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Systematic revision of *Anopinella* Powell (Lepidoptera: Tortricidae: Euliini) and phylogenetic analysis of the *Apolychrosis* group of genera

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ABSTRACT

Thirty-five species are recognized in the Neotropical genus *Anopinella* Powell, including 5 previously described, *A. isodelta* (Meyrick), *A. triquetra* (Walsingham), *A. ophiodes* (Walsingham), *A. aurea* (Razowski & Becker), new combination, and *A. perblanda* (Razowski & Becker), new combination, and 30 described as new: *A. albolinea* (TL: Costa Rica), *A. araguana* (TL: Venezuela), *A. arenalana* (TL: Costa Rica), *A. boliviana* (TL: Bolivia), *A. brasiliana* (TL: Brazil), *A. cafrosana* (TL: Costa Rica), *A. cartagoa* (TL: Costa Rica), *A. carabayana* (TL: Peru), *A. choko* (TL: Colombia), *A. cuzco* (TL: Peru), *A. fana* (TL: Venezuela), *A. holandia* (TL: Guatemala), *A. larana* (TL: Venezuela), *A. macrosema* (TL: Costa Rica), *A. mariana* (TL: Guatemala), *A. panamana* (TL: Panama), *A. parambana* (TL: Ecuador), *A. peruvensis* (TL: Peru), *A. phillipsae* (TL: Costa Rica), *A. porrasa* (TL: Costa Rica), *A. powelli* (TL: Costa Rica), *A. rastafariana* (TL: Jamaica), *A. razowskii* (TL: Brazil), *A. rica* (TL: Costa Rica), *A. rigidana* (TL: Costa Rica), *A. styraxivora* (TL: Costa Rica), *A. sympatrica* (TL: Guatemala), *A. tinalandana* (TL: Ecuador), *A. transecta* (TL: Costa Rica), and *A. tucki* (TL: Peru). The genus occurs from Jamaica and southern Mexico to southern

Brazil, Paraguay, and Bolivia. One species has been reared from the fruit of *Styrax* (Styracaceae), one from a fungus gall on *Inga longispina* (Fabaceae), and one from the stem of *Vernonia* (Asteraceae). We re-examine phylogenetic relationships among *Anopinella* and its putative related genera, *Seticosta* Razowski, *Punctapinella* Brown, *Strophotina* Brown, and *Apolychrosis* Amsel. We synonymize *Ecuadorica* Razowski & Becker, 2000, with *Anopinella*.

Key words. Leafrollers, Neotropical, phylogeny, new species, biodiversity, morphology, genitalia, *Anopinella, Seticosta, Punctapinella, Strophotina, Apolychrosis, Ecuadorica, Chirotes*

RESUMEN

Trenta y cinco especies del género neotropical *Anopinella* Powell son reconozidas, estos incluyen 5 previamente descritas, *A. isodelta* (Meyrick), *A. triquetra* (Walsingham), *A. ophiodes* (Walsingham), *A. aurea* (Razowski & Becker), comb. nov., yi *A. perblanda* (Razowski & Becker), comb. nov., y 30 nuevas descitas aqui: *A. albolinea* (TL: Costa Rica), *A. araguana* (TL: Venezuela), *A. arenalana* (TL: Costa Rica), *A. boliviana* (TL: Bolivia), *A. brasiliana* (TL: Brazil), *A. cafrosana* (TL: Costa Rica), *A. cartagoa* (TL: Costa Rica), *A. carabayana* (TL: Peru), *A. choko* (TL: Colombia), *A. cuzco* (TL: Peru), *A. fana* (TL: Venezuela), *A. holandia* (TL: Guatemala), *A. larana* (TL: Venezuela), *A. macrosema* (TL: Costa Rica), *A. mariana* (TL: Guatemala), *A. panamana* (TL: Panama), *A. parambana* (TL: Ecuador), *A. peruvensis* (TL: Peru), *A. phillipsae* (TL: Costa Rica), *A. porrasa* (TL: Costa Rica), *A. powelli* (TL: Costa Rica), *A. rastafariana* (TL: Jamaica), *A. razowskii* (TL: Brazil), *A. rica* (TL: Costa Rica), *A. rigidana* (TL: Costa Rica), *A. styraxivora* (TL: Costa Rica), *A. sympatrica* (TL: Guatemala), *A. tinalandana* (TL: Ecuador), *A. transecta* (TL: Costa Rica), yi *A. tucki* (TL: Peru). El genero esta presente desde el sur de Mexico y Jamaica hasta Brasil. Una especie ha sido criada sobre el fruto de *Styrax* (Styracaceae), una especie fue criada en agallas de hongos sobre *Inga longispina* (Fabaceae), y una especie fue criada sobre *Vernonia* (Asteraceae). Hemos revisado nuevamente las relaciones filogeneticas entre los generos *Anopinella, Seticosta* Razowski, *Punctapinella* Brown, *Strophotina* Brown, y *Apolychrosis* Amsel.

INTRODUCTION

Anopinella was proposed by Powell (1986) for three described species of Neotropical tortricid moths (i.e., *Eulia isodelta* Meyrick, which was designated as the type species, *Tortrix ophiodes* Walsingham, and *Eulia homosacta* Meyrick), one of which (*homosacta*) subsequently was transferred to *Seticosta* Razowski (Razowski 1986). Subsequently, *Tortrix triquetra* Walsingham was added to the genus by Powell et al. (1995). In a preliminary hypothesis of phylogenetic relationships among the genera in the tribe Euliini, Brown and Powell (1991) suggested that *Anopinella*, *Seticosta*, and *Apolychrosis* Amsel together represented a monophyletic group, basal within the tribe. In his subsequent description of *Punctapinella*, Brown (1991) expanded that hypothesis to include the latter, which was suspected to be the sister group of *Seticosta*. Razowski and Becker (1999) revisited relationships among these genera, including their new taxon, *Chirotes* Razowski and Becker (a synonym of *Strophotina* Brown) (Brown 2003). They described several new species of

