

CORRESPONDENCE.

SCARCITY OF PAPILIONIDÆ IN NOVA SCOTIA AND NEW BRUNSWICK.

DEAR SIR,—

During the months of July and August last I visited several places in New Brunswick and Nova Scotia, and was everywhere, alike, surprised at the scarcity of Papilionidæ this year. Where last summer there were swarms of *Argynnis aphrodite*, *Colias philodice*, *Nymphalis arthemis*, *nephele*, *atope* and *Pieris rapæ*, I did not see two dozen examples in all. The only *arthemis* I have seen this year is one obtained from a mature larva I picked up on the side-walk near my own residence. I have one *disippus* taken near St. John, July 1st. This species I think is rare here at any time; *turnus* is also rare. *Melitæas* have been about as abundant as usual; *Vanessa antiopa* much less numerous. The commoner kinds of moths which enter our houses at night are remarkably scarce.

In Nova Scotia I found large numbers of the larvæ of *Cynthia cardui*, and later here I have seen the imagines very abundant. *Huntera* is much less common. At Parrsboro', N. S., I found on cultivated grounds several young maples quite defoliated by the larvæ of *Orygia leucostigma*. A careful search failed to discover any on the larch, poplar, willow, mountain ash and other trees and shrubs which were planted thickly around. On the opposite side of the street I saw a small apple tree swarming with these caterpillars, but they do not appear to do as much injury to the apple as to the maple tree. I suggested to the owner of the apple tree that they might be picked off and destroyed before they commenced spinning, but he eventually thought it would be too much trouble. There will likely be a good crop of these caterpillars next year.

CAROLINE E. HEUSTIS, Carleton, St. John, N. B.

DEAR SIR,—

For some two or three years back there has been no little discussion of the question, "What constitutes a genus?" The opinions of many of our lepidopterists and others have been given to the gain of us all. We each had our opinions before the reading of these articles, but now are able intelligently to give a reason for our opinions. And probably the majority have been convinced that the creation of genera upon minute differences is not only unnatural, but ill-advised and unnecessary.

But with the Catalogues of Edwards and Strecker before me, and after viewing the varying conflict between Messrs. Strecker and Grote, I would like to ask "What constitutes a species?" There is certainly a wide difference of opinion among authors upon the subject, and if we are properly, and with profit, to read their articles and study their books, we ought to know the basis upon which they work. I am aware there is, properly speaking, in nature, no such thing as a species defined by precise limits. It is impossible to tell where variety leaves off and species begins, and where one species ceases to be one, and becomes two. But when a person becomes (by the fact that he gives a "Check List" or a "Catalogue" to the public) a professed systematist, we, "the public," have some right to the ideas of truth upon which their work is based. Apart from right, however, I am sure information on this subject will be of general interest and profit. May I therefore ask our friends to "rise and explain?"

Very truly yours,

GEO. D. HULST, Brooklyn, N. Y.

DEAR SIR,—

The paper by Mr. Robert M. Grey in your January number is of great interest. In it Mr. Grey takes the ground that the four Eastern so-called "species" of *Limenitis* are plastic forms of an original species modified by the environment and with essentially differing ranges in latitude and vertical height. The intermediary individuals which bear out this statement, and Mr. Grey's experience in collecting the different forms, are important witnesses to the truth of his discovery. I wish to point out the fact that, in experiments in breeding these different forms, we may not expect to rear all four from one brood of larvæ, as a proof of Mr. Grey's correctness. These forms of *Limenitis* stand evidently in an intermediate position between varieties and species. We may expect, indeed, more or less reversion to be made clear by breeding experiments with them. But we may suppose that these forms, either from climatic or other influences, are partially crystallized. This seems to be inferable from their greater distinctness, more intense than in the cases selected from European butterflies by Weismann and shown in *Papilio Ajax* by Edwards. Experiments will doubtless allow us to arrive at some conclusion respecting the oldest of the forms, which may prove to be *arthemis*.

A. R. GROTE, Buffalo, N. Y.