

Salmonella Types Isolated in Georgia in 1941-1943, Including a New Type—*Salmonella georgia*

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AN increasing number of *Salmonella* strains is being isolated in the laboratories of the Georgia Department of Public Health. In the 3 year period, 1938-1940, our laboratories made only 47 isolations of *Salmonella* organisms from blood and stool cultures. During the succeeding 3 years, 1941-1943, 130 isolations were made. This increase is probably due to more efficient methods of isolation and identification rather than to an increase in incidence of the infections.

Bismuth sulfite agar and Bacto-SS

agar for plating, tetrathionate broth for enrichment, and Kligler's iron agar for colony differentiation, have proved a satisfactory combination of media for isolating the organisms. A fairly adequate assortment of group and specific antisera further facilitates identification. However, for the past 3 years most of our strains have been either identified or confirmed by the New York Salmonella Center, Beth Israel Hospital, New York, N. Y. During this time 20 different types have been encountered, including a new type.

TABLE 1
Salmonella Types Isolated in Georgia During 1941-1943

Group	Type	1941	1942	1943	Total No. Isolations	Total No. Individuals
A	<i>S. paratyphi A</i>	1	1	4	6	4
B	<i>S. paratyphi B</i>	5	8	20	33	22
	<i>S. typhimurium</i>	0	14	10	24	18
	<i>S. derby</i>	0	2	1	3	3
	<i>S. bredeney</i>	0	1	0	1	1
C	<i>S. choleraesuis</i>	2	6	5	13	13
	<i>S. oranienburg</i>	1	3	6	10	7
	<i>S. barclilly</i>	1	0	0	1	1
	<i>S. montevideo</i>	1	3	2	6	6
	<i>S. tennessee</i>	0	0	2	2	1
	<i>S. georgia</i>	0	0	1	1	1
	<i>S. newport</i>	1	1	0	2	2
	<i>S. muenchen</i>	0	0	3	3	1
	<i>S. litchfield</i>	0	1	0	1	1
	D	<i>S. sendai</i>	1	0	0	1
<i>S. panama</i>		1	0	9	10	3
E	<i>S. give</i>	0	1	0	1	1
	<i>S. anatum</i>	0	2	5	7	7
	<i>S. meleagridis</i>	0	1	1	2	2
Other	<i>S. poona</i>	0	0	3	3	2
Totals		14	44	72	130	97

Some types were isolated only once while others occurred more frequently. *Salmonella bredeney*, *S. bareilly*, *S. georgia*, *S. litchfield*, *S. sendai*, and *S. give* were each represented by a single isolation from only 1 patient. *S. tennessee* was isolated twice from 1 patient, and *S. muenchen* 3 times from another. *S. paratyphi B*, *S. typhimurium*, and *S. choleraesuis* accounted for 53.8 per cent of all isolations. A list of the types found in this state during 1941-1943 is presented in Table 1.

S. paratyphi B and *S. choleraesuis* were found in 59 per cent of the blood cultures. One strain of *S. choleraesuis* was isolated from pus from the knee. A combination of *S. typhi* and *S. montevideo* occurred in a 3 year old child. *S. typhi* was recovered from the first stool culture. From a second specimen received 5 days later, both *S. typhi* and *S. monevideo* were isolated. Table 2 shows the distribution of types in blood and stool cultures.

There have been very few instances in which relationship between the

cases could be established. One outbreak of food infection due to *S. typhimurium* occurred in an institution for boys. There were about 40 patients who had symptoms of fever, vomiting, and diarrhea. Unfortunately, the peak of the epidemic had passed before the laboratory was called upon for assistance. Stool specimens were received from only 6 patients and *S. typhimurium* was isolated from 4. Four *S. paratyphi B* infections occurred in the staff personnel of a small hospital. The first case, a nurse, was proved by a positive blood culture. About 2 months later 2 other nurses became ill with nausea, vomiting, diarrhea, and temperature elevation to 103° F. No blood or stool cultures were made at the time. Later, the chief physician was taken ill with about the same symptoms, and a blood culture was positive. Epidemiological investigation indicated that the only source of food common to the physician and nurses was milk and cream. A milker in the dairy that supplied milk to the hospital was found to

TABLE 2

Salmonella Types Isolated from Blood and Stool Cultures

Group	Type	Blood	Stool	Total No. Isolations	
A	<i>S. paratyphi A</i>	6	0	6	
B	<i>S. paratyphi B</i>	17	16	33	
	<i>S. typhimurium</i>	1	23	24	
	<i>S. derby</i>	0	3	3	
	<i>S. bredeney</i>	1	0	1	
	<i>S. choleraesuis</i>	9*	4	13	
C	<i>S. oranienburg</i>	5	5	10	
	<i>S. bareilly</i>	0	1	1	
	<i>S. montevideo</i>	1	5	6	
	<i>S. tennessee</i>	1	1	2	
	<i>S. georgia</i>	0	1	1	
	<i>S. newport</i>	0	2	2	
	<i>S. muenchen</i>	0	3	3	
	<i>S. litchfield</i>	0	1	1	
	D	<i>S. sendai</i>	1	0	1
		<i>S. panama</i>	2	8	10
	E	<i>S. give</i>	0	1	1
<i>S. anatum</i>		0	7	7	
<i>S. meleagridis</i>		0	2	2	
Other	<i>S. poona</i>	0	3	3	
Totals		44	86	130	

* One isolation was made from pus from knee.

be a carrier of *S. paratyphi B*. Two cases due to *S. panama* occurred simultaneously in adjoining homes. There were 2 cases due to *S. anatum* in 1 home, the mother and daughter being ill at the same time.

S. typhimurium, *S. derby*, *S. bareilly*, *S. oranienburg*, *S. litchfield*, *S. give* and *S. anatum* were isolated from feces in routine food handler examinations.

The new type, designated as *S. georgia*, was isolated from the feces culture of a 16 year old white boy during a routine examination of food handlers. The boy apparently was a healthy carrier. The organism was identified by the New York Salmonella Center and confirmed by Dr. P. R. Ed-

wards of the National Salmonella Center, Lexington, Ky. It has the antigenic formula VI, VII: b-e,n,z₁₅.

SUMMARY

During the 3 year period, 1941-1943, 20 types of *Salmonella* organisms were isolated from blood and stool specimens. Of 130 isolations, *S. paratyphi B*, *S. typhimurium*, and *S. choleraesuis* accounted for 53.8 per cent. *S. paratyphi B* and *S. choleraesuis* were found in 59 per cent of the 44 positive blood cultures.

A new type, isolated from the stool of a normal food handler, has the antigenic formula VI, VII: b-e,n,z₁₅, and has been designated as *S. georgia*.

Isolation of *Shigella paradysenteriae* Type P288 of Boyd from a Case of Acute Diarrhea

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DURING June, 1944, several cases of acute diarrhea occurred among trainees at a naval training school for WAVES located in Georgia. All patients had temperatures of 102-103° F., profuse watery stools, abdominal cramps and prostration. The duration of illness was 3 to 4 days. Fecal specimens from only 2 patients were submitted for culturing. From 1 of these was isolated an organism identified as *Shigella paradysenteriae* P288,* a type

described by Boyd^{1,2} as occurring in India. This isolation, to our knowledge, is the first to be reported in this country.

The incitants of bacillary dysentery comprise a group of Gram-negative bacilli having diverse characters and a study of both biochemical and serological properties is essential to their identification. Boyd¹⁻⁴ has made valuable contributions to the study of dysentery bacilli and has shown the Flexner group to be of complex antigenic structure. An analysis by Boyd² of the antigenic structure of 4,856 strains of

* Identification was confirmed by Dr. A. J. Weil, Lederle Laboratories, Inc., Pearl River, N. Y., and by Dr. K. M. Wheeler, Connecticut State Department of Health Laboratories, Hartford, Conn.