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The Influence of Colchicine on the Germ Cells of Insects, Melanoplus Differentialis and Gryllus Assimilis, With Special Reference to the Cytoplasmic Inclusions

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tive embryos show that concentrations up to 0.025 M n-butyl carbamate have a slight stimulating effect on diapause respiration but reduce the respiration of the active embryo to the diapause level. In concentrations of 0.025 M and greater, both active and blocked embryos are depressed to the same rate of oxygen consumption.

Reversible concentrations of carbamates are antagonized completely by 12.5 x 10^{-5}M methylene blue, the oxygen uptake of narcotized postdiapause embryos being restored to its normal level, and the narcotized diapause embryo being stimulated to the postdiapause level.

The dinitrophenol stimulated respiration of both active and blocked embryos is antagonized by the carbamates.

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THE INFLUENCE OF COLCHICINE ON THE GERM CELLS OF INSECTS, MELANOPLUS DIFFERENTIALIS AND GRYLLUS ASSIMILIS, WITH SPECIAL REFERENCE TO THE CYTOPLASMIC INCLUSIONS

THOMAS P. DOOLEY

Colchicine injected into the body cavity of insects affects the mitotic process of the germ cells by destroying the spindle. The chromosomes become clumped or scattered depending upon the concentration of the colchicine used. The injections were of .05cc. of concentrations ranging from .5 per cent — .05 per cent solutions. A testis from an animal injected with colchicine often shows numerous giant spermatids. Accompanying this karyokinetic disturbance the mitochondria, which are generally in the form of threads along the spindle fibers during the metaphase and anaphase, fail to assume such arrangement. They are found diffused in the cytoplasm in the form of short rods and granules, instead of the usual threads. The mitochondria affected in a dividing cell may assume an irregular mass in the daughter cells. The Golgi bodies seem to be less affected showing only a slight swelling.

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A PEDIGREE OF MALFORMED UPPER EXTREMITIES

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Many congenital abnormalities of the upper extremities of man have been reported, but none quite so complex both in anatomical deformity and hereditary tendency can be found in the literature by the authors.

This pedigree deals with an Iowa family with most of its members being engaged in agriculture.

The defect varies greatly throughout the family. There are two individuals which have only a malformation of the fingers, namely, a webbing between the thumb and index fingers and an inward curvature of the little fingers. Seven individuals exhibit malformations similar to the above two cases plus a partial fusion of the radius and ulna bones of the forearm. Three extreme cases show not only deformities including the first two types mentioned but also defects in the shoulders and upper arms. In two of these three cases the humerus is only about one inch long.

The investigation includes four generations of twenty-six individuals, twelve of them showing some variation of the malformation.

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