

Proceedings of the Iowa Academy of Science

Volume 44 | Annual Issue

Article 94

1937

A Study of the Gonadotropic Potency of Bird Pituitary (Domestic Turkey)

A. J. Stanley
State University of Iowa

G. M. Riley
State University of Iowa

E. Witschi
State University of Iowa

Copyright ©1937 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Stanley, A. J.; Riley, G. M.; and Witschi, E. (1937) "A Study of the Gonadotropic Potency of Bird Pituitary (Domestic Turkey)," *Proceedings of the Iowa Academy of Science*, 44(1), 207-207.

Available at: <https://scholarworks.uni.edu/pias/vol44/iss1/94>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

EFFECT OF NITROPHENOLS ON THE RESPIRATORY METABOLISM OF ORTHOPTERAN EMBRYOS

J. H. BODINE AND E. J. BOELL

When 2, 4-dinitrophenol (DNP) or 3, 5-dinitro-o-cresol (DNC) in suitable concentrations are added to isolated embryos of the grasshopper, *Melanoplus differentialis*, an immediate increase in the oxygen uptake of the embryos is noted. Respiration of either blocked or developing embryos in the presence of the nitrophenol varies between 200 and 300 per cent of the normal and may continue at a uniform rate for several hours.

Maximum stimulation by DNP is obtained with a concentration of approximately 2.5×10^{-5} molar; with DNC the optimal concentration is somewhat lower.

The stimulation of oxygen uptake is practically completely prevented by carbon monoxide. Moreover, in developing embryos, CO reduces the respiratory level to less than the normal even in the presence of DNP or DNC.

Although the normal respiratory quotient for blocked or developing embryos at the stages used is approximately 0.75, in the presence of DNP the R.Q. is raised almost to unity. The nature of the extra oxidations induced by DNP will be discussed.

DEPARTMENT OF ZOOLOGY,
STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

A STUDY OF THE GONADOTROPIC POTENCY OF BIRD PITUITARY (DOMESTIC TURKEY)

A. J. STANLEY, G. M. RILEY AND E. WITSCHI

Pituitary glands were collected from domestic turkeys and assayed on immature rats and on non-breeding adult sparrows.

Various dosages were given. In the rat 25 milligrams of the dry powdered gland produces a minimal reaction. Smaller amounts gave little or no effect while larger amounts gave greater reactions.

Daily injections of 5 to 10 milligrams of the powdered gland cause a striking development of the sex glands of sparrows within two weeks.

DEPARTMENT OF ZOOLOGY,
STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.