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A new cecidogenous species of *Eugnosta* Hübner (Lepidoptera: Tortricidae) associated with *Baccharis salicifolia* (Asteraceae) in the northern Chilean Atacama Desert: Life-history description and phylogenetic inferences

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Abstract

Eugnosta Hübner, 1825 (Lepidoptera, Tortricidae, Tortricinae, Cochylini, Cochyliina) is reported for the first time in Chile. Male and female adults, the pupa, the last-instar larva, and galls of *Eugnosta azapaensis* Vargas & Moreira, sp. n., are described and illustrated from the Azapa Valley in the northern Atacama Desert. The larvae induce fusiform galls on shoots of the shrub *Baccharis salicifolia* (Ruiz & Pav.) Pers. (Asteraceae). An assessment of phylogenetic relationships of *E. azapaensis* with two congeneric species based on mitochondrial DNA is provided.

Key words: tortricid moths, plant galls, life history, molecular phylogeny, Neotropical region

Introduction

The tortricid fauna of Chile was recently reviewed by Razowski & Pelz (2010), who recorded 86 species. As reported for many other moth families, the Chilean tortricids that have been collected more often and consequently are better represented in scientific collections are those from the central-south part of the country. Therefore, it is not surprising that field collections made in some locations in arid northern Chile result in additional species. Since the review of Razowski & Pelz (2010), additional species were recorded from the coastal valleys of the northern Chilean Atacama Desert: two Fabaceae-feeding *Eccopsis* Zeller, 1852 (Vargas 2011), and the widespread *Strepsicrates smithiana* Walsingham, 1892, which is associated with the native tree *Myrica pavonis* (Myricaceae) (Vargas 2012). Another Fabaceae-feeding species, *Cydia largo* Heppner, 1981, was reported from the coastal valleys of northern Chile, where its larvae feed on the flowers of the native tree *Acacia macracantha* (Vargas & Parra 2006, 2009).

Cochylinina is a cosmopolitan subtribe of Cochylini in the subfamily Tortricinae, whose monophyly was supported by morphological and molecular studies (Regier *et al.* 2012). About 1,000 species, many from the Neotropics, are currently included in this subtribe (Razowski 1986a, b, 1993a, b, 1994, 2011, Razowski & Becker 1993, 1994, 2002, 2007a, b, Nishida & Adamski 2004). Several plant families, principally members of Asteraceae, were mentioned as hosts for larvae of species of Cochylinina (Powell 1980, Brown *et al.* 2008). The larvae are generally oligophagous, although some species have a broad host range, and may be associated with different plant organs (Brown 1987, Haghani *et al.* 2014). Some species are known to induce galls in the larval stage, and this is one of the most important cecidogenous subtribes within Tortricidae (Brown & Nishida 2007).

Eugnosta Hübner, 1825 is a diverse genus of Cochylinina with 91 recognized species, 47 of them from the New

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