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fects of Ultracentrifuging on Certain Cell Structures

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EFFECTS OF ULTRACENTRIFUGING ON CERTAIN CELL STRUCTURES

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Extremely great centrifugal forces may be obtained by the use of the air-driven ultracentrifuge developed by J. W. Beams and his associates. Such forces afford a means of testing the viscosity and relative specific gravity of many cell components. The authors have been able to establish the fact that the Nissl bodies of rat ganglion cells represent a definite material in the cell and are not the result of the action of the fixative used on homogeneous cytoplasm; likewise, for the Golgi material in the uterine gland cells of the guinea pig. In general the chromatin has been shown to be heavier than the non-chromatin materials of the nucleus of various animal and plant cells. In Paramecium the chromatin has been moved centrifugally and there is left in the usual position of the macronucleus an achromatic alveolar mass. In Arcella the chromidia are heavier than the cytoplasm and the karyosomes of the nuclei are displaced toward the centripetal pole.

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RESPIRATORY MECHANISM OF BLOCKED AND NORMAL EMBRYONIC CELLS (ORTHOPTERA)

J. H. BODINE AND E. J. BOELL

Two types of response to the action of carbon monoxide and cyanide are noted in the respiration of the embryo of the grasshopper, Melanoplus differentialis.

The respiratory rate of embryonic cells in a state of normally occurring physiological block or diapause is stimulated in a carbon monoxide-oxygen medium in which the oxygen tension is sufficient to sustain normal respiration. Increasing the concentration of CO and correspondingly decreasing the O_2 tension depresses the respiratory rate, but the degree of depression is, within the limits of