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The Embryology of the English Sparrow (Abstract)

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IOWA NON-BITING MIDGES
(DIPTERA; CHIRONOMIDAE)
(ABSTRACT)

JAMES C. BEYER

A survey of the Chironomid fauna of Iowa waters is being made, together with a study of life histories and the ecology of the group. Methods of preparing permanent mounts of life-histories are being developed. One of the objectives is to investigate the role played by these insects as fish food. The group has received little attention in this country and is a promising field for the taxonomist, the limnologist and the physiologist. To date the author has recorded some sixty species from Iowa including several life histories hitherto undescribed.

ST. AMBROSE COLLEGE,
DAVENPORT, IOWA.

THE EMBRYOLOGY OF THE ENGLISH SPARROW
(ABSTRACT)

WARREN N. KECK

The purpose of this investigation is three-fold: (1) to outline the general embryogeny of the English Sparrow, (2) to determine the relative rates of differentiation of the various external features and (3) to compare the developmental rates of the sparrow with those of the chick and turkey.

Two questions arise from the fact that the incubation period of the sparrow is 13 days, while that of the chick is 21 and the turkey 28 days:

(1) Is it possible to establish corresponding stages in the three embryos, or do the different organs develop at different times?

(2) Are the three at the same stage of development at hatching, or for example, is the sparrow at hatching to be compared to a chick one week before hatching?

A series of carefully timed embryos was obtained by incubating fresh sparrow eggs under artificial conditions. Diagnostic features for each day were recorded in chart form so that the age of embryos taken from eggs in nature can be readily determined. An

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.

COE COLLEGE,
CEDAR RAPIDS, IOWA.

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.