

Correcting the record of *Miniphila miniago* (Freyer, 1840) (Lepidoptera, Noctuidae) from Iran with taxonomic notes

Esfandiari, M.^{1*} and Afsarian, M.²

¹Department of Plant Protection, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Ahvaz, Iran

²Insect Taxonomy Research Department, Iranian Research Institute of Plant Protection, Agricultural Research, Education and Extension Organization (AREEO), Iran

(Received: 15 January 2018; Accepted: 10 May 2018)

Miniphila miniago (Freyer, 1840) (Lepidoptera, Noctuidae) was reported by Rezwani Gilkalai (1975) from Tehran and north-west of Iran as *Eugnorisma miniago* (Freyer), a grapevine bud pest, which damages vine buds in the early of April. Results on expeditions of foreign researchers as well as recent relevant taxonomic catalogues and publications show no record of *miniago* from Iran and report the southernmost distribution range of this species in Armenia (Fibiger, 1993; Rabieh *et al.*, 2013; Varga *et al.*, 2015). On the other hand, *Miniphila persago* Gyulai & Ronkay, 2006 was described from central and west of Iran as a closely allied species of *M. miniago*. Therefore, we were doubtful that report of *M. miniago* from Iran was a misidentification of *Miniphila persago*.

The species of *miniago* was first described as *Xanthia miniago* by Freyer in 1840. Boursin described the genus *Eugnorisma* in 1946 and later in 1954 moved some species of the other genera, including *miniago* to this genus in order to complete the list of *Eugnorisma* species (Varga & Ronkay, 1987). But, according to Varga & Ronkay (1987, 1990), *miniago* had greater affinity to *Coenophila* Stephens, 1850 than *Eugnorisma*, and considered to be associated with the other genera such as *Eugraphe* Hübner, 1821 as well.

Beck (1996) erected the new genus *Miniphila*, with *miniago* as its type species by combination of larval morphological characters and imaginal features. Fibiger (1997) moved back again this species to *Eugnorisma* to continue such a controversy on the generic position of this species. It seemed that decision on the exact position of this species needed a revision of the related Noctuidae genera. Moreover, this uncertainty was based on the unusual combination of morphological characters in the habitus versus genitalia of this species.

Recent revisions by Varga *et al.* (2015) on the subfamily Noctuidae, confirmed Beck's (1996) studies. Some of the male genital characters which distinguish *Miniphila* from other main lineages of the *Eugnorisma*-complex consist of strongly sclerotised and long valvae with more distally positioned harpe and pseudopollex, long and tubular aedeagus, absence of fine cornutus from subbasal diverticulum, presence of a rounded cornutus on distal part of vesica and lack of spinulose terminal field on the vesica (Varga *et al.*, 2015).

We reexamined the materials of Rezwani Gilkalai (1975), which were deposited in large series at the Hayk Mirzayans Insect Museum, Iranian Research Institute of Plant Protection (IRIPP). The specimens were collected in November of 1971 from Shahriar, Tehran Province. The genitalia dissections were followed modern dissection standards for genital preparation of Lepidoptera (Fibiger, 1997), and photographs were taken using a digital still camera DSC-F717 and a Dino-Eye Microscope Eye-piece camera. The software Combine ZP was also used to combine some

images. In addition, the types of *M. persago* located at Peter Gyulai's private collection (Miskolc, Hungary) were checked.

It was revealed that these materials indeed belong to *M. persago*, so *M. miniago* record from Iran is corrected. Diagnostic characters for separating *M. persago* from its sister-species are as follows: smaller wingspan (33-38 mm.), more concolorous forewings with more reduced noctuid maculation (Fig. 1A). The male genitalia of *M. persago* (Fig. 1B, C), differs from those of *M. miniago* by having shorter valvae which has a broader and shorter apical section, basally wider pseudopollex, less pointed harpe and shorter carina of aedeagus. The clearest difference of the female genitalia (Fig. 1D) in *M. persago* is the shorter and broader ductus bursae and shorter and egg shaped corpus bursae than those of its sibling species (Gyulai & Ronkay, 2006; Varga *et al.*, 2015).

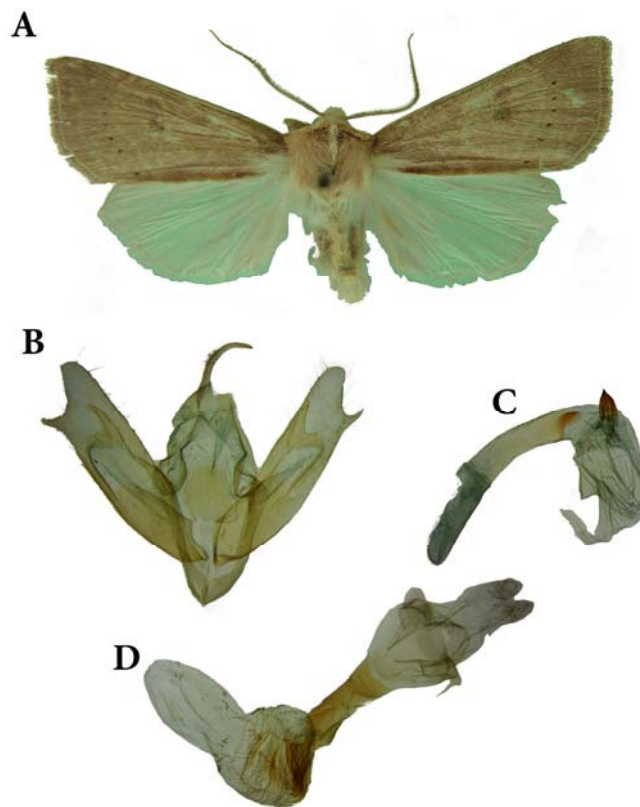


FIGURE 1. External and internal morphological characters of the *M. persago*: A, wing pattern of male; B, armature, C, aedeagus with everted vesica, D, female genitalia.

However, a main diagnostic character for distinguishing these two species is the width of harpe (Fig. 2: A) which is about twice as its basal plate (Fig. 2: B) in male genitalia of *miniago* whereas in *persago* the width of harpe (Fig. 2: C) is approximately equal to basal plate (Fig. 2: D).

The name of *Eugnorisma miniago* in Iranian publications as grapevine bud pest should be changed to *Miniphila persago*. *M. miniago* occurs from Eastern Europe towards the northern slope of the central and East Tien Shan mountain ranges. Its southernmost distribution range is Armenia. Nominotypical *M. persago* occurs in Provinces of Azarbayjan-e Sharghi, Azarbayjan-e Gharbi, Ardabil, Kordestan, Tehran, Alborz and Esfahan. It inhabits hot and xerothermic grassland biotopes and flies in late summer and early autumn (Rezwani Gilkalai, 1975; Gyulai & Ronkay, 2006; Varga *et al.*, 2015).

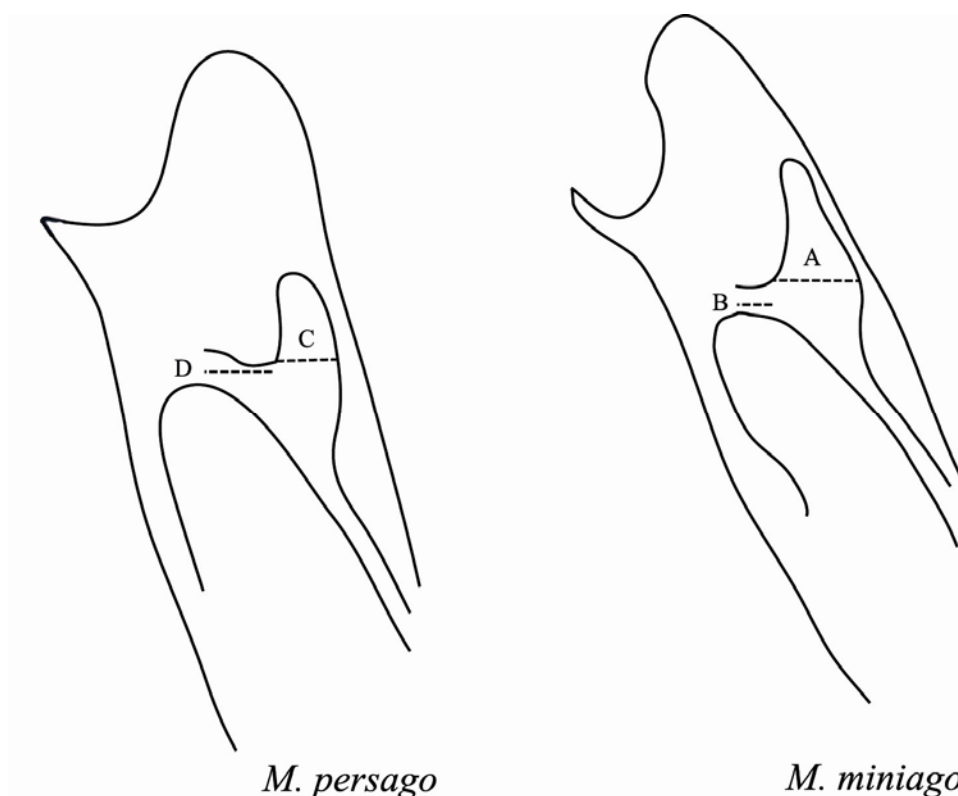


FIGURE 2. Drawings show the width of harpe (A, C) compare to its basal plate (B, D) in male genitalia of *M. miniago* and *M. persago*.

ACKNOWLEDGMENTS

The authors would like to thank to Dr. Peter Gyulai (Miskolc, Hungary) for help in checking type materials of *M. persago* as well as Dr. Laszlo Ronkay for useful discussions. This study was financially supported by Shahid Chamran University of Ahvaz.

LITERATURE CITED

- Beck, H., 1996. Systematische Liste der Noctuidae Europas (Lepidoptera, Noctuidae). Neue Entomologische Nachrichten 36, 1–122.
- Fibiger, M., 1993. Noctuinae II, Noctuidae Europaeae. Volume 2. Entomological Press, Sorø, Denmark. 230 pp.
- Fibiger, M., 1997. Noctuinae III, Noctuidae Europaeae. Volume 3. Entomological Press, Sorø, Denmark. 418 pp.
- Gyulai, P., Ronkay, L., 2006. New Noctuidae taxa from Iran and Turkey (Lepidoptera). Esperiana 12, 255-266.
- Rabieh, M.M., Seraj, A.A., Gyulai, P., Esfandiari, M., 2013. Checklist of the genus *Eugnorisma* Boursin, 1946 of Iran with new records and distributional data (Lepidoptera: Noctuidae, Noctuinae). Shilap Revista de Lepidopterologia 41(163), 399-413.

Rezwani Gilkalai, A., 1975. Untersuchungen über die biologie und ökologie der Rebenknospenschädlinge (*Eugnorisma miniago* Ferr. Lep. Noctuidae). Entomologie et Phytopathologie Appliquees 38, 13-14

Ronkay, L., Varga, Z., 1990. Studies on the Palearctic Noctuidae. Sect. Amphipyriinae II. Investigations on the genus *Auchmis* Hübner, 1821. Acta Zoologica Academiae Scientiarum Hungaricae 36(1-2), 121-134.

Varga, Z., Ronkay, L., 1987. The revision of the genus *Eugnorisma* Boursin, 1946 (Lepidoptera, Noctuidae). Acta Zoologica Academiae Scientiarum Hungaricae 33 (1-2), 187-262.

Varga, Z., Ronkay, G., Ronkay, L., Gyulai, P., 2015. Noctuinae II, A Taxonomic Atlas of the Eurasian and North African Noctuoidea. Volum 8. Heterocera Press, Budapest, 362 pp.