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***Compositermes vindai* (Isoptera: Termitidae: Apicotermittinae), a new genus and species of soldierless termite from the Neotropics**

RUDOLF H. SCHEFFRAHN

Fort Lauderdale Research and Education Center, Institute for Food and Agricultural Sciences, 3205 College Avenue, Davie, Florida 33314 USA. E-mail: rhsc@ufl.edu

Abstract

The New World *Anoplotermes* group is a common and diverse clade of soil-dwelling soldierless termites that is undergoing needed taxonomic reclassification. Based on robust worker gut morphology centered near the enteric valve, a new genus and its singular species, *Compositermes vindai*, are described from collections encompassing a massive expanse of tropical America. The enteric valve armature is thought to enhance inoculation of the food stream with symbiotic bacteria.

Key words: French Guiana, Panama, Paraguay, Trinidad and Tobago, *Anoplotermes* group, enteric valve seating, proctodeal segments

Introduction

In his treatise on the gut anatomy of the higher termites, Noirot (2001) divided the subfamily Apicotermittinae into three taxonomic groups based on the gut morphology of the worker caste. His *Apicotermes* group includes species with soldiers from tropical Africa, the *Speculitermes* group includes species with soldiers from tropical Asia, and the *Anoplotermes* group consists of soldierless species from both the American and African tropics (Noirot 2001). The molecular and morphological phylogeny elucidated by Inward *et al.* (2007) confirms monophyly for the Apicotermittinae, but provides evidence that the neotropical *Anoplotermes* s.l. forms a separate clade from the more basal African Apicotermittinae. Those who have studied the soldierless termites of the Neotropics (e.g. Bourguignon *et al.* 2010, Davis 2002, Fontes 1992, Mathews 1977) agree that the genus *Anoplotermes* is in dire need of revision and at present constitutes a superficially cryptic, yet diverse group. The five other *Anoplotermes*-group genera, *Aparatermes*, *Grigiotermes*, *Longustitermes*, *Ruptitermes*, and *Tetimatermes*, also need reevaluation as a whole using current morphological and molecular techniques.

In the Neotropics, only *Longustitermes manni* (Synder 1922) and *Tetimatermes oliveirae* Fontes (1986) were described from the worker caste alone; the former having an unusually small and elongate body, and the later possessing a deep concavity of the fore tibia. In a landmark discovery, Grassé and Noirot (1954) found that the worker gut of higher termites contains robust morphology that is useful for taxonomic comparisons. Noirot (2001) refers specifically to the enteric valve of the *Anoplotermes* group as having “great systematic value”. Sands (1972) was the first to embrace these gut characters in large scale for his landmark revision of the soldierless termites of Africa. Sands (1972, 1998) photomicrographs of enteric valves from African termite workers are often diagnostic at the species level because of their complex, yet intraspecifically stable nature. But even so, Sands (1972) included the imago in all of his generic and specific descriptions, no doubt leaving taxa without accompanying imagos undescribed.

For soldierless termites, it has been customary to use the winged imago as the primary, often sole, morphological basis for taxonomic descriptions. However, imagos of this group are rarely collected. The University of Florida Termite Collection (Davie, Florida) alone has over 2,000 colony samples of neotropical soldierless termites of which only 5% contain imagos. The shortcomings of using solely imago characters and overlooking the worker enteric valve armature in the *Anoplotermes*-group taxonomy were made most evident by