FOR ADMINISTRATIVE USE ONLY
NOT FOR PUBLICATION

PUBLIC HEALTH SERVICE, BSS, CDC - Atlanta

November 15, 1965

SHIGELLA SURVEILLANCE

THIRD QUARTER 1965

Report No. 8
49 Participating States

PREFACE

This report summarizes data voluntarily reported from participating State, territorial, and city health departments. Much of the information is preliminary.

Communicable Disease Center	Dr. James L. Goddard, Chief
Epidemiology Branch	Dr. Alexander D. Langmuir, Chief
Investigations Section	Dr. Philip S. Brachman, Chief Dr. Theodore C. Eickhoff, Deputy Chief Dr. John R. Boring, Assistant Chief
Shigella Surveillance Program	Dr. Eugene J. Gangarosa Dr. Read F. McGehee Dr. Edward R. Eichner Mr. James B. Goldsby, Statistician

Collaborators

Laboratory Branch	
Bacteriology Section	Dr. Philip R. Edwards, Chief
Enteric Bacteriology Unit	Dr. William H. Ewing, Chief

I Introduction

Fifty-two reporting centers are now participating in the Shigella Surveillance Program. These include 49 states as well as New York City, the District of Columbia, and the Virgin Islands (Figure 1). The most recent states that have initiated reporting are Massachusetts, Minnesota, and New York.

II Summary

A total of 2248 human shigella isolations were reported from the 52 reporting centers during the third quarter of 1965. This represents an increase over the 1515 isolations reported during the second quarter of 1965 (49 reporting centers), which was a decline from the 1752 isolations reported during the first quarter of the year (46 reporting centers).

During July, August, and September, 69.5 per cent of shigella isolations were reported from children under 10 years of age, as compared with almost 73 per cent during the second quarter of 1965. A slight female predominance (51.1 per cent) was reported during the third quarter of this year. The opposite was true during the previous quarter. However, both quarters showed a predominance of males among the less than 5 year age groups.

The most frequently isolated serotypes during the third quarter continued to be Shigella sonnei and Shigella flexneri 2a. Regional differences continue to follow the same pattern, as reported below.

III Reported Isolations

A. Human

1. General Incidence

Seventeen states have been reporting shigella isolations since January 1964. As noted in previous reports, these isolations increased markedly in July and peaked in September 1964 (Figure 2). During the third quarter of 1965, a total of 1050 isolations were reported from these 17 states, as compared with a total of 792 from the same states during the second quarter of 1965. The increase is consistent with the seasonal pattern observed during the previous year. However, the third quarter for 1965 represented a decrease from the 1793 isolations reported for the same quarter last year. Thus, the data indicate a decrease in the incidence of shigella isolations for 1965, although the seasonal pattern was similar for the two 9-month periods.

The age and sex distribution (Table III) during the third quarter of 1965 demonstrated a pattern consistent with past experience. Almost 70 per cent of the isolations reported were from children under 10 years of age. Forty per cent were reported from children between the ages of 1 and 4 years. The high concentration of isolations among children is consistent with past experience.

Of the 2248 isolations reported during the third quarter, 2190 were reported by sex. Of these isolations, 1070 (48.9 per cent) were from males. Each quarter since the beginning of shigella surveillance (October 1963) has shown a slight female predominance, with only one exception. The exception was the second quarter of 1965 when there was a slight male predominance of 52.1 per cent which was unexplained. Although there has consistently been a slight female predominance, the difference has not been significant to justify reasoning that there is a female predilection for shigellosis.

2. Serotype Frequencies

During the third quarter of 1965, 13 serotypes were reported from 52 reporting centers. The six most frequently reported serotypes were:

Third Quarter 1965				Previous Quarter	
Rank	Serotype	Number	Per cent	Rank	Per cent
1	S. sonnei	728	32.4	1	34.1
2	S. flexneri 2	604	26.9	2	25.8
3	S. flexneri 3	270	12.0	3	11.0
4	S. flexneri 4	176	7.9	4	6.3
5	S. flexneri 6	86	3.8	6	3.6
6	S. flexneri 1	81	3.6	5	5.7

In all previous quarters these six subgroups have been the six most common, and have accounted for over 85 per cent of all isolations. Shigella sonnei and S. flexneri 2 have always been the two most common. Positions three through six have always been occupied by S. flexneri 1, 3, 4, and 6 in varying order. All members of S. dysenteriae and S. boydii groups are rare, as is S. flexneri 5.

Table II shows the relative importance of the various serotypes, calculated on the basis of data compiled since the beginning of the Shigella Surveillance Program in October 1963. A total of 12,474 isolations has been reported during the 24-month period, 12,357 of which were typed at least as far as the main group (A, B, C, or D). In Table II the isolations in each of the unspecified categories have been distributed in their subgroups in the same proportions as the completely specified isolations of that group. These figures in Table II are called the "calculated number" and from these are derived a "calculated per cent" for each serotype. This probably gives a reasonably accurate approximation of the relative frequencies of at least the more common shigella serotypes in the United States. The six most common serotypes determined by the outlined method over the 24-month period were:

Rank	Serotype	Frequency (Per cent)
1	S. sonnei	37.9
2	S. flexneri 2a	24.9
3	S. flexneri 3a	9.8
4	S. flexneri 4a	6.1
5	S. flexneri 6	6.0
6	S. flexneri 2b	5.5

Once again, the six most common serotypes accounted for a little over 90 per cent of all isolations, and these six serotypes were all either S. sonnei or in the S. flexneri group.

A regional difference has been found to exist in shigella isolations with a significantly higher percentage of S. flexneri isolations in the South as compared to the North. No statistical difference exists when comparing East and West (see Figure 1 for regional divisions). In southern states, S. flexneri have accounted for about 75 per cent of all shigella isolations, and the figure for the third quarter of 1965 is 80 per cent. In the northern states, S. flexneri isolations have accounted for 40 to 50 per cent. The figure for the third quarter was 60 per cent of total shigella isolations. Although this was higher than previously noted, the figure for the same quarter during 1964 was just under 60 per cent. This can be seen in Figure 3. This was due to the apparent seasonality of S. flexneri which was also evident in southern states (see Figure 4). Isolations of S. sonnei have been reported at a relatively constant rate.

Since S. flexneri has an apparent seasonal pattern and is reported more commonly from the southern states, the reported incidence of shigella isolations from the southern states demonstrates a seasonal pattern which is decernable by inspection of Figure 4. This is not true for northern states. Both Figures 3 & 4 are constructed on the basis of only 15 states. This is done so that 1965 data may be compared with 1964, when only 17 states were reporting. Of these 17, Alaska and Hawaii are excluded because they are not contiguous with the continental United States.

Of the 2248 isolations reported during the third quarter of 1965, 602 (26.8 per cent) represented isolations from families with other members of the same family positive for shigella. This was slightly higher than the percentages reported during the two previous quarters (22.5 and 19.5 respectively).

B. Nonhuman

A total of 26 nonhuman isolations of shigella were reported during the third quarter of 1965, as summarized in the table below:

Serotype	Number of Isolations	Reporting Center	Source
S. flexneri	5	Mich.	Monkeys
S. flexneri 2a	3	Texas	Lab. Stock Cultures
S. flexneri 2b	2	Texas	Lab. Stock Cultures
S. flexneri 3	14	Md. (13)	Monkeys
		Pa.	Monkey
S. flexneri 4b	1	Ill.	Monkey
S. sonnei	1	Ill.	Monkey
	26		

IV Current Investigations

Shigellosis at a Wisconsin Home and School for the Mentally Retarded. Reported by Dr. Josef Preizler, Director, Bureau of Communicable Diseases, Wisconsin State Health Department, Dr. Ellison White, Medical Director, Southern Wisconsin Colony and Training School, Drs. Edward Eichner, EIS Officer, Jose Hernandez, WHO Fellow, Bernard Goffe, EIS Officer, and Mr. Wallace DeWitt, Bacteriologist, Laboratory Services Unit, Investigations Section, Epidemiology Branch, CDC.

Description of Southern Wisconsin Colony and Training School:

The Southern Colony is one of three institutions for the mentally retarded in Wisconsin. It is a large complex of 15 cottages for patients, a new 120-bed hospital, a school, laundry, employee residence hall and administration building, power house, warehouse, service building, superintendent's residence, and sewage disposal plant. This residential school provides for the care, treatment, training and rehabilitation of the mentally retarded, ranging in age from 3 to 76 years. There are currently 1560 patients, and 876 staff members including 24 graduate nurses and 5 doctors.

The cottages are scattered in groups of two and four, except for three single cottages. Population of the cottages ranges from 41 to 124, averaging around 100. The cottages are, however, discrete units, and there is little or no contact among patients from different cottages.

Status of Shigellosis at the Southern Colony

Shigellosis has been a problem at the Southern Colony for over 10 years. Approximate numbers of cases reported per year since 1954 are shown on the following page:

Year	Cases
1954	117
1955	81
1956	32
1957	57
1958	188
1959	290
1960	204
1961	56
1962	34
1963	265
1964	48
1965	125 (as of 10/1/65)

During the period of 1958 to 1960 there were over 500 cases, with eight deaths directly attributable to shigellosis, and four deaths partially attributable to shigellosis. During this period, much attention was devoted to the problem, with many measures, both preventative and therapeutic, taken. There was a drop in prevalence during the years immediately following this period, but 1963 and 1965 were, again, years of high prevalence. In some years there seems to be a seasonal trend, with a slight peak in the late summer and early fall; but in other years, especially those with few cases, this trend is not evident.

In July and August of 1965, a new outbreak of clinical shigellosis occurred, with 76 culturally proven cases, and many more patients with diarrhea but negative cultures. When differential attack rates were calculated, 78 per cent of the cases were located in only 2 of 15 cottages. These two cottages contained the youngest patients, with moderate-to-severe degrees of retardation. Epidemic curves (Figure 5), support a person-to-person, "intracottage," spread of disease, beginning in cottage 8 in July, and cottage 12 in August. Attack rates were 25 per cent in cottage 8 and 39 per cent in cottage 12, with the highest attack rate in any other cottage being 4.3 per cent; several cottages had no cases. Median age of the cases in cottage 8 was 10 years, and in cottage 12 was 9 years. In cottage 8, all isolates were of the S. flexneri group, and in cottage 12, all were of the S. sonnei group. In the other eight cottages, with only a few cases, the serogroup was always consistent with the cottage. In two of these cottages, the index case was linked with cottage 12.

On review of the charts, it was noted that 21 per cent of the patients with shigellosis in cottage 8, and 39 per cent in cottage 12, had culturally proven episodes of shigellosis in the past. In cottage 8, six or seven of the employees had diarrhea in July, but a culture of all employees in this cottage during the summer revealed no shigella. None of the other employees admitted diarrhea, and there seemed to be no cases in the community of Union Grove and vicinity.

The kitchen arrangement is satisfactory, and generally sanitary. Water is from deep wells and has apparently been chlorinated since 1960. Milk is purchased commercially and is pasteurized. General cleanliness of the cottages is good; laundry is handled adequately. Flies, however, were numerous this year, despite frequent spraying. Means of isolation on the cottages varies from adequate in some rooms, with individual sinks; to less adequate in others, with the only washing facility being pans of liquid green soap.

Rectal Swab Culture Survey

During the period October 5 to 7, 1965, three rectal swab cultures were obtained from every patient in cottages 8 and 12, and at least one rectal swab culture from

all employees in these two cottages. Swabs were plated directly onto SS agar. After 24 hours incubation at 37°C, suspect colonies were picked to TSI slants, and after further incubation suspect organisms from the slants were tested against shigella antisera, with confirmatory biochemical tests being done when indicated. From a total of 337 individuals, there were only 8 positive cultures. None of these were from employees. One was a girl in cottage 12, excreting S. sonnei, and the other seven were all boys in cottage 8, excreting S. flexneri (the subgroups have not been determined as yet). Prevalence rates were 6.3 per cent (7 cases, 112 children) in cottage 8, and 1.1 per cent (one case, 88 people) in cottage 12. Only four of the eight children were symptomatic, and they had only mild diarrhea.

Antibiotic sensitivity tests (disc method) showed that the organisms were resistant to neomycin (5 mcg) but sensitive to chloromycetin (5 mcg).

Discussion

The pattern of shigellosis during recent months at the Southern Colony seemed to be one of rapid, person-to-person spread in certain cottages. There was a correlation of clinical cases with youth (age group 6-12 years) and to a lesser extent, with the severity of mental retardation. There were a considerable number of children in cottage 8 and 12 who had had shigellosis on several occasions through the years; this may have been due to reintroduction of the organism, or to re-excretion of the organism after a latent phase.

The current level of clinical shigellosis in the institution is low as is the prevalence rate of shigella carriers in cottages 8 and 12. It is hoped that active surveillance, plus rapid and effective isolation of children excreting shigella, will prevent future outbreaks.

V Reports From the States

Texas

Laboratory Associated Shigellosis. Reported by Major Dorothy G. Farrell, Bacteriologist, and Dr. George Lathrop, Epidemiologist, U.S.A.F. Epidemiological Laboratory, Lackland Air Force Base, Texas.

On June 27, 1965, Airman A, the shipping and receiving clerk for the Lackland Air Force Base laboratory, experienced the onset of watery diarrhea which continued through the night and was grossly bloody by the morning of June 28, when he was admitted to the hospital. Cultures taken at this laboratory on the 27th grew out Shigella flexneri type 2. The only shigella cultures recently shipped to the laboratory had been received from Columbus AFB, Mississippi on June 23, and they were also S. flexneri type 2. The nine tubes in which these cultures had been shipped were still available and S. flexneri type 2 was isolated from the outside of several of the tubes. All personnel who had contact with Airman A or with these cultures submitted stool specimens for culture, but no enteric pathogens were recovered.

Discussions with laboratory personnel at the Columbus AFB Hospital, from where the cultures were received, revealed the fact that the laboratory technician, Airman B, who worked on the original culture from patient D. M. at the hospital, had also acquired the infection. Airman A was treated with tetracycline and discharged from the hospital on July 3, 1965.

VI International

Summary of Shigella Isolations in Canada, 1964. Reported by J. Yurack, Ph.D., Officer-in-charge, Enteric Section, Laboratory of Hygiene, Ottawa, Ontario.

During 1964, 1112 recoveries of shigellae were made by the Laboratory of Hygiene in Ottawa. The table below depicts the relative importance of the various serotypes during the year.

Human Isolations of Shigella in Canada - 1964

Serotype	Number		Per cent	
S. dysenteriae group	11		1.0	
untypable		10		0.9
dysenteriae 2		1		0.1
S. flexneri group	571		51.4	
untypable		12		1.1
flexneri 1		9		0.8
flexneri 2		103		9.3
flexneri 3		146		13.1
flexneri 4		6		0.5
flexneri 6		247		22.2
variant X		29		2.6
variant Y		19		1.7
S. boydii group	43		3.9	
untypable		3		0.3
boydii 2		40		3.6
S. sonnei group	487		43.8	
sonnei		487		43.8
Total		1112		

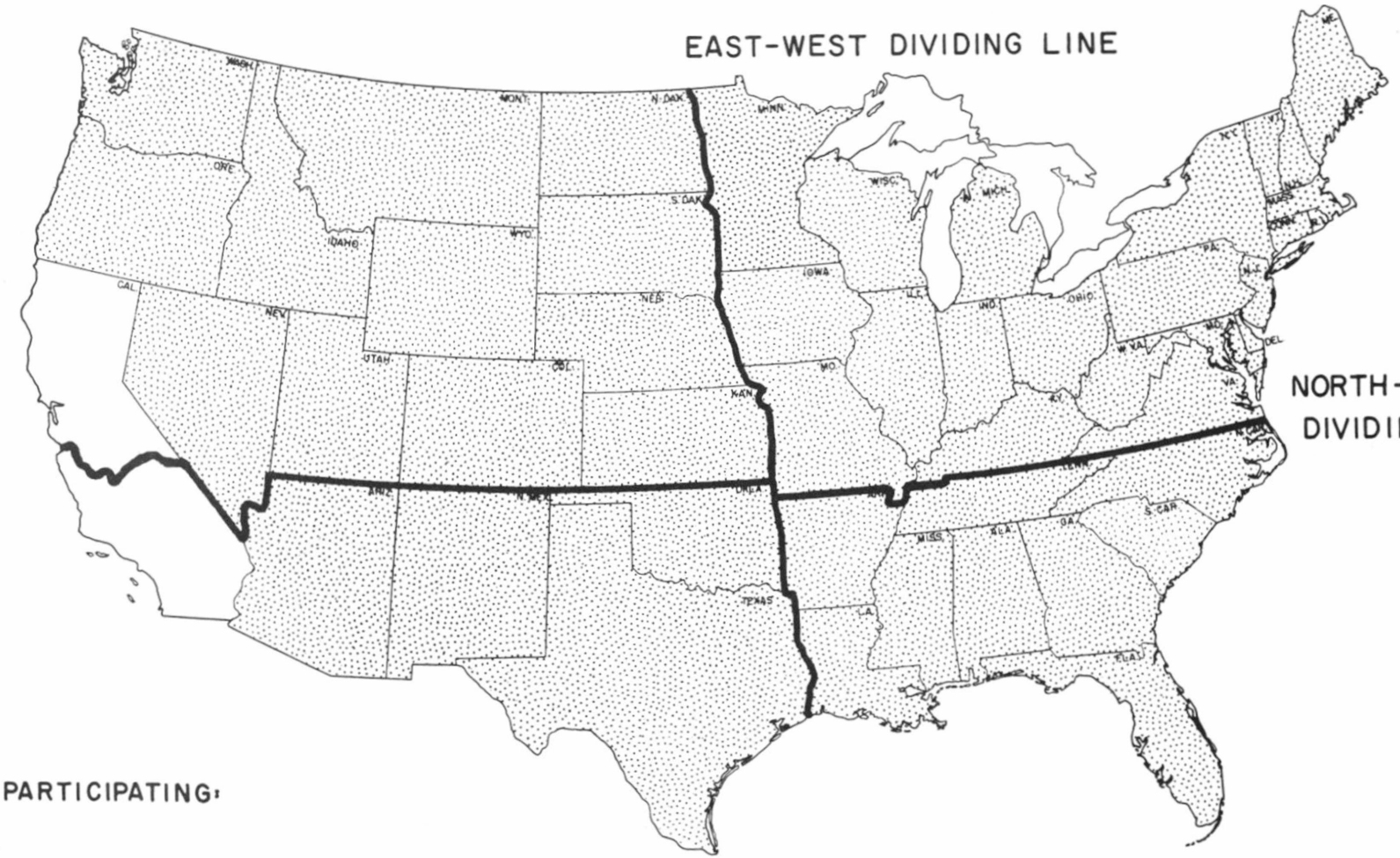
Shigella sonnei and S. flexneri 6 were responsible for institutional outbreaks in Ontario and Saskatchewan respectively which considerably altered the relative incidence of all types for 1964. During 1963, S. sonnei and S. flexneri 6 accounted for 28.3 per cent and 14.8 per cent respectively of all shigella isolations as compared to 43.8 per cent and 22.2 per cent in 1964.

The outbreak of S. flexneri 6 in Saskatchewan occurred in a provincial institution for the mentally retarded. It began in late 1963 and continued until September 1964. In November 1963, a small mentally retarded girl was admitted to the institution and routinely examined for the presence of enteric pathogens. Her first stool culture was negative and the child was admitted to the general ward. However, a second swab yielded S. flexneri 6. The child was asymptomatic. Within a few days a contact showed symptoms of mild gastroenteritis and was found positive for S. flexneri 6. In succeeding weeks the spread of dysentery (mostly mild cases) throughout the institution became extensive and difficult to control. At least 140 of the more than 160 isolations of S. flexneri 6 reported by Saskatchewan were from this outbreak and an additional 160 to 180 unconfirmed milder cases occurred. Although several staff members were found to be carriers of the same serotype and others were treated symptomatically by their private family physicians, the spread of the epidemic did not go beyond the institution.

More than 200 cases of shigellosis due to S. sonnei occurred in Ontario. The cases occurred over a 4 to 5 month period in a hospital for the care of mentally retarded children. A much smaller outbreak due to S. sonnei in a second and similar institution was also reported.

Figure 1

STATES CURRENTLY PARTICIPATING IN SHIGELLA SURVEILLANCE*



*OTHERS PARTICIPATING:

ALASKA
HAWAII
DISTRICT OF COLUMBIA
NEW YORK CITY
VIRGIN ISLANDS

TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
THIRD QUARTER, 1965

NORTHEAST

Serotype	Conn.	Del.	D.C.	Ill.	Ind.	Iowa	Ky.	Me.	Md.	Mass.	Mich.	Minn.	Mo.	N.H.	N.J.	N.Y. State	N.Y. City	Ohio	Pa.	R.I.	Vt.	Va.	W.Va.	Wisc.	North-east Total
A. S. dysenteriae																									
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
3573-50																									
3341-55																									
variant R																									
unspecified																	1								1
Total																	1								1
B. S. flexneri																									
1a				2											1										3
1b																									
1 unspecified											1		1												2
2a	1			43							17														61
2b																			1						1
2 unspecified				1					33		11							10							55
3a													1												1
3b																									
3c													1												1
3 unspecified				32					15		2		4					2	2						57
4a	1			6																					7
4b																									
4 unspecified											7	4	4						1						16
5																									
6				10					3		4	6	1			3									27
variant X																									
variant Y																									
variant R																									
unspecified			8		9	6	4			2			4			5	65					9		4	116
Total	2		8	94	9	6	4		51	2	42	10	16		1	8	65	12	4			9		4	347
C. S. boydii																									
1																									
2				1																					1
3																									
4																									
5																									
6																									
7																									
8													1												1
9																									
10																									
11																									
12																									
13																									
14																									
15																									
3615-53																									
2710-54																									
1621-54																									
2044-54																									
variant R																									
unspecified				1																					1
Total				2									1												3
D. S. sonnei	9	1	2	36	16	3	1	1	26		57	1	9	1	1	22	37	12	11	2		4		25	277
untypable																									
unknown			5								1						1							1	8
Total	11	1	15	132	25	9	5	1	77	2	100	11	26	1	2	30	104	24	15	2		13		30	636

NORTHWEST

Serotype	Colo.	Idaho	Kans.	Mont.	Nebr.	Nev.	N.D.	Ore.	S.D.	Utah	Wash.	Wyo.	North-west Total	North Total
A. S. dysenteriae														
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
3573-50														
3341-55														
variant R														
unspecified														1
Total														1
B. S. flexneri														
1a	2			31			3						36	39
1b	8							3					11	11
1 unspecified														2
2a	2		4	10			11	5					32	93
2b	4			4									8	9
2 unspecified										2	10		12	67
3a														1
3b														
3c														1
3 unspecified	6									1	1		8	65
4a	3		2										5	12
4b														
4 unspecified														16
5														
6	8										1		9	36
variant X														
variant Y														
variant R														
unspecified	1				3		1	2	5	5			17	133
Total	34		6	45	3		15	10	5	8	12		138	485
C. S. boydii														
1														
2						1							1	2
3														
4														
5														
6														
7														
8														1
9														
10														
11														
12	1												1	1
13														
14														
15														
3615-53														
2710-54														
1621-54														
2044-54														
variant R														
unspecified		2											2	3
Total	1	2				1							4	7
D. S. sonnei	46	7	14	17				35		3	42		164	441
untypable														
unknown								2					2	10
Total	81	9	20	62	3	1	15	47	5	11	54		308	944

SOUTHEAST

Serotype	Ala.	Ark.	Fla.	Ga.	La.	Miss.	N.C.	S.C.	Tenn.	South-east Total
A. S. dysenteriae										
1										
2			1							1
3										
4										
5										
6										
7										
8										
9										
10										
3573-50										
3341-55										
variant R										
unspecified							3			3
Total			1				3			4
B. S. flexneri										
1a					3					3
1b										
1 unspecified			3	11					4	18
2a		26			34					60
2b		1			9					10
2 unspecified		1	46	148					46	241
3a		10			11					21
3b					1					1
3c		1			3					4
3 unspecified			7	34					16	57
4a		10			6					16
4b										
4 unspecified		1	3	3					16	23
5										
6	3	4	3	12	4				4	30
variant X										
variant Y										
variant R										
unspecified	17					9	32			58
Total	20	54	62	208	71	9	32		86	542
C. S. boydii										
1										
2		1		1						2
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
3615-53										
2710-54										
1621-54										
2044-54										
variant R										
unspecified										
Total		1		1						2
D. S. sonnei	10	2	51	52	28	3	14		28	188
untypable										
unknown						2				2
Total	30	57	114	261	99	14	49		114	738

TABLE I (Continued)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
THIRD QUARTER, 1965

SOUTHWEST						OTHER						Previous Quarter		1964* CDC		1965 Cumulative		
Ariz.	N.M.	Okla.	Texas	South-west Total	South Total	Alaska	Hawaii	Virgin Islands	Other Total	Total	Percent of Total	Total	Percent of Total	Total	Percent of Total	Total	Percent of Total	Serotype
					1					1	0.04	3	0.2	6	0.9			A. S. dysenteriae 1
														6	0.9	7	0.1	2
																4	0.1	3
																		4
																		5
																		6
																		7
																		8
																		9
																		10
																		3573-50
																		3341-55
	1			1	4					5	0.2	2	0.1			11	0.2	variant R unspecified
	1			1	5					6	0.3	5	0.3	12	1.7	22	0.4	Total
					3	1			1	43	1.9	40	2.6	89	12.8	103	1.9	B. S. flexneri 1a
			4	4	4					15	0.7	28	1.8	14	2.0	50	0.9	1b
	3			3	21					23	1.0	20	1.3			70	1.3	1 unspecified
1		3	46	50	110		32		32	235	10.5	169	11.2	180	25.9	490	8.9	2a
1			7	8	18					27	1.2	34	2.2	71	10.2	102	1.8	2b
1	33			34	275					342	15.2	188	12.4	2	0.3	778	14.1	2 unspecified
			16	16	37	1			1	39	1.7	45	3.0	43	6.2	94	1.7	3a
			5	5	6					6	0.3	4	0.3	6	0.9	10	0.2	3b
					4	1			1	6	0.3	6	0.4	16	2.3	22	0.4	3c
4	66			70	127	2	25		27	219	9.7	110	7.3			468	8.5	3 unspecified
53		4	20	77	93	1	1		2	107	4.8	51	3.4	99	14.2	185	3.4	4a
												4	0.3	5	0.7	10	0.2	4b
2	28			30	53					69	3.1	39	2.6	2	0.3	172	3.1	4 unspecified
7	2			9	9					9	0.4	6	0.4	4	0.6	19	0.3	5
1	12		6	19	49	1			1	86	3.8	54	3.6	57	8.2	224	4.1	6
														5	0.7	15	0.3	variant X variant Y variant R
1	4	61		66	124	4			4	261	11.6	167	11.0	4	0.6	610	11.1	unspecified
71	148	68	104	391	933	11	58		69	1,487	65.7	965	63.7	597	85.8	3,422	62.0	Total
														2	0.3			C. S. boydii 1
			2	2	4					6	0.3	7	0.5	9	1.3	24	0.4	2
																		3
														1	0.1			4
																1	0.02	5
																		6
										1	0.04					1	0.02	7
																		8
																		9
										1	0.04					1	0.02	10
																		11
																		12
																		13
																		14
																		15
																		3615-53
																		2710-54
																		1621-54
	2	1		3	3					6	0.3	2	0.1	1	0.1	16	0.3	2044-54 variant R unspecified
	2	1	2	5	7					14	0.6	9	0.6	13	1.9	43	0.8	Total
3	20	15	38	76	264		23		23	728	32.4	516	34.1	74	10.6	1,966	35.6	D. S. sonnei
																1	0.02	untypable
		1		1	3					13	0.6	20	1.3			61	1.1	unknown
74	171	85	144	474	1,212	11	81		92	2,248		1,515		696		5,515		Total

*Shigella cultures examined by CDC Enteric Bacteriology Unit, 1964

TABLE II

CUMULATIVE SHIGELLA SEROTYPE FREQUENCIES
Based on all Isolations Reported From Fourth Quarter 1963 Through Third Quarter 1965

	Number Reported	*Calculated Number	*Calculated Per cent	Rank
A. S. dysenteriae				
1				
2	25	39	0.3	13
3	7	11	0.1	16
4				
5				
6	1	2	0.02	18
unspecified	19			
B. S. flexneri				
1a	139	342	2.8	7
1b	87	211	1.7	9
1 unspecified	226			
2a	849	3083	24.9	2
2b	189	679	5.5	6
2 unspecified	2039			
3a	155	1215	9.8	3
3b	13	97	0.8	10
3c	36	287	2.3	8
3 unspecified	1104			
4a	258	757	6.1	4
4b	22	65	0.5	12
4 unspecified	392			
5	32	39	0.3	13
6	602	736	6.0	5
variant y	17	21	0.2	15
unspecified	1372			
C. S. boydii				
1				
2	44	83	0.7	11
3				
4	3	6	0.05	17
5				
6	1	2	0.02	18
7				
8	1	2	0.02	18
9				
10				
11				
12	1	2	0.02	18
unspecified	45			
D. S. sonnei	4678	4678	37.9	1
Untypable	1			
Unknown	116			
Total	12,474	12,357		

* Calculated Number and Per cent are derived by applying the unspecified isolations in each group to that group in the same proportion as the known isolations of that group.

TABLE III

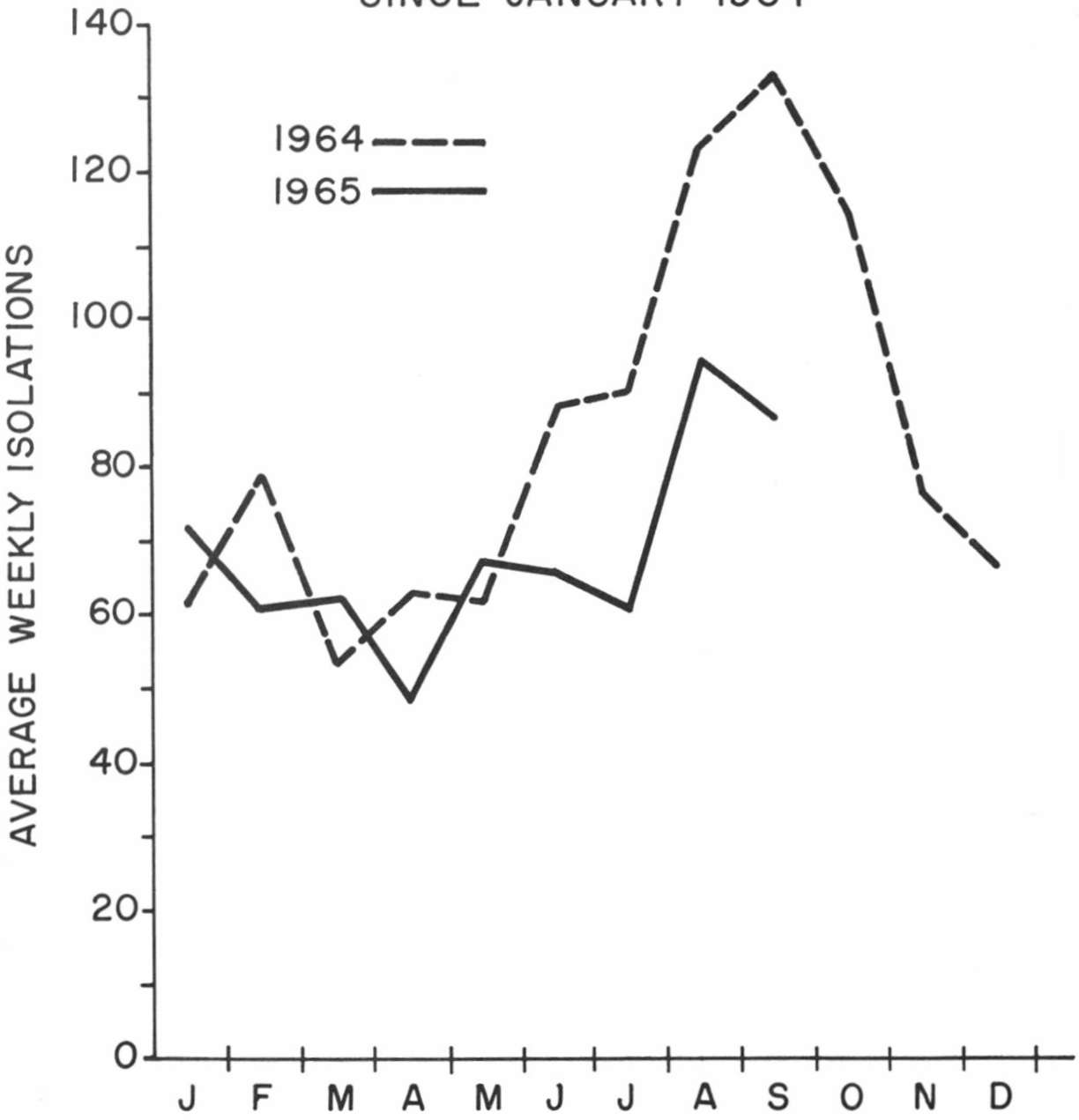
Age and Sex Distribution of 2190 Isolations of Shigella
Reported for Third Quarter 1965

Age (years)	Male	Female	Total	Per cent	Cumulative Per cent
Under 1	73	52	125	9.2	9.2
1-4	270	276	546	40.0	49.2
5-9	151	126	277	20.3	69.5
10-19	89	102	191	14.0	83.5
20-29	35	62	97	7.2	90.7
30-39	15	23	38	2.8	93.5
40-49	15	16	31	2.3	95.8
50-59	12	21	33	2.4	98.2
60-69	3	5	8	0.6	98.8
70-79	4	9	13	1.0	99.8
80+	3	1	4	0.2	100.0
Unknown	400	427	827		
Total	1070	1120	2190		
Per cent of Total	48.9	51.1			

Figure 2.

SEASONAL INCIDENCE OF REPORTED SHIGELLA ISOLATIONS

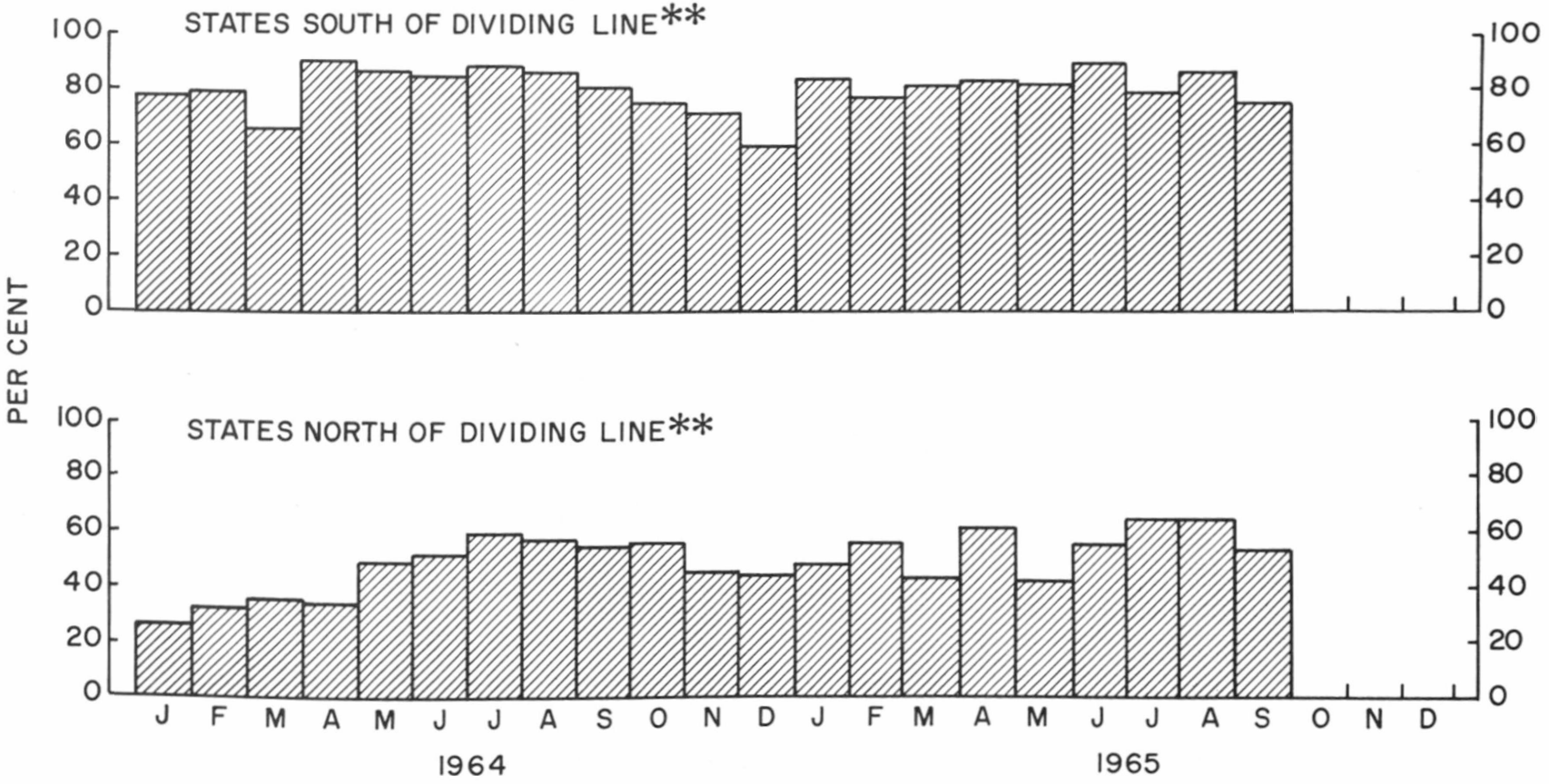
FOR 17 STATES* WHICH HAVE REPORTED SINCE JANUARY 1964



*ALASKA, ARIZONA, HAWAII, ILLINOIS, KANSAS, MARYLAND, NEW JERSEY, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OHIO, OKLAHOMA, OREGON, SOUTH DAKOTA, TENNESSEE, TEXAS, VERMONT.

Figure 3.

PER CENT *SHIGELLA FLEXNERI* ISOLATIONS OF TOTAL ISOLATIONS FROM 15 STATES* WHICH HAVE REPORTED SINCE JANUARY 1964



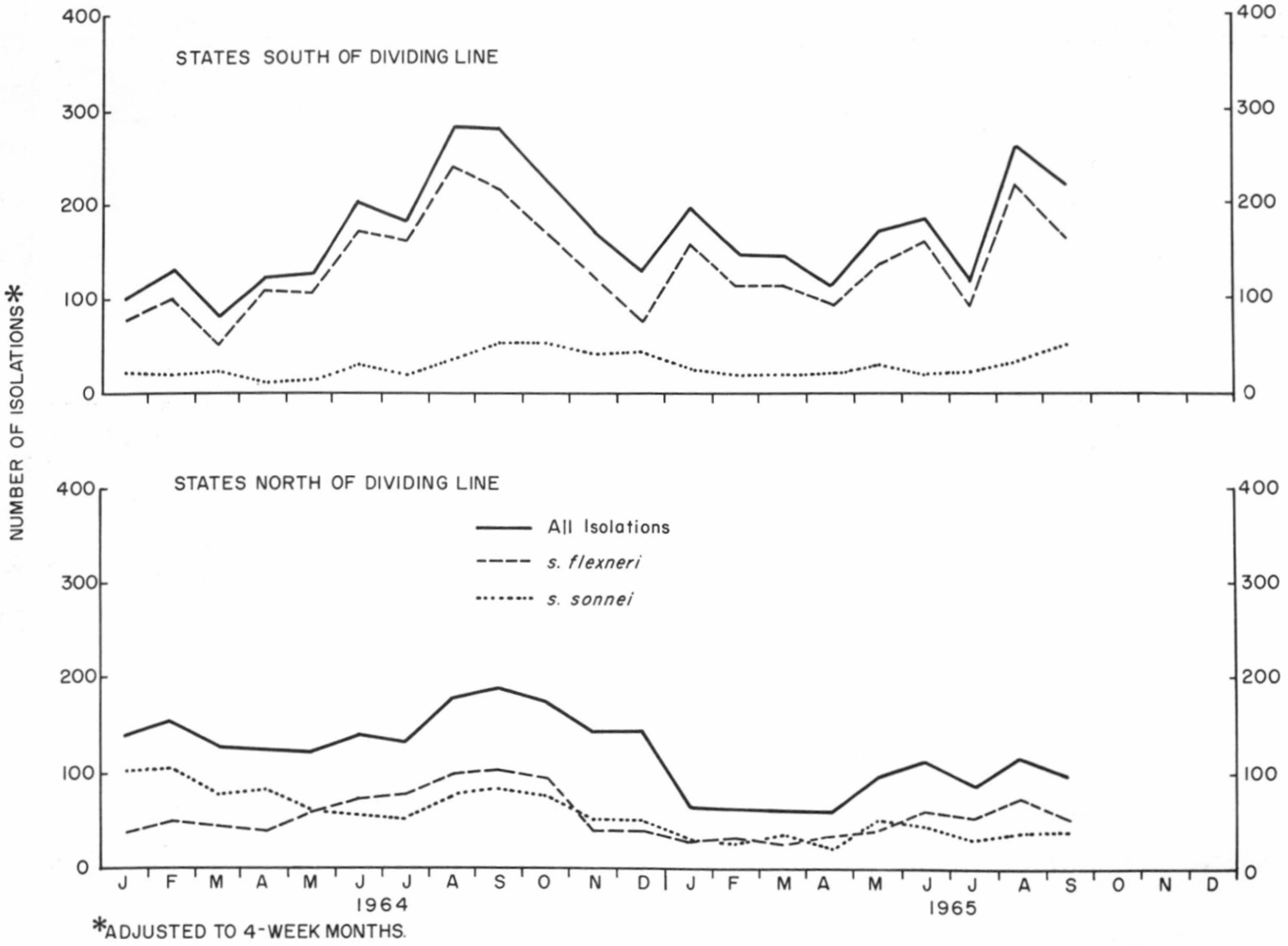
*ARIZONA, ILLINOIS, KANSAS, MARYLAND, NEW JERSEY, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OHIO, OKLAHOMA, OREGON, SOUTH DAKOTA, TENNESSEE, TEXAS, AND VERMONT.
ALASKA AND HAWAII ALSO REPORTED BUT ARE NOT INCLUDED ON GRAPH.

**SEE FIGURE 1.

Figure 4.

SEASONAL DISTRIBUTION OF SHIGELLA ISOLATIONS BY SEROTYPE AND REGION

15 STATES WHICH HAVE REPORTED SINCE JANUARY 1964



*ADJUSTED TO 4-WEEK MONTHS.

Figure 5.

CONFIRMED CASES OF SHIGELLOSIS AT THE SOUTHERN WISCONSIN COLONY AND TRAINING SCHOOL BY DATE OF ONSET

1965