

Taxonomic appendix

It is important to note that our generic and morphospecies concepts in Geometridae are based on extensive study by three of the co-authors (JDH, SEM and MER), including examination of genitalia of type specimens, documented in *Moths of Borneo* [1–3] in addition to our studies of New Guinea type specimens [4,5], while the Pyraloidea higher taxa lack the same comprehensive review based on genitalic characters. The taxonomic challenges of Southeast Asian Pyraloidea are discussed by Robinson *et al.* [6] and Sutton *et al.* [7]. We used Shaffer *et al.* [8] as a foundation for our generic concepts in Pyraloidea, but also incorporated the concepts of the late Eugene Munroe as represented in Munroe *et al.* [9], Shaffer & Munroe [10], and personal communications (including identification labels on specimens), and our subsequent research.

Geometridae

The generic concepts for all genera in this study follow “*Moths of Borneo*” [1–3], with the exception of *Agathiopsis*, *Capasa*, *Paradromulia*, and *Peridelias*, which were not treated there. As part of a related project, we are producing genitalia dissections and DNA sequences of the primary types of New Guinea Geometridae to provide new taxonomic framework, but we have not yet been able to fully analyze those data [4].

Albinospila and *Oenospila*: We have reared many species in these two genera, only a few of which have been matched to type specimens of described species. Hausmann *et al.* (2016) discuss the taxonomic complexity of *Albinospila* and related genera, including *Prasinocyma*, at both the generic and specific levels.

Dizuga recusataria (Walker): Craft *et al.* [11] treated this as *Zeugma recusataria*; the generic combination was changed by Holloway [12:327].

Eucyclodes: This genus is diverse in New Guinea and requires further study to clarify species names.

Jodis albifusa (Warren): See Craft et al. [11:S2].

25 **Pyraloidea**

Most of the generic and specific concepts in this study are derived from identifications provided to Scott Miller by the late Eugene Munroe and Michael Shaffer, and their labels in museum collections (especially in London, Washington, Honolulu, and Ottawa). Unfortunately, much of their knowledge of New Guinea Pyraloidea remains unpublished, although some of M. Shaffer's ideas are represented in Robinson et al. [6] and M. Shaffer et al. [8] and some of Munroe's ideas in Munroe [13–15] and J. Shaffer and Munroe [10].

Crambidae: Pyraustinae

“Herpetogramma” bractealis (Kenrick) (PYRA025 = AAE3920) does not belong in the genus *Herpetogramma*, but apparently represents an undescribed genus of Pyraustinae.

35 **Crambidae: Spilomelinae**

Cotachena: Despite partial revision of the *Cotachena histricalis* complex by Whalley [16], several new species remain to be characterized. *Cotachena fuscimarginalis* Hampson is probably misplaced in this genus, but proper placement must await revision of the relevant genera.

Eusabena paraphragma (Meyrick): Based on DNA and male genitalia, *“Syllepte” planeflava* Hampson is a NEW SYNONYM of *Eusabena paraphragma*, and a NEW GENERIC COMBINATION with *Eusabena*. The different forewing patterns are evidently just color forms.

Glyphodes and *Talanga*: See comments in

Munroe [15:280]; Craft et al. [11:5043, S2]; Hrccek et al. [17:S1]; Quicke et al. [18:91,100].

Haritalodes adjunctalis (CRAM012 = AAD3371): What was once considered a widespread pest species *Syllepte* (or *Sylepta*) *derogata* is a species complex that belongs in the genus *Haritalodes* [19:876]. There

have been two partial taxonomic revisions [20,21], but the identity of some of the available species names that have long been in synonymy have not been critically examined. Our species agrees with *Haritalodes adjunctalis* Leraut, 2005, but eventually an older name may be found.

Herpetogramma bipunctalis complex: This species complex was partially revised by J. Shaffer and
50 Munroe [22], who state that of “18 names synonymized by Hampson ... under *Pachyzancla bipunctalis* (Fabricius), a pest species commonly known as the southern beet webworm... most... are deserving of separate specific status, with *bipunctalis* itself being restricted to the Western Hemisphere.”

Meekiaria: As noted by Craft et al. [11:S2], *Meekiaria* includes many undescribed species that are closely related to *Meekiaria lignea* Munroe 1974.

55 *Orthospila*: Following the concept of *Orthospila* in M. Shaffer et al. [8], we have recognized three externally similar, apparently undescribed species, one of which (species A = AAB8448) was illustrated in Novotny et al. [23:1110]. However, species C (AAA1514) may not be congeneric, but resolution must await revision of the complex of genera including *Notarcha* and *Dichocrocis*.

“*Syllepte*” species CRAM078 and CRAM092: As discussed in Quicke et al. [18:111], these are “two
60 similar species which are superficially similar to “*Syllepte*” *crotonalis* Walker (CRAM078, Genbank GU695707 and CRAM092, Genbank GU695702). The genus *Syllepte* has accumulated many unrelated brown moths, and needs revision, so the correct generic name is also unclear.” CRAM078 appears to be the same as *Syllepte* sp. of Haines & Rubinoff [24], Genbank JX017885.

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