Examination of the ovaries revealed mature follicles and corpora lutea in the case of the normal animals while those of the injected animals were pale and showed no signs of maturity. No histological studies were made.

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Use of Organic Acids for the Differentiation of Salmonella pullorum and Salmonella gallinarum.

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Brown, Duncan and Henry[1] demonstrated that the sodium salts of 4 organic acids, tartaric, mucic, fumaric and citric, were utilized as food by some members of the paratyphoid group, thus making it possible to separate certain members of this group through the use of this agency. The utilization of the acids as foods was measured in a liquid medium by precipitation of the residual acid by lead acetate. Using this procedure they were able to separate *Salmonella aertrycke* and *Sal. schotmülleri.* In a personal communication, Henry and Duncan[2] reported the separation of *Sal. pullorum* and *Sal. gallinarum* as follows:

Organism	1% dextrotartrate	0.5% laevotartrate
Sal. pullorum	—	+
Sal. gallinarum	+	—

Jordan and Harmon[3] demonstrated that sodium tartrate peptone medium containing phenol red separated *Sal. aertrycke* and *Sal. schotmülleri* by a color change due to difference in pH.

Using a method of procedure similar to that of Jordan and Harmon, the writer tested the sodium salts of citric, d-tartaric, fumaric and mucic acids on *Sal. pullorum* and *Sal. gallinarum* together with a few closely related organisms. Fumaric and citric acids were found unsatisfactory as the pH changes induced were very inconstant. On the other hand, the reactions obtained with d-tartaric and mucic acids were very constant. The data on the latter 2 acids are presented in Table I.

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

[2] Personal communication from Dr. H. C. Brown in 1927.

[3] Jordan, E. O., and Harmon, P. H., *J. Infect. Dis.*, 1928, **42**, 258.

TABLE I.
The fermentation of d-tartaric and mucic acids by members of the Salmonella group as measured by pH changes.

Organism	Sodium d-tartarate		Sodium mucate	
	alkali	acid	alkali	acid
Sal. pullorum	+	—	+	—
Sal. gallinarum	—	+	—	+
Shig. jeffersonii	—	+	—	+
Sal. schotmülleri	+	—	—	+
Sal. aertrycke	—	+	—	+
Eberth. typhi	+	—	+	—

The data show that both sodium salts of d-tartaric and mucic acids differentiated between *Sal. pullorum* and *Sal. gallinarum.* Using these salts on a number of strains of both organisms over a period of 3 years, no variations or exceptions in the reactions listed above were obtained with either the tartrate or mucate media. Liquid and agar stab cultures gave the same reactions. The data on *Sal. aertrycke* and *Sal. schotmülleri* confirmed the work of Jordan and Harmon. The identical reactions obtained with *Sal. gallinarum* and *Shig. jeffersonii* add strength to the statement of St. Johns-Brooks and Rhodes[4] that these 2 organisms are identical.

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Evidence of Biologic Relationships Among Species of Chenopodiales.

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The differentiation of plants into species or larger groups is usually based upon gross or microscopic characteristics. Physiologic criteria are seldom emphasized and chemical ones are notoriously inadequate in the establishment of significant differences. The order *Chenopodiales* contains several genera which have been implicated in clinical allergy in man. The more important of these are *Amaranthus, Atriplex, Chenopodium* and *Salsola.* All, except the first, are included in the family *Chenopodiaceae.* There are many anatomic characteristics common to these genera although the gross appearances in the individual species differ enormously.

[4] St. Johns-Brooks, R., and Rhodes, M., *J. Bacteriol. and Path.*, 1923, **26**, 433.