



## Phylogenetic analysis of the *Pantomorus-Naupactus* complex (Coleoptera: Curculionidae: Entiminae) from North and Central America

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### Abstract

We undertook the first cladistic analysis of the *Pantomorus-Naupactus* complex (Coleoptera: Curculionidae) from North and Central America, based on 35 species and 61 morphological characters, plus 1151 bp of the mtDNA COI and Cyt b genes. The morphological and the combined matrices analyzed with TNT yielded a single most parsimonious cladogram that allows recognition of two main lineages within the *Pantomorus-Naupactus* complex in North and Central America. One is represented by the species formerly placed in *Phacepholis* and the *Pantomorus* species group II *sensu* Sharp, ranging along the Pacific coast of Central America and Mexico and reaching the Great Plains of North America in the United States, yet not occurring in South America. The other lineage is represented by the species of *Naupactus* and *Pantomorus* species group I, with closer relationships to the South American species of these genera. The *Pantomorus* group I includes the type species of the genus (*P. albosignatus* Boheman) whereas the *Pantomorus* group II includes the type species of *Athetetes* Pascoe, 1886 (*A. globicollis* Pascoe). Based on the results of our phylogenetic analysis, we recommend retaining the name *Pantomorus* Schoenherr for most species of the *Pantomorus* group I, except *P. stupidus* (Boheman) and *P. femoratus* Sharp which should be transferred to *Naupactus* Dejean. Moreover, we enlarge the previous concept of *Phacepholis* to include most species of the *Pantomorus* group II, and we establish the synonymy of *Athetetes* Pascoe, 1886 with *Phacepholis* Horn, 1876, being the latter the valid name, by priority.

**Key words:** biogeography, classification, phylogenetics, Naupactini, Central America, Mexico, North America

### Introduction

*Pantomorus* Schoenherr, 1840 (Entiminae: Naupactini) is a broad-nosed weevil genus based on the Mexican species *P. albosignatus* Boheman, 1840, and described in the classic work *Genera et species Curculionidum* along with several Brazilian species (Schoenherr, 1833–1845). The most closely related genus to *Pantomorus* is probably *Naupactus* Dejean, 1821 (Sharp, 1889–1991; Scataglini *et al.*, 2005), based on the type species *N. rivulosus* (Olivier, 1790) from Brazil. *Naupactus* consists of more than 150 species distributed mainly in South America and only five species occurring in Mexico and Central America (O’Brien & Wibmer, 1982; Wibmer & O’Brien, 1986). *Pantomorus* has been traditionally separated from *Naupactus* by the smaller body size, the shorter antennae and rostrum, the lack of humeri and hind wings, and the front femora being as wide as to slightly wider than the hind femora (Lanteri & Normark, 1995; Scataglini *et al.*, 2005; Lanteri *et al.*, 2010); however, there is no clear distinction between both genera, and several species show intermediate characters between them. For this reason, Buchanan (1939) proposed the concept of *Pantomorus-Naupactus* complex, with about 250 species ranging from North to South America.

The North American species of *Pantomorus* were studied by Buchanan (1939). He recognized four subgenera (in addition to the nominotypic *Pantomorus*): *Phacepholis* Horn, 1876, native to the Nearctic region, *Atrichonotus* Buchanan, 1939, *Graphognathus* Buchanan, 1939, and *Asynonychus* Crotch, 1867 (= *Aramigus* Horn, 1876),