

**RECEIVED**

MAY 11 1987

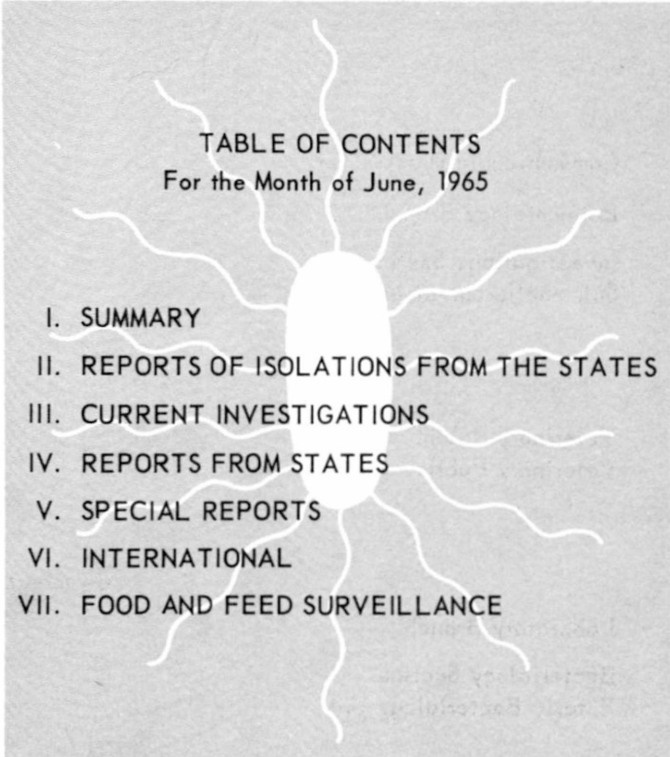
CDC LIBRARY  
ATLANTA, GA. 30333

CDC  
COMMUNICABLE DISEASE CENTER

# SALMONELLA

## SURVEILLANCE

TABLE OF CONTENTS  
For the Month of June, 1965

- 
- I. SUMMARY
  - II. REPORTS OF ISOLATIONS FROM THE STATES
  - III. CURRENT INVESTIGATIONS
  - IV. REPORTS FROM STATES
  - V. SPECIAL REPORTS
  - VI. INTERNATIONAL
  - VII. FOOD AND FEED SURVEILLANCE

# 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 to:

Chief, Salmonella Surveillance Unit, Communicable Disease Center, Atlanta, Georgia 30333

Communicable Disease Center

Epidemiology Branch

Investigations Section

Salmonella Surveillance Unit

Veterinary Public Health Section

Veterinary Public Health Laboratory

Dr. James L. Goddard, Chief

Dr. Alexander D. Langmuir, Chief

Dr. Philip S. Brachman, Chief

Dr. Richard N. Collins, Chief

Dr. Read F. McGehee

Arnold F. Kaufmann, D.V.M.

Mr. James B. Goldsby, Statistician

Dr. James H. Steele, Chief

Mrs. Mildred M. Galton, Chief

Dr. John R. Boring

## *Collaborators*

Laboratory Branch

Bacteriology Section

Enteric Bacteriology Unit

Dr. Philip R. Edwards, Chief

Dr. William H. Ewing, Chief

## TABLE OF CONTENTS

	<u>Page</u>
I. SUMMARY	1
II. REPORTS OF ISOLATIONS FROM THE STATES	1
A. Human	1
B. Nonhuman	2
III. CURRENT INVESTIGATIONS	2
A. Surveillance of South American Turtles and Monkeys at Point of Entry into the United States.	2
B. Progress Report on Water-Borne Outbreak of <u>Salmonella typhi-murium</u> Gastroenteritis in Riverside, California.	3
IV. REPORTS FROM THE STATES	5
A. Georgia -	
(1) Report of Two Cases of Infection Due to <u>Salmonella java</u> Associated with Pet Turtle.	5
(2) Outbreak of Salmonellosis Due to Live Easter Chicks.	5
B. Virginia - Infection with <u>Salmonella enteritidis</u> Related to Exposure to Pet Dog.	6
C. Washington - Nursing Home Outbreak of Salmonellosis Due to <u>Salmonella typhi-murium</u> .	6
V. SPECIAL REPORTS	6
A. Sanitation Guidelines for Salmonella Control and Processing Industrial Fishery Products.	7
B. Report on American Institute of Baking, Conference on Eggs and Baking held May 25-26, 1965 in Chicago, Illinois.	7
VI. INTERNATIONAL	7
A. Isolations of Salmonella in Belgium During the First Quarter of 1965.	7
B. Salmonella Isolations Typed During the First Quarter of 1965, Utrecht, The Netherlands.	7
VII. FOOD AND FEED SURVEILLANCE	8
A. Dry Heat Resistance of Salmonellae in Rendered Animal By-products.	8
B. Dehydrated Dog Foods.	8

## I. Summary

This month marks the completion of Dr. Charles E. McCall's two-year assignment with the Salmonella Surveillance Unit. Dr. McCall has returned to the Harvard University Medical Service at the Boston City Hospital as Senior Resident in Medicine. Dr. Richard N. Collins will now assume duties as Chief of the Salmonella Surveillance Unit.

During June a total of 2,174 isolations of salmonellae from human sources were reported to the Salmonella Surveillance Unit for an average weekly total of 435. This represented an increase of 14 isolations per week over May 1965, and a decrease of 4 isolations per week from June, 1964. This conforms to the seasonal pattern of salmonellosis noted in this country during 1963 and 1964.

Included under the section Current Investigations is a report on a recent program of surveillance of South American turtles and monkeys at the point of entry into the United States. A progress report on the continuing investigation of the large water-borne outbreak of Salmonella typhi-murium infection in Riverside, California, is also included under Current Investigations. A report of human isolations of salmonellae for the first quarter of 1965 from Belgium and the Netherlands is summarized in the International section.

## II. REPORTS OF ISOLATIONS FROM THE STATES

### A. Human

The seven most commonly reported serotypes from human sources during June were:

<u>Rank</u>	<u>Serotype</u>	<u>Number</u>	<u>Per Cent</u>	<u>Rank Last Month</u>
1	<u>S. typhi-murium</u> & <u>S. typhi-murium</u> <u>var. copenhagen</u>	786	36.2	1
2	<u>S. heidelberg</u>	156	7.2	2
3	<u>S. infantis</u>	116	5.3	3
4	<u>S. newport</u>	106	4.9	5
5	<u>S. meleagridis</u>	105	4.8	Not Listed
6	<u>S. saint-paul</u>	76	3.5	8
7	<u>S. enteritidis</u>	74	3.4	4
Total		1,419	65.3	

Total salmonellae isolated (June) 2,174

The increase in isolations of S. meleagridis is a reflection of a common source outbreak related to a delicatessen in Washington, D.C. (SSR #38). Persons who became ill in this outbreak resided in the states of Maryland, Virginia, New Jersey, and Pennsylvania, in addition to the District of Columbia. The age and sex distribution is consistent with past experience (Table IV). These seven serotypes accounted for 65.3 per cent of the total human isolations.



## B. Nonhuman

There were 315 isolations of salmonellae from nonhuman sources reported in June, a decrease of 161 from the previous month. This decrease may be accounted for by the fact that no reports were received from the National Animal Disease Laboratory during June. Due to the heavy load of cultures being received for typing in that laboratory, reports became backlogged. There were 51 serotypes identified among those submitted from 36 states.

<u>Rank</u>	<u>Serotype</u>	<u>Number</u>	<u>Per Cent</u>	<u>Rank Last Month</u>
1	<u>S. typhi-murium</u> & <u>S. typhi-murium</u> <u>var. copenhagen</u>	87	27.6	1
2	<u>S. san-diego</u>	23	7.3	Not Listed
3	<u>S. pullorum</u>	17	5.4	Not Listed
4	<u>S. give</u>	16	5.1	Not Listed
5	<u>S. newport</u>	12	3.8	5
6	<u>S. oranienburg</u>	11	3.5	Not Listed
7	<u>S. anatum</u> and <u>S. infantis</u>	10 <u>10</u>	3.2 <u>3.2</u>	Not Listed 3
		186	59.1	

These seven types accounted for 59.1 per cent of the total number of nonhuman isolations reported.

The four species from which most of the isolations were obtained in order of frequency are: turkeys, 67 (21.3 per cent); chickens, 58 (18.4 per cent); cattle, 18 (5.7 per cent); and horses, 16 (5.0 per cent). Previously isolations from swine have appeared as the third or fourth most frequent.

Salmonella eimsbuettel, a type not previously reported in the United States was obtained from stuffed Easter ducks in Washington. However, according to Dr. W. H. Ewing, re-examination of cultures of the closely related serotype, S. livingstone, indicates that some of these are S. eimsbuettel. Another relatively rare type, S. inverness, was reported from swine in California. Most of the previous isolates of this type have been reported from Florida.

## III. CURRENT INVESTIGATIONS

- A. Surveillance of South American Turtles and Monkeys at Point of Entry into the United States. Reported by Arnold Kaufmann, D.V.M., Investigations Section, CDC; Charles Prather, M.D., Director of Epidemiology, Florida State Board of Health; and Lee C. Watkins, M.D., Medical Officer in Charge, USPHS Quarantine Station, Fisher Island, Miami Beach, Florida.

During May 1965, a culture surveillance program was instituted on South American turtles and monkeys arriving at Miami International Airport and at holding areas for wholesale dealers.

Twelve newly arrived turtles from South America were divided into four groups and cultures obtained from each group. Salmonella organisms were recovered from each of these four groups; serotypes isolated included S. newport, S. san-diego, and Arizona species. Ten swabs were taken from the tanks in the holding areas in which newly arrived turtles were to be placed. Nine of the ten tank swabs were positive for salmonella including S. rubislaw, S. alagbon, S. madelia, S. urbana, and an untyped salmonella. Cloacal swabs were obtained on ten large red-like turtles. All ten were

positive for salmonella or Arizona species. Serotypes isolated include S. anatum, S. heidelberg, S. newport, S. oranienburg, and S. poona.

Fecal cultures were obtained from South American monkeys in three categories: 1) newly arrived animals prior to transfer from shipping cages, 2) recently arrived animals being held at wholesale animal dealers, and 3) a stable colony of monkeys at a Florida medical school. The monkeys examined included several varieties of marmosets. Fifteen out of 26 swabs from newly arrived monkeys were positive for salmonella; serotypes isolated included S. glostrup, S. poona, S. newport, S. oranienburg, S. saphra, and S. urbana. Four out of the five fecal specimens obtained from monkeys maintained in a wholesale holding area were positive for S. anatum. Twelve out of 26 swabs from the medical school monkey colony were also positive; 10 of these were S. typhi-murium and 2, S. montevideo.

Editor's Comment: In this study a high percentage of isolations of salmonella organisms were made from imported turtles and monkeys at the point of entry into the United States. Many of the serotypes identified from these animals are extremely rare; S. alagbon and S. glostrup have not been previously reported from this country. Several of the other serotypes identified have previously been reported almost exclusively from the Southeastern states: S. saphra has previously been isolated only in the Gulf Coast states; S. madelia has previously been isolated only in Florida, Louisiana, and Texas; and the majority of isolations of S. rubislaw have been from the Southeastern United States. The evidence suggests that these serotypes are indigenous to South America and have subsequently been exported to the United States primarily in those areas serving as receiving areas for South American products.

The evidence presented in this study suggests that many of the animals are already infected with salmonella at the time of entry into the United States and further that wholesale holding areas, such as gang cages and large turtle tanks, provide ample opportunity for maintaining a reservoir of infection and cross contamination of different lots of imported animals. Both monkeys and turtles represent significant reservoirs of infection for salmonellosis in man. Similar studies at other points of entry into the United States are needed to further define the extent of the problem as a preliminary to formulation of regulations to control this source of salmonellae.

- B. Progress Report on Water-Borne Outbreak of Salmonella typhi-murium Gastroenteritis in Riverside, California. Reported by Philip K. Condit, M.D., Director, Division of Communicable Diseases, California State Department of Public Health; Everett Stone, M.D., Director of Riverside County Health Department; and Read F. McGehee, M.D., and James B. Goldsby, Investigations Section, Communicable Disease Center.

In May and June 1965, a large outbreak of gastroenteritis due to Salmonella typhi-murium occurred in Riverside, California (SSR #38). The municipal water supply was incriminated as the vehicle of infection in this outbreak. Salmonella typhi-murium, phage type 2, was recovered from both patients and six water samples taken from various points within the city limits. Based on a house-to-house sample survey, a total of 18,000 symptomatic cases are thought to have occurred. The vast majority of these were mild and self-limiting. Less than 75 persons required hospitalization. Infection with S. typhi-murium was associated with three deaths: one death occurred in a 5-day-old infant; another in a 16-year-old female with anemia; and the third death in a 55-year-old female with disseminated malignancy. The available data on symptomatology and duration of illness is tabulated on the next page.

Symptomatology - Tabulated on 974  
Individuals Contacted During Surveys  
Riverside, California

<u>Symptom</u>	<u>No. with Symptom</u>	<u>% with Symptom</u>
Diarrhea	830	85.2
Cramps	770	79.1
Fever	384	39.4
Nausea	346	35.5
Vomiting	230	23.6
Chills	142	14.6
Blood in Stool	100	10.3
Headache	54	5.5
Myalgia	18	1.8
Other	26	2.7

Duration of Illness - Tabulated on 974  
Individuals Contacted During Surveys  
Riverside, California

<u>Duration</u>	<u>No. of Individuals</u>		
< 1 day	30		
1 to 2 days	131		
2 to 3 "	206		
3 to 4 "	180	Median	3.67 days
4 to 5 "	92		
5 to 11 "	243		
11 to 17 "	40		
17 to 23 "	10		
23 +	6		
Uncertain or Unknown	<u>36</u>		
	974		

A program of continuing surveillance of diarrheal disease through contact with practicing physicians and the major hospitals in the Riverside community is underway. There is no indication of significant secondary spread of infection at this time. The incidence of diarrheal disease in the community has returned to what is considered to be the base-line level. Extensive precautions were taken in the pediatric departments of each of the hospitals in Riverside. To date, no serious problems of hospital-associated infections have been reported. No secondary outbreaks related to food handlers infected during the primary wave of infection have been reported.

A group of over 100 persons initially infected and documented to have stool cultures positive for S. typhi-murium is being kept under continuous surveillance to determine the persistence of excretion of this organism. It is anticipated that this study group will be cultured at 30-day intervals until all persons have had at least 2 consecutive negative cultures.

The municipal water system has been chlorinated since June 2. An extensive investigation of the water system by a county, state, and federal team continues. Every aspect of the water system, including the deep wells, transmission lines, and holding reservoirs, is being placed under close scrutiny in an effort to determine how contamination of the water system with S. typhi-murium organisms occurred. A thorough search for cross connections is underway. In the course of these investigations, several additional recoveries of S. typhi-murium directly from unchlorinated well sources in the Riverside area have been reported. It is anticipated that

additional water samples throughout Riverside County and adjoining county water systems will be examined in the subsequent stages of this investigation.

#### IV. REPORTS FROM THE STATES

##### A. Georgia

- (1) Report of Two Cases of Infection Due to Salmonella java Associated with Pet Turtle. Reported by Byron W. Mixon, Public Health Ecology Assistant, Epidemiologic Investigations Branch, State of Georgia Department of Public Health.

Salmonella java is a relatively uncommon serotype in the State of Georgia. Between 1955 and 1964, this organism has been isolated from humans only 13 times. A recent report of two isolations from the same family prompted an epidemiological investigation. Two children in a single household experienced gastroenteritis and S. java was isolated from both children. Subsequent investigation indicated the presence of a pet turtle in the household; S. java was isolated from both the gastrointestinal tract of the turtle and from water in the turtle bowl. The turtle had been purchased locally during the Christmas season in 1964.

- (2) Outbreak of Salmonellosis Due to Live Easter Chicks. Reported by Byron W. Mixon, Public Health Ecology Assistant, Epidemiologic Investigations Branch, State of Georgia Department of Public Health.

Salmonella infections due to exposure to live Easter chicks continue to be reported despite repeated warnings by the Georgia State Department of Public Health. A four and one-half month old white male child was hospitalized two days after Easter suffering from fever, severe diarrhea, and vomiting. Salmonella typhi-murium was recovered from this child and from an asymptomatic four-year old sibling. Subsequent investigation revealed that the older child had had close contact with five live Easter chicks given as an Easter present by his mother and grandmother. The mother had received the two chicks as a premium for shopping in a local suburban shopping center. The remaining three Easter chicks had been given to the children by their grandmother who purchased them in a different shopping center. Three of the five chicks died before completion of the investigation but were preserved by freezing. The live birds were sacrificed and all five were cultured by dropping the gall bladder, cecum, and a portion of the liver into enrichment broth. Salmonella montevideo was isolated from each of the five birds and S. typhi-murium was isolated from three of the birds. It was learned that the grandmother had sent an additional three chicks to another family. One of these was obtained and found to be positive for S. typhi-murium. Chicks obtained by the grandmother came from out of state; those obtained by the mother came from a hatchery within the State of Georgia. It is felt likely that additional infections due to exposure to live Easter chicks have occurred but have probably not been investigated.

Editor's Comment: The distribution and sale of live chicks as Easter gifts to preschool age children continues to be a widespread practice despite repeated warnings concerning the spread of salmonella infection from these chicks to human beings. These items are involved in both intrastate and interstate commerce annually at Easter time. At a recent meeting on salmonellosis attended by various Federal agencies, including the Public Health Service, Food and Drug Administration, Department of Agriculture, and Fish and Wild Life Service, the question of jurisdiction and control was discussed. A representative from the Department of Agriculture indicated that control of interstate shipment of these items would fall under their jurisdiction. There was agreement among all agencies that a more comprehensive program of control of this recognized hazard to health is necessary.

## B. Virginia

Infection with Salmonella enteritidis Related to Exposure to Pet Dog. Reported by Martin B. Marx, D.V.M., M.P.H., Director, Veterinary Public Health, Commonwealth of Virginia, Bureau of Epidemiology; and Mrs. Eleanor Robertson, P.H.N., Lynchburg City Health Department, Lynchburg, Virginia.

In May 1965, a 75-year-old white female developed diarrhea, headache, fever, vomiting, and abdominal pain. A stool specimen was positive for Salmonella enteritidis. The patient had no close human contacts; she lived alone with a pet dog and pet cat. Prior to the patient's illness, her dog had experienced repeated attacks of diarrhea. Stool specimens obtained from the dog were also positive for S. enteritidis. The dog, a toy breed which "stays in the house all the time" is fed canned dog food consisting of chicken parts. Specimens of the canned dog food on hand were negative on examination for salmonellae.

## C. Washington

Nursing Home Outbreak of Salmonellosis Due to Salmonella typhi-murium. Reported by Herb W. Anderson, Epidemiologist Assistant, Jean Spearman, Public Health Nurse - Epidemiologist, and Donald R. Pearson, M.D., Director, Division of Epidemiology and Communicable Disease Control, King County Department of Public Health, Seattle, Washington.

During the period May 13-17, 1965, 18 patients in a nursing home in Seattle became ill with gastroenteritis. Symptoms included diarrhea (100 per cent), fever (85 per cent), nausea (22 per cent), vomiting (17 per cent), and abdominal pain (11 per cent). The illness occurred only among the 86 patients in the nursing home who had received eggnog or poached egg on the morning of May 13. The incubation period using the eggnog feeding as a starting point ranged from 6 to 32 hours in 12 cases in which adequate data was available. Salmonella typhi-murium, phage 1A, was isolated from 13 of the 18 ill patients and from a specimen of left over eggnog. Subsequently, S. typhi-murium was isolated from two cooks, who became ill on May 18 and 21. Both admitted having tasted the eggnog during its preparation. Seven other food handlers in the kitchen were negative on culture for salmonellae. Grade AA small eggs were used in the eggnog. Investigation established that the eggs were received from farms located both in southern California and from farms in the State of Washington.

## V. SPECIAL REPORTS

- A. Sanitation Guidelines for Salmonella Control and Processing Industrial Fishery Products. Abstract of a pamphlet prepared by the Agricultural Research Service, U. S. Department of Agriculture, publication ARS 91-51, May 1965.

This recent USDA publication was produced with the co-operation of the National Fish Meal and Oil Association of the National Fisheries Institute, Inc., and sets forth general principles for producers of fish meal. The over-all goal is production of a salmonella-free product. Clearly the product should be free of salmonella when leaving a properly-operated dryer. A problem of major importance is recontamination of the product after leaving the dryer. The institution of a sturdy "wall of defense" between the raw material area and the processed material area is fundamental in the approach to solving this problem. Specific programs such as dust control, pest control, and the prevention of personnel and equipment from moving between the raw and finished product area are discussed and emphasized. The total program should include provision for a continuous bacteriological monitoring of the product in order to insure its salmonella-free status.

Copies of this book are available to interested individuals from the National Fish Meal and Oil Association, National Fisheries Institute, Inc., 1614 - 20th Street NW, Washington, D.C. 20009.

- B. Report on American Institute of Baking, Conference on Eggs and Baking held May 25-26, 1965 in Chicago, Illinois.

More than 70 bakers, suppliers, and specialists recently attended a two-day conference in Chicago sponsored by the American Institute of Baking. Eight additional special guests from government and industry also participated in the program. Three main points were emphasized.

- (1) With the increasing recognition of salmonellosis as a major public health problem in the United States, bakers can expect more rigid control measures by the FDA and other government regulatory agencies. Mandatory pasteurization of all egg products produced in government inspected plants or sold in interstate commerce is anticipated within months.
- (2) Leading technologists in the baking industry emphasized that pasteurized egg products can perform as well as or better than unpasteurized products and require little or no changes in bakery production methods.
- (3) Numerous speakers emphasized that pasteurization of egg products is not a panacea. It must be coupled with rigid sanitation procedures to further safeguard the product. The potential danger of cross-contamination or recontamination of finished egg products was also emphasized.

## VI. INTERNATIONAL

- A. Isolations of Salmonella in Belgium During the First Quarter of 1965. Reported by Dr. E. van Oye, Ministry of Public and Family Health, Brussels.

A total of 238 isolations of salmonella organisms from human sources were reported in Belgium during the first quarter of 1965. Twenty-three different serotypes were included in this total. Salmonella urbana and Salmonella jerusalem were isolated from humans for the first time in Belgium during this quarter. The seven most frequently isolated serotypes were as follows:

<u>Rank</u>	<u>Serotype</u>	<u>No. of Isolations</u>	<u>Per Cent</u>
1	<u>S. typhi-murium</u>	143	60.0
2	<u>S. panama</u>	39	16.3
3	<u>S. brandenburg</u>	17	7.1
4	<u>S. enteritidis</u>	6	2.5
5	<u>S. bovis-morbificans</u>	4	1.7
6	<u>S. muenchen</u>	4	1.7
7	<u>S. heidelberg</u>	3	1.3
Total		216	92.8

- B. Salmonella Isolations Typed During the First Quarter of 1965, Utrecht, The Netherlands. Reported by E. H. Kampelmacher, D.V.M., Head, Zoonoses Laboratory, National Institutes of Health, The Netherlands.

During the first quarter of 1965, 1,818 isolations of salmonellae were typed in the Zoonoses Laboratory for a decrease of 1,086 (37.4 per cent) from the last quarter of 1964. Of the 1,818 recoveries made, 742 (40.8 per cent) were from human specimens. The seven most frequently isolated serotypes from human and nonhuman sources appear in Table VII. As was true during the previous quarter, S. typhi-murium, S. panama, and S. stanley were the only types which appeared among the seven most common from



both human and nonhuman sources. Salmonella dublin was recovered predominately from cattle and the majority of the S. bareilly isolations were from chickens. Nonhuman recoveries of both S. panama and S. stanley were, with only minor exceptions, from meat and meat products, pigs, slaughterhouse scrapings and sewage and surface water.

The most prominent nonhuman sources of salmonellae were pigs, 306 (28.4 per cent); cattle, 241 (22.4 per cent); chickens, 156 (14.5 per cent); meat and meat products, 127 (11.8 per cent); and sewage and surface water, 96 (8.9 per cent).

## VII. FOOD AND FEED SURVEILLANCE

- A. Dry Heat Resistance of Salmonellae in Rendered Animal By-products.  
Abstract from the May 1965 issue of the Veterinary Bulletin, from the original article by Rasmussen, O. G., Hansen, R., Jacobs, N. J., and Wilder, O. H. M., 1964, Poultry Science, 43:1151-1157.

A temperature of 180°F. (80.2°C.) for 7 minutes was sufficient to destroy consistently the salmonella in two naturally contaminated dry meals. A temperature of 170°F. for 15 minutes was not sufficient. In a third meal with a high fat content and a high level of natural salmonella contamination, a temperature of 195°F. (90.2°C.) for 7 minutes was required. Subsequent studies showed that when a relatively heat resistant strain, S. senftenberg, was added to a sterile meal, a milder heating procedure destroyed the salmonella, although the organisms were more numerous than in naturally contaminated meals. Heat tolerance studies on salmonella should, therefore, be conducted wherever possible with naturally contaminated meals. Heating did not significantly alter the nutritive value of the proteins in this study.

### B. Dehydrated Dog Foods.

Results of examination of samples of dog food for salmonellae: During the month, dried and moist dog food samples obtained in retail markets have been examined in the Veterinary Public Health Laboratory. All of the dried food was pelleted, or in flakes, the moist food was in the form of "hamburgers" or in chunks. Four different brands were represented in the 20 packages examined. Three samples from each of the 20 samples were cultured and no salmonellae were isolated.

Figure 1.

REPORTED HUMAN ISOLATIONS OF SALMONELLAE  
IN THE UNITED STATES

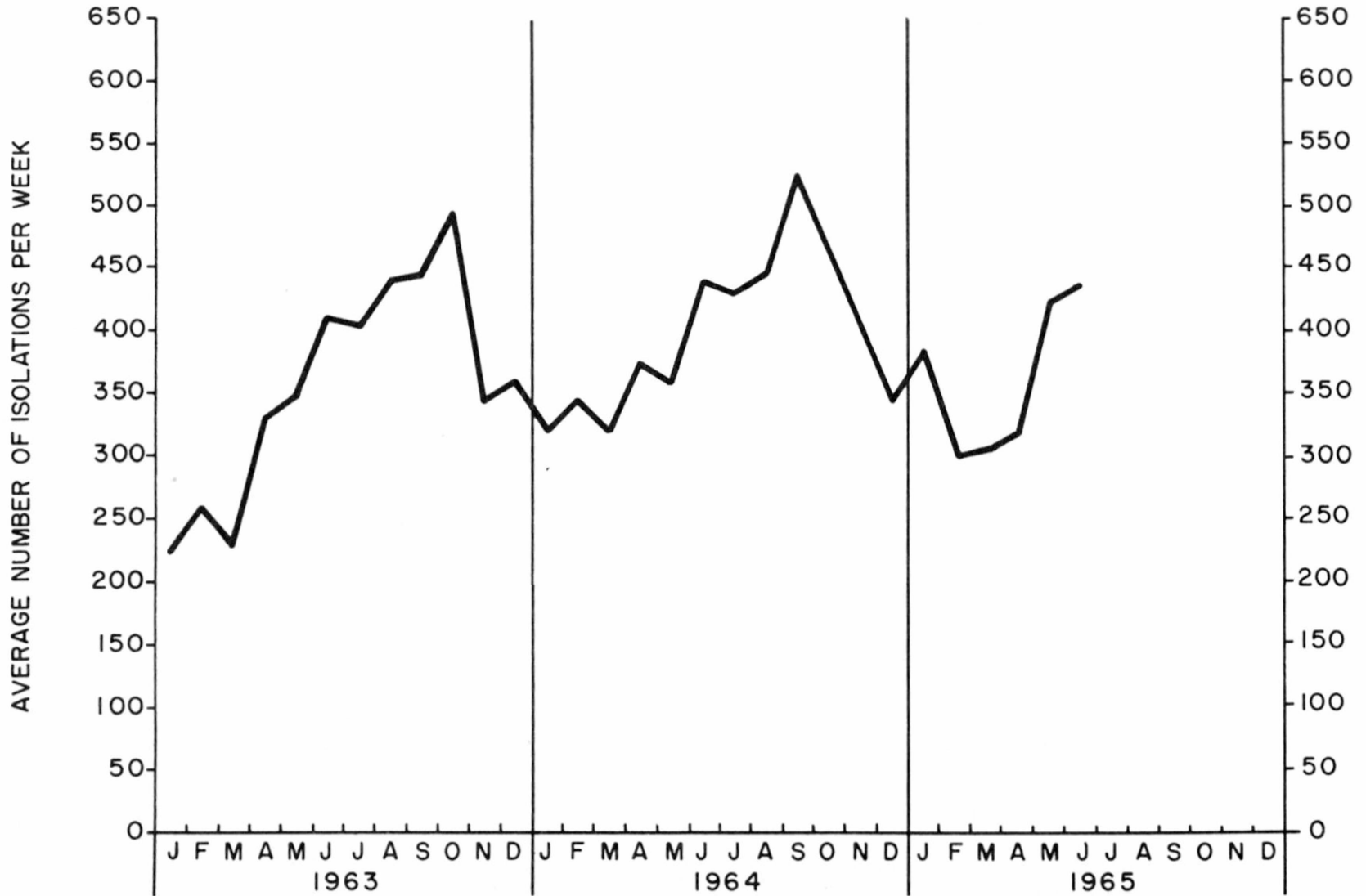




TABLE I  
SALMONELLA SEROTYPES ISOLATED FROM HUMANS DURING \*\*JUNE, 1965

SEROTYPE	REGION AND REPORTING CENTER																		
	NEW ENGLAND							MIDDLE ATLANTIC							EAST NORTH CENTRAL				
	MAINE	NH	VT	MASS	RI	CONN	TOTAL	NY-A	*NY-BI	NY-C	NJ	PA	TOTAL	OHIO	IND	ILL	MICH	WIS	TOTAL
anatum								1		1			2			3			3
arkansas																			
atlanta				1		1	2			1		1	2						
bareilly				1			1						1						
berta																			
bilthoven																			
binza				2			2			1			1						
blockley				1			1			1	1		2	1		4		1	6
bovis-morbificans				1			1												
braenderup														1		1			2
brandenburg																1			1
bredeney																			
chester															1				1
cholerae-suis															1				1
cholerae-suis v kun																	1		1
colorado																			
cubana				2			2												1
derby			1	2		3	6	2	2	6	1	18	29	4		2	1	1	8
duesseldorf																			
eastborne																			
enteritidis				12		2	14	3	5	7	1	9	25	7	1	2			10
essen																			
gaminara				1			1	1					1						
give								1					1		1	4			5
hartford																			
heidelberg	1			17		1	19	4	3	7	3	3	20	5	1	10	5	5	26
indiana																			1
infantis				4	1	1	6	5	3	8	5	7	28	5	8	5	8	1	27
Inverness																			
kaapstad																			
java																3			3
javana				2			2								1		1		2
johannesburg																			
kentucky																	1		1
leeuwarden																			
lexington																			1
litchfield									1	1			2	1		1			1
lomita														1					1
manhattan								2					2			2			2
meleagridis											5		5						
miami								2	1				3						
minnesota																			
mississippi				3	1		4	1			1		2	9	1	2	2		14
montevideo				1			1					1	1						
muenchen																			
muenster																			
nagoya																			
new-brunswick								1			1		2			1		1	2
newington								8			3	1	13	6	1	2	5	5	19
newport				2		1	3				1	1							
ohio																			
oranienburg				1			1	1		3	1	1	6	2		1		1	4
oslo																			
panama						1	1									2	1	1	4
paratyphi A																			
paratyphi B				2			2	1					1	4			2		6
paratyphi C										1			1						
poona																			
reading				5		1	6		3		9	2	14			2	3	1	6
saint-paul																			
san-diego						1	1											1	3
schwarzengrund										1		6	7	2		1		1	2
senftenberg													1			2			2
stanley																			
sundavall																			
tennessee				3			3	1	2	1		5	1	1		1	2	2	1
thompson					2		2	2	1	5		1	8	3	2	4		1	6
typhi				43	1	17	61	60	32	34	26	36	190	27	12	29	13	15	10
typhi-murium				17			17				2		2			3			96
typhi-murium v cop																	3		3
urbana														7					7
westhampton																			
worthington						1	1			1			1						
yalding																			
untypable group B					3		3							2					2
untypable group C-1																			
untypable group C-2																			
untypable group D						2	2												
untypable group E																			
untypable group O				1			1												
unknown			6				6											4	4
TOTAL	1	6	1	124	10	30	172	97	54	83	57	93	384	89	28	86	50	41	294

New York (A-Albany, B-Beth Israel Hospital, C-City)

\*The Beth-Israel Salmonella Typing Center in New York is a reference laboratory and processes many cultures from other states which are assigned to the respective states also reported by N.Y.-B.I. Beth Israel reported a total of 143 isolations for July.

\*\*Includes March late reports from Nevada and Iowa.

TABLE I (Continued)  
BY SEROTYPE AND REPORTING CENTER

REGION AND REPORTING CENTER																		SEROTYPE
WEST NORTH CENTRAL								SOUTH ATLANTIC										
MINN	IOWA	MO	ND	SD	NEBR	KAN	TOTAL	DEL	MD	DC	VA	WV	NC	SC	GA	FLA	TOTAL	
			1				1			1						1	2	anatum
		1					1								1	1	1	arkansas
														1				atlanta
																1		bareilly
																1		berta
1						1	2		1					1				bilthoven
																4	1	binza
																		blockley
																		bovis-morbificans
																		braenderup
									1			1						brandenburg
																		bredenev
									1									chester
															1			cholerae-suis
																		cholerae-suis v kun
1						1	1	1										colorado
																		cubana
																		derby
																		duesseldorf
																		eastborne
	1						1	1	3	2	3					1	3	enteritidis
																		essen
2							2											gaminara
																		give
																		hartford
		4				2	6		4	1					12	5		heidelberg
		1					1											indiana
3		4	1			2	10				1				3	1		infantis
											8							inverness
																		kaapstad
		3					3								3	3		java
1							1				1				10			javana
																		johannesburg
																		kentucky
																		leeuwarden
									68	2	30							lexington
																		litchfield
																		lomita
																		manhattan
																		meleagridis
		1					1		1		1					8		miami
																		minnesota
1		1				1	1		2		2				1			mississippi
		3					5		1						5	2		montevideo
															2	1		muenchen
	1					1	1									1		muenster
																		nagoya
		2		1		1	4			1					4	1		new-brunswick
																7		newington
																		newport
1		1				4	6				1				4	6		ohio
									1									oranienburg
																		oslo
															1			panama
																		paratyphi A
	1					1	1		1									paratyphi B
																		paratyphi C
7		1					8		1		6					6		poona
																		reading
																		saint-paul
1							1											san-diego
																2		schwarzengrund
																		senftenberg
																		stanley
																		sundsvall
1	1					2	3		3		2					1		tennessee
						1	2		1	1						1		thompson
		4				1	5									1		typhi
22	1	12		2		12	49		12	2	8	1		15		21		typhi-murium
																		typhi-murium v cop
1							1											urbana
																		westhampton
																		worthington
	1						1			5		1						yalding
																		untypable group B
1							1											untypable group C-1
										3								untypable group C-2
										3								untypable group D
										31								untypable group E
																		untypable group O
										1								unknown
43	6	38	2	3	-0-	30	122	3	100	53	65	2	52	-0-	78	85	438	TOTAL

TABLE I (Continued)

S E R O T Y P E	R E G I O N A N D R E P O R T I N G C E N T E R																			
	E A S T S O U T H C E N T R A L					W E S T S O U T H C E N T R A L					M O U N T A I N									
	KY	TENN	ALA	MISS	TOTAL	ARK	LA	OKLA	TEX	TOTAL	MONT	IDA	WYO	COLO	NM	ARI	UTAH	NEV	TOTAL	
anatum									3	3									2	
arkansas																				
atlanta																				
bareilly																				
berta			1		1	1	4		1	6									1	
bilthoven																				
binza																				
blockley										3										
bovis-morbificans																				
braenderup							3			2										
brandenburg																				
bredenev																			1	
chester																1			2	
cholerae-suis																				
cholerae-suis v kun							1			1										
colorado																				
cubana	1	3	1		5				1	1									1	
derby																				
duesseldorf																				
eastborne																				
enteritidis		1			1		2	2	3	7									1	
essen																			1	
gaminara																1				
give																			2	
hartford							1		2	3										
heidelberg		2	3		5		5	2	2	9							10		10	
indiana		1			1															
infantis		1	2		3		5	1	4	10									5	
inverness														3		2				
kaapstad														1					1	
java																				
javiana																				
johannesburg			11		11	3	2		3	6										
kentucky																				
leeuwarden									1	1										
lexington																				
litchfield																				
lomita																				
manhattan			1		1															
meleagridis																				
miami																				
minnesota																				
mississippi																				
montevideo																				
muenchen			1		1															
muenster						1														
nagoya																				
new-brunswick																				
newington																				
newport		1	2	1	4	5	15	2	5	27										
ohio																				
oranienburg			1		1		2	2	6	10		1		1					2	
oslo																				
panama			1		1															
paratyphi A																				
paratyphi B																				
paratyphi C																				
poona																				
reading																				
saint-paul	1	1			2		4	2		6				2		1			2	
san-diego																				
schwarzengrund																				
senftenberg																				
stanley																				
sundsvall																				
tennessee			1	1	2		1													
thompson																				
typhi			2		2	2	2	1	6	11										
typhi-murium		6	3	1	11	3	9	14	13	39										
typhi-murium v cop	1						3			3									1	
urbana																				
westhampton																				
worthington																				
yalding																				
untypable group B			1	2	3										18	1			19	
untypable group C-1		1			1															
untypable group C-2																				
untypable group D																				
untypable group E																				
untypable group O																				
unknown				1	1															
TOTAL	3	21	31	6	61	15	86	29	74	204	2	2	-0-	21	27	19	12	4	87	

TABLE I (Continued)

REGION AND REPORTING CENTER						OTHER VI	TOTAL	PERCENT OF TOTAL	SIX MONTH TOTAL	% SIX MONTH TOTAL	1964 6 MOS. TOTAL	% 1964 6 MOS. TOTAL	S E R O T Y P E
P A C I F I C													
WASH	ORE	CAL.	ALASKA	HAWAII	TOTAL								
	1	1		6	8		21	1.0	142	1.5	102	1.1	anatum
		1			1		1		1				arkansas
		1			1		1		1		4		atlanta
		1			1		15		51		46		bareilly
		1			1		7		21		25		berta
1		1			1		1		3				bilthoven
		1			1		4		8		7		binza
		3			4		20	0.9	148	1.6	204	2.2	blockley
		1			1		1		7				bovis-morbificans
		1			1		13		47		40		braenderup
		4		1	5		1		1		1		brandenburg
	1				1		7		63		112		bredenev
					1		4		63		34		chester
							1		3				cholerae-suis
							4		19		16		cholerae-suis v kun
				1	1		1		3		2		colorado
				2	5		11	2.5	87	4.0	30	17.5	cubana
							55		375		1,661		derby
					1		1		3				duesseldorf
							1		1				eastborne
	1	1			2		74	3.4	444	4.7	292	3.1	enteritidis
							1		2				essen
							2		5				gaminara
		1		1	3		16		62		33		give
							1		13		8		hartford
5	4	27		1	37		156	7.2	737	7.9	752	8.0	heidelberg
							5		20		16		indiana
		8		5	13		116	5.3	525	5.6	417	4.4	infantis
							1		2				inverness
							1		2				kaapstad
					3		14		79				java
							35		82		73		javana
							1		1				johannesburg
							1		6		11		kentucky
							1		2				leeuwarden
							1		1				lexington
							4		45		25		litchfield
					1		1		2				lomita
							6		46		87		manhattan
							105		113		36		meleagridis
							14		42				miami
	1				1		1		7				minnesota
							4		11		9		mississippi
		3		1	4		41	1.9	231	2.5	200	2.1	montevideo
		2		1	3		20	0.9	88	0.9	120	1.2	muenchen
							2		3		1		muenster
							1		1				nagoya
		1			1		2		4				new-brunswick
		1			1		8		28		16		newington
2		18			20		106	4.9	438	4.7	366	3.9	newport
							2		4				ohio
		9		2	9		53	2.4	275	2.9	252	2.7	oranienburg
							2		12				oslo
							8		85		82		panama
							3		7		4		paratyphi A
8	1				9		22		99		86		paratyphi B
							1		1				paratyphi C
1					1		8		26		17		poona
							3		9		17		reading
7	1				8		76	3.5	341	3.6	191	2.0	saint-paul
							4		158	1.7	83	0.9	san-diego
3		1			2		8	0.9	64		33		schwarzengrund
1							7		30		58		senftenberg
							1		3		2		stanley
					1		1		1				sundsvall
							2		114		216		tennessee
2	1	2			6		41	1.9	204	2.2	146	1.6	thompson
	3	5			14		69	3.2	390	4.2	299	3.2	typhi
	9				219		760	35.0	2,883	30.7	2,539	27.2	typhi-murium
25	15	151		28			26	1.2	104	1.1	85	0.9	typhi-murium v cop
							9		14		9		urbana
							2		3				westhampton
							4		20		30		worthington
							1		1				yalding
		2			2		36		137		141		untypable group B
							7		35		34		untypable group C-1
							7		31		15		untypable group C-2
							7		21		11		untypable group D
							31		42		3		untypable group E
							1		8				untypable group O
							12		63		38		unknown
56	28	272	-0-	56	412		2,174		9,388		9,410		TOTAL

(VI - Virgin Islands)

TABLE 1-A  
 SEROTYPES REPORTED FROM HUMANS  
 PREVIOUSLY DURING 1965 BUT NOT IN JUNE

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
adelaide	May	NY-A	1
alachua	Mar	Mass	1
albany	Jan-Feb	Ill(2)	
	Feb	Conn(1)	3
blegdam	Feb	SD	1
california	Jan-Feb	Pa(3)	
	Jan	Tex(1)	
	Mar-Apr	Wash(3)	
	May	Ill(1)	
	May	Okla(1)	
	May	Ga(1)	10
carrau	Jan	La	1
cerro	Mar	RI(1)	
	Mar	Pa(1)	
	May	Calif(1)	3
corvallis	Feb	Hia	1
daytona	May	Tenn	1
denver	Feb	La	1
dublin	Feb-Mar-Apr	Calif	3
fayed	Mar	NC	1
florida	Jan-May	Fla	2
fresno	Mar	Tenn	1
heilbron	Jan	Mo	1
irumu	Jan-Feb-Mar	Mo(3)	
	Feb	Colo(1)	4
kottbus	Feb	NY-A(3)	
	Feb	Colo(1)	
	Mar	Ind(1)	5
lindenburg	May	Colo	1
livingstone	Feb	NY-A(1)	
	Feb-Mar	Tex(4)	
	Feb	Calif(1)	
	Mar	Colo(1)	
	Mar	NY-BI(2)	
	Apr	NY-C(1)	
	Apr	Ill(1)	
	Apr	La(2)	
	May	Ky(1)	
	May	Ga(1)	15
loma-linda	May	Ore	1
london	May	NY-C	1
luciana	Jan	Ariz	1
madelia	Mar	Pa(1)	
	Mar	Fla(1)	2
mishmar-haemek	Feb	Calif(1)	
	May	Tex(1)	2
mission	Feb-Mar-Apr-May	Fla	5
norwich	Jan-May	Ga(2)	
	Jan-Mar	Tex(2)	
	Mar	Fla(1)	
	May	NY-BI(1)	
	May	Mich(1)	7
nottingham	May	Ark	1
pensacola	Feb	Okla(1)	
	May	NC(1)	2
pomona	Apr	Fla(1)	
	May	Calif(1)	2
remo	Mar	Va(1)	
	May	Pa(1)	2
rubislaw	Jan	La	2
sieburg	Jan	Ill(1)	
	Apr	NY-C(1)	2
taksony	Jan	NY-BI	1
thomasville	Jan	NJ	1
virchow	Jan	Colo	1
weltevreden	Jan-Feb-Mar	Hia(10)	
	May	Calif(1)	11
TOTAL			100

**TABLE II**  
**REPORTED ISOLATIONS OF S. TYPHI BY PATIENT STATUS - JUNE 1965**

STATE	REPORTED TO SALMONELLA SURVEILLANCE UNIT								CLINICAL CASES REPORTED IN MMWR	
	CASES		CARRIERS		UNKNOWN		TOTAL		June	1965 Cuml.
	June	1965 Cuml.	June	1965 Cuml.	June	1965 Cuml.	June	1965 Cuml.		
<b>UNITED STATES</b>	<b>9</b>	<b>75</b>	<b>25</b>	<b>137</b>	<b>33</b>	<b>179</b>	<b>67</b>	<b>391</b>	<b>47</b>	<b>187</b>
<b>NEW ENGLAND</b>	-	-	-	1	2	7	2	8	2	3
Maine	-	-	-	-	-	2	-	2	-	-
New Hampshire	-	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	-	-	1	-	1	1	2
Rhode Island	-	-	-	-	2	4	2	4	1	1
Connecticut	-	-	-	1	-	-	-	1	-	-
<b>MIDDLE ATLANTIC</b>	<b>4</b>	<b>18</b>	<b>1</b>	<b>12</b>	<b>3</b>	<b>16</b>	<b>8</b>	<b>46</b>	<b>7</b>	<b>32</b>
New York	4	18	1	6	3	11	8	35	5	24
New Jersey	-	-	-	-	-	4	-	4	-	2
Pennsylvania	-	-	-	6	-	1	-	7	2	6
<b>EAST NORTH CENTRAL</b>	<b>1</b>	<b>10</b>	<b>1</b>	<b>26</b>	<b>8</b>	<b>20</b>	<b>10</b>	<b>56</b>	<b>6</b>	<b>25</b>
Ohio	-	7	1	16	2	4	3	27	-	6
Indiana	-	-	-	9	2	6	2	15	5	9
Illinois	-	-	-	-	4	10	4	10	1	5
Michigan	-	2	-	1	-	-	-	3	-	3
Wisconsin	1	1	-	-	-	-	1	1	-	2
<b>WEST NORTH CENTRAL</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>11</b>	<b>3</b>	<b>13</b>	<b>5</b>	<b>26</b>	<b>2</b>	<b>5</b>
Minnesota	-	-	-	1	-	-	-	1	-	-
Iowa	-	-	-	-	-	-	-	-	1	1
Missouri	1	2	1	10	2	8	4	20	1	4
North Dakota	-	-	-	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-	-	-	-
Kansas	-	-	-	-	1	5	1	5	-	-
<b>SOUTH ATLANTIC</b>	<b>1</b>	<b>16</b>	<b>15</b>	<b>36</b>	-	<b>10</b>	<b>16</b>	<b>62</b>	<b>8</b>	<b>40</b>
Delaware	-	-	-	-	-	-	-	-	1	4
Maryland	-	2	-	3	-	6	-	11	3	12
District of Columbia	-	-	-	-	-	-	-	-	-	-
Virginia	-	2	-	2	-	-	-	4	-	3
West Virginia	-	2	-	4	-	-	-	6	-	1
North Carolina	1	9	14	18	-	1	15	28	4	12
South Carolina	-	-	-	-	-	-	-	-	-	4
Georgia	-	-	-	1	-	2	-	3	-	2
Florida	-	1	1	8	-	1	1	10	-	2
<b>EAST SOUTH CENTRAL</b>	-	<b>3</b>	-	<b>15</b>	<b>2</b>	<b>16</b>	<b>2</b>	<b>34</b>	<b>3</b>	<b>18</b>
Kentucky	-	-	-	1	-	3	-	4	-	6
Tennessee	-	3	-	6	2	3	2	12	3	6
Alabama	-	-	-	-	-	-	-	-	-	3
Mississippi	-	-	-	8	-	10	-	18	-	3
<b>WEST SOUTH CENTRAL</b>	<b>2</b>	<b>23</b>	<b>7</b>	<b>32</b>	<b>1</b>	<b>8</b>	<b>10</b>	<b>63</b>	<b>10</b>	<b>28</b>
Arkansas	-	4	1	7	1	4	2	15	2	10
Louisiana	-	6	1	15	-	2	1	23	3	5
Oklahoma	-	1	1	2	-	1	1	4	-	2
Texas	2	12	4	8	-	1	6	21	5	11
<b>MOUNTAIN</b>	-	<b>3</b>	-	<b>3</b>	-	<b>22</b>	-	<b>28</b>	-	<b>13</b>
Montana	-	-	-	-	-	3	-	3	-	-
Idaho	-	-	-	-	-	-	-	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	1
Colorado	-	-	-	-	-	-	-	-	-	-
New Mexico	-	3	-	3	-	17	-	23	-	8
Arizona	-	-	-	-	-	2	-	2	-	4
Utah	-	-	-	-	-	-	-	-	-	-
Nevada	-	-	-	-	-	-	-	-	-	-
<b>PACIFIC</b>	-	-	-	<b>1</b>	<b>14</b>	<b>67</b>	<b>14</b>	<b>68</b>	<b>9</b>	<b>23</b>
Washington	-	-	-	-	2	4	2	4	1	2
Oregon	-	-	-	1	3	12	3	13	-	3
California	-	-	-	-	9	50	9	50	7	16
Alaska	-	-	-	-	-	-	-	-	1	1
Hawaii	-	-	-	-	-	1	-	1	-	1
Virgin Islands	-	-	-	-	-	-	-	-	*	*

\*Does not report

TABLE III

## Infrequent Serotypes

<u>Serotype</u>	<u>Center</u>	<u>June</u>	<u>1965*</u>	<u>Total 1963 &amp; 1964**</u>	<u>Comment</u>
<u>S. arkansas</u>	CALIF	1	1	0	Never previously isolated from humans in U.S.
<u>S. atlanta</u>	GA	1	1	16	Almost all isolations have been from GA and bordering states.
<u>S. bilthoven</u>	CALIF	1	3	0	Previously isolated in MICH.
<u>S. bovis-morbificans</u>	MASS	1	7	11	Not infrequent in HAI.
<u>S. brandenburg</u>	ILL	1	1	8	Implicated in turtle-associated outbreak in NC - 1964.
<u>S. colorado</u>	HAI	1	3	5	HAI has reported half of total isolations.
<u>S. dusseldorf</u>	LA	1	3	7	Isolated previously from poultry in VA.
<u>S. eastbourne</u>	CALIF	1	1	2	Isolated previously from poultry in CALIF.
<u>S. essen</u>	ARIZ	1	2	6	Six of 7 previous isolations from COLO.
<u>S. gaminara</u>	MASS & NY	2	5	6	Previously isolated from sheep in UTAH and from man and dogs in FLA.
<u>S. inverness</u>	FLA	1	2	4	Previously found in cold-blooded vertebrates in MICH; originally isolated from man in FLA. Most subsequent cultures reported from FLA or neighboring states.
<u>S. johannesburg</u>	MINN	1	1	4	Previously found in poultry feed.
<u>S. kaapstad</u>	COLO	1	2	0	All isolations to date from COLO.
<u>S. leeuwarden</u>	TEX	1	1	0	First reported human isolation in USA.
<u>S. lexington</u>	ILL	1	2	3	First isolated from swine in KY.
<u>S. lomita</u>	OHIO	1	2	4	First isolated in TEX.
<u>S. muenster</u>	ARK & FLA	2	3	12	Many of previous isolations from Gulf states.

Table III (cont'd)

<u>Serotype</u>	<u>Center</u>	<u>June</u>	<u>1965*</u>	<u>Total 1963 &amp; 1964**</u>	<u>Comment</u>
<u>S. nagoya</u>	TEX	1	1	0	First isolation in USA.
<u>S. ohio</u>	CALIF	2	4	4	Previously found in animal feeds.
<u>S. paratyphi A</u>	CALIF	3	7	15	Common in India and Far East.
<u>S. paratyphi C</u>	IOWA	1	1	4	Also known as <u>S. hirschfeldii</u> ; frequently produces septicemia.
<u>S. sundsvall</u>	CALIF	1	1	3	Previously reported from MEX.
<u>S. westhampton</u>	LA	2	3	2	Previously reported from bone meal in WASH.
<u>S. yalding</u>	TEX	1	1	0	First reported isolation from USA.

\*Represents 9,380 human isolations of salmonellae during the first 5 months of 1965.

\*\*Represents 39,762 human isolations of salmonellae during 1963 and 1964.

TABLE IV

Age and Sex Distribution of 2,140 Isolations of Salmonellae  
Reported for June 1965

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>%</u>	<u>Cumulative %</u>
Under 1	100	97	197	14.1	14.1
1-4 yrs.	226	152	378	27.1	41.2
5-9 yrs.	96	94	190	13.7	54.9
10-19 yrs.	73	47	120	8.6	63.5
20-29 yrs.	49	66	115	8.3	71.8
30-39 yrs.	44	58	102	7.3	79.1
40-49 yrs.	52	42	94	6.7	85.8
50-59 yrs.	43	26	69	5.0	90.8
60-69 yrs.	26	34	60	4.3	95.1
70-79 yrs.	19	25	44	3.1	98.2
80 +	7	18	25	1.8	100.0
Unknown	<u>396</u>	<u>350</u>	<u>746</u>		
Total	1,131	1,009	2,140		
% of Total	52.9	47.1			





TABLE VI  
REPORTED NONHUMAN ISOLATES BY SEROTYPE AND STATE \*JUNE, 1965

S E R O T Y P E	State																												Total	6 Mos. Total	S E R O T Y P E										
	Ala	Ariz	Ark	Calif	Colo	Conn	Dela	Fla	Ga	Hai	Ill	Ind	Iowa	Kan	La	Me	Md	Mass	Mich	Minn	Miss	Mont	NJ	NY-A	NC	Ohio	Ore	Pa				SC	Tex	Utah	Vt	Va	Wash	Wisc	Wyo		
anatum				8																1															1			10	94	anatum	
berta	1								1									3																			5	8	berta		
binza																																					2	19	binza		
blockley				1			1	1								1						1														5	71	blockley			
bredeney				2																															1	30	bredeney				
california																				2																2	29	california			
cerro																				1							3									4	37	cerro			
chester		1		1																1																3	70	chester			
cubana				1																							1									1	12	cubana			
derby															1												1	3								5	44	derby			
dublin																					2															2	24	dublin			
duesseldorf																1																				1	2	duesseldorf			
eimsbuettel																																				1	1	eimsbuettel			
enteritidis											1																								1	1	5	19	enteritidis		
gallinarum																1																				1	15	gallinarum			
give																																				1	66	give			
heidelberg																																				4	308	heidelberg			
indiana																																				2	18	indiana			
infantis																																				10	150	infantis			
inverness																																				1	1	1	1	inverness	
java																																				1	10	java			
javiana																																				3	5	javiana			
kentucky																																				7	22	kentucky			
lexington																																				1	2	1	2	lexington	
lindenburg																																				1	1	1	1	lindenburg	
litchfield																																					1	1	1	1	litchfield
livingstone																																				6	62	livingstone			
manhattan																																				1	26	1	26	manhattan	
meleagridis																																				7	22	7	22	meleagridis	
menston																																				1	3	1	3	menston	
miami																																				1	4	1	4	miami	
minnesota																																				2	13	2	13	minnesota	
montevideo																																				3	84	3	84	montevideo	
muenchen																																				1	19	1	19	muenchen	
newport																																				12	51	12	51	newport	
oranienburg																																					11	43	11	43	oranienburg
oslo																																				6	10	6	10	oslo	
panama																																				1	4	1	4	panama	
paratyphi B																																				1	5	1	5	paratyphi B	
pullorum																																				17	145	17	145	pullorum	
reading																																				3	29	3	29	reading	
saint-paul																																				9	98	9	98	saint-paul	
san-diego																																				23	69	23	69	san-diego	
schwarzengrund																																				4	40	4	40	schwarzengrund	
senftenberg																																				2	32	2	32	senftenberg	
tennessee																																				6	50	6	50	tennessee	
thompson																																				4	78	4	78	thompson	
typhi-murium																																				73	384	73	384	typhi-murium	
typhi-murium v cop																																				14	131	14	131	typhi-murium v cop	
urbana																																				1	4	1	4	urbana	
westhampton																																				1	2	1	2	westhampton	
worthington																																				9	43	9	43	worthington	
unknown																																				2	4	2	4	unknown	
TOTAL	10	1	1	119	2	1	1	2	6	6	13	9	3	10	9	3	2	6	9	16	2	1	10	2	1	12	3	5	3	8	1	4	11	17	3	3	315	2,671	TOTAL		

\*Includes May late report  
(NY-A - New York - Albany)

Source: National Disease Laboratory, Ames, Iowa and weekly Salmonella Surveillance Reports from Individual States.

TABLE VI-A  
 SEROTYPES REPORTED FROM NONHUMAN SOURCES  
 PREVIOUSLY DURING 1965 BUT NOT IN JUNE

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
alachua	Jan-Apr	Calif(3)	11
	Feb	Ind(1)	
	Feb	Minn(4)	
	Feb	Tex(1)	
	Feb	Utah(2)	
albany	Feb	Tex(1)	2
	Mar	Ind(1)	
bareilly	Feb	Ga(2)	14
	Feb	Mass(1)	
	Mar-May	Conn(2)	
	Mar	Utah(1)	
	Apr	Calif(1)	
	Apr	Fla(3)	
	Apr	Ill(3)	
braenderup	May	NJ(1)	6
	Jan	Conn(1)	
	Jan	Ind(1)	
	Mar	Miss(1)	
	Apr	Mass(1)	
brandenburg	May	Ala(1)	1
	May	Ga(1)	
cambridge cholerae-suis v kun	Jan	NC	46
	Apr	Ind	
	Jan-Mar-Apr-May	Ala(8)	
	Jan	Calif(3)	
	Jan-Feb-Mar-Apr-May	SC(11)	
	Feb-May	Ind(7)	
	Feb	Kan(1)	
	Feb-Mar	Miss(2)	
	Feb-Mar-Apr	NC(5)	
	Mar	Ore(1)	
	Apr	Ill(1)	
	Apr	Md(1)	
	Apr	Va(1)	
	May	Fla(4)	
	May	Tenn(1)	
florida	Jan	Ill	1
	Jan	Wash	
	Apr	Minn	
goerlitz	Jan	Wash	1
	Apr	Minn	
hartford	Jan	Minn	1
	Apr	Minn	
illinois	Mar	Minn(1)	2
	May	Md(1)	
johannesburg	Mar	Utah	1
manila	Apr	Tenn	1
mikawashima	Mar	Ind	1
mission	Jan	Ark(1)	2
	Jan	SC(1)	
muenster	Jan-Mar	Fla(2)	5
	Jan-Apr	Miss(2)	
	Mar	Ohio(1)	
newington	Jan	Tenn(1)	16
	Feb	Ill(1)	
	Mar-Apr-May	Calif(11)	
	Mar	Fla(1)	
norwich	Mar	Wisc(2)	1
	Feb	NC	
orion	Jan	Miss(1)	4
	Jan	Mont(1)	
	Mar	Minn(2)	
pomona	Mar	Minn(2)	1
	Apr	Mich	
poona	Jan	Tenn(1)	7
	Mar	Calif(3)	
	Mar	Mass(3)	
rubislaw	Apr	Mont	1
rurru	Apr	Md	1
siegburg	May	Mich	1
tallahassee	Jan	Fla	1
thomasville	Mar-Apr	Md(4)	5
	Apr	Minn(1)	
typhi-suis	Feb	Calif	1
wassenaar	Apr	Ill	1
westerstede	Jan	Miss	2
TOTAL			138

TABLE VII

The Seven Most Commonly Recovered Salmonella  
Serotypes from Human & Nonhuman Sources  
in the Netherlands - 1st Quarter, 1965

<u>Rank</u>	<u>Human</u>			<u>Nonhuman</u>		
	<u>Serotype</u>	<u>No.</u>	<u>%</u>	<u>Serotype</u>	<u>No.</u>	<u>%</u>
1	<u>S. typhi-murium</u>	278	37.5	<u>S. typhi-murium</u>	253	23.5
2	<u>S. panama</u>	122	16.4	<u>S. dublin</u>	129	12.0
3	<u>S. stanley</u>	112	15.1	<u>S. bareilly</u>	83	7.7
4	<u>S. typhi</u>	31	4.2	<u>S. oranienburg</u>	75	7.0
5	<u>S. paratyphi B</u>	26	3.5	<u>S. give</u>	74	6.9
6	<u>S. java</u>	25	3.4	<u>S. panama</u>	67	6.2
7	<u>S. bovis-morbificans</u>			<u>S. stanley</u>	53	4.9
	& <u>S. heidelberg</u>	<u>21</u>	<u>2.8</u>			
Total		615	82.9		734	68.2
Total (all serotypes)	742			1,076		