



## A new species of *Bucculatrix* Zeller (Lepidoptera: Bucculatricidae) associated with *Baccharis salicifolia* (Asteraceae) in northern Chile

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### Abstract

Male, female and immature stages of *Bucculatrix mirnae* sp. n., from the Azapa Valley, coastal desert of northern Chile, are described and illustrated, under optical and scanning electron microscopy. The immature stages are associated with the shrub *Baccharis salicifolia* (Ruiz & Pav.) Pers. (Asteraceae). The larva is hypermetamorphic, having five instars and two feeding habits. The first, second and third instars are leaf miners, and the fourth and fifth instars are leaf skeletonizers. This is the first species of Bucculatricidae described from Chile.

**Key words:** leaf-mining moths, Neotropical region, hypermetamorphosis, molting cocoon, pupal cocoon

### Introduction

Bucculatricidae are plant-mining Lepidoptera, with nearly 250 species known around the world (Davis & Robinson 1998). Their larvae undergo a hypermetamorphic development, most being leaf miners in early instars and either leaf skeletonizers, stem borers or gall-makers in later ones (Friend 1927; Braun 1963; Davis & Robinson 1998; Davis *et al.* 2002; Kobayashi *et al.* 2009).

In the Nearctic region they are represented only by the genus *Bucculatrix* Zeller, 1848, for which more than 100 species are recognized in North America (Braun 1963; Rubinoff & Osborne 1997). On the other hand, only seven species of *Bucculatrix* were listed by Davis and Miller (1984) for the Neotropical region. Among them is the cotton pest *Bucculatrix thurberiella* Busck, 1914, whose type locality is located in the United States but that has a distributional range extending to many South American countries. Of the six remaining Neotropical species, one has its type locality in Bermuda, three in Mexico and two in the Virgin Islands. Subsequently, Davis *et al.* (2002) described two other Neotropical species for this genus, one from Belize and another from the Galapagos Islands, both with host plants in the genus *Cordia* (Boraginaceae). They provided a detailed description of the immature stages of *Bucculatrix caribbea* Davis and Landry, illustrated with scanning electron microscopy.

Chilean micro-moths, especially those of the coastal northern desert, are poorly known, mostly because of the poor collecting efforts in the past. This region, in conjunction with the coastal desert of southern Peru, is very interesting for taxonomic studies regarding many insect groups, and some endemic taxa have been described (e.g., Porter 1985; Vargas & Landry 2005; Vargas & Parra 2005; Howden 2008). Records of Bucculatricidae were previously unknown from Chile. As part of a survey of indigenous Lepidoptera associated with native vegetation in the Azapa Valley, Arica Province in northern Chile, adults of an undescribed species of *Bucculatrix* were obtained from larvae collected on the shrub *Baccharis salicifolia* (Ruiz & Pav.) Pers. (Asteraceae). Herein, we describe and illustrate all the life stages of this new species, and provide a preliminary characterization of its life history.