



## Revision and phylogenetic analysis of the Papuan weevil genus *Thyestetha* Pascoe (Coleoptera, Curculionidae, Cryptorhynchinae)

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### Abstract

*Thyestetha* Pascoe, an apterous genus of Papuan Cryptorhynchinae is revised. It contains two previously described species, *T. carbonaria* Faust and *T. nitida* Pascoe, plus seven new species: *T. discolor* sp. n., *T. emarginata* sp. n., *T. glabra* sp. n., *T. lubrica* sp. n., *T. oblita* sp. n., *T. puncticollis* sp. n., and *T. splendens* sp. n. Lectotypes are designated for *T. carbonaria*, *T. nitida*, and *Pantoxistus rubripennis* Chevrolat which is a junior synonym of *T. nitida* (syn. n.). The genus and its species are described and the characters relevant for their identification are illustrated. A key to the species is provided. Phylogenetic analyses are performed, utilizing molecular and morphological approaches. A maximum likelihood tree including 5 *Thyestetha* species and 2 outgroups is presented, based on 3 mitochondrial and 4 nuclear markers. A maximum parsimony analysis of 19 morphological characters includes all described species. *Thyestetha* is presumably closely related to *Telaugia* Pascoe and *Elichora* Pascoe. The group is restricted to New Guinea and some smaller neighboring islands.

**Key words:** new species, New Guinea, *Pantoxistus*, synonymy, key, phylogeny, cladistics, molecular, morphology

### Introduction

The genus *Thyestetha* Pascoe is a little-known genus of Papuan weevils. It is regularly found on foliage in lowland to mid-montane forests, from the Raja Empat and Aru Islands in the West to the D'Entrecasteaux Islands in the East. Originally, it was described by Pascoe (1865) without precise placement among Curculionidae. Later, Pascoe (1871) included it in the Zygopinae Lacordaire (now Conoderinae Schoenherr), along with genera such as *Elichora* Pascoe, *Idotasia* Pascoe (now a synonym of *Trigonopterus* Fauvel), and *Telaugia* Pascoe. These genera were transferred to Cryptorhynchinae Schoenherr by Heller (1894), but Hustache (1934, 1936) still lists them among Zygopinae. Finally, Alonso-Zarazaga & Lyal (1999) and Setliff (2007) place them in the Tylodina Lacordaire of the Cryptorhynchinae.

With the genera mentioned above *Thyestetha* shares a largely subglabrous body and a loss of wings. In the course of a comprehensive study on the hyperdiverse genus *Trigonopterus* (Riedel 2010, 2011; Tänzler *et al.* 2012), *Thyestetha* was initially regarded as a close relative of this genus. The need for outgroup-data initially triggered this study.

### Material and methods

This study is based on the examination of 320 specimens of *Thyestetha* and 5 specimens of related genera used as outgroup representatives in the phylogenetic analyses. Type depositories are cited using the following codens:

ARC Alexander Riedel Collection, stored in SMNK, Germany.

BMNH The Natural History Museum, London, U.K.