

ADDENDUM

Dr. M. C. Terry (PROCEEDINGS, 1935, **33**, 14) overlooked a report of the same experiment and result by R. A. A. O'Meara (*J. Path. and Bact.*, 1935, **37**, 166) and wishes to acknowledge priority.

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Respiratory Behavior of the Propionic Acid Bacteria.

R. W. STONE, C. ERB AND C. H. WERKMAN.

From the Department of Bacteriology, Iowa State College, Ames.

Redox potential data obtained with resting cells of propionic acid bacteria, using succinic, fumaric, or malic acids as hydrogen donors, with various hydrogen acceptors show the following results. Succinic acid acts as a donator to methylene blue, NaNO_3 , and o-chlorophenol-indophenol. Fumaric acid may donate hydrogen to a less degree to methylene blue and o-chlorophenol-indophenol, while malic acid shows only a slight donation to these acceptors. Respiration experiments using the Barcroft-Warburg technique show marked O_2 -uptake with buffered suspensions of propionic acid bacteria when succinic, lactic, and pyruvic acids are used as substrates; much less with malic and fumaric acids. In an atmosphere of nitrogen, CO_2 is evolved in relatively large quantities from succinic, lactic, and

* P represents a preliminary, C a complete manuscript.

pyruvic acids, and in smaller amounts from fumaric and malic acids. From these results it is concluded that the conversion of succinic acid to propionic acid proposed by Wood, Stone and Werkman¹ probably takes place by direct decarboxylation and not by way of fumaric, malic, and oxalacetic acids as intermediates.

8420 C

The Bill of the Sparrow as an Indicator for the Male Sex Hormone. I. Sensitivity.*

EMIL WITSOHL.

From the Zoological Laboratory, State University of Iowa.

Research on the male sex hormone has long been hampered by the lack of indicators which at the same time are sufficiently sensitive, inexpensive and simple from a technical viewpoint. Keck¹ reported the fact that pigmentation of the male sparrow bill depends on the presence of the male sex hormone. Using a preparation which had been extracted in our laboratory from male urine and standardized by the rat seminal vesicle test, he concluded that in the bill of male castrates as little as 1/15 of a daily rat unit gives a distinct reaction by the eighth day.

Since the sparrow can be kept with little expense even in small laboratories and the color change is so distinct and directly observable, it seemed worthwhile to investigate the availability of this reaction as a hormone indicator. We here report on a quantitative study, comparing the sparrow unit with the capon and the rat units.

Castration causing permanent depigmentation is easily performed in the sparrow. Even in the unoperated male, the bill is light brown outside of the breeding season, as is the bill of the female, with few exceptions, during the whole year. It would considerably facilitate the use of the test if such unoperated specimens should react the same way as the male castrate. This possibility has been thoroughly investigated as well as the question whether the duration of castration has some influence on the color response.

¹ Wood, H. G., Stone, R. W., and Werkman, C. H., *J. Bact.*, 1935, **20**, 84.

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¹ Keck, W. N., *J. Exp. Zool.*, 1934, **67**, 315.