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ROCKY MOUNTAIN SPOTTED FEVER (EASTERN TYPE)

VIRUS RECOVERED FROM THE DOG TICK Dermacentor variabilis FOUND IN NATURE

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

The American dog tick *Dermacentor variabilis* has a wide distribution in the eastern part of the United States and is the common tick in the localities in Maryland and Virginia where the eastern type of Rocky Mountain spotted fever has occurred (1). Maver (2) reported experimental transmission of the western type of Rocky Mountain spotted fever by the *Dermacentor variabilis*, and Dyer (3) reported the experimental transmission of the eastern type of the disease by the same tick.

During the tick seasons of 1930, 1931, and 1932 attempts were made to recover the virus of spotted fever from the D. variabilis found in Several thousand ticks were collected in the States of Marynature. land and Virginia. In 1930 an occasional guinea pig, upon which ticks had fed or into which ticks had been inoculated, failed to react to subsequent inoculations with the virus of spotted fever. Such evidence alone was regarded as too meager to warrant any conclu-In 1931, in addition to such occasional apparent immunity sions. produced in guinea pigs by feeding or inoculating ticks, the vascular and nodal lesions, characteristic of spotted fever, were found in the brain of a guinea pig in the fourth generation from the animal inoculated with ticks. This strain of virus was contaminated and discontinued before other criteria for the identification of a strain of spotted fever virus could be fulfilled.

In 1932, efforts to obtain and prove a strain of spotted fever virus from ticks infected in nature met with success. This strain of virus obtained from ticks was proved to be one of spotted fever by the following facts: It produced in laboratory animals symptoms identical with those produced by a known virus of spotted fever (eastern type); it produced the same brain lesions as those produced by the spotted fever virus; it produced in the serum of the rabbit and the monkey agglutinins for *B. proteus* X_{19} ; a complete cross immunity with the virus of Rocky Mountain spotted fever was demonstrated.

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2366

PROCEDURE

Approximately 200 ticks (*D. variabilis*) were collected from a farm in Virginia on which a human case of the disease had occurred. The ticks, which were not numerous on this farm, were collected a few at a time during the period July 12 to September 2, 1932. The unfed and partly engorged ticks were fed, in lots of 3 to 15, on guinea pigs. When the female ticks had become engorged, the ticks were removed, washed with alcohol and ether, emulsified in normal salt solution, and inoculated intraperitoneally into fresh guinea pigs. Those female ticks which were engorged, at the time of collection, were emulsified in normal salt solution after being washed with alcohol and ether, and inoculated intraperitoneally into fresh guinea pigs. In some of the tests the ticks were incubated at 37° C. for 24 or 48 hours before being allowed to feed, or before being inoculated.

Seven male and two unengorged female ticks, collected August 8, were incubated for 24 hours at 37° C. and allowed to feed on guinea pig 8014. On the eighth day after the application of the ticks the morning temperature of the guinea pig was 40° C. The ticks were removed. Each of the male ticks was feeding while one of the females had fed to engorgement and become detached. The other female had died, apparently without feeding.

THE VIRUS OBTAINED BY FEEDING OF THE TICKS

On the first day of fever, guinea pig 8014 was killed and bled from the heart. The cardiac blood was cultured and inoculated into two fresh male guinea pigs. Each animal received intraperitoneally 4 cc of the whole cardiac blood. The culture media inoculated with the blood revealed no growth for seven days, and each guinea pig reacted to the inoculation with fever. From these guinea pigs a strain of the virus of Rocky Mountain spotted fever was established.

THE VIRUS OBTAINED BY INOCULATING THE TICKS

The female tick which had fed to engorgement on guinea pig 8014, after having been incubated at 37° C. for 24 hours, was washed with ether, then alcohol, and again with ether. It was then emulsified in sterile salt solution and inoculated, intraperitoneally, into two fresh guinea pigs. Culture media inoculated with this emulsion remained sterile. The guinea pigs inoculated with this tick emulsion became febrile after a period of incubation of three days in one, and four days in the other. From these guinea pigs a strain of Rocky Mountain spotted fever virus was established. This strain of virus has now been carried in guinea pigs for 19 generations.

IDENTIFICATION AS A STRAIN OF ROCKY MOUNTAIN SPOTTED FEVER VIRUS

Clinical manifestations and gross pathology.—The reactions produced by this tick virus in the guinea pig, rabbit, and monkey are identical with those produced by the eastern type of spotted fever virus (1).

Microscopic pathology.—The brains of seven guinea pigs which had reacted to the tick strain of virus were examined microscopically. Vascular and nodal lesions like those seen in Rocky Mountain spotted fever and typhus were found in five of the seven brains examined.

Weil-Felix reaction.—This tick virus produced in the sera of rabbits and monkeys agglutinins to *B. proteus* X_{19} . Complete agglutination in the titer of 1:160 was observed.

Cross immunity tests.—There is a complete cross immunity between the virus obtained from the tick and the western and eastern spotted fever viruses. There is no cross immunity between this tick virus and the viruses of endemic and epidemic typhus.

Cultures inoculated with the cardiac blood of animals from which transfers were made were consistently negative.

Results of a few of the cross immunity tests are shown in the accompanying tables.

Table 1.—Guinea pigs immune to Rocky Mountain spotted fever (eastern type) inoculated, along with four fresh guinea pigs as controls, with the tick virus: The immune spotted fever guinea pigs failed to react (immune), while each of the fresh animals reacted.

Table 2.—Guinea pigs immune to the tick virus inoculated, along with four fresh guinea pigs as controls, with the virus of Rocky Mountain spotted fever (western virulent): The immune tick virus guinea pigs failed to react (immune), while each of the four fresh animals reacted.

Table 3.—Guinea pigs immune to a virus of endemic typhus inoculated, along with four fresh guinea pigs as controls, with the tick virus: The immune typhus guinea pigs reacted (non-immune), as did the fresh animals.

Table 4.—Guinea pigs immune to the tick virus inoculated, along with two fresh guinea pigs as controls, with the virus of epidemic (European) typhus: The immune tick virus guinea pigs reacted (non-immune), as did the fresh animals.

December 30, 1982

2368

TABLE 1.—Cross immunity tests between the virus recovered from ticks and the virus of Rocky Mountain spotted fever (eastern type). Daily temperature records

	Guinea pigs inoculated with the tick virus								
Day after inoculation		Fresh g	Immune Rocky Moun- tain spotted fever guinea pigs (eastern type)						
	8457	8458	8459	8460	T. M. 904	T. M. 907			
0	40. 7 39. 0 (²)	39.3 39.1 39.5 39.0 39.3 39.5 39.0 39.4 40.5 (1)	39.3 39.0 40.0 39.8 39.5 39.8 40.4 39.6 39.5 40.0 40.2 40.5 41.0 40.8 (³)	39.0 39.5 39.5 39.5 39.5 39.5 39.1 39.2 40.0 39.0 39.0 39.5 40.5 40.5 40.5 40.5	38. 8 38. 6 39. 0 39. 0 39. 0 39. 0 39. 2 38. 6 38. 8 38. 0 38. 2 38. 0 38. 2 39. 2 39. 2 39. 2 39. 2 39. 0	39, 2 38, 5 38, 8 39, 2 39, 0 39, 0 39, 0 39, 0 39, 0 38, 4 38, 4 38, 0 38, 5 38, 0 38, 0,			

Killed for transfer.
 Dead.
 Killed for pathological examination.

TABLE 2.—Cross immunity tests between the virus recovered from ticks and the virus of Rocky Mountain spotted fever (western type). Daily temperature records

	Guinea 1	pigs inocul	ated with vi	Rocky Mo rus	untain spot	ted fever
Day after inoculation		Fresh gu	Immune tick virus guinea pigs			
	316	317	318	. 319	9003	9105
0 1	39. 3 38. 5 38. 2 39. 5 1 40. 5 (²)	38. 9 39. 0 38. 0 40. 0 40. 0 1 41. 0	38.5 38.8 38.3 40.0 40.2 140.7	39. 0 39. 3 38. 5 41. 0 59. 5 1 41. 0	39. 0 39. 0 39. 0 39. 0 39. 0 38. 2 39. 3	39. 0 38. 5 39. 0 39. 0 38. 0 38. 0 38. 5
7		40. 8 40. 8 40. 6 39. 8 38. 0 (³)	(3)	41. 0 41. 2 40. 0 39. 3 (³)	39.0 39.0 39.5 39.5 39.3 39.3 39.3 39.4 39.0	39. 0 39. 0 38. 8 38. 8 39. 0 39. 0 39. 0 38. 5 38. 5

¹ Scrotal involvement.

² Killed for transfer.

² Dead.

TABLE 3Cross	immunity tests bet	ween the virus	recovered from	ticks and the virus
_ 1	of endemic typhus	s. Daily temp	perature records	

	Guinea pigs inoculated with the tick virus								
Day after inoculation		Fresh gu	Immune endemic typhus guines pig						
	9355	9356	9357	9358	W 3016	S 9109			
0	38. 6 39. 5 39. 3 40. 2 40. 0 41. 2 40. 8 40. 5 40. 8	38. 5 38. 8 39. 0 39. 5 40. 0 40. 0 (1)	39. 2 39. 7 39. 0 40. 5 39. 8 40. 5 40. 0 40. 0 39. 5	38. 5 39. 0 40. 5 40. 0 40. 2 40. 5 49. 8 39. 5 (³)	38.8 39.5 39.5 39.5 39.2 39.5 39.5 40.3 40.0 40.4	39. 4 39. 5 39. 0 39. 5 39. 3 40. 0 40. 2 39. 5 40. 0 40. 2 40. 0 40. 4			
10 11 12	40. 0 39. 3 (³)		39.0 39.0 (³)		40.6 40.0 39.8	39.5 39.0 38.5			
13 14					35.6 39.0	38. 5 39. 0			

1 Killed for transfer.

* Died.

³ Killed for pathological examination of brain.

 TABLE 4.—Cross immunity tests between the virus recovered from ticks and the virus of European (epidemic) typhus. Daily temperature records

	Guinea pigs inoculated with the epidemic typhus virus						
Day after inoculation	Fresh gu	inea pigs	Immune tick virus guinea pigs				
	B 2147	B 2148	9421	9422			
) 	38. 5 39. 3	39. 0 39. 0	38. 5 39. 2 39. 2	38. 5 39. 5 39. 0			
	39. 0 39. 3	38.5 38.7	39. 2 38. 5 39. 5 38. 8	39. 0 38. 2 39. 8 38. 8			
	40.0 40.1 40.0	40. 0 39. 5 40. 0	39. 0 40. 5 40. 5	38. 8 40. 0 40. 2			
0 1	40. 2 40. 2 40. 5 40. 0	(')	40. 0 40. 0 40. 4 40. 0	39. 8 39. 8 39. 4 39. 0			
3 4	39.8 39.5		39. 3 39. 0	39. 0 39. 0 38. 0			

¹ Killed for transfer.

SUMMARY

A dog tick (Dermacentor variabilis) obtained from a farm on which a human case of spotted fever had occurred was proved to be infected in nature with the virus of Rocky Mountain spotted fever, eastern type.

REFERENCES

- (1) Rumreich, A., Dyer, R. E., and Badger, L. F.: Pub. Health Rep., 46, 470 (1931).
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ENDEMIC TYPHUS FEVER VIRUS RECOVERED FROM WILD RAT TRAPPED AT TYPHUS FOCUS IN THE UNITED STATES

By R. E. DYER, Surgeon, W. G. WORKMAN, Assistant Surgeon, and A. RUMREICH, Passed Assistant Surgeon, United States Public Health Service

Recovery of the virus of endemic typhus from rat fleas caught at typhus foci has been reported from the United States (1) (2) (3), Manchuria (4), and Greece (5). Endemic typhus virus has been recovered from the brains of wild rats trapped in Mexico (6), Greece (7), Manchuria (4), Syria (8), and the United States (9).

At the time of the report of the recovery of endemic virus from the brains of a wild rat in the United States, complete data were not recorded. Such data are the subject of this report.

In April, 1932, rats were trapped on premises in Savannah, Ga., where cases of endemic typhus had recently occurred. The brains of these rats were emulsified in salt solution and injected intraperitoneally into guinea pigs. The animals inoculated with the brain emulsion of one of these rats developed the characteristic febrile and scrotal reactions of endemic typhus. The guinea pigs showing the typical reactions were sacrificed and material from them (blood and testicular washings) was inoculated into other guinea pigs. In this manner the virus was perpetuated in guinea pigs and maintained for 30 generations.

Of 481 guinea pigs inoculated with this strain of virus, 30 died of intercurrent infections and 85 per cent of the survivors showed the characteristic scrotal reaction. It was noted that 90 per cent of the guinea pigs inoculated with testicular virus and 78 per cent of those inoculated with blood virus developed genital involvement. Rickettsiæ were found in smears made from the tunica vaginalis of infected guinea pigs. Four rabbits inoculated with the virus developed agglutinins for *B. proteus* X_{19} , type O, as follows: Complete agglutination, 1:160, two rabbits; 1:320, one rabbit; and 1:640, one rabbit.

The nodal lesions of typhus were found in the brain of one guinea pig used in propagating the virus. The brains of seven guinea pigs were frankly negative, while in the brains of six suggestive changes were noted. All of the guinea pigs chosen for microscopic pathology had shown typical scrotal involvement during life. Complete crossimmunity (see Tables 1 and 2), was found to exist between the strain of virus isolated from the wild rat and known strains of endemic typhus virus.

REFERENCES

- Dyer, R. E., Rumreich, A., and Badger, L. F.: Pub. Health Rep., 46:334 (Feb. 13), 1931.
- (2) Dyer, R. E., Rumreich, A., and Badger, L. F.: Jour. Am. Med. Assn., 97:589 (Aug. 29), 1931.
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- (4) Kodamo, M., Takahashi, G., Kohno, M., and Futaki, Y.: Kitasato Arch. of Exp. Med., 9:84 (Feb.), 1932.
- (5) Lepine, P., Caminopetros, J., and Pangalos, G.: Compt. rend. Soc. di biol., 109:710 (Mar. 11), 1932.
- (6) Mooser, H., Castaneda, M. R., and Zinsser, H.: Jour. Am. Med. Assn., 97:231 (July 25), 1931.
- (7) Lepine, P.: Compt. rend. des séances de l'acad. des Sci., 194:401 (Jan. 25), 1932.
- (8) Lepin, P.: Compt. rend. des séances de la Soc. de biol., 109:1072 (Apr. 9), 1932.
- (9) Dyer, R. E., Badger, L. F., Ceder, E. T., and Workman, W. G.: Jour. Am. Med. Assn., 99:795 (Sept. 3), 1932.

CROSS-IMMUNITY TESTS

TABLE 1.—Daily temperature records (centigrade)

Guinea pig	Guinea pig	Guinea pig	Guinea pig
W-2572	W-2582	Sav. 6817	Sav. 6818
• 38. 7 38. 5 38. 5 39. 0 39. 0 39. 0 39. 0 39. 0 39. 5 30. 8 R. & S. 30. 8 R. & S. 30. 8 R. & S. 30. 6 R. & S. 30. 6 R. & S. 30. 5 30. 0 30. 2 30. 5 30. 5 30	• 38. 9 38. 5 39. 0 39. 8 R. & S. 40. 0 R. & S. 40. 3 R. & S. 40. 3 R. & S. 40. 0 R. & S. 40. 0 R. & S. 39. 0 39. 0 39. 0 39. 0 38. 5 38. 5 38. 5 38. 5 38. 5 38. 5 38. 5 38. 5 38. 5 39. 5 3	• 38, 8 38, 5 39, 5 40, 8 R. & S. 39, 8 R. & S. 40, 7 R. & S. 40, 2 R. & S. 40, 2 R. & S. 40, 9 R. & S. 39, 5 39, 5 39, 4	• 39. 1 38. 8 39. 0 40. 5 R. & S. 39. 5 R. & S. 40. 0 R. & S. 39. 6 R. & S. 39. 7 R. & S. 30. 7 R. &

• Inoculated with known endemic typhus virus.

• Inoculated with virus recovered from wild rat.

R. & 8.=Characteristic scrotal involvement.

Guinea pig	Guinea pig	Guinea pig	Guinea pig
Sav. 9543	Sav. 9579	9812	9613
* 39.0 38.9 39.2 39.0 38.7 40.0 R. & S. 38.7 R. & S. 39.8 R. & S. 39.8 R. & S. 	• 39. 4 38. 9 39. 0 40. 0 R. & S. 40. 0 R. & S. 40. 0 R. & S. 39. 5 R. & S. 39. 5 R. & S. 39. 5 R. & S. 39. 5 R. & S. 39. 6 R. & S. 39. 1 39. 4 39. 6 39. 0 39. 0	*38.5 38.6 39.5 38.9 39.0 39.1 40.0 R. & S. 39.8 R. & S. (*)	• 39. 0 38. 7 39. 8 40. 2 39. 8 R. & S. 40. 5 R. & S. 40. 5 R. & S. 39. 5 R. & S. 39. 5 R. & S. 39. 5 R.

TABLE 2.—Daily temperature records (centigrade)

• Inoculated with virus recovered from wild rat. • Inoculated with known endemic typhus virus. • Killed for transfer.

R. & S.=Characteristic scrotal involvement.

DEATHS DURING WEEK ENDED DECEMBER 10, 1932

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

	Week ended Dec. 10, 1932	Correspond- ing week, 1931
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 ¹ . Teaths per 1,000 population, annual basis, first 49 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 49 weeks of year, annual rate.	8, 651. 12, 3 609 51 11. 1 69, 666, 314 13, 381 10, 0 9. 5	7,768 11.2 627 49 11.7 74,343,907 13,176 9.2 9.6

1932, 81 cities; 1931, 77 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 December 17, 1932, and December 19, 1931

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 17, 1932, and December 19, 1931

	Diph	Diphtheria Influ		luenz a Mei		asles	Meningococcus meningitis	
Division and State	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931
New England States: Maine New Hampshire Vermont	3 1 2	18 1		9	1	131	0 0 0	1 0 0
Massachusetts Rhode Island Connecticut	40 4 5	67 4 9	i0 1 13	7	110 	294 390 67	1 0 0	3 0 3
Middle Atlantic States: New York New Jersey Pennsylvania	49 41 92	156 35 146	45 32	¹ 13 8	715 230 208	447 46 681	3 0 2	7 1 6
East North Central States: Ohio Indiana Illinois Michigan	78 67 80 31	92 77 135 58	644 1, 078 167 57	7 15 3 3	203 24 54 271	59 38 36 43	3 2 11 3	1 9 4 3
Wisconsin West North Central States: Minnesota Iowa	13 6 27	23 27 45	111 10		222 84 3	39 24 3	0 3 0	1 0 1
Missouri North Dakota South Dakota Nebraska Kansas	26 9 20 35 28	102 5 2 15 54	184 17 26 41	4	14 120 2 1 6	6 7 80 6	4 0 0 1 2	8 0 0 0
South Atlantic States: Delaware Maryland ²	4 26 5	9 58 16	1 171 64		- 1 6	1 6	0 1 2	0 2 0
Virginia. West Virginia. North Carolina . South Carolina 4. Georgia 3. Florida 4.	39 25 38 12 36 23	65 71 13 26 9	62 192 1, 446 3, 954 38	18 8 406 49 1	147 88 49 11	281 55 36 1	0 4 0 0	3 1 0 0

See footnotes at end of table.

December 30, 1932

2374

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 17, 1932, and December 19, 1931—Continued

	Dipł	a theria	Infl	uenza	Me	asles	Meningococcus meningitis		
Division and State	Week ended Dec. 17 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17 1932	Week ended Dec. 19 1931	Week ended Dec. 17 1932	Week ended Dec. 19, 1931	
East South Central States:									
Kentucky Tenuessee	29 25 27	62 73	2, 537	25 19	53	19		1 2 2 0	
Alabama Mississippi West South Central States:		71 21	7,034			7	2	0	
Arkansas	. 13	30 44	4, 272 4, 945	15	1	8	02	0	
Oklahoma 4 Texas 4	29 104	83 106	2, 305 498	43 14	2 232	34	0	0 2 0 0	
Mountain States: Montana	1	1	1, 388		449	104	1	1	
Idaho Wyoming		2	9 101		5 17		1		
Colorado New Mexico ¹	6	3	313	1	8	4	Ó	j ē	
New Mexico	10 5	13	8 174	1 5	1	6	01	Ö	
Utah '	2	1	21	7			ī	0	
Pacific States: Washington	2	4	1		5	100	0	1	
Washington Oregon Oalifornia	1 64	1 105	769 1, 271	57 104	45 27	3 99	1	0	
Total	1, 220	1, 969	37, 777	888	3, 384	3, 249	57	69	
	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever		
Division and State	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931							
New England States:									
Maine	0	0	31	28	0	0	0	2	
New Hampshire Vermont	. 0	0	21 11	12	0	0 10	0	Ō	
Massachusetts	2	8	360	369	0	0	0 7	5	
Rhode Island Connecticut	2 9 0	0	34 63	26 58	0	0 32	02	0 4	
Middle Atlantic States								-	
New Jersey	1 3	15 5	594 213	476 142	3	5	8 5	23 3	
New York New Jersey Pennsylvania East North Central States:	6	9	651	468	0	Ó	7	28	
Onio	20	3	550 118	326 95	8	20 10	21 4	6	
Indiana Illinois	0	6	391	307	5 2 0	18	11	5 5	
Michigan Wisconsin	02	3	297 84	240 63	0	14	6	5 8 3	
West North Central States: Minnesota	0	9	73	63	0	8	0		
Iowa	0	3	47	43 74	64	83	Ô l	0 1	
Missouri North Dakota	02	1	76 12	74 28	0	6 22	1	5	
South Dakota	0	0	10	19	1	11	2	1	
Nebraska Kansas	0 1	1	50 88	23 82	3	5	1 0 2 0 0	1 5 0 1 4 3	
outh Atlantic States:	1	1							
Delaware Maryland ²	0	1	11 100	1 87	0	8	07	1	
District of Columbia	Ő	ŏ	12	25	0	ŏ	0	10	
Virginia West Virginia	0	·····	78 - 69	65	Ö.	4	13 5 4	31	
								8	
North Carolina	1	3	77	99	U I	1	1	0	
North Carolina South Carolina ³ Georgia ³ Florida ³	1 0 2	3 1 1	77 13 22	13 28	0 0 2 0	0	5 2	11 14	

See footnotes at end of table.

2375

Cases of certain communicable	diseases reported by telegraph by State	health officers
for weeks ended December	r 17, 1952, and December 19, 1931-Con	ntinued

	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
Division and State	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931	Week ended Dec. 17, 1932	Week ended Dec. 19, 1931
East South Central States: Kentucky Tennessee Alabama * Mississippi West South Central States:	0 2 0 0	0 0 2 0	40 39 20 12	93 54 59 13	1 19 1 1	0 4 0 18	7 12 0 1	21 9 2
Arkansas. Louisiana Oklahoma 4. Teras 4. Mountain States:	0 0 0 0	0 0 0	23 12 34 82	11 26 57 73	2 0 4 7	0 1 1 7	5 14 0 6	10 19 13 12
Montana Idabo Wyoming Colorado New Mexico ¹	0	1 0 0 0	10 4 13 25 18	36 6 10 21 8	0 1 0 0 0	2 0 0 0 0	1 1 0 0 1	3 0 8 2
Arizona Utah ¹ Pacific States: Washington Oregon California	000000000000000000000000000000000000000	0 0 1 0 2	5 25 44 20 111	9 18 50 19 127	0 0 22 7 1	0 0 10 11 2	1 0 2 8	0 1 0 6
Total	27	78	4, 701	3, 961	156	313	175	289

1 New York City only.
1 Week ended Friday.
3 Typhus fover, week ended Dec. 17, 1932, 17 cases: 1 case in South Carolian, 8 cases in Georgia, 1 case in Florida, 5 cases in Alabama, and 2 cases in Teras.
4 Figures for 1932 are exclusive of Oklahoma City and Tulsa.
4 Florida. 5 potted fever, week ended Dec. 17, 1932, 1 case in New Mexico.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Malaria	Measles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
November, 1932										
Alabama. Arkansas Delaware Florida Maryland Massachusetts Minnesota New Jersey Pennsylvania South Carolina	4 1 10 9 3 2 13 	237 135 14 132 79 160 89 72 107 488 291	2, 206 387 1 17 50 14 57 3 54 1, 787	133 70 51 2 1,033	14 9 2 1 279 814 348 590 889 52	14 39 2 1 2 127	2 1 0 7 4 7 6 15 46 3	189 161 17 30 336 1,039 1,004 334 618 2,017 57	2 5 0 0 0 11 4 0 2	29 36 12 44 18 25 125 30

December 30, 1932

November, 1932

Actinomycosis: Massachusetts	Cases
Chicken pox:	
Alabama	62
Arkansas	122
Delaware	33
Florida	1
Maryland	430
Massachusetts	1, 127 1, 7 3 5
Michigan Minnesota	1,017
New Jersey	1, 147
Pennsylvania	3, 668
South Carolina	106
Dengue:	
South Carolina	2
Diarrhea:	-
Maryland	14
Maryland South Carolina	287
Dysentery:	
Maryland	8
Massachusetta	24
Michigan	4
Minnesota	i
Minnesota (amebic)	ī
Pennsylvania	
German measles:	
Maryland	10
Maryland Massachusetts	25
New Jersey	32
Hookworm disease:	
South Carolina	52
Impetigo contagiosa:	
Maryland	62
Lead poisoning:	
Massachusetts	4
New Jersey	- 7
Lethargic encephalitis: Alabama	•
Michigan	- 1
	•

Lethargic encephalitis-Cont	a 565
Minnesota	1
New Jersey	1
Pennsylvania.	4
South Carolina Mumps:	1
Aiabama	58
Arkansas	111
Delaware	4
Florida. Maryland	120
Massachusetts	353
Michigan	515
New Jersey	378
Pennsylvania 1 South Carolina	, 196 37
Ophthalmia neonatorum:	
Arkansas	2
Arkansas Massachusetts	78
New Jersey Pennsylvania	1
South Carolina	6 13
Paratyphoid fever:	10
South Carolina	6
Psittacosis:	•
Minnesota	2
Puerperal septicemia:	
Pennsylvania	27
Rabies in animals:	
New Jersey South Carolina	16
Rabies in man:	U
Alabama	1
Michigan	i
Scables.	-
Maryland.	- 4
South Carolina	6
Septic sore throat:	
Maryland Massachusetts	1
Michigan	23

Tetanus:	Cases
Maryland	3
Massachusetts	1
Minnesota	1
Pennsylvania	4
South Carolina	3
Trachoma:	
Arkansas	26
Massachusetts	- 3
Pennsylvania	1
Trichinosis:	
New Jersey	1
Tularaemia:	
Arkansas	- 4
Maryland	6
Michigan	3
Minnesota	6 3 7 2 1
Pennsylvania	2
South Carolina	1
Typhus fever:	
Alabama Maryland South Carolina	17
Maryland	2
South Carolina	1
Undulant fever:	
Alabama	1
Delaware	1
Maryland.	3 1
Massachusetts	
Michigan	2
Minnesota	3
New Jersey	3
Vincent's angina:	
Maryland Whooping cough:	10
whooping cough:	
Alabama	75
Arkansas	61
Delaware	21
Maryland	101
Massachusette	396
Michigan	921
Minnesota	125
New Jersey	305
Pennsylvania	939
South Carolina	110

WEEKLY REPORTS FROM CITIES

City reports for week ended December 10, 1932

	Diph-	Inf	uenza	Mea-	Pneu-	Scar-	Small-	Tuber-	Ty- phoid	Whoop- ing	Deaths,
State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	pox cases	culosis deaths	fever cases	cases	all causes
Maine: Portland	1		0	0	0	11	0	0	0	5	20
New Hampshire:			0				0				
Concord Nashua	0		Ő	0	0	1 0	ŏ	3 0	00	0	7
Vermont: Barre	0		0	0	1	0	0	1	0	0	2
Burlington Massachusetts:	3		0	0	0	2	0	0	0	0	5
Boston Fall River	13		0	35	21	82	0	9	1	61	221
Springfield Worcester	02		1	3 1	02	4 22	0	2	0	50	33
Rhode Island: Pawtucket	0		0	0	0	0	0	0	0	0	15
Providence Connecticut:	0		2	0	5	18	0	2	1	36	70
Bridgeport Hartford	01	12	1	16 2	43	34	0	1 2	1	4	37
New Haven	Ō		Ō	Ō	3	3	Ŏ	Ō	Ō	. 8	35
New York: Buffalo	2	2	0		30	44	0	5	0	22	140
New York Rochester	5 5 0	30	12 1	230 0	139	198 22	Ŏ	76 1	8 1	129 3	1, 439 52
Syracuse	ŏ		Ô	3	3	20	ŏ	2	ō	9	59
Camden	Ģ	14	1	0 36	2 11	6 17	0	3 5	0	2 13	35 103
Newark Trenton	5 2		1	1	2	17	ŏ	2	ŏ	. 6	46
Pennsylvania: Philadelphia	5		1	23	30	122	0	29	1	9	515
Pittsburgh Reading	12 0	35 	12 0	0 15	60 1	38 2	0 0	11 1	3 0	14 7	264 28
Ohio:											
Cincinnati Cleveland	1 9	2 275	5 10	0	17 34	18 79	0	3 9	1	3 25	147 233
Columbus Toledo	0 2	145 7	33	184 8	10 6	6 26	0	43	1 0	2 6	84 76
Indiana: Fort Wayne	10		1	0	4	1	0	1	0	0	
Indianapolis South Bend	2		5 0	7 0	14 3	8 4	0	8 0	0	3 2	15
Terre Haute Illinois:	2		1	Ó	4	2	0	0	0	0	24
Chicago Springfield	13	77	19	66	72	205	0	42	1	31	75 2
Michigan: Detroit	14	26	3	42	23	82	0	17	1	96	242
Flint Grand Rapids.	Ô		02	0	53	05	Ŏ	0	. Ō 1	0 41	18 37
Wisconsin: Kenosha	0		0	0	0	5	0	1	1	1	8
Madison Milwaukee	1	2	2	04	8	1 22	Ŏ	7	Ô	1 17	106
Racine	Õ	2	0 1	Ō	1	3	ŏ	ó	ŏ	5	20 12
Superior	U		1	U	1	Ů	Ů	۲,	, i	Ű	12
Minnesota: Duluth	0		o	0	6	.4	0	1	Q	0	25
Minneapolis St. Paul	1 1		4	70 2	16 8	18 9	0	5 1	0	11 26	116 52
Iowa: Des Moines	12			0		10	0		0	0	30
Sioux City Waterloo	0			0		2 0	0		0	2 0	
Missouri: Kansas City	1	5	1	25	9	19	0	8	o	1	111
St. Joseph St. Louis	3 19	6	2 7	1 2	12 15	2 26	0	3 10	0	0 1	219
North Dakota: Fargo	0		0	2	3	1	0	0	0	0	12
Grand Forks South Dakota:	ŏ		ŏ	21	ŏ	ō	ŏ	ŏ	ŏ	ŏ	
Aberdeen	1		0	. 0	0	1	0	0	0	0	
Omaha	10		0	o	ol	8	0	0	0	0	52

2378

City reports for week ended December 10, 1933-Continued

Q4+4+ + + + +++	Diph-	Inf	uenza	Mea-	Pneu-	Scar-	Small-	Tuber-	Ty- phoid	Whoop-	Deaths,
State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	pox cases	culosis deaths	lever cases	cases	all
Kansas: Topeka			0	2	3	2		1	0	3	
Wichita	80		ŏ	Ő	3	6	0	2	ŏ	ů	10 26
Delaware: Wilmington	0		0	0	5	2	0	1	1	2	28
Maryland: Baltimore Cumberland	2	33	1	6	22 0	69 3	0	17 1	1 0	26 0	207 13
Frederick Dist. of Columbia:	Õ		Ō	Ö	Ó	1	Ō	0	0	Ō	2
Washington Virginia: Lynchburg	10 2	13	2	2	15 5	26 4	0	14 0	•	11 5	159 10
Norfolk Richmond	0 1		0	0	54	4	0	04	0 0	0	26 51
Roanoke West Virginia: Charleston	5 0		0	0 0	0 1	5	0	0	0	0 1	12
Huntington Wheeling North Carolina:	4	8	0	17 58	9	34	000	1	ŏ	0 2	25
Raleigh Wilmington Winston-Salem	0	2	0 0	0 1	0 1	2 0	 0 0	1 0	1 0	0 1	6 11
South Carolina: Charleston Columbia	0	56	2	0	1	1	0 1	9	1	0	20 11
Georgia: Atlanta Brunswick	2	1, 298	14 •	1	9	5	0	0 1	0	6	107 4
Savannah Florida:	0	9	1	0	3	8 1	0 0	. 1	•	1	38 20
Miami Tampa Kentucky:	ĩ		Ŏ	ŏ	Ž	Ō	Ŏ	ō	ŏ	Ŭ.	23
Covington	<u>1</u>	29	0	0	2	2	0	5	0	0	23
Louisville Tennessee: Memphis	7	156	0	4	12 8	14 6	0	4	0	0	91 78
Nashville Alabama: Birmingham	7	1, 332	2 5	0	3	6 12	0	3	0	0	42 71
Mobile Montgomery	4	128 90	8	ě O	4	i	0	ō	Ö	Ŏ	27
Arkansas: Fort Smith Little Rock	3	18		0	<u>1</u>	2	0		0		i
Louisiana: New Orleans Shreveport	. 15	373	58 0		46 8	7	0	17	0	0	256 44
Oklahoma: Oklahoma City. Tulsa	3	600	1	0	3	17	0	2	0	0	38 1
Texas: Dallas	14	7	6	0	2	14	0	0	0	0	55
Fort Worth Galveston Houston	7 4 11		1 0 6	400	9 3 17	11 1 6	0000	1 1 1	0 1 0	0	45 18 73 74
San Antonio	5	7	4	Õ	16	5	Ō	5	Ŏ	ŏ	74
Montana: Billings Great Falls	0		0	0 169	0	0	0	0	0	8	9 3 3
Helena. Missoula Idaho:	0	249	0	0	0	0	0	0	0 9	0	3 5
Boise Colorado:	0		0	7	0	1	7	0	0	0	7
Denver Pueblo New Mexico:	3 - 0 -		9	6 0	31 0	11 0	0	4	0	1	112 5
Albuquerque	0		1	0	0	1	0	5	0	2	9
Phoenix	0 .		0	0	1.	0	0	5	0	아니	

	1	1		1			1	1	<u> </u>	I	
State and city	Diph theria cases	·	luenza	Mea- sles cases	Pneu- monia deaths	Scar- let fever	Small- pox cases	Tuber- culosis deaths	fever	Whoop- ing cough	Deaths, all causes
		Case	s Deaths		deatins	Cases		deatils	CUSES	Cases	
Utah:	0		5	2	5	7		2	0	1	38
Salt Lake City. Nevada: Reno	0		0	0	2	0	0		0		
Washington:					_						
Seattle Spokane	0			0		4	0		30	70	
Tacoma Oregon:	0		. 0	0	0	0	0	0	0	0	30
Portland	0		1	0 11	7	5 0	3	4	0	0	71
California: Los Angeles Sacramento	28 0		10 2	26 0	28 10	36 1	15 0	18	0	34 0	302 39
San Francisco	3		5	2	12	8	Ŭ Ŏ	9	ŏ	45	152
Meni			ococcus		1			1	Mening	ococcus	
State and city		menf	ngitis	Polio- mye-					ngitis	Polio- mye- litis	
	ſ	Cases	Deaths	Cases			•		Cases	Deaths	cases
Massachusetts:					Miel	igan:		[
Boston		1	0	0					2	1	0
New York: New York		1	1	1		raska: Omaha.			1	0	0
Rochester New Jersey: Newark		1	0	1	Ten	nessee: Memph	is		1	0	9
Pennsylvania: Philadelphia		0	0	3	Alah	ama		1	1	0	0
Pittsburgh		2	ŏ	ŏ	Utah	:			1	1	1
Ohio: Cleveland		0	0	1	Was	hington	te City :		_	_	
Indiana: Indianapolis		2	0	0	Calif	ornia:			1	θ	1
Illinois: Chicago		6	5	1		.08 Ans	reles ncisco		0 0	0 1	1 •
					11			1			

City reports for week ended December 10, 1932-Continued

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Lethargic encephalitis—Cases: New York, 1; Chicago, 1; Washington, 1; Birmingham, 1; Los Angeles 1,
 Pellagra—Cases: Charleston, S. C., 1; Atlanta, 1; Savannah, 2; Birmingham, 1; Dallas, 1; Los Angeles 1,
 Typhus Fever—Cases: New York, 2; Savannah, 4; Montgomery, 1.

FOREIGN AND INSULAR

ALASKA

Cordova—Poliomyelitis.—Information was received December 15, 1932, that 6 cases of poliomyelitis, with 1 death, were reported in Cordova, Alaska. All patients and suspects had been quarantined and no suspect or person known to have been exposed was allowed on boats. Schools had been closed and every precaution was being taken. About one week had elapsed without the development of new cases.

CANADA

Provinces—Communicable diseases—Week ended December 3, 1932.— The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended December 3, 1932, as follows:

Disease	Nova Scotia	New Bruns- wick	Quebec	On- tario	Mani- toba	Sas- katch- ewan	Alber- ta	British Colum- bia	Total
Cerebrospinal meningitis Chicken pox Diphtheria Erysipelas	16 5	23	1 129 31 1	331 10	99 3 1	59 6		63 2 1	1 699 60 3
Influenza Measles Mumps Pneumonis, all forms	3 4	4	101 	7 470 93 10	29 16	2		1, 174 11 1 1	1, 182 620 114 21
Poliomyelitis Scarlet fever Trachoma	4	17	4 46	1 62	21 1	14		13	5 177 1
Tuberculosis Typhoid fever Undulant fever	1		52 12	38 1 1	17 5	6 3		25 2	139 23 1
Whooping cough	4		123	82	26	14		7	256

CUBA

Habana—Communicable diseases—Four weeks ended December 3, 1932.—During the four weeks ended December 3, 1932, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria. Leprosy Malaria Measles	28 1 23 3	3	Scarlet fever Tuberculosis Typhoid fever	6 17 9	3

2381

GREAT BRITAIN

England and Wales—Vital statistics—July-September, 1932.— During the third quarter of the year 1932, 156,302 births and 97,951 deaths were registered in England and Wales. The following statistics are taken from the Quarterly Return of Births, Deaths, and Marriages, issued by the Registrar-General of England and Wales. The figures are provisional.

Birth and death rates in England and Wales, July to September, 1932

Annual rates per 1,000 population:

Annual rates per 1,000 population:	Annual rates per 1,009 population-Contd.
Live births	Deaths from-Continued.
Stillbirths	Diphtheria 0.05
Deaths, all causes	Influenza
Deaths from—	Deaths per 1,000 live births:
Measles	Diarrhea and enteritis (under 2 years) 7.3
Scarlet fever	Total deaths under 1 year
Whooping cough	

England and Wales—Infectious diseases—Thirteen weeks.ended October 1, 1932.—During the 13 weeks ended October 1, 1932, cases of certain infectious diseases were reported in England and Wales as follows:

Disease	Cases	Disease	Cases
Diphtheria	1, 117 6, 012	Puerperal pyrexia. Scarlet fever. Smallpox. Typhoid fever.	17, 795 234

MEXICO

Tampico—Communicable diseases—November, 1932.—During the month of November, 1932, certain communicable diseases were reported in Tampico, Mexico, as follows:

Diseese	Cases	Deaths	Disease	Cases	Deaths
Diphtheria Enteritis, various Influenza Malaria	2 85 73 892	75	Paratyphoid fever Tuberculosis Typhoid fever Whooping cough	3 5 33	1 32 1

PUERTO RICO

Communicable diseases—Four weeks ended November 5, 1932.— During the four weeks ended November 5, 1932, cases of certain communicable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Bronchitis Broncho-pneumonia Chicken pox Diphtheria Dysentery Erysipelas Filariasia Filariasia Impedigo contagiosa Malaria Measles Mumps	127 4 44 53 410 4 3 509 3, 604 289 40	Ophthalmia neonatorum Paratyphoid fever Pellagra Pneumonia Puerperal fever Syphilis Tetanus, infantile Tuberculosis Typhoid fever Whooping cough	9 1 4 15 3 151 3 11 367 99

147066°-32-2

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

From medical officers of the Public Health Service, American consuls, International Office of Public Hygtene, Pan American Sanitary Bureau, health Service, American of the League of Mathina, and other representation of the flowing tables must not be considered as complete or final as regards either the list of countries included or the flownee the particular point reports and given.

CHOLERA

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		1	1							Weeh	Week ended							
Place		a a a a a a a a a a a a a a a a a a a	Aug.	Aug. 27.	Sep	September, 1932	, 1932		-	October, 1932	, 1932			Novel	November, 1932	8 92	Dec	December, 1932
		7001	2 001	1932	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	2	17 2	24			8	8	20	12	19	8	~	10
Balmohistan		18	59 37		-													
Ohina: AmoyO		965	1 06	: * %	52	4	31	17	-									
Oanton Oanton	679 879	479 358 104	212 32	1 2.	- 6	500	01	- Cr Cr	CN 00 0	~~~~	~~~~							
Dairon.1 Hankow.		8	384	112 °	8	° 8	12		•					-				
D Hong Kong.		118	88:	9 9	\$0.00	4 10 1	1- 41			-								
Evantung Leased Territory—District of Port		9 P	\$ °			4	m			<u> </u>								
		4	18	4	4				<u> </u>				<u> </u>			<u> </u>		
		368	នន្ល	4.8	1 04	œ	13	-	12									
Newchwang	11	2 20	35	-	4	-	-							<u> </u>				
Bhanghai		1, 360	1, 648	258	131	110	47	21	=	3			<u> </u>					
Swatow ³		83:	62 82 F	14	=	<u>0</u> ~'	00	-0	10	12	9		100					
Tientsin		•ត្ត	28.	8	5	<u> </u> 040			1		<u> </u>	<u> </u> -	<u> </u>			++		
		1	~	<u>-</u> ק	٩	٩	٩		+	-	+	-	-			-	-	-
Tsingtao.			10	29	-0-	-0-		4	69									
11233 cases: 78 deaths in Dairen un to Aug 92 1039	e 1020		•	-	-	i			<u>i</u>		<u> </u>	-		+		-		ļ

1138 cases, 78 deaths, in Dairen, up to Aug. 28, 1932.
2 Local unofficial reports included 159 deaths from cholera in Swatow, China, from June 10 to 30, 1932.

288
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788 416 1 1 1 1 1 1
200 200 200 200 200 200 200 200 200 200
₩ 2 3 3 3 3 3 3 3 3 3 3 3 3 3
625 mm 1 1 1 mm 1 1 mm 1 1 1 1 1 1 1 1 1 1
83 83 98 98 98 98 10 10 10 10 10 10 10 10 10 10
Chosen Ludia. Bombay Calcutta. Rangoon. Calcutta. Calcutta. Rangoon. Randernagor Pondichery Territory Calcutta. Rande-China (see also table below): Pronto-Penh. Salgon and Cholon. Japan: Salgon and Cholon. Japan: Japan: Salgon and Cholon. Japan: Japan: Cebu Province. Dolio Province. Laguna Province. Laguna Province. Lagua Province. Bangtok. Straita Bettlements: Singapore. Bangtok. Straita Bettlements: Singapore. Con vessels: B. S. President Wilson en route to Mania. Kong.

FEVER-Continued
YELLOW
AND Y
FEVER,
TYPHUS
SMALLPOX,
PLAGUE,
CHOLERA,

CHOLERA—Continued [O indicates cases; D, deaths; P, present]

~		į	1							Week	Week ended							
718008	Į×Į ž		14 ⁴ 8 8	Aug. 27.	Sep	September, 1932	, 1932		0	October, 1932	1932		Z	November, 1932	er, 1982		December 1932	aber 2
				1932		101	17 2	24	90	15	ន	8	2	12	19	8	ŝ	9
Car essents — Continued. a. 8. Protestius at Hong Kong from Bhang- bal. bal. bal. Nukawa Maru at Hong Kong from B. 8. Arankola at Ranroon from Calcutta. C B. 8. Arankola at Ranroon from Calcutta.			<u></u> е е															
8. 8. Shantung at Swafow from Shanghai. C 6. 8. Yusang at Hong Kong from Shanghai. C 8. 8. Taisan Maru en route Tsingtao to Moji		-	-															
Ā	April.	May.	June,		July,	July, 1932		IV	August, 1932	932	ļ	September, 1932	iber, 19	32		October, 1932	. 1932	
	1932			1-10		11-20 2	21-31	1-10	11-20	21-31	1-10		11-20	21-30	1-10	11-20		21-31
Indo-Chima (French) (see also table above): Annam 4		- - 			- 00													
	81	- 	88		•==	10.4	88	80	40				40	55			-	
Coomin-China - Co	281				9 10	0 8	10 4	2	44		60 60	-1 00	-1 00	20			~ ~ ~	9 CA
											<u> </u>							

PLAGUE 1

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	Mow	Inne								Week	Week ended-							
Place	June 29- June 25, 1032	26- 26- 3uly 3032	24- 24- Aug.		8°	September, 1932	ır, 1932			Octob	October, 1932	3		ŭ	November, 1932	ar, 1935		De.
				1932	~	10	17	24	1	80	15	ន	50	23	12	19	8	1082
Angola: Naulila																	<u>ب</u> م	
Cnaco-Villa Angela C D La Rioga Province C Salta Province C							000								-			1112
low):			I											-				
Uganda. Cevion: Colombo	33885	324	83-	88	280	58-	ฆ≏°	89"	22	22	523.	88°						
infected rats.					101-1		101		-		1	101-1	****			101		
Burabaya. C West Java. D	196 196	081 081	101 151 151	1 4 3	23	23		88	113	199	50	138						
ole below).	**	19 04								-								
	61-1	61				-	-	-			-							
Gharbieh	ю -1					-	1				-			-				
Great Britain: Liverpool-Plague-infected rats			Ц					F	$\frac{1}{1}$	$\frac{1}{1}$	İ	Π	Ť	Ī		Ī		
 Including plague in the United States and its possessions. Several cases of plague with 1 death were reported at Quines, San Luis Province, Argentina, on Dec. 9, 1832. At dock where steemship Oity of Oxford was barthed. 	essions. at Quine bed.	s, San I	uis Pro	vince, .	Argenti	na, on]	Dec. 9,	1932.							•			

December 30, 1932

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

PLAGUE-Continued

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

										Week	Week ended	,				.		
Place	May 20- June 3K 1023	June 26- July 2023	July 24- Aug.	Aug.	Sej	September, 1932	r, 1932	-	ĺ	Octob	October, 1932	8		Z	November, 1932	er, 19	2	, B
	7001 107		7091 1907	27. 1932	~	01	17	24	-	80	15	ន	8	5	12	19	8	8. 193 2
Hawaii Territory: Hawaii Island- Hamakua-Kukalau-Plague-infected rats Paulo-Plague-infected rats Maul Island- Makawao0	1		T													1		
	302 302 302 302	1, 122 631 2	2, 545 1, 482 4 4	672 638 1 1	1,059	647 1. 375	562 1,	312 1	,462 1, 863 1, 1	789 I, 031	465							
Bombay Bombay D Madras Presidency Madras Presidency		21 233	1 32 547	2 81 81	7	1011	E ***	11	6 83		4 11	3 613 3	10	=	4	e S	6	
	3 1 38	н 21078 8		ထိုမာမာ	31	ន	8	1	4	8	33	17	1	6	1	1		
Madagascar. (See table below.) D Morocco			1 1 6		80				· · · · · · · · · · · · · · · · · · ·		-	40 -		c	•			

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United States: Oulformise: La Angeleo-Plague-Infected San Benito County-Plague squirrels	nfected r -Plague	rats e-infected ground	ground			6											
Steamship Columbia, at Naples Baue-Infored and at Liverpool Plague-infocted rats	Naples verpool	from Barcelona- from Alexandria-	reelona- xandria-	61				1									
B. S. Figuig at Marselle from B ville S. Patris at Beirut	rom Bo	Bons and Fhillppe-						1						-	3		
Place	May, 1932	June, 1932	July, 1932	August, 1932	Sep- ten- ber, 1932	Det. Det. 1932	Nотет- ber, 1932		Place		May, 1932	June, 1932	July, 1932	August, 1932	Sep- tem- 1982, 1982	Octo- ber, 1932	Novem- ber, 1932
Brttiah East Africa (see also table above): Kanya. O Equation Province OlaOlaO Indo-ChinaO Madagascar: Province AmbositraO MaarhastroO MaarhastroO MaarhastroO MaarhastroO MaarhastroO TamataveO	888 117 888 177	8 a 11 aojo wa 1 ad	8 ************************************	ర్ల (గణ అజనేనేచదంశశరణర్రి	23 40 28833 200 22	ч. П.		Peru. Departme Lamb Libert Lima. Lima. Lima. Luma. Pakar e Rufisque Thies e Tiyaouan	Department- Department- Lambaysque- Libertad Lima - Lima - Louga • Louga • Rufisque • Thies •	0 0000000 00000000000000000000000000000	2 IIIIIIIIIIIIIIIIII	a a a a a a a a a a a a a a a a a a a	TT Co≉∞8288	1 88,88	10 10 10 10 10 10 10 10 10 10 10 10 10 1	M	

204 cases of plague with 47 deaths were reported in Ovamboland, Southwest Africa, up to Oct. 29, 1932. Antiplague measures have been taken.
 Suspicious cases.
 Reports incomplete.

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

SMALLPOX

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

										We	Week ended-	1						
Place	May June 29-June 28-July 25, 1932 23, 1932	June 28-July 23, 1932	July 24- Aug. 20, 1932	Aug. 27.	Set	September, 1932	r, 1932			Octob	October, 1932			Nove	November, 1932	1933	Å	December, 1932
				1932	e	9	17 2	7	<u> </u>		15 22	3		8	61	8	•	9
Algeria: Algera: O	8			-				 										
			5									1					6	
Jujuy Province							<u> </u>			$\frac{11}{11}$			<u> </u>	$\frac{11}{11}$	$\frac{11}{11}$		++	++
																<u> </u>		<u> </u>
	20	10	10			•	9											<u>, n</u>
British East Africa: Tanganyika	19	32	168	-	19	80	Ş -	12	5	19	1- 00	101	12			$\frac{1}{1}$	$\frac{1}{1}$	+
		4 5	- 1	•			•		•				•					
Alberta. Britsh Columbia. Manitoba. Ontarloba.	1	1	3			13											-	
	- 00	n						9										
A moy Canton	9	3	+		-				61						1	<u> </u>	19	<u> </u>
Footbow Hong Kong	P.22	₽'∞4	<u>р</u> 99		ρ.		A		P-1		<u>д</u>			- <u>-</u> 24			_	



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Manchuria: Dairen Nanking Eiaanghai Tientsin Tientsin Choem, (See table below.) Colombia: Cali Dahomoy Daton East Indiee Butch East Indiee	Alstandria. Cairo Frhland Gold Coast. (3ee table below.) Great Britain: England and Wales. London and Great Towns Hondon and Great Towns Proto Coarlin.	Tegroticatpa	Madrus. Moulmein Negapatam Rangoon . Tutioorin. Visarapatam

December 80, 1983

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

SMALLPOX-Continued

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

										Ψć	Week ended	led-							
Place .	May 29-June 25, 1932	June 26-July 23, 1932	July 24- Aug. 20, 1932	Aug.	å	September, 1932	Jr, 1932			Octob	October, 1932	çı		Ň	vembe	November, 1932		December, 1932	n, Ber
				1932	69	9	11	2			 9		8	2	12	91	8		9
India (French): Karikal																			
D Pondichery Territory		ii	16	1	-				~	600	600					010			
Indo-China (see also table below): Saigon and Cholon			2 00 0	- 010	• •••	•	a c	• •	•	; •	<u> </u>		$\frac{1}{1}$			N		-	
Iraq: Baghdad		- 0	• •					-	60	-	61	m	6	64	- 69	1	12		1
Basra	N			8-				-010	-9	9	16	: N 20 0	-21	525	8	°5:	-8:	~9	
		•		•		•	-	•		-	•	•	1	2	3	-	3	9	
Mexico: ChihuahuaD Jaliso (State)	10 CM	1	3																
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Monterrey Saltillo Santillo Santillo		8	60	1	1			$\frac{1}{1}$				-			- 99	6	-	-	-
	(co ci								-41	-					•		İİ		
Morocco. (See table below.) Nigeria. O	ଞ 	123	4 02		18		13				33	-	22						
D Palestine		- F2		11		Ī	13				-		-						
Peru. (See table below.) D				= °°	89	31	81	28	4 2	841	83	$\frac{1}{1}$			21% 21%				
Poland D																			

------..... ------ļ Nov. 1-10, 1932 -----; -----21-31 ----ŝ October, 1932 11-20 -----..... -1-10 **A** 21-30 September, 1932 -----ሳሳ 11-20 00 ρ. 1 1-10 ρ. -----L L 21-31 ρ. August, 1932 11-20 1-10 <u>م</u> ; 21-31 July, 1932 11-20 -----..... 9<u>-</u>1 June, 1932 3 ρ, 8888 May, 1932 600 **₽**, ¬ 3 ρ. 0000000 Dir vessels:
Dir vessels:
B. S. Tusscala at Suez from Bombay.....
C. S. S. Tusscala at Suez from Amoy and Hong Kong.
B. Marialt Van Ste. Aldegonde at Port Sald
B. Ethiopia at Rangoon from Shanghal.
C. S. Radnput at Robe from Shanghal.
C. S. B. Rathput at Cochin from Colombo...
S. B. British Splandour en route to 0000 DOA O D D 0000 00000000 Gibraltar 8. Jervis Bay en route to Southampton. Gold Coast. Indo-China (see also table above)_____

² From Mar. 6 to July 9, 1932, 878 cases of smallpor, with 13 deaths, were reported in Sierra Leone

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Syria: Beirut

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Oporto_____ Sarawak Portugal: Lisbon.

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Sudan (Anglo-Egyptian). Syria. (See table below.)

Transvaal Upper Volta

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

SMALLPOX-Continued

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

							TYPHUS PEVER	TYPHU							
			667	3, 289 1, 672			Union of Socialist Soviet RepublicsO	33 76	24 166	11 · 19 35		27	101	101	Morocco.
13	13	8	8				Turkey (see also table above) C			50			55 8	20 KO 60	Chosen O Greece
Octo- ber, 1932	Septem- ber, 1932	July, August, Septem- Octo- 1932 1982 ber,1932 ber,1932	July, 1932	June, 1932	May, Jı 1932 J	April, 1932	Place	July, August, Septem- October, 1932 1932 ber,1932 1932	Septem- ber, 1932	August, 1932	July, 1932	June, 1932	May, 1932	April, 1932	Place

	May	May	June	July						Wee	Week ended	۲ ۲						
Place	1-28	June 36 1039	July 2013	Aug.	Aug.	Sept	September, 1932	1932			Octobe	October, 1932			Nove	November, 1932	1983	1
				7001 107	1932	8	10	17	24	30		15 22	29		1	12 19	8	1-1
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Bona Constantine Department		1	102	8							101							
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D Bulgaria	88	15	10	4				-					-					
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Iquique. Bantago. Talcabuano			-	15	8	63	4	13		8	9	10	=		6			
Ohina: Hankow Tiankow	01-	-	-	•													\square	1 1
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------ CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER-Continued

TYPHUS FEVER

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

May June, July August, Sep- Octo- Novem- 1932 1932 1932 1932 1932 1932 1932 1932	1 1 1		
Augus 1932			
July, 1932	2 1 4		
June, 1932	4		
May, 1982	* 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	% 9	
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Octo- ber, 1932	9		
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2 m			
August, ter 1932 1	14		
July, August, ter 1932, 1932, ter	3	4	
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May, June, July, August, ter 1932 1932 1932 1932 1	6	13 16 7	

XELLUOW FEVER

									-	Week ended-	-beba							
Place	29- 29-		May June June July 20- 26- 24- Aug.	Aug.	3	September, 1932	r, 1932			October, 1932	r, 1982			Nove	November, 1933	1933		9
<u> </u>	1933	1932	1982	27, 1982	~	9	17	*			15	କ ସ			12		8	3, 1932
Bollyla.1 Brazila:								•		 			 		 		<u> </u> 	
	2		8				44						+				$\frac{1}{1}$	
Pernambuco State.		9	1			a	-		-									
													$\frac{1}{1}$	11	20		<u>, 1</u>	
Bakel-Kidira.											-							
Upper Gambla							$\frac{1}{1}$	610	-	•			$\frac{1}{11}$			$\frac{1}{11}$	$\frac{1}{11}$	
Budan (French): Keyes								•						~~~	<u> </u> 			
Upper Volta																		
¹ About 30 deaths from yellow fever occurred in southern Bolivis during the spring of 1832	Ver occur	red in s	uthern	Bolivia	during	the sp	ring of	1932.				1 Date	Date uncertain	rtain.				