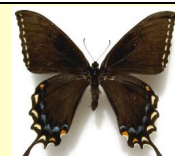


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DISCOVERY OF A BLACK FEMALE FORM OF *PTEROURUS APPALACHIENSIS* (PAPILIONIDAE: PAPILIONINAE) AND ADDITIONAL OBSERVATIONS OF THE SPECIES IN WEST VIRGINIA

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ABSTRACT: The univoltine *Pterourus appalachiensis* was described from the southern Appalachian Mountain region of the United States as a sympatric sibling of *P. glaucus* (Pavulaan & Wright, 2002). A black form female was unrecognized at that time. Subsequent sampling of populations at Spruce Knob, West Virginia revealed a unique black female phenotype among typically yellow female *P. appalachiensis*. We believe this phenotype represents a black female form of *P. appalachiensis*, thus broadening our understanding of this unusual species and firmly establishing its distinction from *P. canadensis*.

Additional key words: mimicry, female-linked polymorphism, sympatry, introgressive-type hybridization

REVIEW OF THE BLACK FORM OF *PTEROURUS GLAUCUS* (LINNAEUS)

Papilio glaucus was described by Linnaeus (1758) from a black female, which he believed was a distinct species unrelated to the large yellow swallowtails of eastern North America. As was customary of 18th century natural history, no type specimen was designated and the name existed for over two centuries without a name-bearing type. Honey & Scoble (2001) in their exhaustive survey of butterflies in the Linnaean collections found no surviving *glaucus* specimens. In the absence of syntypes from which to select a lectotype, we designated a typical black female of the summer brood (Fig. 6) as the neotype of *Papilio glaucus* Linnaeus (see Pavulaan & Wright 2002). This specimen was collected on September 10, 2000, in the Sandbridge section of Virginia Beach, VA, a few hundred feet from the Atlantic Ocean. Scott (1981) introduced the infrasubspecific name *nigra* for the black female to distinguish it from the “normally yellow” form. However, this name has no official taxonomic standing under the rules of the ICZN (1999). The black female of *P. glaucus* is believed to be a mimic of the poisonous model *Battus philenor* (Linnaeus), a dark-colored swallowtail that sequesters aristolochic acids from its larval hosts (Sime et al. 2000). The mimetic black female of *glaucus* occurs in differing frequencies within the species range, constituting a greater percentage of females in the southern portion and a lesser percentage in the north. This distribution is believed to be in response to the frequency of *B. philenor*, which is more common in southern United States and less common in the north.

DISCOVERY OF AN UNUSUAL BLACK PHENOTYPE OF *PTEROURUS APPALACHIENSIS*

During our original field study of *Pterourus appalachiensis* in years 1985-2001, no black females corresponding to the size and behavior of typical yellow females were found in the mountains of North Carolina, Virginia, Maryland, and southern Pennsylvania. The few black specimens retrieved for identification proved to be rather typical black females of *P. glaucus*. We surmised that *appalachiensis* lacked

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