

Morbidity and Mortality



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EPIDEMIOLOGIC NOTES AND REPORTS

OUTBREAK OF PSYCHOSOMATIC ILLNESS - Alabama

On Friday, May 11, 1973, 105 students and 3 teachers at the Berry Elementary School, Berry, Alabama, became ill with pruritus and 1 or more of the following symptoms: rash, headache, cough, weakness, faintness, and shortness of breath. Seventy persons received care at a nearby hospital emergency room. On Tuesday, May 15, and Friday, May 18, 18 and 14 students, respectively, mostly ones who had been ill on May 11, sought medical attention for the same problems. Only a few cases occurred at times other than the 3 peak days (Figure 1); 3 additional persons sought medical treatment in June. Physical examination on all 3 dates revealed anxiety, hyperventilation, simple erythema of the skin in excoriated areas, and occasional epigastric tenderness. Blood pressure and temperature were uniformly normal. Complete blood counts of 13 of those ill were normal except for slight eosinophilia in 2 cases.

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Data from questionnaires revealed that in the 6 weeks preceding the outbreak on May 11, approximately 30 cases of rash illnesses attributed to various organic causes occurred among students and faculty. These rashes were maculopapular eruptions that persisted for several days without significant pruritus. Epidemiologic investigation revealed no other similar illness in Berry or its environs before May 11. With the exception of 3 cases in the families of elementary school children and several in students at the high school where elementary classes were held on May 17 and 18, there was no secondary spread in the community.

The total enrollment in the school was 400 students and 26 staff, and the overall attack rate was 29%; among male

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

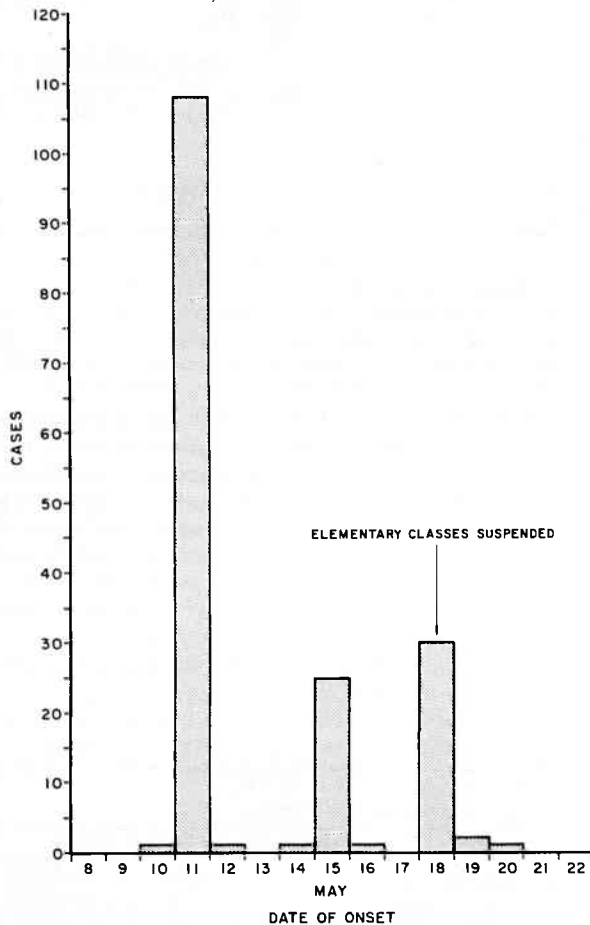
DISEASE	31st WEEK ENDING		MEDIAN 1968-1972	CUMULATIVE, FIRST 31 WEEKS		
	August 4, 1973	August 5, 1972		1973	1972	MEDIAN 1968-1972
Aseptic meningitis	180	156	153	1,833	1,471	1,471
Brucellosis	2	5	5	109	102	123
Chickenpox	449	629	---	143,571	112,073	---
Diphtheria	—	—	—	104	60	94
Encephalitis, primary:						
Arthropod-borne and unspecified	42	25	35	724	515	620
Encephalitis, post-infectious	3	8	8	185	187	248
Hepatitis, serum (Hepatitis B)	169	156	152	4,721	5,500	4,233
Hepatitis, infectious (Hepatitis A)	913	875	964	30,051	32,911	32,911
Malaria	2	6	37	142	638	1,633
Measles (rubeola)	147	201	228	23,594	26,136	26,136
Meningococcal infections, total	14	12	24	968	921	1,709
Civilian	14	12	24	944	885	1,535
Military	—	—	—	24	36	174
Mumps	542	476	726	53,431	54,832	72,577
Rubella (German measles)	141	137	344	25,467	19,958	42,181
Tetanus	1	5	4	49	69	69
Tuberculosis, new active	541	667	---	18,928	19,962	---
Tularemia	1	2	2	88	77	87
Typhoid fever	11	6	9	425	185	181
Typhus, tick-borne (Rky. Mt. spotted fever)	26	31	19	407	300	232
Veneral Diseases:						
Gonorrhea	17,493	15,546	---	474,475	423,031	---
Syphilis, primary and secondary	474	541	---	15,535	14,397	---
Rabies in animals	72	71	58	2,217	2,633	2,210

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Poliomyelitis, total:	3
Botulism:	13	Paralytic:	3
Congenital rubella syndrome: Calif. -1	18	Psittacosis: Calif. -1	12
Leprosy: Calif. -1, Hawaii -8, Tex. -1	72	Rabies in man:	—
Leptospirosis: Mich. -1	20	Trichinosis: Mich. -1, N.Y.C. -1	63
Plague:	1	Typhus, murine: Tex. -1	24

PSYCHOSOMATIC ILLNESS - Continued

Figure 1
CASES OF PSYCHOSOMATIC ILLNESS, BY DATE OF ONSET
BERRY, ALABAMA - MAY 1973



students the rate was 18%, among females 42%. Attack rates were highest in the 3rd through 6th grades (38%), while grades 1 and 2 and the special education classes had an attack rate of 9% (Table 1).

There was no significant correlation between the use of water, playgrounds, or school buses and the onset of illness. The attacks occurred before lunchtime, so cafeteria food was not implicated. Examination of the general environment revealed no recent use of insecticides or industrial chemicals and no change in the cleaning and washing compounds used within the school.

Interviews with the affected students and teachers suggested a progression of the illness from class to class during the morning of May 11. Individuals became ill after seeing other ill students in the hallways and other public areas of the school building. The cases on May 15 and 18 occurred primarily in small groups of female classmates who had been previously affected.

Several possible causes of this illness were considered. The sudden onset and rapid course, lack of fever, and lack of secondary spread in households ruled against an infectious process. The lack of a known chemical introduction, the absence of cases in individuals from areas surrounding the school, and the symptom complex were not compatible with

Table 1
Attack Rates of Psychosomatic Illness for Students, by Grade
Berry (Ala.) Elementary School - May 11, 1973

Grade	Number Present	Number Responding	Number Ill	Percent Ill*
Spec. Ed.	19	17	0	0
1st	61	55	5	9
2nd	51	41	5	12
3rd	67	64	28	44
4th	60	60	24	40
5th	62	57	25	44
6th	70	70	19	27

*No. ill/No. responding to questionnaire

known allergies or reactions to toxins. Furthermore, rapid spread apparently requiring observation of other ill persons and the prevalence of hyperventilation strongly suggested a psychosomatic etiology to the illness.

Control measures included closing the school building on May 15, suspending classes for the remainder of the school year after the occurrence of cases on May 18, and quickly informing the news media of the suspected psychological etiology of the illness with specific information on the treatment of hyperventilation.

(Reported by J. B. Robertson, M.D., Health Officer, Thelma Humber, Public Health Nurse Supervisor, Fayette County Health Department; John Kaiser, Medical Student, University of Mississippi School of Medicine; Frederick S. Wolf, M.D., State Epidemiologist, Alabama State Department of Health; a CDC Sanitarian, and 3 EIS Officers.)

Editorial Note

Outbreaks of psychosomatic illness date back to the dancing manias reported in Europe in the Middle Ages. In the past 30 years, at least 10 outbreaks diagnosed as mass hysteria have been reported in the United States (1, 2, 3, 4, 5), the United Kingdom (6, 7), and Africa (8). Five of these outbreaks occurred in schools, and in several the predominant finding was hyperventilation or faintness. Attack rates were highest for females, and recurrences were common. Laboratory results were generally within normal limits, and physical findings were minimal compared with the complaints registered by the patients. Psychologic and sociometric testing in several outbreaks revealed that those affected rated high on scales of neuroticism and that closer personal relationships often existed among those affected than those not affected. The outbreak in Berry had many of these features, and the epidemiologic investigation confirms the absence of physical or infectious agents.

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 4, 1973 AND AUGUST 5, 1972 (31st WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post In- fectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
						1973	1972	1973	1973	1973	1972
UNITED STATES	180	2	449	-	104	42	25	3	169	913	875
NEW ENGLAND	9	-	73	-	3	1	3	-	3	53	86
Maine *	-	-	-	-	-	-	-	-	1	3	2
New Hampshire	-	-	-	-	-	-	1	-	-	4	15
Vermont	-	-	5	-	-	-	-	-	-	1	8
Massachusetts	1	-	46	-	1	1	2	-	1	35	39
Rhode Island	7	-	12	-	2	-	-	-	-	6	6
Connecticut	1	-	10	-	-	-	-	-	1	4	16
MIDDLE ATLANTIC	22	-	35	-	-	5	5	2	39	109	111
Upstate New York	1	-	1	-	-	1	3	1	4	28	33
New York City	1	-	34	-	-	-	-	-	19	29	36
New Jersey	17	-	NN	-	-	4	2	-	7	40	42
Pennsylvania	3	-	-	-	-	-	-	1	9	12	-
EAST NORTH CENTRAL	49	-	152	-	-	14	1	-	24	150	116
Ohio *	29	-	16	-	-	10	-	-	4	17	17
Indiana	4	-	7	-	-	-	1	-	-	17	5
Illinois	3	-	-	-	-	-	-	-	10	41	31
Michigan	13	-	36	-	-	4	-	-	9	63	55
Wisconsin	-	-	93	-	-	-	-	-	1	12	8
WEST NORTH CENTRAL	3	-	45	-	7	1	-	-	-	53	28
Minnesota	-	-	-	-	-	-	-	-	-	5	-
Iowa	3	-	4	-	-	-	-	-	-	12	-
Missouri	-	-	28	-	-	-	-	-	-	20	13
North Dakota	-	-	13	-	-	1	-	-	-	-	-
South Dakota	-	-	-	-	7	-	-	-	-	-	1
Nebraska	-	-	-	-	-	-	-	-	-	-	-
Kansas	-	-	-	-	-	-	-	-	-	16	14
SOUTH ATLANTIC	26	-	37	-	-	1	3	-	11	115	141
Delaware	-	-	-	-	-	-	-	-	-	-	-
Maryland	7	-	-	-	-	-	1	-	6	14	43
District of Columbia	2	-	2	-	-	-	-	-	-	1	2
Virginia	6	-	1	-	-	-	1	-	3	14	16
West Virginia *	4	-	25	-	-	1	-	-	1	3	5
North Carolina	4	-	NN	-	-	-	-	-	-	31	23
South Carolina	1	-	9	-	-	-	-	-	-	7	4
Georgia	-	-	-	-	-	-	-	-	-	8	5
Florida	2	-	-	-	-	-	1	-	1	37	43
EAST SOUTH CENTRAL	6	-	10	-	-	2	2	-	10	71	43
Kentucky	1	-	9	-	-	-	-	-	1	10	7
Tennessee	4	-	NN	-	-	1	1	-	4	47	29
Alabama *	1	-	1	-	-	1	1	-	3	9	5
Mississippi	-	-	-	-	-	-	-	-	2	5	2
WEST SOUTH CENTRAL	17	1	27	-	9	10	4	-	12	136	116
Arkansas *	-	-	-	-	-	-	2	-	-	1	6
Louisiana	1	-	NN	-	-	-	1	-	5	9	16
Oklahoma	10	-	6	-	-	9	-	-	-	25	17
Texas	6	1	21	-	9	1	1	-	7	101	77
MOUNTAIN	4	-	35	-	7	-	1	-	1	28	40
Montana	1	-	7	-	-	-	1	-	-	3	11
Idaho	3	-	-	-	-	-	-	-	-	2	5
Wyoming	-	-	7	-	-	-	-	-	-	2	-
Colorado *	-	-	10	-	-	-	-	-	1	17	-
New Mexico	-	-	11	-	6	-	-	-	-	1	5
Arizona *	-	-	-	-	1	-	-	-	-	-	13
Utah	-	-	-	-	-	-	-	-	-	3	5
Nevada	-	-	-	-	-	-	-	-	-	-	1
PACIFIC	44	1	35	-	78	8	6	1	69	198	194
Washington	2	-	11	-	70	-	-	-	4	27	37
Oregon	-	-	-	-	3	-	-	-	4	13	35
California	42	1	-	-	3	8	6	1	59	155	119
Alaska	-	-	7	-	2	-	-	-	2	-	2
Hawaii	-	-	17	-	-	-	-	-	-	3	1
Guam *	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	9	-	-	-	-	-	-	7	46
Virgin Islands	-	-	2	-	-	-	-	-	-	-	-

*Delayed reports: Aseptic meningitis: W. Va. 2
Chickenpox: Me. 1, Guam 2
Encephalitis, primary: Ark. 1

Hepatitis B: Ala. 1, Ariz. 1, Guam 2
Hepatitis A: Me. 3, Ohio delete 2, Ark. 3, Colo. 17, Ariz. 17

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 4, 1973 AND AUGUST 5, 1972 (31st 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	2	142	147	23,594	26,136	14	968	921	542	53,431	141	25,467
NEW ENGLAND	-	12	14	7,346	3,027	-	44	38	28	2,703	40	3,580
Maine *	-	-	-	64	243	-	1	3	3	299	-	68
New Hampshire	-	-	1	856	227	-	6	3	-	177	-	353
Vermont	-	2	-	118	125	-	2	-	-	241	-	43
Massachusetts	-	6	8	3,909	648	-	12	18	11	801	34	2,031
Rhode Island	-	-	1	603	519	-	3	10	9	310	1	210
Connecticut	-	4	4	1,796	1,265	-	20	4	5	875	5	875
MIDDLE ATLANTIC	-	21	40	2,352	909	2	129	116	78	6,959	5	4,134
Upstate New York *	-	12	7	780	124	1	46	30	NN	NN	1	407
New York City	-	1	8	859	246	-	26	35	71	4,325	4	445
New Jersey *	-	4	5	382	484	1	29	24	4	1,467	-	2,996
Pennsylvania	-	4	20	331	55	-	28	27	3	1,167	-	286
EAST NORTH CENTRAL	1	20	52	8,314	10,784	-	125	130	108	13,868	35	5,767
Ohio	1	4	-	278	233	-	56	53	17	2,631	5	675
Indiana	-	3	4	617	1,222	-	4	11	10	1,144	6	923
Illinois	-	10	17	2,004	3,996	-	24	25	21	2,337	4	907
Michigan	-	3	20	4,302	1,958	-	36	35	19	3,854	12	1,781
Wisconsin	-	-	11	1,113	3,375	-	5	6	41	3,902	8	1,481
WEST NORTH CENTRAL	-	5	3	434	925	1	75	68	51	4,559	5	1,194
Minnesota	-	1	-	19	19	-	6	19	1	77	-	218
Iowa	-	-	-	276	648	-	17	2	3	2,787	-	184
Missouri	-	1	1	49	162	-	31	20	44	658	5	259
North Dakota	-	1	2	58	51	-	3	-	-	64	-	276
South Dakota	-	-	-	-	6	-	4	2	-	17	-	23
Nebraska	-	1	-	5	18	1	7	9	3	120	-	139
Kansas	-	1	-	27	21	-	7	16	-	836	-	95
SOUTH ATLANTIC	1	22	9	1,175	2,088	1	159	208	48	6,273	24	2,064
Delaware	-	-	-	8	48	-	-	1	4	258	-	12
Maryland *	-	2	-	12	15	-	22	33	4	609	-	10
District of Columbia	-	1	-	5	2	-	4	9	6	87	-	3
Virginia	-	5	1	410	59	-	29	47	1	662	4	620
West Virginia	-	-	4	190	258	-	2	7	23	2,184	14	281
North Carolina	1	6	-	4	32	-	35	26	NN	NN	1	201
South Carolina	-	1	1	57	214	-	10	20	1	348	3	84
Georgia	-	3	-	147	164	-	20	8	-	26	-	11
Florida	-	4	3	342	1,296	1	37	57	9	2,099	2	842
EAST SOUTH CENTRAL	-	5	-	587	1,020	2	91	75	73	4,307	13	1,256
Kentucky	-	1	-	363	518	1	32	24	3	1,271	4	380
Tennessee	-	-	-	165	191	1	37	28	49	1,977	5	500
Alabama	-	4	-	5	131	-	15	15	21	605	1	184
Mississippi	-	-	-	54	180	-	7	8	-	454	3	192
WEST SOUTH CENTRAL	-	9	4	633	1,402	5	152	113	62	3,520	5	1,420
Arkansas	-	-	-	69	13	-	13	9	4	344	-	112
Louisiana	-	2	-	83	82	-	30	34	1	70	-	100
Oklahoma	-	1	-	51	10	2	27	6	11	420	-	175
Texas	-	6	4	430	1,297	3	82	64	46	2,686	5	1,033
MOUNTAIN	-	9	7	575	1,737	-	29	16	13	2,386	3	2,348
Montana	-	1	1	16	12	-	6	2	-	221	-	499
Idaho	-	-	1	247	24	-	4	4	-	110	-	33
Wyoming	-	-	2	79	51	-	-	1	2	420	1	6
Colorado	-	2	2	102	517	-	9	3	9	415	1	1,536
New Mexico	-	2	-	112	113	-	3	2	2	951	-	186
Arizona	-	4	-	16	867	-	3	1	-	140	-	17
Utah	-	-	1	2	153	-	2	2	-	121	1	68
Nevada	-	-	-	1	-	-	2	1	-	8	-	3
PACIFIC	-	39	18	2,178	4,244	3	164	157	81	8,856	11	3,704
Washington	-	3	4	1,000	972	-	17	12	1	1,406	-	651
Oregon	-	2	3	452	113	-	12	13	16	1,639	4	772
California	-	31	11	643	3,053	3	129	123	58	4,894	7	2,246
Alaska	-	2	-	65	11	-	6	6	3	675	-	9
Hawaii	-	1	-	18	95	-	-	3	3	242	-	26
Guam *	-	-	-	26	8	-	-	11	-	17	-	8
Puerto Rico *	-	-	6	1,717	568	-	7	4	11	636	-	26
Virgin Islands	-	-	-	-	1	-	-	2	3	20	-	2

*Delayed reports: Malaria: Md. delete 1
Measles: N. J. delete 2, Guam 6, P. R. 10

Mumps: Me. 8, Guam 1
Rubella: N. Y. Ups. 21

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 4, 1973 AND AUGUST 5, 1972 (31st WEEK) - Continued

AREA	TETANUS Cumulative 1973	TUBERCULOSIS (New Active)		TULA- REMIA Cumulative 1973	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS		
		1973	Cum. 1973		1973	1973	Cum. 1973	1973	Cum. 1973	GONOR- RHEA	SYPHILIS (Pri. & Sec.)	1973	Cum. 1973
										1973	1973		
UNITED STATES	49	541	18,928	88	11	425	26	407	17,493	474	72	2,217	
NEW ENGLAND	2	16	661	-	-	6	-	1	490	9	1	93	
Maine	-	-	50	-	-	-	-	-	47	-	-	53	
New Hampshire	-	-	37	-	-	-	-	-	7	1	1	32	
Vermont	-	-	18	-	-	-	-	-	5	-	-	3	
Massachusetts	-	8	353	-	-	6	-	1	235	3	-	4	
Rhode Island	1	-	45	-	-	-	-	-	53	-	-	-	
Connecticut	1	8	158	-	-	-	-	-	143	5	-	1	
MIDDLE ATLANTIC	7	96	3,713	-	2	40	1	22	3,066	96	1	20	
Upstate New York	1	24	674	-	-	6	1	10	849	6	1	10	
New York City	3	25	1,399	-	-	14	-	1	1,251	68	-	-	
New Jersey	2	18	640	-	2	12	-	5	350	15	-	-	
Pennsylvania	1	29	1,000	-	-	8	-	6	616	7	-	10	
EAST NORTH CENTRAL	7	75	2,888	2	-	22	-	17	1,990	28	14	211	
Ohio *	1	12	862	-	-	9	-	13	599	6	3	29	
Indiana	-	4	371	-	-	-	-	-	282	3	1	47	
Illinois	3	36	885	-	-	5	-	4	298	1	2	56	
Michigan	1	23	693	2	-	6	-	-	642	11	1	4	
Wisconsin	2	-	77	-	-	2	-	-	169	7	7	75	
WEST NORTH CENTRAL	4	16	759	10	2	15	1	14	700	5	24	715	
Minnesota	-	6	91	-	-	4	-	-	216	2	9	243	
Iowa	-	1	82	-	-	-	1	7	6	1	2	146	
Missouri	3	5	352	10	2	9	-	6	221	2	4	66	
North Dakota	1	1	28	-	-	-	-	-	17	-	4	117	
South Dakota	-	1	52	-	-	1	-	-	26	-	-	77	
Nebraska	-	1	48	-	-	1	-	1	47	-	-	3	
Kansas	-	1	106	-	-	-	-	-	167	-	5	63	
SOUTH ATLANTIC	8	109	3,748	6	2	227	15	198	4,216	170	9	181	
Delaware	-	-	50	-	-	-	-	7	72	3	1	3	
Maryland	-	15	400	-	-	6	1	8	296	20	-	9	
District of Columbia	-	6	172	-	-	-	-	-	383	11	-	-	
Virginia	2	12	490	1	2	3	4	43	450	32	2	55	
West Virginia	-	4	176	-	-	2	-	1	50	2	-	18	
North Carolina	-	16	594	1	-	4	6	82	599	11	-	1	
South Carolina	-	17	340	-	-	4	-	26	607	31	-	3	
Georgia	1	13	623	3	-	1	4	31	677	7	5	60	
Florida	5	26	903	1	-	207	-	-	1,082	53	1	32	
EAST SOUTH CENTRAL	7	56	1,714	6	1	18	6	65	1,288	20	1	344	
Kentucky	1	11	396	1	1	3	-	-	129	4	1	188	
Tennessee	4	25	539	4	-	8	3	30	635	10	-	119	
Alabama	2	8	451	-	-	2	-	9	324	-	-	37	
Mississippi *	-	12	328	1	-	5	3	26	200	6	-	-	
WEST SOUTH CENTRAL	8	57	1,920	62	2	20	2	76	2,127	50	8	419	
Arkansas *	-	12	230	43	-	3	-	12	101	5	1	89	
Louisiana *	3	9	304	-	-	6	-	-	526	13	-	33	
Oklahoma	3	-	163	17	-	2	2	62	162	6	1	133	
Texas *	2	36	1,223	2	2	9	-	2	1,338	26	6	164	
MOUNTAIN	-	14	608	1	1	7	1	7	630	13	-	19	
Montana	-	-	29	-	-	-	-	-	22	-	-	-	
Idaho	-	1	26	-	-	-	1	2	37	-	-	-	
Wyoming	-	-	11	-	-	1	-	1	26	2	-	-	
Colorado	-	-	114	-	-	1	-	1	232	7	-	-	
New Mexico	-	9	139	1	1	2	-	3	106	-	-	2	
Arizona	-	-	226	-	-	3	-	-	132	3	-	17	
Utah	-	4	25	-	-	-	-	-	37	1	-	-	
Nevada	-	-	38	-	-	-	-	-	38	-	-	-	
PACIFIC	6	102	2,917	1	1	70	-	7	2,986	83	14	215	
Washington	2	8	240	-	-	6	-	4	224	3	1	3	
Oregon	1	8	163	-	-	2	-	2	223	-	1	3	
California	3	79	2,274	1	1	61	-	1	2,435	79	12	202	
Alaska	-	-	67	-	-	-	-	-	58	-	-	7	
Hawaii	-	7	173	-	-	1	-	-	46	1	-	-	
Guam *	-	-	28	-	-	-	-	-	-	-	-	-	
Puerto Rico	4	4	289	-	-	3	-	-	8	2	5	34	
Virgin Islands	-	1	1	-	-	-	-	-	1	1	-	-	

*Delayed reports: TB: Ohio delete 3
Tularemia: Ark. 3
RMSE: Miss. 4

Gonorrhea: Guam 8
Syphilis: La. delete 1
Rabies: Tex. 4

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING AUGUST 4, 1973

Week No.

31

(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	674	402	22	27	SOUTH ATLANTIC	1,257	658	44	51
Boston, Mass.	223	113	7	13	Atlanta, Ga.	155	80	6	8
Bridgeport, Conn.	43	28	—	—	Baltimore, Md.	219	127	8	2
Cambridge, Mass.	24	21	1	5	Charlotte, N. C.	51	27	4	—
Fall River, Mass.	31	22	—	—	Jacksonville, Fla.	87	44	2	1
Hartford, Conn.	51	29	4	—	Miami, Fla.	149	68	4	3
Lowell, Mass.	26	19	1	—	Norfolk, Va.	79	27	4	8
Lynn, Mass.	17	11	—	1	Richmond, Va.	97	50	1	6
New Bedford, Mass.	21	13	—	1	Savannah, Ga.	37	18	—	1
New Haven, Conn.	59	33	5	—	St. Petersburg, Fla.	92	71	3	3
Providence, R. I.	45	30	—	4	Tampa, Fla.	82	38	6	5
Somerville, Mass.	9	6	—	1	Washington, D. C.	174	90	6	9
Springfield, Mass.	40	23	1	1	Wilmington, Del.	35	18	—	5
Waterbury, Conn.	30	20	1	—	EAST SOUTH CENTRAL	622	370	23	15
Worcester, Mass.	55	34	2	1	Birmingham, Ala.	93	55	1	1
MIDDLE ATLANTIC	3,088	1,842	96	147	Chattanooga, Tenn.	38	24	1	—
Albany, N. Y.	49	25	4	—	Knoxville, Tenn.	57	36	1	1
Allentown, Pa.	24	15	—	2	Louisville, Ky.	96	61	7	10
Buffalo, N. Y.	145	90	4	13	Memphis, Tenn.	155	91	6	—
Camden, N. J.	43	26	4	1	Mobile, Ala.	55	33	2	—
Elizabeth, N. J.	29	18	—	1	Montgomery, Ala. *	37	22	1	2
Erie, Pa.	35	22	2	4	Nashville, Tenn.	91	48	4	1
Jersey City, N. J.	63	36	—	3	WEST SOUTH CENTRAL	1,314	701	56	26
Newark, N. J.	59	29	3	6	Austin, Tex.	74	38	2	1
New York City, N. Y. †	1,467	897	38	64	Baton Rouge, La.	49	25	1	1
Paterson, N. J.	35	19	4	3	Corpus Christi, Tex.	42	24	4	—
Philadelphia, Pa.	600	336	28	22	Dallas, Tex.	174	86	6	—
Pittsburgh, Pa.	194	104	3	10	El Paso, Tex.	29	14	3	3
Reading, Pa.	37	26	—	3	Fort Worth, Tex.	82	54	1	1
Rochester, N. Y.	98	69	1	4	Houston, Tex.	305	156	14	3
Schenectady, N. Y.	24	13	—	1	Little Rock, Ark.	62	30	2	4
Scranton, Pa.	30	20	—	—	New Orleans, La.	156	77	12	3
Syracuse, N. Y.	79	51	2	1	Oklahoma City, Okla. *	92	53	4	1
Trenton, N. J.	30	18	—	4	San Antonio, Tex.	133	71	5	3
Utica, N. Y.	26	16	—	4	Shreveport, La.	67	37	1	4
Yonkers, N. Y.	21	12	1	1	Tulsa, Okla.	49	36	1	2
EAST NORTH CENTRAL	2,359	1,272	115	64	MOUNTAIN	482	263	29	12
Akron, Ohio	67	44	1	—	Albuquerque, N. Mex.	44	15	4	5
Canton, Ohio	48	27	2	—	Colorado Springs, Colo.	27	13	3	3
Chicago, Ill.	597	313	26	13	Denver, Colo.	107	64	2	—
Cincinnati, Ohio	162	95	6	4	Las Vegas, Nev.	55	27	3	—
Cleveland, Ohio	205	99	12	3	Ogden, Utah	16	12	1	—
Columbus, Ohio	136	63	4	2	Phoenix, Ariz.	95	48	6	2
Dayton, Ohio	77	40	3	1	Pueblo, Colo.	23	12	—	1
Detroit, Mich.	302	145	18	9	Salt Lake City, Utah	60	31	7	—
Evansville, Ind.	35	25	3	4	Tucson, Ariz.	55	41	3	1
Fort Wayne, Ind.	28	17	1	—	PACIFIC	1,679	1,045	57	37
Gary, Ind.	30	16	4	4	Berkeley, Calif.	13	10	—	2
Grand Rapids, Mich.	47	31	2	4	Fresno, Calif.	56	30	2	2
Indianapolis, Ind.	152	82	8	2	Glendale, Calif.	39	34	1	1
Madison, Wis.	32	12	5	3	Honolulu, Hawaii *	54	30	4	1
Milwaukee, Wis.	134	86	5	5	Long Beach, Calif.	120	80	2	3
Peoria, Ill.	52	32	4	3	Los Angeles, Calif.	542	340	13	11
Rockford, Ill.	35	18	1	1	Oakland, Calif.	75	48	3	1
South Bend, Ind.	43	24	2	3	Pasadena, Calif.	28	17	—	1
Toledo, Ohio	118	71	6	3	Portland, Oreg.	157	95	8	2
Youngstown, Ohio	59	32	2	—	Sacramento, Calif.	65	36	2	1
WEST NORTH CENTRAL	799	475	42	36	San Diego, Calif.	110	59	11	—
Des Moines, Iowa	47	31	3	—	San Francisco, Calif.	167	112	7	5
Duluth, Minn.	32	25	1	2	San Jose, Calif.	36	28	—	—
Kansas City, Kans.	25	12	3	1	Seattle, Wash.	133	78	4	5
Kansas City, Mo.	115	71	6	1	Spokane, Wash.	45	26	—	1
Lincoln, Nebr.	39	27	2	4	Tacoma, Wash.	39	22	—	3
Minneapolis, Minn.	98	55	4	2	Total	12,274	7,028	484	415
Omaha, Nebr.	93	50	5	—	Expected Number	12,156	6,873	550	392
St. Louis, Mo.	211	116	12	12	Cumulative Total (includes reported corrections for previous weeks)	404,985	238,745	15,021	16,896
St. Paul, Minn.	60	42	1	3					
Wichita, Kans.	79	46	5	11					

†Delayed report for week ending July 28, 1973

*Estimate based on average percent of divisional total

TICK PARALYSIS — Mississippi, Oklahoma, Virginia

In June 1973, 3 cases of tick paralysis were reported to CDC from Oklahoma, Mississippi, and Virginia; each is summarized below.

Oklahoma: In June 1973, a previously healthy 3-year-old girl from Oklahoma awoke unable to walk. Her legs were weak, and she could not stand without assistance. Later that day, she had truncal and upper extremity ataxia and weakness. En route to their family physician, her parents discovered an engorged tick on the child's scalp and removed it. Physical examination an hour later revealed quadriparesis, but deep tendon reflexes, sensory examination, and mentation were normal. She was afebrile and had no history of nausea, vomiting, pain, or recent respiratory or gastrointestinal infections. Several hours after the tick had been removed, the girl was markedly improved and ambulatory. She subsequently made a complete recovery. The tick was identified by the Oklahoma State Department of Health as *Dermacentor variabilis*, commonly called the dog tick.

(Reported by Stanley W. Ferguson, Ph.D., State Epidemiologist, Oklahoma State Department of Health; and an EIS Officer.)

Mississippi: On June 1, 1973, a 4-year-old boy from Mississippi awoke unable to move his extremities or talk. As in the case in Oklahoma, there was no prior history of a recent infection, fever, pain, or diarrhea. On the way to the hospital, his parents removed 2 ticks from the child's scalp. Upon arrival, the boy was afebrile. A complete blood cell count was normal, and a lumbar puncture, though traumatic, showed a normal pressure. Quadriparesis was present, but he was alert. Within an hour after removal of the ticks, the child was markedly improved and could move all 4 extremities and talk. Over the next 24 hours, he recovered completely. The 2 ticks were subsequently identified by an entomologist from Mississippi State University as a male *D. variabilis* and an engorged pregnant female tick of the same species.

(Reported by James Grotta, M.D., USPHS Indian Hospital, Philadelphia, Mississippi; B. R. Norment, Ph.D., Department of Entomology, Mississippi State University; Durward L. Blakey, M.D., State Epidemiologist, Division of Preventable Disease Control, Mississippi State Board of Health; and an EIS Officer.)

Virginia: In June 1973, a 19-year-old girl from Virginia had abrupt onset of paresthesia in the distal extremities and incoordination upon walking. The next morning she could not get out of bed without assistance. Following her admission to a local hospital, physical examination revealed profound symmetrical weakness of the lower extremities and ataxic movements. There was no fever. Sensory examination, cranial nerves, and deep tendon reflexes were normal. Over the next 48 hours, weakness progressed to the upper extremities, and deep tendon reflexes could no longer be elicited. Breathing became labored. A complete blood cell count, electrolytes, and cerebrospinal fluid examination were repeatedly normal. An engorged female tick, *D. variabilis*, was subsequently dis-

covered in the right posterior temporal area and removed. Within 6 hours, the patient was markedly stronger and within 48 hours had completely recovered.

(Reported by Emerson Farley, M.D., private physician, Retreat for the Sick Hospital, Richmond, Virginia; George H. Agate, M.D., Director, Henrico County Health Department; Karl A. Western, M.D., Director, Preventive Medical Services, Virginia State Department of Health; and an EIS Officer.)

Editorial Note

Tick paralysis or tick toxicosis was first described in 1824, in farm animals in Australia (1). The first human case was reported from British Columbia in the late 19th century (2); in 1912 the first case in the United States was reported from Oregon. Worldwide, a variety of ticks can cause this disease, but only the wood tick (*Dermacentor andersoni*) and the dog tick (*D. variabilis*) have been responsible for documented cases in this country.

An estimated 150 cases have been reported in the United States, with a 10-12% case-fatality ratio. The majority of the cases have occurred in the northwest and along the eastern coast. Children, due to their greater exposure to tick-infested areas, are more frequently affected than adults. The disease is more common in females, probably due to their longer hair, which obscures the feeding tick and makes difficult its detection in the scalp.

The syndrome of tick paralysis is quite characteristic (3). In general, the tick must be attached for at least 4 days before symptoms begin. Initially, incoordination and ataxia are common in the lower extremities, followed by rapidly progressive symmetrical ascending flaccid paralysis. Paresthesia may occasionally be the first symptom noted. Death may result from bulbar paralysis and respiratory impairment in unrecognized cases. The white blood cell count, cerebrospinal fluid examination, and electroencephalogram are normal. Symptoms subside within several hours after removal of the tick, with complete recovery within 48 hours.

The illness is thought to be mediated by a toxin in the tick's saliva elaborated only by the female (4). The mode of action of the toxin has not been completely defined, but several investigators have demonstrated a block at the myoneuronal junction (5). In addition, a decreased motor nerve conduction velocity has been demonstrated by electromyography (6).

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PROBABLE SCOMBROID FISH POISONING — Mississippi

On August 2, 1973, 30 of 298 children attending a day care center in Jackson, Mississippi, had the sudden onset of a pruritic maculopapular rash 15 minutes after beginning lunch. Three children had urticarial lesions on the head and neck,

and another developed periorbital edema. No vomiting occurred. Symptoms lasted from 15 minutes to 2 1/2 hours. Several children saw local physicians, but none required hospitalization.

SCOMBROID FISH POISONING — Continued

The children ate lunch in small groups divided by age. At approximately 10:30 a.m. on August 2, 3 groups (ages 11-13 months, 14 months-2 years, and 2-3 years) began to eat. Fifteen minutes later, a pruritic erythematous maculopapular rash began to appear which subsequently affected 10 of 11 children in the youngest age group, 13 of 17 in the middle group, and 7 of 20 in the oldest group.

Lunch consisted of tuna casserole, string beans, banana pudding, bread, milk, and grape juice. Investigation revealed that all 30 children who became ill had eaten the tuna casserole. The 1 child in the youngest age group who did not eat the casserole did not become ill. Suspecting that the tuna casserole was responsible for the illness, the staff did not serve it to the older children who ate later. These children experienced no illness. Seven adults who ate the casserole remained well and reported that the casserole looked and tasted normal.

The casserole was prepared on the morning of August 2 in the school kitchen from cans of commercially packaged tuna fish, cream of mushroom and cream of celery soup, and spices and was served hot within minutes after preparation. Cultures of specimens performed by the Mississippi Public Health Laboratory from an opened can of tuna used to prepare the casserole and from an unopened can of tuna incubated at

37°C were sterile. Cultures of the remaining tuna casserole grew only a few colonies of diphtheroids. Analysis of the tuna casserole and of tuna from an open can by U.S. Food and Drug Administration Laboratories revealed no detectable histamine. Cans in the remaining 59 cases of the lot appeared normal. Additional studies are in progress.

(Reported by Will Ratliff, Sanitarian, Eric McVey, M.D., Director, Hinds County Health Department; Emily Jumper, Microbiologist, Richard Andrews, M.S., Director, Mississippi Public Health Laboratory; Durward L. Blakey, M.D., State Epidemiologist, Division of Preventable Disease Control, Mississippi State Board of Health; U.S. Food and Drug Administration; and an EIS Officer.)

Editorial Note

Although no histamine was detected in the tuna casserole or the remaining tuna fish in the opened can, the incubation period and clinical manifestations of this illness are compatible with scombroid fish poisoning.

Erratum, Vol. 22, No. 30, p. 256

In the article "Follow-up on Relapsing Fever — Arizona," 2nd paragraph, 2nd line, correct the trade name to read **Baygon**; in the footnote correct the generic name to read **2% o-isopropoxyphenyl-n-methylcarbamate**.

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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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