


NATIONAL
COMMUNICABLE DISEASE CENTER

SALMONELLA

SURVEILLANCE

CONTENTS...

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For the month of November

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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

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I. SUMMARY

In November 1966, 2,121 isolations of salmonellae were reported from humans, an average of 424 isolations per week (Tables I and II). This number represents a decrease of 6 (1.4 percent) from the weekly average of October 1966 and an increase of 35 (9.0 percent) over the weekly average of November 1965. The cumulative number of isolations reported for the first eleven months of 1966 (18,581) represents a decrease of 2.5 percent from the total number of isolations reported during this same period in 1965 (19,052).

Reports of 1,026 nonhuman isolations of salmonellae were received during November, an increase of 313 (43.9 percent) over October 1966 (Tables IV, V, and VI).

II. REPORTS OF ISOLATIONS FROM THE STATES

A. Human

The seven most frequently reported serotypes during November were:

<u>Rank</u>	<u>Serotype</u>	<u>Number</u>	<u>Percent</u>	<u>Rank Last Month</u>
1	<u>S. typhi-murium</u> and <u>S. typhi-murium var.</u> <u>copenhagen</u>	628	29.6	1
2	<u>S. newport</u>	181	8.5	3
3	<u>S. heidelberg</u>	131	6.2	2
4	<u>S. enteritidis</u>	115	5.4	4
5	<u>S. infantis</u>	104	4.9	5
6	<u>S. saint-paul</u>	85	4.0	7
7	<u>S. blockley</u>	<u>68</u>	<u>3.2</u>	Not Listed
	Total	1312	61.8	
	Total (all serotypes)	2121		

The age and sex distribution (Table III) was similar to that of previous months.

B. Nonhuman

Thirty-seven states reported nonhuman isolations, represented by 70 different serotypes.

The seven most frequently reported serotypes during November were:

Rank	Serotype	Predominant Source and Number	Number	Percent	Rank Last Month
1	<u>S. heidelberg</u>	Turkeys (57) and Porcine (37)	114	11.1	1
1	<u>S. typhi-murium</u> and <u>S. typhi-murium var.</u> <u>copenhagen</u>	Porcine (34), Chickens (26) and Bovine (21)	114	11.1	2
3	<u>S. derby</u>	Porcine (83)	103	10.0	Not Listed
4	<u>S. anatum</u>	Porcine (53)	94	9.2	Not Listed
5	<u>S. saint-paul</u>	Turkeys (26) and Porcine (20)	53	5.2	7
6	<u>S. schwarzengrund</u>	Turkeys (46)	50	4.9	6
7	<u>S. infantis</u>	Chickens (16)	47	4.6	4
Total			575	56.1	
Total (all serotypes)			1026		

The most prominent nonhuman sources of salmonellae reported during November were porcine, 312 (30.4 percent); turkey, 215 (21.0 percent); chicken, 111 (10.8 percent); animal feed, 61 (5.9 percent); and bovine, 40 (3.9 percent). Salmonella derby ranks third this month due mainly to 83 isolates of porcine origin, 52 of which were reported by Louisiana and 31 by the National Animal Disease Laboratory, Ames, Iowa.

III. CURRENT INVESTIGATIONS

NONE

IV. REPORTS FROM THE STATES

NONE

V. SPECIAL REPORTS

NONE

VI. INTERNATIONAL

NONE

VII. FOOD AND FEED SURVEILLANCE

A. Progress Report on Food Surveillance

As indicated in this section last month, salmonellae have been isolated both from carmine dye, a commonly used red food coloring, and from products containing carmine. The Veterinary Public Health Laboratory has been examining foods containing red food coloring for salmonellae, shigellae, Escherichia coli, and coagulase-positive staphylococci. Twenty-seven samples of such foods were received from Florida in November. The foods were candy, 3; food decoration, 5; non-gelatin dessert, 4; gelatin dessert, 7; soft drink mix, 5; cake icing, 1; pie filling, 1; strawberry flavoring, 1. All samples were negative.

A total of 187 samples containing red food coloring were received from Washington, Louisiana, North Carolina, New York City, Virginia, Illinois, Colorado, and New Mexico. The samples were soft drink mix, 35; frosting mix, 27; gelatin dessert, 22; food decorations, 12; liquid soft drink, 11; candy, 9; cake mix, 8; cookies with filling, 7; food coloring, 7; canned diet food, 7; non-gelatin dessert, 3; cereal, 3; chewing gum, 6; multiple vitamins, 3; gravy mix, 3; and miscellaneous food samples, 24. The samples were examined for the presence of salmonellae and E. coli, and all were found to be negative.

B. Regulations Concerning the Import and Sale of Egg Products in West Germany
Abstracted from Verordnung zum Schutze gegen Infektion durch Erreger der Salmonella-Gruppe in Ei-Produktion. December 17, 1956 (BGBl I S. 944).

Egg products are not to be offered for sale as foodstuffs without adequate preliminary treatment, by which the agents of the salmonella group and other agents of the group of the Enterobacteriaceae are killed. Egg products are defined as liquid, frozen, or powdered egg. The nature of the preliminary treatment is to be noted on the containers. Anyone wishing to pre-treat egg products needs approval from responsible authorities. Approval is given only when the applicant has facilities available that guarantee controlled adequate preliminary treatment. Anyone pre-treating egg products is obligated to keep records of incoming and outgoing material according to source, nature of product, quantity, time and date of treatment, and receiver of the egg products.

It is forbidden to transport egg products as foodstuffs into West Germany without adequate preliminary treatment, with the exception of duty free areas. The clearance of egg products through customs service sites takes place only after a certificate of the responsible authorities is given to customs officials showing that the egg products, according to the results of bacteriological examination, are adequately pre-treated.

In similar shipments, the samples required for the official examination are indicated below:

- Up to 3 packages - samples from all packages
- 4 to 10 packages - samples from at least 3 packages
- 11 to 20 packages - samples from at least 4 packages
- 21 to 40 packages - samples from at least 5 packages
- 41 to 60 packages - samples from at least 6 packages
- 61 to 1000 packages - samples from at least 5% of all packages

If there is a shipment of more than 1000 packages, then the number of random samples taken is limited to 3 percent in the number of packages exceeding 1000 and to 2 percent of the number of packages exceeding 3000. Samples of approximately 30 gm. are randomly taken using sterile technique.

The homogeneity of the contents of a shipment is assumed if a uniform trademark, nature of the package, or the code numbers permit this to be concluded.

The samplings are not taken if the egg products are subjected to preliminary treatment in a plant located in a duty free area. The provisions of the decree are not applicable to egg products destined for shipment to regions outside the range of enforcement of the decree.

C. Regulations Concerning the Import of Feeds of Animal Origin into West Germany. Abstracted from Verordnung zum Schutze gegen die Gefahr der Einschleppung von Salmonellen durch Futtermittel tierischer Herkunft aus dem Ausland. February 14, 1958 (GVBl. S. 27).

Feeds of animal origin are defined as parts or products of animals of all kinds used as feed either processed or unprocessed, or mixtures in which feeds of animal origin are contained. Animals include marine animals and fowl, as well as mammals.

Feeds may be imported only if there is displayed to customs officials a certificate from responsible authorities of the exporting countries that the feed during or after drying was submitted to a heating process or to another equivalent procedure through which salmonellae, if present, are killed. The regulations are also applicable if the feeds are destined for use as fertilizer. Feeds are to be imported only in new paper sacks except for feeds processed into cake form. The latter may be imported in other packing material. The regulations do not apply to direct transport or storage of feeds under customs supervision or to the shipment of samples of 250 gm. or less. Health authorities may grant exceptions from the regulations if there is no fear of endangering the health of humans or native cattle.

The feeds may furthermore be imported only if the official bacteriological examination of the material for salmonellae has shown a negative result. Sampling required for analogous shipments:

- 1 to 100 sacks - samples from at least 5% of the sacks
- 101 to 500 sacks - samples from at least 3% of the sacks
- 501 and above - samples from at least 2% of the sacks

If salmonellae are found, the feeds can be imported only after they have been submitted to a heating process under official supervision or to another equivalent procedure, by which the salmonellae are killed.

The clearance of feeds through customs service will be approved only after presentation of a certificate from health authorities showing negative results of the official examination.

Copies of these regulations were received from Dr. Leistner, Director, Institut für Bakteriologie und Histologie, Bundesanstalt für Fleischforschung, Kulmbach, West Germany.

D. Results of Examination of Eggs and Egg Products for Salmonella During FY 1966. Reported by the U.S. Food and Drug Administration.

A report of findings on eggs and egg products by the Food and Drug Administration during fiscal years 1964, 1965, and the first 3 quarters of 1966, appeared in Salmonella Surveillance Report No. 50 (page 3). Information for the fourth quarter of 1966 has been received and can be compared with the first 3 quarters in the table below. The increase in percent of salmonella isolations in the fourth quarter is notable. It is difficult to determine whether this is a real increase or if it is a result of more selective sampling. It is believed that selective sampling had a significant influence.

Results of Examinations of Eggs and Egg Products for
Salmonella Organisms

Fiscal years:	Investigational Samples				Official Samples			
	1966 (Quarters)				1966 (Quarters)			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Samples examined	40	86	35	39	76	112	92	29
Percent positive	42.5	32.6	11.4	23.1	46.0	23.2	12.0	31.0
Subsamples examined	634	1329	532	486	733	916	1076	230
Percent positive	12.9	10.5	0.94	4.1	20.0	9.3	2.5	10.0

TABLE I
COMMON SALMONELLA SEROTYPES ISOLATED FROM HUMANS IN THE UNITED STATES DURING *NOVEMBER, 1966

S E R O T Y P E	G E O G R A P H I C D I V I S I O N A N D R E P O R T I N G C E N T E R																																	S E R O T Y P E			
	N E W E N G L A N D						M I D D L E A T L A N T I C						E A S T N O R T H C E N T R A L						W E S T N O R T H C E N T R A L						S O U T H A T L A N T I C												
	M E	N H	V T	M A S S	R I	C O N N	T O T	N Y - A	N Y - B I	N Y - C	N J	P A	T O T	O H I O	I N D	I L L	M I C H	W I S	T O T	M I N N	I O W A	M O	N D	S D	N E B R	K A N	T O T	D E L	M D	D C	V A	W V	N C		S C	G A	F L A
anatum bareilly berta blockley braenderup				5		5		2	1		3	6	1		2		1	4			1							1				1	1	9	7	18	anatum bareilly berta blockley braenderup
	1			3	1	1	6	1	1	2		4	8			4		1				1	1				1	3		4			1	5	7	2	2
			1			4	5					2	2			1											3	3					2	1	3		
bredeney chester cholerae-suis v kun cubana derby						1	1	1	2			1	4			2		1	3			1									2			2		4	bredeney chester cholerae-suis v kun cubana derby
												2	2																				1		1		
			3			3			2	4		4	10			3	1	1	5		1							1		2	1	2		1	6		
enteritidis give heidelberg indiana infantis				21		3	24	15	3	5	2	14	39	5		10	2	10	27	2		1					3	1	1		3	5	7	2	19	enteritidis give heidelberg indiana infantis	
												3	3																				1		1		
				3		1	4	5		6	2	3	16	4	2	5	14	3	28	2		1					3		3		1	14	3	8	29		
												1	1																								
			1	6			7	1	2	6	1	6	16		1	6	4	1	12	1	1	1					12	15	1	1	4	11	4	5	26		
java javiana kentucky litchfield livingstone				2		1	3	1	1		2		4			2		2		2														5	5	java javiana kentucky litchfield livingstone	
							1										1		1															2	17	19	
				1			1											1									1	1							1	1	
				1			1							1					1																		
manhattan meleagridis miami mississippi montevideo						1	1			3		3	6					4	4																1		
											1		2																								
			1				1		1	2		1	2																					1	9	10	
													3																								
			2			2		1	6	1	15	3	26				1		1										1					2	4	5	
muenchen newington newport oranienburg panama				1		1	2		1	1	1	1	4	1					1			1															
			7		1	8		6	4	2	4	16	1	1	4	3	1	10	2		2																

(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 188 isolations for November.

TABLE III

Age and Sex Distribution of Individuals Reported as Harboring Salmonellae
During November 1966

<u>Age (Years)</u>	<u>Male</u>	<u>Female</u>	<u>Unknown</u>	<u>Total</u>	<u>%</u>	<u>Cumulative %</u>
Under 1	167	153	9	329	21.7	21.7
1 - 4	204	180	4	388	25.6	47.3
5 - 9	93	96	1	190	12.5	59.8
10 - 19	76	67		143	9.4	69.2
20 - 29	40	72	1	113	7.5	76.7
30 - 39	34	51	2	87	5.7	82.4
40 - 49	29	45	1	75	4.9	87.3
50 - 59	31	32	1	64	4.2	91.5
60 - 69	30	33		63	4.2	95.7
70 - 79	14	24		38	2.5	98.2
80 +	9	16	1	26	1.7	99.9
Child (Unspec.)	14	9	4	27		
Adult (Unspec.)	27	13	3	43		
Unknown	<u>237</u>	<u>226</u>	<u>72</u>	<u>535</u>		
Total	1005	1017	99	2121		
% of Total	49.7	50.3				

TABLE IV
REPORTED NONHUMAN ISOLATES BY SEROTYPE AND SOURCE, *NOVEMBER, 1966

[illegible]

Source: National Disease Laboratory, Anap, Inc., weekly Salmonella Report - from individual states and U.S. Agency of Microbiology, Washington, D.C.

*Includes October late reports.

REPORTED NONHUMAN ISOLATES BY SPROTYPE AND STATE. *NOVEMBER, 1966

SEROTYPE	ALA	ARTZ	ARK	CAL	COLO	IC008	DC	FLA	GA	IDA	ILL	IND	IOWA	KAN	KY	LA	MD	MASS	MICH	MINN	MISS	MO	NEB	NJ	NY-N	SC	OHIO	OKLA	ORE	PA	SC	SD	TEX	UTAH	VA	WASH	WISC	TOTAL	11 MO. TOTAL	SEROTYPE
abortus-bovis											1																											1	2	abortus-bovis
alachua				1																																		1	1	alachua
anatum			2	3				4	2		6					2	31			1	1			17	1			2			22					1		1	27	anatum
bareilly																																						1	26	bareilly
binza											10	2	2							4							1										20	69	binza	
blockley				6												1					2	2							2							1	1	15	192	blockley
braenderup																15	1			1			2					3									16	33	braenderup	
bredenev										2				1							1		2															11	69	bredenev
california													1				2					1	1														1	29	california	
cerro																																					5	62	cerro	
chester										2	3				2	9					5									1							2	24	163	chester
cholerae-suis										1													1														2	5	cholerae-suis	
cholerae-suis v kun																																						2	93	cholerae-suis v kun
cubana								1		1		2							4	15			1			8	1					1	2	3				33	152	cubana
denver																																						3	3	denver
derby			1	4				1	1			2				55					2		4				2			30	1						103	247	derby	
dublin				1																																	1	33	dublin	
eastbourne																					2																2	2	eastbourne	
eimbuettel											1	4	1			6				6		5									2					25	140	eimbuettel		
enteritidis												1																									2	87	enteritidis	
gallinarum	1																																					2	17	gallinarum
give				1				1				1	1		1	2					1		2							1							11	32	give	
grumpensis																				1		1															1	6	grumpensis	
habana																																						1	2	habana
halmstad																				4																	4	9	halmstad	
heidelberg				38				8		3	3	1		1	31						12							1	4	7						1	5	114	763	heidelberg
infantis	2	1	6					4		8	1			1	3							5					1		8		8			1		1	47	336	infantis	
inverness																																						1	1	inverness
jawa																																					1	50	jawa	
javiana				1												4							1														5	7	javiana	
jedburgh																																						1	1	jedburgh
kentucky		3																		1		1															7	40	kentucky	
lexington											2																											2	12	lexington
lille																																						2	3	lille
livingstone																												1										3	76	livingstone
luciana																																						1	1	luciana
manhattan																																						6	41	manhattan
manila																																						3	12	manila
melagrdis											1																											6	18	melagrdis
minneapolis																																						1	2	minneapolis
minnesota																																						5	47	minnesota
montevideo				1						5		4	3	1	3		3	4		4	2	2		3													31	327	montevideo	
muenchen				5																																		9	64	muenchen
munster																																						1	21	munster
new-brunswick																																						1	86	new-brunswick
newington				2																																		7	71	newington
newport		1		2																																		36	145	newport
norwich																																						3	7	norwich
orankenburg										1		1	1																								9	174	orankenburg	
orion											1																											1	14	orion
oslo				1																																		1	6	oslo
panama																																						1	22	panama
paratyphi-B																																						1	9	paratyphi-B
pomona				1																																		1	2	pomona
poona				1																																		4	19	poona
reading				4																																		10	43	reading
saint-paul					1	2			1	1																											53	315	saint-paul	
sao-diego																																						106		sao-diego
schwarzengrund				45																																		50	251	schwarzengrund
senftenberg	1	1	1	5				4		1		1	1								1	3															21	177	senftenberg	
simsbury																																						1	9	simsbury
taksony																												</												

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

(NYA- New York-Albany)

*In 1966 October late reports.

TABLE VI
OTHER SEROTYPES REPORTED DURING 1966
FROM NONHUMAN SOURCES

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
adelaide	Mar	La	1
alagbon	Mar	NJ	2
albany	Aug	Miss(1)	
	Sep	Md(1)	2
amager	May-Jul-Oct	Ark(3)	
	Oct	Ida(1)	4
amsterdam	Jan	Ohio	1
babelsberg	Jan	Ind	1
berta	Feb	Ga(2)	
	May	Cal(1)	3
birmingham	Jun	La	1
bovis-morbificans	Jan	Cal(1)	
	Aug	DC(2)	3
bradford	Jan	NJ	1
cambridge	Apr	La	1
caracas	Mar	La	1
carrau	Apr	Mass	2
champaign	Mar-Oct	La	4
colorado	Mar	NJ	1
corvallis	Apr-Jun	La	2
drypool	Jun-Sep-Oct	La	7
emek	Jul	Tex	1
eppendorf	Jan	NJ	1
fayed	Apr	La(1)	
	Apr	NC(1)	2
gaminara	Jul	La(1)	
	Aug	Tex(1)	2
hamilton	Jan	La	1
hartford	Mar	Fla	1
illinois	Mar-Sep	Minn(2)	
	Jun-Sep	La(2)	
	Jul	Cal(2)	6
indiana	Jan	Fla(1)	
	Jan	NJ(6)	
	Feb-Mar-Apr-May-Jun-Oct	Ind(15)	(15)
	Feb	La(1)	
	Mar	Iowa(3)	
	Mar	Miss(1)	
	Mar	Pa(1)	
	Jun	Ill(1)	
	Jul	SC(1)	
	Aug	Mo(3)	
	Oct	Ohio(1)	34
johannesburg	Mar	Mich(1)	
	Sep	Ark(1)	
	Sep	NJ(1)	3
kaapstad	Mar	La	1
kottbus	Feb	Ga	1
litchfield	Apr	Cal(1)	
	May	Conn(4)	
	May	Ga(1)	
	May	Kan(2)	
	Jun-Jul	Fla(9)	
	Jul	Ohio(1)	
	Jul	Wash(1)	19
madelia	Jul	SC(1)	
	Aug	Cal(1)	2

TABLE VI (Continued)
OTHER SEROTYPES REPORTED DURING 1966
FROM NONHUMAN SOURCES

SEROTYPE	MONTH(S)	REPORTING CENTER(S)	NUMBER OF ISOLATIONS
menston	Sep	Kan	1
miami	Feb	Cal(1)	
	Feb	Tex(1)	
	Jul	Fla(1)	
	Jul	Wash(1)	4
mikawashima	Jul	Ind	2
mission	Mar	Ohio(1)	
	May	La(1)	2
mississippi	Mar	La(1)	
	Oct	Va(1)	2
new-haw	Mar	NJ	1
ohio	Feb	Iowa(7)	
	Feb	Minn(1)	
	Jun	NJ(1)	
	Jun	NYA(1)	10
pharr	Jan	Mich	1
portland	Jul	Wash	1
pullorum	Jan-Jun	La(2)	
	Jan	Mont(1)	
	Jan-Mar-Oct	Pa(3)	
	Jan	Tenn(1)	
	Jan-Apr-Jun	Va(9)	
	Feb-Apr-Jun	Neb(4)	
	Mar-May	Iowa(2)	
	Mar-Apr-Aug-Sep	Minn(5)	
	Mar	Ore(1)	
	Mar-Apr	SC(3)	
	Apr-Jun-Jul-Sep	Mo(4)	
	Apr-Sep	Vt(2)	
	Jun	Md(1)	
	Jun	Ohio(5)	
	Jun-Jul-Aug-Oct	Wisc(10)	
	Jun	Wyo(1)	
	Aug	Kan(1)	
	Aug	Mich(1)	56
rubislaw	Jul	Conn(1)	
	Jul	La(2)	
	Aug	Ind(1)	4
seremban	Aug	Kan	1
siegburg	Feb-Sep-Oct	Mich(27)	
	May-Aug-Sep-Oct	La(5)	
	Oct	Ark(2)	34
stockholm	May	Ohio	1
teddington	Aug	La	1
thomasville	Jan	Cal(1)	
	Mar-Apr-May-Jun-Jul-Aug-Sep	La(21)	
	Mar-May-Aug-Oct	Minn(4)	
	May	Miss(1)	27
tournai	Mar	NJ	1
tuebinger	Jan	Mich	1
typhi	Jan	Mo	1
typhi-suis	Feb-Mar	Cal(6)	
	Mar	Minn(1)	7
vejle	Apr	La	1
waycross	Sep	Minn	1
westhampton	Mar	Kan	1
Total			272

Figure 1.
REPORTED HUMAN ISOLATIONS OF SALMONELLA
IN THE UNITED STATES

