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

January 29–February 25, 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."

Influenza.—The influenza incidence continued to decline through the month of February. For the four weeks ended February 25 the number of cases reported was 26,557, as against 25,207, 41,548, and 10,627 for the corresponding period in the years 1932, 1931, and 1930, respectively. A steady decline was apparent in all sections of the country, but in the regions along the Atlantic coast the incidence was still considerably in excess of that for the same period last year. Due in large part to a rather slow decline of the incidence in Maine, the number of cases reported for the New England States was more than seven times the number reported for the same period last year. In the South Atlantic group the incidence remained particularly high. The number of cases reported (12,103) was more than three times last year's figure for the same period.

Measles.—The number of cases of measles reported for the current period was almost twice the number reported for the preceding period. All regions contributed to this expected seasonal increase. The current figure (42,415 cases) was approximately 3,500 cases above the average for recent years. The disease was most prevalent in the South Atlantic and North and South Central States. In the West North Central group the number of cases reported (5,931) was more than four times the number reported for the same period last year; in the South Atlantic States the number (5,189) was almost double that of last year; and in the West South Central area the number (2,260) was more than seven times the figure for last year. In States

[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, 48; diphtheria, 48; scarlet fever, 48; influenza, 38 States and New York City. The District of Columbia is counted as a State in these reports.

along the North Atlantic Coast and in the far Western groups the seasonal increase was apparent but the incidence was considerably below that of last year.

Poliomyelitis.—The number of cases of poliomyelitis reported for the current 4-week period was 51. This number represented the lowest incidence of this disease during the corresponding period in the five years for which data are available. It was less than 40 per cent of the incidence for the same period last year and only about 50 per cent of the incidence in 1931. Each geographic area except the West South Central shared in this favorable situation. In that area eight cases were reported for the current period, as against one for the corresponding period last year.

Smallpox.—For the country as a whole, the number of cases of smallpox reported for the four weeks ended February 25 was 748, as against 1,402, 4,137, and 6,642 for the corresponding period in the years 1932, 1931, and 1930, respectively. In each geographic area, except the Mountain and Pacific, the incidence was the lowest in recent years. An increase in the number of cases in Idaho from 11 for this period last year to 45 for the current period and in California a corresponding increase from 15 to 150 cases seemed mostly responsible for a 20 per cent increase in the combined Mountain and Pacific areas over the corresponding period last year. The number of cases (232) was, however, considerably below that of other recent years. (See the note on the decrease in smallpox incidence on opposite page.

Typhoid fever.—The incidence of typhoid fever declined about 35 per cent during the current 4-week period from the preceding period. In relation to recent years the number of reported cases (481) for the country as a whole was the lowest in five years. Each geographic area, except the West North Central and Mountain and Pacific, showed very appreciable decreases from last year's figure for the corresponding period. In those areas the incidence very closely approximated that of last year.

Scarlet fever.—For the country as a whole, the number of cases of scarlet fever (22,629) reported for the four weeks ended February 25 was approximately the same as was reported for the corresponding period in 1932 and 1931. In the years 1930 and 1929 the cases for this period totaled 20,851 and 18,913, respectively. While an increase over last year was reported from the East North Central and Mountain States, in general the incidence in all areas came close to the average for recent years.

Meningococcus meningitis.—While the incidence of meningococcus meningitis was the lowest in recent years, it was very close to the incidence for the corresponding period last year. For the current 4-week

period the number of cases was 307, as against 327, 588, and 1,001 for the corresponding period in the years 1932, 1931, and 1930, respectively. A rather high incidence in Virginia and North and South Carolina seemed mostly responsible for a 50 per cent increase over last year's figure in the South Atlantic group of States, and 17 cases reported from Oklahoma, as against 7 last year, brought the incidence in the West South Central group up to a more than 50 per cent increase over last year. Other areas either approximated last year's figure or showed decreases.

Diphtheria.—There were 3,187 cases of diphtheria reported for the current 4-week period—approximately 1,000 less than were reported for the preceding period. A comparison with preceding years shows that for the whole reporting area the total number of cases was about 60 per cent of the number reported for the corresponding period last year and 70 per cent of the number in 1931. Each geographic area reported a very appreciable decrease. In fact, for the country as a whole and for practically all sections of the country, the reported incidence was the lowest for this period in the five years for which data are available.

Deaths, all causes.—The average mortality rate from all causes in large cities, as reported by the Bureau of the Census for the 4-week period ended February 25 was 12.2 per thousand population (annual basis). The current rate was practically the same as that for the corresponding period last year. For this period in the years 1931, 1930, and 1929 the rate was 14.2, 13.7 and 15.6, respectively.

NOTE ON SMALLPOX INCIDENCE IN THE UNITED STATES

A very noticeable decrease in smallpox incidence has occurred in the last two years. The following table shows the numbers of reported cases of smallpox in the United States for the years 1928 to 1932, inclusive.

Number of cases of smallpox reported in the United States for the years 1928 to 1932

Year	Cases of smallpox reported	Year	Cases of smallpox reported
1928	39,396	1931	30,232
1929	42,282	1932	11,168
1930	48,907		

The number of cases of smallpox reported for the year 1932 is 27.8 per cent of the average for the preceding four years.

The following table gives a comparison of the cases of smallpox reported during three 4-week periods of the winter of 1932–33 with corresponding periods of the preceding five years:

	Average number of cases per week			
	Last 4 weeks of December	First 4 weeks of the calendar year	Second 4 weeks of the calendar year	12 weeks of midwinter
1927–28	776	1,202	1,289	1,089
1928–29	605	740	982	776
1929–30	1,163	1,638	1,660	1,487
1930–31	543	979	1,055	859
1931–32	304	493	378	392
1932–33	128	160	187	158

The number of cases of smallpox reported for the 12-week period in 1932–33 is only 17.2 per cent of the average number for the corresponding period of the preceding five years; for three of the five years this period included the heaviest incidence of the year.

It is possible that there may be some relation between this notable drop and the more general use of cold storage for smallpox vaccine in the field.

No other disease which is reported to the Public Health Service shows any such notable reduction in incidence during the period covered.

ROCKY MOUNTAIN SPOTTED FEVER

Investigation of Sexual Transmission in the Wood Tick *Dermacentor andersoni* [1]

By Cornelius B. Philip, *Associate Entomologist*, and R. R. Parker, *Special Expert, United States Public Health Service*

In 1909 Ricketts advanced an hypothesis to account for the persistence of Rocky Mountain spotted fever virus in *Dermacentor andersoni* in nature. The fundamental concept involved was the starting each year of new lines of infection in previously noninfected ticks through simultaneous infestation of susceptible small mammalian hosts by both noninfected and infected ticks. Generation to generation transmission of the virus through the medium of the eggs was relegated to a position of secondary importance. In the main, this hypothesis has been accepted generally as the most likely explanation of the phenomena concerned. However, observations incident to experimental studies made at the Public Health Service Laboratory at Hamilton, Mont., during the past 10 years have raised two

[1] Contribution from the Rocky Mountain spotted fever laboratory of the U. S. Public Health Service, Hamilton, Mont.

questions concerning this hypothesis: First, that it fails to take account of the possibility of sexual transmission of the virus, i. e., transfer of the organisms from infected to noninfected ticks of the opposite sex during copulation; and second, whether or not the phenomenon of generation to generation transmission of the virus may have been unduly subordinated.

This paper concerns particularly the possibility of sexual transmission. There are two references which bear on this question. Wolbach (1919) has recorded the occurrence of the organisms in the spermatozoa of infected males—an observation repeatedly confirmed at this laboratory—and Parker (1923), in discussing maintenance of the virus, writes "there are no apparent avenues for the spread of the infection among ticks" other than those suggested by Ricketts, "unless it be by the act of copulation."

Transfer of the virus between the sexes must increase the number of infected ticks if it is to function as a factor of consequence in virus maintenance. Such an increase could conceivably result from the transfer of infectious secretions from infective male to "normal" female ticks or *vice versa*, or by infected spermatozoa. In the case of transfer by virus-containing secretions, a generalized infection of the opposite sex might follow. In the case of transfer by infected spermatozoa, however, it appears that individual ova and their resultant larvæ may become infected; but it is less evident that a generalized invasion of the parent female tissue would necessarily occur. The experiments here reported concern generalized infection of the adult ticks only.

METHODS AND MATERIALS

Preliminary observations to determine the conditions under which copulation may occur experimentally showed that partially fed *D. andersoni* of both sexes will mate off the host with either unfed or partially fed individuals of the opposite sex. It was known that copulation does not take place between unfed ("flat") individuals.

The experiments were then so planned that the ticks could be observed, and only groups or pairs of ticks known to have mated were used. Furthermore, in the cases of attempted male to female transfers of the virus, all females concerned were permitted to oviposit in order that impregnation could be verified by egg fertility. Since copulation does not occur between unfed ticks, there was no possibility that fertilization could have taken place antecedent to the tests which are detailed.

Pill boxes with cellophane windows were used in order to observe pairs of experimental ticks. Copulation was encouraged by darkening the boxes between the brief periods of observation.

After copulation was observed to have occurred, and in order to determine whether test ticks had acquired demonstrable infection, they were permitted to feed on normal male guinea pigs for minimum periods of nine days or, in the case of female ticks, until complete engorgement had been accomplished. This minimum period of feeding was employed to allow an elapse of time sufficient for the virus, if present, to reach the salivary glands. This is in accordance with the minimum incubation period of 9 days, following a 3-day infective feeding, observed by Spencer and Parker (1930b) in a single series of tests with *D. andersoni*.

If a test guinea pig showed fever and the characteristic scrotal lesions of Rocky Mountain spotted fever, or if there was pyrexia without scrotal lesions and the animal was shown to be immune to a subsequent injection of controlled guinea pig blood virus, the test was considered positive. On the other hand, if a host guinea pig remained afebrile and was susceptible to a later immunity test, the experiment was deemed negative, although the failure of a tick to infect its host can not be accepted as conclusive evidence that the virus is not present. This has been demonstrated repeatedly, in previous studies (Spencer and Parker, 1930a) and again in this paper. In order to meet this contingency, in our later experiments all male ticks and certain females which had not completely engorged were eviscerated immediately after removal from their hosts and injected into other guinea pigs.

Necropsies were performed on each test animal that died and gross lesions noted. If death occurred before immunity test and the lesions were atypical, diagnosis was established by the result of spleen transfer made intraperitoneally to a normal guinea pig.

For both the initial feeding prior to mating and for the later infectivity tests the experimental ticks were confined on the clipped bellies of male guinea pigs under screw-top capsules described elsewhere by Jellison and Philip (1933). The putting on and removal of ticks could thus be effected readily as desired.

The noninfected ticks used were from stock lots which had been reared through a considerable series of generations without evidence of infectivity. Where such ticks were permitted to feed partially on guinea pigs prior to allowing copulation, negative reactions of the host animals followed by immunity tests resulting in typical Rocky Mountain spotted fever were considered as confirmatory evidence of noninfectivity. No questionable reactions due to presumably noninfected ticks occurred.

Infected ticks used were from known infected laboratory-reared stock. As with the noninfected ticks, the initial partial separate feeding of both males and females served as a check on infectivity. In each instance the host guinea pig developed typical spotted fever.

EXPERIMENTAL

Six preliminary experiments were initiated in February, 1930, under varying conditions as described, in one experiment using noninfected, unfed females with infected, partially fed males, one involving noninfected, unfed males with infected, fed females, three experiments involving noninfected, partially fed females with infected, fed males, and one experiment using noninfected, fed males with infected, fed females. Of these, two resulted positively, the first test of unfed females and the last test of fed males, respectively.

1. *Infected, fed males with normal "flat" females.*—Eight fed, infected males were confined with five noninfected, unfed females and incubated at 37° C. for three days. The females were then placed on a normal guinea pig for nine days. The latter died on the fifteenth day following four days of fever but without scrotal lesions. Transfer of spleen tissue to a second guinea pig resulted in typical fatal infection.

The above females were then placed on another normal guinea pig, which died typically in 12 days.

2. *Infected, fed females with normal, "flat" males.*—Four fed, infected females were confined with six unfed, normal males and incubated for three days at 26° C. The males were than placed on a normal guinea pig on which they fed more or less continuously for 19 days. This animal remained afebrile for 22 days and died of typical infection after immunity test.

3. *Infected, fed males with noninfected, fed females.*—Four fed, infected males were placed with six partially fed, noninfected females at 26 C°. for five days. The females were then allowed to feed on a normal guinea pig for 11 days. No reaction resulted; and after 22 days the guinea pig was given an immunity test, which resulted in typical fatal disease.

4 and 5. Negative results under conditions similar to those in No. 3, above, were obtained from two other tests with four and five partially fed, noninfected females which had been placed with three and four infected males, respectively, for five days at room temperature.

6. *Infected, fed females with noninfected, fed males.*—Eight fed, infected females were confined with seven fed, normal males for five days at room temperature. The males were then isolated on damp sand trays for 23 days and finally allowed to feed on a normal guinea pig for 15 days. Except for one day of mild fever of 39.8° C., on the second day of tick feeding, the animal registered normal temperature for 18 days. Two immunity tests were given, the second on the thirty-fourth day. Following both, the guinea pig remained afebrile.

A second series of tests was begun in February, 1932, using a larger number of ticks. No unfed ticks were used for mating in these ex-

periments. Copulation of the partially fed ticks was permitted under two sets of conditions, as described.

1. Single, noninfected ticks were placed in separate pill boxes and opportunity was permitted for each to mate with three infected individuals of the opposite sex. The latter were introduced singly on successive days. Three days thus elapsed between the initial partial blood meal and final confinement on the test guinea pig. Each of the ticks tested in this group was observed to pair with at least two and in many cases with all three of the infected ticks. Whether or not actual fertilization was accomplished at each pairing can not be stated.

Twelve of the originally noninfected ticks were tested on 10 guinea pigs. Two of the test animals became infected, six did not, while the two remaining tests were valueless, owing to intercurrent infection.

The two positive tests were of females that had mated with infected males. One test animal died in eight days, after three days of fever but without scrotal involvement; typical fatal infection resulted in a second animal after spleen transfer. The other test animal registered prolonged pyrexia, accompanied by scrotal swelling, necrosis, and sloughing. This pig recovered and resisted a later immunity test with controlled virus. The six negative tests followed the feeding of single females in two instances, of single males in two instances, and of two males in two instances. All six of the host guinea pigs were proved susceptible to infection by a later injection of controlled blood virus.

2. The remainder of the partially fed ticks were grouped in two lots—infected males with normal females, and vice versa. Observation of mating was not attempted. The lots were stored over damp sand at room temperature for 16 days before test feedings were started. This allowed both a longer period for the invasion of the tick tissues by the virus and greater opportunity for matings than in previous tests.

Thirteen feeding tests were made, using 16 males and 3 females. Eleven were negative and two valueless. In the 11 negative tests 1 male was used in each of 4 tests, 2 males in each of 6 tests, and 1 female in the remaining test. All guinea pigs proved susceptible when later injected with blood virus. The two valueless tests were of single females.

Because of the possibility that some of these ticks might contain virus which could not be demonstrated by feeding, the surviving ticks were injected into four guinea pigs. Three of these tests were of multiple ticks; two were valueless, and one test was negative. The fourth was of one female tick which had remained attached to the original test guinea pig for 20 days, although feeding poorly. It was finally removed and injected. The guinea pig died in seven days with all the characteristic symptoms and gross lesions of Rocky Mountain spotted fever.

SUMMARY AND DISCUSSION

The experiments reported here demonstrate that Rocky Mountain spotted fever virus may be transmitted from infected ticks of one sex to normal individuals of the opposite sex during copulation; also that the virus invades the tissues of the latter and is transmissible during subsequent feeding, just as would happen had the virus been acquired by ingestion or from a parent female. They do not, however, explain the medium by which transfer of the virus is effected, i. e., whether by transfer of male or female secretions or by infected sperm.

Of 23 tests performed, five were positive. Transmission of the virus from infected males to normal females was shown in 4 of 11 tests, while transmission from a group of infected females to normal males was demonstrated in 1 of 12 tests.

In the four positive male-to-female tests, three of the females transmitted the virus while completing engorgement. The fourth failed to do so by feeding on a guinea pig but was subsequently shown infected when eviscerated and injected into another guinea pig.

An inapparent infection was the result of the one positive female-to-male test. Virus of the type that produces this low grade reaction is rather frequently encountered in individuals of *D. andersoni* which have acquired infection either experimentally or in nature.

The period between the acquisition of virus by the ticks involved in the positive tests and its subsequent transmission is a matter of conjecture. That it may be relatively short is indicated by two of the tests in which 14 days was the time between confinement of the partially fed females with infected males and the onset of fever in the guinea pigs on which these females later completed engorgement. This interval included both the incubation period in the tick and that in the guinea pig. That it may also be considerably longer is shown by the test in which the female was attached for 20 days without infecting its host, though shown to be infected by subsequent injection.

According to these results, it becomes obvious that the number of infected females of any given generation of ticks can be increased through the mating of infected males with hitherto noninfected females. (The chance that an infected female will copulate with an infected male is relatively small, owing to the low percentage of infected ticks in nature, usually less than 3 per cent in the Bitterroot Valley.) Whether or not this number would be increased still further by males that acquire infection from females and later mate with normal females is less clear. In any event, it is obvious that the potentialities of generation to generation transmission through the egg are greater because of sex to sex transfer of the virus. Generation to generation transmission therefore may have correspondingly greater significance than hitherto supposed in the natural maintenance of the virus.

Sex to sex transmission may be of still further importance, owing to the possibility that an additional number of females (i. e., those in which a generalized tissue invasion may not occur) may deposit a certain percentage of infected eggs as a result of fertilization by infected sperm.

REFERENCES

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Ricketts, H. T.: (1909) Some aspects of Rocky Mountain spotted fever as shown by recent investigations. Med. Record. **76**:842.

Spencer, R. R., and Parker, R. R.: (1930a) Studies on Rocky Mountain spotted fever. Infectivity of fasting and recently fed ticks. Hygienic Laboratory Bul. No. 154, pp. 1–10.

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COURT DECISIONS RELATING TO PUBLIC HEALTH

Damage caused by disposal of municipal sewage.—The subject of the liability of a city for damage caused by the disposal of sewage is treated in the following cases:

City of Harrisonville, Mo., *v.* W. S. Dickey Clay Mfg. Co., 61 F. (2d) 210, decided by the United States Circuit Court of Appeals, Eighth Circuit, on August 5, 1932.

Gotwals *v.* City of Wessington Springs, 244 N. W. 649, decided by the South Dakota Supreme Court on October 15, 1932.

Gray et al. *v.* City of High Point, 166 S. E. 911, decided by the North Carolina Supreme Court on December 21, 1932.

DEATHS DURING WEEK ENDED FEBRUARY 25, 1933

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

	Week ended Feb. 25, 1933	Corresponding week, 1932
Data from 85 large cities of the United States:		
Total deaths	8,772	9,011
Deaths per 1,000 population, annual basis	12.3	12.9
Deaths under 1 year of age	644	614
Deaths under 1 year of age per 1,000 estimated live births [1]	55	51
Deaths per 1,000 population, annual basis, first 8 weeks of year	12.6	12.1
Data from industrial insurance companies:		
Policies in force	68,993,332	73,951,428
Number of death claims	13,943	13,563
Death claims per 1,000 policies in force, annual rate	10.5	9.6
Death claims per 1,000 policies, first 8 weeks of year, annual rate	11.3	9.9

[1] 1933, 81 cities; 1932, 78 cities.

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 March 4, 1933, and March 5, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 4, 1933, and March 5, 1932

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932
New England States:								
Maine	-------	2	13	8	4	385	0	1
New Hampshire	-------	1	11	-------	-------	17	0	0
Vermont	2	-------	-------	-------	29	69	0	0
Massachusetts	24	33	8	18	323	584	1	1
Rhode Island	3	13	8	2	-------	714	0	0
Connecticut	1	7	24	20	178	283	1	0
Middle Atlantic States:								
New York	62	122	[1] 53	[1] 514	3,301	2,307	1	10
New Jersey	18	56	75	212	1,093	170	4	1
Pennsylvania	69	168	-------	-------	1,328	2,489	17	7
East North Central States:								
Ohio	44	59	23	233	609	570	2	3
Indiana	30	42	96	200	40	59	3	10
Illinois [2]	47	88	70	202	277	263	21	4
Michigan	10	31	13	154	975	767	2	1
Wisconsin	5	23	143	704	106	405	1	1
West North Central States:								
Minnesota	5	10	-------	2	1,444	15	6	0
Iowa	7	15	-------	-------	2	3	1	0
Missouri	32	22	10	15	284	117	11	2
North Dakota	5	6	57	-------	221	59	2	1
South Dakota	4	4	2	66	8	27	0	0
Nebraska	10	4	7	86	16	21	0	1
Kansas	14	7	9	19	292	169	0	0
South Atlantic States:								
Delaware	4	3	-------	1	3	-------	0	0
Maryland [3]	12	29	44	166	11	40	0	5
District of Columbia	9	14	1	7	3	2	0	2
Virginia	14	-------	-------	-------	399	-------	1	-------
West Virginia	21	18	53	295	281	470	1	0
North Carolina	18	22	168	44	370	457	2	2
South Carolina	12	8	1,151	1,049	129	128	0	1
Georgia [2]	19	5	381	118	28	12	5	2
Florida	10	13	23	9	10	3	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 4, 1933, and March 5, 1932—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932
East South Central States:								
Kentucky	14	32	82	653	67	82	1	4
Tennessee	16	19	93	1,165	89	104	3	1
Alabama [2]	11	15	148	99	33	5	0	2
Mississippi	8	20					0	0
West South Central States:								
Arkansas	4	10	101	81	37	1	1	0
Louisiana	8	23	6	169	51	110	2	0
Oklahoma [4]	10	30	160	1,533	18	75	3	1
Texas [2]	54	61	317	225	615	18	4	0
Mountain States:								
Montana			31	2,652	205	42	1	0
Idaho	1	1	1	1	63		0	0
Wyoming			2		1		0	0
Colorado	3	5	58		4	80	8	1
New Mexico	10	8	18	2,012	2	105	0	2
Arizona	2	2	2	9	24		0	1
Utah [3]	3	1	4		5	4	0	0
Pacific States:								
Washington	7	4	1	8	32	682	1	2
Oregon	1	4	43	245	160	192	1	0
California	62	58	133	227	911	403	3	10
Total	725	1,118	3,643	13,223	14,081	12,508	110	79

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932
New England States:								
Maine	0	0	20	8	0	0	1	0
New Hampshire	0	0	35	28	0	0	0	0
Vermont	0	0	13	9	0	8	0	0
Massachusetts	0	2	436	457	0	0	0	2
Rhode Island	0	0	30	57	0	0	0	0
Connecticut	0	0	109	143	2	2	0	0
Middle Atlantic States:								
New York	1	1	981	1,811	0	0	8	11
New Jersey	0	0	335	322	0	0	2	2
Pennsylvania	1	1	1,171	645	0	7	6	10
East North Central States:								
Ohio	0	0	673	341	3	96	8	6
Indiana	1	0	195	144	1	6	2	1
Illinois [2]	0	0	477	387	15	8	5	6
Michigan	1	0	548	552	1	12	1	7
Wisconsin	2	0	162	119	0	14	1	2
West North Central States:								
Minnesota	0	0	86	154	0	4	1	3
Iowa	0	2	41	48	44	15	0	0
Missouri	0	0	112	57	5	20	1	1
North Dakota	0	0	27	14	1	0	0	0
South Dakota	0	0	21	15	4	5	0	4
Nebraska	0	0	40	31	0	9	0	0
Kansas	0	1	56	47	2	4	1	2
South Atlantic States:								
Delaware	0	0	6	18	0	0	0	0
Maryland [3]	0	0	97	121	0	0	2	7
District of Columbia	0	1	13	51	0	0	0	2
Virginia	0		53		0		2	
West Virginia	0	0	31	58	0	3	2	4
North Carolina	0	1	33	47	5	2	4	4
South Carolina	1	0	11	10	0	0	3	7
Georgia [2]	0	0	12	14	3	0	3	15
Florida	0	0	5	6	0	1	4	3

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 4, 1933, and March 5, 1932—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932	Week ended Mar. 4, 1933	Week ended Mar. 5, 1932
East South Central States:								
Kentucky	0	0	55	117	1	2	4	16
Tennessee	0	0	63	37	1	28	7	10
Alabama [2]	0	0	13	27	1	15	2	5
Mississippi	0	1	11	7	0	32	3	3
West South Central States:								
Arkansas	0	0	14	8	0	22	6	1
Louisiana	0	0	14	20	0	2	2	15
Oklahoma [4]	0	0	23	39	1	3	2	6
Texas [2]	0	0	65	49	12	29	6	4
Mountain States:								
Montana	0	0	12	60	0	0	9	0
Idaho	0	0	4	3	4	2	1	0
Wyoming	0	0	1	4	0	0	0	0
Colorado	0	0	55	23	0	6	0	0
New Mexico	0	0	12	11	0	2	1	1
Arizona	0	0	18	9	0	0	0	0
Utah [3]	0	0	18	8	0	0	1	1
Pacific States:								
Washington	1	0	65	48	4	18	0	1
Oregon	0	0	20	30	10	24	0	1
California	0	5	239	143	56	11	7	2
Total	8	15	6,531	6,357	176	412	108	165

[1] New York City only.
[2] Typhus fever, week ended Mar. 4, 1933, 8 cases: 1 case in Illinois, 1 case in Georgia, 4 cases in Alabama, and 2 cases in Texas.
[3] Week ended Friday.
[4] Figures for 1933 are exclusive of Oklahoma City and Tulsa, and for 1932 are exclusive of Tulsa only.

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
December, 1932										
New Hampshire	1	1	------	------	------	------	------	112	------	3
January, 1933										
Arkansas	3	46	13,427	31	46	135	2	88	47	12
Colorado	1	26	500	------	25	------	0	146	0	1
Kansas	10	45	7,998	------	346	------	4	304	2	6
Nevada	1	1	47	------	2	------	0	13	0	------
New Hampshire	------	2	------	------	------	------	------	136	------	------
Oregon	3	13	2,054	------	99	------	1	73	20	7
Puerto Rico	------	52	301	4,499	190	2	0	------	0	27
Rhode Island	------	21	661	------	3	------	0	194	0	------
Wisconsin	9	22	10,376	------	775	------	2	593	17	4
February, 1933										
Nebraska	2	44	292	------	62	------	1	96	10	1

January, 1933

	Cases
Anthrax:	
Arkansas	1
Chicken pox:	
Arkansas	157
Colorado	335
Kansas	589
Nevada	6
Oregon	166
Puerto Rico	28
Rhode Island	89
Wisconsin	2,220
Conjunctivitis:	
Kansas	3
Dysentery:	
Puerto Rico	792
Filariasis:	
Puerto Rico	3
German measles:	
Kansas	11
Rhode Island	3
Wisconsin	16
Hookworm disease:	
Arkansas	6
Impetigo contagiosa:	
Colorado	18
Kansas	1
Oregon	64
Leprosy:	
Puerto Rico	5
Lethargic encephalitis:	
Kansas	3
Oregon	1
Wisconsin	2
Mumps:	
Arkansas	71
Colorado	256
Kansas	493
Oregon	12
Puerto Rico	19
Rhode Island	54
Wisconsin	403
Ophthalmia neonatorum:	
Kansas	1
Puerto Rico	5
Rhode Island	1
Paratyphoid fever:	
Oregon	2
Puerperal fever:	
Puerto Rico	11
Scabies:	
Colorado	12
Kansas	16
Oregon	69
Septic sore throat:	
Kansas	2
Oregon	2
Rhode Island	1
Tetanus:	
Puerto Rico	13
Tetanus, infantile:	
Puerto Rico	26
Trachoma:	
Arkansas	45
Kansas	1
Puerto Rico	32
Wisconsin	1
Tularaemia:	
Arkansas	2
Kansas	5
Undulant fever:	
Kansas	1
Rhode Island	1
Wisconsin	3
Vincent's angina:	
Colorado	5
Kansas	2
Oregon	9
Whooping cough:	
Arkansas	50
Colorado	100
Kansas	115
Nevada	2
Oregon	20
Puerto Rico	111
Rhode Island	76
Wisconsin	424
Yaws:	
Puerto Rico	7

February, 1933

Nebraska:	
Chicken pox	181
Leprosy	1
Septic sore throat	1
Whooping cough	33

WEEKLY REPORTS FROM CITIES

City reports for week ended February 25, 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	-------	2	4	6	7	0	3	0	12	42
New Hampshire:											
Concord	1	-------	0	0	2	0	0	1	0	0	10
Nashua	0	-------	0	0	0	0	0	0	0	0	--------
Vermont:											
Barre	0	-------	0	0	0	1	0	1	0	4	4
Massachusetts:											
Boston	3	1	4	44	31	124	0	11	0	70	227
Fall River	0	2	1	0	5	11	0	0	0	4	32
Springfield	1	1	1	0	1	7	0	2	0	10	34
Worcester	1	-------	0	5	2	20	0	1	0	2	48
Rhode Island:											
Pawtucket	0	-------	0	0	0	0	0	0	0	0	21
Providence	1	2	1	0	4	22	0	3	0	12	69
Connecticut:											
Bridgeport	1	1	3	15	4	9	0	2	0	2	36
Hartford	0	2	0	1	3	11	0	1	0	0	35
New Haven	1	3	0	1	1	9	0	0	0	7	50
New York:											
Buffalo	6	-------	1	5	27	47	0	6	0	33	165
New York	42	45	22	1,545	183	272	0	82	4	113	1,577
Rochester	0	-------	2	1	7	35	0	1	0	4	84
Syracuse	0	-------	0	1	4	25	0	0	0	8	44
New Jersey:											
Camden	0	2	3	1	5	14	0	0	0	0	35
Newark	0	11	1	327	6	33	0	5	0	24	76
Trenton	2	7	1	11	7	22	0	1	1	4	48
Pennsylvania:											
Philadelphia	3	9	6	67	32	146	0	33	0	2	497
Pittsburgh	2	6	5	7	17	56	0	6	0	19	156
Reading	0	-------	0	73	6	13	0	0	0	6	38
Scranton	0	-------	0	0	0	33	0	0	0	1	--------
Ohio:											
Cincinnati	3	3	5	1	15	16	0	12	0	5	148
Cleveland	9	79	4	2	17	168	0	12	0	41	170
Columbus	0	1	1	118	7	17	0	5	0	1	92
Toledo	1	2	2	81	1	66	0	7	0	0	63

City reports for week ended February 25, 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								
Indiana:											
Fort Wayne	0		0	1	0	2	0	1	0	0	23
Indianapolis	6		0	13	16	14	0	6	0	7	
South Bend	0		0	0	1	20	0	1	0	5	21
Terre Haute	1		0	0	1	10	0	1	0	0	24
Illinois:											
Chicago	9	3	11	197	61	237	0	43	0	34	733
Springfield	3		0	2	3	8	0	0	0	0	24
Michigan:											
Detroit	7	3	4	315	32	163	0	25	0	129	272
Flint	2	8	0	30	4	7	0	2	0	0	27
Grand Rapids	0		0	2	3	14	0	2	0	34	48
Wisconsin:											
Kenosha	0		0	1	1	3	8	0	0	14	2
Madison	0			54		2	0		0	0	
Milwaukee	0	2	2	4	3	43	0	4	0	30	109
Racine	0		0	2	0	14	0	0	0	7	12
Superior	0		0	0	0	0	0	0	0	7	8
Minnesota:											
Duluth	0		0	3	1	2	0	1	0	28	14
Minneapolis	1		0	926	7	39	0	3	0	9	102
St. Paul	0	2	2	104	4	11	0	4	2	66	62
Iowa:											
Des Moines	5			0		4	0		0	0	29
Sioux City	1			0		2	0		0	1	
Waterloo	0			0		0	0		0	0	
Missouri:											
Kansas City	1		3	167	25	49	0	12	0	4	90
St. Joseph	2		2	4	8	2	0	3	0	2	40
St. Louis	12	3	2	7	13	19	0	8	0	0	221
North Dakota:											
Fargo	0		0	0	1	0	0	0	0	1	8
Grand Forks	0		0	4	0	3	0	0	0	0	
South Dakota:											
Aberdeen	1			0		0	0		0	0	
Nebraska:											
Omaha	4		0	10	10	11	0	4	0	0	56
Kansas:											
Topeka	0		2	73	3	0	0	0	0	1	13
Wichita	2		2	0	2	3	0	0	0	2	37
Delaware:											
Wilmington	2		0	6	4	3	0	2	1	0	43
Maryland:											
Baltimore	3	15	4	3	24	83	0	6	1	18	225
Cumberland	0		0	0	5	2	0	0	0	0	18
Frederick	0		0	0	0	0	0	1	0	0	3
District of Col.:											
Washington	5	5	1	2	14	12	0	17	0	1	180
Virginia:											
Lynchburg	0		0	0	1	1	0	0	0	0	10
Norfolk	2		0	0	4	2	0	1	0	3	23
Richmond	3		2	0	6	5	0	7	0	0	60
Roanoke	0		0	168	1	3	0	0	0	0	18
West Virginia:											
Charleston	1	3	0	0	4	1	0	0	0	2	12
Huntington	0			20		0	0		0	0	
Wheeling	0	1	0	40	5	2	0	1	0	7	14
North Carolina:											
Raleigh	0		0	1	2	0	0	1	0	1	12
Wilmington	0		0	60	2	2	0	0	0	1	11
Winston-Salem	1		1	0	0	3	0	3	0	9	12
South Carolina:											
Charleston	0	51	0	0	2	0	0	1	0	1	17
Columbia											
Greenville	0			31		0	0		0	0	
Georgia:											
Atlanta	4	11	1	2	9	3	0	3	0	21	82
Brunswick	0		0	0	1	0	0	1	0	0	5
Savannah	0	184	4	0	3	0	0	0	0	0	31
Florida:											
Miami	1	13	3	1	0	2	0	2	3	3	29
Tampa	2	1	1	0	2	0	0	2	0	7	25

City reports for week ended February 25, 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								
Kentucky:											
Ashland	1		0	0	0	1	0	0	0	0	1
Lexington	0		0	2	2	0	0	2	0	0	16
Louisville	2	6	0	0	15	11	0	6	0	0	107
Tennessee:											
Memphis	2		1	9	7	10	0	2	1	13	81
Nashville	3		1	0	5	2	0	2	1	2	47
Alabama:											
Birmingham	6	2	4	0	6	2	0	4	1	0	55
Mobile	2		2	0	2	0	0	0	0	0	21
Montgomery	0	5		0		0	0		0	1	
Arkansas:											
Fort Smith	0			0		0	0		0	0	
Little Rock	0		0	0	1	3	0	1	0	1	3
Louisiana:											
New Orleans	12	3	2	1	10	5	0	5	0	0	158
Shreveport	0		0	1	3	1	0	2	0	0	46
Oklahoma:											
Oklahoma City	0	35	3	0	12	9	0	0	0	0	42
Tulsa	0			1		4	1		0	3	
Texas:											
Dallas	11	3	3		14	3	0	6	1	1	97
Fort Worth	3		2	162	9	8	0	1	0	0	46
Galveston	4		0	1	4	2	0	1	0	0	14
Houston	5		2	57	11	0	0	2	0	0	87
San Antonio	0		5	12	12	1	0	10	0	2	72
Montana:											
Billings	0		0	1	0	0	0	0	0	0	5
Great Falls	0		1	5	3	0	0	0	0	0	9
Helena	0		0	0	0	0	0	0	0	0	3
Missoula	0		0	1	0	1	0	0	0	0	8
Idaho:											
Boise	0		0	44	1	0	2	1	0	0	8
Colorado:											
Denver	1	53	3	4	18	10	0	5	0	2	78
Pueblo	0		0	0	4	2	0	1	0	2	7
New Mexico:											
Albuquerque	0	1	0	0	1	1	0	3	0	0	11
Arizona:											
Phoenix	0		1	1	5	2	0	2	0	2	
Utah:											
Salt Lake City	0		2	1	0	4	0	0	0	6	41
Nevada:											
Reno	0		0	0	0	2	0	0	0	0	5
Washington:											
Seattle	0			3		9	0		0	6	
Spokane	0			1		0	0		0	0	
Tacoma	0		0	0	2	6	0	0	0	0	26
Oregon:											
Portland	1	2	0	3	6	5	1	3	1	2	78
Salem	0	2		41		0	0		0	0	
California:											
Los Angeles											
Sacramento	1	1	3	0	6	3	0	4	1	5	32
San Francisco	2	27	3	1	13	2	0	7	0	46	185

City reports for week ended February 25, 1933—Continued

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Delaware:			
Boston	0	0	1	Wilmington	1	0	0
New York:				District of Columbia:			
New York	2	3	1	Washington	0	1	0
Pennsylvania:				South Carolina:			
Philadelphia	4	5	0	Charleston	1	0	0
Illinois:				Georgia:			
Chicago	17	5	0	Atlanta	2	0	0
Michigan:				Kentucky:			
Detroit	1	0	0	Louisville	1	0	0
Iowa:				Tennessee:			
Sioux City	2		0	Memphis	1	0	0
Missouri:				Louisiana:			
Kansas City	2	3	0	New Orleans	1	1	0
St. Joseph	1	0	0	Colorado:			
St. Louis	1	0	0	Denver	0	1	0
				California:			
				San Francisco	0	1	0

Lethargic encephalitis.—Cases: New York, 1; Chicago, 1; Birmingham, 2.
Pellagra.—Cases: Worcester, 1; Baltimore, 1; Charleston, S. C., 3; Atlanta, 1; Savannah, 1; Dallas, 1.
Rabies (in man): Fort Worth, 1 case and 1 death.
Typhus fever.—Cases: Tampa, 1.

FOREIGN AND INSULAR

INFLUENZA IN EUROPE AND THE BRITISH ISLES

The health section of the League of Nations published data which show decreases in the prevalence of influenza in Copenhagen, Denmark (latest report February 11, 1933), France, (January 31), Hungary (February 18), and Switzerland (February 11).

England and Wales.—For the week ended February 18, 1933, 630 deaths from influenza were registered in the great towns of England and Wales, as compared with 1,306 deaths for the preceding week. In these towns the general death rate for the week ended February 18, 1933, was 15.9 per 1,000. The peak in the general death rate was reached during the week ended February 4, when it was 26.8 per 1,000.

Irish Free State—Dublin.—For the four weeks ended February 18, 1933, deaths from influenza were registered in Dublin as follows: 20, 24, 44, and 20, respectively.

Netherlands—Amsterdam.—For the three weeks ended February 11, 1933, deaths from influenza and pneumonia were registered at Amsterdam as follows: 23, 39, and 57 deaths, respectively.

Germany.—Reports for the weeks ended February 11 and 18, 1933, showed decreases in the incidence of influenza among insured persons in most of the great towns of Germany. The general death rates in these towns for the first five weeks of the year 1933 were as follows: 11.6, 11.2, 11.6, 13.9, and 19.1, respectively.

CUBA

Habana—Communicable diseases—Four weeks ended February, 25, 1933.—During the four weeks ended February 25, 1933, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	9	1	Tuberculosis	13	2
Malaria [1]	6	2	Typhoid fever	12	3
Measles	1	1			

[1] Many of these cases are from parts of the island outside of Habana.

CZECHOSLOVAKIA

Communicable diseases—December, 1932.—During the month of December, 1932, certain communicable diseases were reported in Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	4		Puerperal fever	51	21
Cerebrospinal menigitis	4	2	Rabies	2	2
Diphtheria	4,910	262	Scarlet fever	2,647	32
Dysentery	26	3	Trachoma	133	
Malaria	3		Typhoid fever	741	59
Paratyphoid fever	9				

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 February 24, 1933, pp. 200-210. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued March 24, 1933, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

Philippine Islands.—For the week ended March 4, 1933, 2 cases of cholera were reported in the Province of Cebu, Philippine Islands, and 24 cases with 13 deaths in the Province of Leyte.

Smallpox

China.—For the week ended February 25, 1933, 41 cases of smallpox were reported at Canton and 63 cases at Hong Kong.

Yellow Fever

Gold Coast.—A fatal case of yellow fever was reported February 27, 1933, in the District of Sekondi, Gold Coast.