

## New Nepticulidae species (Insecta: Lepidoptera) from the Yucatán Peninsula (SE Mexico)

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### Abstract

Thirty-eight species of Nepticulidae are known from the Yucatán Peninsula and adjacent areas (mainland Mexico and Belize). This paper describes two new species: *Stigmella maya* Remeikis & Stonis, sp. nov. (a leaf-miner of *Karwinskia humboldtiana*, Rhamnaceae), and *Acalyptris yucatani* Remeikis & Stonis, sp. nov. (a leaf-miner of *Schinus* sp., Anacardiaceae). *S. maya* is among the smallest Lepidoptera in the world. In its male genitalia *S. maya* resembles a sizeable group of undescribed species occurring in the Andes (Patagonia: Argentina). The adults of both new species are illustrated with photographs of adults, genitalia and leaf-mines.

**Key words:** Nepticulidae, new species, *Stigmella*, *Acalyptris*, taxonomy, leaf-mines, Yucatán

### Introduction

The family Nepticulidae comprises the world's smallest monotrysian Microlepidoptera. It has a worldwide distribution and includes about 800 described species. Their morphology and biology has been reviewed, amongst others, by Johansson *et al.* (1990), Puplesis & Robinson (2000) and Puplesis & Diškus (2003). Due to the concealed mining life-style of the larvae, difficulties in rearing the adults, and minute size of the adults, Nepticulidae have not been sufficiently studied in many regions (*e.g.* Stonis & Remeikis 2011; Navickaitė *et al.* 2011). A historical review of the description of Nepticulidae from the Neotropical Region is given by Puplesis and Robinson (2000), with updates by Puplesis *et al.* (2002a, 2002b) and Šimkevičiūtė *et al.* (2009).

The Yucatán Peninsula and adjacent mainland Mexico and Belize are famous for their great general biodiversity (Puplesis 2002). However, past studies of Nepticulidae in the Yucatán arguably underestimate the diversity of this group. In the present paper, two new species from the lowland tropical forests of Yucatán are described, and an updated distribution map for all currently known 38 species of Central America is provided.

### Material and methods

The type material of nearly all species listed in the current paper was available to the authors from BMNH (London) and LUES (Vilnius). The adults of the new species were collected by A. Remeikis and J.R. Stonis in the lowland forests of Yucatán (Tulum, Figs 1, 15) by rearing imagoes from mining larvae using a standard method. Collecting methods, techniques for genitalia preparation and protocols for description are outlined in Puplesis & Robinson (2000) and Puplesis & Diškus (2003).

Permanent slides were photographed and studied using a Leica DM2500 microscope and Leica DFC420 digital camera. The descriptive terminology of morphological structures follows Johansson *et al.* (1990), Puplesis (1994) and Puplesis & Robinson (2000).