

ON THE SPECIES OF THE GENUS *PERO* OCCURRING IN
BRITISH COLUMBIA

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For many years the species of the genus *Pero* were a puzzling one to geometrid students, and it was not until the year 1910 that the late John A. Grossbeck, of New Brunswick, N.J., revised this group and placed the different species upon a satisfactory basis.

Pero, the name by which this genus is now known, was applied by Herrich Schaeffer in the year 1850, and it supersedes the old name of *Azelina* Guenee by which it was known for so many years, and it also includes the genus *Marmarea* which was erected by Hulst in 1896. This latter was made a distinct genus owing to the fact that the male of *occidentalis* had dentate antennae.

In the species separated by Grossbeck in his revision two have dentate antennae in the males, all the others having filiform antennae. In regard to this difference in antennal structure, Grossbeck in his Monograph (Proceedings of the U.S. National Museum, Vol. 38, 1910) says: "*occidentalis* has dentate antennae in common with *colorado*, but this in my opinion can hardly be considered of generic value, especially in view of the fact that *occidentalis* in habitus and genitalic structure has strong affinities with *modestus* a species with filiform antennae, while *colorado* has affinities in the same peculiarities with *morrisonatus*, also a form with filiform antennae. For these reasons I have regarded the genus as identical with *Pero*."

This means that the two species with dentate antennae differ more from each other than they do from those with simple antennae. The markings of this group, although similar in outline but differing in colour, are very well defined and quite distinctive. The ground colour varies from light gray and light ochreous through all their varying shades to dark umber-brown. The fore wings are divided into three transverse regions, the basal and outer thirds generally being of the same shades of colouring, while the median band is very much darker, becoming more intense as it approaches the extra-discal line. In some species the intra-discal line is partially obsolete, giving them the appearance of a single division. The hind wings are divided by a slightly curved or undulate line, which crosses the wing outward of the middle, terminating at the inner margin. Now, this concludes my generic references, but before speaking of the species with which we are most interested, I would like to say that prior to the time when Mr. Grossbeck undertook his investigations, only two species were recognized, viz.: *Honestarius* Walker (the *ancetaria* of our lists) and *occidentalis* Hulst. Mr. Grossbeck had for a long time thought that there were many forms going under the name of *honestarius*, and he set to work to gather as

much material as possible, for the purpose of studying the whole group. With his own large collection supplemented by specimens loaned from many different points in the United States and Canada, which included very long series from the collection of Dr. Wm. Barnes, he eventually examined some 800 specimens. The final result of all this work showed that there were nine different species represented on the American continent north of Mexico, five of which had been regarded, at one time or another, as varieties of *honestarius*. With typical thoroughness, Mr. Grossbeck had slides made of the genitalia, and in every case they bore out the arrangement that he had previously based on superficial characters only.

Of the nine species listed by him as occurring in North America, there are four which are found in this Province, viz.: *giganteus* Grossbeck, *occidentalis* Hulst, *morrisonatus* Hy. Edw., and *behrensarius* Pack.

I will now give a short description of each, with their habitat, which I hope will render them more easy of identification in the future. I have also brought with me specimens of the different species for comparison.

Pero giganteus Grossbeck. This is the largest species of the genus, measuring 45-51 m.m. in expanse. Its large size alone will readily distinguish it from the other species. The ground colour of the fore wings is whitish-grey, with more or less of a brownish, or yellowish, cast. The median band in the male is of a dark umber-brown, which becomes more intense as it approaches the extra-discal line. In the female this dark brown colour is replaced by a brighter reddish brown. While not a common insect, it is more abundant than any of the other species that occur in our fauna. It is on the wing from the beginning of July until the end of August, and ranges from Vancouver Island to as far east as Kaslo. This is the species that Taylor listed erroneously as *Azelina occidentalis* and is labelled as such in many of our collections.

Pero occidentalis Hulst. This species can be recognized by the dentate antennae of the male, which at once separates it from the others. It is smaller than the preceding species, being from 38-40 m.m. in expanse. The intra-discal line of the primaries is dark brown and well defined, giving the median area the appearance of a solid dark brown band, which contrasts sharply with the lighter grayish brown of the ground colour. This species is earlier on the wing than any of the others, being found throughout May and June. It is found in the Interior, and is rather uncommon. The specific localities I have for this species are Rossland, June 8th (W. H. Danby); Kaslo, June 10th (J. W. Cockle); and Okanagan Falls, May 6th (E. M. Anderson).

Pero morrisonatus Hy. Edw. This form is readily identified by its peculiarly mottled appearance. The ground colour is of a variegated yellow, the extra- and intra-discal lines being dark brown, and the

median space often profusely mottled with the same colour. This species occurs all over the southern part of British Columbia and Vancouver Island, but is more uncommon than *giganteus*. It generally flies from the beginning to the end of June. This form has been invariably sent to me under the name of *honestarius* (*ancetaria*), which species does not occur, as far as is known, any further west than Calgary, and must accordingly be struck off our lists.

Pero behrensarius Pack. Of this species I can say but very little, and it must be exceedingly rare, as I believe it is contained in only two collections. Mr. Grossbeck had nine specimens before him when writing his Monograph, of which seven came from Oregon, one from California, and one from Rossland, B.C. The latter was dated June 3rd, but by whom it was taken is not recorded. I had hoped to have found a specimen amongst Mr. W. H. Danby's material (he having collected at Rossland for several years), but was disappointed in this respect, although he had specimens of the other three species. Speaking of this form, Mr. Grossbeck says: "It is a very distinct and easily recognized species, separable from all the others by the granite-grey ground and the sharply defined median area."

To summarize the foregoing, the species of this genus will stand in our lists as follows:

PERO Herr-Sch.

- giganteus* Grossbeck - Generally distributed.
- occidentalis* Hulst - - Rossland; Kaslo; Okanagan Falls.
- morrisonatus* Hy. Edw. - Generally distributed.
- behrensarius* Packard - Rossland.

Author's Note.—Since the above article was written, the following additional data has been gathered:

Pero behrensarius Pack. Recently in going over a collection of Lepidoptera made by Mr. W. Downes, at Armstrong, B.C., a few years ago, I found two specimens of what are undoubtedly this species, taken in July, 1914. They agree perfectly with Grossbeck's description and are easily separable from the other three species found in this Province.

Pero occidentalis Hulst. On June 4th, 1917, I took at light a specimen of *Pero*, which seemed to me to be different to any that I had hitherto taken in Victoria. Upon examination under a binocular, it proved to my surprise to be *occidentalis*. This, to my knowledge, is the first record of this species on Vancouver Island, and considerably extends its known range in British Columbia. On June 7th, I took another one, also at light, both specimens being males.

Pero morrisonatus Hy. Edw. It is well to note that in Messrs. Barnes and McDunnough's New Check List (1917) the name *morrisonatus* has been altered to *morrisonarius*.

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