



## *Monopis fenestratella* (Heyden, 1863) (Lepidoptera, Tineidae) – new records from Poland, with notes on species biology

Tomasz JAWORSKI\*, Jakub GRYZ\*\*, Jarosław BUSZKO\*\*\*

\*Department of Forest Protection, Forest Research Institute, Braci Leśnej 3, Sękocin Stary, 05-090 Raszyn, Poland;  
e-mail: T. Jaworski@ibles.waw.pl

\*\*Department of Forest Ecology, Forest Research Institute, Braci Leśnej 3, Sękocin Stary, 05-090 Raszyn, Poland;  
e-mail: J. Gryz@ibles.waw.pl

\*\*\*Department of Animal Ecology, Nicolaus Copernicus University, Gagarina 9, 87-100 Toruń, Poland;  
e-mail: buszko@biol.uni.torun.pl

**Abstract:** *Monopis fenestratella* (Heyden) was recorded from two localities in Poland. One specimen was captured in 2001, and additionally 5 specimens were reared in 2009 from the detritus collected from a tawny owl (*Strix aluco* L.) nest box. Comments on species biology are given.

**Key words:** Tineidae, *Monopis*, tawny owl, *Strix aluco*, keratophagy, faunistics

### INTRODUCTION

Genus *Monopis* Hübner, 1825 comprises 14 species in Europe (Gaedike 2004), six of which were recorded in Poland so far (Buszko and Nowacki 2000; Šumpich et al. 2011). In all the species the adults are rather small moths with a wingspan ranging from 8 to 20 mm. The forewing coloration is usually uniform – grayish, or sometimes contrasting – grayish-black with a large, white costal blotch or yellowish streak along the hind margin. These moths can be easily distinguished from other tineids by the presence of a small, translucent spot on the forewing. Their larvae are keratophagous and can be encountered in various microhabitats, from natural to anthropogenic environments.

*Monopis fenestratella* (Heyden) was first described by Carl von Heyden in 1863 as *Tinea fenestratella* (Heyden 1863). The species is distributed in Northern and Central Europe (Gaedike 2004). Until now, although known from almost all surrounding areas, *M. fenestratella* has not been found in Poland but the first data on its occurrence in Poland have been published only recently (Šumpich et al. 2011). Here we present new records of *M. fenestratella* from Poland with some notes about species biology.

### MATERIAL

The following specimens of *Monopis fenestratella* (Heyden, 1863) were found in Poland:

- Toruń (CD38): Las Piwnicki reserve, 1 female, 28 VI 2001, leg. et coll. J. Buszko.
- Zlotoklos (DC96): 5 exx., e.l. 23 IV 2010, larvae VI 2009, leg. J. Gryz et I. Mirowski, coll. T. Jaworski

The specimen from Toruń was caught at light. All specimens from the second locality have been reared from the detritus collected from a tawny owl (*Strix aluco* L.) nest box. One of these specimens is shown at Fig. 1.

## DISCUSSION

Despite its relatively wide distribution in Europe (Gaedike 2004), *M. fenestratella* is very rarely encountered, therefore little is known about its life history. It probably inhabits a wide range of environments, from natural habitats to urban areas, and may be more common than generally believed. This is, in our opinion, mostly due to lack of explorations of suitable microhabitats, e.g. nests and nest boxes of carnivorous birds, because sometimes individuals might be reared in large numbers from humus accumulated in such places.



Fig. 1. *Monopis fenestratella* (Heyden, 1863), female, Zlotoklos, c.l. 23 IV 2010, leg. J. Gryz et I. Mirowski, coll. T. Jaworski (photo T. Jaworski)

In natural conditions the adults were recorded from May to August (Pelham-Clinton 1985, Šumpich et al. 2011), and appear to be sporadically attracted to artificial light (Parsons 1996, Huisman and Koster 1998, Šumpich et al. 2011). Two or more generations might occur annually. Hannemann's information (1977) concerning the description of the larva, allegedly given by Hinton (1956), turns out to be incorrect. The only note made by the latter author refers only to the occurrence of the species in France. Thus, the characteristics of preimaginal stages of *M. fenestratella* remain unknown. Morphology of the adults was described in detail by Heyden (1863), Meyrick (1895) and Zagulajev (1960)

The eggs are probably laid in the proximity or directly on the larval feeding substrate, which is common for most tineids. As their relatives, the larvae feed on diverse organic remains, particularly in birds' nests and on animal carcasses (Jalava 1980, Simpson 1981, Pelham-Clinton 1985, Zagulajev 1960, Robinson 2009). For this reason, they are considered to be capable of feeding on keratin. In our opinion the suggestions that the caterpillars can also

develop on bracket fungi and in decaying wood (Heinemann 1870, Ruston 1879, Meyrick 1895, Petersen 1969, Hannemann 1977) are erroneous and require confirmation before these substrates can be considered as suitable for this species. Firstly, an inaccurate determination of species may have taken place, as already pointed out by Zagulajev (1960). Secondly, some records actually refer to specimens that have been collected in an open area, when resting or flying in the close vicinity of rotting wood, which was then incorrectly recognized as a feeding substrate for the larvae (see Ruston 1879). Furthermore, Heyden's description of the species was based on one specimen only, perhaps erroneously considered to be reared from rotting wood (see Heyden 1863). Finally, practically all *Monopis* species appear to be trophically connected to various animal refuses (e.g. skin, fur, owls' pellets, feathers) and no reliable data exist on phyto- or mycophagy (Robinson 2009).

#### REFERENCES

- BUSZKO J. & NOWACKI J. 2000. The *Lepidoptera* of Poland. A distributional checklist. Polish Entomological Monographs 1: 1–178.
- GAEDIKE R. 2004. Fauna Europaea: Tineidae. In: KARSHOLT, O. & NIEUKERKEN, E. J. van (eds), Fauna Europaea: Lepidoptera, Moths. Fauna Europaea version 1.1, <http://www.faunaeur.org>
- HANNEMANN H. J. 1977. Kleinschmetterlinge oder Microlepidoptera III. Federmotten (Pterophoridae), Gespinmotten (Yponomeutidae), Echte Motten (Tineidae). Die Tierwelt Deutschlands 63, 273 pp, 17 pls.
- HEINEMANN H. 1870. Die Schmetterlinge Deutschlands und der Schweiz. Braunschweig, II: 1–825.
- HEYDEN C. VON. 1863. Entomologische Zeitung, Stettin, 24: 342.
- HINTON H. E. 1956. The larvae of the species of Tineidae of economic importance. Bulletin of Entomological Research, 47: 251–346.
- HUISMAN K. J. & KOSTER J. C. 1998. Nieuwe en interessante Microlepidoptera uit Nederland in het jaar 1995 (Lepidoptera). New and interesting microlepidoptera from the Netherlands in the year 1995 (Lepidoptera). Entomologische Berichten Amsterdam 58 (4): 53–69.
- JALAVA J. 1980. Tineidae (Lepidoptera) from the nests of the Ural owl (*Strix uralensis* Pall.). Notulae entomologicae 60: 96–100.
- MEYRICK E. 1895. A handbook of British Lepidoptera. Macmillan and Co., London, 843 pp.
- PARSONS M. S. 1996. *Monopis fenestratella* (Heyden, 1863) (Lepidoptera: Tineidae) from Richmond Park, Surrey. Entomologist's Gazette 47: 19–20.
- PELHAM-CLINTON E. C. 1985. Tineidae. In: HEATH J. (ed.), The Moths and Butterflies of Great Britain and Ireland. 2. Cossidae to Helioidinidae, pp. 152–207. Harley Books, Colchester, 460 pp.
- PETERSEN G. 1969. Beiträge zur Insekten-fauna der DDR: Lepidoptera – Tineidae. Beiträge zur Entomologie 19: 311–388.
- ROBINSON G. S. 2009. Biology, distribution and diversity of tineid moths. Southdene Sdn Bhd, Kuala Lumpur and Natural History Museum, London 143 pp, 16 pls.
- RUSTON H. 1879. Occurrence of *Tinea fenestratella* (Heyden) in Britain. Entomologist's Monthly Magazine 15: 238.
- SIMPSON A. N. B. 1981. *Monopis fenestratella* Heyd. in Warwickshire. The Entomologist's Records and Journal of Variation, 93 (3–4): 45.
- ŠUMPICH J., LIŠKA J., DVORÁK I. 2011. Contribution to knowledge of the butterflies and moths (Lepidoptera) of north-eastern Poland with a description of a new tineid species from the genus *Monopis* Hübner, 1825. Polish Journal of Entomology 80: 83–116.
- ZAGULAJEV A. K. 1960. Tineidae; part 3 – subfamily Tineinae. Fauna SSSR, Moskva-Leningrad, 78: 1–267, 231 figs, 3 pls.

#### STRESZCZENIE

**[*Monopis fenestratella* (Heyden, 1863) (Lepidoptera, Tineidae) – nowy dla fauny Polski gatunek mola]**

Praca zawiera nowe dane o występowaniu *Monopis fenestratella* (Heyden) w Polsce. Jeden okaz odłowiono w 2001 roku, a 5 kolejnych wyhodowano w 2009 roku z humusu zebranego ze skrzynki lęgowej puszczyka (*Strix aluco* L.). W pracy omówiono aktualne dane o cechach biologii gatunku.

Accepted: 16 May 2011