Journal of the Lepidopterists' Society
43(4), 1989, 313–322

GENERIC REASSIGNMENTS FOR NEOTROPICAL TORTRICID MOTHS (TORTRICIDAE)

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ABSTRACT. Based on current studies of neotropical tortricine moths, I propose generic reassignments for 20 species, comprising 18 Euliini (Tortricinae), 1 Chlidanotini (Chlidanotinae), and 1 Eucosmini (Olethreutinae), and identify characters that support the new combinations.

Additional key words: Tortricinae, Euliini, Chlidanotini, Eucosmini, hairpencil.

Although nearly all species of Holarctic Tortricinae can be placed confidently within our current generic and tribal framework (Powell 1983, Razowski 1987a), a comparable system for the neotropical fauna has not yet been realized. The most significant contribution toward this goal is Powell's (1986) synopsis of the classification of the Neotropical Tortricinae, in which all described genera are assigned to tribal categories compatable with those of the Nearctic and Palearctic faunas. However, nearly 30% of neotropical species lack meaningful generic assignments, and a large portion of the fauna is still undescribed. Through the efforts of Razowski (1982, 1986a, 1987b, 1987c, 1988) and Powell (1986), a generic framework is emerging, providing categories to which previously "unplaced" species can be assigned. The purpose of this paper is to transfer 20 neotropical species described prior to 1930 in broadly defined, polyphyletic genera, such as *Eulia* Hübner and *Tortrix* Linnaeus, into well-defined, monophyletic genera. This will provide appropriate generic combinations, and rationalizations for such, for a forthcoming checklist of the Neotropical Tortricinae (Powell & Razowski 1989).

Depositories abbreviated in the text are as follows: BMNH, British Museum (Natural History), London, England; CMNH, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania; NHMV, Naturhistorisches Museum Vienna, Austria; UCB, Essig Museum of Entomology, University of California, Berkeley; USNM, United States National Museum of Natural History, Washington, DC.

TORTRICINAE: EULIINI

Seticosta Razowski

Seticosta was described by Razowski (1986a) to accommodate *Eulia archnogramma* Meyrick, *Eulia tholeraula* Meyrick, and *Eulia homosacta* Meyrick. Males are characterized by elongate antennal cilia (1.5–2.0 × segment diameter), a foreleg hairpencil (Brown 1989), narrow

or subbasally constricted valvae, and a dense patch of long, spine-like setae on the subbasal region of the costa of the valva. The latter character appears to provide the most convincing synapomorphy for the genus. Females have long, narrow apophyses, slender papillae anales, an elongate, slender ductus bursae, and an accessory bursa arising from the ductus bursae, unassociated with the ductus seminalis that usually arises from the corpus bursae.

Seticosta aeolozona (Meyrick), new combination

Eulia aeolozona Meyrick, 1926, Exotic Microlepidoptera 3:252; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:116.

The male holotype (BMNH) lacks the abdomen, prohibiting genitalic comparison. However, *aeolozona* is extremely similar to several undescribed species of *Seticosta* (BMNH, USNM) in forewing shape, size, and pattern. The holotype possesses a foreleg hairpencil consistent with other species in the genus.

Seticosta hypsithrona (Meyrick), new combination

Eulia hypsithrona Meyrick, 1926, Exotic Microlepidoptera 3:251; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:128:

The holotype male (BMNH) can be assigned to *Seticosta* on the basis of the long, spine-like setae on the subbasal portion of the costa of the valva, the narrow valva, the elongate labial palpi, and the long (1.5× segment diameter) antennal cilia.

Seticosta mirana (Felder and Rogenhofer), new combination

Tortrix mirana Felder and Rogenhofer, 1875, Reisse Novara, pl. 139:24.

The holotype (BMNH), reported to be a male from Venezuela, is a female. In the genitalic preparation (BMNH slide no. 7811), the corpus bursae has a pair of small triangular signa, indicating that this species should be assigned to the Laspeyresiini (Olethreutinae). However, I dissected an identical female (Venezuela, Aragua, Colonia Tovar, 6000–7000′, Holt C. M. Exped.; CMNH) and found the genitalia to be consistent with other species of *Seticosta*, i.e., long, slender apophyses and narrow papillae anales, and the presence of an accessory bursa unassociated with the ductus seminalis. The female genitalia on BMNH slide no. 7811 evidently are associated incorrectly with the holotype of *mirana*. *Seticosta mirana* is superficially similar to other large species in the genus (e.g., *arachnograma* and several undescribed species [USNM]). A male from Rio de Janeiro (BMNH) has elongate labial palpi, long antennal cilia, and a foreleg hairpencil. It lacks the abdomen, prohibiting genitalic comparison.

Seticosta multifidana (Zeller), new combination

Teras multifidana Zeller, 1877, Exotische Microlepid., Hot. Soc. Entomol. Ross. 13:47, fig. 29.

This species is represented only by the holotype female (BMNH) collected in Bogotá. Although the genitalia (BMNH slide no. 8588) are fairly divergent from other species in the genus, particularly the sparsely setose, crescent-shaped papillae anales and the sclerotized patch of the corpus bursae, *multifidana* is similar to other species of *Seticosta* in the general configuration of the female genitalia and in superficial facies. Three males from Carabaya and Cuzco, Peru, are associated with the holotype (BMNH); although similar, they probably are not conspecific with *multifidana*. The males possess several features typical of *Seticosta*, namely elongate labial palpi, long antennal cilia, foreleg hairpencil, and the unusual patch of spine-like setae on the costa of the valva (BMNH slide no. 8767).

Seticosta sagmatica (Meyrick), new combination

Eulia sagmatica Meyrick, 1912, Trans. Entomol. Soc. London 1911:680; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:136.

The holotype male (BMNH) from Colombia can be unambiguously assigned to *Seticosta* on the basis of the spine-like setae on the subbasal region of the costa of the valva (JFGC slide no. 6217). Other features are consistent with this association, including elongate labial palpi, long antennal cilia, and male foreleg hairpencil.

Seticosta versabilis (Meyrick), new combination

Eulia versabilis Meyrick, 1926, Exotic Microlepidoptera 3:251; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:143; Razowski, 1986, Bull. Polish Acad. Sci., Biol. Sci. 35:70.

Although superficially similar to some Chlidanotini (Razowski 1986b), the female genitalia of *versabilis* are consistent with those of other species of *Seticosta*. The apophyses are long and slender, the papillae anales are narrow, the ductus bursae is long and slender and bears an accessory bursa from the ductus bursae unassociated with the ductus seminalis. In addition to the female holotype from Bolivia (BMNH), there are two females and a male from Carabaya, Peru (BMNH), that are almost certainly conspecific with *versabilis*.

Inape Razowski

Inape was described by Razowski (1988) to accommodate *Eulia biremis* Meyrick and the type species, *Inape penai* Razowski. Synapomorphies include a pair of blunt, digitate processes submedially from

the transtilla in the male, and complex signa in the female with a longitudinally arranged, strongly spined signum and a large, marginally dentate, more caudal signum. In some species one of the two signa is reduced. Males of all species have a well developed foreleg hairpencil (Brown 1989).

Inape auxoplaca (Meyrick), new combination

Eulia auxoplaca Meyrick, 1926, Exotic Microlepidoptera 3:255; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:119.

I. auxoplaca is represented by the holotype male only (BMNH). The unique modification of the transtilla (JFGC slide no. 6348) provides evidence for its inclusion in *Inape*. In addition, the genitalia share many symplesiomorphies with other species in the genus, e.g., large upturned valvae with broadly rounded apex, short, stout aedeagus with two stout cornuti, and unmodified uncus, gnathos and socius. *I. auxoplaca* also is similar to other species in the genus in superficial facies. Given the sexual dimorphism exhibited by several species of *Inape*, it is possible that *auxoplaca* represents the male of *I. biremis*; both were collected at Mt. Tolima, Colombia, in October 1920.

Inape iantha (Meyrick), new combination

Cnephasia iantha Meyrick, 1912, Trans. Entomol. Soc. London 1911:684.
Eulia iantha; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:131.

I. iantha is represented by the holotype female (BMNH) and a second female (USNM; same data as holotype). The characteristic longitudinal signum with elongate spines confirms its membership in *Inape*. The second signum is reduced to a patch of slender, parallel spines.

Inape xerophanes (Meyrick), new combination

Tortrix xerophanes Meyrick, 1909, Trans. Entomol. Soc. London 1909:15.
Eulia xerophanes; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3: 143.

I. xerophanes was described from a single male taken in Aqualani, Peru (BMNH). It is assigned to *Inape* on the basis of the digitate submedial processes from the transtilla, the most convincing male synapomorphy for the genus. It also shares many symplesiomorphies with its congeners, including the upturned valva with broadly rounded apex, stout aedeagus with two slender cornuti, and unmodified uncus, gnathos and socius. A female specimen (BMNH) from Santo Domingo, Peru, appears to be conspecific with the holotype. The genitalia of the female (BMNH slide no. 8857) are typical of the genus.

Inape zelotypa (Meyrick), new combination

Eulia zelotypa Meyrick, 1912, Trans. Entomol. Soc. London 1911:679; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:143.

I. zelotypa was described from 15 specimens that appear to represent at least three species (BMNH), all of which can be referred to *Inape*. The two new species will be described in a revision of the genus (Brown, in prep.). In *I. zelotypa* the digitate submedial processes of the transtilla are extremely elongate, but other features of the genitalia (viz., valvae, uncus, gnathos, socii, aedeagus) are consistent with other species of *Inape*. In addition to the foreleg hairpencil, males of *I. zelotypa* have an additional hairpencil arranged longitudinally along the costa of the hindwing, densely covered by black scales. Three males (BMNH) of a closely related undescribed species, included in the type series, have both the foreleg and hindwing hairpencil, but lack the patch of black scales on the hindwing.

Clarkenia Razowski

Clarkenia was described by Razowski (1988) to accommodate *C. superba* Razowski and *C. miramunda* Razowski. Adults are large, brightly colored, somewhat checkered moths. Males have large valvae, short, oval socii, a long, narrow uncus, and two patches of distinctly different types of cornuti in the vesica of the aedeagus; they lack the foreleg hairpencil. Females have narrow, nearly parallel-sided papillae anales, a short, slender ductus bursae, and an elongate corpus bursae.

Clarkenia lacertana (Zeller), new combination

Sciaphila lacertana Zeller, 1866, Stett. Entomol. Z. 27:151.
Eulia lacertana; Meyrick, 1926, Exotic Microlepidoptera 3:249; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:140.

Although the holotype is apparently lost, two males, one from Colombia and one from Venezuela, match the description of *lacertana*, and are identified as such in the collection of the BMNH. The specimens are similar to other species of *Clarkenia* in superficial facies and characters of the genitalia.

Clarkenia nivescens (Meyrick), new combination

Eulia nivescens Meyrick, 1926, Exotic Microlepidoptera 3:250; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:132.

C. nivescens is represented by the holotype male (BMNH) collected on Mt. Tolima, Colombia. The species is transferred to *Clarkenia* on the basis of the similarity of the valvae, socii, uncus, and cornuti, to those of *C. superba*. The two species also are superficially similar. *C.*

nivescens differs from *superba* in its uniquely modified gnathos with elongate lateral processes.

Clarkenia trilobopa (Meyrick), new combination

Eulia trilobopa Meyrick, 1926, Exotic Microlepidoptera 3:249.
Eulia triloba (misspelling) Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:140.

C. trilobopa was described from a single male (BMNH) from Rio Grande do Sul, Brazil. The holotype is lacking the abdomen. Although slightly smaller in forewing length, *C. trilobopa* is extremely similar in superficial facies to other species in the genus. The holotype lacks the foreleg hairpencil. In his description of *Eulia trilobopa*, Meyrick (1926) indicated that it was "allied" to *lacertana*; both species herein are transferred to *Clarkenia*. Razowski (1988) recognized the similarity of *trilobopa* to *Clarkenia superba*, but incorrectly interpreted the figure of *trilobopa* in Clarke (1958, pl. 70) as that of *Eulia trapezoides* Meyrick. Consequently, he did not include *trilobopa* in *Clarkenia* because the genitalia of *trapezoides* (which he believed belong to *trilobopa*) were dissimilar to other species of *Clarkenia*.

Ernocornutia Razowski

Ernocornutia was described by Razowski (1988) to accommodate *E. catopta* Razowski and *E. capronata* Razowski. Males are characterized by the strong, slender sacculus reaching about three-fourths the distance from the base to the apex of the valva, capitate uncus, and a small funnel-shaped cornutus; all known species possess the male foreleg hairpencil (Brown 1989).

Ernocornutia carycodes (Meyrick), new combination

Eulia carycodes Meyrick, 1926, Exotic Microlepidoptera 3:256; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:120.

E. carycodes is represented by the holotype male (BMNH) from Mt. Tolima, Colombia. It is similar to *E. catopta*, also from Colombia, in several features, namely the narrow portion of the valva extending beyond the sacculus, widely separated, distal processes from the gnathos, and the general configuration of the aedeagus. *E. carycodes* can be distinguished from *E. catopta* by the broad dorsal portion of the tegumen and by the presence of slender teeth-like cornuti in the distal portion of the vesica.

Silenis Razowski

Razowski (1987) described *Silenis* for the single Bolivian species *S. senilis* Razowski, known only from the male holotype (USNM). Several

undescribed congeners are represented in the collections of the BMNH, USNM, and UCB.

Silenis eurydice (Butler), new combination

Sericoris eurydice Butler, 1883, Trans. Entomol. Soc. London 1883:72.

The holotype male (BMNH) from Chile lacks the abdomen preventing genitalic comparison. However, in superficial facies, *S. eurydice* is nearly identical to several undescribed species (BMNH, USNM) that are clearly congeneric with *Silenis senilis.*

Proeulia Clarke

Prior to the description of *Proeulia boliviae* (Razowski 1988), the genus was considered restricted to Chile and its offshore islands. Clarke (1962) described the genus for two species from Juan Fernandez Islands, Obraztsov (1964) added nine species from central Chile, and Clarke (1980) described two additional species from San Ambrosio Island. Males have broad valvae with an upturned costa and a narrow sacculus, short antennal cilia, a short, stout aedeagus with several large cornuti, and a foreleg hairpencil. Females are characterized primarily by symplesiomorphies, except for the short, broad ductus bursae, and the unusual signum consisting of a nearly circular sclerotized patch bearing a short, blunt thorn.

Proeulia hypochloris (Meyrick), new combination

Eulia hypochloris Meyrick, 1932, Exotic Microlepidoptera 4:256; Razowski, 1964, Polska Akad. Nauk, Ann. Zool. 22:459.

Eulia hypochloris (holotype NHMV), which occurs from Costa Rica to Brazil (USNM), is almost certainly congeneric with *Proeulia boliviae,* to which the male genitalia are extremely similar. The female of *hypochloris* lacks the signum and the male lacks the foreleg hairpencil. The inclusion of *hypochloris* and *boliviae* in *Proeulia* significantly broadens previous concepts of the genus both morphologically and biogeographically; hence, it is possible that *hypochloris* and *boliviae* represent an undescribed genus closely related to *Proeulia.* Consequently, the assignment of these species to *Proeulia* may represent only an interim solution.

Proeulia dives (Butler), new combination

Oenectra dives Butler, 1883, Trans. Entomol. Soc. London 1883:68.

The name *dives* is listed as a synonym of *Cnephasia fulvaria* Blanchard in the collection of both the BMNH and USNM. I examined the

holotype of *dives* (BMNH), but I have been unable to locate the holotype of *C. fulvaria* to confirm the synomymy. Powell and Razowski (1989) assign *fulvaria* to *Proeulia*. The holotype of *dives* from Chile was reported to be male; it is a female. The genitalia of the holotype and two additional females (BMNH slides no. 7806, 8766, 8702) are similar to other species of *Proeulia*. Although the single male from Valparaiso, Chile (BMNH), matches the holotype in superficial facies, the genitalia differ from other species of *Proeulia* in the spined transtilla, weakly dentate gnathos, and absence of cornuti; the specimen lacks the foreleg hairpencil. These characters are fairly divergent from other *Proeulia* and either represent autapomorphies for the species, or evidence that a new genus may be required for *dives*. Consequently, the transfer of *dives* (and possibly *fulvaria*) to *Proeulia* is provisional.

Bonagota Razowski

Bonagota was described by Razowski (1986a) for *Sciaphila bogotana* Zeller (Colombia), *Ptherochroa cranaodes* Meyrick (Argentina), *Eulia melanecta* Meyrick (Ecuador), *Cryptolechia penthinella* Zeller (Colombia), and *Eulia salubricola* Meyrick (Argentina). The genus is remarkably homogenous in superficial facies, and extremely similar to *Apotomops* Powell. *Bonagota* and *Apotomops* appear to be sister taxa on the basis of the unique, slightly attenuate, accessory pouch from the ductus bursae, and the similarity in wing venation (Powell 1986). The male genitalia of both genera are characterized primarily by symplesiomorphies. The valvae are large, weakly deflexed medially in the distal third (inconspicuous in slide mounted preparations), and usually with a distinctly sclerotized, strongly-arched costa. In *Bonogota* the male antennal cilia and the uncus are unmodified, and the socii are moderately digitate. In *Apotomops* the antennal cilia are extremely short, the uncus is broadly capitate with a large basal expansion, and the socii are greatly reduced and nearly entirely fused to the gnathos.

***Bonagota wilkinsonii* (Butler), new combination**

Sericoris wilkinsonii Butler, 1883, Trans. Entomol. Soc. London 1883:41.

The holotype of *B. wilkinsonii* (BMNH) lacks the abdomen, but is superficially similar to other species of *Bonagota*. A specimen matching the holotype (BMNH) has genitalia that share many symplesiomorphies with other species of *Bonagota*. They are also similar to "*Acleris*" *crocoptycha* (Meyrick) from Argentina, and "*A.*" *acmanthes* (Meyrick) from Chile, which appear to be congeneric with each other, and unrelated to the genus *Acleris* (Tortricini).

CHLIDANOTINAE: CHLIDANOTINI

Monortha Razowski and Becker

Monortha was described in the Polyorthini for the species *M. funesta* Razowski and Becker and *M. corusca* (Meyrick), known only from males (Razowski and Becker 1981). Razowski (1986b) transferred the genus to the Chlidanotini on the basis of the female genitalia, which share several uniquely derived characters with other Chlidanotini, viz., strong setae on the sterigma, ductus seminalis from near the junction of the corpus and ductus bursae, a unique accessory bursa from near the middle of the corpus, and the unusual "asteroid" signum of long spines. *Monortha* is distinguished from other chlidanotines by the following male genitalic characters: socii and hami fused, with stout, spine-like setae, and similar spine-like setae from the venter of the uncus.

***Monortha illaqueata* (Meyrick), new combination**

Capua illaqueata Meyrick, 1917, Trans. Entomol. Soc. London 1917:6.
Capua illaquaeta (misspelling) Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:71.

This species is represented only by the holotype female from French Guiana (BMNH). The heart-shaped configuration of the papillae anales, strong setae on the posterior edge of the sterigma, position of the ductus seminalis, and putative possession of an accessory bursa, indicate that *illaqueata* should be assigned to *Monortha*. The signum is greatly reduced to a patch of concentric, dimple-like sclerites, and the accessory bursa is lacking in the genitalic slide (JFGC 6289), hence its position in the Chlidanotini has not been recognized previously. Vestiges of the ductus of the accessory bursa are present, and the dimple-like modification of the signum is seen to a lesser degree in other Chlidanotini. In superficial facies *illaqueata* is most similar to *M. corusca* (holotype BMNH).

OLETHREUTINAE: EUCOSMINI

***Eucosma torrens* Meyrick, revised status**

Eucosma torrens Meyrick, 1927, Exotic Microlepidoptera 3:334.
Eulia torrens; Clarke, 1958, Cat. Type Spec. Microlep. Brit. Mus. Descr. Meyrick 3:140.

The holotype of *torrens* (BMNH) lacks the abdomen. Clarke (1958) transferred the species to *Eulia* on the basis of its superficial similarity to other Neotropical species assigned to this large, polyphyletic genus. However, the genitalia of an undescribed species (USNM) superficially nearly identical to *torrens* indicate that the two are obviously olethreutines, probably referrable to the Eucosmini.

ACKNOWLEDGMENTS

For allowing me to examine specimens in their care I thank: J. F. G. Clarke (USNM), M. Lödl (NHMV), J. Powell (UCB), J. Rawlins (CMNH), and K. Tuck (BMNH). Jerry A. Powell kindly reviewed the manuscript. An anonymous reviewer provided many helpful suggestions for improvement of the manuscript. This work was completed under the support of a Smithsonian Postdoctoral Fellowship.

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Received for publication 27 May 1989; accepted 30 August 1989.