

SCIENTIFIC NOTE

Stigmella epicosma (Meyrick) (Lepidoptera: Nepticulidae): First Distribution Records from Chile and First Host Plant Record

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Abstract

The presence of *Stigmella epicosma* (Meyrick) is reported for the first time from two coastal valleys from northern Chile: Azapa and Chaca. Adults examined were reared from leafminer larvae on *Trixis cacalioides* (Asteraceae), the first host plant known for *S. epicosma*.

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Nepticulidae is a globally distributed family of the smallest monotriscyan moths comprising about 750 described species (Puplesis *et al* 2002a). Larvae are mostly miners through all instars (Davis 1998), but some species are gall makers (Nieukerken *et al* 2004).

Seventy four species are currently known from the Neotropical Region, although at least 500 species could be present in this biologically diverse area (Puplesis *et al* 2002b). Little is known about the biology and the host plants of the immature stages of Neotropical Nepticulidae. Only eight plant genera belonging to eight families were mentioned as hosts for nepticulid larvae in the Neotropic by Puplesis *et al* (2002b) and, recently, Santos *et al* (2008) added a host record for an unidentified species of Nepticulidae of the genus *Stigmella* Schrank.

The family Nepticulidae is poorly known within Chile with only one species reported which is apparently restricted to the southern portion of this country (Puplesis & Robinson 2002). No records of Nepticulidae have been reported from northernmost Chile.

In this paper, the presence of *Stigmella epicosma* (Meyrick) is reported for the first time from Chile, together with the first record of its host plant, the shrub

Trixis cacalioides (Asteraceae).

Mines were found in leaves of *T. cacalioides* between August and December 2007 in two coastal valleys of the desert of northern Chile, Arica Province: Azapa (eight mined leaves) and Chaca (10 mined leaves). In order to obtain adults for species identification, mined leaves were collected and brought to the laboratory. Only one mine was present in each leaf collected. Larvae were present only in two mines (one larva in each mine); the remaining 16 mines were empty. Mature larvae exited the mines and constructed a dense cream white cocoon for pupation. Two adults were obtained, one male (Chaca valley) and one female (Azapa valley), and these will be deposited in the Museo Nacional de Historia Natural de Santiago (MNNC), Santiago, Chile. These specimens were identified after dissection and comparison of the genitalia with the illustrations provided by Puplesis & Robinson (2000).

Stigmella epicosma is the first species of the family Nepticulidae recorded from the coastal desert of northernmost Chile, and it is the second species of *Stigmella* recorded from Chile. The only species of *Stigmella* previously known from Chile is *Stigmella rudis* Puplesis & Robinson, described from the Osorno Region,

which is approximately 3,000 km south of Arica (Puplesis & Robinson 2000).

Stigmella epicosma was originally described from Lima, Peru, approximately 1,350 km north of Arica, and was for a long time known only from the type locality. Subsequently, Puplesis & Robinson (2000) added new distribution records from Arequipa, Peru, located about 400 km north of Arica. Thus, the new distribution records provided considerably expand the geographic distribution of this species southward.

The leafmining habit of the larvae of *S. epicosma* agrees with the predominant habit of nepticulid larvae (Davis 1998). Previously only two other genera of Asteraceae had been mentioned as host plants for larvae of two other species of Neotropical Nepticulidae (Bourquin 1962, Santos *et al* 2008). Thus, *T. cacalioides* is not only the first host plant known for *S. epicosma*, it is the first report of the genus *Trixis* as a host for any Neotropical nepticulid larva.

The Neotropical genus *Trixis* comprises 37 species of shrubs, subshrubs and herbs, and is represented by 21 species in South America (Katinas 1996). *Trixis cacalioides* is a native shrub growing in the coastal valleys of northern Chile (Zöllner 1976), and it is also distributed in Argentina, Bolivia and Peru (Katinas 1996). Further collecting will be necessary to determine if the range of this moth also extends into those areas.

Material examined. CHILE. Arica. One ♂, Chaca, Arica, Chile, August 2007, H A Vargas coll., reared from larva collected from *Trixis cacalioides*; one ♀, Azapa, Arica, Chile, December 2007, H A Vargas coll., reared from larva collected from *Trixis cacalioides* (MNNC).

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