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Changes in Susceptibility to X-Rays of Certain Embryonic Cells of the Grasshopper (Abstract)

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8 day sparrow embryo is comparable to an 11 day chick or a 14 day turkey embryo in morphological development. However, an adaptive character for hatching, the egg tooth, appears on the 6th day in all three birds.

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EXPERIMENTAL MODIFICATION OF X-RAY INJURY TO THE SKIN OF NEW-BORN RATS

(ABSTRACT)

J. P. GOODRICH, T. C. EVANS, AND J. C. SLAUGHTER

New-born rats have been irradiated with dosages of 300 to 3,000 roentgens and the effects noted on the skin (histologically) two weeks later. It was found that animals irradiated at temperatures of 0-10 degrees C. were much more resistant to the radiation than those at room temperature. It was also found that at 30 and 35 degrees C. the injury produced was greater than that at 25 degrees C.

The effect of the temperature changes appears to be due (at least in part) to alterations produced in metabolic conditions. This conclusion is based on experiments in which the resistance was increased by preventing breathing during the irradiation. It was also found that legs and tails were more resistant if a ligature was applied during the roentgen treatment.

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CHANGES IN SUSCEPTIBILITY TO X-RAYS OF CER- TAIN EMBRYONIC CELLS OF THE GRASSHOPPER

(ABSTRACT)

J. C. SLAUGHTER, T. C. EVANS, AND J. P. GOODRICH

Eggs of *Melanoplus differentialis* were irradiated with dosages of 1,000-10,000 roentgens, in steps of 1,000 on each of the first six days after laying. Gross and microscopical studies of the eggs were made after the controls had reached diapause.

It was found that the radiation on the first and second days had prevented subsequent development of all cells. Irradiation after the second day inhibited the development only of the cells of the embryo proper.

It is therefore indicated that the yolk and serosa cells undergo a marked increase in their resistance to X-rays after the second day. The yolk and serosa cells are apparently able to complete the process of differentiation following exposure to the radiation. The most evident morphological expression of this differentiation is a marked increase in size, especially of the nucleus. In some of the eggs irradiated on the second day this process of differentiation was so affected that large masses of nuclear material were produced.

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THE INHERITANCE OF PITTED EAR

(ABSTRACT)

KARL A. STILES

Pitted ear is a relatively rare human anomaly defined as a pit in the proximal end of the upper part of the helix. This hereditary malformation has been studied in three different families, not known to be related. Pedigree charts prepared for these families show that one hundred and twenty-seven individuals are involved, of which twenty-four show pitted ear. This physical trait varies greatly throughout the families: the size of the pits ranges from approximately that of a pin head to about that of a match stick; and in depth, from about one-sixteenth to one-half inch. This trait is usually unilateral in its expression, but appears about as often in one ear as in the other; and there are some cases in which it is found in both ears. This character is not inherited as a simple Mendelian dominant, but rather an irregular dominance is suggested.

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