is not thought that the strain, age, or diet of the rabbits used can be the factor involved, for in the controls typical myxoma and fibroma developed. Fibroma-virus derives from Shope and in America myxoma-virus traces through Hyde or Rivers to Moses in South America. While originally identical it is likely there is a difference of many passages between the viruses used by Berry and Dedrick, Hyde, Hurst, and ourselves. It is possible that different viral strains or even the same strains kept in different laboratories may vary in their capacities to undergo alterations and that this may be the explanation for the contradictory findings on fibroma-myxoma inter-relationships.

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Decomposition of Sodium Mucate by *Aerobacter cloacae*.

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Brown, Duncan, and Henry[1] stated that the sodium salt of mucic acid is apparently not decomposed by *Aërobacter cloacæ*. Thus this singular property served to aid in the separation of this species of organism from the rest of the coliform group. In their study of the fermentation of salts of organic acids by various bacteria, a 1% peptone broth containing 1% of sodium mucate was used. To detect decomposition of sodium mucate, a solution consisting of 0.4 cc of glacial acetic acid and 0.6 cc saturated lead acetate was added to 5 cc of the culture. If the mucate was unaltered, a dense turbidity resulted which ultimately settled down in a small precipitate; but if decomposition of the salt had occurred, no precipitate followed upon the addition of the lead-acetate solution. However, they noted that on decomposition of mucate by other bacteria, sodium bicarbonate was one of the end-products formed. Thus, on the addition of lead acetate, a small precipitate of lead carbonate was formed. To overcome this disadvantage, a small amount of acetic acid (see above) was necessarily added to dissolve the lead carbonate and prevent false reactions. This is a tedious procedure.

In the author's study[2] on the decomposition of organic acids by

[1] Brown, H. C., Duncan, J. T., and Henry, T. A., *J. Hyg.*, 1924, **23**, 1.

[2] Hajna, A. A., *J. Bact.*, 1935, **29**, 253.

bacteria of the genus *Salmonella,* a synthetic medium with a pH indicator was found to be as satisfactory as peptone. If the organic acids were not decomposed, the medium remained clear and the indicator showed no evidence of a change in pH. If the test-substances were decomposed, this was evident by turbidity and a change in the color of the indicator.

The object of the present study was to determine whether *Aërobacter cloacæ* was able to decompose sodium mucate in Koser's[3] synthetic liquid medium, in place of detecting the change in a peptone medium.

The composition of the medium is as follows: Sodium mucate 0.3%, sodium ammonium phosphate 0.15%, monobasic potassium phosphate 0.1%, and magnesium sulphate 0.02%. The final hydrogen ion concentration is adjusted with sodium hydroxide to pH 7.0.

Tubes of mucate medium were inoculated with a loop (approximately 2 mm in diameter) with tryptone-broth cultures which were previously incubated at 37°C between 18 and 24 hours.

Sources of Cultures: Aërobacter cloacæ strains were isolated from the following sources: human feces 24, sewage 18, water supplies 12, crabmeat 2, oysters 24, and stock collection 8, making a total of 88. All cultures were purified by repeated serial transfers in Koser's liquid citrate medium and on Levine's eosin-methylene-blue agar plates. All *Aërobacter cloacæ* cultures were methyl-red negative; Voges-Proskauer positive; grew in citrate and uric acid synthetic media; failed to hydrolyze hippurate in a synthetic base medium (no growth); liquefied gelatin; produced no gas from glycerol at 37°C and from glucose, lactose and mannitol at 46°C. Indole and hydrogen sulphide were not produced.

Sixty of the 88 strains decomposed sodium mucate within 24 hours with the development of acid end-products as judged by the reaction of brom thymol blue. The remaining strains fermented it feebly. On further incubation at 37°C, all of the reactions reverted to the alkaline side and remained so for a period of at least 7 days with heavy growth in every instance. The reversion of the color of the indicator may indicate secondary decomposition resulting in the complete or nearly complete breakdown of sodium mucate into bicarbonate and other end-products.

Conclusion. Aërobacter cloacæ is able to decompose sodium mucate (in the synthetic liquid basic medium of Koser) and thus there is no apparent difference from the rest of the coliform group in ability to attack sodium mucate.

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[3] Koser, S. A., *J. Bact.,* 1923, **8**, 493.