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The genus *Visiana* Swinhoe (Lepidoptera: Geometridae: Larentiinae) in Australia: resurrection of two species from synonymy

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Abstract

Based on the study of morphological characters and DNA barcode (CO1) data, the present review revealed the existence of at least three species of *Visiana* Swinhoe (Lepidoptera: Geometridae: Larentiinae) in Australia. *Visiana brujata* (Guenée) is redescribed, and two species *V. incertata* (Walker), **stat. rev.** and *V. repentinata* (Walker), **stat. rev.** are resurrected from synonymy with *V. brujata*. *Visiana breviararia* (Walker), **syn. rev.**, previously cited as a synonym of *V. brujata*, is now considered a synonym of *V. incertata*. *Visiana brujata* and *V. incertata* show close affinities with the *sordidata* group of species, whereas *V. repentinata* belongs to the *vinosa* species group. Images of adults and genitalia of all types are illustrated and the presence of the gnathos in the genus *Visiana* is discussed.

Key words: Australian region, DNA barcoding, geometrid moths, gnathos, faunistics, larentiine moths, morphology, *Visiana*

Introduction

In recent decades there has been renewed interest in the taxonomy of the rich Australasian larentiine moth fauna (Lepidoptera: Geometridae), including a revision of the tribe Trichopterygini (Dugdale 1980) and reviews of the genera *Notoreas* Meyrick (Craw 1986, Patrick *et al.* 2010), *Anachloris* Meyrick, *Chaetolopha* Warren, and *Scotocyma* Turner (Schmidt 2001, 2002, 2005, 2007). Species of the genus *Visiana* Swinhoe have been documented across the entire Indo-Pacific region and the Indo-Papuan taxa have been discussed in detail by Holloway (1986, 1997) and Schmidt (2006a, 2006b, 2006c, 2009, 2013).

Taxonomic history

Although *Visiana* has a comprehensive taxonomic history, its Australian species have never been critically revised. The type species of the genus, *V. sordidata* (Moore 1888), occurs in the Indian region. Prout (1940) reported conspicuous morphological similarities between *V. sordidata* and the Australian species *V. brujata* (Guenée 1858), the latter being originally described in the genus *Scotosia* Stephens and later on treated as *Xanthorhoe* Hübner by Turner (1926). Nevertheless, Prout (1940) treated *V. brujata* as *Xanthorhoe*, whereas Holloway (1986) assigned the Australian species to *Visiana*. McQuillan and Edwards (1996) supported this assignment and also placed *V. excentrata* (Guenée 1858), which had been associated with *Coremia* Guenée in original combination and treated as *Euphyia* Hübner by Turner (1922, 1926), in the genus *Visiana*. Holloway (1997) listed *V. excentrata* in the genus *Visiana* without any discussion. Currently two species are listed for Australia, namely *V. brujata* with three synonyms (*V. breviararia* (Walker), *V. incertata* (Walker), and *V. repentinata* (Walker)), and *V. excentrata* (Guenée) with two synonyms (*V. bifusata* (Walker) and *V. constipata* (Walker)) (McQuillan & Edwards 1996, Scoble 1999). However, *V. excentrata* was cited by McQuillan (2004) as “*Coremia*” *excentrata* without further comments on its taxonomy. Interestingly, the characters stated for the genus *Visiana* by Holloway (1997) are not shared by *V. excentrata* (Schmidt 2005).