

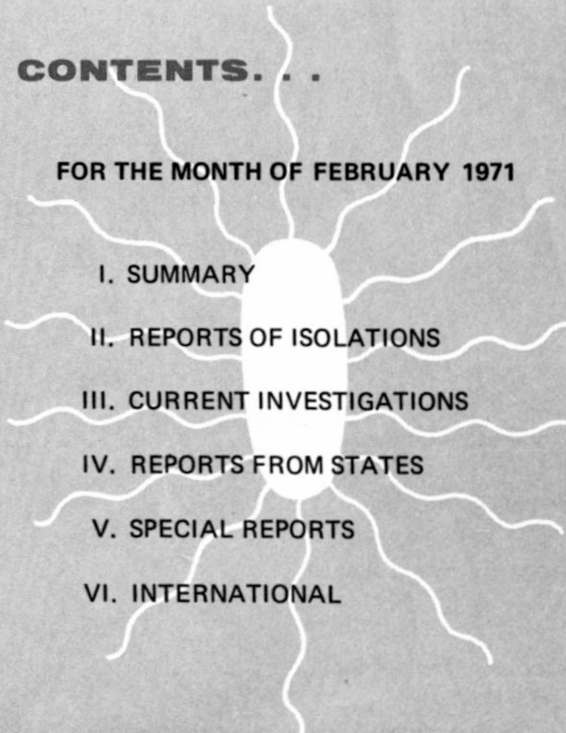
CENTER FOR DISEASE CONTROL

# **SALMONELLA**

## **SURVEILLANCE**

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**FOR THE MONTH OF FEBRUARY 1971**

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# 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:

Center for Disease Control  
Attn: Salmonellosis Surveillance Activity, Epidemiology Program  
Atlanta, Georgia 30333

Center for Disease Control	David J. Sencer, M.D., Director
Epidemiology Program	Philip S. Brachman, M.D., Director
Bacterial Diseases Branch	John V. Bennett, M.D., Chief Eugene J. Gangarosa, M.D., Deputy Chief
Enteric Diseases Section	Matthew S. Loewenstein, M.D., Chief
Salmonellosis Surveillance Activity	Marshall D. Fox, D.V.M. Andrew Taylor, Jr., M.D.
Statistician	Stanley M. Martin, M.S.
Office of Veterinary Public Health Services	James H. Steele, D.V.M., Chief

June 1, 1971

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## I. SUMMARY

In February 1971, 1,485 isolations of salmonellae were reported from humans, an average of 372 isolations per week (Tables I, II, and V-A). This number represents a decrease of 133 (26.3 percent) from the weekly average of January 1971 and an increase of 45 (13.8 percent) over the weekly average of February 1970.

Reports of 263 nonhuman isolations of salmonellae were received during February 1971 (Tables II, IV, and V-B).

## II. REPORTS OF ISOLATIONS

The ten most frequently reported serotypes during February:

HUMAN				NONHUMAN		
Serotype	Number	Percent	Rank Last Month	Serotype	Number	Percent
1 <u>typhi-murium*</u>	405	27.3	1	<u>typhi-murium*</u>	57	21.7
2 <u>enteritidis</u>	145	9.8	2	<u>reading</u>	33	12.5
3 <u>newport</u>	80	5.4	4	<u>montevideo</u>	12	4.6
4 <u>heidelberg</u>	75	5.1	3	<u>heidelberg</u>	11	4.2
5 <u>infantis</u>	69	4.6	6	<u>manhattan</u>	10	3.8
6 <u>saint-paul</u>	63	4.2	5	<u>cubana</u>	9	3.4
7 <u>blockley</u>	45	3.0	>10	<u>java</u>	9	3.4
8 <u>java</u>	45	3.0	9	<u>oranienburg</u>	9	3.4
9 <u>thompson</u>	40	2.7	7	<u>infantis</u>	8	3.0
10 <u>cubana</u>	34	2.3	10	<u>schwarzengrund</u>	7	2.7
Total	1001	67.4		Total	165	62.7
TOTAL (all serotypes)	1485			TOTAL (all serotypes)	263	
*Includes <u>var. copenhagen</u>	22	1.5		*Includes <u>var. copenhagen</u>	1	0.4

## III. CURRENT INVESTIGATIONS

### A. Salmonella kottbus Meningitis Associated with Contaminated Breast Milk - Illinois

Reported by Charles A. Lang, M.D., Director, Geraldine Simonek, R.N., P.H.N., Home Health Aid Coordinator, DuPage County Health Department; Paul R. Schnurrenberger, D.V.M., Assistant State Epidemiologist, Franklin D. Yoder,



M.D., Director, State of Illinois Department of Public Health; and John N. Lewis, M.D., EIS Medical Epidemiologist, Enteric Diseases Section, Center for Disease Control.

On February 23, 1971, a 19-day-old premature infant in a hospital nursery in Elmhurst, Illinois, became ill with meningitis. Salmonella kottbus was isolated from the infant's cerebrospinal fluid as well as from his blood, sputum, and stool specimens. The baby was being breast fed, and four separate cultures of the mother's breast milk were positive for S. kottbus. The mother had no mastitis or gastroenteritis. Follow-up cultures of her milk in late March were negative.

Three other infants in the nursery had asymptomatic enteric infections with S. kottbus, but there is no evidence that these infections preceded that of the infant with meningitis. The mother's milk, therefore, may have either been the cause of her child's infection, or have been contaminated by the nursing infant.

#### Editor's Comment

This is the first reported isolation of salmonellae from human milk. This organism has been isolated from cows' milk (from both raw milk and milk contaminated after pasteurization) and from milk products (1). Salmonellae have been isolated from the udders of cows in cases of mastitis, and they have been excreted by asymptomatic cows for prolonged periods following artificial infusion into the udders. Contamination of milk has also been documented following contact with infected calves.

#### B. Salmonella cubana Alert!

Since December 1970, unusually high numbers of Salmonella cubana isolations have been reported to CDC by state health departments throughout the United States (Figure 1). The number of isolations has exceeded that reported in 1966, when a large interstate outbreak caused by S. cubana was traced to contaminated carmine dye (MMWR, Vol. 15, No. 33). No vehicle of infection has yet been identified.

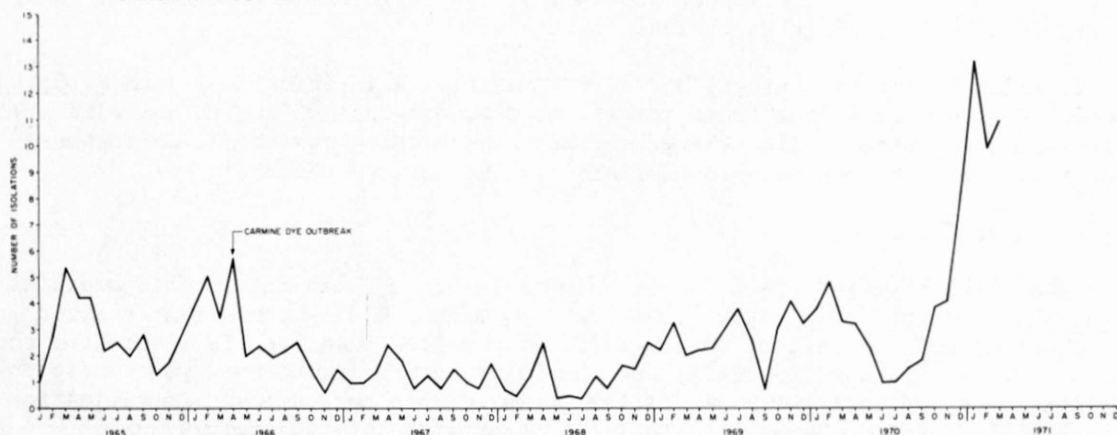
Between December 1, 1970 and March 31, 1971, 180 isolations of S. cubana were reported (Figure 2), compared to 63 isolations for the same period 1 year previously. Males and females were similarly affected; 70 percent of the patients were less than 10 years old. This age and sex distribution is similar to that seen for all salmonella isolations.

The increased number of isolations and their widespread geographic distribution suggest that a nationally distributed product may be involved. Although there have been no recent increases in isolations of S. cubana from non-human sources, this organism has been isolated most commonly from chickens, dried milk products, dried egg yolks, dried yeast, gelatin, and animal feeds.

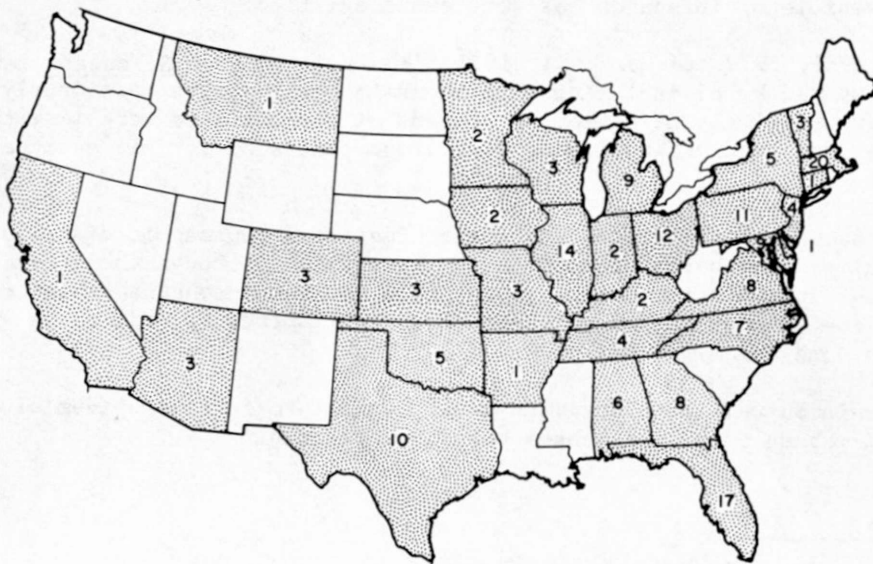
The Salmonellosis Surveillance Activity would appreciate further epidemiologic information on any S. cubana cases which have been investigated.

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1. Marth EH: Salmonellae and salmonellosis associated with milk and milk products. A review. J Dairy Sci 52:283-315, 1969

**Figure 1** AVERAGE NUMBER OF ISOLATIONS OF *S. cubana* PER WEEK FOR EACH MONTH, UNITED STATES, JANUARY 1965 - MARCH 1971



**Figure 2** REPORTED ISOLATIONS OF *S. cubana* FROM HUMAN SOURCES, BY STATE, DECEMBER 1970 - MARCH 1971



#### IV. REPORTS FROM THE STATES

None

#### V. SPECIAL REPORTS

##### A. Recent Articles on Salmonellosis

The following articles on salmonellosis of interest to public health workers have been published in recent months.

1. Adler JL, Anderson MS, Boring JR III, Nahmias AJ: A protracted hospital-associated outbreak of salmonellosis due to a multiple-antibiotic-resistant strain of Salmonella indiana. J Pediat 77:970, 1970
2. Gitter M, Sojka WJ: S. dublin abortion in sheep. Vet Rec 87:775, 1970
3. Goepfert JM, Mann ME, Hicks R: One-day fluorescent-antibody procedure for detecting salmonellae in frozen and dried foods. Appl Microbiol 20:977, 1970
4. Greenberg B, Kowalski JA, Klowden MJ: Factors affecting the transmission of salmonella by flies: natural resistance to bacterial colonization and bacterial interference. Infection and Immunity 2:722, 1970
5. Harvey RWS, Price TH: Sewer and drain swabbing as a means of investigating salmonellosis. J Hyg 68:611, 1970
6. Hess GW, Moulthrop JI, Norton HR II: New decontamination efforts and techniques for elimination of salmonella from animal protein rendering plants. J Amer Vet Med Ass 157:1975, 1970
7. Members of the Association for the Study of Infectious Disease: Effect of neomycin in non-invasive salmonella infections of the gastrointestinal tract. Lancet 2:1159, 1970
8. Milone NA, Watson JA: Thermal inactivation of Salmonella senftenberg 775W in poultry meat. Health Lab Sci 7:199, Oct 1970
9. Thomas MEM, Mogford HE: Salmonellosis in general practice. Observations of cases and their households in Enfield. J Hyg 68:663 1970
10. Vassilidasis P, Trichopoulos D, Papadakis J, Politi G: Salmonella isolations in abattoirs in Greece. J Hyg 68:601, 1970

B. Recalls of Products contaminated with Salmonellae for Period March 3, 1971, to April 14, 1971 (reported by the U. S. Food and Drug Administration).

From March 3, 1971, to April 14, 1971, two products were recalled by manufacturers and distributors because of salmonella contamination. These products as reported by the U. S. Food and Drug Administration are summarized in the table below.

Week Ending	Name, Label, Form	Manufacturer, Distributor	Lot No.	Depth of Recall	Product Distribution	Serotype	Use
3/24	Sterilized Whipping Cream	(Mfr.) Avoset Food Corp. Guistine, California	3-25	Retail	National	<u>S. senftenberg</u>	Food
4/7	World's Finest Milk Chocolate Bars, World's Finest Imperial Almonds, World's Finest Continental Almonds, Cookettes Flavored Chocolate Cake Toppings	(Mfr.) Cook Chocolate Co. Chicago, Illinois	not coded	Retail	National	<u>S. anatum</u>	Candy

### C. Status of the Cooperative State-Federal Salmonella Program

Abstracted with permission of the authors from a paper originally presented at the Seventy-fourth Annual Meeting, United States Animal Health Association, Philadelphia, Pennsylvania, October 23, 1970. Authors are Saul T. Wilson, Jr., D.V.M., M.P.H., Chief Staff Veterinarian, John W. Walker, D.V.M., Senior Staff Veterinarian, and Claude J. Pfow, D.V.M., Staff Veterinarian, Poultry Diseases, Animal Health Division, Agricultural Research Service, U. S. Department of Agriculture.

The cooperative State-Federal Salmonella Program is designed to prevent salmonella contamination of feed supplements of animal and marine origin. The accomplishment of this objective is dependent upon a management-operated salmonella control program being developed by each participating rendering and industrial fish plant. The program is being conducted in three phases on an individual plant basis: Phase I "Evaluation," Phase II "Clean-up," and Phase III "Approved."

The evaluation phase of the program has been completed. The objective of this phase was to identify those plants that were producing a finished product in which salmonellae could be detected by specified sampling and laboratory procedures.

Phase II or "Cleanup" is intended to identify the areas where salmonella contamination is occurring in the animal by-products and fishmeal plants. When these areas have been eliminated, when the operational procedures have been brought into adequate compliance with the Sanitation Guidelines, when a self-monitoring program has been implemented, and when the plant has achieved the required number of negative tests of official samples, the plant may be designated as an "Approved" establishment by local, state, and federal officials. After this designation, maintaining "Approved Status" is the program's objective. This is the final goal of the program for the individual plant. Since this is a voluntary program, the owner of each plant is free to establish the target approval date for his own plant. With these goals, a national target date can be established.

The following statistics summarize the results of salmonella testing conducted by the program and the status of the program at the end of Fiscal Year 1970:

Field stations reported the examination of 27,666 samples of which 24,329 were finished product and 3,337 were inline or environmental samples. Of the finished product samples, 3,892 or 16 percent were positive. A comparison of the number of samples tested for program purposes in Fiscal Years 1969 and 1970 is given in Table 1. The increase in 1970 (17 percent to 28 percent) of the percentage of environmental samples that were positive may be attributed to the increased experience of field personnel in locating potential sources of product contamination.

Table 1 - Number of samples tested for salmonella in Fiscal Year 1969 and 1970 by type of samples, number and percent positive.

Type of Sample	Fiscal Year 1969			Fiscal Year 1970		
	Samples Tested			Samples Tested		
	Total	Positive		Total	Positive	
		Number	Percent		Number	Percent
Environmental	7,821	1,353	17.3	3,337	934	28
Finished Product	<u>22,824</u>	3,835	16.8	<u>24,329</u>	3,892	15.9
TOTAL	30,645			27,666		

The numbers of finished product samples tested and the numbers and percent positive by plant category for Fiscal Years 1969 and 1970 are presented in Table 2.

Table 2 - Test results on finished product samples by type of plant - FY 1969 and FY 1970.

<u>Type of Plant</u>	<u>Number of Plants Tested</u>		<u>No. of Finished Product Samples Tested</u>		<u>Percentage of Samples Positive for Salmonellae</u>	
	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1969</u>	<u>FY 1970</u>
Protein Blender	15	16	381	433	40	52
Livestock Slaughtering	373	378	9,156	10,390	18	16
Poultry Slaughtering	35	41	730	1,078	17	16
Independent Rendering	362	352	10,407	10,421	16	16
Marine Product	86	77	1,991	1,726	11	8
Feather Meal	<u>9</u>	<u>8</u>	<u>159</u>	<u>281</u>	<u>3</u>	<u>10</u>
TOTAL	880	872	22,824	24,329	17	16

In Fiscal Year 1970, a total of 3,124 salmonella isolates were serotyped. There were 90 different serotypes represented in these isolates, compared with 93 different serotypes represented in the 3,996 isolates serotyped for program purposes in FY 1969. The serotypes found and the ranks they occupied were essentially the same for both years. Table 3 lists the 10 serotypes most frequently isolated in FY 1970.

Table 3 - The ten salmonella serotypes most frequently isolated from animal and marine byproducts - FY 1970.

<u>Serotype</u>	<u>Number</u>	<u>Percent</u>
1. senftenberg	326	10.4
2. montevideo	296	9.5
3. eimsbuettel	233	7.4
4. anatum	216	6.9
5. oranienburg	148	4.7
6. binza	135	4.3
7. bredeney	130	4.2
8. derby	125	4.0
9. infantis	98	3.1
thomasville	<u>98</u>	<u>3.1</u>
Total	1,805	57.8
Total (all serotypes)	3,124	

A comparison of the number and percent of plants meeting the Uniform Methods and Rules definition of a negative plant based on their last three tests is given in Table 4.

The increased number in 1970 is due to the increased number of plants that have had at least three or more inspections.

Table 4 - Number and percent of plants meeting the salmonella Uniform Methods and Rules definition for a negative plant based upon the last three inspections at close of Fiscal Years 1969 and 1970.

Type of Plant	Fiscal Year 1969			Fiscal Year 1970		
	Plants			Plants		
	Total Represented	Negative* Number	Percent	Total Represented	Negative* Number	Percent
Protein Blender	11	0	0	15	0	0
Livestock Slaughtering	286	60	21	380	101	26
Poultry Slaughtering	22	5	23	38	8	21
Independent Rendering	342	96	28	377	107	28
Feather Meal	4	1	25	8	4	50
Marine Product	<u>63</u>	<u>35</u>	<u>55</u>	<u>81</u>	<u>44</u>	<u>54</u>
Total	728	197	27	899	264	29

\*A negative plant is one that has had three consecutive negative tests of 10 sample units (total 30 negative sample units) of an official sample of finished product. The sample units are collected from the shipping or storage area at an interval of not less than 30 days apart within a 12 month period.

#### D. Announcement of a Change in the Frequency of Salmonella Surveillance Reports

Beginning in July 1971, the Salmonella Surveillance Report will be distributed quarterly, rather than the present monthly distribution. Salmonella Surveillance Report No. 111 for the month of June 1971 will be the final monthly issue. Report No. 112 will include surveillance data for the months of July, August, and September.

This revised distribution schedule has been favorably received by the Association of State and Territorial Epidemiologists and by readers of the Salmonella Surveillance Report. One of the important decisions leading to this change is the recognition that the more common modes of salmonella transmission, such as mishandled foods, person-to-person spread, and contact with pets, seldom require immediate reporting as an adjunct to control. Quarterly publications will continue to provide timely information on current salmonellosis topics.

As in the past, outbreaks traced to or potentially due to commercial food products and other timely news items will be published weekly in the Morbidity and Mortality Weekly Reports (MMWR). Persons who desire this publication may write to the Editor, Morbidity and Mortality Weekly Report, Center for Disease Control, Atlanta, Georgia 30333.

We wish to thank those readers who sent us their comments on this change.



# VI. INTERNATIONAL

## Summary of Salmonella Serotypes Identified in Israel, January - March 1970

Reported by Dr. Ch. B. Gerichter, Director, Government Central Laboratories,  
Ministry of Health, Jerusalem, Israel.

Table 1 - Most Common Salmonella Serotypes Isolated from Man, Israel, January - March 1970

	<u>Number</u>	<u>Percent</u>	<u>Rank</u>	<u>Rank</u> <u>4th Quarter</u> <u>1969</u>	<u>Rank</u> <u>1st Quarter</u> <u>1969</u>
<u>S. blockley</u>	86	18.9	1	1	4
<u>S. haifa</u>	86	18.9	1	4	7
<u>S. typhi-murium</u>	73	16.0	2	2	1
<u>S. enteritidis</u>	61	13.4	3	6	3
<u>S. typhi-murium</u> <u>var. copenhagen</u>	18	4.0	4	3	2
<u>S. sofia</u>	17	3.7	5	7	5
<u>S. montevideo</u>	16	3.5	6	12	6
<u>S. infantis</u>	14	3.1	7	8	12
<u>S. braenderup</u>	12	2.6	8	9	12
<u>S. newport</u>	12	2.6	8	5	12
<u>S. dublin</u>	6	1.3	9	-	12
<u>S. muenchin</u>	6	1.3	9	12	-
Total 12 serotypes	407	89.4			
Other 21 serotypes	48	10.6			
Total 33 serotypes	455	100.0			

Table 2 - Most Common Salmonella Serotypes isolated from Nonhuman Material, Israel, January - March, 1970

	<u>Number</u>	<u>Percent</u>	<u>Rank</u>	<u>Rank</u> <u>4th Quarter</u> <u>1969</u>	<u>Rank</u> <u>1st Quarter</u> <u>1969</u>
<u>S. kentucky</u>	36	12.7	1	8	10
<u>S. montevideo</u>	31	11.0	2	6	12
<u>S. typhi-murium</u>	31	11.0	2	2	1
<u>S. sofia</u>	23	8.2	3	7	2
<u>S. blockley</u>	20	7.2	4	3	3
<u>S. dublin</u>	20	7.2	4	12	12
<u>S. anatum</u>	19	6.7	5	12	11
<u>S. typhi-murium</u> <u>var. copenhagen</u>	17	6.0	6	9	5
<u>S. zanzibar</u>	17	6.0	6	12	12
<u>S. infantis</u>	16	5.7	7	4	9
<u>S. enteritidis</u>	7	2.4	8	7	8
<u>S. haifa</u>	7	2.4	8	12	7
<u>S. concord</u>	6	2.2	9	12	12
<u>S. braenderup</u>	5	1.7	10	12	12
Total 14 serotypes	255	90.4			
Other 27 serotypes	27	9.6			
Total 41 serotypes	282	100.0			



### Editor's Comment

Salmonella blockley continues to be one of the most commonly isolated serotypes from human sources in Israel, accounting for 18.9 percent of salmonella isolations during the first 3 months of 1970. In contrast, this serotype accounted for only 2.7 percent of human isolations in the United States during 1970, and was the eighth most frequently found serotype.

The nine most frequently isolated serotypes from humans in Israel during this period were also among the 14 most frequently obtained from nonhuman sources. This again demonstrates the importance of the nonhuman reservoir as a source for human disease.

TABLE I. COMMON SALMONELLAE REPORTED FROM HUMAN SOURCES, FEBRUARY, 1971

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>								2		2	3			2												1							2
<i>bareilly</i>								1			1																						
<i>blockley</i>	2			2		1		5	2		3	4		4	1	1	1						1	1	2		2		1		3	4	
<i>braenderup</i>											2						1																
<i>bredeney</i>				1		1								2									2										
<i>chester</i>				1						1									1														
<i>cholerae-suis v kun</i>																			1	1												1	
<i>cubana</i>				4				2		2	1	3		4				1	1						2		2		2		2	3	
<i>derby</i>						1				4	3	4	1		3	1	2						1		2						2	1	
<i>enteritidis</i>		2		11	1	1		14	9	5	22	4	1	10	4	3	4								2	6	1	1		4	9	2	
<i>give</i>															1																1	3	
<i>heidelberg</i>				1				4	5	4	4			7	4	4	1						1		1				1		7	6	
<i>indiana</i>											1															2					2		
<i>infantis</i>				1		1		5	3	2		7	1	7	1	1	2						5		1		2				2		
<i>java</i>								1	4	8	6			4		2	1															1	
<i>javiana</i>												1							1													4	
<i>litchfield</i>				2		1		2	1					1															1				
<i>livingstone</i>																																	
<i>manhattan</i>								1	3	4	5			1	3																1	2	
<i>miami</i>																																1	
<i>mississippi</i>																																	
<i>montevideo</i>	2			4				1			2			2											3				1		1	2	
<i>muenchen</i>				1				1				1				2			1						2				1			2	
<i>newington</i>										1	3																						
<i>newport</i>				2				7	7		3	4		9	1	1	1	1					1	1	1				1		1	3	
<i>oranienburg</i>						1		1			2			1				1											1		2	1	
<i>panama</i>						1																											
<i>paratyphi B</i>				1				1				5						1							2		1						
<i>reading</i>								1																							1		
<i>saint-paul</i>				2		1		3			9	2	2	3	2	3	2		1						3		3		1		2	4	
<i>san-diego</i>	1									1				1																			
<i>schwarzengrund</i>																											2				1		
<i>senftenberg</i>				1						1	3			1				1							1		1				2		
<i>tennessee</i>				1																											1		
<i>thompson</i>				2					2	2	1	4		4	3								2									3	
<i>typhi</i>							1		3		1			1	1				1												2	3	
<i>typhimurium</i>	2			22	1	13		18	11	6	30	13	4	18	4	8	5	1	10	3	3		4		12		11	2	8		16	9	
<i>typhimurium v cop</i>				4		3				4					2																		
<i>weltveden</i>												2	1																				
<i>worthington</i>																																	
TOTAL	7	2	—	63	2	25	1	70	54	47	105	54	8	85	28	27	18	6	16	3	3	—	17	4	41	1	25	2	22	—	58	57	
ALL OTHER *	—	4	1	2	10	—	24	5	1	1	7	—	—	2	2	3	—	—	—	—	—	3	—	1	1	20	1	—	1	2	2	3	
TOTAL	7	6	1	65	12	25	25	75	55	48	112	54	8	87	30	30	18	6	16	3	3	3	17	5	42	21	26	2	23	2	60	60	

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 110 cultures.

\* See Table II.

TABLE I - Continued

GEOGRAPHIC DIVISION AND REPORTING CENTER																					TOTAL	% OF TOTAL	CUMU- LATIVE TOTAL	% OF CUMU- LATIVE TOTAL	SERO TYPE
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					
					1		1									2		1		3	22	1.5	39	1.1	<i>anatum</i>
					1													1			3	0.2	10	0.3	<i>bareilly</i>
																		4			45	3.0	82	2.3	<i>blockley</i>
																				2	5	0.3	24	0.7	<i>braenderup</i>
							1											1		3	11	0.7	29	0.8	<i>bredeney</i>
						1															4	0.3	19	0.5	<i>chester</i>
					1																2	0.1	2	0.1	<i>cholerae-suis v kun</i>
		1				1	3														34	2.3	86	2.5	<i>cubana</i>
		1			1											1		3		2	33	2.2	77	2.2	<i>derby</i>
3			1			1	4	1					1			6	5	6		1	145	9.8	304	8.7	<i>enteritidis</i>
	1	2			2	1	1				1		4			3		10		1	6	0.4	9	0.3	<i>give</i>
																					75	5.1	215	6.1	<i>heidelberg</i>
	4	1		1	5	1	1						2					2			7	0.5	14	0.4	<i>indiana</i>
																		9		4	69	4.6	156	4.5	<i>infantis</i>
	1				2									1			1	10		3	45	3.0	99	2.8	<i>java</i>
	1						1														7	0.5	43	1.2	<i>javana</i>
							5						1						3		12	0.8	23	0.7	<i>litchfield</i>
																			2	1	9	0.6	9	0.3	<i>livingstone</i>
																			4	1	25	1.7	66	1.9	<i>manhattan</i>
																					1	0.1	7	0.2	<i>miami</i>
					3		1						1								—	—	3	0.1	<i>mississippi</i>
							1														23	1.5	50	1.4	<i>montevideo</i>
																					16	1.1	41	1.2	<i>muenchen</i>
																					4	0.3	6	0.2	<i>newington</i>
2	1	2		1			9				1		2		1	1		14		2	80	5.4	194	5.5	<i>newport</i>
		2			1		1											2			16	1.1	57	1.6	<i>oranienburg</i>
																				3	7	0.5	23	0.7	<i>panama</i>
					2	1					1								1		16	1.1	28	0.8	<i>paratyphi B</i>
						1										2			1		6	0.4	22	0.6	<i>reading</i>
		1					5	1			1					1	2	9			63	4.2	175	5.0	<i>saint-paul</i>
																1	1	2			7	0.5	30	0.9	<i>san-diego</i>
	1																				3	0.2	9	0.3	<i>schwarzengrund</i>
		1				1	1				1								1		16	1.1	33	0.9	<i>senftenberg</i>
		2									3		3				1		1		8	0.5	11	0.3	<i>tennessee</i>
	1				2											1		7		1	40	2.7	95	2.7	<i>thompson</i>
9					2													8			32	2.2	87	2.5	<i>typhi</i>
2	12	6	2	1	3	1	8				8		3	2		11	6	76		8	383	25.8	897	25.6	<i>typhimurium</i>
				1	2			1	1				2				2				22	1.5	46	1.3	<i>typhimurium v cop</i>
																				6	6	0.4	14	0.4	<i>weltevreden</i>
																			1		4	0.3	7	0.2	<i>worthington</i>
13	25	19	3	3	27	9	45	3	1	—	16	—	19	3	1	29	18	185	1	41	1312	88.4	3141	89.6	TOTAL
1	—	1	6	1	—	1	19	—	—	—	3	25	—	—	—	—	4	9	1	6	173	X	364	X	ALL OTHER*
14	25	20	9	4	27	10	64	3	1	—	19	25	19	3	1	29	22	194	2	47	1485		3505		TOTAL

TABLE II. OTHER SALMONELLAE REPORTED FROM HUMAN SOURCES, FEBRUARY, 1971

SERO TYPE	REPORTING CENTER																							
	ALA	ALK	ARK	CAL	COL	DEL	DC	FLA	GA	HAW	ILL	KY	MD	MAS	MIC	MIS	NEB	NH	NJ	NM	NYA	NYB	NYC	
albany														1										
amager									2															
berta								1																
cerro						1																		
chittagong																								
eastbourne																								
gatow																								
homosassa								1																
irumu																								
johannesburg																								
kaaped					1																			
kentucky										1												1		
kottbus											1	1										1		
krefeld																								
loma-linda					1																			
lomita																								
london																								
madella				1																				
meleagridis				1																				
minnesota															2									
molade								1																
oslo										4				1										
paratyphi A																								
poona	1				1																	2		
siegburg				2																				
stanley				1																				
taksony				1																				
urbana				1						1			1						1					
vejle																								
weslaco																								
</																								

\* See Table V-A

TABLE II - Continued

REPORTING CENTER													TOTAL	CUMULATIVE TOTAL	SERO TYPE
NC	OK	LO	RE	PA	RI	SC	TEX	VT	VA	WIS					
				1									2	3	<i>albany</i>
													2	2	<i>amager</i>
													1	3	<i>berta</i>
													1	2	<i>cerro</i>
				2									2	2	<i>chittagong</i>
							1						1	2	<i>eastbourne</i>
							7						7	7	<i>gato</i>
		1											1	1	<i>homosassa</i>
									1				1	1	<i>irumu</i>
													1	1	<i>johannesburg</i>
	1												1	5	<i>kaapstad</i>
				1									3	5	<i>kentucky</i>
					1								4	11	<i>kottbus</i>
													1	1	<i>krefeld</i>
													1	1	<i>loma-linda</i>
				1			1						1	3	<i>lomita</i>
													1	4	<i>london</i>
													1	1	<i>madelia</i>
													1	5	<i>meleagridis</i>
													2	3	<i>minnesota</i>
										1			1	2	<i>molade</i>
										1			6	7	<i>oslo</i>
				1			1						1	2	<i>paratyphi A</i>
							1						6	15	<i>poona</i>
							1						3	10	<i>siegburg</i>
													1	1	<i>stanley</i>
				1									1	1	<i>taksony</i>
													5	12	<i>urbana</i>
1							1						1	1	<i>vejle</i>
								1					1	1	<i>weslaco</i>
1	1	1	7	1	-	12	-	1	2				61	162	TOTAL
-	-	3	-	9	2	7	1	-	1				112	202	NOT TYPED *
1	1	4	7	10	2	19	1	1	3				173	364	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, FEBRUARY, 1971

SEROTYPE	DOMESTIC ANIMALS AND THEIR ENVIRONMENT							ANIMAL FEEDS			
	CHICKENS	TURKEYS	SWINE	CATTLE	HORSES	OTHER	SUBTOTAL	TANKAGE	VEGETABLE PROTEIN	OTHER	SUBTOTAL
<i>anatum</i>		2		1			3				1
<i>bareilly</i>							1				1
<i>blockley</i>	1						1				1
<i>braenderup</i>							1				1
<i>bredeney</i>							1	3			3
<i>chester</i>		1					1				1
<i>cholerae-suis v kun</i>							1				1
<i>cubana</i>							1	6			6
<i>derby</i>							1	3			3
<i>enteritidis</i>						1	1				1
<i>give</i>		1					1				1
<i>heidelberg</i>		5					5				5
<i>indiana</i>							1				1
<i>infantis</i>	1						1			1	1
<i>java</i>							1				1
<i>javiana</i>							1				1
<i>litchfield</i>							1				1
<i>livingstone</i>					1		1				1
<i>manhattan</i>	2						2				2
<i>miami</i>							1				1
<i>mississippi</i>							1				1
<i>montevideo</i>							1	2			2
<i>muenchen</i>							1				1
<i>newington</i>							1				1
<i>newport</i>							1				1
<i>oranienburg</i>						3	3				3
<i>panama</i>							1				1
<i>paratyphi B</i>							1				1
<i>reading</i>		32					32				32
<i>saint-paul</i>	1						1				1
<i>san-diego</i>		4					4				4
<i>schwarzenrund</i>							1				1
<i>senftenberg</i>							1				1
<i>tennessee</i>							1			4	4
<i>thompson</i>	1						1				1
<i>typhi</i>							1				1
<i>typhimurium</i>	9	4	4	14	2	4	37				37
<i>typhimurium v cop</i>						1	1				1
<i>weltevreden</i>							1				1
<i>worthington</i>							1				1
TOTAL	15	49	4	15	3	9	95	14	—	5	19
ALL OTHER *	—	—	4	2	—	—	6	5	—	1	6
TOTAL	15	49	8	17	3	9	101	19	—	6	25

\* See Table IV

TABLE III - Continued

WILD ANIMALS AND BIRDS	REPTILES AND ENVIRON- MENT	HUMAN DIETARY ITEMS						MISCEL- LA- NEOUS	TOTAL	CUMU- LATIVE TOTAL	SEROTYPE
		EGGS AND PRODUCTS	POULTRY	RED MEAT	DAIRY PRODUCTS	OTHER	SUBTOTAL				
		1					1		3	34	<i>anatum</i>
		4					4		1	2	<i>bareilly</i>
		1		1			2		1	24	<i>blockley</i>
	1						4		4	6	<i>breenderup</i>
	1	1					2		6	24	<i>brederney</i>
							—		1	3	<i>chester</i>
							—		—	24	<i>cholerae-suis v kun</i>
1					1		2	1	9	17	<i>cubana</i>
	2	1					1	1	6	17	<i>derby</i>
							—	1	4	8	<i>enteritidis</i>
							—		2	4	<i>give</i>
1	1	5					5		11	44	<i>heidelberg</i>
	9	6					6		—	1	<i>indiana</i>
							—		8	43	<i>infantis</i>
							—		9	19	<i>java</i>
							—		—	1	<i>javana</i>
	1	1					—		1	4	<i>litcheild</i>
		1					1		2	3	<i>livingstone</i>
		1					1	7	10	13	<i>manhattan</i>
							—		—	—	<i>miami</i>
							—		—	—	<i>mississippi</i>
	1		2				9	1	12	33	<i>montevideo</i>
	3		1				—		1	7	<i>muenschen</i>
							2		—	6	<i>newington</i>
							1		5	14	<i>newport</i>
		2	1			1	4	2	9	17	<i>orantenburg</i>
							—		—	1	<i>panama</i>
	1						—		1	1	<i>paratyphi B</i>
		1					—	1	33	73	<i>reading</i>
							1	1	3	39	<i>saint-paul</i>
							—		4	15	<i>san-diego</i>
		1	1	4			6	1	7	9	<i>schwarzengrund</i>
						1	1	1	2	23	<i>senftenberg</i>
		4	1				—		4	19	<i>tennessee</i>
							5		6	31	<i>thompson</i>
4	2	5	1				—	7	—	—	<i>typhi</i>
		3					6		56	140	<i>typhimurium</i>
							—		1	20	<i>typhimurium v cop</i>
							—		—	—	<i>welleveden</i>
							3		3	19	<i>worthington</i>
6	21	36	7	8	3	6	60	24	225	758	TOTAL
—	5	15	—	—	1	—	16	5	38	162	ALL OTHER*
6	26	51	7	8	4	6	76	29	263	920	TOTAL

TABLE IV. OTHER SALMONELLAE REPORTED FROM NONHUMAN SOURCES, FEBRUARY, 1971

SERO TYPE	DOMESTIC ANIMALS AND THEIR ENVIRONMENT							ANIMAL FEEDS			
	CHICKENS	TURKEYS	SWINE	CATTLE	HORSES	OTHER	SUBTOTAL	TANKAGE	VEGETABLE PROTEIN	OTHER	SUBTOTAL
<i>albany</i>											
<i>berta</i>								1			
<i>bornum</i>											1
<i>cerro</i>											
<i>cholerae-suis</i>			3				3				
<i>dublin</i>				2			2	1			
<i>eimsbuettel</i>											1
<i>glostrup</i>											
<i>habana</i>										1	1
<i>kentucky</i>											
<i>orion</i>											
<i>siegburg</i>											
<i>thomasville</i>											
<i>urbana</i>											
TOTAL	-	-	3	2	-	-	5	2	-	1	3
NOT TYPED*	-	-	1	-	-	-	1	3	-	-	3
TOTAL	-	-	4	2	-	-	6	5	-	1	6

\* See Table V-B



TABLE IV - Continued

WILD ANIMALS AND BIRDS	REPTILES AND ENVIRON- MENT	HUMAN DIETARY ITEMS						MISCEL- LA- NEOUS	TOTAL	CUMU- LATIVE TOTAL	SEROTYPE
		EGGS AND PRODUCTS	POULTRY	RED MEAT	DAIRY PRODUCTS	OTHER	SUBTOTAL				
	1	1					1		1	1	<i>albany</i>
							1		1	1	<i>berta</i>
		2					2		1	5	<i>bornum</i>
							1		2	5	<i>cerro</i>
									3	7	<i>cholerae-suis</i>
	1	3					3		2	5	<i>dublin</i>
							1		4	14	<i>eimsbuettel</i>
		1					1	1	1	1	<i>glostrup</i>
							1		2	2	<i>habana</i>
									1	6	<i>kentucky</i>
	2	5			1		1		1	2	<i>orion</i>
							5		5	14	<i>siegburg</i>
							1	3	3	11	<i>thomassville</i>
							1		2	6	<i>urbana</i>
-	4	12	-	-	1	-	13	4	29	135	TOTAL
-	1	3	-	-	-	-	3	1	9	27	NOT TYPED*
-	5	15	-	-	1	-	16	5	38	162	TOTAL

### A. HUMAN SOURCES

REPORTING CENTER	GROUP															TOTAL
	B	C	C1		C2	D	E		E4	F	G		I	O	UNK	
ALASKA	1															1
ARKANSAS									1							1
CALIFORNIA			1												1	2
D.C.	5	2			2	3	1				1				6	20
ILLINOIS	1															1
MISSISSIPPI	2				2	1									1	6
NEBRASKA	2				1											3
NEW HAMPSHIRE	1		1			1									1	4
NEW MEXICO	13		4		2	1				2	2		1			25
NEW YORK - A															24	24
NEW YORK - B1											1					1
NEW YORK - C		1														1
OREGON	1		1												1	3
RHODE ISLAND	5	1			2										1	9
SOUTH CAROLINA	1				1											2
TEXAS	1		3				1								2	7
VERMONT					1											1
WISCONSIN	1															1
TOTAL	34	4	10		11	6	2		1	2	4		1	-	37	112

### B. NONHUMAN SOURCES

SOURCES	GROUP															TOTAL
	B	C	C1		C2	D	E		E4	F	G		I	O	UNK	
DOMESTIC ANIMALS AND THEIR ENVIRONMENT			1													1
ANIMAL FEEDS			1											2		3
WILD ANIMALS AND BIRDS																-
REPTILES AND ENVIRONMENT			1													1
HUMAN DIETARY ITEMS															3	3
MISCELLANEOUS															1	1
TOTAL	-	-	3		-	-	-		-	-	-		-	2	4	9