

poecilogonic forms, while preserving a great resemblance in the adult state, cannot be crossed and this inability to cross facilitates the divergence of the two species even if they come in contact in some point of their habitat. It is thus, that, according to Grote and Smith, *Agrotis haruspica* and *A. rubifera* are the American representatives of the European *A. auger* and *A. rubi*, from which they differ only in the genital armature of the male; but that these modifications may be effective they should perhaps recede and determine the poecilogony instead of being caused by it or produced by it. This question is hard to solve at present and stands with the numerous problems that Romanes has stated in his work on physiological selection. In other circumstances poecilogony seems to be due to the varying nourishment of the larvae. If certain caterpillars are modified directly by the supporting plant as is known to be the case among a great number of species, we know also that some are adapted definitely to a determined plant and are protected by a permanent form, a different livery. Poulton has stated, as well as other authors, that many caterpillars die of hunger rather than touch nourishment

for which their race has lost the habit. Perhaps it is to poecilogony of nourishment that we should attribute the differences found in the caterpillars of *Cuculia verbasci* and *C. scrofulariae*, moths, the similarity of which in the adult state is not easily explained by convergence. Further, certain cases of resemblance among insects, in which the larvae differ but live in the same localities, sometimes upon the same plants, are difficult to interpret under one or the other of these alternatives which we have indicated (convergence or poecilogony). We cite for example *Lithosia complanana* and *L. lurideola*, *Deilephila euphorbiae* and *D. nicaea*.

Finally the only purpose in this short note is to state a very important problem of general biology, touching at once embryology, ethology and taxonomy. Perhaps on certain sides the problem is capable of experimental solution. In any case the question ought to receive light from our specialist friends, if they will study into the numerous cases of the kind enumerated above, which pass daily under their eyes, and of which they; better than any others, can state precisely the actual value.

In "The butterfly hunters in the Carribees" (N. Y., Scribner) Mr. E. M. Aaron, in the guise of a learned "Dr. Bartlett," takes two boys of a friend collecting in the Bahamas, Hayti and Jamaica, and brings them back laden with spoil and honors, culminating in their election into the Philadelphia Academy. What with history

and other matters butterflies themselves play a minor part, but there are some observations due to personal experience which lend a certain value to the book. It ought to interest boys, for it has the odor of the camp about it, but we could wish there had been less of the mercantile spirit in it. It is well printed.



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