

**A REVIEW OF THE NEW RIODINID BUTTERFLY GENUS *PANAROPSIS*  
(LEPIDOPTERA: RIODINIDAE: SYMMACHIINI)**

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*Abstract.*—A new riodinid genus *Panaropsis*, tribe Symmachiini, is described and illustrated from Central and South America. Four species are recognized: *elegans* Schaus and *semiota* Bates transferred from *Pterographium* Stichel (**n. comb.**), and *thyatira* Hewitson and *inaria* Westwood transferred from *Esthemopsis* C. and R. Felder (**n. comb.**).

*Key Words:* *Esthemopsis*, Neotropical, *Pterographium*, *Panaropsis*, Symmachiini

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The purpose of this paper is to describe and characterize a new riodinid genus in the tribe Symmachiini to provide a generic name for *elegans* Schaus 1920, *semiota* Bates 1868, *inaria* Westwood [1851] and *thyatira* Hewitson [1853], currently treated in *Pterographium* Stichel 1910 and *Esthemopsis* C. and R. Felder 1865, for a forthcoming morphological survey of male androconia in the Riodinidae (Hall and Harvey, in press). The tribe Symmachiini has been adequately diagnosed elsewhere (Harvey 1987, Hall and Willmott 1996) and this information is not repeated here.

#### METHODS

Dissections were made using standard techniques, after abdomens were soaked in hot 10% potassium hydroxide solution for approximately five minutes, and subsequently stored in glycerol. The terminology for male and female genital and abdominal structures follows Klots (1956) and Eliot (1973), while nomenclature for wing venation follows Comstock and Needham (1918). The taxonomic status of names is based on the catalog of Callaghan and Lamas (in press).

All the collections listed by Hall (1999)

were examined to determine the ranges of *Panaropsis* species. The following collection acronyms are used throughout the text: AME: Allyn Museum of Entomology, Florida Museum of Natural History, Sarasota, FL, U.S.A.; BMNH: The Natural History Museum, London, England; MNRJ: Museu Nacional, Rio de Janeiro, Brazil; MUNB: Museo de la Universidad Nacional, Bogotá, Colombia; USNM: National Museum of Natural History, Smithsonian Institution, Washington, DC, U.S.A.; ZMHU: Zoologisches Museum für Naturkunde, Humboldt Universität, Berlin, Germany.

#### SYSTEMATICS

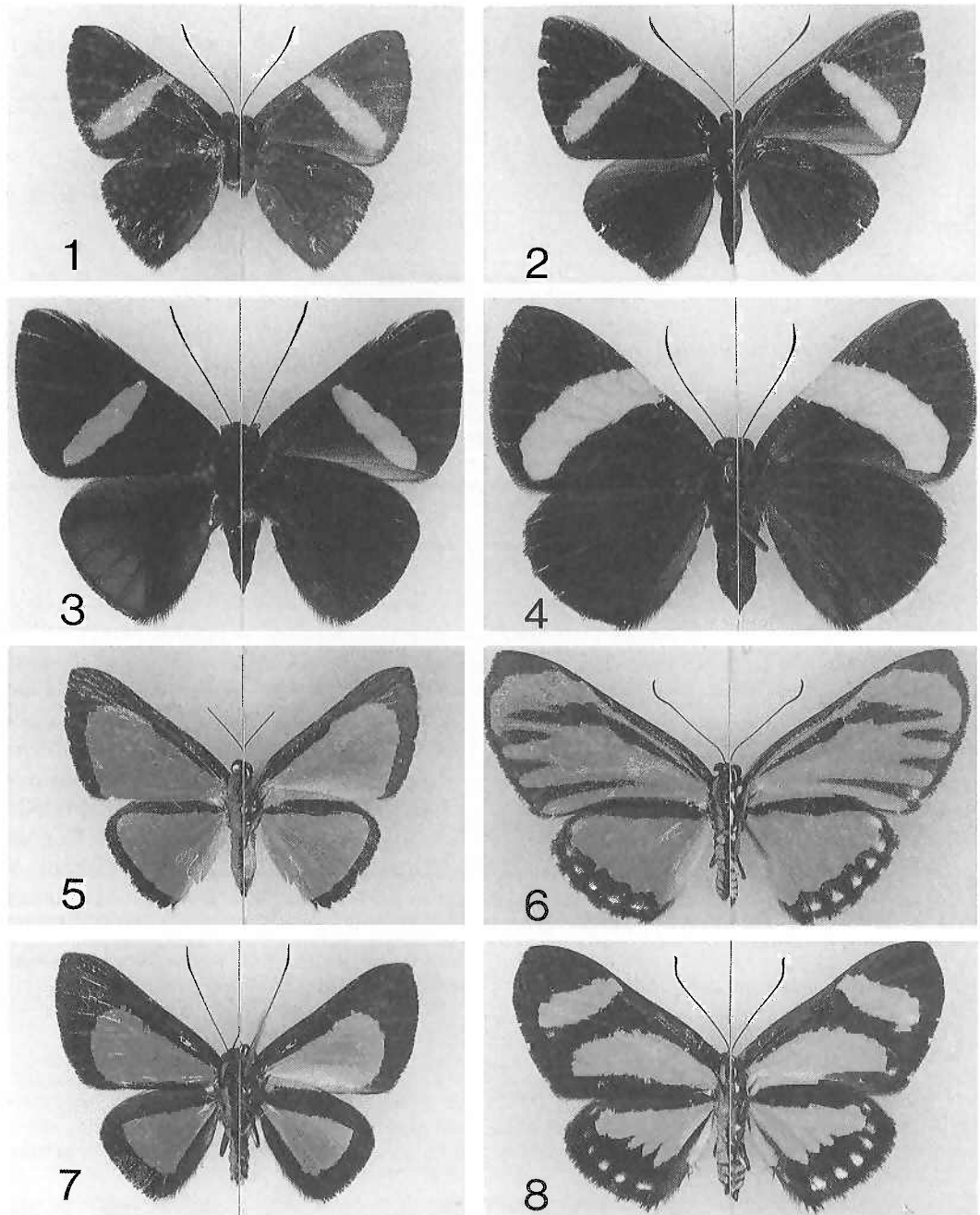
##### ***Panaropsis* Hall, new genus**

(Figs. 1–8, 9, 10–14, 15–17, 18)

Type species.—*Panara elegans* Schaus 1920.

Etymology.—The name alludes to the superficial similarity between members of the riodinine genus *Panara* and the type species *elegans*, which was formerly placed in *Panara*.

Description.—*Male.* Forewing length 17–20 mm. *Wing shape:* both wings typically somewhat elongate; forewing costa very slightly arched at base, distal margin



Figs. 1-8. Adults (dorsal surface on left, ventral surface on right). 1, *Pterographium sicora*, male, Brazil, Espírito Santo, Linhares [AME]. 2, *Panaropsis semiota*, male, French Guiana, Cayenne, Galion [USNM]. 3, *P. elegans*, male, Panama, Panamá, nr. El Llano [USNM]. 4, *P. elegans*, female, Panama, Colón, Colón [USNM]. 5, *P. thyatira*, male, Brazil, Mato Grosso, Diamantino [USNM]. 6, *P. thyatira*, female, Brazil, Mato Grosso, Colegio Buriti [USNM]. 7, *P. inaria*, male, Brazil, Pernambuco, São Lourenço [USNM]. 8, *P. inaria*, female, Brazil, Pernambuco, São Lourenço [USNM].

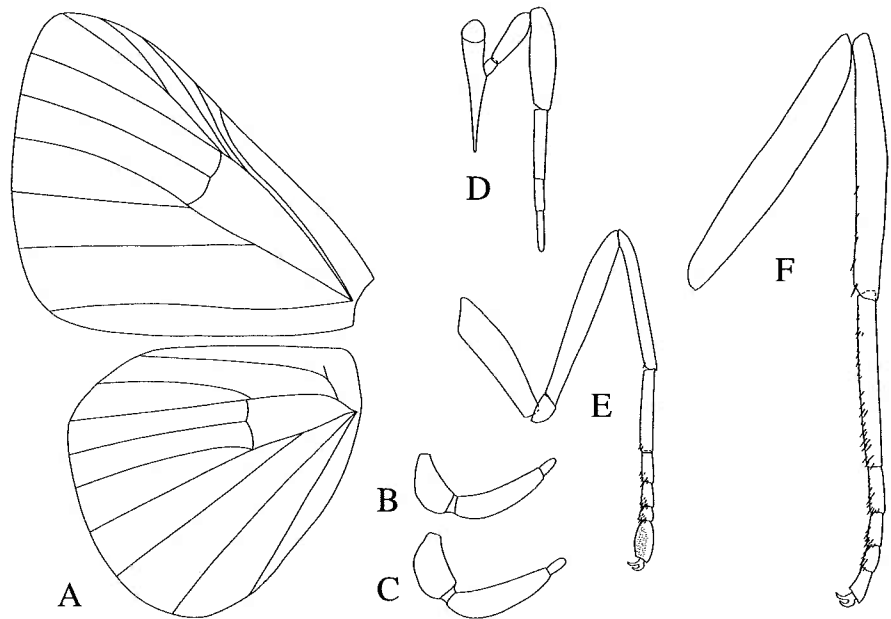


Fig. 9. Morphology of *Panaropsis elegans*. A, Male venation. B, Male palpus. C, Female palpus. D, Male foreleg. E, Female foreleg. F, Male hindleg.

slightly convex; hindwing slightly pointed at apex and tornus. *Venation* (Fig. 9A): four forewing radial veins. *Dorsal surface*: ground color of both wings black; forewing with a diagonal yellow or red postdiscal band and hindwing black or with iridescent blue patch (*semiota* and *elegans*) or both wings with a large orange patch (*thyatira* and *inaria*); patch of erectile androconial setae at base of hindwing cell Cu<sub>2</sub>, dense in *semiota* and *elegans*, diffuse in *thyatira* and *inaria*; fringe on both wings black. *Ventral surface*: same as dorsal surface but paler and with no iridescence. *Head*: labial palpus entirely black (*semiota* and *elegans*) or with white scaling ventrally (*thyatira* and *inaria*), second and third segments short (Fig. 9B); eye brown and bare, black or white scaling at margins; frons black with white lateral scaling dorsally in *thyatira* and *inaria*; antennal length approximately 70% of forewing length, segments black without white scaling at base; club long and black, tips often orange brown. *Body*: thorax and abdomen broad and robust; dorsal and ventral surface of thorax and abdomen black in

*semiota* and *elegans*, tegula black with variably prominent red anterior spot in *elegans*; dorsal surface of thorax black with orange tegula and orange lateral scaling, ventral surface black with patches of white scaling in *thyatira* and *inaria*, dorsal surface of abdomen black with remainder orange in *thyatira* and *inaria*, also black scaling ventrally in *inaria*; a narrowly medially divided band of concealed androconial scales on dorsal half of anterior margin of abdominal tergites four and five; tarsus of foreleg trimerous, coxa of medium length for family (Fig. 9D); legs black, midleg and hindleg with a tibial spur, a scattered group of spines along distal inner margin of tibia and two dense rows of spines along distal inner margin of tarsal segments (Fig. 9F). *Genitalia* (Figs. 10–14): overall large; uncus rectangular and produced into small medial point dorsally, falces and tegumen of average size and shape for family; vinculum evenly narrow with medium-sized rounded saccus ventrally; aedeagus short and very broad, everted vesica contains a straight row of approximately ten large an-

teriorly directed spines ventrally that become gradually shorter posteriorly, a large patch of large anteriorly directed spines dorsally that is slightly ventrally curved anteriorly and a sparse lateral patch of very small spines; pedicel short, narrow and strap-like; valvae curl ventrally and slightly overlap, upper portion rectangular, lower portion produced into one or two small rounded projections, setae on valvae typically only on upper rectangular portion and small raised ridge at middle.

*Female:* Differs externally from male in following ways: forewing length 19–25 mm. Both wings more rounded (and elongate in *thyatira* and *inaria*); ground color of both wings paler; *semiota* and *elegans* not significantly sexually dimorphic, females with no dorsal blue iridescence, broader forewing orange bands and white fringe elements on hindwing and in forewing apex; *thyatira* and *inaria* strongly sexually dimorphic, females with yellow or orange pattern elements divided into subapical and basal areas on forewing, white submarginal hindwing spots present, prominent white hindwing fringe elements present in *thyatira*, some lateral black scaling present on each abdominal segment. *Head:* second segment of labial palpus slightly broader (Fig. 9C). *Body:* foreleg with spines at inner distal tip of tibia and tarsal segments one to four, large ovoid patch of sensilla on swollen last tarsal segment (Fig. 9E). *Genitalia* (Figs. 15–17): corpus bursae elongate and slightly medially constricted, no signa present; ductus bursae short, broad and somewhat sclerotized with tiny spines lining inner surface, becoming suddenly broader and less sclerotized anterior to broad opening of ostium bursae which is positioned in desclerotized invagination between eighth and seventh abdominal sternites; eighth sternite sclerotized and slightly concave medially.

*Diagnosis.*—Having examined the internal male abdominal morphology of approximately 95% of species in the tribe Symmachiini (males are not known for several

of the remainder) for a paper surveying male androconia in the Riodinidae (Hall and Harvey, in press), it became clear that four species which were currently treated in *Pterographium* (*semiota* and *elegans*) and *Esthemopsis* (*thyatira* and *inaria*) were more closely related to each other than to any other symmachiine species. These four species, which I place in the new genus *Panaropsis*, present a rather heterogeneous external appearance, but their morphology is very homogeneous. The only external similarities are their relatively large size for riodinds, somewhat elongate wing shapes and robust thoraces and abdomens, whereas the only interspecific genital variation lies in differences in the shapes of the valvae and dorsal cornutal band in males. There are two unique male genital synapomorphies for *Panaropsis*. One is the arrangement of the aedeagal cornuti, with a straight row of large spines ventrally, a scattered patch of very small spines laterally and an anteriorly recurved dense band of large spines dorsally. The other is the shape of the valvae, which are curled ventrally to partially overlap and possess a lower portion produced into one or two small “finger-like” projections.

*Systematic position.*—Although two *Panaropsis* species, *semiota* and *elegans*, externally closely resemble the sole member of *Pterographium*, *sicora*, the male genitalia differ substantially in almost every respect (see Figs. 10–12), suggesting that the two genera may not be closely related. Given the prevalence of aposematic and putatively mimetic coloration in the tribe, such wing pattern convergence would not be surprising. It is presently not certain what the closest relatives of *Panaropsis* are. Only a few *Symmachia* Hübner [1819] species, all *Stichelia* Zikán 1949, one *Mesene* Doubleday 1847, two *Xenandra* C. and R. Felder 1865, and one *Esthemopsis* possess medially divided concealed abdominal androconia on segments four and five as in *Panaropsis*, but none of these taxa closely resemble *Panaropsis* species in external ap-

