



Morbidity and Mortality

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE
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INTERNATIONAL NOTES

**BOTULISM TRACED TO COMMERCIALY
CANNED MARINATED MUSHROOMS - Canada**

On July 5, 1973, a 28-year-old woman living in Montreal, Quebec, Canada, noted excessive fatigue at the end of a day's shopping. On July 6, diplopia, dysarthria, dysphagia, respiratory impairment, and difficulty walking supervened, and she sought medical assistance. Her complaints were diagnosed as psychogenic by several physicians; she was hospitalized on July 7 when the diagnosis of botulism was considered. By the next day her respiratory insufficiency required tracheostomy and assisted ventilation. Trivalent (ABE) botulism antitoxin was administered on July 9 with equivocal results, but respirator assistance was successfully discontinued on July 10. The patient was asymptomatic except for some residual diplopia at the time of her discharge on July 24.

Epidemiologic investigation revealed that on July 4,

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while alone at home, the patient had eaten from a jar of Marque Pastene Marinated Mushrooms, manufactured by Wirth's Food Products, Lawrence, Massachusetts. Although she usually ate an entire 6 1/2-oz jar at one sitting, the contents of the suspect container had tasted bad, and she had eaten only approximately 5 of the mushrooms. The remainder of the suspect jar was tested at l'Institut de Microbiologie de Montreal early in the course of the patient's hospitalization. Protection studies using monovalent botulism antitoxin in

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	29th WEEK ENDING		MEDIAN 1968-1972	CUMULATIVE, FIRST 29 WEEKS		
	July 21, 1973	July 22, 1972		1973	1972	MEDIAN 1968-1972
Aseptic meningitis	174	97	120	1,500	1,212	1,212
Brucellosis	4	6	6	102	90	113
Chickenpox	1,080	1,116	---	142,634	110,735	---
Diphtheria	-	1	1	102	57	92
Encephalitis, primary:						
Arthropod-borne and unspecified	32	25	26	648	472	555
Encephalitis, post-infectious	11	7	12	177	172	234
Hepatitis, serum (Hepatitis B)	154	202	134	4,349	5,165	3,966
Hepatitis, infectious (Hepatitis A)	972	1,046	991	28,164	31,001	30,925
Malaria	7	21	37	138	622	1,497
Measles (rubeola)	268	257	329	23,261	25,764	25,764
Meningococcal infections, total	26	19	32	935	878	1,643
Civilian	26	17	30	912	843	1,474
Military	-	2	2	23	35	170
Mumps	690	671	901	52,405	53,831	70,952
Rubella (German measles)	197	185	348	25,279	19,633	41,357
Tetanus	4	3	3	48	63	63
Tuberculosis, new active	651	663	---	17,777	18,390	---
Tularemia	4	5	5	78	74	80
Typhoid fever	15	10	7	409	173	163
Typhus, tick-borne (Rky. Mt. spotted fever)	42	32	23	353	244	190
Veneral Diseases:						
Gonorrhea	18,529	16,489	---	438,560	390,698	---
Syphilis, primary and secondary	373	530	---	14,443	13,336	---
Rabies in animals	50	84	71	2,067	2,486	2,095

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Poliomyelitis, total:	2
Botulism:	13	Paralytic:	2
Congenital rubella syndrome: Md.-1, Mo.-1	17	Psittacosis:	11
Leprosy: *Calif.-1	57	Rabies in man:	-
Leptospirosis:	18	Trichinosis: Calif.-1, N.Y. Ups.-1	44
Plague:	-	Typhus, murine: Tex.-1	23

*Delayed reports: Leprosy: Tex. delete 2

BOTULISM – Continued

mice confirmed the presence of botulinal toxin, probably type B, in the mushrooms.

On July 19 the case was reported to the Health Protection Branch, Health and Welfare, Canada, which confirmed the presence of type B botulinal toxin in the suspect jar and found the pH of the contents from the opened jar to be 6.3. The pH range of 4 apparently normal jars of this product tested by the Health Protection Branch was 4.2-4.5. The highest pH in 32 samples of 4 jars each of this product tested by the U.S. Food and Drug Administration (FDA) was 4.7. FDA determined that the product was made from fresh mushrooms to which a vinegar marinade was added before processing at 190°F for 1 hour.

On July 21, FDA announced a recall of marinated mushrooms canned by Wirth's Food Products. The recall included 7 brands (Pastene Brand Marinated Mushrooms, Marinated Mushrooms, Purveyor Brand, Carriage Trade, Wirth Brand, Pinmoney, and S. S. Pierce) and 6 different sizes (4-, 6-, 6 1/2-, 16-, and 32-oz jars of whole mushrooms and 15 1/2-oz jars of sliced mushrooms). The primary consignees were Massachusetts, New York, New Jersey, Pennsylvania, and California firms; military distributors; and Panamanian and Canadian customers. The products bore no identifying lot numbers. A similar recall in Canada involving Marque Pastene only was announced on July 19.

No other cases of neurologic disease compatible with botulism in consumers of the incriminated product have been reported to CDC or to Canadian health authorities.

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Editorial Note

Since February 1973, botulinal toxin has been detected in mushroom products canned in the United States on 4 separate occasions (MMWR, Vol. 22, Nos. 7, 10, 13, 14). This is the first reported case of botulism that has been related to any of these products. Heating mushrooms at 190°F for 1 hour would not be sufficient to kill type B *Clostridium botulinum* spores (1). Surviving type B spores could germinate and produce toxin under subsequent anaerobic conditions at a pH of 4.8 or greater (2).

Although over 90% of all outbreaks of botulism in the United States reported since 1899 for which the vehicle of transmission was identified were due to home-canned or home-preserved foods, cases of suspected botulism should be assumed to be associated with a contaminated commercially distributed food until investigation implicates another vehicle or the diagnosis is ruled out.

References

1. Perkins WE: Prevention of botulism by thermal processing. In Botulism: Proceedings of a Symposium, Cincinnati, December 1964 (PHS Pub No. 999-FP-1), edited by Lewis KH, Cassel K Jr. Cincinnati, 1964, pp 187-204
2. Schmidt CF: Spores of *C. botulinum*: Formation, resistance, germination. In Botulism: Proceedings of a Symposium, Cincinnati, December 1964 (PHS Pub No. 999-FP-1), edited by Lewis KH, Cassel K Jr. Cincinnati, 1964, p 76

EPIDEMIOLOGIC NOTES AND REPORTS

RELAPSING FEVER – Georgia, Arizona

In July 1973, 2 epidemiologically related cases of relapsing fever were reported to CDC from Georgia and Arizona; these cases and a subsequent investigation for additional cases are summarized below.

Georgia: On June 22, 1973, a 12-year-old girl from Atlanta, Georgia, became ill with chills, headache, and fever (temperature 104°F) which lasted 3 days. After the fever subsided, the girl felt completely well, but on July 4, she had a febrile episode of 2 days' duration. On July 11, she consulted a local physician; physical examination was normal, and no therapy was instituted. On July 12, her temperature rose briefly to 104°F. On July 19, she had another episode of fever and returned to her physician. Loosely coiled spirochetes were noted on a peripheral blood smear taken while she was febrile, and she was placed on tetracycline therapy.

The patient and her parents had visited several western national parks between June 17 and 21. On June 18, they had stayed in an old wooden cabin on the North Rim of the Grand Canyon. The girl and her father carried firewood into the cabin, but they noticed no ticks and gave no history of tick bites.

Arizona: On July 4, 1973, a 20-year-old desk clerk at North Rim Lodge, Grand Canyon National Park, Arizona, developed an acute illness characterized by headache, fever, chills, and myalgia. Diagnostic studies performed during his 4-day hospitalization at a local hospital were unrevealing, and he was discharged improved on no antibiotic therapy. A clinical relapse with fever (temperature 103.8°F) and severe prostration occurred on July 13, and the patient was admitted to another hospital. Routine studies on admission, including urinalysis, electrolytes, BUN, bilirubin, and SGOT, were considered normal. A complete blood cell count revealed a hemoglobin of 14.5 gm%, white blood cell count of 7,200, and a normal differential count. A peripheral blood smear was noted to contain numerous spirochetal organisms consistent with a diagnosis of relapsing fever. Oral tetracycline therapy was initiated with rapid clinical improvement, and the patient has subsequently remained asymptomatic.

Epidemiologic investigation on July 21, revealed that 46 of 290 employees and their family members living at the park had experienced similar illnesses in the preceding month. No

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JULY 21, 1973 AND JULY 22, 1972 (29th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post Infectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
						1973	1972			1973	1973
UNITED STATES	174	4	1,080	-	102	32	25	11	154	972	1,046
NEW ENGLAND	21	-	137	-	3	-	3	1	4	79	81
Maine *	-	-	1	-	-	-	-	-	-	2	5
New Hampshire *	-	-	-	-	-	-	-	-	-	11	-
Vermont	-	-	3	-	-	-	-	-	-	3	5
Massachusetts	1	-	78	-	1	-	3	-	1	33	46
Rhode Island	20	-	31	-	2	-	-	-	1	12	10
Connecticut	-	-	24	-	-	-	-	1	2	18	15
MIDDLE ATLANTIC	4	-	52	-	-	1	-	4	42	138	94
Upstate New York	4	-	2	-	-	-	-	4	12	62	30
New York City	-	-	48	-	-	-	-	-	6	12	21
New Jersey	-	-	NN	-	-	-	-	-	20	47	43
Pennsylvania	-	-	2	-	-	1	-	-	4	17	-
EAST NORTH CENTRAL	23	-	640	-	-	6	8	1	21	150	170
Ohio	12	-	343	-	-	2	1	-	6	41	24
Indiana	1	-	35	-	-	-	1	-	1	11	7
Illinois	1	-	-	-	-	1	2	1	3	37	55
Michigan	9	-	68	-	-	3	4	-	10	53	80
Wisconsin	-	-	194	-	-	-	-	-	1	8	4
WEST NORTH CENTRAL	2	-	20	-	8	1	1	-	5	30	80
Minnesota *	-	-	-	-	-	-	-	-	-	1	7
Iowa	-	-	14	-	-	-	1	-	-	10	3
Missouri	2	-	4	-	1	1	-	-	3	8	55
North Dakota	-	-	2	-	-	-	-	-	-	-	-
South Dakota	-	-	-	-	7	-	-	-	-	-	3
Nebraska	-	-	-	-	-	-	-	-	1	1	-
Kansas	-	-	-	-	-	-	-	-	1	10	12
SOUTH ATLANTIC	22	-	82	-	-	7	3	-	18	174	172
Delaware	-	-	3	-	-	-	-	-	-	-	1
Maryland	3	-	8	-	-	-	-	-	2	11	15
District of Columbia	3	-	4	-	-	-	-	-	-	-	2
Virginia	7	-	6	-	-	3	-	-	3	26	17
West Virginia	2	-	56	-	-	-	-	-	-	8	7
North Carolina	-	-	NN	-	-	-	2	-	2	37	55
South Carolina	2	-	4	-	-	2	1	-	-	7	10
Georgia	-	-	1	-	-	-	-	-	-	36	20
Florida	5	-	-	-	-	2	-	-	11	49	45
EAST SOUTH CENTRAL	36	-	6	-	-	3	-	-	18	105	46
Kentucky	9	-	3	-	-	-	-	-	-	41	20
Tennessee	-	-	NN	-	-	1	-	-	4	43	19
Alabama	20	-	3	-	-	-	-	-	9	12	5
Mississippi	7	-	-	-	-	2	-	-	5	9	2
WEST SOUTH CENTRAL	16	4	54	-	9	9	4	-	3	91	123
Arkansas *	-	-	1	-	-	-	-	-	-	1	6
Louisiana	3	-	NN	-	-	1	2	-	1	9	15
Oklahoma	8	1	5	-	-	8	1	-	2	14	14
Texas	5	3	48	-	9	-	1	-	-	67	88
MOUNTAIN	3	-	27	-	7	-	-	-	1	15	46
Montana	1	-	14	-	-	-	-	-	-	3	2
Idaho	1	-	-	-	-	-	-	-	-	5	11
Wyoming	-	-	-	-	-	-	-	-	-	1	-
Colorado	-	-	7	-	-	-	-	-	-	3	10
New Mexico	1	-	6	-	6	-	-	-	1	3	9
Arizona *	-	-	-	-	1	-	-	-	-	-	10
Utah	-	-	-	-	-	-	-	-	-	-	4
Nevada	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	47	-	62	-	75	5	6	5	42	190	234
Washington	5	-	38	-	67	1	2	-	1	20	25
Oregon	-	-	-	-	3	-	-	-	5	13	29
California *	42	-	-	-	3	4	4	5	36	141	173
Alaska	-	-	4	-	2	-	-	-	-	1	-
Hawaii	-	-	20	-	-	-	-	-	-	15	7
Guam *	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	2	-	-	-	-	-	-	10	12
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-

*Delayed reports: Aseptic meningitis: Ark. 1
 Brucellosis: Ark. 1
 Chickenpox: Me. 7, N.H. 17, Guam 2
 Diphtheria: Ariz. 1
 Encephalitis, primary: Ark. 1
 Hepatitis B: Minn. 1, Calif. 37
 Hepatitis A: Me. 7, N.H. 2, Minn. delete 1, Ariz. 5, Ariz. 11

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING JULY 21, 1973 AND JULY 22, 1972 (29th WEEK) -- Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1973	Cum. 1973	1973	Cumulative		1973	Cumulative		1973	Cum. 1973	1973	Cum. 1973
				1973	1972		1973	1972				
UNITED STATES	7	138	268	23,261	25,764	26	935	878	690	52,405	197	25,279
NEW ENGLAND	-	12	27	7,313	2,978	3	44	36	51	2,635	11	3,531
Maine*	-	-	-	63	238	-	1	3	4	282	-	68
New Hampshire*	-	-	2	854	227	-	6	3	3	177	-	353
Vermont	-	2	1	117	120	-	2	-	1	241	-	43
Massachusetts	-	6	16	3,891	623	1	12	17	5	776	8	1,994
Rhode Island	-	-	2	600	519	-	3	10	16	294	1	206
Connecticut	-	4	6	1,788	1,251	2	20	3	22	865	2	867
MIDDLE ATLANTIC	2	21	66	2,259	889	2	126	107	131	6,792	10	4,131
Upstate New York	1	12	27	748	123	1	45	27	NN	NN	1	374
New York City	-	1	12	847	227	1	25	35	105	4,182	3	438
New Jersey	1	4	23	368	484	-	28	20	14	1,451	5	3,033
Pennsylvania	-	4	4	296	55	-	28	25	12	1,159	1	286
EAST NORTH CENTRAL	-	19	108	8,182	10,640	2	121	116	114	13,673	33	5,703
Ohio	-	3	-	278	226	1	53	46	19	2,607	4	666
Indiana	-	3	6	595	1,206	-	4	11	8	1,111	3	908
Illinois	-	10	41	1,962	3,937	1	24	25	18	2,294	4	896
Michigan*	-	3	47	4,259	1,934	-	35	30	23	3,822	15	1,764
Wisconsin	-	-	14	1,088	3,337	-	5	4	46	3,839	7	1,469
WEST NORTH CENTRAL	-	5	2	430	918	1	72	66	15	4,500	3	1,188
Minnesota	-	1	-	18	19	1	5	17	-	76	3	217
Iowa	-	-	1	276	646	-	17	2	4	2,784	-	184
Missouri	-	1	-	48	158	-	30	20	5	614	-	254
North Dakota	-	1	-	56	51	-	3	-	-	64	-	276
South Dakota	-	-	-	5	-	-	4	2	1	14	-	23
Nebraska	-	1	1	5	18	-	6	9	5	112	-	139
Kansas	-	1	-	27	21	-	7	16	-	836	-	95
SOUTH ATLANTIC	4	22	25	1,159	2,038	5	154	200	79	6,166	10	2,029
Delaware	-	-	-	8	48	-	-	1	-	251	-	8
Maryland	3	3	7	9	15	2	22	33	2	600	-	10
District of Columbia	-	1	1	5	2	-	4	9	9	69	-	2
Virginia	-	5	1	409	58	1	28	44	11	660	1	616
West Virginia	-	-	1	183	249	-	2	7	33	2,137	4	265
North Carolina	-	5	-	4	29	-	33	25	NN	NN	1	199
South Carolina	-	1	-	55	214	-	10	19	-	346	-	80
Georgia	1	3	1	147	153	-	19	6	1	26	-	11
Florida	-	4	14	339	1,270	2	36	56	23	2,077	4	838
EAST SOUTH CENTRAL	-	4	-	585	1,014	3	88	74	99	4,182	6	1,229
Kentucky	-	-	-	361	514	-	31	23	38	1,257	-	375
Tennessee	-	-	-	165	191	2	35	28	56	1,890	3	484
Alabama	-	4	-	5	129	1	15	15	5	581	-	183
Mississippi	-	-	-	54	180	-	7	8	-	454	3	187
WEST SOUTH CENTRAL	-	9	5	623	1,382	5	145	110	73	3,420	12	1,403
Arkansas*	-	-	1	69	13	-	13	9	3	338	-	112
Louisiana	-	2	-	83	82	2	28	34	-	66	-	100
Oklahoma	-	1	1	51	9	3	25	6	6	407	1	166
Texas	-	6	3	420	1,278	-	79	61	64	2,609	11	1,025
MOUNTAIN	-	8	11	561	1,716	1	27	15	27	2,348	10	2,330
Montana	-	1	-	15	12	-	6	2	2	220	3	499
Idaho	-	-	5	242	20	-	4	4	-	110	1	33
Wyoming	-	-	4	77	51	-	-	1	-	418	-	5
Colorado	-	1	2	98	510	1	7	3	13	390	3	1,530
New Mexico	-	2	-	111	108	-	3	1	12	941	3	177
Arizona	-	4	-	16	862	-	3	1	-	140	-	17
Utah	---	-	---	1	153	---	2	2	---	121	---	66
Nevada	-	-	-	1	-	-	2	1	-	8	-	3
PACIFIC	1	38	24	2,149	4,189	4	158	154	101	8,689	102	3,735
Washington	-	3	9	996	970	1	17	11	6	1,401	-	650
Oregon	-	2	3	447	108	-	12	13	34	1,591	8	765
California	1	30	10	623	3,006	3	123	122	56	4,787	93	2,285
Alaska	-	2	-	65	11	-	6	5	-	672	-	9
Hawaii	-	1	2	18	94	-	-	3	5	238	1	26
Guam*	-	-	-	11	4	-	-	11	-	16	-	7
Puerto Rico	-	-	12	1,682	527	-	7	4	7	615	-	26
Virgin Islands	-	-	-	-	1	-	-	2	-	17	-	2

*Delayed reports: Measles: N.H. 1, Mich. 152, Guam 2 Mumps: Me. 4, Guam 1
Meningococcal infections: Me. 1 Rubella: Ark. 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING JULY 21, 1973 AND JULY 22, 1972 (29th WEEK) - Continued

AREA	TETANUS Cumulative 1973	TUBERCULOSIS (New Active)		TULA- REMI Cumulative 1973	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
		1973	Cum. 1973		1973	Cum. 1973	1973	Cum. 1973	GONOR- RHEA	SYPHILIS (Pri. & Sec.)	1973	Cum. 1973
		1973	1973		1973	1973	1973	1973	1973	1973	1973	1973
UNITED STATES	48	651	17,777	78	15	409	42	353	18,529	373	50	2,067
NEW ENGLAND	2	20	631	-	-	5	-	1	563	11	-	89
Maine *	-	3	48	-	-	-	-	-	33	1	-	53
New Hampshire	-	-	36	-	-	-	-	-	12	-	-	28
Vermont	-	-	17	-	-	-	-	-	7	1	-	3
Massachusetts	-	10	337	-	-	5	-	1	288	5	-	4
Rhode Island	1	1	45	-	-	-	-	-	63	1	-	-
Connecticut	1	6	148	-	-	-	-	-	160	3	-	1
MIDDLE ATLANTIC	7	118	3,513	-	1	37	3	17	2,656	129	1	16
Upstate New York	1	19	617	-	1	6	2	9	396	6	-	8
New York City	3	33	1,331	-	-	14	-	1	1,449	83	-	-
New Jersey	2	27	622	-	-	9	-	3	305	23	-	-
Pennsylvania	1	39	943	-	-	8	1	4	506	17	1	8
EAST NORTH CENTRAL	6	100	2,717	2	3	22	5	16	2,546	16	3	191
Ohio	1	36	824	-	3	9	4	12	1,039	4	-	26
Indiana	-	17	353	-	-	-	-	-	244	2	-	45
Illinois	3	23	811	-	-	5	1	4	234	-	1	54
Michigan	1	24	652	2	-	6	-	-	784	10	-	3
Wisconsin	1	-	77	-	-	2	-	-	245	-	2	63
WEST NORTH CENTRAL	5	35	729	9	1	13	-	11	1,113	11	23	659
Minnesota	-	3	85	-	1	4	-	-	239	4	9	225
Iowa	-	5	80	-	-	-	-	5	133	-	3	135
Missouri	4	18	341	9	-	7	-	6	415	6	5	57
North Dakota	1	-	25	-	-	-	-	-	15	-	5	105
South Dakota	-	2	49	-	-	1	-	-	29	-	-	77
Nebraska	-	1	46	-	-	1	-	-	47	1	-	3
Kansas	-	6	103	-	-	-	-	-	235	-	1	57
SOUTH ATLANTIC	8	147	3,502	6	1	223	13	174	4,791	134	10	167
Delaware	-	7	48	-	-	-	-	7	117	2	1	2
Maryland	-	24	369	-	1	5	1	6	354	10	1	8
District of Columbia	-	1	161	-	-	-	-	-	413	13	-	-
Virginia	2	12	471	1	-	1	3	38	436	37	2	53
West Virginia *	-	4	162	-	-	2	1	1	47	1	-	17
North Carolina	-	23	553	1	-	4	1	69	645	6	-	1
South Carolina	-	28	316	-	-	3	6	26	378	22	-	2
Georgia	1	17	580	3	-	1	1	27	1,186	21	4	53
Florida	5	31	842	1	-	207	-	-	1,215	22	2	31
EAST SOUTH CENTRAL	7	61	1,598	5	4	17	16	53	1,186	14	5	335
Kentucky	1	14	372	1	-	2	-	-	145	7	2	183
Tennessee	4	21	499	3	1	8	4	25	563	5	3	115
Alabama	2	15	424	-	-	2	6	9	97	2	-	37
Mississippi	-	11	303	1	3	5	6	19	381	-	-	-
WEST SOUTH CENTRAL	8	59	1,778	54	1	18	3	69	2,460	49	6	400
Arkansas *	-	9	210	36	-	3	-	12	142	3	-	86
Louisiana *	3	7	284	-	1	6	-	-	693	11	1	32
Oklahoma	3	6	156	16	-	2	3	55	296	4	2	128
Texas *	2	37	1,128	2	-	7	-	2	1,329	31	3	154
MOUNTAIN	-	22	581	1	-	6	2	6	532	2	-	18
Montana	-	1	28	-	-	-	-	-	29	-	-	-
Idaho	-	-	23	-	-	-	1	1	81	-	-	-
Wyoming	-	-	11	-	-	1	-	1	-	-	-	-
Colorado	-	4	114	-	-	1	-	1	204	2	-	-
New Mexico	-	3	128	1	-	1	1	3	25	-	-	2
Arizona *	-	14	219	-	-	3	-	-	174	-	-	16
Utah	-	-	21	-	-	-	-	-	-	-	-	-
Nevada	-	-	37	-	-	-	-	-	19	-	-	-
PACIFIC	5	89	2,728	1	4	68	-	6	2,682	7	2	192
Washington	1	4	231	-	1	6	-	3	270	4	-	2
Oregon	1	5	149	-	-	2	-	2	263	2	-	1
California	3	75	2,119	1	3	59	-	1	2,059	-	2	182
Alaska	-	-	67	-	-	-	-	-	33	-	-	7
Hawaii*	-	5	162	-	-	1	-	-	57	1	-	-
Guam *	-	-	27	-	-	-	-	-	-	-	-	-
Puerto Rico	4	6	277	-	-	2	-	-	97	11	1	29
Virgin Islands	-	-	-	-	-	-	-	-	5	2	-	-

*Delayed reports: TB: Me. delete 2, Guam 11
Tularemia: Ark. 5
Typhoid: Ariz. 1

Gonorrhea: La. delete 2, Guam 6
Syphilis: Hawaii delete 20
Rabies: W. Va. 1, Tex. 4

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING JULY 21, 1973

Week No.
29

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes			Pneumonia and Influenza All Ages	Area	All Causes			Pneumonia and Influenza All Ages
	All Ages	65 years and over	Under 1 year			All Ages	65 years and over	Under 1 year	
NEW ENGLAND	686	419	17	34	SOUTH ATLANTIC	1,363	717	49	49
Boston, Mass.	226	136	8	8	Atlanta, Ga.	123	58	3	8
Bridgeport, Conn.	34	25	—	3	Baltimore, Md.	217	119	7	5
Cambridge, Mass.	32	20	1	5	Charlotte, N. C.	42	15	6	—
Fall River, Mass.	19	12	—	—	Jacksonville, Fla.	112	62	4	2
Hartford, Conn.	64	39	—	2	Miami, Fla.	112	57	3	3
Lowell, Mass.	27	9	—	3	Norfolk, Va.	68	33	3	8
Lynn, Mass.	19	11	—	1	Richmond, Va.	101	55	1	4
New Bedford, Mass.	20	13	—	—	Savannah, Ga.	29	19	2	1
New Haven, Conn.	54	28	4	—	St. Petersburg, Fla.	108	81	2	3
Providence, R. I.	56	33	1	8	Tampa, Fla.	68	37	3	4
Somerville, Mass.	10	8	—	—	Washington, D. C.	335	157	13	8
Springfield, Mass.	44	30	2	3	Wilmington, Del.	48	24	2	3
Waterbury, Conn.	21	17	—	—	EAST SOUTH CENTRAL	716	407	32	27
Worcester, Mass.	60	38	1	1	Birmingham, Ala.	129	67	7	3
MIDDLE ATLANTIC	3,460	2,094	112	134	Chattanooga, Tenn.	64	38	3	3
Albany, N. Y.	60	32	4	1	Knoxville, Tenn.	43	28	1	2
Allentown, Pa.	33	20	—	1	Louisville, Ky.	112	62	5	10
Buffalo, N. Y.	135	80	3	6	Memphis, Tenn.	160	89	12	—
Camden, N. J.	57	32	3	—	Mobile, Ala.	61	36	2	1
Elizabeth, N. J.	34	18	—	—	Montgomery, Ala.	29	17	1	2
Erie, Pa.	35	26	3	4	Nashville, Tenn.	118	70	1	6
Jersey City, N. J.	46	32	3	3	WEST SOUTH CENTRAL	1,253	641	60	45
Newark, N. J.	81	42	4	4	Austin, Tex.	39	23	3	3
New York City, N. Y. †	1,785	1,115	50	79	Baton Rouge, La.	34	12	—	—
Paterson, N. J.	32	19	1	—	Corpus Christi, Tex.	19	7	3	—
Philadelphia, Pa.	595	342	16	5	Dallas, Tex.	158	71	5	3
Pittsburgh, Pa.	162	83	13	8	El Paso, Tex.	50	31	5	5
Reading, Pa.	33	24	1	3	Fort Worth, Tex.	96	44	2	1
Rochester, N. Y.	124	82	4	5	Houston, Tex.	296	136	16	9
Schenectady, N. Y.	20	8	3	2	Little Rock, Ark.	62	37	5	6
Scranton, Pa.	60	40	—	4	New Orleans, La.	159	93	6	6
Syracuse, N. Y.	62	36	3	1	Oklahoma City, Okla. *	88	48	4	2
Trenton, N. J.	42	23	1	1	San Antonio, Tex.	142	71	5	2
Utica, N. Y.	30	19	—	1	Shreveport, La.	49	26	2	3
Yonkers, N. Y.	34	21	—	6	Tulsa, Okla.	61	42	4	5
EAST NORTH CENTRAL	2,559	1,430	107	60	MOUNTAIN	582	329	35	13
Akron, Ohio	66	41	1	—	Albuquerque, N. Mex.	55	26	2	5
Canton, Ohio	45	26	2	1	Colorado Springs, Colo.	36	24	1	—
Chicago, Ill.	652	342	25	10	Denver, Colo.	132	70	17	1
Cincinnati, Ohio	170	112	2	2	Las Vegas, Nev.	62	27	2	—
Cleveland, Ohio	179	104	3	4	Ogden, Utah	17	12	—	1
Columbus, Ohio	132	69	12	4	Phoenix, Ariz.	124	75	8	3
Dayton, Ohio	92	55	4	2	Pueblo, Colo.	30	20	—	2
Detroit, Mich.	390	201	19	17	Salt Lake City, Utah	52	36	4	—
Evansville, Ind.	42	29	2	4	Tucson, Ariz.	74	39	1	1
Fort Wayne, Ind.	45	27	2	3	PACIFIC	1,661	1,037	50	36
Gary, Ind.	34	20	2	3	Berkeley, Calif.	21	15	—	—
Grand Rapids, Mich.	48	30	—	—	Fresno, Calif.	65	38	2	1
Indianapolis, Ind.	138	71	6	2	Glendale, Calif.	31	23	1	1
Madison, Wis.	91	45	4	1	Honolulu, Hawaii	47	21	2	2
Milwaukee, Wis.	120	70	6	2	Long Beach, Calif.	93	59	1	4
Peoria, Ill.	55	36	6	—	Los Angeles, Calif.	566	367	14	9
Rockford, Ill.	35	18	3	2	Oakland, Calif.	97	61	4	1
South Bend, Ind.	60	40	4	1	Pasadena, Calif.	33	17	—	—
Toledo, Ohio	113	65	2	2	Portland, Oreg.	144	93	11	2
Youngstown, Ohio	52	29	2	—	Sacramento, Calif.	70	38	3	—
WEST NORTH CENTRAL	873	531	40	34	San Diego, Calif.	107	69	2	2
Des Moines, Iowa	67	38	3	2	San Francisco, Calif.	153	92	7	7
Duluth, Minn.	29	19	—	4	San Jose, Calif.	58	31	—	1
Kansas City, Kans.	29	16	3	2	Seattle, Wash.	103	65	2	2
Kansas City, Mo.	123	81	5	2	Spokane, Wash.	38	27	1	3
Lincoln, Nebr.	33	23	—	1	Tacoma, Wash.	35	21	—	1
Minneapolis, Minn.	131	68	11	1	Total	13,153	7,605	502	432
Omaha, Nebr.	83	42	5	1	Expected Number	12,210	6,913	550	390
St. Louis, Mo.	242	146	9	8	Cumulative Total (includes reported corrections for previous weeks)	380,702	224,913	14,016	16,089
St. Paul, Minn.	65	45	2	3					
Wichita, Kans.	71	53	2	10					

†Delayed report for week ending July 14, 1973

*Estimate based on average percent of divisional total

RELAPSING FEVER – Continued

apparent temporal clustering was noted, with sporadic cases occurring throughout the period June 15–July 18, 1973. Mouse inoculation studies on blood specimens from 10 individuals with most recent symptoms revealed all 10 to be infected with *Borrelia* organisms. Their symptoms are shown in Table 1. The rustic cabins where the patients resided were scattered throughout the North Rim Park area and included standard and deluxe cabins, mens' and womens' employee dormitories, and the ranger housing area. A preliminary survey of South Rim employees revealed no cases of a clinically similar illness.

Tourists visiting the area are being warned about the current outbreak, and vector control measures are being initiated.

(Reported by Thomas Luckey, M.D., private physician, Atlanta; John E. McCroan, Ph.D., State Epidemiologist, Georgia Department of Human Resources; Dean Abbott, Sanitarian, Thomas O. Newell, M.A., Communicable Disease Investigator, and William Thomas, M.D., Director, Coconino County Health Department, Flagstaff, Arizona; Philip M. Hotchkiss, D.V.M., State Epidemiologist, Arizona State Department of Health; William Orr, Chief Ranger, Alan Steckler, Ph.D., Consultant, National Park Service, North Rim, Grand Canyon National Park; Phoenix, Arizona, Laboratories, Fort Collins, Colorado, Laboratories, Ecological Investigations Program, the Bacterial Immunology Section, Bacteriology Branch, Bureau of Laboratories, and the Bacterial Diseases Branch, Bureau of Epidemiology, CDC.)

Editorial Note

Endemic tickborne relapsing fever has been recorded in Arizona (1,2) and 12 other western states. Although it is usually a sporadic endemic disease, large outbreaks can occur. The last large outbreak was in 1968 in a group of Boy Scouts using old wooden cabins in Spokane County, Washington (3).

The disease is transmitted by several species of ticks of the genus *Ornithodoros* (*O. hermsi*, *O. parkeri*, and *O. turicata*) and produced by spirochetes of the genus *Borrelia* with similar names (*B. hermsi*, *B. parkeri*, and *B. turicata*). The *Ornitho-*

Table 1
Symptoms of 10 Patients with Laboratory-Confirmed Relapsing Fever
Grand Canyon National Park – June-July 1973

Symptom	Number with Symptom
Headache	8
Muscle pain	8
Weakness	8
Nausea	8
Feverish feeling	7
Loss of appetite	7
Stiff neck	6
Shaking chills	5
Abdominal pain	5
Diarrhea	4
Red eyes	4

doros ticks and their bites often go unnoticed because the ticks usually feed in the dark, have brief feeding times, and inflict bites that are relatively painless.

Diagnosis of relapsing fever is usually made by finding loosely coiled spirochetes in a peripheral blood smear, and/or by the inoculation of whole blood intraperitoneally into young mice or guinea pigs. The disease is often self-limiting, but treatment with tetracyclines is effective (4).

Although relapsing fever is rarely considered in the diagnosis of a febrile episode, it is possible that this diagnosis should be considered in febrile illnesses in persons who have stayed overnight at the North Rim of the Grand Canyon since early June 1973.

References

1. Bannister K: Relapsing fever (Febris recurrens, Ruckfallfieber, Spirochillum fever, Tick fever). *Southwest Med* 14:581, 1930
2. Thayer KH: Relapsing fever. *Southwest Med* 24:125, 1940
3. Thompson RS, Burgdorfer W, Russell R, Francis BJ: Outbreak of tick-borne relapsing fever in Spokane County, Washington. *JAMA* 210:1045-1050, 1969
4. Southern PM Jr, Sanford JP: Relapsing fever. A clinical and microbiological review. *Medicine* 48:129-149, 1969

CURRENT TRENDS**PRIMARY AND SECONDARY SYPHILIS – United States**

In June 1973, a total of 2,079 cases of primary and secondary syphilis were reported in the United States – 0.3% fewer than in June 1972 (Table 2). Cases increased from 19,019 in 1968 to 24,429 in 1972, an overall increase of 28.5% or an average of 6.6% per year. In the 3-month period January-March 1973, cases increased by 4.7%; in April-June, cases increased by 0.5%. These data suggest that reported cases may presently be leveling off after 4 consecutive years of increase.

The national trend is not uniformly mirrored in individual states, where both significant increases and significant decreases in syphilis cases are being reported. While a variety of local factors influenced the trends within individual states, a strong syphilis epidemiology program was typical of states experiencing significant decreases in reported cases.

(Reported by the Venereal Disease Branch, Bureau of State Services, CDC.)

Table 2
SUMMARY OF REPORTED CASES OF INFECTIOUS SYPHILIS

CASES OF PRIMARY AND SECONDARY SYPHILIS: By Reporting Areas June 1973 and June 1972 - Provisional Data

Reporting Area	June		Cumulative Jan.-June		Reporting Area	June		Cumulative Jan.-June	
	1973	1972	1973	1972		1973	1972	1973	1972
NEW ENGLAND	85	57	571	437	EAST SOUTH CENTRAL	132	129	718	687
Maine	1	1	12	14	Kentucky	19	36	196	131
New Hampshire	—	1	5	5	Tennessee	51	34	223	255
Vermont	2	1	12	11	Alabama	33	19	95	91
Massachusetts	55	29	388	243	Mississippi	29	40	204	210
Rhode Island	2	5	11	21	WEST SOUTH CENTRAL	173	248	1,338	1,537
Connecticut	25	20	143	143	Arkansas	14	12	77	113
MIDDLE ATLANTIC	455	557	2,840	2,905	Louisiana	62	90	415	446
Upstate New York	43	24	199	215	Oklahoma	11	12	96	52
New York City	260	436	1,770	2,034	Texas	86	134	750	926
Pa. (Excl. Phila.)	20	9	127	84	MOUNTAIN	41	39	301	250
Philadelphia	44	21	233	156	Montana	1	3	1	4
New Jersey	88	67	511	416	Idaho	—	—	6	3
EAST NORTH CENTRAL	188	166	1,157	1,283	Wyoming	—	—	2	8
Ohio	28	21	143	165	Colorado	10	8	114	30
Indiana	28	13	164	99	New Mexico	8	5	39	57
Downstate Illinois	17	7	97	76	Arizona	17	15	92	104
Chicago	72	63	455	521	Utah	—	2	8	13
Michigan	41	60	257	401	Nevada	5	6	39	31
Wisconsin	2	2	41	21	PACIFIC	345	301	2,170	1,740
WEST NORTH CENTRAL	25	26	151	136	Washington	12	10	78	63
Minnesota	4	5	54	19	Oregon	5	2	24	23
Iowa	9	6	22	22	California	324	286	2,027	1,631
Missouri	11	7	56	64	Alaska	2	—	9	9
North Dakota	—	—	1	—	Hawaii	2	3	32	14
South Dakota	1	—	2	1	U.S. TOTAL	2,079	2,086	12,660	12,095
Nebraska	—	5	2	11	TERRITORIES	37	52	410	429
Kansas	—	3	14	19	Puerto Rico	34	47	392	384
SOUTH ATLANTIC	635	563	3,414	3,120	Virgin Islands	3	5	18	45
Delaware	10	3	53	32					
Maryland	83	88	419	478					
District of Columbia	66	61	391	400					
Virginia	54	47	374	217					
West Virginia	—	—	8	13					
North Carolina	63	55	323	277					
South Carolina	47	32	323	246					
Georgia	121	114	611	665					
Florida	191	163	912	792					

Note: Cumulative Totals include revised and delayed reports through previous months.

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The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

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