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Effect of Nitrophenols on the Respiratory Metabolism of Orthopteran Embryos

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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.

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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.

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