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COMMUNICABLE DISEASE CENTER

SALMONELLA

SURVEILLANCE

U. S. Department of Health, Education, and Welfare / Public Health Service

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.

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I. SUMMARY

During November, reports of 1,3 1 isolations of salmonella from human sources were reported to the Salmonella Surveillance Unit. These represent an average of 345 isolations per week (See Figure 1), and 57 different serotypes.

During the same period 326 nonhuman isolations were reported. These were comprised of 43 different serotypes.

Included in this issue are: (1) a follow-up report of a large outbreak of salmonellosis in Washington State, traced to contaminated meringue pies, (2) a description of a neighborhood outbreak of gastroenteritis in Oregon, and (3) a report of an outbreak of food poisoning in Alberta, Canada.

Also included is a status report on the outbreak of hospital-associated illness due to S. derby and the recommendations of the Institute of American Poultry Industries Research Council pertaining to salmonellosis.

II. REPORTS OF ISOLATIONS FROM THE STATES

A. Human

The total number of salmonella isolations reported from humans during November (1,381) represented a marked decrease from the October total of 2,462. Although November contained only four reporting weeks and October contained five, this decrease appears to be real since the average weekly total for November was 345 as opposed to 492 for the earlier month. The November figure represented the first departure from the upward trend which has been observed in 1963 since March (See Figure 1). It is believed that the prevalence of salmonella is a seasonal phenomenon which could, in part at least, explain the November drop. Another factor which could partially explain the decrease is the two holidays in November which could have altered the reporting mechanism slightly. It is believed that the former explanation is the more likely reason, but the seasonable prevalence of salmonella has not been proved and its possible influence on the reported incidence of salmonellosis in this country is purely speculative at this time.

The seven serotypes reported most frequently during November were:

No.	Serotype	Number	Per Cent	Standing Last Month
1	S. typhimurium	365	26.4	1
2	S. derby	127	9.2	2
3	S. heidelberg	105	7.6	3
4	S. enteritidis	85	6.2	4
5	S. infantis	84	6.1	5
6	S. newport	63	4.6	6
7	S. saint-paul	55	4.0	9
	Total	884	64.0	

Total salmonella isolated (Nov.) 1,381

The serotypes on the above list hold positions which would be expected based on past experience and account for 64 per cent of the 1,381 isolations reported during November. These seven types represented only 12.3 per cent of the 57 different types reported.

Of the 1,381 individuals reported as harboring salmonellae this month, 273 (19.8 per cent) had other members of their family also positive for salmonella. This family attack rate is consistent with those computed for the antecedent months.

Once again during November, 1-4 years was the modal age group for individuals reported with salmonella isolated. The sex distribution (Table IV) offers no reason to suspect that there is a sex predilection among individuals with salmonellosis.

Nonhuman

During November, 326 salmonella isolations were reported. Forty-three serotypes were identified with 7 reported as to group only. Salmonella salinatis appeared for the first time since surveillance began. This culture was isolated from a lizard in California.

The seven most commonly reported serotypes for November were:

	No.	Per Cent	Standing Last Month
1. S. typhimurium S. typhimurium var. copenhagen	82	25.2	1
2. S. infantis	27	8.3	5
3. S. saint paul	24	7.4	3
4. S. heidelberg	20	6.1	2
5. S. schwarzengrund	20	6.1	4
6. S. anatum	12	3.7	7
7. S. blockley	12	3.7	(Not listed)
Total	292		

These 7 types comprise 60.4 per cent of the total isolates reported. S. typhimurium and S. typhimurium var. copenhagen isolations remain remarkably constant in that each month approximately 25 per cent of the total reported nonhuman isolations are identified as these types.

Turkeys are again the single largest source of salmonella isolations with 119 (36.5 per cent); followed by chickens, 80 (24.5 per cent); cattle, 33 (10.1 per cent); and swine, 19 (5.8 per cent). The total isolated from these 4 sources represent 77.0 per cent of cultures reported from all nonhuman sources during the month.

CURRENT INVESTIGATIONS

A. Louisiana

Salmonellosis in Lafayette Parish, Louisiana. Dr. George Hauser, Director, Division of Laboratories; Dr. John Bruce, Chief, Section of Epidemiology; Dr. Charles Caraway, Assistant Chief, Section of Epidemiology, Louisiana State Department of Health; and Dr. Charles McCall, EIS Officer, Salmonella Surveillance Unit, Communicable Disease Center.

During the months of August, September and October 1963, Lafayette Parish accounted for between 15 and 20 per cent of the total human salmonella isolations reported to the Communicable Disease Center from the State of Louisiana; whereas, between January and July, Lafayette Parish represented only 4 to 10 per cent of the total reported human isolations. The following study was conducted between November 4 and 8, 1963. Information and data were derived from interviews with local physicians, health authorities, hospital personnel, and examination of laboratory records.

The State Regional Health Laboratory in Lafayette provided data comparing the number of salmonella isolations with the total number of stool cultures submitted to their laboratory between 1961 and 1963.

Year	No. of Salmonella Isolations	No. of Stool Cultures Submitted	Per Cent of Salmonella Isolates
1961	80	4,527	1.5
1962	140	8,552	4.0
1963	196	2,477	8.0

Assuming that most of the stool cultures were submitted because of diarrheal disease, these figures suggest that diarrhea due to salmonella infection has increased in Lafayette since 1961. It may be, however, that the increase is accounted for by improvements in laboratory technique, or increased culturing of contacts of symptomatic cases.

There are four bacteriological laboratories in Lafayette that handle all stool specimens cultured in Lafayette and adjacent parishes. By comparing the names of persons from whom salmonella was isolated and reported to the State Board of Health and to the Communicable Disease Center with those of the four laboratories in Lafayette, it was found that CDC receives 56 per cent of their reported isolations from the State Regional Health Laboratory; 30 per cent from the Lafayette Medical Laboratory, a commercial laboratory; 12 per cent from the Cherokee Hospital Laboratory; and 2 per cent from a small private clinic. When the total number of serotypes isolated per laboratory was compared with the number reported to the State and CDC, the data revealed that only 43 per cent of the isolations from Lafayette Medical Laboratory had been reported. The other laboratories reported between 95 and 100 per cent of their isolations.

The prevalence of salmonellosis was determined by combining the data from all four laboratories and listing each isolate by month of culture. These data were compared with the number of isolations reported from Lafayette Parish and appear below.

Prevalence of Salmonella Isolations in Lafayette Parish During 1963 Listed by Month of Culture and by Month of Reporting to the CDC

Month (1963)	All Isolations, Listed by Month of Culture Submission	Isolations Reported to CDC
January	16	5
February	15	2
March	21	3
April	29	5
May	20	5
June	30	7
July	18	1
August	36	11
September	24	26
October	28	23
	232	88

The differences between the reported list and the list containing all salmonella isolations are evident. Two important points stand out. First, the degree of under-reporting is impressive. Between January and November 1963, only 37 per cent of the total isolations were reported to the State. This varies from a low of 6 per cent in July to a high of 89 per cent in October. Secondly, a discrepancy between the date of culture and the date of reporting is suggested. In September more isolations were reported than actually occurred. To document this suggested delay, all individual isolates reported were reviewed, and it was found that delays between stool culture submission dates and serotype reporting dates varied between 1 and 7 weeks, as can be seen when corrections for reporting and date of culture submission were made.

Statistical analysis of the 1963 data revealed that only the month of August was significantly above the expected statistical variation (P less than .01). Twenty-six out of the 36 isolations for this month were serotyped, and 12 different serotypes were identified. Only three of these were isolated more than twice - Salmonella typhimurium (9), Salmonella newport (4), Salmonella java (4). These data indicate that one isolated serotype was not responsible for the increase noted for the month of August. The large number of serotypes recovered suggests that either a wide-spread increase in salmonellosis occurred during August, or that there was an augmented awareness of the problem, or both. That the latter was important is suggested in the fact that local physicians became more alert for salmonellosis. This was precipitated by concern over two small hospital acquired outbreaks in May and June 1963.

There were 16 different serotypes isolated from the Lafayette area between May and October 1963. The frequency of the five most common

serotypes isolated is listed below and is not different from that expected for this area.

S. typhimurium	37 per cent
S. newport	15 per cent
S. javiana	12 per cent
S. java	8 per cent
S. derby	5 per cent

The large number of different serotypes isolated and the position of their prevalence does not suggest that an uncommon serotype or a single serotype was accounting for most of the salmonellosis in the area. Salmonella typhimurium, as would be expected, heads the list. Approximately 40 per cent of the S. typhimurium isolations were accounted for by two small hospital outbreaks in May and June and an epidemic in October involving 22 persons. This last outbreak probably resulted from the ingestion of contaminated pork. In light of the problem of Salmonella derby as a hospital-acquired infection in the Northeast, none of the S. derby isolates from this area were hospital acquired. S. javiana, an uncommon organism based on national experience, is not rare in the southeastern United States and frequently is the third to fifth most common isolate reported from Louisiana.

Editor's Comment: This investigation reveals that delayed and incomplete reporting may lead to false impressions about the prevalence of salmonellosis and delayed recognition of an epidemic. The problem is universal and is one not easily obviated. Prompt reporting of suspected outbreaks by physicians and alertness of laboratory personnel who determine salmonella serotypes will help to reduce the delay in reporting. One of the greatest problems which confronts the epidemiologist interested in salmonellosis is arrival at the scene of an epidemic too late to adequately investigate the outbreak. "He who hesitates, loses."

REPORTS FROM STATES

A. Colorado

Two Family Outbreaks of Gastroenteritis Due to Salmonella chester. Dr. C. S. Mollohan, Chief, Epidemiology Section, and Dr. W. H. Foggs, EIS Officer, Colorado Department of Public Health.

Salmonella chester has been isolated on ten occasions in Colorado from 1957 through 1962. Nine isolations were reported from Denver County and one isolation (1960) was made in Pueblo County. Nationally this serotype accounts for approximately one per cent of salmonella isolations.

Two families were reported as having S. chester infections during the first week of November. The M. family lives in Littleton, Arapahoe County, and have resided in Colorado for the past four years. The only unusual history prior to illness consists of a two-week stay by their oldest child (three years of age) in Buffalo, New York, in

September, followed by a visit from grandparents who live in Buffalo.

On October 2, 1963, B.M., a two-year-old male was admitted to Children's Hospital with a complaint of frequent stools for six weeks. No disease was found and he was discharged on October 6, 1963. He was re-admitted to the hospital on October 16, 1963 with bloody diarrhea and stool cultures were positive for S. chester. On October 28, 1963, a six-month-old male sibling was admitted with diarrhea and was also found to harbor S. chester. The third and oldest sibling (age three) recently developed diarrhea and has had positive stool cultures for S. chester. Culture reports on December 4 indicate all three children and the mother (age 25) are positive for the organism. The father has remained well.

The P. family lives in Aurora, Arapahoe County. They moved from Tuscon, Arizona on September 1, 1963. After traveling through California and Nevada, they arrived in Denver on September 15, 1963. Both children have had positive cultures, the first a four-year-old female developed fever and vomiting in mid-October and her stool culture was positive for S. chester. A six-year-old male was then cultured and found positive for the same organism. On November 15, 1963 the mother (age 29) developed diarrhea, vomiting, fever, chills, muscle aches and stomach cramps. Her stool culture has also been positive. Again, the husband has been without symptoms.

No source of infection has been determined to date and no direct connection between families is evident. Both husbands work for the same company, in different divisions and separate building. They do not know each other, nor do they eat at the same facilities, etc.

Follow-up culturing is being carried out by the Tri-County Health Department, Aurora and Englewood offices.

Louisiana

Foodborne Gastrointestinal Illness of Unknown Etiology. Dr. T. N. Armistead, Director, DeSoto Parish Health Unit, Mansfield, Louisiana and Dr. Charles T. Caraway, Assistant Chief, Section of Epidemiology, Louisiana State Board of Health.

The second ward school in DeSoto parish is an elementary and high school. The food served at this school on Thursday, October 10, 1963, was suspected as the most likely cause of an apparent food-borne outbreak. Enrollment in this school is 987, of which 720 ate lunch on Thursday, October 10, 1963. Approximately 500 reported some ill effects. The symptoms for the most part were diarrhea and abdominal pain. Only three persons reported nausea or vomiting. The earliest onset of symptoms was reported at approximately 4:00 P.M. Thursday. Onset of symptoms continued to appear throughout Thursday night and all day Friday.

Foods served at the meal on Thursday were turkey, dressing, apricots, combination salad, salad dressing, homemade rolls and milk.

Investigation was begun at 3:00 P.M. October 11. According to the head cook, the turkeys were removed from the freezer on Tuesday afternoon and left in the sink to thaw overnight. They were cooked Wednesday morning. Some were cooked in cookers on top of the stove and some in a steam cooker. Cooking ceased at approximately 1:00 P.M. The turkeys were placed in a walk-in cooler at 3:00 P.M. Wednesday. Thursday morning the turkeys were cut up and recooked by baking in shallow pans.

The dressing was made Thursday morning using the broth obtained from the turkeys when they were baked in shallow pans. The dressing was then cooked in the oven. All serving was done from the shallow pans used in cooking.

No lesions were found on the hands of any of the kitchen personnel.

No water was available in the lunch room at the time of the investigation. The orifices from which the rinse water emerged on the dishwashing machine were occluded with rust.

Apparently the water from the well that supplies this school is not of the best quality from the standpoint of iron content and hardness. The well normally produces adequate water for the school needs. It seems that at the time of the investigation the flushing of commodes brought on by the epidemic of diarrhea overtaxed either the capacity of the well or its pump. At the time of the investigation, dishes were stacked awaiting the build-up of adequate pressure to carry on the dishwashing operation.

Laboratory reports from the central State laboratory stated that "no food poisoning organisms were isolated on any of the food samples." The report on the sample of turkey states, "79 enterococci per gram. No salmonella, shigella, staphylococci or clostridia isolated."

Enterococci are part of the normal intestinal flora of both man and animals. This organism may cause disease when introduced into tissues, blood stream, urinary tract or meninges. Enterococci would doubtfully have played a part in the causation of this epidemic of gastrointestinal disease.

No cause for this apparent food outbreak has been found. The number of people involved, however, points to some unknown common source.

"The practice of thawing turkeys or other fowl or meats in general by placing them in the sink overnight as was done in this case should be discouraged. When thawing is done in this way, the deeper portions of the meat may be still frozen while the more superficial portions have reached (and maintained for some time) a temperature suitable for the incubation of bacteria. Salmonella organisms are particularly prevalent in fowl. A greater length of time should be allowed for thawing, and the entire thawing process should be carried out while the meat is still refrigerated.

Meats after cooking should be refrigerated as soon as slight cooking has taken place."

North Carolina

A Family Outbreak of Salmonella newport Gastroenteritis. Dr. Jacob Koomen, Assistant State Health Director, North Carolina State Board of Health, and Dr. Ronald Levine, EIS Officer Assigned to North Carolina State Board of Health.

Eleven cases of gastroenteritis were reported from one family in North Carolina. The family lived in a rural area and the father was employed in a local dairy. The eldest child, age 15, was first to become ill when she developed cramps, fever, and diarrhea on November 7, 1963. She was hospitalized, and Salmonella newport was isolated from her stools. The other members of the family became ill approximately two days following the onset of the first case. All members of the family had similar symptoms - fever, lassitude, myalgia, diarrhea, and headache. All were treated with chloramphenicol and made a complete recovery.

Investigation revealed sanitary conditions at the home to be very poor. No privy was existent at the time of the outbreak. Surface contamination was heavy, including chicken, duck, and dog droppings. There was no water supply in the area, all water being hauled in milk cans from a great distance. The family admitted using unpasteurized buttermilk from a local resident.

Cultures taken from the water supply and from chicken droppings were all negative. Eight stool cultures were submitted from family members, three of which were positive for Salmonella newport. These cultures were taken after treatment with chloramphenicol. The source of the unpasteurized buttermilk is presently being investigated. It was suggested that all members of the family refrain from food handling until negative stool cultures had been obtained.

Oregon

Neighborhood Outbreak of Salmonella typhimurium Gastroenteritis of Unknown Source. Dr. Grant Skinner, Director, Epidemiology Section, Oregon State Board of Health.

During October 1963, thirteen cases of gastroenteritis due to Salmonella typhimurium occurred among four families residing in one block of a residential subdivision, Lane County, Oregon. One of the four families experienced only one case. Attack rates among children and adults in the area were equal. The family residences are modern homes, built approximately two years ago. All of the dwellings are supplied by municipal water, and all but one are linked to the city's sewage disposal system. The remaining one is equipped with a septic tank, which meets sanitary code requirements.

Preliminary investigation of this sharply defined outbreak has

failed to uncover a common meal or food item as a suspect source. No domestic animal or pet has shared contact with the families. The possible role of rodents (field mice and Norway rats) in the outbreak is being investigated, as these rodents have been a problem in the area recently, due to an abundance of unharvested nuts in the environs. Trapping and culture of these rodents is planned.

C. Washington

Follow-up of Report of Outbreak of Salmonellosis Occurring in a College in Washington. Dr. Ernest A. Ager, Chief, Division of Epidemiology, Washington State Department of Health; Dr. Roger Kennedy, EIS Officer assigned to Washington State Department of Health.

Preliminary reports on an outbreak of salmonellosis occurring in a college in Washington were presented in Salmonella Surveillance Reports No. 17 and No. 18. The following is a summary of the investigation on this outbreak conducted between September 16 and November 13, 1963:

Between September 12 and September 16, sixty-four students from a college in Washington reported to the college infirmary with symptoms of gastroenteritis. The clinical picture was an abrupt onset of illness characterized by diarrhea, high fever, chills, nausea, vomiting, and headache. The highest temperature recorded was 107.6 degrees F. Forty-two of these students were admitted to the college infirmary, and stool cultures were obtained from 16 of the patients, 12 of which were positive for S. heidelberg. The occurrence of these cases over a 4-day period with the majority of onsets of symptoms within a 48-hour period suggested a common-source outbreak. The students who were seen in the infirmary represented every dormitory, in numbers approximately proportional to the population of these dormitories. It was noteworthy that no faculty, married students, or students living off-campus presented to the infirmary. Food histories suggested that lemon meringue pie served in the cafeteria on September 11 was the likely vehicle of infection. This hypothesis was further tested by surveying two dormitories. These two dormitories were chosen because it was felt that they represented a good sample from each class of students. Forty-seven per cent of those responding to the questionnaire gave a history of a diarrheal illness. The epidemic curve of this group corresponded well with the curve drawn from the infirmary cases. Food histories again pointed to lemon meringue pie as the suspect vehicle of infection.

The lemon meringue pies were supplied to the college by one bakery. A visit to this bakery was made to obtain a distribution list of the pies made on the same day as those sold to the college. The critical evidence necessary to establish that the pies were the source of the outbreak was to find other cases of S. heidelberg infection unrelated to the college except by consumption of pies baked at the same bakery. Several buyers on this distribution list seem likely to have served the pies to a definable group of persons,

and to have records of the persons to whom they were offered. Five such groups were interviewed and one case of S. heidelberg gastroenteritis was uncovered.

On September 23, 1963, the Division of Epidemiology received a report of six hospitalized cases of gastroenteritis, all of whom had isolations of S. heidelberg from stool cultures. This report was investigated, and on completion, a total of ten cases of S. heidelberg infection following the consumption of lemon meringue pies baked at the same bakery which supplied the pies to the college were discovered. Local health departments, medical societies, practicing physicians, and bacteriological laboratories likely to become involved, were alerted to the problem. Reports were then received from a number of patients with similar illnesses, and on investigation an additional twelve cases from four counties in eastern Washington were linked to the same lemon meringue pies.

The bakery was visited and cultures were obtained from equipment surfaces, ingredients present, and employees, all of which were negative. The only ingredients used in the pies cultured that were not from the same batch as that used to make the pies distributed to the college were fresh lemons and egg whites. The egg whites, which were processed and supplied in the frozen state by a commercial creamery company, were purchased daily in 30-lb. cans by the bakery, and were allowed to thaw for two days at room temperature before use. One 30-lb. can of these egg whites makes topping for 284 pies. Since the bakery made 334 pies on September 11, more than one can of egg whites would have been used.

The next step in the investigation was to visit the creamery to locate other cans of potentially-contaminated egg whites, and to determine if the presumed contamination of the eggs could be traced back further. The suppliers of the eggs to the creamery were both numerous and widely scattered geographically. For this reason it was deemed impossible to trace the suspected source of infection back farther than the creamery. The eggs used in breaking were in general those that could not be sold as shell eggs at a profit, in other words, Grade "C" eggs, and an unknown quantity of cracked, checked, and dirty eggs. The procedures followed in processing egg whites are as follows: The eggs are sorted into those obviously unsuitable for consumption and those fit for breaking. They are then sent in buckets to the breaking room where they are broken, and whites and yolks are separated. The whites are then poured into a 900-lb. holding vat which has a propeller-type mixer that mixes the egg whites to prevent them from solidifying. When this vat is filled, triethyl citrate is added as a preservative and the cans are filled with 30 lbs. of this material. These are then stored in deep-freeze for variable periods of time prior to sale (usually 1-3 months).

Representatives of the Washington State Department of Agriculture and the federal Food and Drug Administration inspected the commercial creamery and obtained cultures of salmonellae from equipment surfaces exposed to raw-egg products. Cultures positive for salmonella were obtained from around loose solder and on the

inside surface of a 900-lb. filling vat, on inside surfaces of the egg and cheese dryer, and along the feed line to dryer equipment. Three different serotypes were isolated, none of which were S. heidelberg. Stool cultures from the creamery employees were all negative for salmonella.

The Washington State Department of Agriculture seized the creamery records and it thus became possible to sample eggs in storage for salmonellae. An estimated 15,000 cans of frozen egg whites were found in storage. It was decided to take a ten per cent sample of these cans. Thus, 1500 thirty-pound cans of frozen egg whites are presently in the process of being cultured. The results thus far appear below:

Frequency of 18 Salmonella Serotypes Isolated from 588 Samples (54 Lots) of Frozen Egg

Serotype	No. Times Isolated
S. infantis	57
S. schwarzengrund	28
S. kentucky	25
S. typhimurium	18
S. montevideo	15
S. heidelberg	11
S. thompson	9
S. cerro	7
S. saint paul	6
S. alachua	6
S. worthington	6
S. muenchen	5
S. tennessee	2
S. bredeney	2
S. oranienburg	1
S. kaapstad	1
S. lexington	1
S. california	1
Total	201 (34 per cent of total samples)

SPECIAL REPORT

A. Current Status of the Outbreak of Hospital Associated Infections Due to Salmonella derby.

Previous reports (SSR 13, 14, 15, 16) have described the epidemiological characteristics of an outbreak of hospital associated infections due to Salmonella derby. To review briefly, the outbreak began in March 1963 in at least six hospitals in three states in the Northeastern United States and rapidly spread to involve 38 hospital in 10 states by July 1, 1963. Investigation of 200 initial cases established that the S. derby infections were hospital-acquired in most instances. Individual cases appeared sporadically, and multiple cases appeared in widely separated areas of the hospital

without obvious common features. The vehicle of infection was clearly an item in interstate commerce.

Extensive studies implicated a food source common to the "initial" cases. This source was identified as raw or undercooked eggs, served usually as dietary supplements to patients on highly restricted diets. As a result of these studies, the Surgeon General of the U. S. Public Health Service recommended that the use of raw or undercooked eggs be discontinued in hospitals. All involved hospitals complied.

Secondary Spread of Infections: During the latter weeks of June, it became apparent that a second wave of new infections was occurring in several hospitals. The epidemiological features of this wave suggested person-to-person spread of infection. One Philadelphia hospital experienced over 300 such secondary infections. Studies in the hospitals uncovered a number of geographic clusters of cases where personal contact appeared to be the mode of spread of infection. The ability of the organism to persist in the environment was demonstrated and environmental reservoirs such as mattresses, bedding, and even air were uncovered. Employees of these hospitals were frequently infected secondarily. Infection rates among hospital employees showed a striking positive correlation with frequency and intimacy of patient contact.

Attempts to control secondary spread of infection involved rigid enforcement of both isolation techniques and personal hygienic procedures. These measures appeared not to have altered the rate of appearance of secondary salmonella infections; however, there was a precipitous decline in the incidence of hospital-acquired staphylococcal infections during this period, in at least two hospitals.

During August the reported incidence of S. derby infections declined; the first month of decline since the outbreak was discovered. In September, hospital-associated infections were reported almost exclusively from those hospitals that previously had experienced a large number of cases.

Since September, S. derby has accounted for approximately 9.0 per cent of total salmonella isolations reported to the Communicable Disease Center Salmonella Surveillance Unit. The normal incidence of S. derby isolations in a non-epidemic period is 2.0 per cent of total salmonella isolations.

As in September, recently reported isolations continue to represent either "community-acquired" infections or infections in hospitals that have previously experienced a problem with the S. derby organism. At least four hospitals are known to have a continuing salmonella problem, each experiencing approximately 3-4 new S. derby infections per week. Efforts at detection of the source of these recent secondary infections have been difficult and frequently unrewarding. On occasion, however, it has been possible to identify "carrier" contacts, only after culturing a large number of patients and employees.

The total S. derby isolations, March 1 to December 13, 1963, are presented in Figure 2. Of 1,813 isolations from humans, 840 have been

identified as hospital-associated. (Investigation of each individual S. derby isolation was terminated September 27, 1963) To date 59 hospitals in 16 states have experienced this problem.

Bacteriology: A full report of bacteriological examinations pertaining to sources of S. derby infections in the current outbreak will be included in the January Salmonella Surveillance Report.

3. Recommendations for Future Research Pertaining to Salmonellosis. Harold M. Williams, President, The Institute of American Poultry Industries Research Council.

The Institute of American Poultry Industries Research Council met in Chicago, Illinois on October 22-23, 1963. The Research Council's duties are to recommend and support research in a variety of areas vital to the poultry industry. One of the topics of discussion on the agenda for the October meeting was salmonellosis. A representative of the Communicable Disease Center presented data concerning the recent Salmonella derby epidemic and participated in a portion of the council's discussions.

As a culmination of the Research Countil's discussion, specific recommendations pertaining to salmonellosis were made in three of the four major poultry and egg research divisions; the Egg, Farm Production, and Microbiology Divisions. Salmonellosis was given top priority in the Egg and Microbiology areas, and third priority in the Farm Production area (behind arian leucosis and "nutrition and disease").

The specific recommendations in each of the divisions follows:

Egg Division: "Research should be expanded to progressively reduce and ultimately eliminate salmonella as a problem in shell eggs and egg products. To this end the mode of entry of the organisms into eggs and egg products at all points from production through distribution must be determined and investigations of all possible means, physical or chemical, for their control and elimination be intensively studied.

Farm Production Division: "Much concern has been expressed about recent outbreaks of salmonella infections in man and animals. It is recommended that research on this subject be continued and expanded. Special efforts should be made to identify the sources of contamination, and means to eliminate these sources of contamination. Observations that pelleted feeds rarely if ever contain salmonella organisms suggest that practical methods could be developed to eliminate salmonella organisms from all feeds. Studies should be made to determine which salmonella species cause systemic infection in poultry and farm animals.

Microbiology Division: "Expand studies on salmonella and other bacteria in egg and poultry products. The relative importance of portals of entry, modes of transmission, and methods of handling should be established. Specifically, investigation should be made of the conditions under which salmonella will proliferate in feedstuffs, poultry, eggs, and in poultry and egg products."

Editor's Comment:

A recommendation is due the Institute's Research Council for establishing salmonellosis as a top priority subject of its research program. Such impetus to research from industry is vital to any program aimed at eventual control of a foodborne disease, such as salmonellosis.

INTERNATIONAL

Canada

Salmonella Food Poisoning Outbreak in Alberta, abstracted from the Epidemiological Bulletin, Vol. 7, No. 10, October 1963, and from reports of Dr. S. P. C. Casey, Medical Officer of Health, Wetoka Health Unit and Dr. E. W. R. Best, Chief, Epidemiology Division, Canadian Department National Health and Welfare.

Ten cases of "food poisoning" were reported to the Wetoka, Alberta Health Unit on September 3, 1963. The initial report noted that all patients were residents of a town of 1500 inhabitants, 90 miles southwest of Edmonton. Four patients had been hospitalized.

Investigation revealed that each of the ten patients was employed at an oil refinery site, working the evening "shift". All developed "pyrexia, diarrhea, and cramps" during the late afternoon and evening of September 1. On the previous evening, each had consumed portions of meringue pie which was left over from the factory's noon meal of August 31. The pie had not been refrigerated. No illness was noted among plant employees who had consumed the fresh pies. Salmonella typhimurium was isolated from the stools of the only patient from whom a specimen was obtained.

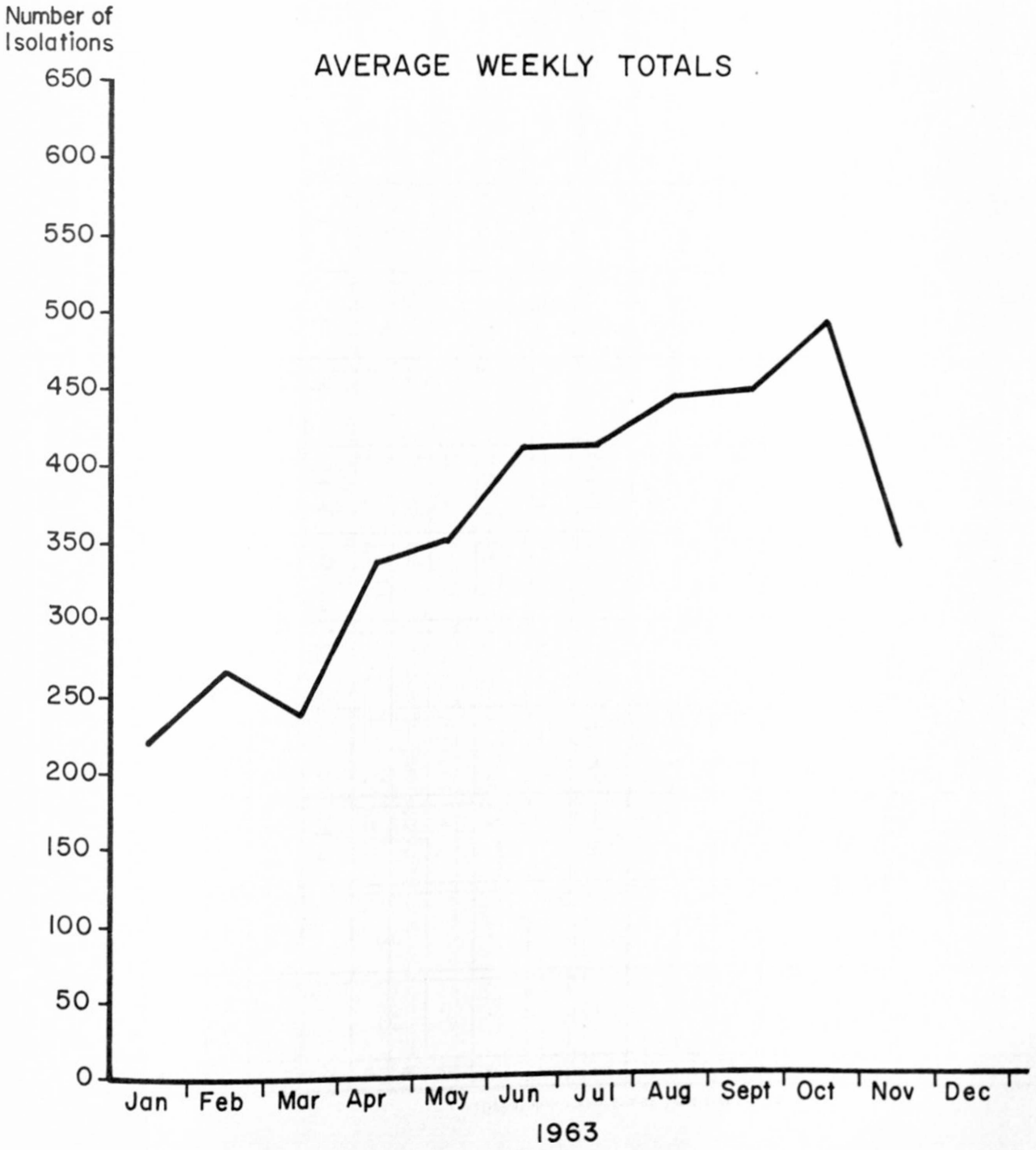
Epidemiological evidence clearly implicated the meringue pies as the source of the outbreak. A sample of meringue powder used in preparing the pies was found to contain S. typhimurium and S. thompson. The remaining meringue powder was thus seized and withdrawn from the market.

Editor's Comment:

This report lends support to previous studies that warned of the dangers inherent in salmonella contamination of meringue ingredients. Under normal baking conditions meringue pie-toppings may escape temperatures of sufficient intensity or duration to destroy viable salmonellae. Once having survived baking the organisms may readily multiply in the finished pie if it is allowed to stand unrefrigerated.

Figure I.

REPORTED HUMAN ISOLATIONS OF SALMONELLAE in the United States



Note: Average weekly totals rather than monthly totals are presented because some months have 5 instead of 4 weeks.

TABLE I
SALMONELLA SEROTYPES ISOLATED FROM HUMANS DURING NOVEMBER, 1963

REGION AND REPORTING CENTER

SEROTYPE	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
alachua																			
albany																			
amager																			
anatum				2			2								1				1
bareilly																	3		3
berta												1	1						
blockley				2		1	3	2	1	1			4	1		3	1		5
bonariensis												1	1						
braenderup									1		1	1	3	2					2
bredeney																			
california																			
chester																			
cholerae-suis														1					1
cholerae-suis var. kunzendorf															1				1
cubana											1		1				1		1
derby				6		2	8	18	17	4	9	32	80	5		20	2		27
enteritidis				25			25	2	3	3	6	2	16	4		7	1	14	26
give																1			1
heidelberg	3			7	1	1	12	1	7	4	2	4	18	4		6	1	2	13
horsham																			
infantis				5		5	10	6	5	1		8	20	3	4	10	1	3	21
irumu																			
javiana																1			1
johannesburg																			
kentucky																			
lexington																1			1
litchfield			1	3			4		2				2				1		1
livingstone														1					1
madelia																			
manhattan									1		1		2			1	1		2
maricopa																1			1
miami														1					1
minnesota																		1	1
mississippi																			
montevideo				4		1	5	1	2	2			5			3	1	1	5
muenchen				1			1		2				2			1	1		2
newington						1	1												
newport				1		1	2			1		2	3		1	2	2	1	6
norwich																			
oranienburg				3	2	1	6	1	1			2	4	2		1	1		4
panama									1			1	2					1	1
paratyphi B var. java								3								5		1	6
paratyphi B									1			1	2	2			2		4
poona									1				1						
reading								1					1						
rubislaw																			
saint-paul				7			7	5	3	2		8	18	4		3			7
san-diego									3				3				3		3
schwarzengrund				1			1			1			1				1		1
senftenberg																			
sundsvall																1			1
tennessee				5		1	6												
thompson				1			1		3	1		1	5	1		2	1	4	8
typhi						1	1												
typhimurium	2		8	19	2	3	34	14	1	6	1	2	4	8			1		9
typhimurium var. copenhagen				3			3		12		4	22	58	7	5	16	16	13	57
urbana											5		5				2		2
																		1	1
weltevreden																			
worthington																			
Untypable Group B																			
Untypable Group C-1		1																	
Untypable Group C-2							1												
Untypable Group D																			
Untypable Group O		2					2		1				1						
Unknown																			
Untypable																1		1	2
TOTAL	5	3	9	95	5	18	135	54	68	26	30	88	266	46	12	86	43	43	230

New York (A-Albany, BI-Beth Israel Hosp.,C-City)

TABLE I
BY SEROTYPE AND REPORTING CENTER

REGION AND REPORTING CENTER																		
WEST NORTH CENTRAL								SOUTH ATLANTIC										
MINN	IOWA	MO	ND	SD	NEBR	KAN	TOTAL	DEL	MD	DC	VA	WV	NC	SC	GA	FLA	TOTAL	SEROTYPE
						1	1									1	1	alachua albany amager anatum bareilly
									3				1		1	7	11	berta blockley
						1	1									1	1	bonariensis
																1	1	braenderup
															1	1	2	bredeney
															2		2	california chester cholerae-suis cholerae-suis var. kunzendorf
															1		1	cubana
									1						1		2	derby
1							1	2	3		2		1		1	4	13	enteritidis
																1	1	give
3		1					4		6	1	2		3		2	1	15	heidelberg
		1				2	3	1			1		1			4	6	horsham infantis
																	1	irumu
															1	1	2	javiana johannesburg
																2	2	kentucky lexington
																1	1	litchfield livingstone madelia
											4					3	7	manhattan maricopa
															1	3	4	miami minnesota mississippi
										1	2		3		1	2	9	montevideo
																1	1	muenchen newington
						1	1						2		3	7	12	newport norwich
						2	2		1						3	13	17	oranienburg
1							1		3								3	panama
1							1								1	1	2	paratyphi B var. java
1							1		4								4	paratyphi B
																1	1	poona
																1	1	reading rubislaw
1		1					2		1		3					8	12	saint-paul san-diego
																		schwarzengrund senftenberg sundsvall
2						3	2 3	1	1		1					4	5 2	tennessee thompson
		3					3				1		5			2	8	typhi
11		5	2	3		9	30		6	10	3		5		7	23	54	typhimurium
																1	1	typhimurium var. copenhagen
																		urbana weltevreden worthington
				2			2			4							4	Untypable Group B
										2							2	Untypable Group C-1 Untypable Group C-2
										3							3	Untypable Group D
	1					1	1 1			2						1	3	Untypable Group O Unknown Untypable
21	1	11	2	5	0	20	60	4	29	23	19	0	21	0	26	96	218	TOTAL

TABLE I

SEROTYPE	EAST SOUTH CENTRAL					WEST SOUTH CENTRAL					MOUNTAIN								
	KY	TENN	ALA	MISS	TOTAL	ARK	LA	OKLA	TEX	TOTAL	MONT	IDA	WYO	COLO	NM	ARI	UTAH	NEV	TOTAL
alachua																			
albany							1			1									
amager							5			5									
anatum			1		1				1	1	1			1					2
bareilly																			
berta							1			1									
blockley							2		2	4									
bonariensis																			
braenderup																			
bredeney									2	2									
california									2	2									
chester							1		1	2				4					4
cholerae-suis																			
cholerae-suis var. kunzendorf																			
cubana																			
derby							2			2				1					1
enteritidis	1				1														
give																			
heidelberg	1	1			2		1		1	2	1	1		1		2	1		6
horsham																			
infantis		1			1		2		2	4				1		1	1		3
irumu														1					1
javiana						1	4		4	9									
johannesburg																			
kentucky																			
lexington																			
litchfield							6			6									
livingstone																			
madelia																			
manhattan							1			1									
maricopa																			
miami																			
minnesota																			
mississippi							1			1									
montevideo							1		2	3				1					1
muenchen									1	1						2			2
newington							1			1									
newport						1	5		10	16						7			7
norwich																			
oranienburg						2	2	1	6	11				1		2			3
panama									1	1									
paratyphi B var. java							36			36									
paratyphi B									1	1				1					1
poona																			
reading																			
rubislaw							2			2									
saint-paul																			
san-diego																			
schwarzengrund																			
senftenberg																			
sundsvall																			
tennessee																			
thompson							1			1									
							4			4									
typhi	1	2			3	3		1		4					4				4
typhimurium	1	4			5		12	5	10	27				14		2	3		19
typhimurium var. copenhagen																			
urbana																2	1		2
																			1
weltevreden																			
worthington																			
Untypable Group B															10				10
Untypable Group C-1															4				4
Untypable Group C-2															4				4
Untypable Group D																			
Untypable Group O								1		1					2				2
Unknown																			
Untypable																	1		1
TOTAL	4	8	1	0	13	7	91	8	46	152	2	1	0	26	24	18	7	0	78

TABLE I

REGION AND REPORTING CENTER													
PACIFIC						OTHER	TOTAL	PERCENT OF TOTAL	11 MONTH TOTAL	% 11 MONTH TOTAL	CDC TOTAL	PERCENT OF TOTAL	S E R O
WASH	ORE	CAL	ALASKA	HAWAII	TOTAL	VI							
		1			1		1		9				alachua
							1		3		1		albany
							5		7				amager
		3		3	6		14	1.0	201	1.2	1	0.9	anatum
													anatum
							4		54		1		anatum
		2			2		5		62				braenderu
		4			4		31	2.2	331	1.9			braenderu
							1		1		1		braenderu
							3		51		1		braenderu
		2		1	3		12	135			1		bredeney
							2	10					bredeney
		1			1		7	185					bredeney
							3	19					bredeney
							1	53					[illegible]
							3	35					cubana
		6		1	7		127	9.2	1,445	8.4	2	1.8	derby
		3			3		85	6.2	743	4.3	4	3.6	enteritid
		1		1	2		4		58		2		give
13		15		5	33		105	7.6	1,430	8.3	5	4.5	heidelbe
											2		horsham
3	1	10		2	16		84	6.1	882	5.1	4	3.6	infantis
							2		78				irumu
							12		155		2		javiana
		1			1		1		2				johannesl
		1		1	2		4		55				kentucky
							1		2		1		lexingto
		2			2		16		64				litchfie
							1		15		1		livingst
											1		madelia
		1		1	2		14		164				manhatta
							1		1		1		maricopa
1					1		6		63		1		miami
							1		13		1		minnesot
							1		26				mississi
	1	4		1	6		34	2.5	448	2.6			montevid
		1			1		10		247		1		muenchen
		1			1		3		43				newingto
2		14			16		63	4.6	991	5.7	7	6.4	newport
		1			1		1		11				norwich
		1			1		48	3.5	503	3.9	4	3.6	oranienb
		2		4	6		14		132		2		[illegible]
							48		164		1		[illegible]
				1	1		14		148				poona
							2		47		1		poona
							2		45				reading
							2		13		1		rubislaw
1	1	5		2	9		55	4.0	547	3.2	1	0.9	saint-pa
	1	3			4		10		109				san-dieg
		4		1	5		8		137				schwarze
1					1		1		31				senftenb
											1		sundsval
							15		135		2		tennesse
		1			1		24	1.7	300	1.7	4	3.6	thompson
		3			3		39	2.8	683	4.0	19	17.3	typhi
8	16	51		6	81		365	26.4	5,051	29.3	24	21.8	typhimur
							13		156		3		typhimur var. c
				1	1		3		28		1		urbana
				1	1		1		43				weltevre
				1	1		1		26		1		weltevre
	1				1		17		276				weltevre
		1			1		8		64				weltevre
	1				1		5		46				[illegible]
							9		72				Untypabl
							1		2				Untypabl
							7		70				Unknown
											4		Untypabl
29	22	145	0	33	229	0	1,381		17,262		110		TOTAL

VI (Virgin Islands)

TABLE II

Number of Salmonella Isolates From Two or More Members of the Same Family - November, 1963

Reporting Center	Total Number of Isolates Reported	Number of Isolates from Family Outbreaks	Per Cent of Total
Alabama	1	0	0.0
Arizona	18	1	5.6
Arkansas	7	2	28.6
California	148	14	9.5
Colorado	26	11	42.3
Connecticut	18	3	16.7
Delaware	4	0	0.0
District of Columbia	23	8	34.8
Florida	96	23	24.0
Georgia	26	6	23.1
Hawaii	33	2	6.1
Idaho	1	0	0.0
Illinois	86	9	10.5
Indiana	12	3	25.0
Iowa	1	0	0.0
Kansas	20	9	45.0
Kentucky	4	0	0.0
Louisiana	91	48	52.7
Maine	5	1	20.0
Maryland	29	6	20.7
Massachusetts	95	24	25.3
Michigan	43	3	7.0
Minnesota	21	4	19.0
Missouri	11	0	0.0
Montana	2	0	0.0
New Hampshire	3	0	0.0
New Jersey	30	7	23.3
New Mexico	24	11	45.8
New York-Albany	54	3	5.6
New York-Beth Israel	68	4	5.9
New York City	26	2	7.7
North Carolina	21	2	9.5
North Dekota	2	0	0.0
Ohio	46	9	19.6
Oklahoma	8	0	0.0
Oregon	22	9	40.9
Pennsylvania	88	14	15.9
Rhode Island	5	1	20.0
South Dakota	5	0	0.0
Tennessee	8	0	0.0
Texas	46	0	0.0
Utah	7	0	0.0
Vermont	9	2	22.2
Virginia	19	4	21.1
Washington	29	9	31.0
Wisconsin	43	19	44.2
Total	1381	273	19.8

TABLE III
Infrequent Serotypes

Serotype	Center	November	11 Month Total*	CDC**	Comment
S. alachua	CAL	1	9	14	Rare cause of human illness. First isolated from soil in a swine holding pen, Alachua County, Fla., 1952.
S. albany	LA	1	3	6	Four of 6 CDC isolations from humans in Washington, D.C.
S. amager	LA	1	3	13	Only 4 of 13 isolations in CDC experience derived from human sources.
S. bonariensis	FLA	1	1	4	All previous isolations in CDC experience from humans: New Mexico, 2; Texas and New York, one each.
S. california	TEX	2	10	143	Sixty-six of 143 CDC isolations from turkeys & chickens, 43 from humans.
S. johannesburg	CAL	1	2	1	Only previous isolation this year from New York State.
S. lexington	ILL	1	2	13	First found in lymph glands of a normal swine in Kentucky. Rare cause of human illness.
S. maricopa	ILL	1	1	0	Extremely rare serotype.
S. minnesota	WIS	1	13	81	Fifty of 81 CDC isolations from Fla. & Ga. of which 32 were from dogs.
S. norwich	CAL	1	11	25	Recent recoveries from swine, pork products and dogs.
S. rubislaw	LA	2	11	239	Confined almost exclusively to Southeastern United States.

* Represents 17,262 human isolations of salmonellae reported to the Salmonella Surveillance Unit - January 1 - November 29, 1963.

** Represents approximately 28,000 isolations of salmonellae from all sources between 1947 and 1958.

TABLE IV

Age and Sex Distribution of 1,323 Individuals From Whom Salmonellae were Isolated - November, 1963

Age (Years)	Male	Female
Under 1	67	63
1-4	99	109
5-9	45	56
10-19	48	45
20-29	16	45
30-39	27	33
40-49	19	25
50-59	24	22
60-69	27	17
70-79	12	22
80+	5	8
Unknown	233	256
Total	622	701
Per Cent of Total	47.0	53.0

																				B	Fo	Bon Mea	Feed	Turtl	Snake	Lizard	Turtle	Blood Tr fusion	Turtle B	Unknown	TOTAL	11 MO. TOTAL	S E R O T Y P E
											3									4		2									4	4	alabama
																															12	260	anatum
																															2	7	berta
																															1	26	binza
																															12	108	blockley
braenderup																								1			1		1		3	6	braenderup
bredeney		7																													7	109	bredeney
california		1																													1	21	california
cerro																							1								1	23	cerro
chester		3																													3	88	chester
cholerae-suis var. kunzendorf													10			1															11	127	cholerae-suis var. kunzendorf
derby	1	3	2										1																		7	99	derby
dublin											2																				2	40	dublin
enteritidis		4																													4	65	enteritidis
gallinarum	1																														1	50	gallinarum
give		1																													1	47	give
grumpensis																						1									1	4	grumpensis
heidelberg	6	11									1													2							20	288	heidelberg
indiana	2																														2	24	indiana
infantis	14	2															2	9													27	299	infantis
johannesburg	1																														1	3	johannesburg
litchfield		1																			1										2	19	litchfield
livingstone	2																					3									5	37	livingstone
meleagridis	2																					1									3	16	meleagridis
montevideo	3											1	3																		7	203	montevideo
muenchen		3							1																						4	69	muenchen
newington		1				1																									2	60	newington
newport	1	3									3																				7	191	newport
oranienburg													1										1		1						3	59	oranienburg
orion	1																														1	10	orion
poona																		1													1	5	poona
pullorum	9																														9	171	pullorum
reading		5																													5	40	readi
rubislaw																									1						1	[illegible]	
saint-paul	2	22																															
salinatis																																	
san-diego	2	4																															
schwarzengrund	1	17																															
tennessee	2																																
thompson			1																														
yphimurium	16	17	2	3	1																												
yphimurium var. copenhagen																																	
rthi																																	

NON-HUMAN ISOLATES BY THE NATIONAL ANIMAL DISEASE AND STATE REPORTING CENTERS BY SEROTYPE AND STATE NOVEMBER, 1983

SEROTYPE	STATE																												TOTAL	11 MO. TOTAL	SEROTYPE
	ALA	ARIZ	ARK	CALIF	DEL	FLA	GA	ILL	IND	IOWA	KAN	MD	MASS	MICH	MINN	MO	NEB	NJ	NY-BI	NC	OHIO	OKLA	ORE	PA	SC	TENN	TEX	VA	WASH	W.VA.	WISC			
alabama									4																							4	4	alabama
anatum	1			7				2	2																							12	260	anatum
berta							2																									2	7	berta
binza			1																													1	26	binza
blockley			1	5					2							3											1					12	108	blockley
braenderup																								3								3	6	braenderup
bredeney				1						3					2	1									1							7	109	bredeney
california																																1	21	california
cerro																					1											1	23	cerro
chester																				1											2	3	88	chester
cholerae-suis var. kunzendorf									3	3										1					1	1		1		1	11	127	cholerae-suis var. kunzendorf
derby		1	1						1				2		1												1				7	99	derby
dublin				2																												2	40	dublin
enteritidis															4																	4	65	enteritidis
gallinarum												1																				1	50	gallinarum
give				1																												1	47	give
grumpensis								1																								1	4	grumpensis
heidelberg				4			3								6	1							1	2			2		1			20	288	heidelberg
indiana									2																							2	24	indiana
infantis				1	1	4	1		7						1	1									1				9		1	27	299	infantis
johannesburg							1																									1	3	johannesburg
litchfield											1				1																	2	19	litchfield
livingstone								2													1											5	37	livingstone
meleagridis	1			1		1		1																			1					3	16	meleagridis
montevideo	2						1								2	1					1				3							7	203	montevideo
muenchen				1																												4	69	muenchen
newington				1											2														1			2	60	newington
newport				4											2													1				7	191	newport
oranienburg									1					1							1											3	59	oranienburg
orion							1																					1				1	10	orion
poona																3				1								1				1	5	poona
pullorum							1		1							4							1					3				9	171	pullorum
reading																																5	40	reading
rubislaw				1																												1	7	rubislaw
saint-paul									3						1								15		2					3	24	196	saint-paul
salinatis				1																												1	1	salinatis
san-diego			2																				2		2				2			6	62	san-diego
schwarzengrund				16											1	1																20	183	schwarzengrund
tennessee							2	1																								3	83	tennessee
thompson									1			3																	4			8	79	thompson
typhimurium				30	1		3		12	1		2	2	8	5		1		1			1		1	1			1		3	73	947	typhimurium
typhimurium var. copenhagen									1				4					2						1	1							9	242	typhimurium var. copenhagen

Figure 2

PER CENT SALMONELLA DERBY ISOLATIONS
TOTAL SALMONELLAE ISOLATIONS
MARCH 1 - NOVEMBER 29, 1963

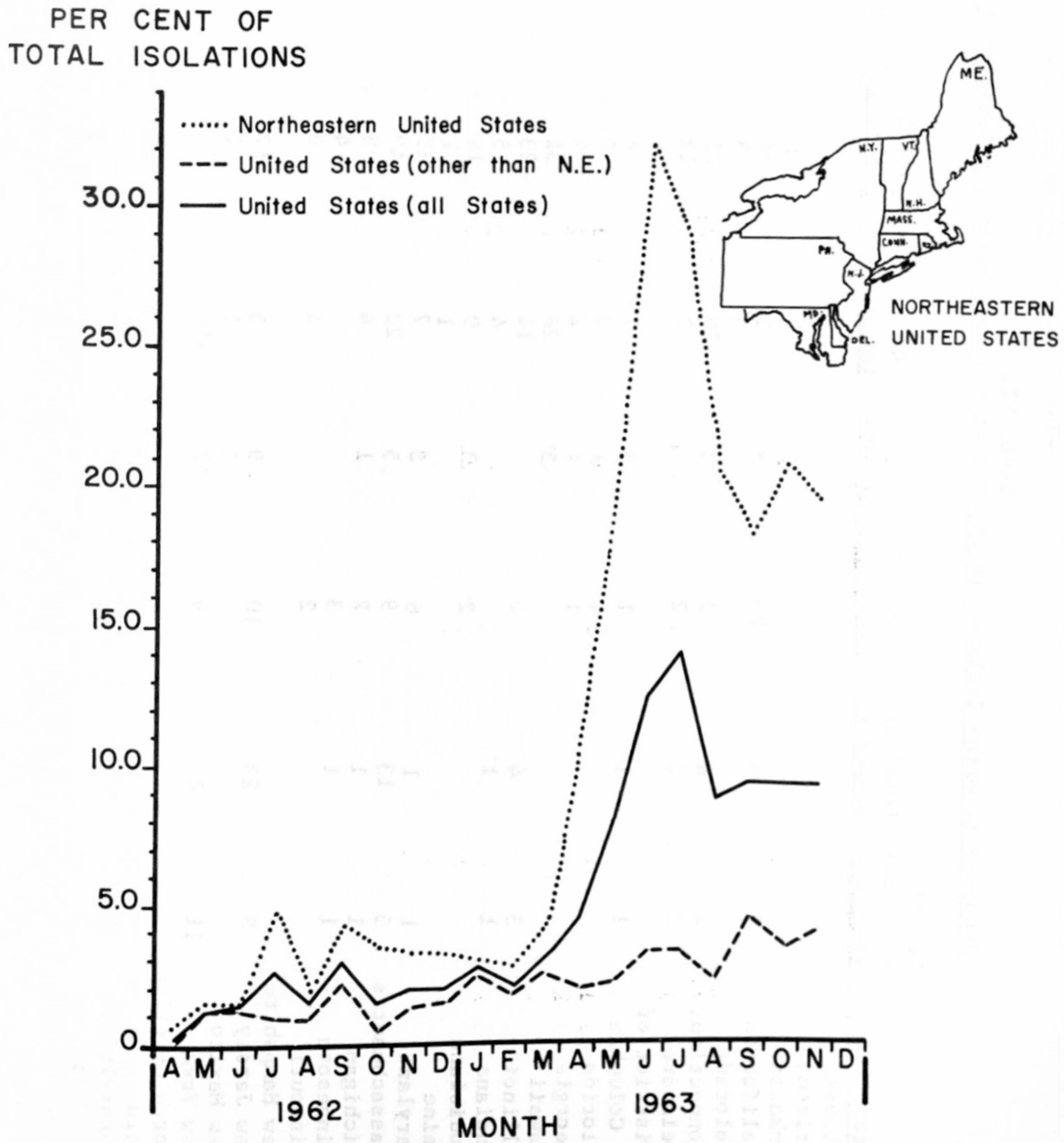


TABLE VII

Reported S. derby Isolates in the United States - March 1 - December 13, 1963

State	No. of Hospitals Involved	Hospital Associated	Community Acquired	Unknown	No Data	Total 3/1 - 9/27	Total 9/28 - 12/13	Total 3/1 - 12/13
Alabama			2			2	1	3
Arizona							1	1
Arkansas				1		1	1	2
California	4	4	20	9	5	38	12	50
Colorado					3	3	2	5
Connecticut	4	4	2	3	16	25	14	39
Delaware	2	3	2		7	12	1	13
District of Columbia	1	1	1	3	1	6		6
Florida			1	1	3	5	1	6
Georgia			1	1	2	4	2	6
Hawaii				3	28	31	9	40
Illinois	3	4	5		14	23	56	79
Indiana	1	1			4	5	1	6
Louisiana			2	3	9	14	7	21
Maine					1	1	1	2
Maryland	1	1	6	3	7	17	7	24
Massachusetts	5	13	9	5	22	49	33	82
Michigan	1	1	2	1	4	8	6	14
Minnesota	1	1	3			4		4
Missouri			2		4	6		6
New Hampshire							1	1
New Jersey	8	23	10	9	5	47	24	71
New Mexico				1	1	2		2
New York	11	82	9	12	100	203	123	326
North Carolina			3			3		3
Ohio	3	6	7	6	3	22	16	38
Pennsylvania	12	687	13	1	96	797	125	922
Rhode Island	1	7		1	3	11	2	13
South Dakota					1	1		1
Tennessee	1	2				2		2

State	No. of Hospitals Involved	Hospital Associated	Community Acquired	Unknown	No Data	Total 3/1 - 9/27	Total 9/28 - 12/13	Total 3/1 - 12/13
Texas			3		1	4	2	6
Virginia			1	1		2	3	5
Washington			5	1		6		6
Wisconsin				2	2	4	4	8
Total	59	840	109	67	342	1358	455	1813

TABLE VIII

Salmonella derby Isolations and Total Salmonella Isolations Reported by Month*

		Total Salmonella Isolations	*S. derby* Isolations	
1962	November	922	18	2.0
	December	794	16	2.0
1963	January	1,111	30	2.7
	February	1,059	22	2.1
	March	931	28	3.0
	April	1,330	61	4.6
	May	1,738	139	8.0
	June	1,640	203	12.4
	July	2,133	303	14.2
	August	1,770	155	8.8
	September	1,786	164	9.2
	October	2,462	228	9.3
	November	1,381	127	9.2

* As reported to the Salmonella Surveillance Unit from 50 states and the District of Columbia.