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Genetic and morphological evidence for a new cryptic species of *Ectinogonia* (Coleoptera: Buprestidae) from central Chile

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Abstract

The genus *Ectinogonia* Spinola, 1837 is a genus mainly found in Chile; it currently contains 17 species. Recent exploration in the Andes Mountain Range of the Bio Bio Region in Chile have resulted in the collection of specimens slightly different morphologically from all previously described species. The aim of this paper is to describe this new species of *Ectinogonia* using morphological and genetic evidence. To establish differences between species we described the external morphology and compared it to species that are morphologically similar (*i.e. E. buqueti* Spinola 1837 and *E. intermedia* Kerremans 1903). We also measured the genetic differences in COI sequences, constructing a distance matrix in which we compared it to species that are morphologically similar (*E. buqueti* and *E. intermedia*) and other species found in the same region (*E. speciosa oscuripennis* Moore 1994). We found that *E. cryptica* **sp. n.** differs from *E. buqueti* (which previously contained *E. cryptica* **sp. n.**) in pronotum and elytral patterns. The genetic distance matrix shows that *E. cryptica* **sp. n.** differs by 4.6% from all other *Ectinogonia* species compared, supporting the morphological evidence.

Ke ywords: Chrysochroinae, Dicercini, *Ectinogonia cryptica* **sp. n.**, genetic distance, taxonomy

Introduction

Ectinogonia Spinola, 1837 is found almost exclusively in Chile and the Occidental Andes (Bellamy 2006); it currently includes 18 species, 3 of them with 2 subspecies occurring between 18°S and 38°S (Moore 2017). These species inhabit regions with semiarid conditions of the north to the sclerophyllous and temperate forests of south-central Chile (Cobos 1954, Moore 1994, Bellamy 2006, Moore & Vidal 2015), with a wide altitudinal range from coastal terraces with transitional shrubs to grasslands in the high Andes (Bellamy 2006, Moore & Vidal 2015).

When first described the genus *Ectinogonia* included one species, *Ectinogonia buqueti* (Spinola 1837). Solier (1849) moved this species to the genus *Latipalpis* Solier, 1849, but later *Ectinogonia* was re-established by Kerremans (1903), listing 13 species and describing one new species. Obenberger (1926) created two new genera to include some species previously assigned to *Ectinogonia*: *Achardella* Obenberger 1926 and *Pseudolampetis* Obenberger 1926. In the first revision of *Ectinogonia* by Cobos (1954), the author questioned the systematic position of the genus and the valid number of species described. Subsequently Moore (1994) reviewed the group, describing five new species and made subspecies of two previously described species, based on external morphology and genitalia characters. Most of these studies have shown how variable are the external morphological and genitalia characters within *Ectinogonia* species (Cobos 1954, Moore 1994), making it difficult to assign specimens to a particular species, therefore, the external morphological and genitalia characters may not be sufficient to improve the systematics of *Ectinogonia* in Chile.

Recent explorations in the distribution area of *E. buqueti* in the Andes Range of Bio Bio Region has resulted in the collection of specimens that are assignable to *E. buqueti* but morphologically differ slightly from previously studied specimens of this species. Cases of cryptic species are common in insects (e.g. Hebert *et al.* 2004, Pons *et al.* 2006, Pentinsaari *et al.* 2014). Cryptic species are defined as two or more distinct species that were originally

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