

ON THE EARLY STAGES OF THE LEPIDOPTERA
(ABSTRACT)

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Students and writers on the subject of embryology have stressed the fact that, in mammals, the process of development of the embryo and fœtus give a slurred-over picture of the entire phylogenetic race history.

Beginning with the single cell, and running through the stages of morula, gastrula, primary dermal layers, notochord, segmentation, gill slits, limb buds and cauda, to the final infantile body form, one sees glimpses of a progressive succession of evolutionary ancestral forms emerging over a vast stretch of time.

After birth comes a contact with a great variety of environments and stresses which brings into play many external adaptations and modifications to meet specific environments, which vary greatly in time and place, and which affect particularly the external structures, and make for speciation and sub-speciation.

With Lepidoptera the picture is somewhat altered, in that metamorphosis gives us at least three stages in which external environment, with its external stresses, must greatly modify the form of the larva, pupa, and imago, in order to adapt each to a specific environment.

Since the egg is formed and extruded by internal organs that have probably not been greatly modified by external stresses, it seems reasonable to suppose that it is a somewhat primitive entity, and it should therefore give us a better indication of family and generic relationships than do the later phases.

Likewise, the first instar larva is probably of much more primitive form than the later instars, and should be helpful in determining generic relationships.

If these surmises are correct, and I believe they are, then the study of life histories in the Lepidoptera should be of great importance to the taxonomist. These are the considerations that have caused me to devote most of my spare time to life history work, and to stress the importance of the egg and first larval instar.

In view of the fact that the eggs of most butterflies and moths are very small, and many of them are hard to visualize with only a word picture, it seems important to have enlarged photographs, or drawings of each species.

This is a contribution that could very easily be made to our science by the younger members of our fraternity, since it requires very little in the way of expensive equipment.

There are those among us who say they "can not draw". It has been my experience, however, that almost anyone can draw, if he exercises patience, and does a reasonable amount of practice. One can never do what he does not try.