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## An Inquiry Concerning the Success of Marine Aquaria in Iowa Schools

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AN INQUIRY CONCERNING THE SUCCESS OF MARINE AQUARIA IN IOWA SCHOOLS

AMY ELIZABETH BLAGG

A five-gallon marine aquarium from the Supply Department of the Marine Biological Laboratory at Woods Hole has afforded much interest not only to our students but also to members of other departments, and information is desired concerning the number of such aquaria used in Iowa, and the length of time the marine forms may be kept alive.

DEPARTMENT OF ZOOLOGY,  
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GRINNELL, IOWA.

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SOME EMBRYONIC ABNORMALITIES CAUSED BY X-RAYS

TITUS C. EVANS

In the course of an investigation of the effects of X-Rays on embryonic development of *Melanoplus differentialis*, it was noticed that abnormalities appeared in some of the individuals. More eggs were rayed, dosages comparable to those given the embryos in which abnormalities appeared, and the following observations have been made. (1) There was a critical stage for the production of abnormalities. Eggs rayed when the embryos were extremely young usually resulted in only deficiencies of various degrees. Eggs rayed when the embryos were just a few days older resulted in embryos exhibiting many abnormalities. Still older embryos produced no abnormalities following irradiation. (2) There was also an effective range of dosage. Too small a dosage gave no effects, too high a dosage caused cessation of growth and degeneration before abnormalities could be discerned.

The abnormalities observed are as follows: Duplication of heads, extra appendages (some biramous) on head, extra mouth parts, extra thoracic appendages (some biramous), and indications of attempts at duplications of the abdomen. Most of the extra structures had the appearance of typical appendages, being abnormal