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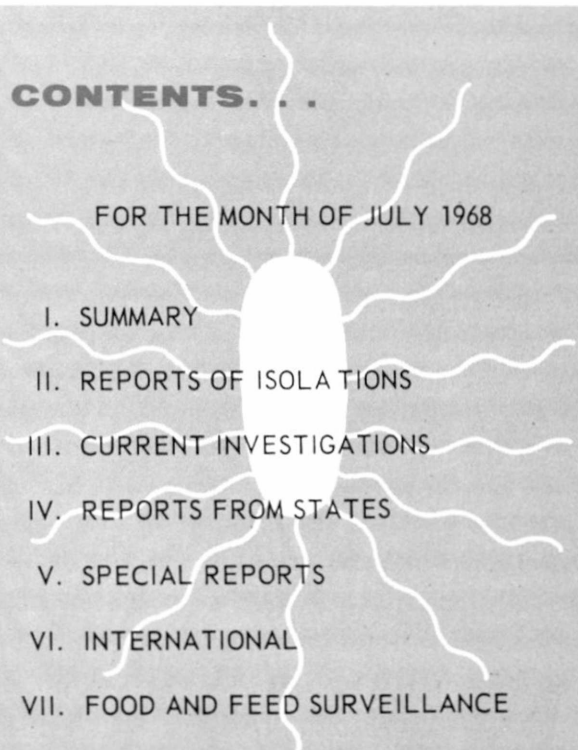
NATIONAL
COMMUNICABLE DISEASE CENTER

SALMONELLA

SURVEILLANCE

CONTENTS . . .

FOR THE MONTH OF JULY 1968

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE/PUBLIC HEALTH SERVICE
Health Services and Mental Health Administration

PREFACE

Summarized in this report is information received from State and City Health Departments, university and hospital laboratories, the National Animal Disease Laboratory (USDA, ARS), Ames, Iowa, and other pertinent sources, domestic and foreign. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigator for confirmation and interpretation.

Contributions to the Surveillance Report are most welcome. Please address

National Communicable Disease Center, Atlanta, Georgia 30333

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September 4, 1968

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I. SUMMARY

In July 1968, 2203 isolations of salmonellae were reported from humans, an average of 441 isolations per week (Table I, II, and V-A). This number represents an increase of 52 (13.4 percent) over the weekly average of June 1968 and a decrease of 28 (6.0 percent) from the weekly average of July 1967.

Reports of 942 nonhuman isolations of salmonellae were received during July 1968 (Tables III, IV, and V-B).

II. REPORTS OF ISOLATIONS

The ten most frequently reported serotypes during July:

HUMAN				NONHUMAN		
Serotype	Number	Percent	Rank Last Month	Serotype	Number	Percent
1 <u>typhi-murium*</u>	578	26.2	1	<u>typhi-murium*</u>	152	16.1
2 <u>enteritidis</u>	227	10.3	2	<u>senftenberg</u>	67	7.1
3 <u>heidelberg</u>	171	7.8	3	<u>montevideo</u>	60	6.4
4 <u>newport</u>	133	6.0	4	<u>heidelberg</u>	58	6.2
5 <u>saint-paul</u>	123	5.6	5	<u>saint-paul</u>	49	5.2
6 <u>infantis</u>	104	4.7	7	<u>anatum</u>	47	5.0
7 <u>javiana</u>	95	4.3	6	<u>infantis</u>	42	4.5
8 <u>thompson</u>	71	3.2	10	<u>newport</u>	39	4.1
9 <u>typhi</u>	65	3.0	8	<u>thompson</u>	38	4.0
10 <u>blockley</u>	43	2.0	9	<u>eimsbuettel</u>	30	3.2
Total	1610	73.1		Total	582	61.8
TOTAL (all serotypes)	2203			TOTAL (all serotypes)	942	
*Includes <u>var. copenhagen</u>	31	1.4		*Includes <u>var. copenhagen</u>	34	3.6

III. CURRENT INVESTIGATIONS

NONE

IV. REPORTS FROM THE STATES

HAWAII

1. Epidemiologic Aspects of Salmonellosis in Hawaii -- A Baseline Study of Salmonella Infections and Carriers on Oahu, Hawaii

Reported by Kingston Wilcox, Ph.D., Chief, Laboratories Branch, and George Q. L. Ching, B.S., Supervisor, Medical Microbiology Section, Laboratories Branch, Hawaii Department of Health. Submitted by the Communicable Disease Division, Hawaii Department of Health.

A limited study of salmonellosis among animals on the island of Oahu was carried out between September 1960 and September 1962. Culture of rectal swabs from live animals or intestinal swabs from slaughtered animals yielded the following results: Of 288 cultures from hogs, 90 (31.3 percent) were positive for salmonellae; of 559 cultures from chickens, 45 (8.1 percent) were positive for salmonellae; of 62 from rats, 11 (17.7 percent) were positive; of 259 from dogs, 12 (4.6 percent) were positive; and of 107 from cows and 64 from cats, none were positive. Food samples and equipment from slaughterhouses and markets were also cultured. Hog products and hog processing equipment used in the slaughterhouse and in several meat markets were frequently contaminated (3-44.4 percent), whereas equipment in markets not selling hog viscera was generally not contaminated. Cultures of shell eggs (528 samples) in poultry slaughterhouses (71 samples) were all negative for salmonellae.

The results of this survey suggest that hogs, hog viscera, hog slaughterhouse equipment, and markets selling hog viscera are frequently contaminated.

2. Epidemiologic Aspects of Salmonellosis in Hawaii -- Prevalence of Salmonella in Meat and Meat Products of Intrastate, Interstate, and Foreign Origin Marketed In Hawaii

Reported by John M. Gooch, D.V.M., M.P.H., Public Health Veterinarian, Communicable Disease Division, Hawaii Department of Health; Frederick T. Lynd, D.V.M., M.S., Chief, Veterinary Laboratory, Hawaii Department of Agriculture; Robert E. Hall, B.S., M.P.H., Environmental Health Officer, and Velma Goo, M.S., M.P.H., Department of Health. Submitted by the Communicable Disease Division, Hawaii Department of Health.

This study was carried out to compare the prevalence of salmonella contamination of locally processed meat products with that of imported meat products (interstate and foreign).

From June 15, 1967, to August 15, 1967, a culture survey of certain foods of animal origin was conducted and the following results obtained:

<u>Product</u>	<u>Origin</u>	<u>Number Sampled</u>	<u>Number Positive</u>	<u>Percent Positive</u>
Beef - Steaks	Intrastate	50	2	4.0
	Interstate	49	0	0.0
	Foreign	50	4	8.0
Pork loins	Intrastate	50	0	0.0
	Interstate	50	0	0.0
Pig stomachs	Intrastate	55	42	76.4
	Interstate	51	1	2.0

Pig stomachs of intrastate origin were found to be highly contaminated. Unlike pig stomachs of interstate origin, these are not scalded and bleached during processing. The stomachs are used in soups and stews by certain ethnic groups in Hawaii. From this study, they apparently play a significant role in the dissemination of salmonellae in Hawaii.

EDITOR'S COMMENT: The third article in this series, entitled "Epidemiologic Aspects of Salmonellosis in Hawaii -- Incidence and Sources of Human Infections," appeared in Salmonella Surveillance Report No. 73, April 1968.

These three studies clearly demonstrate the problem of salmonellosis in Hawaii and its relation to a specific animal vector. Hog stomachs and intestines are frequently contaminated and are consumed by certain ethnic groups in Hawaii. Although salmonellae should be eliminated in the cooking of these foods, the contaminated raw ingredients provide a vehicle for the introduction of salmonellae into the environment of the home and a potential for cross contamination of other foods.

V. SPECIAL REPORTS

Announcement of a course on the epidemiology and control of salmonellosis

The National Communicable Disease Center, Atlanta, Georgia, will present a course, "Epidemiology and Control of Salmonellosis," October 28 - November 1, 1968. Control of salmonellosis will be emphasized. Current information and immediately useful techniques related to control will be delineated.

This five-day course has been designed for workers who are active in the epidemiology and control of salmonellosis. Following an overview of the morbidity and mortality attributed to salmonellosis, the bacteriology of the salmonella organism and environmental factors that govern its survival or destruction are presented. Selected phenomena of the epidemiology of salmonellosis including the reservoirs of salmonellae are discussed. Close attention is given to the contributory sources of salmonella-contamination of food, water, animal feed and fertilizer, and of animals themselves. The course emphasizes techniques of control, particularly as applied in the farm environment, in the processing of foods and of animal feed, and in food-service operations. Administrative application of the information, techniques, and concepts are considered, and program activities of various interested agencies are reviewed. Lectures, demonstrations, problem workshops, discussions, and field work are used to teach the course. For further information, contact: Frank L. Bryan, Ph.D., Chief, Food Borne Disease Unit, Community Sources Training Section, Training Program, NCDC, Atlanta, Georgia 30333.

VI. INTERNATIONAL

NONE

VII. FOOD AND FEED SURVEILLANCE

NONE

TABLE I. COMMON SALMONELLAE REPORTED FROM HUMAN SOURCES, JULY 1968

SEROTYPE	GEOGRAPHIC DIVISION AND REPORTING CENTER																															
	NEW ENGLAND					MIDDLE ATLANTIC					EAST NORTH CENTRAL					WEST NORTH CENTRAL					SOUTH ATLANTIC											
	ME	NH	VT	MAS	RI	CON	NYA	NYB	NYC	NJ	PA	OH	IND	ILL	MIC	WIS	MIN	IOW	MO	ND	SD	NEB	KAN	DEL	MD	DC	VA	WVA	NC	SC	GA	FLA
<i>anatum</i>								1		1	2		4		1	1		1											1		3	
<i>bareilly</i>				1				2				1						1					1						1			
<i>blockley</i>				1		2		2	2	2	3		1	3	1			2				1							1		5	
<i>braenderup</i>				1					2		1	1		1								7										
<i>bredeney</i>											1					1											1					
<i>chester</i>									1	2	2														1							
<i>cholerae-suis v kun</i>																		1								1						
<i>cubana</i>				1																							1					
<i>derby</i>				6					3	1	3		2				1		1					2				2		1		
<i>enteritidis</i>	6	1	1	40		6		12	19	5	21	12	6	20	5	3	12	2	3	1	1			5	3	5	1	5	11	3		
<i>give</i>											1						2															
<i>heidelberg</i>	1	1		9		2		6	7	4	15	7	12	11	12	4	11	1	1			1	1	8	2			7	6	3		
<i>indiana</i>									1					1										1					7			
<i>infantis</i>				2		2		3	5		14			7	6	4	1	1	1			1		5		1				2		
<i>java</i>						1				3	3	2				1	1							2				1				
<i>javiana</i>					2	1						2	1	4	1	3	6					3		1				1	3	13		
<i>litchfield</i>					1				1					4	1									2						5		
<i>livingstone</i>										1	1																					
<i>manhattan</i>														2		1								4		1						
<i>miami</i>															1									1		1					3	
<i>mississippi</i>																											1			2		
<i>montevideo</i>	1			7						1	2		1		1	2							1						1	3		
<i>muenchen</i>	1							4	1		3	1		1				1				1				2	1			3		
<i>newington</i>									1																3							
<i>newport</i>				4	1		1	15	19		3	5		9	1	3								1				1	2	15		
<i>oranienburg</i>	1							4			3	1		1	1		1					1								5		
<i>panama</i>									1		1			1	2	2										2						
<i>paratyphi B</i>				2							1			2																		
<i>reading</i>										1	1																			1		
<i>saint-paul</i>		1		7		2	1	3	8	8	3	5	2	16	4	6	8					2		2	1	11		3	6	6		
<i>san-diego</i>				1										2																		
<i>schwarzengrund</i>																																
<i>senftenberg</i>						1										1										1				1		
<i>tennessee</i>		1													1	2														3		
<i>thompson</i>					1	2	1	3	1	4	4	5		4	6	1	1					10		2	1	7		2	3			
<i>typhi</i>	2						1	1	1	4		2	5	2	1				1									6	3	4		
<i>typhimurium</i>	1	1		42		3		21	28	24	32	18	5	36	11	30	11	1	11			18	1	11	6	11	1	29	13	30		
<i>typhimurium v cop</i>				6		1				3					10													1				
<i>weltevreden</i>																																
<i>worthington</i>										1		1																				
TOTAL	13	5	1	130	4	24	4	76	101	60	117	72	32	129	68	65	59	7	31	1	1	—	45	4	49	15	46	3	62	—	64	103
ALL OTHER*	1	5	—	6	1	—	9	1	2	4	—	4	3	2	2	6	—	4	3	6	—	1	—	—	1	9	1	—	3	—	1	6
TOTAL	14	10	1	136	5	24	43	77	103	64	117	76	35	131	70	71	59	11	34	7	1	1	45	4	50	24	47	3	65	—	65	109

Note: NYA — New York, Albany; NYB — Beth Israel Hospital; NYC — New York City.
Beth Israel Hospital laboratory is a reference laboratory and this month serotyped a total of 168 cultures.

* See Table II.

TABLE I - Continued

GEOGRAPHIC DIVISION AND REPORTING CENTER																				TOTAL	% OF TOTAL	CUMULATIVE TOTAL	% OF CUMULATIVE TOTAL	SEROTYPE		
EAST S. CENTRAL				WEST S. CENTRAL				MOUNTAIN						PACIFIC												
KY	TEN	ALA	MIS	ARK	LA	OKL	TEX	MON	IDA	WYO	COL	NM	ARI	UTA	NEV	WAS	ORE	CAL	ALK	HAW						
		2			1		1											1		3	22	1.0	124	1.2	<i>anatum</i>	
																					8	0.4	31	0.3	<i>bareilly</i>	
					1													15			43	2.0	273	2.6	<i>blockley</i>	
																				3	16	0.7	90	0.9	<i>braenderup</i>	
				1										1							7	0.3	115	1.1	<i>bredeney</i>	
1																					7	0.3	35	0.3	<i>chester</i>	
		1																			4	0.2	20	0.2	<i>cholerae-suis v kun</i>	
							1														3	0.1	28	0.3	<i>cubana</i>	
					1		2				1										6	1.8	237	2.3	<i>derby</i>	
	1	3			1	1					2			1			2				7	10.3	843	8.1	<i>enteritidis</i>	
		1			3																1	8	0.4	35	0.3	<i>give</i>
	5	5			5		3										1				2	171	7.8	737	7.1	<i>heidelberg</i>
1																						11	0.5	58	0.6	<i>indiana</i>
	1				5	1	3	1			1		2	2		1					9	4.7	489	4.7	<i>infantis</i>	
		1			2																3	20	0.9	107	1.0	<i>java</i>
	3	1		3	5		20				3					1	1	17				95	4.3	221	2.1	<i>javiana</i>
	1																					18	0.8	54	0.5	<i>litchfield</i>
																					1	3	0.1	22	0.2	<i>livingstone</i>
2	1			2													1		2		4	15	0.7	108	1.0	<i>manhattan</i>
																						11	0.5	52	0.5	<i>miami</i>
	1				4		2															10	0.5	28	0.3	<i>mississippi</i>
					4		1				1		1								4	33	1.5	133	1.3	<i>montevideo</i>
		1			2		1															23	1.0	93	0.9	<i>muenchen</i>
																						5	0.2	23	0.2	<i>newington</i>
1	1	2		4	10	1	7	1			1					1	1	19			2	133	6.0	571	5.5	<i>newport</i>
					2	2	4									1	1	3				31	1.4	167	1.6	<i>oranienburg</i>
1					4																5	29	1.3	108	1.0	<i>panama</i>
		1					1															7	0.3	62	0.6	<i>paratyphi B</i>
																						5	0.2	20	0.2	<i>reading</i>
		3			3		3				1						1	7				123	5.6	604	5.8	<i>saint-paul</i>
																		2	1			6	0.3	64	0.6	<i>san-diego</i>
																					2	2	0.1	23	0.2	<i>schwarzengrund</i>
	1				1											3					1	10	0.5	27	0.3	<i>sentfenberg</i>
	2				2																1	11	0.5	55	0.5	<i>tennessee</i>
		2																4				71	3.2	279	2.7	<i>thompson</i>
2				2	3	1	1					2	2			1	1	14				65	3.0	323	3.1	<i>typhi</i>
2	4	8		3	19	7	31	1	1		8					6	2	55	2	3		547	24.8	2,760	26.6	<i>typhimurium</i>
		1		1	3													4				31	1.4	169	1.6	<i>typhimurium v cop</i>
																					6	6	0.3	51	0.5	<i>weltevreden</i>
																					1	3	0.1	12	0.1	<i>worthington</i>
10	22	32	-	16	81	13	81	2	3	-	18	2	5	4	-	16	15	201	2	70	1,984	90.1	9,251	89.3	TOTAL	
1	1	4	8	11	5	1	25	3	-	-	-	28	1	2	1	2	2	11	1	1	219		1,107		ALL OTHER*	
11	23	36	8	27	86	14	106	5	3	-	18	30	6	6	1	18	17	212	3	71	2,203		10,358		TOTAL	

TABLE II. OTHER SALMONELLAE REPORTED FROM HUMAN SOURCES, JULY 1968

SEROTYPE	REPORTING CENTER																							
	ALA	AK	ARI	ARK	CAL	DC	FLA	GA	HAW	ILL	IND	IOW	KY	LA	ME	MD	MAS	MIC	MIS	MO	MON	NEB	NEV	NH
<i>alachua</i>																								1
<i>atlanta</i>								1																
<i>berta</i>		1																						
<i>brandenburg</i>														1										
<i>cerro</i>																								
<i>cholerae-suis</i>											1													
<i>decatur</i>																		1						
<i>eimsbuettel</i>																								
<i>flayed</i>																								
<i>gaminara</i>														1										
<i>grumpensis</i>											1													
<i>hartford</i>								2																
<i>irumu</i>																					1			
<i>kentucky</i>						1																		
<i>kottbus</i>																								
<i>lanka</i>										1														
<i>lomita</i>																								
<i>manchester</i>																								
<i>minnesota</i>															1									
<i>mission</i>													1											
<i>muenster</i>						2		1			1							1						
<i>nachshonim</i>																								
<i>nchanga</i>						1																		
<i>norwich</i>																					1			
<i>paratyphi C</i>																								
<i>pomona</i>						2																		
<i>poona</i>		3				3		1								1	1		1					
<i>rubislaw</i>								2											1					
<i>siegburg</i>															1									
<i>urbana</i>																							1	
<i>victoria</i>																								
<i>virchow</i>																							1	
TOTAL	3	1	1	-	9	-	6	1	1	-	3	-	1	5	1	1	4	1	-	3	-	-	1	-
NOT TYPED*	1	-	-	11	2	9	-	-	-	2	-	4	-	-	-	-	2	1	8	-	3	1	-	5
TOTAL	4	1	1	11	11	9	6	1	1	2	3	4	1	5	1	1	6	2	8	3	3	1	1	5

* See Table V-A

TABLE II - Continued

REPORTING CENTER															TOTAL	CUMULATIVE TOTAL	SEROTYPE			
NJ	NM	NY	NY	NY	NY	CNC	ND	OHI	OK	LORE	RI	TEN	TEX	UTA				VA	WAS	WIS
																	1	2	9	<i>alachua</i>
																		1	6	<i>atlanta</i>
													1					2	13	<i>berta</i>
														1				1	2	<i>brandenburg</i>
													1					1	5	<i>cerro</i>
			1															2	11	<i>cholerae-suis</i>
																		1	1	<i>decatur</i>
						1												1	5	<i>eimsbuettel</i>
						1												1	1	<i>fayed</i>
																		1	7	<i>gaminara</i>
																		1	1	<i>grumpensis</i>
																		2	10	<i>hartford</i>
																		1	1	<i>irumu</i>
1																		2	12	<i>kentucky</i>
															1			1	2	<i>kottbus</i>
																		1	2	<i>lanka</i>
													1					1	5	<i>lomita</i>
								2										2	3	<i>manchester</i>
																		1	7	<i>minnesota</i>
																		1	1	<i>mission</i>
												1						6	19	<i>muenster</i>
																	1	1	1	<i>nachshonim</i>
																		1	7	<i>nchanga</i>
												1						1	7	<i>norwich</i>
																		1	2	<i>paratyphi C</i>
						1												2	2	<i>pomona</i>
2						1		1					1					17	43	<i>poona</i>
																	2	5	17	<i>rubislaw</i>
																		1	3	<i>siegburg</i>
1																	1	3	14	<i>urbana</i>
														2				2	2	<i>victoria</i>
																		1	2	<i>virchow</i>
4	-	-	1	-	3	-	3	-	-	1	1	4	2	1	2	4		68	341	TOTAL
-	28	39	-	2	-	6	1	1	2	-	-	21	-	-	-	2		151	766	NOT TYPED*
4	28	39	1	2	3	6	4	1	2	1	1	25	2	1	2	6		219	1,107	TOTAL

Cumulative Totals include isolations of all serotypes (except those listed in Table I) reported this year.

TABLE III. COMMON SALMONELLAE REPORTED FROM NONHUMAN SOURCES, JULY 1968

SEROTYPE	DOMESTIC ANIMALS AND THEIR ENVIRONMENT							ANIMAL FEEDS			
	CHICKENS	TURKEYS	SWINE	CATTLE	HORSES	OTHER	SUBTOTAL	TANKAGE	VEGETABLE PROTEIN	OTHER	SUBTOTAL
<i>anatum</i>	5	7		14			26	6			6
<i>bareilly</i>							—				—
<i>blockley</i>	14					1	15	1			1
<i>braenderup</i>	1						1	3		6	9
<i>bredeney</i>	2	1	2				5	6			6
<i>chester</i>	2	6					8				—
<i>cholerae-suis v kun</i>			12				12			1	1
<i>cubana</i>	1						1	5		2	7
<i>derby</i>			1				1	2		2	4
<i>enteritidis</i>	10		3				13			1	1
<i>give</i>	1						1				—
<i>heidelberg</i>	25	12	1			3	41	5			5
<i>indiana</i>							—				—
<i>infantis</i>	13	3	1		1		18	1		1	2
<i>java</i>							—	3			3
<i>javiana</i>							—				—
<i>litchfield</i>							—				—
<i>livingstone</i>	1	1					2			1	1
<i>manhattan</i>		5					5				—
<i>miami</i>			1			1	2				—
<i>mississippi</i>							—				—
<i>montevideo</i>	21						21	10		5	15
<i>muenchen</i>		1					1				—
<i>newington</i>	2			17			19	3			3
<i>newport</i>	1		1	28			30				—
<i>oranienburg</i>						1	1	9		6	15
<i>panama</i>							—				—
<i>paratyphi B</i>							—				—
<i>reading</i>		1					1				—
<i>saint-paul</i>	7	19	1	10	1		38	1			1
<i>san-diego</i>		5					5				—
<i>schwarzengrund</i>	1	1					2				—
<i>senftenberg</i>		8					8	5		29	34
<i>tennessee</i>		3	1				4				—
<i>thompson</i>	23					1	24	1			1
<i>typhi</i>							—				—
<i>typhimurium</i>	13	13	7	16	1	5	55	13		5	18
<i>typhimurium v cop</i>	14		1			2	17				—
<i>weltevreden</i>							—	1			1
<i>worthington</i>	1	1		1		1	4	1		1	2
TOTAL	158	87	32	86	3	15	381	76	—	60	136
ALL OTHER*	17	5	3	10	—	3	38	22	1	40	63
TOTAL	175	92	35	96	3	18	419	98	1	100	199

* See Table IV

TABLE III - Continued

WILD ANIMALS AND BIRDS	REPTILES AND ENVIRONMENT	HUMAN DIETARY ITEMS						MISCELLANEOUS	TOTAL	CUMULATIVE TOTAL	SEROTYPE
		EGGS AND PRODUCTS	POULTRY	RED MEAT	DAIRY PRODUCTS	OTHER	1/2 SUBTOTAL				
2		1					9	4	47	377	<i>aranum</i>
4			1				1	1	1	21	<i>bareilly</i>
1	1			1			1	1	22	133	<i>blockley</i>
							—	1	11	21	<i>braenderup</i>
							1	2	16	74	<i>bredeney</i>
							—	1	8	37	<i>chester</i>
2					4		—	1	14	63	<i>cholerae-suis v kun</i>
3							1	4	17	219	<i>cubana</i>
3							3	3	13	150	<i>derby</i>
							—	2	19	97	<i>enteritidis</i>
3							—	4	4	36	<i>give</i>
5		2		1			3	4	58	421	<i>heidelberg</i>
1							—	—	—	5	<i>indiana</i>
1				2			17	4	42	256	<i>infantis</i>
1							—	1	5	11	<i>java</i>
							—	2	2	9	<i>javiana</i>
1							—	—	—	1	<i>litchfield</i>
							—	—	3	71	<i>livingstone</i>
							—	—	6	10	<i>manhattan</i>
							—	2	2	9	<i>miami</i>
							—	11	—	—	<i>mississippi</i>
		2			2		13	11	60	315	<i>montevideo</i>
1		1					1	2	4	28	<i>muenchen</i>
4	2				2		2	27	27	64	<i>newington</i>
	4						1	39	39	139	<i>newport</i>
		1					1	1	18	127	<i>orantenburg</i>
	1						—	1	1	26	<i>panama</i>
							—	—	—	6	<i>paratyphi B</i>
	2				1		—	1	1	15	<i>reading</i>
							7	1	49	276	<i>saint-paul</i>
							—	5	2	25	<i>sandiego</i>
2							—	2	2	53	<i>schwarzengrund</i>
2					1		17	8	67	200	<i>sentlenberg</i>
					1		2	3	11	102	<i>tennessee</i>
							11	38	38	182	<i>thompson</i>
15	6	2	3	1	2		—	16	—	—	<i>typhi</i>
3	3	1	3		2		8	7	118	668	<i>typhimurium</i>
		1					4	34	162	162	<i>typhimurium v cop</i>
							—	1	6	6	<i>weltevreden</i>
		1			2		3	9	9	76	<i>worthington</i>
50	19	23	16	2	23		46	78	774	4,491	TOTAL
15	4	15	1	1	4		3	24	168	1,099	ALL OTHER*
65	23	38	17	3	27		49	102	942	5,590	TOTAL

TABLE IV. OTHER SALMONELLAE REPORTED FROM NONHUMAN SOURCES, JULY 1968

SEROTYPE	DOMESTIC ANIMALS AND THEIR ENVIRONMENT							ANIMAL FEEDS			
	CHICKENS	TURKEYS	SWINE	CATTLE	HORSES	OTHER	SUBTOTAL	TANKAGE	VEGETABLE PROTEIN	OTHER	SUBTOTAL
<i>alachua</i>							—	1			1
<i>albany</i>	1	2					3				—
<i>bern</i>							—				—
<i>berta</i>							—				—
<i>binza</i>		1					1	3		1	4
<i>california</i>							—				—
<i>cerro</i>							—	3		1	4
<i>cholerae-suis</i>			1				1				—
<i>dublin</i>				9			9				—
<i>eimsbuettel</i>	1		2				3	11	1	11	23
<i>gallinarum</i>	4						4				—
<i>gatuni</i>						1	1				—
<i>habana</i>	1						1			1	1
<i>kentucky</i>	6	2					8			5	5
<i>kottbus</i>							—				—
<i>lexington</i>							—				—
<i>medelia</i>							—				—
<i>manila</i>							—	1			1
<i>meleagridis</i>							—				—
<i>minneapolis</i>						1	1			20	20
<i>minnesota</i>							—			1	1
<i>mission</i>							—				—
<i>new-brunswick</i>							—				—
<i>norwich</i>							—				—
<i>ohio</i>							—	2			2
<i>pomona</i>							—				—
<i>poona</i>							—				—
<i>pullorum</i>	4						4				—
<i>siegburg</i>							—	1			1
<i>simsbury</i>							—				—
<i>thomasville</i>							—				—
<i>urbana</i>							—				—
<i>wasenaar</i>							—				—
TOTAL	17	5	3	9	—	2	36	22	1	40	63
NOT TYPED*	—	—	—	1	—	1	2	—	—	—	—
TOTAL	17	5	3	10	—	3	38	22	1	40	63

* See Table V-B

TABLE IV - Continued

WILD ANIMALS AND BIRDS	REPTILES AND ENVIRONMENT	HUMAN DIETARY ITEMS						MISCELLANEOUS	TOTAL	CUMULATIVE TOTAL	SEROTYPE
		EGGS AND PRODUCTS	POULTRY	RED MEAT	DAIRY PRODUCTS	OTHER	SUBTOTAL				
1 2							— — — — —	1	2 3 1 2 5	26 4 2 4 47	<i>alachua</i> <i>albany</i> <i>bern</i> <i>berta</i> <i>binza</i>
2		1		1			1 — — — 2	3 2	4 6 1 9 30	51 97 5 28 167	<i>california</i> <i>cerro</i> <i>cholerae-suis</i> <i>dublin</i> <i>eimsbuettel</i>
1 1					2		— — — 2 —		4 1 2 16 1	6 1 2 84 8	<i>gallinarum</i> <i>gatuni</i> <i>habana</i> <i>kentucky</i> <i>kottbus</i>
3 1					1		— — — 1 —	4 — — 4	4 3 1 6 21	21 9 10 19 32	<i>lexington</i> <i>madelia</i> <i>manila</i> <i>meleagridis</i> <i>minneapolis</i>
1 1 1	1				1		1 — — — —		2 1 1 2 2	66 3 7 3 5	<i>minnesota</i> <i>mission</i> <i>new-brunswick</i> <i>norwich</i> <i>ohio</i>
1 1	1	13	1			1	— 1 1 14 —	4 — 2	2 5 7 16 2	7 11 46 45 9	<i>pomona</i> <i>poona</i> <i>pullorum</i> <i>siegburg</i> <i>simsbury</i>
	1 1						— — —	1	1 1 1	41 10 1	<i>thomasville</i> <i>urbana</i> <i>wassenaar</i>
15	4	14	1	1	4	3	23	24	165	1,048	TOTAL
—	—	1	—	—	—	—	1	—	3	51	NOT TYPED*
15	4	15	1	1	4	3	24	24	168	1,099	TOTAL

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Key to all disease surveillance activities are the physicians who serve as State epidemiologists. They are responsible for collecting, interpreting, and transmitting data and epidemiological information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions are made by State Laboratory Directors; we are indebted to them for their valuable support.

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