Zootaxa 2735: 31–34 (2011)
www.mapress.com/zootaxa/

Correspondence

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Taxonomic re-evaluation of *Parastagmatoptera abnormis* Beier, 1963 (Dictyoptera, Mantidae: Stagmatopterinae): An unusual case of "parasite-induced" synonymy

FRANCESCO LOMBARDO & RITA UMBRIACO
Department of Animal Biology "M. La Greca", University of Catania, via Androne 81,95124 Catania Italy.
E-mail: lombafra@unict.it.

The Neotropical genus *Parastagmatoptera* Saussure includes medium-sized species distributed in tropical and subtropical areas of Central and Southern America. Thirteen nominal species have been so far described (Agudelo *et al*. 2007), with most species currently known from few specimens, often of one sex only. Beier (1963) described *Parastagmatoptera abnormis* Beier, 1963 based on a single male specimen from Surinam. Unfortunately, Beier's original description lacks enough details to allow an accurate literature-based identification and, since its original description, no additional specimens ascribable to *P. abnormis* have been recorded.

We recently had the opportunity to examine the holotype of *P. abnormis*, which is deposited in the Biozentrum Grindel und Zoologisches Museum (ZMH-Hamburg, Germany). After the examination of the holotype's external morphology, we believe that the erection of this species was the result of an unusual case of misidentification. The type specimen exhibits some interesting morphological features that we believe might have resulted from the activities of an internal parasite, which we describe as follows.

1. The specimen shows clear signs of infection by a horsehair worm (Nematomorpha); in fact, the apex of the parasite can be seen protruding from the first abdominal segment (Fig. 1a–b), and a good part of the body of the parasite is also visible through the abdominal cuticle, between the fourth and seventh abdominal segments (Fig. 1c).

2. The specimen also exhibits secondary sexual features typically observed in females, suggesting a possible case of an intersex individual. These features are:

- The size of the ocelli falls between those of normal males and females (Fig. 2a–b) (ocelli are much larger in males).
- The shape of the fore- and hindwings and their venation conform to the typical morphology observed in males; however, their pigmentation pattern resembles that of females. The typical wing morphology and pigmentation pattern of *Parastagmatoptera* females is shown in Fig. 3c. In the fore wings, the costal area is opaque and has a dense network of nervatures, the discoidal area is hyaline on its distal 1/3 and opaque on its proximal 2/3, (exhibiting hyaline spots in some cells) and also shows a distinctive brown, rounded spot near its middle section; the hind wing is opaque and colored yellow for the most part but with only some patchily distributed pigmentation on and immediately around the distal-most cross-veins. On the other hand, the typical wing morphology of *Parastagmatoptera* males is reproduced in Fig. 3b. Male wings have the cross-veins of the costal area parallel, and both the fore and hind wings are totally hyaline and unpigmented. The fore and hind wings of the type of *P.abnormis* are shown in Fig. 3a. The shape and distribution of the cross-veins on both wings conform to what is normally observed in most *Parastagmatoptera* males, except that the pigmentation pattern somewhat resembles that normally seen in females.
- The genitalia of the examined holotype (Fig. 4a–d) is proportionally smaller than that of a normal male and it is likely to be non-functional. This reduction might be due to the considerable size of the parasite, which occupies most of the abdominal cavity and may have prevented the normal development of the reproductive organs.

From the above evidence, we believe that Beier made a misidentification and, even though he acknowledged the unusual coloration of the holotype's wing by stating "*Von allen Arten der Gattung durch die merkwürdig gezeichneten Elytren und Alae unterschieden…*" ("From all the species of the genus, it is distinguished by the unusual coloration of its fore and hind wings…"), he did not realize that the specimen before him was an intersex individual. Therefore, we consider *P. abnormis* as an invalid species; in fact, it is similar to *P. flavoguttata* (Serville, 1839), as they both exhibit the

Accepted by J. Rivera: 7 Dec. 2010; published: 10 Jan. 2011