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First record of *Ancognatha erythrodera* (Blanchard, 1846)
(Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini)
in the altiplano of Chile

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First record of *Ancognatha erythrodera* (Blanchard, 1846) (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini) in the altiplano of Chile

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Abstract. The presence of *Ancognatha erythrodera* (Blanchard, 1846) (Coleoptera: Scarabaeidae) is confirmed for the first time in Chile based on male and female specimens collected in the extreme north of the country. This is the second species of *Ancognatha* Erichson, 1847 recorded in Chile. Morphological characters, illustrations of male genitalia, male and female habitus photographs of this species, and additional records in Argentina and Bolivia are provided. A map with the collection sites and montane habitats photograph in Chile are included.

Key words. Andes, dynastine, species diversity, Visviri.

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Introduction

The Dynastinae (Coleoptera: Scarabaeidae) that occur in Chile were comprehensively revised by Ratcliffe et al. (2021), who recorded nine species in six genera. One of these genera, *Ancognatha* Erichson, 1847, includes 23 valid species found from the southwestern United States (Arizona and New Mexico) to northern Argentina, Chile, and Bolivia (Mondaca 2016; Moore et al. 2018a; Paucar-Cabrera and Ratcliffe 2018; Ratcliffe et al. 2021).

In this note, we report the first record of *Ancognatha erythrodera* (Blanchard, 1846) in Chile, based on specimens collected in the altiplanic locality of Visviri, Región de Arica y Parinacota. Previously, *Ancognatha erythrodera* was recorded for the Andes of southern Peru, Bolivia, and northwestern Argentina (Moore et al. 2018b). This new record corresponds to the natural distribution of this species on both sides of the Andes mountain range, which is not surprising due to the similarity of habitats in neighboring localities in Peru, Bolivia, and Argentina.

Materials and Methods

Six specimens of *A. erythrodera* were studied from Chile and deposited at the entomological collection of the Servicio Agrícola y Ganadero, located in Arica city, Chile (SAGC). The other material examined was borrowed from the collections of the first author (JMEC) and of Víctor Manuel Diéguez's private collection, Santiago, Chile (VMDC).

The male genitalia of one specimen was extracted by relaxing the specimen in hot water, cleansing in a hot solution of KOH at 90°C for 10 minutes, and then gluing on a cardboard point for photographing. Habitus and male genitalia photographs were taken with a Canon DCM510 camera. Geographic coordinates of the collecting sites were recorded using Google Earth Pro (Fig. 5).

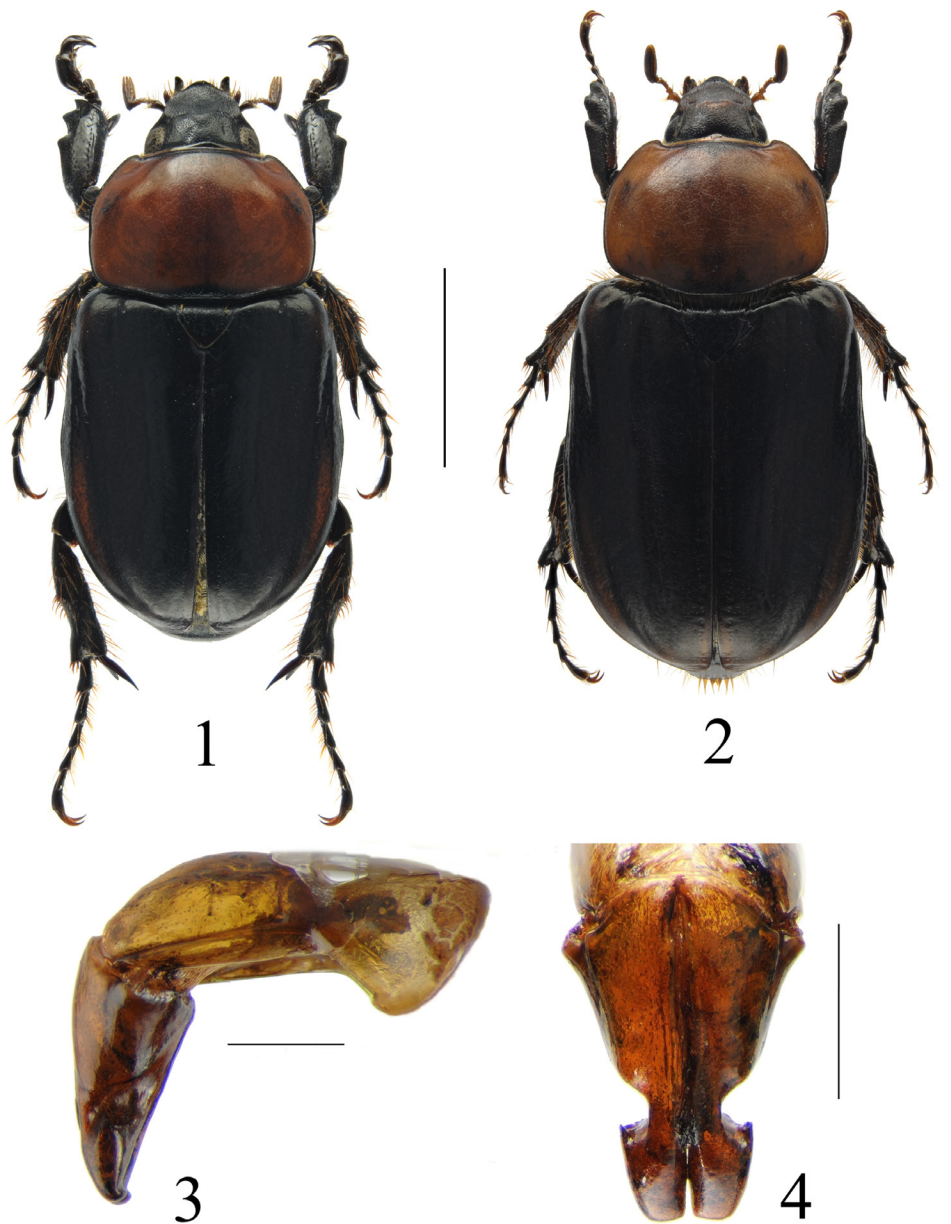
Results

Ancognatha erythrodera (Blanchard, 1846)

(Fig. 1–4)

Material examined. 6 specimens (1 male, 5 females) at SAGC from: CHILE, Provincia de Parinacota, Visviri, 28-II-2018 (4 females), 17-VII-2018 (1 male), col. C. Avila; Visviri, 14-II-2022, col. M. Arias (1 female). 5 specimens were collected at an ultraviolet light trap, and 1 specimen at a funnel trap.

Other material examined. *Ancognatha erythrodera*: Frontera tripartita Perú, Chile, Bolivia, 3-IV-2015, col. J. Mondaca E. (1 JMEC). ARGENTINA, Jujuy, Iturbe 3.412 m, 7-II-2009, col. V.M. Diéguez y G. Arriagada (1



Figures 1–4. *Ancognatha erythrodera* (Blanchard, 1846). 1) Male, dorsal habitus. 2) Female, dorsal habitus. Scale bar: 1.0 mm. 3–4) Parameres. 3) Lateral view. 4) Caudal view. Scale bar: 0.5 mm.

VMDC). BOLIVIA, Departamento Oruro, Caracollo 3790 m, 3–4-II-2008, col. M. Ferrú (2 JMEC, 3 VMDC); Challapata, 1–2-II-2008, col. M. Ferrú (5 VMDC). BOLIVIA, Departamento La Paz, Patacamaya, 4-II-2008, col. M. Ferrú (1 VMDC); Viscachani, 19-III-1995, col. D. Jackson (2 VMDC); Tiahuanaco, 9-II-2008, col. M. Ferrú (1 JMEC).

Diagnosis ($n = 9$). The species most similar to *Ancognatha erythrodera* is *A. aymara* Mondaca, but these species have different body color patterns; males and females of *A. aymara* are unicolored, castaneous or reddish-brown, and are smaller (body length 13–19 mm). *Ancognatha erythrodera* is larger (17–27 mm) and dorsally bicolored in both sexes with the pronotum reddish-brown to brown and the elytra dark-brown to black. The pronotum of *A. erythrodera* generally has a longitudinal dark line down the middle that may be either continuous or interrupted; this dark line is entirely absent in *A. aymara*. The head, scutellum, and legs are dark brown in *A. erythrodera* (Fig. 2) and not reddish brown as in *A. aymara*. The head and male genitalia (Fig. 3–4) are similar in both species.

Distribution and habitat. This species lives at high elevations (3,300–4,080 m) in the altiplano of Argentina (Jujuy, Tucumán), Bolivia (La Paz, Oruro), Peru (Arequipa, Puno) (Moore et al. 2018b), and northern Chile (Parinacota province) (**new record**) (Fig. 5d). This distribution corresponds to the biogeographic province of the Puna of the Andean Region proposed by Morrone (2015). *Ancognatha erythrodera* has been collected in a semi-arid steppe environment dominated by low and resinous scrubs of *Adesmia* sp. (Fabaceae), *Parastrephia* sp. (Asteraceae), and coarse grasses as *Stipa* sp. and *Poa* sp. (Poaceae) (Fig. 5b, c). The adults are nocturnal and often attracted to lights at night and emerge during the rainy season (highland winter) that occurs between the months

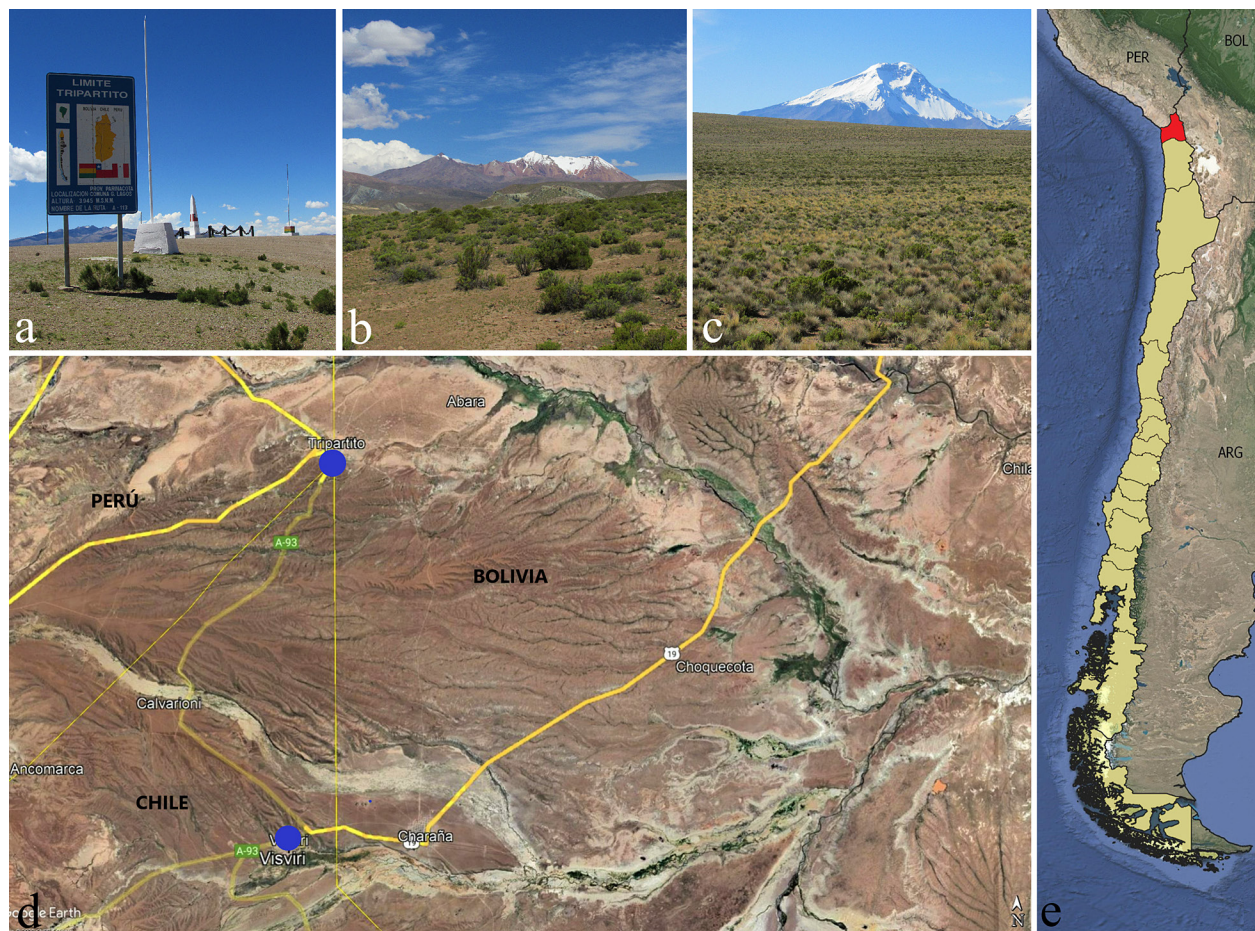


Figure 5. Distribution of *Ancognatha erythrodera*. **a–c)** Montane habitats of *A. erythrodera* in northern Chile. **d)** Collecting sites of *Ancognatha erythrodera* in the altiplano of Chile (blue circles). **e)** Location of the Región de Arica y Parinacota in northern Chile.

of December and April. In Chile, adults were collected at an elevation of 4,080 m. The immature stages of this species are not described; the larvae feed on roots of coarse grasses known as “paja brava” and have been cited as a pest of potato in Bolivia (Mellini and Verenini 1986).

Remarks. This contribution increases the number of *Ancognatha* species found in Chile to two. The new finding of *A. erythrodera* extends the distributional range to the west by 17 km from the Tripartite milestone (the border between Peru, Chile, and Bolivia; Fig. 5a) and 4.8 km to the east from the Bolivian locality of Charaña (Fig. 5d). *Ancognatha erythrodera* is found at high elevations (3,300–4,080 m) on both sides of the Andes mountain range of Peru, Chile, Bolivia, and Argentina, while *Ancognatha aymara* Mondaca, 2016 is a similar species that lives at slightly lower elevations (3,000–3,600 m) in the Andes of northern Chile and northwestern Argentina (Mondaca 2016, 2020).

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