m) thiamine alone gave in 24 hours 30 to 35 per cent of the growth produced in 24 hours by the red blood cell extract and thiamine. This confirms the observation of Berkman and Koser (J. Bact., 41, 38) that slow growth can be obtained in a gelatin hydrolyzate medium with thiamine diphosphate alone and indicates that the alkali-stable portion of the extract is stimulatory, not essential. Attempts to substitute for the alkali-stable fraction with growth factors which are alkali-stable or have alkali-stable components of known activity were unsuccessful. Pantothenic acid, nicotinamide, biotin, pyridoxine, Lactobacillus casei factor, para-aminobenzoic acid, inositol, choline, uracil, adenine, and guanine, in a mixture, or with each omitted in turn, have no effect.

A READILY PREPARED MEDIUM FOR THE CULTIVATION OF THE LACTOBACILLI

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In an attempt to correlate Lactobacillus counts using the dilution and plating methods, whey and tomato juice agars failed to give consistent results. Therefore, an attempt has been made to prepare a satisfactory medium from readily available dehydrated ingredients. The medium devised, which has been called "trypticase sugar agar," has the following formula:

- 2.0 per cent pancreatic digest of casein (Baltimore Biological Laboratory)
- 0.5 per cent lactose cp
- 0.5 per cent glucose cp
- 0.5 per cent sucrose cp
- 0.25 per cent gelatin
- 1.0 per cent agar

Adjust to pH 6.0 with 1/10 HCl before adding agar and gelatin.

Dissolve, tube, plug, and autoclave at 15 pounds (121 C) for 15 minutes.

This medium has proved on repeated tests to be much better than the commercially available whey and tomato juice agars. Many more colonies are obtained and they are larger and more easily identified than on other media used in this study. Typical Lactobacillus colonies may be counted after 48 hours.

Various combinations of ingredients were tried in arriving at the present formula. The addition of soybean peptone (0.1 per cent) caused the colonies to be larger, but the plate count as compared to the regular trypticase sugar agar was somewhat less. The addition of stimulating materials such as yeast extract, liver extract, and cystine to the medium may increase the size of the colonies. However, the number of colonies is not significantly increased and may be materially decreased, and for that reason the simpler formula is considered more
desirable for routine plating. In this study a double-pour-plate technique has been used. This consists of making the usual pour plate, which is covered, after hardening, with approximately 15 ml of the same kind of agar used in pouring the plates.

A NEW SALMONELLA TYPE: SALMONELLA GATUNI

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Salmonella gatuni was isolated from a stool specimen of a waitress at Fort Davis, C. Z. The culture was isolated April 5, 1945, and subsequent cultures taken April 15, 16, 17, 18, and May 24 were negative for organisms of the Salmonella group. No clinical data are available as to the course of the infection.

Cultural characteristics. The organism possesses the morphological, cultural, and biochemical characteristics of the Salmonella genus. It is a gram-negative, motile, nonsporeforming rod. Acid and gas are produced in glucose, maltose, mannitol, xylose, arabinose, dulcitol, rhamnose, and sorbitol. Lactose, sucrose, inositol, and salicin are not fermented. Dextro-tartrate and citrate are utilized. The organism produces hydrogen sulfide but does not form indole or liquefy gelatin.

Serological study. Alcohol-treated suspensions of the organism are agglutinated by Salmonella oranienburg O serum (VI, VII...) and by Salmonella newport O serum (VI, VIII...), which places the strain in group C according to the Kauffmann-White diagnostic schema. When tested with single factor absorbed serums, it was found to possess somatic antigens VI, VIII...

Examination of the flagellar antigens revealed the organism to be diphasic. Phase 1 of S. gatuni is flocculated to the titer of serum derived from phase 1 of Salmonella paratyphi B (b) and in absorption tests it removes all of the flagellar agglutinins from S. paratyphi B serum. Phase 1 of S. gatuni is, therefore, designated as b.

Phase 2 of S. gatuni is agglutinated by Salmonella abortus-equ (e,n,x...) serum. Absorption tests show that S. gatuni will absorb all of the flagellar agglutinins from S. abortus-equ serum. Therefore, phase 2 of S. gatuni should be designated as e,n,x...

SUMMARY

A new Salmonella type isolated from a human stool specimen is described with an antigenic structure that has not been previously described. This organism has the antigenic formula VI, VIII... : b; e,n,x... and is designated Salmonella gatuni.

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