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CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES 1

March 26-April 22, 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."

Measles.—The number of cases of measles increased from approximately 62,000 for the preceding 4-week period to 72,000 for the 4 weeks ended April 22. An increase over the preceding period was reported from all sections of the country except the West North Central. The total reported incidence was about 17 percent in excess of the incidence for the corresponding period last year. For this period in the years 1931 and 1930 the number of cases was 80,804 and 68,364, respectively. A comparison of geographic areas shows an excess during the current period over the same period last year in all except the East North Central and Mountain areas, in each of which a decrease of more than 50 percent was noted in the number of cases.

Scarlet fever.—For the reporting States as a whole, the incidence of scarlet fever (26,299 cases) was the highest for this period in the 5 years for which data are available. One area, however, the East North Central, seemed mostly responsible for the increase over last year. The five States in that group reported 10,017 cases for the current period as compared with 6,070 for the corresponding period last year. In other areas, the incidence closely approximated that of last year and came close to the average for the preceding 5 years.

Typhoid fever.—The number of cases of typhoid fever reported for the current 4-week period was 609, as compared with 664, 513, and 663 for the years 1932, 1931, and 1930, respectively. The incidence was low in relation to last year in all regions except the West South Central and Mountain areas. While the numbers of cases were not high in those regions, they represented a slight increase over the corresponding period last year.

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.

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Poliomyelitis.—The incidence of poliomyelitis continued to be the lowest in the 5 years for which data are available. For the current 4-week period 54 cases were reported. The States in the East North Central area reported 17 cases, which was the highest number reported from any area. That number was the same as was reported from that group of States last year, while all other areas reported decreases from last year's figure.

Smallpox.—The reported incidence of smallpox (815 cases) was 53 percent of last year's figure for the same period. For this 4-week period in 1931 and 1930 the number of cases totaled 4,068 and 6,360, respectively. Appreciable decreases were reported from all except the South Atlantic and Mountain areas. In the South Atlantic States the number of cases (17) was the same as last year, while in the Mountain area 44 cases were reported for the current period as against 21 last year.

Meningococcus meningitis.—The recorded incidence of meningococcus meningitis (340 cases) was approximately the same as that for the corresponding period last year. It was, however, only about 50 percent of the number for the same period in 1931 and 25 percent of that in 1930. For the current period the New England, Middle Atlantic, South Atlantic, and East North Central areas reported decreases from last year. The West North Central and West South Central reported slight increases, and in the East North Central, Mountain, and Pacific regions the incidence was practically the same as that of last year.

Diphtheria.—The steady decline in the reported incidence of diphtheria continued. For the country as a whole, 2,523 cases were reported for the current 4-week period, or about 78 percent of last year's figure for the corresponding period. All regions were low in relation to last year except the South Atlantic and West South Central. In those regions the numbers of cases were not high, but they represented slight increases as compared with last year.

Influenza.—The incidence of influenza dropped about 50 percent from the preceding 4-week period, and the number of cases reported (5,317) was approximately 1,300 below the number reported for the corresponding period in 1930, a very normal year, and slightly below the incidence in 1929 when the 1928-29 epidemic had apparently died out. In 1932 and 1931, when minor epidemics were present, the number of cases for this period totaled 21,742 and 12,011, respectively. A comparison of geographic areas shows that the situation in all areas was similar to that described for the country as a whole.

Mortality, all causes.—The average mortality rate from all causes in large cities, as reported by the Bureau of the Census, for the current 4-week period was 11.3 per thousand population (annual basis), as compared with 12.5, 12.9, and 13.3 for the years 1932, 1931, and

1930, réspectively. The rate is, in fact, the lowest for this period in the years for which comparable data are available.

PROTECTIVE VALUE OF CONVALESCENT SERA OF SAO PAULO EXANTHEMATIC TYPHUS AGAINST VIRUS OF ROCKY MOUNTAIN SPOTTED FEVER 1

By R. R. PARKER, Special Expert, and GORDON E. DAVIS, Bacteriologist, United States Public Health Service

Protection tests recently made against Rocky Mountain spotted fever virus with sera of guinea pigs and rabbits recovering or recovered of exanthematic typhus of Sao Paulo showed a degree of protection sufficient to suggest a close relationship between these two viruses.

Upon request convalescent sera of the Sao Paulo disease were kindly sent to us by Dr. J. L. Monteiro of the Instituto Butantan, in October 1932. The sera used, six in number, were of blood samples, taken post febrile, at the times shown in the following table:

Serum No.	Taken days post- febrile	Animal source
30 851 806 818 849 816	17 15 2 2 1 1	Rabbit. Guinea pig. Do. Do. Do. Do. Do.

TECHNIQUE OF PROTECTION TESTS

The procedure followed in testing the Sao Paulo sera was the same as that usually employed when making tests to secure evidence concerning the specificity of sera of persons or animals suspected to have recovered from Rocky Mountain spotted fever.

For each convalescent serum a series of three serum-virus mixtures was prepared, each mixture containing 0.5 cc of the test serum and 0.1 cc, 0.25 cc, and 0.5 cc, respectively, of spotted fever serum-virus of a strain of known high virulence. After standing one half hour at room temperature, these mixtures were injected intraperitoneally into separate guinea pigs. Whenever sufficient convalescent serum was available, the series was duplicated in whole or in part.

Spotted fever serum-virus is used in such tests for the reason that whole blood virus of the highly fatal strains maintained at the Hamilton (Mont.) laboratory is frequently so virulent that it may

¹ Contribution from the Rocky Mountain Spotted Fever Laboratory of the United States Public Health Service, Hamilton, Mont.

even obscure the protective properties of known specific convalescent sera.

Two of the Sao Paulo sera were tested in complete duplicate series; of two others, the mixtures containing 0.1 cc and 0,25 cc of virus were duplicated, while of the remaining two, but one series of each was possible.

The spotted fever serum-virus was of lot no. 265, which was pooled guinea pig blood virus of a highly virulent strain isolated in 1932 from a fatal western Montana case (blood strain).

Spotted fever serum-virus control guinea pigs were injected intraperitoneally as follows: Four received 0.1 cc each; four, 0.25 cc; and four 0.5 cc.

In another control group duplicate series of three guinea pigs each were injected with mixtures identical with those above, that contained guinea pig convalescent spotted fever serum (taken on the seventh day after defervescence) and serum-virus no. 265. The purpose of these series was to test the protective value of a known specific serum against the virus used.

The above animals were observed over a period of 20 days. Male guinea pigs were used, with one exception.

In interpreting the results of the test, only temperatures above 39.6° C. were considered as indicating fever. Most of the surviving guinea pigs were killed and necropsy done on the twentieth day. The expression "typical" as hereafter used in reference to spotted fever, means that there was both fever and a characteristic gross scrotal involvement with or without sloughing.

RESULTS

The proceeds of the protection tests are shown graphically in chart 1.

Serum 30.—The 3 guinea pigs injected with the mixtures of Sao Paulo convalescent serum no. 30 and spotted fever serum-virus all remained afebrile and were normal grossly when killed and subjected to necropsy.

Serum 851.—The 3 guinea pigs that received the convalescent serum no. 851-serum-virus mixtures all remained afebrile except that the one receiving the mixture containing 0.5 cc of virus had fever of 40.0° C. on the tenth day. There was no evidence of spotted fever at any time and all were apparently well when killed and their tissues appeared normal.

Serum 349.—Of the 6 guinea pigs used in the complete duplicate tests of convalescent serum no. 849, both animals that received 0.1 cc of virus, and 1 of each pair that received 0.25 cc and 0.5 cc, respectively, remained without fever. One of those that received 0.25 cc of virus had fever of 38.8° C. on the sixth day and 40.0° C. on the seventh day, while 1 of the animals given 0.5 cc had fever of 39.8° C. on the fourth day and 40.0° C. on the sixth; neither showed scrotal swelling nor other evidence specifically suggestive of spotted fever. When killed and examined macroscopically all were well and their tissues were found normal.

Serum 818.—Two guinea pigs received duplicate mixtures containing 0.1 cc of serum-virus and 2 others mixtures that contained 0.5 cc; only 1 received 0.25 cc. Each of the 2-that received 0.1 cc each had 1 and 2 days of fever, respectively, one 40.0° C. on the seventeenth day and the other 39.8° C. on the third day and 40.0° C. on the ninth. The animal receiving 0.25 cc had 5 days' intermittent fever of 39.8° C. to 40.4° C. between the third and ninth days. One

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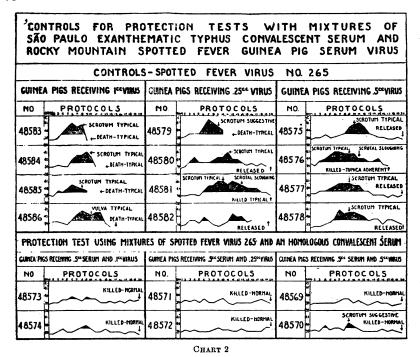
CHART 1

of the animals given 0.5 cc remained afebrile, the other showed 39.8° C. on the fifteenth day. None of these guinea pigs appeared ill; none at any time showed any external evidence suggestive of spotted fever and all seemed well when killed and the tissues appeared normal at necropsy.

Serum 816.—Two guinea pigs received mixtures containing 0.25 cc of virus and 1 each received mixtures having 0.1 cc and 0.5 cc of virus, respectively. The 1 guinea pig that received 0.1 cc of virus and 1 of the 2 that received 0.25 cc were afebrile except that each had 40.0° C. on the ninth day. The other animal

which received 0.25 cc of virus had fever ranging from 39.8° C. to 40.4° C. for a 4-day period from the ninth to the twelfth day, inclusive. The animal injected with 0.5 cc of virus had fever from 40.0° C. to 40.8° C. from the ninth to the fourteenth day, and on the latter day the scrotum became swollen and otherwise typical of spotted fever. None of these guinea pigs, except the last, had any lesions indicative of spotted fever, and all, including the last, were apparently well when sacrificed, and their tissues were normal grossly.

Serum 806.—All of the 6 animals used to test this serum had fever; 3 showed fever only and the other 3 showed, in addition, the typical scrotal lesions of spotted fever. Of the 2 guinea pigs injected with 0.1 cc of virus, 1 was afebrile except for 40.2° C. on the thirteenth day and 39.8° C. on the seventeenth; the other had 2 consecutive days of fever, the eleventh and twelfth, both 40.6° C., and showed typical lesions on the latter day. Of the guinea pigs that received 0.25 cc of virus,



1 had fever of 39.8° C. to 41.0° C. from the sixth to the tenth day, and the scrotum was suggestive; the second had fever ranging from 40.0° C. to 41.0° C. from the fifth to the eleventh day and showed a typical spotted fever scrotum on the tenth day. Of the animals injected with 0.5 cc of virus, 1 was febrile the eighth to the eleventh day, 40.0° C. to 41.0° C., and showed typical lesions on the ninth; the other had fever from the eighth to the thirteenth day, except for 39.6° C. on the tenth, but showed no other evidence of illness. When killed and necropsied, the internal organs of all 6 guinea pigs appeared normal macroscopically.

Serum-virus controls.—Of the 12 virus control guinea pigs, the 4 injected with 0.1 cc of serum virus all died of typical spotted fever on the tenth, thirteenth, thirteenth, and fifteenth days, respectively. Of the 4 that received 0.25 cc of virus, 1 died typically on the twelfth day, 2 ran typical spotted fever courses and recovered (1 of them showing serotal sloughing), while the fourth ran an atypical intermittent fever, suggestive of an intercurrent infection. The 4 animals given

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0.5 cc of virus all had typical spotted fever infections and recovered. Three showed scrotal sloughing, and one showed sloughing of the feet also. Two of 3 surviving animals receiving 0.25 cc and 1 of the 4 given 0.5 cc were killed and examined at necropsy on the twentieth day. Of the former 2, the one which had a febrile course suggestive of intercurrent infection showed a definite pneumonia only; in the other, the visceral and parietal laminae of the tunica vaginalis were completely and typically adherent. This was also true of the one animal which received 0.5 cc. One given 0.25 cc and 3 given 0.5 cc were each injected on the eighteenth day with 1.0 cc of guinea pig citrated whole blood virus no. 270 and all 3 were wholly immune.

The protocols of the spotted fever virus controls are presented graphically in chart 2.

Protection test using mixtures of serum-virus 265 and homologous convalescent sera.—Of the 6 guinea pigs used for this test of 7-day convalescent spotted fever guinea pig serum mixtures containing graded amounts of serum-virus no. 265, 3 remained afebrile—one that received 0.5 cc and both that received 0.25 cc of virus. One of the guinea pigs that received 0.1 cc showed 39.8° C. temperature on the sixth and ninth days, the other on the ninth day only. The second animal receiving 0.5 cc of virus had but two days of fever, 39.8° C. on the fourth and 40.2° C. on the ninth; but on the latter day the scrotum showed a suspicious swelling, presumably due to spotted fever, but not of sufficient degree to be definitely diagnostic. All 6 animals appeared normal in every way when sacrificed. The protocols of this test are shown in chart 2.

DISCUSSION

It is believed that the results of the above protection tests using convalescent Sao Paulo exanthematic typhus sera against Rocky Mountain spotted fever serum-virus suggest a close relationship between these viruses. Similar tests which we have made with sera of guinea pigs or rabbits recovered of tsutsugamushi and of South African tick bite fever have shown no degree of protective value. The latter sera were received through the courtesy of Dr. A. Pijper of Pretoria, South Africa, the former through that of Dr. N. Ogata of the Chiba University of Medicine, at Chiba, and Dr. R. Kawamura of the Niigata Medical College, Niigata, Japan.

Three of the Sao Paulo sera, nos. 30, 851, and 849, showed complete, or essentially complete protective value. The test of serum no. 818 was nearly as good, full protection being indicated in the duplicate tests against the 0.1 and 0.5 cc amounts of spotted fever virus; while the single guinea pig that received 0.25 cc of virus ran an intermittent fever that was possibly occasioned by a weakened spotted fever infection. In the test of serum no. 816, the guinea pigs that received mixtures containing 0.1 and 0.25 cc of spotted fever virus were essentially fully protected; the one that received 0.5 cc showed, at most, not more than slight protection. The fact that all these guinea pigs had their initial fever (two had but one day of fever) on the same day, suggests that even the 1-day fevers were reaction due to the spotted fever virus. In the test of serum no. 806, protection, though less

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marked, is nevertheless evident. Neither of the guinea pigs that received 0.1 cc of spotted fever virus died, as compared with the death of all four controls receiving 0.1 cc of spotted fever virus; also, this serum patently offered better protection against 0.1 cc of spotted fever virus than against the larger amounts. Moreover, none of the other four guinea pigs died, none showed scrotal or pedal sloughing, only two showed typical scrota, and the average febrile period, as compared with their controls, was definitely shorter.

The 3 Sao Paulo sera that afforded the best protection were taken 17 (rabbit), 15, and 2 days, respectively, after the termination of fever. The less effective sera were taken 2 days, 1 day, and 1 day, respectively.

The test of immune guinea pig spotted fever serum against spotted fever serum-virus no. 265 and the complete immunity of three of the recovered spotted fever serum-virus controls when injected with spotted fever virus no. 270, are sufficient evidence of the specificity of virus no. 265. The homologous serum afforded no better protection than that afforded by Sao Paulo sera nos. 30, 851, and 859.

The death of all four spotted fever virus control guinea pigs that received the smallest amount of serum-virus, viz, 0.1 cc, while only one of the eight animals receiving the larger amounts of virus died, is a phenomenon quite frequently encountered when using graded doses of spotted fever virus.

The protection test herein employed, all conditions considered, is an extremely useful test in the laboratory diagnosis of Rocky Mountain spotted fever. However, even when using known specific convalescent sera, the results are occasionally as indefinite as in the case of Sao Paulo serum no. 806. The results of the test of this individual serum would have been of less significance in an isolated test than as one of a group such as is herein concerned.

While these results suggest a close relationship of the two viruses that are being compared, they are not sufficient to establish identity. Similar protection tests in the other direction and reciprocal cross-immunity tests should give further information of value on the relationship. In this connection, Felix (1933) has called attention to the group agglutinins for proteus X strains produced in certain diseases of the typhus group and has suggested that cross-immunity tests between two viruses which contain a major antigenic component in common, but one of which contains a minor component lacking in the other, may fail to establish complete or even partial cross-immunity. It is, therefore, of interest that while sera from at least some human cases of exanthematic typhus of Sao Paulo contain minor agglutinins for OXK strains, these agglutinins, in a significant titer, have not been constantly encountered in sera of Rocky Mountain spotted fever. It may be, therefore, that although Sao Paulo immune

sera have protective properties against the virus of spotted fever, spotted fever sera, on the other hand, may not fully protect against the virus of the Sao Paulo disease. The results of such tests should be of considerable interest.

Along with the other data given in this paper, it is worth noting that Monteiro and his associates (1932) have suggested Amblyomma cajemnesse as a likely transmitting agent of Sao Paulo typhus. Experimentally, they have shown the survival of the virus in adult ticks of this species and its "hereditary" transmission from an infected female to its progeny. Piza (1932) also considers ticks as the probable vectors. In the course of our studies of various species of ticks as possible transmitting agents of spotted fever, we have shown that A. cajennesse that fed as larvae on spotted fever-infected guinea pigs were able to transmit infection in the resultant nymphal and adult stages.

SUMMARY

The sera of six laboratory animals recovered of Sao Paulo exanthematic typhus have been tested for protective value against the virus of Rocky Mountain spotted fever. Three of these sera afforded complete or essentially complete protection, the fourth a degree of protection nearly as good, while the other two showed definite but less marked protective properties. These results suggest a close relationship between the two viruses.

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Piza, J. de T.: (1932) Considerações epidemiologicas e clinicas sobre o typho exanthematico de S. Paulo. Trabahlo do Hospital de Isolamento, São Paulo, Brazil

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ROCKY MOUNTAIN SPOTTED FEVER AND BOUTONNEUSE FEVER

A Study of Their Immunological Relationship

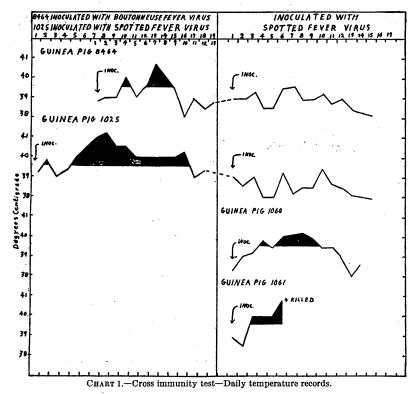
By L. F. Badger, Passed Assistant Surgeon, United States Public Health Service

Boutonneuse fever of the Mediterranean littoral, first described by Conor and Bruch, is an acute, noncontagious, febrile disease transmitted by the tick *Rhipicephalus sanguineus* and characterized

¹ Conor, A., and Bruch, A.: Bull. de la Soc. Path., 1910, 23: 492.

clinically by fever, headaches, muscular and joint pains, and an exanthem.

The similarity between boutonneuse fever and Rocky Mountain spotted fever has frequently been noted, and Brumpt ² has recently reported the results of his study on the immunological relationship between the viruses of these two diseases. Brumpt, in his study, compared a virus of Rocky Mountain spotted fever, western type, obtained from the United States Public Health Service, with a virus of boutonneuse fever isolated at Marseille. From his study he concluded that the two diseases are distinct entities.



Through the kindness of Professor Brumpt the author has had the opportunity to compare immunologically a strain of virus of boutonneuse fever and a strain of virus of Rocky Mountain spotted fever, eastern type, isolated from a human case which occurred in the State of Virginia.

Six Rhipicephalus sanguineus ticks were received from Professor Brumpt. These ticks were infected with the virus of boutonneuse fever and when received were incubated at 37° C. for 24 hours and then allowed to feed on a guinea pig. After feeding 9 days the ticks,

² Brumpt, E.; C. R. Soc. de Biol., 1932, 23: 1197.

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after being washed in bichloride of mercury and sterile saline solution, were emulsified in sterile salt solution and inoculated into two guinea pigs. In this manner a febrile condition was established and carried in guinea pigs for four generations. After four generations of guineapig passage the virus was lost. Culture media inoculated with the cardiac blood of these guinea pigs at the time of transfer were consistently negative.

The accompanying charts illustrate some of the cross-immunity tests in the guinea pig between the two viruses.

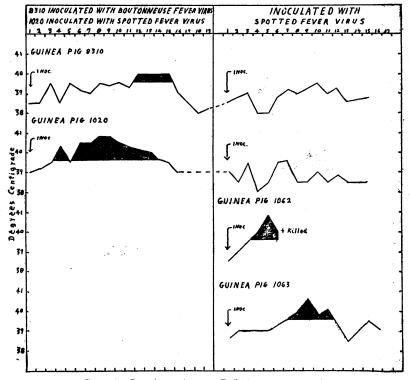


CHART 2.—Cross immunity test—Daily temperature records.

In tests 1 and 2 immune boutonneuse fever guinea pigs were tested for immunity to the virus of Rocky Mountain spotted fever.

Guinea pig 8464, chart 1, six days after recovery from a slight febrile reaction following an inoculation with the virus of boutonneuse fever, was inoculated with the virus of Rocky Mountain spotted fever. Following the second inoculation, guinea pig 8464 failed to react, while two fresh control guinea pigs (1060 and 1061) reacted. The test was further controlled by the failure of an immune spotted fever guinea pig (1025) to react to an inoculation with the same test material.

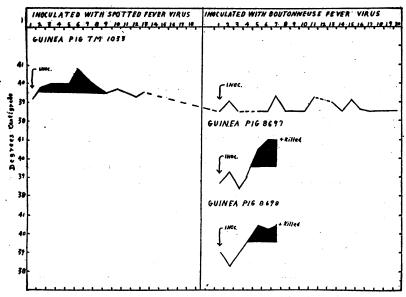


CHART 3.—Cross immunity test—Daily temperature records.

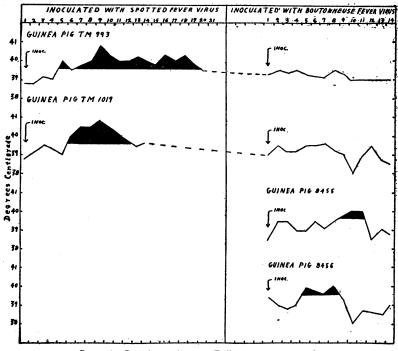


CHART 4.—Cross immunity test—Daily temperature records.

Guinea pig 8310, chart 2, reacted with a 4-day febrile period to an inoculation with the virus of boutonneuse fever. Six days after this reaction the guinea pig was inoculated with the virus of spotted fever along with two fresh guinea pigs (1062 and 1063) and an immune spotted fever guinea pig (1020). Guinea pig 8310 and the immune spotted fever guinea pig failed to react, while the two fresh guinea pigs reacted.

In tests 3 and 4, immune spotted fever guinea pigs were tested for immunity to the virus of boutonneuse fever.

Guinea pig TM 1033, chart 3, 17 days after a reaction due to the virus of Rocky Mountain spotted fever, was inoculated with the virus of boutonneuse fever. Two fresh guinea pigs (8697 and 8698) were inoculated as controls. The immune spotted fever guinea pig failed to react, while the fresh guinea pigs reacted.

Two guinea pigs (TM 993 and TM 1019) chart 4, after recovery from reactions produced by the virus of spotted fever, were inoculated with the virus of boutonneuse fever. These two immune spotted fever guinea pigs failed to react, while two fresh control guinea pigs (8455 and 8456) reacted.

These tests suggest that boutonneuse fever and Rocky Mountain spotted fever are immunologically identical. In comparing the tests of Brumpt and those here reported, it will be noted that in the former a temperature of approximately 38.5° C. was considered the upper limit of normal temperature for the guinea pig, while in the latter a temperature of 39.6° C. was considered the upper limit of normal temperature of the guinea pig.³

DEATHS DURING WEEK ENDED APRIL 22, 1933

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

	Week ended Apr. 22, 1933	Corresponding week,
Data from 85 large cities of the United States: Total deaths. Deaths per 1,000 population, annual basis. Deaths under 1 year of age. Deaths under 1 year of age per 1,000 estimated live births . Deaths per 1,000 population, annual basis, first 16 weeks of year. Data from industrial insurance companies: Policies in force. Number of death claims Death claims per 1,000 policies in force, annual rate Death claims per 1,000 policies, first 16 weeks of year, annual rate.	7, 894 11. 0 553 48 12. 1 68, 438, 649 13, 598 10. 4	8, 375 12, 0 634 53 12, 6 73, 603, 968 15, 009 10, 7

^{1 1933, 81} cities; 1932, 80 cities.

³ Weil, E., and Breinl, F. (Jour. Inf. Dis., 1923, 33: 64), in discussing the normal temperature of the guinea pig made the following statement: "As long as winter food is given, 39.1° C. can be considered as normal. When summer food is given, the normal temperature rises to 39.6° C."

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 April 29, 1933, and April 30, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 29, 1933, and April 30, 1932

	Diph	theria	Influ	ienza	Me	asles	Mening meni	Meningococcus meningitis	
Division and State	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932							
New England States:									
Maine	1	1	2	25	4	290	0	0	
New Hampshire	1	1			1	22	0	Ó	
Vermont					5	97	0	0	
Massachusetts	21	32	3	5	578	854	2	1	
Rhode Island	2	2			1	132	0	Ö	
Connecticut	7	5	5	5	273	158	0	0	
Middle Atlantic States:									
New York		114	1 15	1 25	3, 632	2, 045	3	4	
New Jersey	20	26	7	14	1,869	711	3	0	
Pennsylvania 2	44	70			1, 447	1,725	0	13	
East North Central States:	i i								
Ohio	39	60	111	117	577	3, 445	2	2 5 5	
Indiana	13	16	32	45	217	98	3	5	
Illinois	21	53	13	90	704	1, 275	19	5	
Michigan	18	18	3	10	1, 107	2,010	4	1 2	
Wisconsin	5	5	38	52	429	2, 320	1	2	
West North Central States:					i				
Minnesota	3	5			848	24	1	0	
Iowa	8	4			57	6	.4	2 2	
Missouri	32	17	28	22	228		3	2	
North Dakota		2			26	18	2	0	
South Dakota	1	2			12	3	0	0	
Nebraska	8	6			55	2	0	1	
Kansas	7	7		2	341	453	0	1	
South Atlantic States:	1			- 1			_		
Delaware		10			6	1	0	0	
Maryland 8 District of Columbia	3	15	11	26	15	48	0	2	
District of Columbia	3	7		1	11	19	0	0	
Virginia 4	11			::	279		3	1 2	
West Virginia	5	6		114	106	439	1	2	
North Carolina	25	20	22	312	821	608	3	Ö	
South Carolina	9	5	269	1, 259	266	176	0	0	
Georgia 4	6	4		95	144	58	2	3	
_ Florida	9	8	2	13	88	13	0	0	
East South Central States:	_ 1							_	
Kentucky	7	17		135	105	57	0	1	
Tennessee	6	. 8	61	358	63	56	2	. 4	
Alabama 4	3	10	49	161	135	18	0	2	
Mississippi	4	11				. l	0	0	

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 29, 1933, and April 30, 1932—Continued

	Diph	theria	Infl	lenza	Me	asles	Menin meni	ococcus ngitis
Division and State	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932						
West South Central States:	••							
ArkansasLouisiana	10	25	8	35 19	475 41	37	2	3 0
Oklahoma *	10	14	24	105	65	57	ľ	2
Texas 1	57	24	323	76	1,642	422	2	2
Mountain States:								
Montana ³ Idaho	1	1		17 2	17 18	88	0	0
Wyoming 2	2				17	24	ĭ	ŏ
Wyoming 2	1	4	29		10	151	0	i
New Mexico	4	23		2	24	33	0	0
Arizona Utah ³		3 2		4	77	1	0	0 0 1 0 3
Pacific States:		-			*	1		U
Washington	2	3		1	93	258	0	0
Oregon	5		35	37	85	361	0	. 1
California	47	84	36	74	1, 315	603	4	. 5
Total	542	750	1, 127	3, 258	18, 333	19, 219	68	69
	Polion	yelitis	Scarle	fever	8mal	lpox	Typhoi	d fever
Division and State	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932
New England States: Maine. New Hampshire. Vermont Massachusetts. Rhode Island. Connecticut.	0 0 0 0 0	0 0 0 1 0	18 27 6 365 24 134	35 13 4 520 58 130	0 0 0 0 0	0 0 0 0 0	0 0 0 2 1 1	1 2 0 1 1
Middle Atlantic States: New York	1	0	762	1, 692	0	9	14	14
New Jersey Pennsylvania 2	0	ĭ	223 820	361 1, 025	ŏ	ŏ	3 9	10 10
ast North Central States:	- 1	- 1	320	1,020	•	•	•	
Ohio	2	1	1, 194	527	5	41	7	13
IndianaIllinois	1 0	3	153 411	91 407	7 4	7 13	1 5	3 3 2 2
Michigan	ĭ	1	668	453	i	2	1	2
Wisconsin	2	ī	125	65	ī	1	î	2
Vest North Central States: Minnesota	0	o	96	126	o	1	1	9
Iowa.	ŏ	ő	29	62	16	62	ō	
Missouri	ŏ	ŏ	88	56	4	3	3	9 3 0
North Dakota	1	0	1	17	0	6	0	Ō
South Dakota Nebraska	0	1 0	5 32	15	0 2	13	1 0	ņ
Kansas	ŏ	ŏİ	47	85	î	2	ĭl	1 2
outh Atlantic States:		- 1		-	1	- 1	- 1	_
Delaware	0	0	15	18	0	9	0	1
Maryland 3 District of Columbia	0	0	94	120 35	0	8	4	4
Virginia 4	i l		52 L		8 -		4	
777	0	0	25	23	2	3	2	13
West Virginia	1	2	63	81	0 0 0	3	2 7 5	1
North Carolina			1	3	υį	0	5	7
North Carolina South Carolina	1	2		12	ο :	n ı	7 1	a
North Carolina South Carolina Georgia 4		1 0	6 7	13	8	0	7 5	9 3
North Carolina	1 0 0	0	6 7	4	0	1	5	9
North Carolina	1 0 0 1	1 0 1	6 7 55	108	1	1	5 12	11
North Carolina South Carolina Georgia Florida ast South Central States:	1 0 0	0	6 7	4	0	1	5	

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 29, 1933, and April 30, 1932—Continued

	Polion	nyelitis	Scarle	t fever	Sma	llpox	Typhoid fever	
Division and State	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932	Week ended Apr. 29, 1933	Week ended Apr. 30, 1932
West South Central States:								
Arkansas	0	Q	3	3	4	12	1	1
Louisiana	1	1	7	10	0	5	15	17
Oklahoma 5	Q.	0	9	18	8	6	8	2
Texas 4	1	2	41	22	67	45	9	7
Mountain States:	_	_			_		_	_
Montana 1	0	0	14	15	0	12	2	3
Idaho	Ō	Ó	1	1	3	0	0	0
Wyoming 3	0	0	18	5	0	1	. 0	3
Colorado	0	0	24	30	1	0	0	0
New Mexico	0	Q	11	6	0	0	3	1
Arizona	0	0	12	2	0	0	0	1
Utah i	0	0	2	3	0	0	0	0
Pacific States:							i	
Washington	0	0	36	. 31	25	20	1	3
Oregon	1	0	19	4	6	15	2	2
California	0	2	128	151	32	5	3	4
Total	16	24	5, 945	6, 456	202	328	150	173

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	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Malaria	Measles	Pel- lagra	Polio- myelitis	Scarlet fever	Small- pox	Ty- phoid fever
March 1933 Arkansas	8 20 13 3 1 5 9	26 269 4 25 5 1 37 47 5 296 58 22 17	197 416 6 12 88 38 19 367 191 726 1, 272 210 366	34 1 	527 1, 274 142 1, 283 205 2 42 240 403 1, 882 226 1, 676	55 4 	0 10 0 1 1 2 0 3 1 4	42 1, 027 30 273 50 17 55 103 77 185 204 218 585	48 216 59 2 3 1 0 21 17 4 30 47	6 35 11 7 11 7 13 5 35 25

¹ Exclusive of Oklahoma City and Tulsa.

New York City only.
 Rocky Mountain spotted fever, week ended Apr. 29, 1933, 8 cases: 1 case in Pennsylvania, 6 cases in Montana, and 1 case in Wyoming.
 Week ended Friday.
 Typhus fever, week ended Apr. 29, 1933, 14 cases: 1 case in Virginia, 5 cases in Georgia, 2 cases in Alabama, and 6 cases in Texas.
 Figures for 1933 are exclusive of Oklahoma City and Tulsa and for 1932 are exclusive of Tulsa only.

March 1933		Lethargic encephalitis-		Septic sore throat—Contd.	
	0	Continued	ases	bepeic sore unions -Conta.	Cases
Actinomycosis:	Cases	New Mexico	1	Oregon	V 8000
California	. 4	Virginia	2	Oregon Virginia	7
Kansas	. 1	Wisconsin	ĩ	Washington	` '
Botulism:		I	•	Tetanus:	
California	. 1	Mumps:		California	ĸ
Chicken pox:	156	Arkansas	74	Kansas	ĭ
Arkansas		California 1	, 419	Virginia	ī
California		Idaho	55	Trachoma:	•
Idaho	52 587	Kansas	950	Arkansas	K
Kansas		Montana.	32	California.	22
Montana	21	New Mexico	81	Montana	-3
Nevada New: Mexico	57	Oklahoma 1	63	New Mexico	11
Oklahoma 1	37	Gregon	11	Oklahoma 1	~6
	89 132	Washington	250	Virginia	2
Oregon		Wisconsin	556	Trichinosis:	-
Virginia	736	Ophthalmia neonatorum:		California	4
Washington Wisconsin	2.042	Arkansas	3	Tularaemia:	-
Conjunctivitis:	2, 042	California	1		
New Mexico	2	Virginia Paratyphoid fever:		Arkansas	1
Diarrhea and dysentery:	2	California	4	Kansas	3
Virginia	112	Idobo	3	Virginia Wisconsin	î
Dysentery:	112	Idaho	2	Typhus fever:	
California (amebic)	7	Texas	1		1
California (bacillary)	ıó	Virginia	•	Virginia	
Oklahoma 1	5	Psittacosis:		Undulant fever	_
Food poisoning:	9	California	1	California	8
California	118	Puerperal septicemia:		Kansas	3
German measles:	113	New Mexico	1	Montana	2
Arkansas	48	Washington	2	Virginia	2
California	92	Rabies in animals:	1	Wisconsin	1
Kansas	12	California	53	Vincent's angina:	
Montana	3	Washington	6	Kansas	5
New Mexico	3	Rabies in man:		Oklahoma 1	6
Washington	16	Oklahoma 1	1	Oregon	7
Wisconsin	15	Rocky Mountain spotted	- 1	Whooping cough:	
Granuloma, coccidioidal:		fever:	i	Arkansas	62
California	6	California	1		2. 234
Impetigo contagiosa:	۰	Idaho	2	Idaho	17
Montana	17	Scabies:	1	Kansas	202
Oregon	38	Kansas	3	Montana	38
Washington	ĩ	Oregon	46	Nevada	ĩ
Leprosy:	•	Septic sore throat:		New Mexico	23
Washington	2	California	16	Oklahoma 1	64
Lethargic encephalitis:	- 1	Kansas	5	Oregon.	63
California	3	Montana	š	Virginia	166
Kansas	š	New Mexico	ĭ	Washington	32
Montana	3	Oklahoma 1	14	Wisconsin	733
	•				

PLAGUE IN THE UNITED STATES AND POSSESSIONS DURING 1932

During the year 1932 cases of plague in human beings and plague infection in rodents were reported in the United States and its possessions as follows:

Cases of human plague

In continental United States no case of plague occurred during 1932. In Hawaii Territory, two fatal cases occurred in February 1932 in Hamakua District, island of Hawaii. In Makawao District, island of Maui, 3 fatal cases occurred during the year, 1 case each in March, July, and September. Another case of plague, which recovered, was reported in Makawao District, Maui, in August.

Plague-infected rodents

California:	Number	Hawaii Territory, rats:	Number
Los Angeles, rats—		Hawaii Island, Hamakua District-	
April, 1932	1	February 1932	1
May 1932	2	May 1932	2
June 1932	1	November 1932	2
San Benito County, ground squirrels-	-	December 1932	11
August 1932	2	Maui Island, Makawao District-	
		February 1932	4
	·	August 1932	
	1	September 1932	

WEEKLY REPORTS FROM CITIES

City reports for week ended April 22, 1935

	Diph-		uenza	Mea-	Pnen-	Scar-	Small-	Tuber-	Ty- phoid	Whoop-	Deaths,
State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	cases	culosis deaths	fever cases	cough cases	all causes
Maine: Portland	0		0	_		3	0	0		9	
New Hampshire:	U			0	3			ا ا	1		20
Concord	0		0	0	1 2	0 5	0	1 0	0	0	8 11
Manchester Nashua	ŏ		ŏ	2	ő	ő	ŏ	ŏ	ŏ	ŏ	
Vermont:	0	1	0	0	اه	0	0	1	0	10	2
Burlington	ŏ		ŏ	ŏ	ŏ	2	ŏ	ô	ŏ	ő	11
Massachusetts: Boston	2	2	2	236	22	78	0	16	3	25	232
Fall River	0		0	1	1	6	0	2	Ō	10	34 34
Springfield Worcester	0	1	1 0	2 11	0 3	9 25	0	2 0	0	18 0	34 52
Rhode Island:	0		0	0	0	1	0	0	0	0	
Pawtucket Providence	ì		ŏ	1	4	13	ŏ	3	ŏ	8	17 80
Connecticut:	0		0	36	8	11	0	3	0	1	31
Bridgeport Hartford	Ò		Ŏ	4	2	25	Ō	2	ŏ	Ō	42
New Haven	0		0	5	2	7	0	1	0	5	40
New York:	_ :		_								
Buffalo New York	5 55	11	1 7	83 1, 998	18 166	36 250	0	90	8	24 108	146 1, 475
Rochester	0		0	1	6	19	0	3	0	4	76
Syracuse New Jersey:	0		0	0	4	19	0	1	1	4	50
Camden	0		0	3 410	4	15 31	0	1	0	0	36
Newark Trenton	1 0	4	0	37	8	9	0	8 2	0	15 0	103 36
Pennsylvania:	2	4	3	365	37	127	o	27	1	17	517
Philadelphia Pittsburgh	2	3	2	1	18	56	Ó	8	0	25	141
Reading	1 0		0	45	3	9 12	0	0	8	10	26
	٠			١		. **	١		١	• •	
Ohio: Cincinnati	1		1	6	6	18	o	9	0	1	114
Cleveland	14	45	1	2 17	6 8	171 14	8	10	1 0	33	165
Columbus Toledo	2	1 1	1	328	6 5	107	ŏ	3	ŏ	2 2	68 54
Indiana:	5	i	1	1	o	7	0	1	0	0	22
Fort Wayne Indianapolis	1		0	127	7	28	1	21	0	6 .	
South Bend Terre Haute	0		0	6 7	2	6 15	0	1 1	0	1 4	14 20
Illinois:	1		1	1	- 1	1	!	i i			
Chicago	5 2		3 0	567	36	313	4	33	0	12	589 19
Springfield Michigan:	_ 1		- 1	_ [- 1	1		1	- 1		
Detroit	13	6	2	514 73	16	135	0	19	0	106	299 25
Grand Repids	0		Ō	3	3	8	Ō	ī	Ō	39	\$1
Wisconsin: Kenosha	o		0	0	0	8	1	o i	0	14	. 8
Madison	0		····	139	5	32	8	2	8	2 31	108
Milwaukee Racine	0		0 !	0	1	2	0	0	0	10	15
Superior	0		0	0	1	0	0	1	0	5	11
Minnesota:		- 1		ا۔	.						
Duluth Minneapolis	0 2		0	90	1 2	28	0	0 2	0	56 50	25 107
St. Paul	ō	2	ž	708	4	22	ŏ	ī	ŏ	93	78
Iowa: Des Moines	7			0 .		9	0 -		0	o	27
Sioux City	2			3 .		5	0		Ō	4 .	
Waterloo Missouri:	1	-		0 -		1	2 -		0	1 -	
Kansas City	2 .		0	110	8	48	0	6	0	0	73
St. Joseph	11.	1	0	35	5	0	0	16	0	1 2	29

City reports for week ended April 22, 1933—Continued

.	Diph-	Infl	uenza	Mea-	Pneu-	Scar- let	Small-	Tuber-	Ty- phoid	Whooping	Deaths,
State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	pox cases	culosis deaths	fever cases	cases	CBUSOS
North Dakota: Fargo	0		1	3	0	1	0	1	0	0	5
Grand Forks South Dakota:	Ó		0	0	0	1	0	0	0	0	
Aberdeen Nebraska:	0		ļ	0		0	0		0	0	
Omaha Kansas:	3		0	31	3	8	1	1	0	3	44
Topeka Wichita	0	-	0	104 1	1 5	2 0	0	0	0	5 0	10 32
Delaware: Wilmington	1		o	4	٥	3	0	- 1	. 0	2	29
Maryland: Baltimore	4	1	2	5	29	58	0	19	1	10	247
Cumberland	0		0	0	0	0	0	0 ;	0	0	12
Frederick District of Col:	0		0	0	0	1	0	0	0		3
Washington Virginia:	2	1	1	8	10	15	0	14	0	3	171
Lynchburg Norfolk	0		0	2 10	3 1	0 2	0	0 1	0	3 0	14 23
Richmond Roanoke	1 0		0	1 61	3	4	0	1	0	0	45 15
West Virginia: Charleston	1		o	2	0	1	0	0	0	2	7
Huntington Wheeling	Õ			3 7	i	4	1		Ŏ	0 17	23
North Carolina: Raleigh	0		o	1	1	1	o	1	0	0	15-
Wilmington	ŏ	2	0	124	0 2	0	ŏ	0	0	2 3	4 20
Winston-Salem South Carolina:		_	0	2	- 1	6		1	0	- 1	
Charleston Columbia	1 0	9	0	0	0	1	0	3	0	0	19 21
Greenville Georgia:	0		0	6	1	0	0	0	0	0	9
Atlanta Brunswick	2 0	15	1 0	44	7	3 0	0	5	0	23	80 2
Savannah Florida:	1	38	0	0	0	0	0	2	1	1	25
Miami Tampa	1 1		8	0	0 2	0	0	0	0	9 5	27 27
Kentucky:	٥	ļ	ا								•
Ashland Lexington	Ó	i	Ŏ l	15	0 2	0 2	0	0	0	3 2	14
Louisville Tennessee:	3	1	2	3	4	21	0	2	0	6	45
Memphis Nashville	0		2	21 4	6	0	0	6 3	0	13	82 31
Alabama: Birmingham	3	1	1	4	3	3	0	3	2	0	63
Mobile Montgomery	0		0	15	3	0	0	0	8	5	25
Arkansas: Fort Smith	0	-	1	0		٥	0	0	0	1	
Little Rock	ŏ		0	102	i	ĭ	4	ŏ	ŏ	õ	1
Louisiana: New Orleans	8	1	o l	14	12	9	1	12	1 15	2	130
Shreveport Oklahoma:			0	0	1	2	0	3	1	0	37
Tulsa Texas:	0			43		3	4		0	9 -	
Dallas Fort Worth	. 4		0 -	29	5	13	0	4 2	0	11 0	69 30 7
Galveston Houston	0 17		0	0	8	0	0	0 2	0	0	7 59
San Antonio	2		ĭ	10	ŏ	ŏ	ô	9	ĭ	2	54
Montana: Billings	o		0	٥	0	0	0	o	اه	0	8
Great Falls	o l		0	1	0	1 0	0	0	0	1	7
Helena Missoula	ől:		0	1	0	8	81	8	81	0	3 1

^{1 13} cases nonresidents.

City reports for week ended April 22, 1933-Continued

	Diph	- 1	fluenza	Mea-	Pneu- monia	Scar- let	Small-	Tuber		Whooping	Deaths,
State and city	theri cases		Deaths	20000	deaths	fever cases	cases	culosis deaths	********	cough	all causes
Colorado: Denver Pueblo	4		2	4 0	6	8	0	5	0	5 4	64
New Mexico: Albuquerque	,		0	1	.0	1	0	4	1	2	7
Utah: Salt Lake City.	6		. 0	6	1	1	0	1		19	25
Nevada: Reno	G	1	. 0	0	0	0	0	0	0	0	3
Washington: Seattle Spokane	10			11 0		14 .0	1 2		0	4 0	
Tacoma Oregon:	0		- 0	0	3	5	2	0	0	0	19
Portland Salem California:	0	2	1	30	2	8	0	0	0	0	67
Los Angeles Sacramento San Francisco	19 0 0		. 0	585 1 2	13 1 6	41 0 9	45 0 0	18 5 10	2 3 0	67 84 80	245 23 166
State and city		Mening meni	ococcus	Polio- mye- litis		State a	nd city		Mening meni	ococcus ngitis	Polio- mye
•		Cases	Deaths	cases					Cases	Deaths	litis cases
New York:					Misso	ouri:	7/4				
Buffalo New York		0 5	1 2	0	8	t. Josep	City h		0 2	0	0
New Jersey: Newark		0	0	1	Nebr	aska:		- 1	1	1	. 0
Pennsylvania: Philadelphia		0	o	2					5	1	0
Pittsburgh		0	0	1	Mary B	altimor	е		1	0	0
Ohio: - Cincinnati		1	1	' 0	Distr	ct of C	and olumbia	1: I	1	1	0
Indiana: Indianapolis		1	o	0	W	ashing	ton		2	0	0
Illinois: Chicago	- 1	19	5	0	Louis N	iana: ew Orl	eans		1	1	0
Michigan: Detroit		1	0	0	Wash	ington:			1		0
Iowa: Sioux City Waterloo		2	0	0	Califo	rnia: os Ange	eles		1 0	2 0	0

Lethargic encephalitis.—Cases: New York, 1; Philadelphia, 1; Pittsburgh, 1.

Peltagra.—Cases: Baltimore, 1; Washington, 1; Charleston, S.C., 4; Savannah, 2; Los Angeles, 2.

Typhus fever.—Cases: Charleston, S.C., 1; Atlanta, 1; Savannah, 2.

FOREIGN AND INSULAR

CANADA

Quebec Province—Vital statistics—1932.—During the year 1932, births and deaths were reported in the Province of Quebec, Canada, as follows:

Number of births	81, 750
Birth rate per 1,000 population	27. 9
Number of deaths	
Death rate per 1,000 population	11. 3
Infant mortality per 1,000 births	

CUBA

Habana—Communicable diseases—Four weeks ended April 22, 1933.—During the four weeks ended April 22, 1933, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths Disease		Cases	Deaths
Diphtheria Malaria Rabies	14 3 1		Scarlet fever	8 5 6	2 1 3

CZECHOSLOVAKIA

Communicable diseases—February 1933.—During the month of February 1933 certain communicable diseases were reported in Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis Chicken pox Diphtheria Dysentery Influenza Lethargic encephalitis Malaria Paratyphoid fever	14 229 2, 768 6 11, 553 2 1 6	6 1 150 1 130 1	Poliomyelitis Puerperal fever Rabies Scarlet fever Trachoma Typhoid fever Typhus fever	7 40 1 1,664 123 368 13	1 16 22 40

ITALY

Communicable diseases—Four weeks ended November 13, 1932.— During the four weeks ended November 13, 1932, cases of certain communicable diseases were reported in Italy as follows:

	Oct. 17-23		Oct. 24-30		Oct. 31-Nov. 6		Nov. 7-13	
Diseaso	Cases	Com- munes affected	Cases	Com- munes affected	Cases	Com- munes affected	Cases	Com- munes affected
Anthrax Cerebrospinal meningitis Chicken pox Diphtheria and croup Dysentery Lethargic encephalitis Measles Poliomyelitis Scarlet fever Typhoid fever	41 5 52 700 68 1 572 27 526 1,669	32 5 34 345 27 1 134 25 210 693	34 11 62 835 24 2 578 24 665 1,530	31 11 35 376 14 2 143 21 220 631	38 7 62 697 22 1 659 17 495 1, 219	32 6 35 359 13 1 148 16 197 588	30 7 94 748 23 1 761 26 499 1, 137	27 6 44 355 14 1 135 26 178 518

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 Apr. 28, 1933, pp. 459-470. A similar cumulative table will appear in the Public Health Reports to be issued May 26, 1933, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

Philippine Islands.—During the week ended April 29, 1933, 38 cases of cholera with 35 deaths were reported in Ormoc, Leyte Province, Philippine Islands.

During the month of March 1933, 186 cases of cholera with 144 deaths were reported in the Province of Samar, Philippine Islands.