



First Harvestman Record for the Juan Fernández Archipelago, Chile, with Morphological Notes on *Acropsopilio chilensis* (Opiliones: Caddidae: Acroposopilioninae)

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Abstract

Acropsopilio chilensis Silvestri, 1904 (Eupnoi: Caddidae: Acroposopilioninae), is recorded for Robinson Crusoe Island, Chile. This is the first harvestman species recorded for the Juan Fernández Archipelago and also the first extra-continental record for this species. During the comparison with continental co-specific specimens, some previously unknown, remarkable morphological characteristics were discovered, among them: the absence of ovipositor seminal receptacles and tracheal system, small and probably imperforate spiracles and the presence of a subdistal spiny structure, maybe a stylus, in the major branch of the penis.

Key words: Opiliones, Eupnoi, genital morphology, respiratory system, volcanic island, biodiversity

Introduction

The Juan Fernández Archipelago is one of the priority sites for nature conservation worldwide, and was declared a Chilean National Park in 1935 and Biosphere Reserve in 1977. Because of its isolation and recent volcanic origin, this archipelago of the Nazca Plate represents an exceptional laboratory for understanding evolutionary and biogeographical processes modeling the flora and fauna of isolated islands and contributions that increase the knowledge of its biota are highly valuable.

The volcanic origin of the archipelago was dated as ranging between 1–4 mya. (Stuessy *et al.* 1984), and its terrestrial biota is a mosaic resulting from spatially and historically diverse dispersal events mainly originating from South and Central America, Polynesia and New Zealand (Danton 2004). Some groups exhibit a considerably high degree of endemism, such as vascular plants (60–70%, Hoffman & Marticorena 1987; Stuessy *et al.* 1984) and arthropods (60–70%, Peña 1987). Harvestmen have not been recorded from the archipelago up to now. The goal of the present contribution is to report the occurrence of a representative of this order on the archipelago as well as to clarify some obscure morphological aspects of the recorded species.

Material and methods

The newly recorded specimens were collected on the Robinson Crusoe Island located 670 km west of continental Chile in the Pacific Ocean (Fig. 1). For comparison continental specimens from the arachnological collection of the Argentinean Museum of Natural Sciences (MACN-Ar) were also studied. Field collections were conducted from February 16 to February 20, 2011, using pitfall traps. The traps consisted of two plastic cups of 7.4 × 10.2 cm and

articulated spines, bearing a membranous glans and sometimes subject to 180 degrees of torsion" and recognized for *C. capensis* "four basic plates, two proximal and two distal" with a distal membranous glans. Starega (1988) described the penis of *Caddella croeseri* Starega, 1988, as containing three asymmetric parts: basal part (truncus), middle part (glans) and distal part (a membranous stylus). Lotz (2011) recognizes a "mid region" (with spines) and a glans for *C. haddadi*. As we can see, the terminology used to describe male genital structures of the "spiny asymmetrical" type and in Caddidae is very heterogeneous. The standardization of terminology for male genital morphology in this group of harvestmen exceeds the goal of the present contribution and deserves a further detailed study. Here we follow the terminology used by Macías-Ordoñez *et al.* (2011), defining a *pars basalis* as corresponding to most of the long shaft called the *truncus*; and a *pars distalis* as corresponding to the distal end of the *truncus* and the terminal or subterminal glans.

Tracheal system.—The spiracle of *Acropsopilio chilensis* are very small and seem to be imperforated (Fig. 8a, b) as was observed in *A. chomulae* (Shear 2004) but scanning micrograph did not allow resolution of the deepest layer. Ventrally no tracheal tubes were observed (Fig. 8c, d).

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