



## ***Gymnancyla (Gymnancyla) iranella* (Lepidoptera: Pyralidae, Phycitinae), a new species from Iran**

HELEN ALIPANAH<sup>1,4</sup>, JAN ASSELBERGS<sup>2</sup> & MEHDI SHAMS-ZADEH<sup>3</sup>

<sup>1</sup>*Insect Taxonomy Research Department, Iranian Research Institute of Plant Protection (IRIPP), P. O. Box 1454, Tehran 19395, Iran. E-mail: halipanah@gmail.com*

<sup>2</sup>*Neerland 20, 4614 GD Bergen op Zoom, The Netherlands. E-mail: jef.asselbergs@hetnet.nl*

<sup>3</sup>*Agricultural Research and Natural Resources Institute, Yazd, Iran. E-mail: shamsardakany@yahoo.com*

<sup>4</sup>*Corresponding author*

### **Abstract**

A full description of *Gymnancyla (Gymnancyla) iranella* sp. n. is given; adult, head and appendages, male and female genitalia and the larva are described and illustrated, based on 15 males, 12 females and three last instar larvae collected in central Iran, Yazd Province, Abarkuh region. Larvae were found on *Salsola* sp. (family Chenopodiaceae).

**Key words:** Lepidoptera, Pyralidae, Phycitinae, *Gymnancyla*, new species, Iran

### **Introduction**

The genus *Gymnancyla* Zeller, 1848, with a restricted distribution in the Palaearctic region and comprising seven known species world-broad, is divided into three subgenera viz. *Gymnancyla* Zeller, 1848 (s.str.), *Spermatophthora* Lederer, 1852, and *Dentinodia* Ragonot, 1887, each containing five, one and one species respectively (Roesler 1973; Liu 2010). The three subgenera mentioned above are separated from each other by a few characteristics, viz. the shape and length of the maxillary palpi in the male, the presence or absence of sclerotized knots on the male antennal segments, the shape of the costa in the valvae, the proximal border of the vinculum, and the number of scent scales on the culcita in the males. The distinguishing characters for the three subgenera as given by Roesler (1973) are considerable and for that reason justifying the division in subgenera which is followed by Liu & Li (2010) and also in this article.

In 2010, while studying the pyralid species collected in Yazd Province, a *Gymnancyla* species belonging to the subgenus *Gymnancyla* (s.str.) was discovered, and it differs from the related species by having a sclerotized antrum, the lack of sclerotization at the transition of the corpus bursae and ductus bursae, and the unequal signa in the corpus bursae of the female genitalia; and the presence of a dagger-shaped sclerotized structure below the costa which is extended distally in the male genitalia. In this paper we describe the adults and fifth instar larva of the new species and compare its characters with those of the closely related species.

The literature about the biology of *Gymnancyla* (as far as known) is mentioned in the text and in the references. This genus belongs to the tribe Phycitini Zeller, 1839 and the phylogenetic relationship between *Gymnancyla* and other phycitine genera has not been investigated so far.

### **Material and methods**

This study is based mainly on the material collected in Iran, Yazd Province, which is deposited in the Hayk Mirzayans Insect Museum, Tehran. Morphological characters were examined using a stereomicroscope (maximum magnification 128×). Photographs were taken using a digital still camera DSC-F717 and a Dino-Eye Microscope eye-piece camera. Some images are the result of combining multiple images using the software Combine ZP.

Mesothorax and Metathorax (Fig. 5A): seta D1 postero-dorsal to seta D2 and both from a common pinaculum; length of seta D2 nearly 5× length of seta D1; seta SD2 antero-dorsal to seta SD1 and both from a common pinaculum; length of seta SD1 in mesothorax 6.5–8.0× length of seta SD2, while that of metathorax 3–3.5× length of seta SD2 or slightly more; setae L1, L2 and L3 present and each from a separate pinaculum; setae L1 closer to L2 than L3; seta L1 nearly 1.5× length of seta L2 and slightly more than 2× length of seta L3; SV group missing; seta V1 present.

Abdomen (Figs 5A–E): anal plate (Fig. 5C) oval and very slightly notched antero-medially; setae SD1 and D2 very long; seta SD1 slightly longer than seta D2; seta D1 half length of seta D2; length of seta D2 slightly more than 3× length of seta D3; seta D2, D1 and SD1 nearly equidistant; distance between seta D3 and SD1 less than that between SD1 and D1. Ventral prolegs on A3 to A6 and A10, crochets uniserial, biordinal, arranged in complete circle (Fig. 5E). In segments A1 to A8: D1 anterior to D2 and compared with it rather dorsal; length of seta D2 almost 1.5× length of seta D1; seta SD2 very short; L group in segments A1 to A8 trisetose (L1 and L2 in a unique pinaculum and L3 postero-ventral and well apart from them); length of seta L1 nearly equal to L3 and almost 3.5× length of seta L2; setae SV in segments A1 to A4 trisetose, in segments A1 and A2 setae SV1 and SV3 from a common pinaculum, antero-dorsal to SV2 which originates from a pinaculum apart from them, while in segments A3 to A6 all originate from a common pinaculum; setae SV in segments A7 and A8 bisetose and setae SV2 missing; setae SV1 in segments A1 to A6 longer than both SV2 and SV3, and in segments A7 and A8 longer than SV3; setae V1 in segments A3–A6 missing. Segment A9: seta D1 dorsal to seta D2; distance between setae D1 and D2 more than distance between setae D1 to SD1; L group with three setae L1, L2 and L3 that together form a straight line; seta L3 slightly longer than seta L1; length of seta L2 slightly more than 5× length of seta L3 and slightly more than 6× length of seta L1; SV group bisetose, length of seta SV1 nearly 3× length of seta SV3. Segment A10 (Fig. 5D): AL1 and AL2 equal in length and slightly more than 2× length of seta AL3.

Pupa (female) (Figs 6B, C): maximum length 8.0 mm (n= 1); breadth of head 2.0 mm; integument not clearly punctuate; light brown, slightly darker in ventral surface of thorax, especially in wing sheath and antennal area, except maxillary palpi, labrum and frons which are paler; caudal abdominal segments orangish; all spiracles of nearly the same size and ochreous red; labial palpi present; thoracic spiracles not visible; prothoracic legs extended to slightly beyond half length of maxilla; mesothoracic legs extended to 3/4 length of maxilla; metathoracic legs extended nearly to end of maxilla; spiracle on A1 not clearly visible, and those of A2 to A8 distinct; cremaster indistinguishable; genital openings as vertical slits and present on segments A8 and A9 (g1 and g2 respectively); g1 slightly shorter than g2.

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