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REPORT NO. 68

January 22, 1968

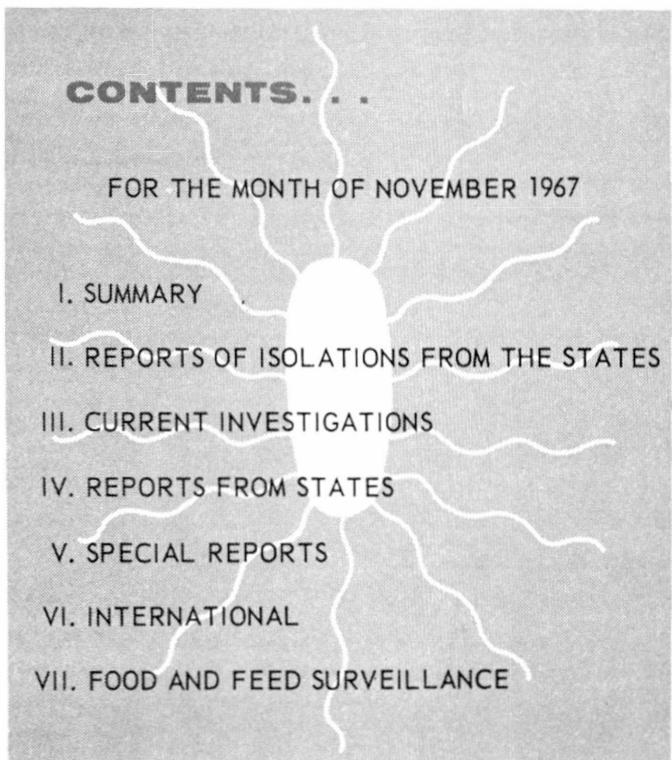
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SALMONELLA

S U R V E I L L A N C E



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE/PUBLIC HEALTH SERVICE
Bureau of Disease Prevention and Environmental Control

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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January 22, 1968

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I. SUMMARY

In November 1967, 1,805 isolations of salmonellae were reported from humans, an average of 361 isolations per week (Tables I and II). This number represents a decrease of 56 (13.4 percent) from the weekly average of October 1967 and a decrease of 63 (14.9 percent) from the weekly average of November 1966.

Reports of 943 nonhuman isolations of salmonellae were received during November, an increase of 471 (99.8 percent) over October 1967 (Tables IV, V, and VI).

II. REPORTS OF ISOLATIONS FROM THE STATES

A. HUMAN

The seven most frequently reported serotypes during November were as follows:

Rank	Serotype	Number	Percent	Rank Last Month
1	<u>S. typhi-murium</u> and <u>S. typhi-murium var.</u> <u>copenhagen</u>	533	29.5	1
2	<u>S. newport</u>	148	8.2	6
3	<u>S. heidelberg</u>	115	6.4	3
4	<u>S. enteritidis</u>	112	6.2	2
5	<u>S. infantis</u>	95	5.3	7
6	<u>S. saint-paul</u>	94	5.2	4
7	<u>S. typhi</u>	62	3.4	Not Listed
Total		1159	64.2	
Total (all serotypes)		1805		

The age and sex distribution is shown in Table III.

B. NONHUMAN

Thirty-five centers reported nonhuman isolations of salmonellae, in which 75 different serotypes were represented. The seven most frequently reported serotypes during November were as follows:

Rank	Serotype	Predominant Source and Number	Number	Percent	Rank Last Month
1	<u>S. typhi-murium</u> and <u>S. typhi-murium var.</u> <u>copenhagen</u>	cattle (54)	116	12.3	1
2	<u>S. anatum</u>	pigs (17)	89	9.4	3
3	<u>S. infantis</u>	egg noodles (18)	67	7.1	2
4	<u>S. heidelberg</u>	chickens (28) and turkeys (23)	60	6.4	Not Listed
5	<u>S. saint-paul</u>	turkeys (18) and chickens (17)	59	6.3	6
6	<u>S. oranienburg</u>	eggs (27)	55	5.8	3
7	<u>S. eimsbuettel</u>	animal feed, unknown (10)	31	3.3	Not Listed
Total			477	50.6	
Total (all serotypes)			943		

The most prominent nonhuman sources of salmonellae reported during November were chickens, 143 (15.2 percent); pigs, 115 (12.2 percent); turkeys, 93 (9.9 percent); bone meal/meat scraps, 86 (9.1 percent); and cattle, 70 (7.4 percent).

III. CURRENT INVESTIGATIONS

NONE

IV. REPORTS FROM THE STATES

NONE

V. SPECIAL REPORTS

NONE

VI. INTERNATIONAL

NONE

VII. FOOD AND FEED SURVEILLANCE

NONE

Figure 1.

REPORTED HUMAN ISOLATIONS OF SALMONELLA
IN THE UNITED STATES

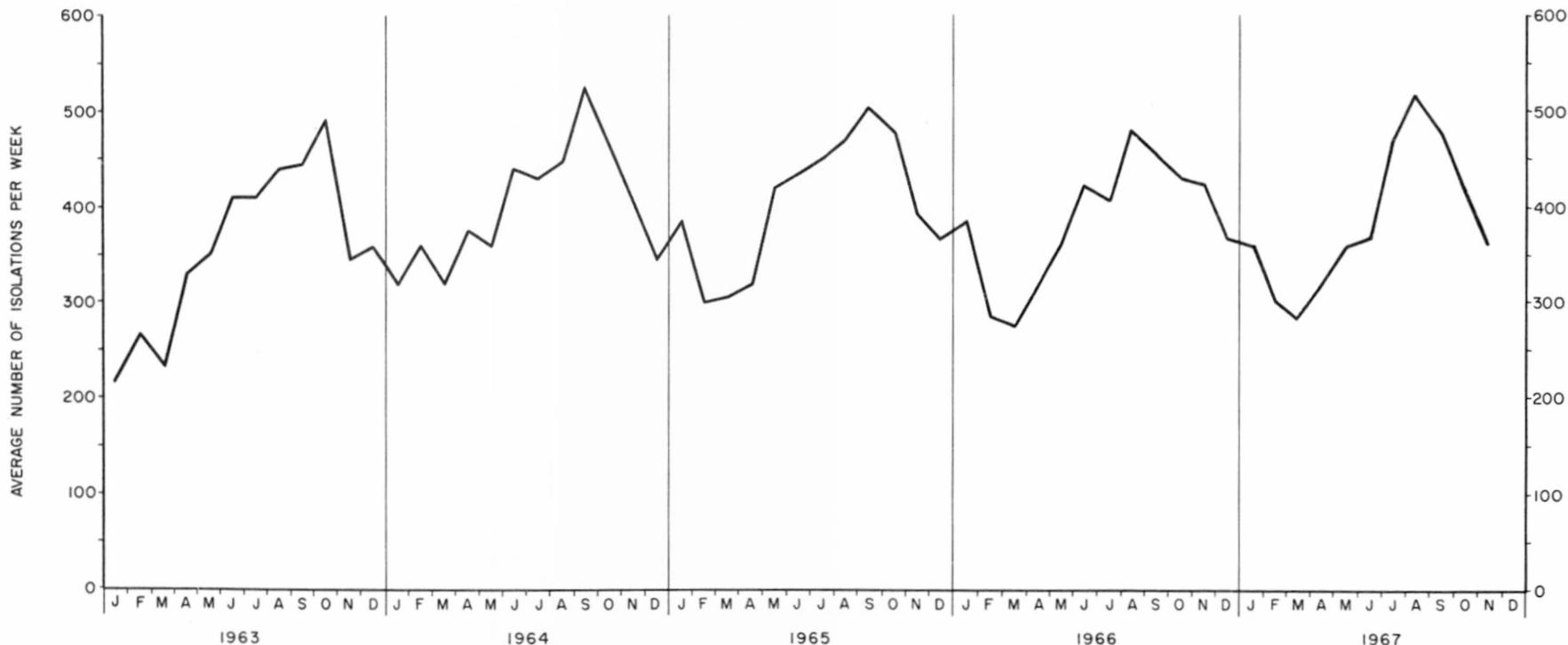


TABLE I
COMMON SALMONELLA SEROTYPES ISOLATED FROM HUMANS IN THE UNITED STATES DURING NOVEMBER, 1967

SEROTYPE	GEOGRAPHIC DIVISION AND REPORTING CENTER																												SEROTYPE									
	NEW ENGLAND						MIDDLE ATLANTIC						EAST NORTH CENTRAL						WEST NORTH CENTRAL						SOUTH ATLANTIC													
	ME	NH	VT	MASS	RI	CONN	NY-A	NY-BI	NY-C	NJ	PA	TOT	OHIO	IND	ILL	MICH	WIS	TOT	MINN	IOWA	MO	ND	SD	NEBR	KAN	TOT	DEFL	MD	DC	VA	WV	NC	SC	GA	FLA	TOT		
anatum				2					1	1	2																				4	4	anatum					
bareilly						1																									1	1	bareilly					
bertha																															1	1	bertha					
blockley																															1	1	blockley					
braenderup																															1	4	braenderup					
bredeney																																		bredeney				
chester																																		chester				
cholerae-suis v kun																																		cholerae-suis v kun				
cubana																																		cubana				
derby																																		derby				
enteritidis	3	1	4				13	21																									enteritidis					
give																																		give				
heidelberg																																		heidelberg				
indiana																																		indiana				
infantis	1		3						4																								infantis					
java																																		java				
javiana																																		javiana				
kentucky																																		kentucky				
litchfield																																		litchfield				
livingstone																																		livingstone				
manhattan																																		manhattan				
meleagridis																																		meleagridis				
miami																																		miami				
mississippi																																		mississippi				
montevideo																																		montevideo				
muenchen																																		muenchen				
newington																																		newington				
newport	4	1					1	5																									newport					
oranenburg																																		oranenburg				
panama																																		panama				
paratyphi B																																		paratyphi B				
poona																																		poona				
saint-paul																																		saint-paul				
san-diego																																		san-diego				
schwarzengrund																																		schwarzengrund				
senftenberg																																		senftenberg				
tennessee																																		tennessee				
thompson																																		thompson				
typhi																																		typhi				
typhi-murium	3	1	9	23	3	7	37																										typhi-murium					
typhi-murium v cop																																		typhi-murium v cop				
urbana																																		urbana				
weltevreden																																		weltevreden				
worthington																																		worthington				
untypable group B																																		untypable group B				
untypable group C ¹																																		untypable group C ¹				
untypable group C ²																																		untypable group C ²				
untypable group D																																		untypable group D				
untypable group E																																		untypable group E				
untypable or unknown																																		untypable or unknown				
TOTAL COMMON	4	4	2	74	9	32	125	0	52	49	73	41	215	38	8	116	58	43	263	19	8	31	3	0	2	19	82	3	42	17	30	2	27	0	72	196	389	TOTAL COMMON
TOTAL OTHER	0	1	0	2	3	0	6	0	2	1	1	0	4	0	2	6	1	0	9	1	0	1	0	0	0	0	2	0	0	1	3	0	0	11	18	TOTAL OTHER		
GRAND TOTAL	4	5	2	76	12	32	131	0	54	50	74	41	219	38	10	122	59	43	272	20	8	32	3	0	2	19	84	3	42	18	33	2	20	0	72	207	407	GRAND TOTAL

**Includes October late reports.

(New York, A-Albany, BI-Beth Israel, 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 although reported by NY-BI. Beth-Israel reported a total of 101 isolations for November.

TABLE I (Continued)
COMMON SALMONELLA SEROTYPES ISOLATED FROM HUMANS IN THE UNITED STATES DURING NOVEMBER, 1967

SEROTYPE	GEOGRAPHIC DIVISION AND REPORTING CENTER																		OTHER	VI	NOV TOTAL	% of NOV TOTAL	JAN- NOV 1967 TOTAL	% of JAN- NOV 1967 TOTAL	JAN- NOV 1966 TOTAL	% of JAN- NOV 1966 TOTAL	SEROTYPE
	EAST SOUTH CENTRAL					WEST SOUTH CENTRAL					MOUNTAIN					PACIFIC											
	KY	TENN	ALA	MISS	TOT	ARK	LA	OKLA	TEX	TOT	MONT	IDA	WYO	COLO	NM	ARI	UTAH	NEV	TOT	WASH	ORE	CAL	ALAS	HAI	TOT		
anatum	2				2					1					1						3	1	7	10			
bareilly																					1		1		27	1.5	
bertha		1					1		2	1						1					1		1		12	0.7	
blockley																					2	0.1	35	0.2	2	0.4	
braenderup																					1	9	487	2.7	561	3.0	
																				5	0.3	78	0.4	103	0.6		
bredeney																									278	1.5	
chester																									305	1.6	
cholerae-suis v kun																									75	0.4	
cubana																									31	0.2	
derby	1	2			3					6		1	7	1							1	7	6	7	18	1.0	
enteritidis		2				2		1	2	5		1									1	7	1	7	117	0.6	
give						1		1													2	2	2	2	91	0.5	
heidelberg	3	5			8		6			6											1	0.06	19	0.1	24	0.1	
indiana			1		1		1			7	13										4	0.2	59	0.3	125	0.7	
infantis	1	4	1																		33	1.8	300	1.6	370	2.0	
java					3					1														1,179	6.4		
javiana																									58	0.3	
kentucky																									1,544	8.4	
litchfield																									1,508	8.1	
livingstone																									43	0.2	
manhattan																									1,445	6.2	
meleagridis																									114	0.6	
miami																									72	0.4	
mississippi																									80	0.04	
montevideo																									76	0.4	
muensch																									49	0.3	
newington	1	3	1			1		2	1	3																	
newport						4		1	8	27	36																
oranienburg						2		2	1	8	10																
panama						1				3	5	1															
paratyphi B																									264	1.4	
poona	1	1				1		3	2	1																	
saint-paul						1		3	4	2																	
san-diego																									201	1.1	
schwarzengrund																									43	0.2	
senftenberg		1				1		1		1																	
tennessee						1																			114	0.6	
thompson	1	5	3	1	24	1	4	6	3	21	30	1															
typhi																									1,161	6.4	
typhi-murium	1	20	3	1	24																				383	2.1	
typhi-murium v cop																									140	0.8	
urbana																									113	0.6	
weltvreden																									65	0.3	
worthington																									122	0.7	
untypable group B			2	2		3				10	13																
untypable group C ¹										1														144	0.8		
untypable group C ²										5	6													148	0.8		
untypable group D										5	6													68	0.4		
untypable group E										2	2													56	0.3		
untypable or unknown										16	16	1											12	0.1			
TOTAL COMMON	7	49	8	4	68	13	62	5	137	217	7	2	0	11	30	38	8	4	100	37	12	174	2	50	275		
TOTAL OTHER	1	2	1	1	5	1	6	1	5	13	0	0	0	0	0	1	0	0	1	1	7	0	4	13			
GRAND TOTAL	8	51	9	5	73	14	68	6	142	230	7	2	0	11	30	39	8	4	101	38	13	181	2	54	288		
																									1,734	96.1	
																									17,810	97.0	
																									17,905	96.4	
																									TOTAL COMMON		
																									TOTAL OTHER		
																									GRAND TOTAL		

TABLE II
OTHER SALMONELLA SEROTYPES ISOLATED FROM HUMANS DURING NOVEMBER, 1967

SEROTYPE	REPORTING CENTER																						SEROTYPE								
	ALA	ARIZ	ARK	CAL	DC	FLA	HAI	ILL	IND	KY	LA	MASS	MICH	MINN	MISS	MO	NH	NJ	NY-BI	NY-C	NC	OKLA	ORE	RI	TENN	TEX	VA	WASH	TOTAL	11 mos. TOTAL	
alachua														1												2	11	alachua			
binza																1										1	9	binza			
bovis-morbificans																										1	6	bovis-morbificans			
brandenburg																										1	2	brandenburg			
california																										4	14	california			
carrau																										1	3	carrau			
cerro																										1	9	cerro			
cholerae-suis																										2	6	cholerae-suis			
colorado																										1	3	colorado			
drypool																										1	1	drypool			
duesseldorf																										1	1	duesseldorf			
eimsbuettel																										3	25	eimsbuettel			
florida																										1	2	florida			
gaminara																										1	7	gaminara			
gatow																										1	1	gatow			
habana																										3	15	habana			
hartford																										1	19	hartford			
heilbron																										1	3	heilbron			
illinois																										1	1	illinois			
inverness																										1	4	inverness			
israel																										1	1	israel			
kottbus																										3	3	kottbus			
lexington																										1	3	lexington			
minnesota																										1	22	minnesota			
mission																										1	19	mission			
muenster																										3	23	muenster			
norwich																										2	14	norwich			
oritamerin																										1	1	oritamerin			
oslo																										2	18	oslo			
paratyphi C																										1	1	paratyphi C			
pensacola																										1	4	pensacola			
pullorum																										2	3	pullorum			
reading																										4	48	reading			
rubislaw																										3	23	rubislaw			
saphra																										2	11	saphra			
siegburg																										1	10	siegburg			
simsbury																										1	4	simsbury			
takoradi																										1	1	takoradi			
worcester																										1	1	worcester			
untypable group C																										5	5	untypable group C			
untypable group G																										2	6	untypable group G			
untypable group H																										3	8	untypable group H			
TOTAL	1	1	1	7	1	11	4	6	2	1	6	2	1	1	1	1	1	1	2	1	3	1	1	3	2	5	3	1	71	558	TOTAL

TABLE III

Age and Sex Distribution of Individuals
Reported as Harboring Salmonellae During November 1967

<u>Age (Years)</u>	<u>Male</u>	<u>Female</u>	<u>Unknown</u>	<u>Total</u>	<u>Percent</u>	<u>Cumulative Percent</u>
< 1	132	122	1	255	20.8	20.8
1 - 4	184	148	2	334	27.3	48.1
5 - 9	83	68	1	152	12.4	60.5
10 - 19	63	52		115	9.4	69.9
20 - 29	51	57		108	8.8	78.7
30 - 39	15	31		46	3.8	82.5
40 - 49	17	47		64	5.2	87.7
50 - 59	15	28		43	3.5	91.2
60 - 69	21	40		61	5.0	96.2
70 - 79	9	17		26	2.1	98.3
80 +	<u>6</u>	<u>14</u>	—	<u>20</u>	1.6	99.9
Subtotal	596	624	4	1224		
Child (Unspec.)	7	9	2	18		
Adult (Unspec.)	21	22	2	45		
Unknown	<u>242</u>	<u>224</u>	<u>52</u>	<u>518</u>		
Total	866	879	60	1805		
Percent of Total	49.6	50.4				

TABLE IV
REPORTED NONHUMAN ISOLATES BY SEROTYPE AND SOURCE, *NOVEMBER, 1967

Source: National Animal Disease Laboratory, Ames, Iowa, weekly Salmonella Reports from individual states and US-FDA-Div. of Microbiology, Washington, D. C.

*Includes October late reports

TABLE V
REPORTED NOSOMON ISOLATES BY SEROTYPE AND STATE, *NOVEMBER, 1967

SEROTYPE	ALA	ARTZ	ARK	CAL	CONN	DELA	FIA	GA	HAI	IDA	ILL	KANSAS	LA	MD	MASS	MICH	MINN	MISS	MO	NEB	NEV	NY-A	NC	OHIO	ORE	SC	TENN	TEX	UTAH	VA	WASH	WISC	TOTAL	11 mos.	TOTAL	SEROTYPE		
alachua				1													4	1													5	112	alachua					
albany				1	5													1												3	30	albany						
anager								1	3	20	15	4	1				15		4	6	11			1						3	7	anager						
anatum																														1	462	anatum						
bareilly				1																										4	31	bareilly						
berita																														1	13	berita						
binza																														9	128	binza						
blockley																														8	91	blockley						
bornum																														1	1	bornum						
braenderup																														3	48	braenderup						
bredeney				2		3	2			1	2	10		2															25	129	bredeney							
california																														4	15	california						
canoga																														1	3	canoga						
cerro				1		1																							6	68	cerro							
chester																													2	44	chester							
cholerae-suis v kun																													13	43	cholerae-suis v kun							
colorado				1	2																								1	1	colorado							
cubana																													16	212	cubana							
derby																													22	424	derby							
dessa																													1	1	dessa							
dublin																													8	17	dublin							
duesseldorf																													1	10	duesseldorf							
duval																													5	4	duval							
eimbuettel																													31	204	eimbuettel							
enteritidis																													16	67	enteritidis							
gallinarum				1																									1	8	gallinarum							
geminara				1																									1	8	geminara							
give				3																									3	41	give							
habana																													3	2	habana							
halinstad																													3	9	halinstad							
heidelberg				2	3	16																						60	460	heidelberg								
illinois																													7	7	illinois							
indiana																													1	22	indiana							
infantis				3	12																							31	331	infantis								
java																													1	28	java							
javiana																													11	29	javiana							
johannesburg																													1	16	johannesburg							
kansas				1																									2	22	kansas							
kothbus																													3	3	kothbus							
lexington																													6	19	lexington							
litchfield																													1	4	litchfield							
livingsome																													9	71	livingsome							
london																													1	1	london							
manhattan																													16	37	manhattan							
manila																													1	1	manila							
meleagridis																													20	52	meleagridis							
minneapolis																													8	34	minneapolis							
minnesota																													8	42	minnesota							
montevideo				1	3																								18	248	montevideo							
muenchien																													1	93	muenchien							
muenter																													1	8	muenter							
newington				4	1	2																						7	140	newington								
newport				1		2																						13	233	newport								
oranienburg				1		2																						35	223	oranienburg								
orion																													2	25	orion							
panama																													5	49	panama							
pomona																													1	1	pomona							
pullorum																													1	15	pullorum							
reading				1	15																								9	85	reading							
saint-paul				10																									59	340	saint-paul							
san-diego				5		1																						13	172	san-diego								
schaarzengrund				5																									7	123	schaarzengrund							
sentenberg				5																									1	27	sentenberg							
siegburg																													9	41	siegburg							
sinstorf																													1	1	sinstorf							
tennessee																													15	272	tennesee							
thomasville																													7	20	thomasville							
thompson				2	1	1																						28	159	thompson								
typhi-murium																													86	761	typhi-murium							
typhi-murium v cop				1	2	31	1																				30	153	typhi-murium v cop									
urbana																													2	15	urbana							
weltvreden																													1	1	weltvreden							
worthington																													14	115	worthington							
untypable group B																													4	22	untypable group B							
untypable group M																													1	1	untypable group M							
unknown																													1	16	unknown							
TOTAL	17	2	13	145	1	1	40	83	91	1	93	92	23	8	5	10	6	17	81	3	29	10	4	24	19	6	38	2	2	7	31	5	7	17	10	963	7,047	TOTAL

Source: National Animal Disease Laboratory, Ames, Iowa, weekly Salmonella Reports from individual states and US-FDA-Div. of Microbiology, Washington, D.C.

*Includes October late reports

TABLE VI
OTHER SEROTYPES REPORTED DURING 1967
FROM NONHUMAN SOURCES

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
adelaide	Jun	Ill	1
albuquerque	Sep	Kan	7
arkansas	Mar	La	1
berlin	May	Pa	1
bonariensis	Aug	Kan	1
carrau	Jan	La(1)	
	Aug	Cal(1)	
champaign	Feb	Minn(1)	
	Jul	Mich(2)	
cholerae-suis	Jan	Cal(1)	
	Jan-Jun-Jul	Ohio(5)	
	Mar	Va(1)	
corvallis	Jan-Feb	La	7
decatur	Aug	Kan	3
			5
drypool	Jan	Conn(1)	
	Jan-Feb-Apr-May	Ohio(7)	
	Feb	La(1)	
	Apr	Ind(1)	
	Apr	Kan(1)	
	May-Aug-Oct	Mich(8)	
	May-Jun-Jul	Minn(4)	
	May	Tenn(1)	
duisburg	Jun	Ohio	24
eastbourne	Jan	Minn(1)	1
	Sep	Mich(1)	
gatow	Apr	Wash(4)	
	May	Kan(1)	
grumpensis	Jan	La(2)	
	Jan	Mich(1)	5
			3
hartford	Jan	Hai	1
hato	Jun	La	1
irumu	Apr-Aug	Hai	2
madelia	Jul	DC	1
manchester	Jul	NJ	1
miami	Apr	Fla(1)	
	Aug-Oct	Cal(2)	
mission	May	Ohio	3
mississippi	Feb	La(2)	
	Oct	Cal(2)	
mokola	Feb	La	4
ness-ziona	Jul	NC	1
			2
new-brunswick	Aug	Kan(1)	
	Oct	Ill(1)	
new-haw	Feb	Iowa(1)	2
	Apr	Ill(1)	
norwich	Aug	Tex	
ohio	Oct	Ohio	
okerara	Feb	La	1
			2

TABLE VI
OTHER SEROTYPES REPORTED DURING 1967
FROM NONHUMAN SOURCES - CONTINUED

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
oslo	Feb	Fla	2
paratyphi-B	Jun	Wash(1)	
	Jul	Mass(1)	
	Jul	Tenn(1)	3
putten	Jun	Cal	1
redlands	Feb	La	1
rubislaw	Jan-Feb-Mar	La(3)	
	Apr	Kan(10)	
	Apr-Jul	Tex(2)	15
saphra	Jun	Tex	1
shubra	Feb	La	1
simsbury	Mar	Mo(1)	
	Apr	Kan(2)	3
stanley	Apr	La	1
sundsvall	Jul	Ariz	2
taksony	Jan-Feb	Utah(2)	
	Aug	Cal(1)	3
tucson	Feb	Cal	1
tuindorp	Feb	Ill(1)	
	Apr	Cal(1)	2
typhi	Jul	Cal	1
typhi-suis	Jan-May-Jun-Jul	Minn(4)	
	Mar-Oct	Cal(5)	9
vejle	Feb	La	1
westhampton	Jan-Mar	Ill(2)	
	Jan-Feb	La(9)	
	May	Minn(2)	
	Jun	SD(1)	
	Jul	Kan(5)	19
wichita	Feb	Utah	1
zanzibar	May	NJ(1)	
	Jul	DC(2)	3
zeist	Sep	Conn	1
TOTAL			162