A NEW SPECIES OF *PAPAIPEMA* (NOCTUIDÆ) FROM NEW JERSEY

by OTTO BUCHHOLZ

The new species described below is a member of the *Papaipema necopina* Grote group, whose species are very difficult to tell apart by characters of the color and pattern; the foodplant and genitalia seem to be the best means of separating them.

Papaipema mulleri BUCHHOLZ, new species

Head, thorax, and the upper side of the primaries dark gray with brown reflections; the subterminal space with a violet tint and a faint t.p. line. Anterior tuft adze-shaped. Abdomen and upperside of the secondaries very light gray. Underside of the wings the same tone as the upperside, darkening gradually toward the outer margin. No external characters were found by which the adults could with certainty be separated from *P. necopina.*

Male genitalia (Holotype): Uncus flat, broad, widest medially, tapering apically to an elongate truncate point, with lateral pieces at base of uncus separated from uncus by their own width; anal tube lightly sclerotized, with a well-defined, roughly U-shaped subscaphium; penicular region of tegumen rounded laterally; vinculum elongate, tapering; juxta a subtriangular plate, continued dorsally as a wide, broad, transtilla-like structure, scobinate medially, and with lateral sclerotized arms that extend antero-laterally into the valves, then swing posteriorly to form the claspers. Valves with large, heavily spined, bifurcate cucullus, the lateral arm of which is of even width, then sharply constricted apically, terminating in a curved spine; clasper bifurcate, the arms long and pointed, the posterior arm with numerous teeth on outer margin; sacculus very broad, with distal margin of sclerotized area truncate, with prominent clavus. Ædeagus elongate, very slightly tapered distally; vesica armed with a single stout spine medially, and with two terminal bands of well-defined teeth, terminating in a rounded sclerotized protuberance on the left side.

The genitalia of this species are similar to those found in *P. necopina* Grote, but a number of differences are present. In *necopina* the uncus tapers more or less evenly to a blunt point, while in the present species the apex is elongate and truncate; the lateral pieces of the uncus are just barely separated from the base of the uncus in *necopina,* while they are much farther out in this species. The subscaphium and the dorsal transtilla-like structure are more strongly developed in the new species, and the ventral plate of the juxta is better defined and distinctly triangular. The lateral arm of the cucullus in *necopina* tapers in width, terminating in a blunt point, while in this species this arm is broader, and is sharply constricted apically, terminating in a curved spine. The terminal bands of spines in the vesica are more strongly toothed in this species than in *necopina,* and the ventral band in the latter species is smaller and more weakly represented.

Described from 10 specimens (7 males and 3 females), all ex-larvæ reared from *Helianthus strumosus* L., and all taken by JOSEPH MULLER along highway 206 about six miles north of Stanhope, Sussex County, New Jersey.

HOLOTYPE, male, ex-pupa 9 August 1951; ALLOTYPE, female, ex-pupa 4-5 September 1951; PARATYPES, 6 males and 2 females ex-pupæ 30 and 31 August and 4, 5, 8, 9, and 16 September 1951. The Holotype is being deposited in the American Museum of Natural History in New York. For the present the Allotype and 2 male and 1 female paratypes are retained in

the collection of the author; the other 4 male and 1 female paratypes are in the collection of JOSEPH MULLER.

The larva is in general usual for *Papaipema* in color and markings. The dorsal line is unbroken. A black line on the side of the head extends along the thoracic shield. The foodplant is entered three inches above ground level, and the burrow extends to one inch below ground level. The larva causes no swelling of the plant. It leaves the plant for pupation in the ground. The adults emerge two weeks earlier than its nearest ally, *P. necopina.* The foodplants of *P. necopina* are *Helianthus divaricatus* L. and *Cacalia tuberosa* Nutt.

I am pleased to dedicate this species to my friend JOSEPH MULLER, of Lebanon, New Jersey, who did all the field work. My thanks go to Dr. FREDERICK H. RINDGE, Associate Curator of Insects, of the American Museum of Natural History, who studied the genitalia and prepared the entire description of the genitalia.

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INFRA-SUBSPECIFIC NAMES AMONG *PARNASSIUS*

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For nomenclatorial purists "form" names of lesser stature than subspecies are annoying synonymic parasites. Form names serve a purpose for the serious student of variation fully as great as species and subspecies names. Both types of names are useful only because they stand for an otherwise cumbersome description. When a type of variation from the normal pattern occurs throughout a group of species or even a group of genera — such as albinic females among Pieridæ — it is very much worth while calling attention to this phenomenon. Such albinism has been investigated and found to be genetic. Similar less conspicuous variation crosses specific lines among butterflies. In time we may learn if they, too, are genetic or physiologic reactions to environment that can occur within the strictures imposed by the genes. The darkening of some butterflies when exposed to cold during immature stages falls within physiologic reactions. Infra-subspecific names are useful in such genetic and physiologic studies.

Perhaps the greatest nomenclatorial furor among American taxonomists has been stirred up by the application of infra-subspecific names by European students of the genus *Parnassius.* Until recently I looked down my nose at such naming. My change of mind came about when I started to make a detailed study of variation among *Parnassius phœbus* Fabricius (the species best known