

Proceedings of the Iowa Academy of Science

Volume 54 | Annual Issue

Article 49

1947

Abstract: A spectrophotometric study of a developing egg (Orthoptera) with especial reference to riboflavin and its derivatives

J. H. Bodine
State University of Iowa

L. R. Fitzgerald
State University of Iowa

Copyright © Copyright 1947 by the Iowa Academy of Science, Inc.
Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Bodine, J. H. and Fitzgerald, L. R. (1947) "Abstract: A spectrophotometric study of a developing egg (Orthoptera) with especial reference to riboflavin and its derivatives," *Proceedings of the Iowa Academy of Science*: Vol. 54: No. 1 , Article 49.
Available at: <https://scholarworks.uni.edu/pias/vol54/iss1/49>

This Research is brought to you for free and open access by UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Abstract: A spectrophotometric study of a developing egg (Orthoptera)with especial reference to riboflavin and its derivatives. (lantern) J. H. Bodine and L. R. Fitzgerald, Zoology Laboratory, State University of Iowa, Iowa City, Iowa.

Spectrophotometric studies of the developing egg of the grasshopper (*Melanoplus differentialis*) show, (a) the presence of riboflavin in the newly-laid egg; (b) no changes in the riboflavin of the developing egg occur until late in prediapause (15th to 19th day of development at 25°C.); (c) differences in the transmittance of the acid (pH 4.5) and alkaline (pH 10) diffusible fractions indicate changes in the original riboflavin content of the eggs; (d) during the diapause or resting developmental period no further changes in the riboflavin are noted; (e) in active postdiapause development changes in the riboflavin increase up to the time of hatching; (f) these changes in riboflavin are thought to be due to the formation of other fluorescing compounds, probably pterines; (g) the fluorescent fraction of the riboflavin is thought to act as a "prosthetic group" for the pterines thus formed.

Abstract: Lethal Effect of some Stylet Cercariae on Various Fishes. F. G. Brooks, Cornell College, Wisconsin Conservation Department, University of Wisconsin.

Incidental to a study being conducted on the cercariae infesting the snails of Carrol Lake, Oneida County, Wisconsin, it has been found that certain Xiphidiocercariae, when in high concentrations, will kill fish of various species. Controlled experiments using five cercariae of the stylet group indicated that the cercariae to which the provisional designations D. S. and Eta have been given pending publication of their descriptions were lethal to sunfish, perch, and large-mouth bass when they were placed in battery jars with from three to forty-eight infested snails, while *C. Gamma* and the cercaria of *Plagiorchis ameiurensis*, McCoy, 1928 were not. The fish were killed in periods of time ranging from three and one-half hours to three and a fraction days. The species of cercaria, the species of fish, and the concentration of the cercariae were factors influencing the time element. *Cercaria D* was found to have the most lethal effect of the three killers. As many as 46,875 *Metacercaria D* were recovered by the digest method from a single sunfish. Either no metacercariae or only small numbers of them were recovered by digest from the other two lethal species, though large numbers could be recovered by dissection. The fish killed by *Cercaria D* showed hemorrhage of the fins, gills, and lips.