeks ended May 20, 1933, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica, outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis	2		Leprosy		1
Chickenpox	6	40	Puerperal fever	2	5
Dysentery	14	21	Tuberculosis	48	105
Erysipelas		2	Typhoid fever	21	64

PUERTO RICO

Notifiable diseases—Four weeks ended August 12, 1933.—During the 4 weeks ended August 12, 1933, cases of certain notifiable diseases were reported in the municipalities of Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chicken pox	7	Mumps	21
Diphtheria	41	Ophthalmia neonatorum	4
Dysentery	234	Puerperal fever	3
Erysipelas	1	Ringworm	4
Filariasis	2	Syphilis	11
Framboesia	1	Tetanus	10
Impetigo contagiosa	1	Tetanus (infantile)	9
Influenza	33	Trachoma	1
Leprosy	1	Tuberculosis	375
Malaria	3,680	Typhoid fever	19
Measles	113	Whooping cough	158

VIRGIN ISLANDS

Notifiable diseases—May–July 1933.—During the months of May, June, and July 1933, cases of notifiable diseases were reported in the Virgin Islands, as follows:

Disease	Cases			Disease	Cases		
	May 1933	June 1933	July 1933		May 1933	June 1933	July 1933
Filariasis	1	2	1	Sprue	1		
Gonorrhea	3	3		Syphilis	21	6	12
Malaria	4	31	187	Tuberculosis	2	2	2
Measles	7	15	1	Uncinariasis			3
Pellagra	1	2	1	Whooping cough	2	2	3
Schistosomiasis			1				

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

(NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for Aug. 25, 1933, pp. 1056-1068. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued Sept. 29, 1933, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

China—Hankow.—During the week ended July 29, 1933, 2 cases of cholera with 1 death from the same cause were reported in Hankow, China.

Philippine Islands.—During the week ended August 19, 1933, cholera was reported in parts of the Philippine Islands as follows: Cebu Province, Cebu, 1 case, 1 death; Olango Island, 3 cases, 3 deaths; Santa Fe, 2 cases, 3 deaths; Leyte Province, Ormoc, 2 cases, 2 deaths; Occidental Negros Province, San Carlos, 1 case, 1 death; Samar Province, Calbayog, 6 cases, 6 deaths; Santa Margarita, 10 cases, 5 deaths.

Plague

Egypt—Luxor.—During the week ended August 12, 1933, 1 case of plague was reported in Luxor, Qena Province, Egypt.

×