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OCTOBER 28, 1965

CDC
COMMUNICABLE DISEASE CENTER

# SALMONELLA

## SURVEILLANCE

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For the Month of September 1965



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

| | |
|---|---|
| Communicable Disease Center | Dr. James L. Goddard, Chief |
| Epidemiology Branch | Dr. Alexander D. Langmuir, Chief |
| Investigations Section | Dr. Philip S. Brachman, Chief |
| Salmonella Surveillance Unit | Dr. Theodore C. Eickhoff, Deputy Chief |
| | Dr. Richard N. Collins, Chief |
| | Dr. Albert R. Martin |
| | Dr. Read F. McGehee |
| | Dr. Arnold F. Kaufmann |
| | Mr. James B. Goldsby, Statistician |
| Veterinary Public Health Section | Dr. James H. Steele, Chief |
| Veterinary Public Health Laboratory | Mrs. Mildred M. Galton, Chief |
| | Dr. John R. Boring |

*Collaborators*

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

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## I. SUMMARY

During September, 2,518 human isolations of salmonella were reported for an average of 504 per week. This represented an increase of 32 over August and a decrease of 21 from the figure for September, 1964 (See Figure 1).

The cumulative number of reported human recoveries through September (15,585) was less than the comparable figure for 1964 of 15,970 (See Table I). The indication is that 1965 will represent a decrease from 1964 in reported human isolations.

A total of 652 nonhuman recoveries were reported during September for a decrease of seven from the previous month.

A Salmonella saphra alert, prompted by the occurrence of 10 cases in Texas during the past six weeks appears under CURRENT INVESTIGATIONS.

Included under Reports from the States this month is a report on a recent outbreak of Salmonella heidelberg gastroenteritis in New Jersey and a review of typhoid fever in California in 1964. A review of salmonellosis in Korea and a report of the second quarter isolations of salmonellae in the Netherlands are included under the International Section.

Continued interest in the problem of contamination of brewer's yeast and cottonseed meal with salmonellae is reflected in reports of surveys of these items by state and federal laboratories in the Food and Feed Surveillance Section.

## II. REPORTS OF ISOLATIONS FROM THE STATES

### A. Human

The seven serotypes reported most frequently from humans during September were:

| Rank | Serotype | Number | Per Cent | Rank Last Month |
|---|---|---|---|---|
| 1 | S. typhi-murium and S. typhi-murium var. copenhagen | 816 | 32.4 | 1 |
| 2 | S. heidelberg | 193 | 7.7 | 3 |
| 3 | S. newport | 169 | 6.7 | 2 |
| 4 | S. enteritidis | 150 | 6.0 | 5 |
| 5 | S. infantis | 139 | 5.5 | 4 |
| 6 | S. oranienburg | 94 | 3.7 | 9 |
| 7 | S. thompson | 90 | 3.6 | 6 |
| | Total | 1,651 | 65.6 | |
| | Total (All serotypes - September) | 2,518 | | |

Although the number of different serotypes increased from 67 during August to 85 during September, the seven most commonly reported serotypes during September accounted for 65.6 per cent of all human isolations. This represented no significant change from the August figure of 65.3 per cent.

Salmonella oranienburg last appeared on the list of seven most commonly reported types in March, 1965. This serotype occurs frequently among the ten most common serotypes and was ninth in relative importance during 1964. During September, S. oranienburg was the etiologic agent responsible for a large intrastate outbreak in Ohio. A condensed report of this outbreak is forthcoming in a future issue.

Salmonella thompson remained among the top seven during September after causing a nursery outbreak in Long Island, New York in July and August. Isolations of S. thompson during September were more diffuse, with only four being reported from Long Island. The remainder of the 25 New York recoveries were predominately from New York City, plus nine other counties throughout the state. Other states showing concentrations of S. thompson isolations were Florida (6), Illinois (6), Ohio (5), and Pennsylvania (8). Although the influence of the Long Island outbreak became negligible during September, S. thompson isolations were still being reported above the normal endemic level of 1.8 per cent.

Another serotype showing an unusually high recovery rate during September was S. enteritidis. Primary responsibility for that divergence can be attributed to an outbreak of salmonellosis due to that serotype in the Atlanta, Georgia area. Epidemiological investigations conducted thus far by Dr. John McCroan, State Epidemiologist, and his staff, indicated that all cases had eaten at one or another of several restaurants belonging to a chain organization within a ten-day period. As yet, no common food has been incriminated. However, investigations are still in progress and a more complete report will appear in a future issue. Georgia reported 39 isolations during September. Other states demonstrating high concentrations were Massachusetts (21), Minnesota (11), and Ohio (19).

The over-all age and sex distribution (Table IV) showed a significant male predominance with 52.5 per cent of the recoveries coming from males during September. While the reason for this is not readily apparent, Table IV also showed that there was a greater-than-normal proportion of individuals less than 20 years of age (65.3 per cent of the individuals reported during September were under 20 as compared to 60.6 per cent during 1964 ). The following table emphasizes the concentration in males under 20 years of age and a comparison is made with data compiled during 1964:

| | Male | | | | Female | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1964 | | Sept. '65 | | 1964 | | Sept. '65 | | 1964 | Sept. '65 |
| Age (in years) | No. | % | No. | % | No. | % | No. | % | | |
| Under 20 | 4,500 | 54.6 | 618 | 58.2 | 3,747 | 45.4 | 443 | 41.8 | 8,247 | 1,061 |
| 20 and over | 2,358 | 44.1 | 225 | 40.0 | 2,993 | 55.9 | 338 | 60.0 | 5,351 | 563 |
| Total (including unknown and unspecified ages) | 10,343 | 50.4 | 1,285 | 52.5 | 10,185 | 49.6 | 1,164 | 47.5 | 20,528 | 2,449 |

As can be seen, the proportion of male adolescents and children is more pronounced than that for all of 1964. Although the divergence can be attributed to males in the younger age groups, primarily the 5-9-year-old group, no pattern within any one state or region can be seen nor can any one serotype be incriminated as causing the divergence at this time.

A total of 505 individuals had other members of the families also positive for salmonella, making the "family attack rate" 20.1 per cent. This is consistent with past experience.

B. Nonhuman

There were 652 isolations of salmonellae from nonhuman sources reported in September. This is a decrease of 7 from the previous month. There were 54 serotypes identified among those submitted from 38 states.

The seven most common types reported for September were as follows:

| No. | Serotype | Number | Per Cent | Standing Last Month |
|---|---|---|---|---|
| 1 | S. typhi-murium S. typhi-murium var copenhagen | 131 | 20.1 | 1 |
| 2 | S. heidelberg | 77 | 11.8 | 2 |
| 3 | S. infantis | 44 | 6.7 | 4 |
| 4 | S. meleagridis | 37 | 5.7 | Not listed |
| 5 | S. saint-paul | 29 | 4.4 | Not listed |
| 6 | S. oranienberg | 26 | 4.0 | Not listed |
| 7 | S. montevideo | 25 | 3.8 | 3 |
| | | 369 | 56.5 | |

These seven types accounted for 56.5 per cent of the total. More than one-third of the S. typhi-murium cultures were reported from California and 22 of these were from sewage, which reflects continued follow-up studies on the Riverside outbreak. Of the 77 isolations of S. heidelberg, 43 were from turkeys; 49 were reported from 3 states, California, Minnesota and Utah. The 33 cultures of S. meleagridis, reported from the District of Columbia, raised this type to 4th in frequency. These cultures were recovered from a variety of foods in a D.C. delicatessen and catering establishment following an outbreak which was reported in Salmonella Surveillance Report #41.

Salmonella oslo, reported in March and April 1965 from monkeys in Illinois, was reported again this month from the same state and source (See SSR # 40.)

Another comparatively rare type, S. madelia, was recovered from frozen eggs and reported from Minnesota. This type has been found in horses, raccoons, dogs, cats and birds, and man in Florida. In 1964, one human isolation was reported from Wisconsin.

The four species from which most of the isolations were obtained in order of frequency are: turkeys, 181 (27.8 per cent); chickens, 131 (20.2 per cent); bovine, 33 (5.1 per cent); and swine, 16 (2.5 per cent).

## III. CURRENT INVESTIGATIONS

### Salmonella saphra Alert!

Salmonella saphra, an extremely rare serotype in this country, was isolated twelve times from humans in Texas between the weeks ending September 17 and October 22, 1965. At least ten people have been affected:

| WEEK | PATIENT | AGE | SEX | COUNTY |
|---|---|---|---|---|
| 9/17 | B.McC. | 15 mos. | M | Travis |
| 9/17 | D.T. | ? | F | Harris |
| 9/24 & 10/15 | K.B. | 3 mos. | F | Harris |
| 9/24 | S.B. | (adult) | ? | Harris |
| 9/24 | G.M. | 13 mos. | M | Harris |
| 10/1 | ? | 12 mos. | M | Harris |
| 10/1 & 10/22 | L.McC. | 2 mos. | F | Brazoria |
| 10/15 | A.R. | ? | ? | Travis |
| 10/15 | P.H. | 2 mos. | M | Travis |
| 10/15 | D.P. | 2 yrs. | M | Jefferson |

The largest concentration of individuals (6) was in Harris County, which is the Houston area, and Brazoria County, immediately to the south. Travis County, the Austin area, reported three and the remaining case was reported from Jefferson County

The importance of this serotype as a public health threat is underscored by its apparent predilection for the high-risk pediatric patient; seven of the persons in the present outbreak are under two years of age.

Between April 1962, when the Salmonella Surveillance program was begun, and September 1965 only six isolations of S. saphra from human sources have been reported.

| 1963 | MONTH | AGE | SEX | COUNTY/STATE |
|---|---|---|---|---|
| 1 | March | ? | F | Jefferson/Texas |
| 2 | July | 2 years | F | Dade/Florida |
| 3 | July | 4 years | F | St. Mary/Louisiana |
| 4 | September | 2 years | F | Lafayette/Louisiana |
| 5 | September | 36 years | M | Lafayette/Louisiana |
| 1964 | | | | |
| 6 | September | ? | M | Bexar/Texas |

No nonhuman isolations have been reported. Efforts to epidemiologically link cases prior to this year have been fruitless. Because of the rarity of the organism, its apparent pediatric predilection, and its regional localization, it is important to investigate any isolation of S. saphra. The current isolations are being investigated by the Texas State Department of Health and the Health Departments of the involved counties. Additional data will be published as it becomes available.

## IV. REPORTS FROM THE STATES

### A. California

Epidemiologic Characteristics of Typhoid Fever in California in 1964. Prepared by the Bureau of Communicable Diseases, California State Department of Public Health.

Epidemiologic data has been accumulated on 43 cases of typhoid fever occurring in the state of California during the year 1964. Cases were reported from 19 of the state's 58 counties, representing all areas of the state. Analysis of the cases by sex showed a marked predominance (2 to 1) in males. Only one of the 43 cases had been immunized against typhoid fever in the five years prior to infection. The breakdown of cases by source of infection revealed that 22 cases were due to exposure to a typhoid carrier and 11 cases were attributed to recent travel in Mexico. The source was undetermined in the remaining ten cases. Additional epidemiologic data is summarized on the following tables:

Typhoid Fever in California - 1964

| Age Distribution (Years) | Number | % | Cumulative % |
|---|---|---|---|
| Under 1 | 1 | 2.3 | 2.3 |
| 1-4 | 6 | 14.0 | 16.3 |
| 5-9 | 6 | 14.0 | 30.3 |
| 10-19 | 13 | 30.2 | 60.5 |
| 20-29 | 10 | 23.2 | 83.7 |
| 30-39 | 4 | 9.3 | 93.0 |
| 40-49 | 0 | 0.0 | 93.0 |
| 50-59 | 1 | 2.3 | 95.3 |
| 60-69 | 1 | 2.3 | 97.6 |
| 70-79 | 1 | 2.3 | 99.9 |
| 80 + | 0 | 0.0 | 99.9 |
| Total | 43 | | |

Cases by Month of Onset

| Month | Number | Month | Number |
|---|---|---|---|
| January | 1 | July | 8 |
| February | 0 | August | 6 |
| March | 0 | September | 8 |
| April | 4 | October | 2 |
| May | 3 | November | 8 |
| June | 1 | December | 2 |

Isolations of S. typhi by Phage Type

| Phage Type | No. of Isolations |
|---|---|
| E1 | 17 |
| Degraded Vi | 5 |
| D4 | 5 |
| 38 | 3 |
| Untypable Vi | 2 |
| C9,A1,26 | 6 (1 each) |
| F1,E,B1 | |

Editor's Comment: Although the total number of cases is small, this study provides an opportunity to compare the epidemiology of S. typhi with non-host adapted salmonella serotypes. The marked male predominance among the cases is of interest and may in part reflect the fact that some of these cases occurred among Mexico migrant workers (braceros). The age distribution reveals marked clustering with better than 50 per cent of the cases occurring between the ages 10 and 29. This is in marked contrast with the nationwide data on non-host adapted salmonella serotypes. People in this age group might be expected to have a good deal of mobility and travel frequently throughout the state and into Mexico. In addition the vast majority of braceros would also fall into this age group. The distribution of cases by month of onset is not inconsistent with the seasonal pattern observed in other salmonella infections and the distribution of strains of S. typhi among the various phage types is consistent with Dr. William Ewing's nationwide data.

B. Colorado

Outbreak of Food-poisoning Due to Salmonella montevideo. Reported by Cecil R. Reinstein, M.D., Director, Mesa County Health Department, Grand Junction, Colorado; C. S. Mollohan, M.D., Epidemiologist, Colorado Department of Public Health, and Michael Cross, M.D., EIS Officer assigned to the Colorado State Health Department.

An outbreak of gastroenteritis occurred in Grand Junction, Colorado, in August, 1965, following a social event attended by three families. Homemade vanilla ice cream and chocolate chip cookies were the only foods served at the party. All those who had eaten ice cream (seven persons) manifested clinical illness with abdominal pain, headache, fever from 101° to 103°, nausea, diarrhea, and vomiting. Onsets of illnesses in this group ranged between 12 and 16 hours following the suspect meal. Five of the seven ill persons required hospitalization. Salmonella montevideo was isolated from each of the hospitalized patients.

Investigation revealed that the vanilla ice cream had been prepared with six eggs, one and one half cups of sugar, one teaspoon vanilla, powdered junket and commercial pasteurized milk. Four of the eggs were noted to be cracked when purchased. The ice cream was eaten approximately one half hour after freezing. No ice cream was available for laboratory analysis. Two dozen eggs from lots containing cracked and checked eggs purchased from the same local ranch which had supplied the eggs for the party were examined and yielded Salmonella montevideo on culture.

C. New Jersey

Outbreak of Gastroenteritis Due to Salmonella heidelberg. Reported by W. J. Dougherty, M.D., Director, Preventable Disease Control, and Alan Bisno, M.D., EIS Officer assigned to the New Jersey State Health Department.

On September 29, 1965, the New York State Department of Health, notified the New Jersey Health Department that several patients were admitted to New York hospitals with acute gastroenteritis after attending a party in New Jersey.

A subsequent investigation revealed that on September 26, Mrs. J. B., a housewife from Woodcliff Lake, New Jersey, had given a surprise birthday party for her husband. Forty three persons attended the party, most of them from New York State.

Food for the party was provided by a catering establishment in Hackensack, New Jersey. The menu included: roast stuffed turkey, roast beef, baked beans, potato salad with mayonnaise, German potato salad, rolls, bread, pickels, olives, and assorted hors d'oeuvres (cream cheese and lox, chicken liver, cheddar cheese, smoked ham). The hostess had prepared lasagna, meat balls and sausage. A birthday cake had been purchased from a bakery in Lodi, New Jersey. Coffee and mixed alcoholic beverages were also served.

The food was laid out buffet style. Guests arrived about noon and left between 10:00 - 10:30 p.m. The above-mentioned foods were thus consumed over a ten hour period. At 11:00 p.m. Mr. J. B. decided to have more turkey. At this point he noted that the turkey had a foul odor and an "aluminum" taste. The turkey was discarded.

Subsequently, 32 of the 43 guests became ill with acute gastroenteritis. All persons present at the party were interviewed either in person or by mail.

The incubation period could not be accurately calculated, as the food was consumed over a ten hour period. However, the average time from leaving the party until onset of symptoms was 13 hours. Symptoms of ill patients included: abdominal pain (94 per cent), diarrhea (88 per cent), chills (85 per cent), headache (85 per cent), fever (63 per cent), nausea (53 per cent), vomiting (48 per cent). Twenty-two patients required the care of a physician and ten were hospitalized. Temperatures ranged from 101° to 106° (median 103°F).

Group B salmonella organisms were isolated from five patients hospitalized in two different New York hospitals. Cultures from Mr. and Mrs. J. B. yielded group B salmonella, further identified by the New Jersey State Laboratory as Salmonella heidelberg.

A visit was made to the catering establishment in Hackensack, and both food handlers who prepared the food for the party were found to be asymptomatic. However, stool cultures were obtained, and the sample from one of the food handlers yielded S. heidelberg.

The most significant food histories implicated turkey and turkey stuffing as follows:

| Food | Attack Rate | |
|---|---|---|
| | Eaten | Not Eaten |
| Turkey | 86% (31/36) | 14% (1/7) |
| Turkey Stuffing | 100% (14/14) | 62% (18/29) |

Development of illness was not statistically associated with consumption of other foods served at the party.

The turkey, weighing 24 lbs. 10 oz., was obtained from the Hackensack outlet of a national meat-packing firm. It arrived frozen at the caterers on September 23. It was kept in the freezer until the evening of September 24, when it was removed, stuffed, and placed back in the freezer. At noon on September 25 it was roasted for 3 hours at 350°F. It was then left unrefrigerated in the front window on display from 3:00 until 9:00 p.m. The turkey was then placed in the icebox until 9:30 a.m. on September 26. It was sliced at 11:00 a.m. and arrived at the party at approximately 12:45 p.m.

The turkey stuffing was made of chicken liver and onions, which were sauted for 15-20 minutes on September 24. Then seasoning, rolls and eggs were added. The completed stuffing was placed in the turkey on the evening of September 24 and does not appear to have been left unrefrigerated for any significant period of time during its preparation. The same stuffing was used in four chickens which were sold to another customer. These chickens were consumed without any apparent illness.

The Metropolitan State Health District is currently arranging for a sanitary inspection of the catering establishment. The food handler has been removed from work pending repeat stool cultures. Although no food residues from the party were available, a turkey from the same lot is being obtained for study by the New Jersey State Laboratory.

In summary, an outbreak of acute gastroenteritis occurred at a catered private party in Woodcliff Lake, New Jersey. Seventy-four per cent (32 of 43 persons) of those attending the party were ill and ten persons required hospitalization. The organism involved was S. heidelberg and the vehicle probably roast turkey, which had been left unrefrigerated for six hours after cooking. A food handler in the catering establishment has been found to have S. heidelberg in his stool. Whether the food handler acquired the salmonella from the turkey or vice-versa is not clear at present.

## V. SPECIAL REPORTS

Abstract of a Paper Presented at the American Association of Avian Pathologists Symposium on Avian Salmonellosis, Portland, Oregon, July 1965. "The Status of Serological Testing for Salmonellosis in Poultry Flocks. Feed Ingredients as a Source of the Infections", by B. S. Pomeroy, D.V.M., Director, Department of Veterinary Bacteriology and Public Health, College of Veterinary Medicine, University of Minnesota, St. Paul, Minnesota.

Salmonella infections of chickens and turkeys continue to be a major problem facing the poultry industry. In addition, in the last two years there has been a spectacular increase in Arizona infections in turkeys. In some areas of the United States organized efforts have been made to reduce salmonella and Arizona infections. Serological tests have been used to identify the infected breeder flocks. The results have been encouraging but other programs are necessary, such as improved sanitation procedures on the farm, in the hatchery and in the manufacture of animal feedstuffs.

In order to eliminate the outside introduction of salmonellae organized efforts must be undertaken to eliminate these organisms from feedstuffs. A quality control laboratory of a large midwest feed manufacturer has been concerned with the problem of feed contamination. Bacteriological examination of meat meal and other feed ingredients have been done since 1960. The results are as follows:

| Year | Total Tested | No. Positive Salmonella | Per Cent Positive |
|---|---|---|---|
| 1960 | 49 | 5 | 10.2 |
| 1961 | 114 | 18 | 15.8 |
| 1962 | 156 | 22 | 14.1 |
| 1963-64 | 269 | 74 | 27.5 |
| 1965 | 63 | 18 | 28.6 |

During the 1963-64 period 27 different serotypes were isolated from feeds. In Minnesota during this same period 16 of these types were isolated from poults that were submitted to diagnostic laboratories and 9 serotypes were isolated from adult breeder flocks that had reactors to the S. pullorum and S. typhi-murium antigens.

In order to eliminate the introduction of salmonellae into chicken and turkey flocks by contaminated feedstuffs, state and national regulatory agencies must take necessary steps to assure salmonella-free feeds are available to livestock and poultry producers.

## VI. INTERNATIONAL

### A. Korea

A Review of Salmonella in Korea. Abstracted from an article by Doki Chun, Department of Bacteriology, Kyungpook University School of Medicine, Taegu, Republic of Korea. Endemic Diseases Bulletin of Nagasaki University, 6(3):125-138, 1964.

The interest in enteric infections as a community problem in Korea has increased recently and work on the etiologic agents has become increasingly active in accordance with the reconstruction and improvement of laboratory facilities. The author is interested in problems concerning enteric infection and reviews some of the recent experience in Korea. During the Korean War many isolations of salmonella organisms were made from military personnel in the United Nations Forces, Korean Military Services, and prisoners of war. Four-fifths of the isolations were obtained from Koreans and the remainder from United Nations Forces. Twenty different serotypes were identified during the period in question (1952-1953). Salmonella paratyphi A was the most frequently recovered serotype (22.6 per cent) followed by S. enteritidis, S. typhi-murium, S. paratyphi C, S. blegdam, and S. paratyphi B in decreasing order of frequency. The other serotypes accounted for less than 5 per cent of the total.

In 1961 the author established a reference laboratory in Taegu for the purpose of obtaining additional information on the epidemiology of salmonella infections in Korea. Serotype distribution from the recent series in the Taegu area has shown considerable variation from their data obtained during the Korean War. Of the 419 isolations from

human sources during this period, 388 (92.6 per cent) were identified as S. typhi. Salmonella paratyphi A accounted for 4.7 per cent, and the remainder were divided between S. paratyphi B, S. paratyphi C, S. miami, S. sendai, and S. typhi-murium. The marked increase in the incidence of typhoid fever as compared with the results obtained during the Korean War was quite striking and stands in marked contrast with the data from the United States, which documents a steady decline in the incidence of typhoid fever accompanied by a marked increase in other forms of salmonellosis.

The seasonal incidence based on isolations obtained in 1961-1963 indicates that the peak is observed in late August and the period of lowest incidence in January. These results are comparable to those data observed in the United States. The incidence of typhoid fever in a community is considered an index of its sanitary state and the prevalence of typhoid fever in Korea in recent years may be partly attributed to poor sanitary conditions. Many patients are treated in their homes with a variety of antibiotics and not reported to health officers. Thus, they are not subjected to supervision and may have the opportunity to disseminate their bacilli to other susceptibles. About 5,000 cases of typhoid fever, including a few cases of paratyphoid fever, were officially reported in Korea during 1963, but it is the opinion of the author that this represents only a small percentage of actual occurring cases. Thus, typhoid fever is considered one of the very most important public health problems in Korea. In those areas of the country considered to be endemic for typhoid fever stool surveys of the general population have revealed a carriage rate between 0.5 and 1 per cent, a very high level when compared with the data from the United States and the United Kingdom indicating an incidence of 0.2 to 0.24 among the general population.

Phage typing of S. typhi is viewed as a valuable means for the epidemiological study of typhoid fever in Korea. Of 135 strains of S. typhi isolated in 1961-1962, the most common phage type was M-1 with 63 strains (48.5 per cent) followed by E-1 with 11 (8.5 per cent) and D-1 with 7 (5.4 per cent). The predominance of the M-1 phage type in Korea is in agreement with previous studies in which this type was shown to be predominant in Korea, Japan, Viet Nam, and other countries in Asia.

Editor's Comment: The author presents considerable evidence in support of his contention that typhoid fever is a major public health problem in Korea. It is indeed puzzling that S. typhi accounted for less than 5 per cent of the isolations during the Korean War period but now accounts for over 90 per cent of the isolations in the Taegu area. In the former series almost all the isolations were from military personnel who might have received typhoid vaccine and this could account for the differences noted. The prominence of S. typhi among the present Taegu series drawn from the general population may be a reflection of the fact that persons with typhoid fever, a disease state far more serious than gastroenteritis caused by other salmonella serotypes, are more likely to seek medical attention.

B. Netherlands

Report of Salmonella Isolations Typed During the Second Quarter of 1965. Reported by E. H. Kampelmacher, D.V.M., Head, Zoonoses Laboratory, National Institute of Health, Utrecht, Netherlands.

During the second quarter of 1965, 2,275 isolations of salmonellae were typed in the Zoonoses Laboratory for an increase of 457 (25.1 per cent) over the first quarter of 1965. Of the 2,275 recoveries made, 899 (39.5 per cent) represented primary isolations from human sources. The seven most frequently isolated serotypes from human sources are shown in the table on the following page:

| Rank | Serotype | No. of Isolations | Per Cent |
|---|---|---|---|
| 1 | S. typhi-murium | 456 | 50.7 |
| 2 | S. stanley | 135 | 15.0 |
| 3 | S. panama | 91 | 10.1 |
| 4 | S. newport | 35 | 3.9 |
| 5 | S. paratyphi B | 26 | 2.9 |
| 6 | S. bareilly | 25 | 2.8 |
| 7 | S. bovis-morbificans | 21 | 2.3 |
| | Total | 789 | 87.7 |

When compared with the most frequent serotypes for the first quarter of 1965 no significant changes are noted. Salmonella panama and S. stanley have been isolated frequently in the Netherlands in previous years. During the second quarter of 1965, a new salmonella serotype, S. enschede was isolated from a human case.

The most common nonhuman sources of salmonellae were cattle, 386; pigs, 370; chicken, 110; and sewage and surface water, 66. The isolation of S. vrindaban from a lizard during this quarter represents the first isolation of this serotype in the Netherlands.

## VII. FOOD AND FEED SURVEILLANCE

### A. Salmonella in Dried Yeast.

During the month, four salmonella isolations were reported from dried yeast powder by the U.S. Food and Drug Administration Laboratory, Washington, D.C. There were two isolations of S. california and one of S. thomasville from Missouri and one isolation of S. senftenberg in New Jersey. The State Public Health Laboratory Directors of these two states were informed of these findings and have arranged to obtain samples from retail stores for examination at their laboratories for the presence of salmonellae. In addition, the Veterinary Public Health Laboratory has examined seven 1-lb. packages and four, 6-oz. bottles of powdered yeast obtained in drug stores and health food stores in the Atlanta area. These samples consisted of three different brands. No salmonellae have been isolated.

### B. Examination of Frozen Beef and Poultry Meat Pies.

Last month, the Veterinary Public Health Laboratory obtained 18 frozen pot pies of three brands from local markets. There were seven chicken pies, six turkey pies, and five beef pies. They were examined for salmonellae, other Gram negative organisms, and staphylococci. No salmonellae or coagulase positive staphylococci were recovered. Organisms of the citrobacter group were isolated from one turkey pie and one chicken pie; aerobacter group strains were found in three beef pies, two turkey pies and one chicken pie. Coliforms were present in thirteen of the pies, three chicken, five turkey, and five beef.

### C. Cottonseed Meal

A total of ten specimens of cottonseed meal were recently submitted to the Veterinary Public Health Laboratory, CDC, for examination for the presence of salmonellae by Everette F. Baker, D.V.M., of the Washington State Health Department. The cottonseed meal is marketed as an animal feed by a California concern. Salmonella eimsbuettel was isolated from two samples and S. cubana was isolated from one sample. Additional samples of cottonseed meal are being studied in Washington and other states.

*Figure 1.*

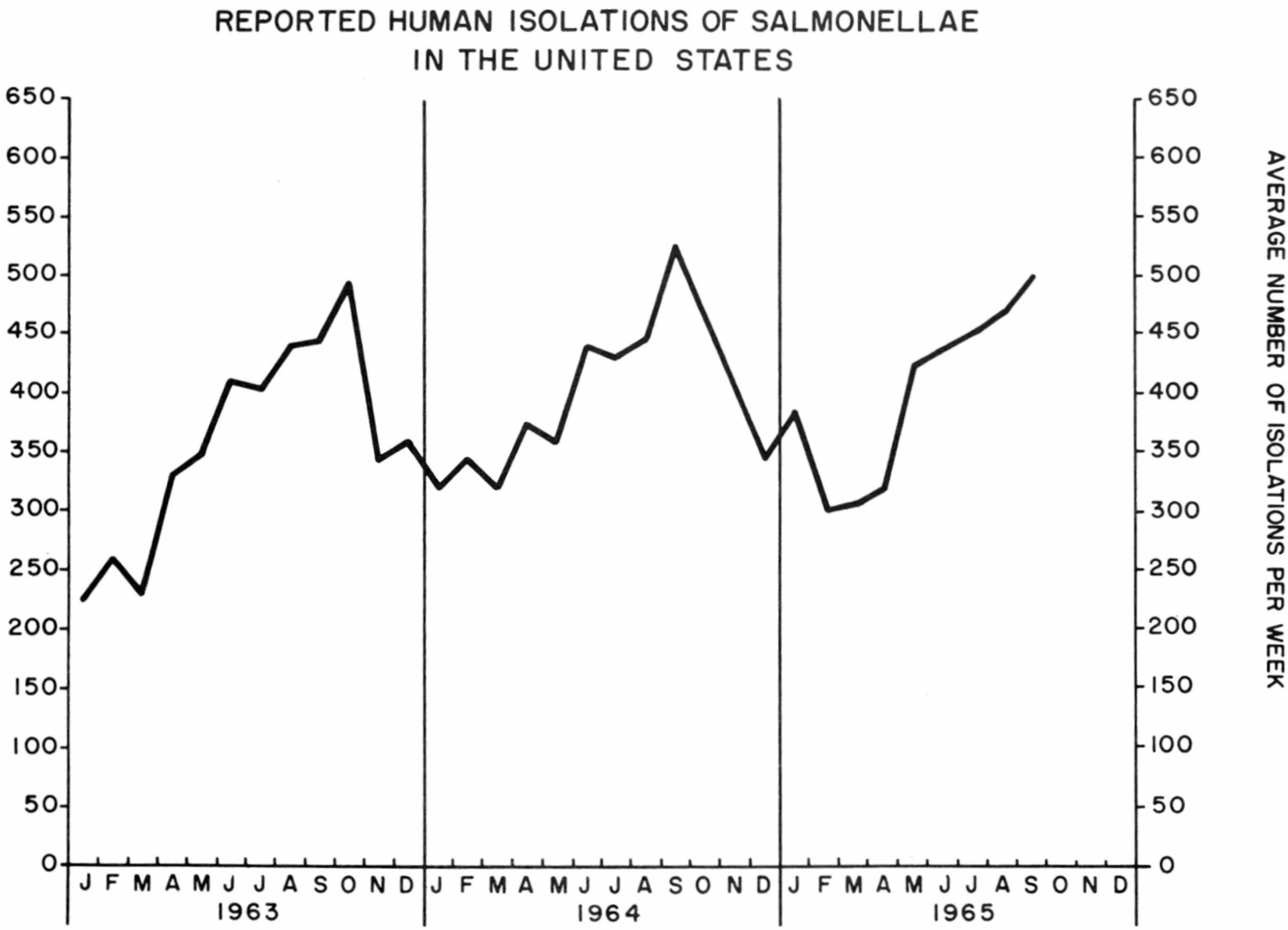
REPORTED HUMAN ISOLATIONS OF SALMONELLAE
IN THE UNITED STATES
650
600
550
500
450
400
350
300
250
200
150
100
50
0
J F M A M J J A S O N D
1963
J F M A M J J A S O N D
1964
J F M A M J J A S O N D
1965
AVERAGE NUMBER OF ISOLATIONS PER WEEK

**TABLE I**

**SALMONELLA SEROTYPES ISOLATED FROM HUMANS DURING **SEPTEMBER 1965**

| SEROTYPE | REGION AND REPORTING CENTER | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | | | | | | | | | | | | | | | 1 | | | 1 |
| albany | | | | | | | | | | | | | | | | 1 | | | 1 |
| allandale | | | | | | | | | | | | | | | | | | | |
| anatum | | | | | | | | | | | | | | | | 2 | | | 2 |
| atlanta | | | | | | | | | | | | | | | | | | | |
| bareilly | | | | 1 | | | 1 | | | | | | | | | 1 | | | 1 |
| berta | | | | | | | | | 1 | | | | 1 | | | | | | |
| binza | | | | | | | | | | | | | | | | | | | |
| blockley | 1 | | | 2 | 1 | 1 | 5 | 2 | 1 | 4 | 1 | 4 | 12 | | | | 1 | 2 | 3 |
| bovis-morbificans | | | | 1 | | | 1 | | | | | | | | | | | | |
| braenderup | | | | | | 1 | 1 | 1 | | | 1 | 1 | 3 | | | 1 | | | 1 |
| bredeney | | | | 1 | | | 1 | | 2 | | | | 2 | | | 4 | | | 4 |
| california | | | | | | | | | | | | | | | | | | | |
| carrau | | | | | | | | | | | | | | | | | | | |
| cerro | | | | | | | | | | | | | | | | | | | |
| chailey | | | | | | | | | 1 | | | | 1 | | | | | | |
| chester | | | | | | | | 1 | | 1 | | | 2 | | | 2 | 1 | 1 | 4 |
| cholerae-suis | | | | | | | | | | | | | | | | | | | |
| cholerae-suis v kun | | | | | | | | | | | | | | | | | 2 | | 2 |
| cubana | | | | 3 | | 1 | 4 | | | | | | | | | 1 | | 2 | 3 |
| daytona | | | | | | | | | | | | | | | | | | | |
| derby | | | 1 | | | 3 | 4 | | 4 | | 1 | 3 | 8 | 1 | | 2 | 2 | 1 | 6 |
| dusseldorf | | | | | | | | | 1 | | | | 1 | | | | | | |
| eastborne | | | | | | | | | | | | | | | | | | | |
| eimsbuettel | | | | | | | | | | | | | | | | | | | |
| emek | | | | | | | | | | | | | | | | | | | |
| enteritidis | | | | 21 | | 2 | 23 | 5 | 3 | 2 | | 4 | 14 | 19 | 1 | 8 | 8 | 2 | 38 |
| gaminara | | | | | | | | | | | | | | | | | | | |
| give | | | | | | | | | | | | | | | | 2 | | | 2 |
| haifa | | | | | | | | | 1 | | | | 1 | | | | | | |
| hartford | | | | | | | | | | | | | | | | | 1 | | 1 |
| heidelberg | 5 | | | 10 | | | 15 | 8 | 1 | 2 | 3 | 6 | 20 | 6 | 1 | 6 | 9 | 5 | 27 |
| indiana | | | | | | | | | | | | | | | 6 | 1 | | | 7 |
| infantis | | | 9 | 2 | | 3 | 14 | 7 | 5 | 4 | 1 | 4 | 21 | 2 | 14 | 4 | 3 | 11 | 34 |
| inverness | | | | | | | | | | | | | | | | | 1 | | 1 |
| irumu | | | 1 | | | | 1 | | | | | | | | | | | | |
| java | | | | | | 1 | 1 | 1 | | | | | 1 | | | 3 | | 2 | 5 |
| javiana | | | | | | | | | | | 3 | | 3 | | | | 3 | | 3 |
| kentucky | | | | | | | | | | | | | | | | | | | |
| kottbus | | | | | | | | 2 | | | | | 2 | | | | | | |
| leeuwarden | | | | | | | | | | | | | | | | | | | |
| lindenburg | | | | | | | | | | | | | | | | | | | |
| litchfield | | | | 1 | | | 1 | | | 1 | | | 1 | | | | | | |
| livingstone | | | | | | | | | | | | | | | | 1 | | | 1 |
| lomita | | | | | | | | | | | | | | | | | | | |
| maastricht | | | | | | | | | | | | | | | | 1 | | | 1 |
| manhattan | | | | | | | | 2 | | | | | 2 | 4 | | | | | 4 |
| meleagridis | | | | | | | | | | | | | | | | | | | |
| miami | | | | | | | | | | | | | | | | | | | |
| michigan | | | | | | | | | | | | | | | | | | | |
| minnesota | | | | | | | | | | | | | | | 1 | | | | 1 |
| mission | | | | | | | | | | | | | | | | | | | |
| mississippi | | | | | | | | | | | | | | | | | | | |
| montevideo | | | | | 1 | 1 | 2 | 2 | | 1 | 1 | 2 | 6 | 3 | | 8 | | 5 | 16 |
| muenchen | | | | | | | | | 2 | | | | 2 | | 1 | 2 | | | 3 |
| muenster | | | | 1 | | | 1 | | | | | | | | | | | | |
| new-brunswick | | | | | | | | | 1 | | | | 1 | | | 1 | | | 1 |
| newington | | | | | | | | | | | | 1 | 1 | | | 1 | | | 1 |
| newport | | | | 2 | | | 2 | 1 | 2 | 6 | 1 | 3 | 13 | 6 | 5 | 5 | 1 | | 17 |
| norwich | | | | | | | | | | | | | | | | | | | |
| ohio | | | | | | | | | | | | | | | | | | | |
| oranienburg | 1 | | | 3 | | | 4 | 1 | 1 | 3 | | 1 | 6 | 39 | | | 1 | 2 | 42 |
| panama | | | | | | 3 | 3 | 13 | 1 | 1 | | | 15 | 1 | | 2 | | | 3 |
| paratyphi A | | | | | | | | | | 1 | | | 1 | | | | | | |
| paratyphi B | | | | | | | | | 1 | | 1 | 1 | 3 | 4 | 2 | | 2 | | 8 |
| poona | | | | | | | | 1 | | | | | 1 | | | | 1 | | 1 |
| reading | | | | | | 1 | 1 | | | | | | | | | | | | |
| saint-paul | | | | 5 | | | 5 | 1 | 1 | 3 | | 3 | 8 | 2 | 3 | 8 | 1 | 1 | 15 |
| san-diego | | | | 1 | | | 1 | 1 | 1 | 2 | | | 4 | | | | | 1 | 1 |
| saphra | | | | | | | | | | | | | | | | | | | |
| sarajane | | | | | | | | | | | | | | 1 | | | | | 1 |
| schwarzengrund | | | | | | | | | | | 1 | | 1 | | | | | | |
| senftenberg | | | | | | | | | | | | | | | | | | | |
| siegburg | | | | | | | | 1 | | | | | 1 | | | | | | |
| tallahassee | | | | | | | | | | | | | | | | | | | |
| tennessee | | | | 2 | 2 | 1 | 5 | | | | 1 | | 1 | 1 | | 1 | | | 2 |
| thomasville | | | | | | | | | | | | | | | | | | | |
| thompson | | | | 4 | | 3 | 7 | 17 | 2 | 6 | 1 | 8 | 34 | 5 | | 6 | 4 | 3 | 18 |
| typhi | | | | | | | | 4 | 1 | 6 | 2 | 1 | 14 | 2 | 1 | 4 | 2 | | 9 |
| typhi-murium | | | 7 | 63 | 6 | 19 | 95 | 34 | 21 | 49 | 13 | 30 | 147 | 24 | 11 | 39 | 18 | 21 | 113 |
| typhi-murium v cop | | | | 1 | | | 1 | | | | 3 | | 3 | | | | 2 | | 2 |
| uganda | | | | | | | | | | | | | | | | 1 | | | 1 |
| urbana | | | | | | | | | | | 1 | | 1 | | | | | | |
| weltevreden | | | | | | | | | | | | | | | | | | | |
| worthington | | | | | | | | | | | | 1 | 1 | | | | | | |
| untypable group A | | | | | | | | | | | | | | | | | | | |
| untypable group B | | | | | 1 | | 1 | | | | | | | | | | | | |
| untypable group C-1 | | | | | 1 | | 1 | | | | | | | | | | | | |
| untypable group C-2 | | | | | | | | | | | | | | | | | | | |
| untypable group D | | | | | | | | | | | | | | | | | | | |
| untypable group E | | | | | | | | | | | | | | | | | | | |
| untypable group G | | | | | | | | | | | | | | | | | | | |
| untypable group O | | | | | | | | | | | | | | | | | | | |
| Unknown | | 4 | | | | | 4 | | | | | | | | | | | 2 | 2 |
| TOTAL | 7 | 4 | 18 | 124 | 12 | 40 | 205 | 105 | 54 | 93 | 35 | 72 | 359 | 120 | 46 | 119 | 63 | 61 | 409 |

New York (A-Albany, B-Beth Israel Hospital, C-City)

*The Beth-Israel Salmonella Typing Center in New York is a reference laboratory and processes many cultures from other states which are assigned to the respective states although reported by N.Y.-B.I. Beth Israel reported a total of 146 isolations for September.

*Includes August late reports.

**TABLE I (Continued)**
**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 | alachua |
| | | | | | | | | | | | | | | | | 1 | 1 | albany |
| 1 | | | | | | | 1 | | 1 | | 1 | | | | 6 | 5 | 13 | allandale |
| | | | | | | | | | | | | | | | 1 | | 1 | anatum |
| | | | | | | | | | 1 | | 1 | | 1 | | 1 | 5 | 9 | atlanta |
| | | | | | | | | | | | 2 | | | | | 1 | 3 | bareilly |
| | | | | | | | | | | | 1 | | | | | | 1 | berta |
| 1 | 1 | 2 | | | | 2 | 6 | | | | 1 | | | | 1 | 1 | 3 | binza |
| | | | | | | 1 | 1 | | | | | | | | 1 | | 1 | blockley |
| | | | | | | 1 | 1 | | | | | | | | | 3 | 3 | bovis-morbificans |
| | | | | | | | | | | | | | | | | 1 | 1 | braenderup |
| | | | | | | | | | | | | | | | | | 1 | bredeney |
| 1 | | 1 | | | | | 2 | | | | 1 | | | | 1 | 1 | 3 | california |
| | | | | | | | | | | | | | | | | 1 | 1 | carrau |
| | | | | | | 1 | 1 | | | | | | | | 2 | | 2 | cerro |
| | | | | | | | | | | | | | | | | | | chailey |
| | | | | | | | | | 2 | | 1 | | 4 | 4 | 4 | | 15 | chester |
| | | | | | | | | | | | | | | | | 1 | 1 | cholerae-suis |
| | | | | | | | | | | | | | 1 | | | | 1 | daytona |
| 11 | | 1 | | | | | 12 | 1 | 9 | | | | 3 | | 39 | 2 | 54 | derby |
| | | | | | | | | | | | | | | | | 2 | 2 | duesseldorf |
| | | | | | | | | | | | | | | | | | | eastborne |
| 7 | 3 | 5 | 1 | | | 1 | 17 | 1 | 2 | | | | 10 | | 17 | 7 | 37 | eimsbuettel |
| | | | | | | | | | | | | | 10 | | | | 10 | emek |
| 2 | | | | | | 1 | 3 | | 3 | | 4 | | 3 | | 8 | 7 | 25 | enteritidis |
| | | | | | | | | | | | | | | | | 1 | 1 | gaminara |
| | | 14 | | | | | 14 | | | | | | | | | | | give |
| | | | 1 | | | 1 | 2 | | | | | | | | | | | haifa |
| | | | | | | 3 | 3 | | 1 | | | | | | 5 | 15 | 21 | hartford |
| | | | | | | | | | | | | | | | | | | heidelberg |
| | | | | | | 1 | 1 | | | | | | | | | | | indiana |
| | | | | | | | | | 1 | | | | | | 1 | | 1 | infantis |
| | | | | | | | | | | | 2 | | | | | 4 | 4 | inverness |
| | | | | | | | | | | | | | | | | | | irumu |
| | | | | | | | | | | | | | | | | 1 | 1 | java |
| | | | | | | | | | | | | | | | | | | javiana |
| | | | | | | | | | | | | | | | | 1 | 1 | kentucky |
| | | | | | | | | | | | | | | | | | | kottbus |
| | | | | | | | | | | | | | | | | | | leeuwarden |
| | | | | | | 1 | 1 | | | | | | | | | | | lindenburg |
| | | | | | | | | | 1 | | | | | | | | 1 | litchfield |
| | | | | | | | | | | | | | | | 1 | | 1 | livingstone |
| | | | | | | | | | | | | | | | | | | lomita |
| | | | | | | | | | 1 | | 2 | | | | | 1 | 4 | maastricht |
| | | | | | | | | | | | | | | | | | | manhattan |
| | | | | | | | | | | | 1 | | | | | 11 | 12 | meleagridis |
| | | | | | | | | | | | | | | | | | | miami |
| | | | | | | | | | | | | | | | | | | michigan |
| | | | | | | | | | | | | | | | | 4 | 4 | minnesota |
| | 1 | 1 | | | | | 2 | | | 1 | 1 | | 2 | | 1 | 6 | 1 | mission |
| 1 | | 1 | | | | 3 | 5 | | | | 1 | | | | 2 | | 12 | mississippi |
| | | | | | | | | | | | | | | | | | 1 | montevideo |
| | | | | | | | | | | | | | | | | | | muenchen |
| | | | | | | | | | | | | | | | | | | muenster |
| | | | | | | | | | | | | | | | | | | new-brunswick |
| 6 | 4 | 1 | | | | 2 | 13 | | 2 | | 2 | | 5 | | 8 | 16 | 33 | newington |
| | | | | | | | | | | | | | | | | | | newport |
| | | | | | | | | | | | | | | | | | | norwich |
| | | | | | | | | 1 | | | | | | | | | 1 | ohio |
| 2 | | 1 | 1 | | | 4 | 8 | | | | | | 6 | | 1 | 8 | 15 | oranienburg |
| 2 | | | | | | | 2 | | | | | | | | | | | panama |
| | 1 | | | | | | 1 | | 1 | | | | | | | | 1 | paratyphi-A |
| | | | | | | | | | | | | | | | | | | paratyphi-B |
| | | | | | | | | 1 | | | | | | | | | 1 | poona |
| 1 | | | | | | 1 | 2 | | 2 | | | | 1 | 2 | 5 | 8 | 18 | reading |
| | | | | | | | | | | | | | | | | | | saint-paul |
| | | | | | | | | | | | | | | | | | | san-diego |
| | | | | | | | | | | | | | | | | | | saphra |
| | | | | | | | | | | | 1 | | 1 | | | | 2 | sarajane |
| | | | | | | | | | | | | | | | | | | schwarzengrund |
| | | | | | | | | | | | | | | | | 3 | 3 | senftenberg |
| | | | | | | | | | | | | | | | | | | siegburg |
| | | | | | | | | | 1 | | | | 3 | | | | 4 | tallahassee |
| 1 | | | | | | 1 | 2 | | 1 | | 1 | | | | 3 | 6 | 11 | tennessee |
| 1 | 1 | 4 | | | | | 6 | | | | 3 | | 5 | | 6 | 2 | 16 | thomasville |
| 3 | 6 | 15 | | 3 | 3 | 8 | 38 | 3 | 10 | 9 | 7 | 1 | 68 | 1 | 20 | 28 | 147 | thompson |
| | | | | | | | | | | | | | | | | | | typhi |
| | | | | | | | | | | | | | | | | | | typhi-murium |
| 1 | | | | | | | 1 | | | | | | | | | 1 | 1 | typhi-murium v cop |
| | | | | | | | | | | | | | | | | | | uganda |
| | | | | | | | | | | | | | | | | 1 | 1 | urbana |
| | | | | | | | | | | | | | | | | | | weltevreden |
| | | | | | | | | | | | | | | | | 1 | 1 | worthington |
| | | | | | | | | | | 8 | | | | 10 | | 2 | 20 | untypable group A |
| | | | | | | | | | | 1 | | | | | | | 1 | untypable group B |
| | | | | | | | | | | | | | | 1 | | | 1 | untypable group C-1 |
| | | | | | | | | | | 1 | | | | | | | 1 | untypable group C-2 |
| | | | | | | | | | | | | | | | | | | untypable group D |
| | | | | | | | | | | 2 | | | | | | | 2 | untypable group E<br>untypable group G<br>untypable group O<br>Unknown |
| 41 | 17 | 46 | 3 | 3 | 3 | 31 | 144 | 7 | 38 | 22 | 31 | 1 | 123 | 18 | 134 | 152 | 526 | TOTAL |

**TABLE I (Continued)**

| 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 | | | | | | | | | | | | | | | | | | | |
| allandale | | | | | | | | | | | | | | | | | | | |
| anatum | | | | | | | 5 | | 6 | 11 | | | | | | | | | |
| atlanta | | | | | | | | | | | | | | | | | | | |
| bareilly | | 1 | | | 1 | | | | 1 | 1 | | | | | | | | | |
| berta | | | | | | | 1 | | | 1 | | | | | | | | | |
| binza | | | | | | | | | | | | | | | | | | | |
| blockley | | 2 | 1 | | 3 | | 1 | | 2 | 3 | | | | | | | | | |
| bovis-morbificans | | | | | | | | | | | | | | | | | | | |
| braenderup | 1 | | | | 1 | | | | 1 | 1 | | | | | | | | | |
| bredeney | | | 1 | | 1 | | 2 | | 2 | 4 | | | | | | | | | |
| california | | | | | | | | | 1 | 1 | | | | | | | | | |
| carrau | | | | | | | | | 1 | 1 | | | | | | | | | |
| cerro | | | | | | | | | | | | | | | | | | | |
| chailey | | | | | | | | | | | | | | | | | | | |
| chester | | | | | | | | | | | | | | | | | | | |
| cholerae-suis | | | | | | | | | | | | | | | | | | | |
| cholerae-suis v kun | | | | | | | | | | | | | | | | | | | |
| cubana | | | | | | | 2 | | 2 | 4 | | | | | | | | | |
| daytona | | | | | | | 1 | | | 1 | | | | | | | | | |
| derby | | | | | | | 1 | | 1 | 2 | | | | | | | | | |
| dusseldorf | | | | | | | | | | | | | | | | | | | |
| eastborne | | | | | | | | | | | | | | | | | | | |
| eimsbuettel | | | | | | | | | | | | | | | | | | | |
| emek | | | | | | | | | | | | | | 1 | | | | | 1 |
| enteritidis | 1 | | | | 1 | 1 | 1 | 2 | | 4 | 1 | | | | | | | | 1 |
| gaminara | | | | | | | 1 | | | 1 | | | | | | | | | |
| give | | | | | | | 2 | | | 2 | | | | | | | | | |
| haifa | | | | | | | | | | | | | | | | | | | |
| hartford | | | | | | | | | | | | | | | | | | | |
| heidelberg | | 2 | 3 | | 5 | | 6 | | 2 | 8 | | | | 3 | | 6 | 5 | 2 | 16 |
| indiana | | | | | | | | | | | | | | | | | | | |
| infantis | | 2 | | | 2 | | 8 | 1 | 5 | 14 | 1 | | | 2 | | 1 | | | 4 |
| inverness | | | | | | | | | | | | | | | | | | | |
| irumu | | | | | | | | | | | | | | | | | | | |
| java | | 1 | 1 | | 2 | | 2 | | | 2 | | | | | | | | | |
| javiana | | | 1 | | 1 | 3 | 11 | 2 | 12 | 28 | | | | | | | | | |
| kentucky | | | | | | | | | 1 | 1 | | | | | | | | | |
| kottbus | | | | | | | | | | | | | | 1 | | | | | 1 |
| leeuwarden | | | | | | | | | 1 | 1 | | | | | | | | | |
| lindenburg | | | | | | | | | | | | | | | | | | | |
| litchfield | | 1 | | | 1 | 1 | 1 | | | 2 | | | | | | | | | |
| livingstone | | | | | | | | | | | | | | | | | | | |
| lomita | | | | | | | 1 | | | 1 | | | | | | | | | |
| maastricht | | | | | | | | | | | | | | | | | | | |
| manhattan | | | | | | | 3 | | | 3 | | | | | | | | | |
| meleagridis | | | | | | | | | 1 | 1 | | | | | | | | | |
| miami | | | | | | | | | | | | | | | | | | | |
| michigan | | | | | | | | | | | | | | | | | | | |
| minnesota | | | | | | | | | 1 | 1 | | | | | | | | | |
| mission | | | | | | | | | | | | | | | | | | | |
| mississippi | | 1 | | | 1 | | 3 | | | 3 | | | | | | | | | |
| montevideo | | 1 | 1 | | 2 | | 1 | 4 | 1 | 6 | | | | 7 | | | | | 7 |
| muenchen | | | 1 | | 1 | | 6 | 4 | 3 | 13 | | | | | | | | | |
| muenster | | | | | | | | | | | | | | | | | | | |
| new-brunswick | | 1 | 1 | | 2 | | | | | | | | | | | | | | |
| newington | | | | | | | 3 | | | 3 | | | | | | | | | |
| newport | 1 | 3 | 1 | 1 | 6 | 8 | 17 | 4 | 32 | 61 | 1 | | | 1 | | 3 | | | 5 |
| norwich | | 1 | | | 1 | 1 | 1 | 1 | | 3 | | | | | | | | | |
| ohio | | | | | | | | | | | | | | | | | | | |
| oranienburg | 1 | 1 | | | 2 | 1 | | 5 | 2 | 8 | | | | | | 1 | | | 1 |
| panama | | | | | | | 1 | | 1 | 2 | | | | | | | | | |
| paratyphi A | | | | | | | | | | | | | | | | | | | |
| paratyphi B | | | | | | | | 2 | | 2 | 1 | | | | | | | | 1 |
| poona | | | | | | | | | | | | | | | | | | | |
| reading | | | | | | | | | | | | | | | | | | | |
| saint-paul | 2 | 1 | | | 3 | 1 | 5 | | | 6 | 1 | | | 1 | | 1 | 2 | | 5 |
| san-diego | | | | | | | | | | | | | | | | | | | |
| saphra | | | | | | | | | 7 | 7 | | | | | | | | | |
| sarajane | | | | | | | | | | | | | | | | | | | |
| schwarzengrund | | | | | | | 1 | | | 1 | | | | | | | | | |
| senftenberg | | | | | | | 8 | | 5 | 13 | | | | | | | | | |
| siegburg | | | | | | | | | | | | | | | | | | | |
| tallahassee | | | | | | | | | | | | | | | | | | | |
| tennessee | | | 1 | | 1 | | | | | | | | | | | | | | |
| thomasville | | 1 | | | 1 | | | | | | | | | | | | | | |
| thompson | | 2 | | | 2 | | | 1 | 3 | 4 | | | | | | | 3 | | 3 |
| typhi | | 3 | | 1 | 4 | 1 | 4 | 5 | 3 | 13 | | | | | 1 | | | | 1 |
| typhi-murium | 4 | 6 | 5 | 1 | 16 | 6 | 7 | 8 | 27 | 48 | 9 | 4 | | 10 | | 2 | 1 | | 26 |
| typhi-murium v cop | | | | | | | 2 | | | 2 | 1 | | | | | | | | 1 |
| uganda | | | | | | | | | | | | | | | | | | | |
| urbana | | | | | | | | | | | | | | | | | | | |
| weltevreden | | | | | | | | | | | | | | | | | | | |
| worthington | | | | | | | | | | | | | | | | | | | |
| untypable group A | | 2 | | | 2 | | | | | | | | | | 4 | | | | 4 |
| untypable group B | | | | 2 | 2 | | | | | | | | | | 7 | 1 | | | 8 |
| untypable group C-1 | | | | 1 | 1 | | | | | | | | | | 3 | | | | 3 |
| untypable group C-2 | | | | | | | | | | | | | | | 2 | | | | 2 |
| untypable group D | | | | | | | | | | | | | | | | | | | |
| untypable group E | | | | 1 | 1 | | | | | | | | | | | | | | |
| untypable group G | | | | | | | | | | | | | | | 1 | | | | 1 |
| untypable group O | | | | | | | | | | | | | | | | | | | |
| Unknown | | | | | | | | | | | | | | | | | | | |
| TOTAL | 10 | 32 | 17 | 7 | 66 | 23 | 108 | 39 | 124 | 294 | 15 | 4 | -0- | 26 | 18 | 15 | 11 | 2 | 91 |

**TABLE I (Continued)**

| REGION AND REPORTING CENTER | | | | | | | TOTAL | PERCENT OF TOTAL | EIGHT MONTH TOTAL | % EIGHT MONTH TOTAL | 1964 8 MOS. TOTAL | % 1964 8 MOS. TOTAL | SEROTYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PACIFIC | | | | | | OTHER VI | | | | | | | |
| WASH | ORE | CAL | ALASKA | HAWAII | TOTAL | | | | | | | | |
| | | | | | | | 1 | | 4 | | 3 | | alachua |
| | | | | | | | 2 | | 6 | | | | albany |
| | | | | | | | 1 | | 2 | | | | allandale |
| 1 | 1 | 3 | | 3 | 8 | | 35 | | 218 | | 196 | | anatum |
| | | | | | | | 1 | | 6 | | | | atlanta |
| | | 3 | | 1 | 4 | | 17 | | 86 | | 67 | | bareilly |
| | | | | | | | 5 | | 29 | | 41 | | berta |
| | | | | | | | 1 | | 14 | | 14 | | binza |
| 3 | | 9 | | | 12 | | 47 | 1.9 | 268 | 1.7 | 334 | 2.1 | blockley |
| | | | | 2 | 2 | | 3 | | 31 | | 6 | | bovis-morbificans |
| | | | | | | | 9 | | 62 | | 76 | | braenderup |
| | | 1 | | 4 | 5 | | 21 | | 110 | | 157 | | bredeney |
| | | 1 | | | 1 | | 3 | | 13 | | 26 | | california |
| | | | | | | | 1 | | 4 | | 2 | | carrau |
| | | | | | | | 1 | | 8 | | 4 | | cerro |
| | | | | | | | 1 | | 1 | | | | chailey |
| | | | | | | | 11 | | 90 | | 60 | | chester |
| | | | | 1 | 1 | | 1 | | 8 | | 12 | | cholerae-suis |
| | | | | | | | 3 | | 26 | | 29 | | cholerae-suis v kun |
| | | | | | | | 14 | | 119 | | 48 | | cubana |
| | | | | | | | 1 | | 2 | | | | daytona |
| | | 5 | | 4 | 9 | | 44 | 1.7 | 511 | 3.3 | 2,138 | 13.4 | derby |
| | | | | | | | 2 | | 5 | | | | duesseldorf |
| | | 1 | | | 1 | | 1 | | 4 | | | | eastborne |
| | | | | | | | 1 | | 1 | | | | elmsbuettel |
| | | | | | | | 1 | | 2 | | | | emek |
| 1 | | 1 | | 1 | 3 | | 150 | 6.0 | 788 | 5.1 | 543 | 3.4 | enteritidis |
| | | | | | | | 3 | | 11 | | | | gaminara |
| | | | | 2 | 2 | | 6 | | 89 | | 63 | | give |
| | | | | | | | 1 | | 1 | | | | haifa |
| | | | | | | | 1 | | 17 | | 9 | | hartford |
| 12 | 1 | 34 | | 1 | 48 | | 193 | 7.7 | 1,210 | 7.8 | 1,316 | 8.2 | heidelberg |
| | | | | | | | 17 | | 44 | | 40 | | indiana |
| 1 | 1 | 14 | | 6 | 22 | | 139 | 5.5 | 858 | 5.5 | 1,018 | 6.4 | infantis |
| | | | | | | | 2 | | 6 | | | | inverness |
| | | | | | | | 15 | | 22 | | | | irumu |
| | | 4 | | | 4 | | 17 | | 127 | | 179 | | java |
| | | | | | | | 59 | | 221 | | 181 | | javiana |
| | | 1 | | | 1 | | 2 | | 8 | | 16 | | kentucky |
| | | | | | | | 3 | | 8 | | | | kottbus |
| | | | | | | | 1 | | 3 | | | | leeuwarden |
| | | | | | | | 1 | | 2 | | | | lindenburg |
| | | | | | | | 6 | | 63 | | 48 | | litchfield |
| | | | | | | | 2 | | 21 | | 7 | | livingstone |
| | | | | | | | 1 | | 3 | | 4 | | lomita |
| | | | | | | | 1 | | 1 | | | | maastricht |
| | | 1 | | 5 | 6 | | 19 | | 92 | | 149 | | manhattan |
| | | | | | | | 1 | | 136 | | | | meleagridis |
| | | | | | | | 12 | | 67 | | 33 | | miami |
| | | 1 | | | 1 | | 1 | | 1 | | | | michigan |
| | | 1 | | | 1 | | 3 | | 11 | | 10 | | minnesota |
| | | | | | | | 4 | | 11 | | | | mission |
| | | | | | | | 5 | | 27 | | 26 | | mississippi |
| | | 4 | | | 4 | | 57 | 2.3 | 360 | 2.3 | 368 | 2.3 | montevideo |
| | | 7 | | | 7 | | 32 | | 162 | | 185 | | muenchen |
| 1 | | | | | 1 | | 2 | | 8 | | 2 | | muenster |
| | | | | 1 | 1 | | 5 | | 11 | | | | new-brunswick |
| | | | | | | | 5 | | 44 | | 27 | | newington |
| 2 | | 16 | | 1 | 19 | | 169 | 6.7 | 867 | 5.6 | 705 | 4.4 | newport |
| | | | | | | | 4 | | 17 | | 10 | | norwich |
| | | 1 | | | 1 | | 2 | | 6 | | | | ohio |
| 1 | 1 | 6 | | | 8 | | 94 | 3.7 | 470 | 3.0 | 400 | 2.5 | oranienburg |
| | | 1 | | 3 | 4 | | 29 | | 176 | | 135 | | panama |
| | | | | | | | 1 | | 10 | | 5 | | paratyphi A |
| 2 | | | | | 2 | | 18 | | 134 | | 123 | | paratyphi B |
| 1 | | | | | 1 | | 4 | | 36 | | 30 | | poona |
| | | | | | | | 1 | | 17 | | 30 | | reading |
| 2 | 3 | 5 | | 1 | 11 | | 73 | 2.9 | 560 | 3.6 | 470 | 2.9 | saint-paul |
| 1 | 2 | 1 | | | 4 | | 10 | | 207 | | 119 | | san-diego |
| | | | | | | | 7 | | 7 | | 1 | | saphra |
| | | | | | | | 1 | | 1 | | | | sarajane |
| | | 1 | | | 1 | | 3 | | 80 | | 100 | | schwarzengrund |
| | | 1 | | | 1 | | 16 | | 56 | | 82 | | senftenberg |
| | | | | | | | 1 | | 5 | | | | siegburg |
| | | | | | | | 3 | | 3 | | | | tallahassee |
| | | 2 | | | 2 | | 15 | | 152 | | 292 | | tennessee |
| | | | | | | | 1 | | 2 | | 1 | | thomasville |
| 2 | | 4 | | 3 | 9 | | 90 | 3.6 | 430 | 2.8 | 285 | 1.8 | thompson |
| 1 | 1 | 14 | | | 16 | | 79 | 3.1 | 567 | 3.6 | 534 | 3.4 | typhi |
| 31 | 30 | 97 | | 19 | 177 | | 807 | 32.0 | 4,893 | 31.4 | 4,311 | 30.0 | typhi-murium |
| | | | | | | | 9 | | 142 | | 150 | | typhi-murium v cop |
| | | | | | | | 1 | | 1 | | 3 | | uganda |
| | | 3 | | | 3 | | 6 | | 24 | | 18 | | urbana |
| | | | | 8 | 8 | | 8 | | 27 | | 16 | | weltevreden |
| | | | | 5 | 5 | | 7 | | 34 | | 38 | | worthington |
| | | | | | | | 2 | | 2 | | | | untypable group A |
| | 1 | 2 | | | 3 | | 30 | | 219 | | 236 | | untypable group B |
| | | 3 | | | 3 | | 14 | | 66 | | 69 | | untypable group C-1 |
| | 1 | | | | 1 | | 3 | | 45 | | 43 | | untypable group C-2 |
| | | | | | | | 3 | | 28 | | 30 | | untypable group D |
| | | | | | | | 1 | | 46 | | 7 | | untypable group E |
| | | | | | | | 1 | | 4 | | 1 | | untypable group G |
| | | 1 | | | 1 | | 1 | | 9 | | | | untypable group O |
| | | | | | | | 8 | | 94 | | 78 | | Unknown |
| 62 | 42 | 249 | -0- | 71 | 424 | -0- | 2,518 | | 15,585 | | 15,970 | | TOTAL |

(VI - Virgin Islands)

TABLE I-A
SEROTYPES REPORTED FROM HUMANS
PREVIOUSLY DURING 1965 BUT NOT IN SEPTEMBER

| SEROTYPES | MONTH(S) | REPORTING CENTER(S) | NUMBER OF ISOLATIONS |
|---|---|---|---|
| adelaide | May | NY-A | 1 |
| amager | Jul | NY-BI | 1 |
| arkansas | Jun | Calif | 1 |
| belem | Jul | Tex | 1 |
| bilthoven | Apr-Jun | Calif(2) | |
| | May | Mich(1) | 3 |
| blegdam | Feb | SD | 1 |
| brandenburg | Jun | Ill | 1 |
| butantan | Aug | Mich | 1 |
| colorado | Jan-May-Jun | Hai | 3 |
| corvallis | Feb | Hai | 1 |
| denver | Feb | La | 1 |
| dublin | Feb-Mar-Apr | Calif | 3 |
| duisburg | Jul | Ark | 1 |
| essen | Jan | Colo(1) | |
| | Jun | Ariz(1) | |
| | Aug | Mass(1) | 3 |
| fayed | Mar | NC | 1 |
| florida | Jan-May | Fla | 2 |
| fresno | Mar | Tenn | 1 |
| glostrup | Jul | La | 1 |
| guinae | Aug | Ill | 1 |
| heilbron | Jan | Mo | 1 |
| johannesburg | Jun | Minn | 1 |
| kaapstad | Feb-Jun | Colo | 2 |
| lexington | Feb | Calif(1) | |
| | Jun | Ill(1) | 2 |
| loma-linda | May | Ore | 1 |
| london | May | NY-C | 1 |
| luciana | Jan | Ariz | 1 |
| madelia | Mar | Pa(1) | |
| | Mar | Fla(1) | 2 |
| minneapolis | Jul | Conn | 1 |
| mishmar-haemek | Feb | Calif(1) | |
| | May | Tex(1) | 2 |
| nagoya | Jun | Tex | 1 |
| nottingham | May | Ark | 1 |
| oslo | Jan-Jun | Hai(3) | |
| | Mar-May | Calif(2) | |
| | Apr-May | Wisc(7) | |
| | Aug | Mich(1) | 13 |
| paratyphi-C | Jun | Iowa | 1 |
| pensacola | Feb | Okla(1) | |
| | May | NC(1) | |
| | Jul | Ga(1) | 3 |
| pomona | Apr | Fla(1) | |
| | May | Calif(1) | 2 |
| remo | Mar | Va(1) | |
| | May | Pa(1) | 2 |
| richmond | Jul | Kan(1) | |
| | Jul | Fla(1) | 2 |
| rubislaw | Jan-Aug | La | 3 |
| taksony | Jan | NY-BI | 1 |
| tamale | Aug | Fla | 1 |
| virchow | Jan | Colo | 1 |
| westhampton | Feb | Mass(1) | |
| | Jun | La(2) | 3 |
| yalding | Jun | Tex | 1 |
| TOTAL | | | 77 |

TABLE II
REPORTED ISOLATIONS OF *S. TYPHI* BY PATIENT STATUS – SEPTEMBER 1965

| STATE | REPORTED TO SALMONELLA SURVEILLANCE UNIT | | | | | | | | CLINICAL CASES REPORTED IN MMWR | |
|---|---|---|---|---|---|---|---|---|---|---|
| | CASES | | CARRIERS | | UNKNOWN | | TOTAL | | | |
| | September | 1965 Cuml. | September | 1965 Cuml. | September | 1965 Cuml. | September | 1965 Cuml. | September | 1965 Cuml. |
| **UNITED STATES** | **11** | **96** | **26** | **198** | **42** | **274** | **79** | **568** | **51** | **314** |
| **NEW ENGLAND** | – | – | – | *1* | – | **9** | – | *10* | – | **4** |
| Maine | – | – | – | – | – | *2* | – | *2* | – | – |
| New Hampshire | – | – | – | – | – | – | – | – | – | – |
| Vermont | – | – | – | – | – | – | – | – | – | – |
| Massachusetts | – | – | – | – | – | *3* | – | *3* | – | *3* |
| Rhode Island | – | – | – | – | – | *4* | – | *4* | – | *1* |
| Connecticut | – | – | – | *1* | – | – | – | *1* | – | – |
| **MIDDLE ATLANTIC** | **1** | *20* | **6** | **19** | **7** | **31** | **14** | **70** | **9** | **55** |
| New York | 1 | *20* | 3 | *9* | 7 | *23* | 11 | *52* | 5 | *40* |
| New Jersey | – | – | 2 | *2* | – | *6* | 2 | *8* | 3 | *7* |
| Pennsylvania | – | – | 1 | *8* | – | *2* | 1 | *10* | 1 | *8* |
| **EAST NORTH CENTRAL** | **2** | *14* | **2** | **32** | **5** | **32** | **9** | **78** | **4** | **39** |
| Ohio | – | *7* | 1 | *18* | 1 | *5* | 2 | *30* | 1 | *9* |
| Indiana | – | – | 1 | *13* | – | *6* | 1 | *19* | – | *8* |
| Illinois | – | – | – | – | 4 | *19* | 4 | *19* | 1 | *10* |
| Michigan | 2 | *4* | – | *1* | – | *2* | 2 | *7* | 2 | *7* |
| Wisconsin | – | *3* | – | – | – | – | – | *3* | – | *5* |
| **WEST NORTH CENTRAL** | **1** | **3** | **4** | **16** | **1** | **15** | **6** | **34** | **2** | **11** |
| Minnesota | – | – | – | *1* | 1 | *1* | 1 | 2 | 1 | *1* |
| Iowa | 1 | *1* | – | – | – | – | 1 | *1* | – | *2* |
| Missouri | – | *2* | 4 | *15* | – | *9* | 4 | *26* | 1 | *7* |
| North Dakota | – | – | – | – | – | – | – | – | – | – |
| South Dakota | – | – | – | – | – | – | – | – | – | – |
| Nebraska | – | – | – | – | – | – | – | – | – | *1* |
| Kansas | – | – | – | – | – | *5* | – | *5* | – | – |
| **SOUTH ATLANTIC** | **3** | **22** | **5** | **53** | **8** | **26** | **16** | *101* | **11** | **64** |
| Delaware | – | – | – | – | – | *2* | – | *2* | – | *4* |
| Maryland | – | *2* | – | *4* | – | *8* | – | *14* | 4 | *19* |
| District of Columbia | – | – | – | – | – | – | – | – | – | – |
| Virginia | – | *2* | – | *3* | 3 | *4* | 3 | *9* | 4 | *8* |
| West Virginia | – | *3* | – | *5* | – | – | – | *8* | – | *3* |
| North Carolina | – | *10* | 5 | *28* | – | *1* | 5 | *39* | – | *15* |
| South Carolina | – | – | – | – | – | – | – | – | 2 | *8* |
| Georgia | 2 | *2* | – | *1* | 4 | *8* | 6 | *11* | 1 | *3* |
| Florida | 1 | *3* | – | *12* | 1 | *3* | 2 | *18* | – | *4* |
| **EAST SOUTH CENTRAL** | **1** | **4** | **1** | **21** | **2** | **21** | **4** | **46** | **8** | **32** |
| Kentucky | – | – | – | *1* | – | *3* | – | *4* | 3 | *9* |
| Tennessee | 1 | *4* | 1 | *8* | 1 | *7* | 3 | *19* | 3 | *11* |
| Alabama | – | – | – | – | – | – | – | – | 1 | *7* |
| Mississippi | – | – | – | *12* | 1 | *11* | 1 | *23* | 1 | *5* |
| **WEST SOUTH CENTRAL** | **3** | **29** | **8** | **51** | **2** | **13** | **13** | **93** | **5** | **43** |
| Arkansas | – | *4* | 1 | *13* | – | *4* | 1 | *21* | 1 | *13* |
| Louisiana | – | *6* | 2 | *20* | 2 | *6* | 4 | *32* | 1 | *6* |
| Oklahoma | 3 | *4* | 2 | *5* | – | *2* | 5 | *11* | 2 | *6* |
| Texas | – | *15* | 3 | *13* | – | *1* | 3 | *29* | 1 | *18* |
| **MOUNTAIN** | – | **4** | – | **4** | **1** | **24** | **1** | **32** | **3** | **27** |
| Montana | – | – | – | – | – | *4* | – | *4* | – | *1* |
| Idaho | – | – | – | – | – | – | – | – | – | – |
| Wyoming | – | – | – | – | – | – | – | – | – | *1* |
| Colorado | – | – | – | – | – | – | – | – | – | – |
| New Mexico | – | *3* | – | *4* | 1 | *18* | 1 | *25* | 2 | *11* |
| Arizona | – | – | – | – | – | *2* | – | *2* | 1 | *12* |
| Utah | – | *1* | – | – | – | – | – | *1* | – | – |
| Nevada | – | – | – | – | – | – | – | – | – | *2* |
| **PACIFIC** | – | – | – | *1* | **16** | *103* | **16** | *104* | **9** | **39** |
| Washington | – | – | – | – | 1 | *5* | 1 | *5* | 2 | *4* |
| Oregon | – | – | – | *1* | 1 | *18* | 1 | *19* | 3 | *7* |
| California | – | – | – | – | 14 | *79* | 14 | *79* | 4 | *27* |
| Alaska | – | – | – | – | – | – | – | – | – | – |
| Hawaii | – | – | – | – | – | *1* | – | *1* | – | *1* |
| **Virgin Islands** | – | – | – | – | – | – | – | – | * | * |

*Does not report

TABLE III

Infrequent Serotypes

| Serotype | Center | September | 1965* | Total 1963 & 1964** | Comment |
|---|---|---|---|---|---|
| S. alachua | ILL | 1 | 4 | 15 | Has been recovered in every geographic section of the country except HAI. |
| S. albany | FLA, ILL | 2 | 6 | 9 | Nonhuman isolates primarily from poultry. |
| S. atlanta | GA | 1 | 6 | 16 | All of the isolates reported to this unit have been from GA. |
| S. binza | VA | 1 | 14 | 28 | A quite common isolate from poultry. |
| S. bovis-morbificans | HAI, MASS | 3 | 31 | 11 | No apparent connection between the MASS case and HAI; he had visited Puerto Rico a few months before his illness. |
| S. carrau | TEX | 1 | 4 | 4 | Most human isolates reported to this unit were from gulf coast states. |
| S. cerro | FLA | 1 | 8 | 15 | A fairly common nonhuman isolate; multiple sources. |
| S. daytona | LA | 1 | 2 | 3 | Most of the isolates have been from the gulf coast states. |
| S. duesseldorf | FLA & NY-BI | 2 | 5 | 7 | Isolated from poultry in LA and MASS this year. |
| S. eastbourne | CALIF | 1 | 4 | 2 | Has been isolated from chickens in CALIF. |
| S. eimsbuettel | NC | 1 | 1 | 0 | Closely related antigenically to S. livingstone; re-exam of S. livingstone isolates with single factor 0-14 may reclassify them as S. eimsbuettel. |
| S. emek | COLO | 1 | 2 | 1 | A common isolate in Israel. |
| S. gaminara | FLA, LA | 3 | 11 | 6 | Seven of the 1965 isolates have been from these two states. |

TABLE III (Cont'd)

| Serotype | Center | September | 1965* | Total 1963 & 1964** | Comment |
|---|---|---|---|---|---|
| S. haifa | NY-BI | 1 | 1 | 1 | First reported isolate since 1963; the 1963 isolate was traced to Israel. |
| S. hartford | MICH | 1 | 17 | 27 | Serotype involved in first reported case of turtle-associated salmonellosis in the United States. |
| S. inverness | FLA, MICH | 2 | 6 | 4 | Original isolate was made in FLA. |
| S. irumu | MO, UT | 15 | 20 | 83 | Fourteen of the isolates from a single outbreak in MO traced to homemade ice cream in which cracked eggs were used. |
| S. kottbus | COLO,NY-A | 2 | 7 | 5 | A turtle belonging to the NY-A case also yielded S. kottbus when cultured. |
| S. leeuwarden | TEX | 1 | 3 | 0 | Third time reported from Texas this year. |
| S. lindenburg | KANS | 1 | 2 | 2 | Has also been reported from COLO and OKLA. |
| S. livingstone | GA,ILL | 2 | 21 | 32 | A common isolate from poultry, swine and meat scraps. |
| S. lomita | LA | 1 | 3 | 4 | All of the 1963-64 isolates were from LA. |
| S. maastricht | ILL | 1 | 1 | 0 | First time reported to this unit. |
| S. michigan | CALIF | 1 | 1 | 2 | Originally isolated from an alligator; the 1963-64 isolates were from the same county as the current isolate. |
| S. mission | FLA | 4 | 11 | 4 | Most of the isolates are from a single county in FLA; no source has been determined. |
| S. muenster | MASS, WASH | 2 | 8 | 12 | |
| S. ohio | CALIF,DEL | 2 | 15 | 4 | Thirteen of 14 nonhuman isolates reported in 1963-64 were from Ohio. |

TABLE III (Cont'd)

| Serotype | Center | September | 1965* | Total 1963 & 1964** | Comment |
|---|---|---|---|---|---|
| S. paratyphi-A | NY-C | 1 | 10 | 15 | Isolated from a Chinese woman recently returned from a Europen trip; isolated from both blood and feces. |
| S. saphra | TEX | 7 | 7 | 6 | An interesting cluster of isolates of a rare serotype within a single state; no source has been reported. |
| S. sarajane | OHIO | 1 | 1 | 0 | First time reported to this unit. |
| S. siegburg | NY-A | 1 | 5 | 2 | Three of the 7 isolates reported to this unit have been from N.Y. |
| S. tallahassee | FLA | 3 | 3 | 9 | All but 2 of the isolates reported to this unit were from FLA. |
| S. thomasville | TENN | 1 | 2 | 14 | Cause of a family outbreak in ILL during 1963. |
| S. uganda | ILL | 1 | 1 | 5 | Isolated from turtles imported from Africa in KANS during 1964. |

* Represents 15,863 human isolations during the first 9 months of 1965.

** Represents 39,762 human isolations of salmonellae during 1963 and 1964.

TABLE IV

Age and Sex Distribution of 2,449 Isolations of Salmonella
Reported for September 1965

| Age | Male | Female | Total | % | Cumulative % |
|---|---|---|---|---|---|
| Under 1 | 146 | 115 | 261 | 16.1 | 16.1 |
| 1-4 yrs. | 207 | 169 | 376 | 23.1 | 39.2 |
| 5-9 yrs. | 156 | 82 | 238 | 14.7 | 53.9 |
| 10-19 yrs. | 109 | 77 | 186 | 11.4 | 65.3 |
| 20-29 yrs. | 49 | 68 | 117 | 7.2 | 72.5 |
| 30-39 yrs. | 41 | 65 | 106 | 6.5 | 79.0 |
| 40-49 yrs. | 42 | 60 | 102 | 6.3 | 85.3 |
| 50-59 yrs. | 41 | 58 | 99 | 6.1 | 91.4 |
| 60-69 yrs. | 35 | 35 | 70 | 4.3 | 95.7 |
| 70-79 yrs. | 14 | 37 | 51 | 3.1 | 98.9 |
| 80+ | 3 | 15 | 18 | 1.1 | 100.0 |
| Unknown | 442 | 383 | 825 | | |
| Total | 1,285 | 1,164 | 2,449 | | |
| % of Total | 52.5 | 47.5 | | | |

TABLE V

REPORTED NONHUMAN ISOLATES BY SEROTYPE AND SOURCE, *SEPTEMBER, 1965

| Serotypes | chicken | turkey | duck | pigeon | canary | pheasant | quail | wild bird, unknown | avain | equine | bovine | porcine | domestic animal, unknown | canine | lab mouse | monkey | wild mouse | mink | egg | egg albumen | frozen egg | frozen egg albumen | turkey meat | pork meat | meat, unknown | unpasteurized cream | ice cream | potato salad | yeast | corned beef | fish | stuffed olives | ripe olives | stuffing | dessert, unknown | wild bird feed, unknown | bone meal/ meat scraps | animal feed, unknown | horse meat | tankage | turtle | lizard | sewage | turtle water | unknown | Total | 9 Mos. Total | Serotypes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| alachua | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | 15 | alachua |
| albany | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 5 | albany |
| anatum | 6 | 6 | | | | | | | | | 1 | 1 | | 2 | | | | | | | 1 | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | 1 | 1 | 22 | 174 | anatum |
| bareilly | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 25 | bareilly |
| binza | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 3 | 39 | binza |
| blockley | 10 | 7 | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | 1 | | | 20 | 133 | blockley |
| bonariensis | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | bonariensis |
| bredney | 3 | 1 | | | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | 3 | | 12 | 65 | bredney |
| california | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 3 | 45 | california |
| cerro | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 3 | | | | | | | 4 | 50 | cerro |
| chester | | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 21 | 137 | chester |
| cholerae-suis | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | cholerae-suis |
| cholerae-suis v kun | | | | | | | | | | | | 5 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | 82 | cholerae-suis v kun |
| cubana | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | 16 | cubana |
| derby | 5 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 5 | 1 | | | 1 | | 1 | 15 | 74 | derby |
| dublin | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 34 | dublin |
| eimsbuettel | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | 7 | 39 | eimsbuettel |
| enteritidis | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | 37 | enteritidis |
| gallinarum | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 25 | gallinarum |
| give | 2 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 80 | give |
| heidelberg | 20 | 43 | | | | | | | | | | 1 | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | 1 | | 7 | 1 | | 77 | 551 | heidelberg |
| illinois | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | 6 | illinois |
| indiana | | 1 | 1 | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 31 | indiana |
| infantis | 23 | 1 | | | | | | | 1 | | | 3 | | | | | | | | 3 | 7 | | | | | | 1 | | 3 | | | | | | | | 1 | | | | | 2 | | 2 | 44 | 281 | infantis |
| irumu | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | 1 | irumu |
| java | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 12 | java |
| javiana | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 8 | javiana |
| kentucky | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | 2 | 34 | kentucky |
| livingstone | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 3 | 70 | livingstone |
| madelia | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | madelia |
| manhattan | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | 1 | 1 | | 6 | 35 | manhattan |
| meleagridis | 2 | | | | | | | | | | | | | | | | | | | | 1 | | 3 | | 20 | | | 3 | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | 1 | | 1 | 37 | 62 | meleagridis |
| miami | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 7 | miami |
| minnesota | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | 2 | 26 | minnesota |
| montevideo | 4 | | | | | | 1 | 2 | | | | 1 | | | | | | | 3 | | 8 | 1 | | | | | | | | | | | | | | | | 1 | | | 1 | | | 3 | | 25 | 169 | montevideo |
| muenchen | 2 | 3 | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 7 | 41 | muenchen |
| newington | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 23 | newington |
| newport | | 3 | | | | | | | | | 1 | | | 2 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | 5 | 1 | 1 | 18 | 96 | newport |
| oranienburg | 5 | 1 | | | | | | | 3 | | | | | | | | | | 1 | | 10 | | | | | | | | | | | | | | | | | 1 | 1 | 2 | | | | | 1 | 1 | 26 | 140 | oranienburg |
| orion | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 5 | orion |
| oslo | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 11 | oslo |
| pamana | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | | | | | | | 2 | | 10 | 19 | pamana |
| poona | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 11 | poona |
| pullorum | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 188 | pullorum |
| reading | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 40 | reading |
| saint-paul | 2 | 19 | 1 | | | | | | | | 1 | | | 1 | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | 29 | 158 | saint-paul |
| san-diego | | 8 | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 9 | 90 | san-diego |
| schwarzengrund | 3 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | 14 | 94 | schwarzengrund |
| senftenberg | | 12 | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 1 | | | | | | | | | 4 | 1 | | 1 | | | | 20 | 88 | senftenberg |
| tennessee | 1 | 4 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | 6 | | 1 | 14 | 89 | tennessee |
| thomasville | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 2 | | | | | | | | 3 | 9 | thomasville |
| thompson | 6 | 2 | | | | | | | | | | 1 | | | | | | | | | 6 | | | | | | | | | | | | | | | | | | | | 1 | | | | 16 | 129 | thompson |
| typhi-murium | 20 | 18 | 1 | 3 | 1 | | | | 1 | 3 | 21 | 1 | 1 | 1 | | | | | | | 5 | | | | | 2 | | | | | | | | | | | | | | 1 | | 22 | 4 | 3 | 112 | 700 | typhi-murium |
| typhi-murium v cop | 5 | 8 | | 2 | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | | 19 | 211 | typhi-murium v cop |
| urbana | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | 2 | 7 | urbana |
| worthington | | 3 | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | 5 | 66 | worthington |
| untypable group B | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 9 | untypable group B |
| untypable group O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 2 | untypable group O |
| TOTAL | 131 | 181 | 3 | 5 | 1 | 2 | 1 | 2 | 5 | 4 | 33 | 16 | 1 | 8 | 2 | 3 | 1 | 1 | 6 | 4 | 58 | 2 | 3 | 1 | 20 | 2 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 22 | 7 | 11 | 5 | 12 | 2 | 56 | 15 | 10 | 652 | 4,751 | TOTAL |

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

*Includes August late report from US-FDA-Division of Microbiology, Washington, D. C.

TABLE VI
REPORTED NONHUMAN ISOLATES BY SEROTYPE AND STATE *SEPTEMBER, 1965

| Serotypes | Ala | Ariz | Ark | Calif | Colo | Conn | Dela | DC | Fla | Ga | Ill | Ind | Iowa | Kan | La | Md | Mass | Mich | Minn | Miss | Mo | Mont | Neb | NJ | NY-A | NC | Ohio | Okla | Ore | Pa | SC | Tex | Utah | Vt | Va | Wash | WVa | Wisc | Total | 9 Mos. Total | Serotypes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| alachua | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | 15 | alachua |
| albany | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 5 | albany |
| anatum | | | | 5 | | | | | 1 | 2 | | 3 | 2 | | | | 1 | 1 | 1 | 1 | | | | 1 | | | | | 1 | | | | 1 | | | 1 | | 1 | 22 | 174 | anatum |
| bareilly | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 1 | 25 | bareilly |
| binza | | | | | | | | | | | | | | | | | | | 1 | | 2 | | | | | | | | | | | | | | | | | | 3 | 39 | binza |
| blockley | | | | 6 | | | | | | 3 | | 3 | | | | | | | | | | | | | 2 | | | | | | | | 1 | | | 2 | | 3 | 20 | 133 | blockley |
| bonariensis | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | bonariensis |
| bredney | | | 2 | | | | | | 1 | | | 2 | | | 1 | | 3 | | | | | | | 1 | | | | | | | | | | | 2 | | | 12 | 65 | bredney |
| california | | | | | | | | | | | | 1 | | | | | | | | | 2 | | | | | | | | | | | | | | | | | 3 | 45 | california |
| cerro | | | | | | | | | | | | 1 | 1 | | | | | | 2 | | | | | | | | | | | | | | | | | | 4 | 50 | cerro |
| chester | | | | | | | | | | | | 1 | | | | | | | 6 | | 2 | | | | | | | | | | | | | | | 12 | 21 | 137 | chester |
| cholerae-suis | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | cholerae-suis |
| cholerae-suis v kun | | | | | | | | | | | | 2 | | | | | | | | | | | | | | 4 | | | | | | | | | | | | 6 | 82 | cholerae-suis v kun |
| cubana | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | 1 | 16 | cubana |
| derby | | 1 | | 3 | | | | | | 1 | | 1 | | 5 | | | | | 2 | 1 | 1 | | | | | | | | | | | | | | | | 15 | 74 | derby |
| dublin | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 34 | dublin |
| eimsbuettel | | | | | | | | | | 1 | 1 | 1 | 1 | | | | | | 3 | | | | | | | | | | | | | | | | | | 7 | 39 | eimsbuettel |
| enteritidis | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 3 | 37 | enteritidis |
| gallinarum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | 25 | gallinarum |
| give | | 1 | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 3 | 80 | give |
| heidelberg | | | 4 | 18 | | | | | | 4 | | 2 | 1 | 1 | | 1 | 3 | | 15 | | | | | | | | | 6 | 1 | | 16 | | | 2 | | 3 | 77 | 551 | heidelberg |
| illinois | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 6 | illinois |
| indiana | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | 1 | | | | | | 3 | 31 | indiana |
| infantis | 1 | | | 15 | | | | | | | | 1 | 9 | | | | | | 3 | | 1 | | | | | | 3 | | 6 | | | 1 | 1 | | 1 | | 2 | 44 | 281 | infantis |
| irumu | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | 1 | irumu |
| java | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | 12 | java |
| javiana | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 8 | javiana |
| kentucky | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | 2 | 34 | kentucky |
| livingstone | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 70 | livingstone |
| madelia | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | 2 | 2 | madelia |
| manhattan | | | | | | | | | 1 | | | | | 2 | | | | | | | 2 | | | | | | | | | | | | | | 1 | | | 6 | 35 | manhattan |
| meleagridis | | | | 2 | | | | 33 | | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | 37 | 62 | meleagridis |
| miami | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 7 | miami |
| minnesota | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | 2 | 26 | minnesota |
| montevideo | | | | 2 | 2 | | 2 | | | | | 2 | | | 1 | | 1 | | 4 | | | | 3 | | | | 3 | 4 | | 1 | | | | | | | 25 | 169 | montevideo |
| muenchen | 1 | | 1 | | | | | | | | | | | | | | | | 1 | | 4 | | | | | | | | | | | | | | | | 7 | 41 | muenchen |
| newington | | | | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 2 | 23 | newington |
| newport | | | 2 | 3 | | | | | | | | | | 4 | | | | | 5 | | | | | | 3 | | | | | | | | | | | 1 | 18 | 96 | newport |
| oranienburg | | | 1 | | | | | | 2 | | | 2 | | | | | 1 | | 5 | | | | | | | 6 | 8 | | | | | | 1 | | | | 26 | 140 | oranienburg |
| orion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | 3 | orion |
| oslo | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 11 | oslo |
| pamana | | | | | | | | | | | | | | | | | | | 2 | | | | | | 8 | | | | | | | | | | | | | 10 | 19 | pamana |
| poona | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 11 | poona |
| pullorum | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | 2 | 188 | pullorum |
| reading | | | | | | | | | | | | | | | | | | | 2 | | 1 | | | | | | | | | | | | | | | | 1 | 4 | 40 | reading |
| saint-paul | | | | 2 | | | | | 1 | 1 | | 1 | | | 2 | | 3 | | 7 | | 2 | | | | | | | | | | | 2 | 3 | | 2 | | 3 | 29 | 158 | saint-paul |
| san-diego | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | 2 | | 1 | 1 | 4 | | | | | 9 | 90 | san-diego |
| schwarzengrund | | | | 7 | | 1 | | | | | | 1 | | | | | | | 3 | | 1 | | | | | | | | | | | | | | | | 1 | 14 | 94 | schwarzengrund |
| senftenberg | | | | | | | | | | 1 | 1 | 1 | | | | | 1 | | 14 | | 1 | | | 1 | | | | | | | | | | | | | 20 | 88 | senftenberg |
| tennessee | | | | 5 | | | | | | 1 | | 1 | | | | | | | 3 | | | | | | | | 1 | | | | | | | 1 | | 2 | 14 | 89 | tennessee |
| thomasville | | | | | | | | | | | | | | | | | | | 2 | | 1 | | | | | | | | | | | | | | | | | 3 | 9 | thomasville |
| thompson | 2 | | 1 | 1 | | 1 | | | 2 | | | | | 1 | | | | | 1 | 2 | | | | | 2 | | | | | | | | 1 | | 1 | | 1 | 16 | 129 | thompson |
| typhi-murium | 4 | | 2 | 54 | | | | | 1 | 6 | | 3 | 2 | 6 | | | 3 | | 6 | | 1 | | 2 | 1 | 1 | 1 | 1 | | 3 | | | | 3 | | 2 | 6 | 4 | 112 | 700 | typhi-murium |
| typhi-murium v cop | | 3 | 2 | | | | | | | | | 1 | | | | 1 | | | 3 | 1 | 2 | 1 | | | | | | | 2 | 1 | | | 1 | | | 1 | | 19 | 211 | typhi-murium v cop |
| urbana | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | 2 | 7 | urbana |
| worthington | | | | | | | | | 1 | | | | | | | | | | 3 | | | | | | | | 1 | | | | | | | | | | | 5 | 66 | worthington |
| untypable group B | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 9 | untypable group B |
| untypable group O | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | untypable group O |
| TOTAL | 9 | 5 | 15 | 136 | 2 | 2 | 2 | 33 | 10 | 21 | 3 | 31 | 17 | 20 | 2 | 5 | 17 | 1 | 102 | 6 | 25 | 1 | 5 | 3 | 17 | 5 | 19 | 15 | 20 | 3 | 2 | 5 | 33 | 1 | 5 | 20 | 1 | 33 | 652 | 4,751 | TOTAL |

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

*Includes August late report from US-FDA-Division of Microbiology, Washington, D. C.

(NY-A - New York - Albany)

TABLE VI-A
SEROTYPES REPORTED FROM NONHUMAN SOURCES
PREVIOUSLY DURING 1965 BUT NOT IN SEPTEMBER

| SEROTYPES | MONTH(S) | REPORTING CENTER(S) | NUMBER OF ISOLATIONS |
|---|---|---|---|
| alabama | Aug | Ind | 1 |
| berta | Feb | Fla(1) | |
| | May-Jun-Jul-Aug | Ga(6) | |
| | May | Miss(1) | |
| | Jun-Aug | Ala(2) | |
| | Jun | Mass(3) | |
| | Jul-Aug | NC(2) | |
| | Jul-Aug | SC(2) | 17 |
| braenderup | Jan | Conn(1) | |
| | Jan-Jul | Ind(2) | |
| | Mar-Aug | Miss(2) | |
| | Apr | Mass(1) | |
| | May | Ala(1) | |
| | May-Aug | Ga(2) | |
| | Jul | NY-A(3) | |
| | Jul | Tex(2) | |
| | Jul | Wash(1) | |
| | Aug | Kan(1) | 16 |
| brandenburg | Jan | NC | 1 |
| cambridge | Apr | Ind | 1 |
| carrau | Jul | Conn | 1 |
| drypool | Jul | Fla(1) | |
| | Aug | Wisc(1) | 2 |
| duesseldorf | Apr | Mass(1) | |
| | Jun | Me(1) | 2 |
| florida | Jan | Ill | 1 |
| gaminara | Aug | Ind | 1 |
| gatow | Jul | Pa | 1 |
| goerlitz | Jan | Wash | 1 |
| grumpensis | Jul | Miss | 1 |
| hartford | Apr | Minn | 1 |
| inverness | Jun | Calif | 1 |
| johannesburg | Mar | Utah(1) | |
| | Jul | Ga(4) | |
| | Aug | Ind(1) | |
| | Aug | Miss(1) | 7 |
| lexington | Jan | Tenn(1) | |
| | Jun | Conn(1) | |
| | Jul | Ind(2) | 4 |
| lindenburg | Jun | La | 1 |
| litchfield | Jun | Hai(1) | |
| | Jul | RI(1) | |
| | Aug | La(9) | |
| | Aug | Minn(1) | 12 |
| manila | Apr | Tenn(1) | |
| | Jul | Ind(1) | |
| | Aug | Dela(2) | 4 |

TABLE VI-A (Continued)
SEROTYPES REPORTED FROM NONHUMAN SOURCES
PREVIOUSLY DURING 1965 BUT NOT IN SEPTEMBER

| SEROTYPES | MONTH(S) | REPORTING CENTER(S) | NUMBER OF ISOLATIONS |
|---|---|---|---|
| menston | Mar | Va(1) | |
| | Apr-Jun | Wash(2) | 3 |
| mikawashima | Mar | Ind | 1 |
| mission | Jan | Ark(1) | |
| | Jan | SC(1) | |
| | Jul | Miss(1) | 3 |
| muenster | Jan-Mar | Feb(2) | |
| | Jan-Apr | Miss(2) | |
| | Mar | Ohio(1) | |
| | Aug | Ala(1) | 6 |
| norwich | Feb | NC | 1 |
| ohio | Jul | Ind | 5 |
| paratyphi-B | Mar | Tex(1) | |
| | May | Pa(2) | |
| | May | NY-BI(1) | |
| | Jun | Md(1) | |
| | Aug | Wash(1) | 6 |
| pomona | Apr-Aug | Mich | 2 |
| rubislaw | Apr | Mont(1) | |
| | Jul-Aug | Kan(4) | 5 |
| ruiru | Apr | Md(1) | |
| | Aug | Dela(1) | 2 |
| siegburg | May | Mich(1) | |
| | Jul | Ark(1) | |
| | Jul | Mo(4) | 6 |
| simsbury | Jul | Ark(1) | |
| | Jul | Fla(2) | |
| | Jul | Iowa(1) | 4 |
| taksony | Aug | Dela | 1 |
| tallahassee | Jan | Fla | 1 |
| typhi-suis | Feb | Calif | 1 |
| wassenaar | Apr | Ill(1) | |
| | Aug | Mich(1) | 2 |
| westerstede | Jan | Miss | 2 |
| westhampton | Feb | Mass(1) | |
| | Jun | La(1) | |
| | Jul | SC(1) | 3 |
| TOTAL | | | 130 |