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*STIGMELLA DIVINA* SP. N., A REMARKABLE SPECIES  
FROM TURKMENISTAN AND TURKEY  
(LEPIDOPTERA, NEPTICULIDAE)

Puplesis, R. A. Diškus & E.J. van Nieuwerkerken, 1997. *Stigmella divina* sp. n., A remarkable species from Turkmenistan and Turkey (Lepidoptera, Nepticulidae). – Tijdschrift voor Entomologie 140: 55-58, figs. 1-11 (issn 0040-7496). Published 31 October 1997.

*Stigmella divina* sp. n. is described from the Kopet Dag mountains in Turkmenistan and Central Anatolia (Turkey). The species cannot be placed in any known species group, because of its remarkable genitalia. The male possesses a unique androconial patch on the forewing underside.

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Key words. – Nepticulidae; Palaearctic; Central Asia; *Stigmella*.

The Nepticulidae of Turkmenistan were recently revised, together with those from other parts of Central Asia (Puplesis 1994). Since then a few more species have been described, and a checklist was published (Puplesis & Diškus 1995, 1996a, 1996b, 1996c, Puplesis et al 1996). Some of the species collected by the first two authors during the 1993 expedition to the Kopet Dag ridge remain to be described. One of these is a peculiar species of *Stigmella*, which does not fit in any of the recognised species-groups. The same species was encountered by the third author amongst unidentified material from Turkey. The nepticulid fauna of Turkey is still imperfectly known, there is as yet no general review available, but a few species were mentioned in several taxonomic papers (Klimesch 1978, van Nieuwerkerken 1985, 1990, van Nieuwerkerken & Puplesis 1991).

We describe this species here to point to its unique set of characters, not fitting into any known species group, awaiting further revisionary work on western Palaearctic *Stigmella*.

Type material is deposited in the collection of the Department of Zoology of Vilnius Pedagogical University, Lithuania (VPU), the National Museum of Natural History, Leiden (RMNH) and the Zoological Museum, Copenhagen (ZMUC). Terminology of external features and genitalia follows van Nieuwerkerken

et al. (1990) and Puplesis (1994). Genitalia structures of the Turkmenian specimens were examined and figured in glycerine.

*Stigmella divina* sp. n.  
(figs. 1-11)

Type material. – Holotype ♂: Turkmenistan, western Kopet Dag, 40 km E Kara Kala (= Garrygala), 800 m, 7.viii.1993, leg. R. Puplesis & A. Diškus (VPU). Paratypes: 9♂, 15♀ same data as holotype, 25.vi-18.viii.1993 (VPU, RMNH); 1 ♂ Turkey, Sivas, 10 km W Gürün, 1650 m, 27.vii.1989, leg. Fibiger & Esser, Genitalia slide EJVN 3180 (ZMUC).

Diagnosis. – Females can be recognised by the combination of a yellowish cream thorax and forewing base and the wide fascia. Males, which have a dark thorax, can easily be recognised by the elongate yellow androconial patch on the forewing underside. The male genitalia are characterised by the shape of the valva with the bifid apex and the dagger shaped juxta.

#### Description

Male (fig. 1). – Forewing length 2.3-2.7 mm. Head: frontal tuft from ferruginous to brown, occasionally fuscous; scape and collar cream; antenna cream-grey to grey-brown, with 30-31 segments.

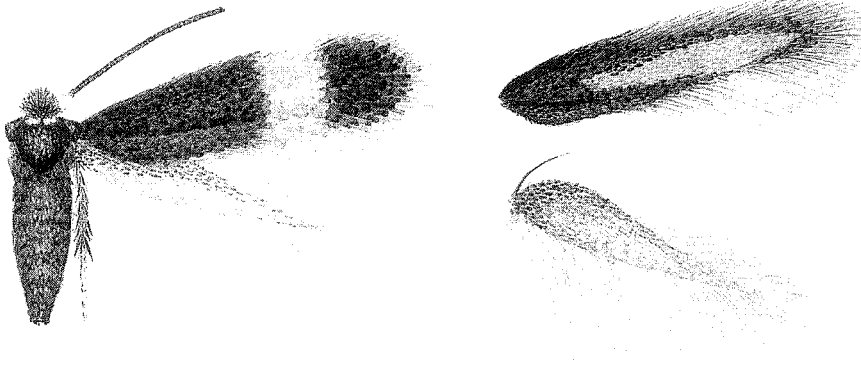


Fig. 1. *Stigmella divina*, male Paratype, Turkey. Left: dorsal view; right: underside of left wings, showing androconial patch. Painted by Roland Johansson.

Thorax, tegulae and forewing grey-brown, with some purplish reflection; area posterior to fascia with intensive reflections, darker. Fascia creamy white, rather wide, but slightly varying in shape. Underside of forewing with large cream to yellow elongate spot of androconial scales, further dark grey. Cilia pale grey to grey-cream, lustre. Hindwing totally or partly covered by pale cream scales, underside grey. Abdomen fuscous, valval lobes and anal tufts brown and lustre.

Female. – Forewing length approximately 2.2-2.4 mm. Head: frontal tuft pale ferruginous to pale brown; scape and collar cream; antenna grey-brown to brownish-cream, with 27-28 segments. Thorax, tegulae and small area of forewing base yellowish cream. Hindwing grey. Further as male, except androconial scales.

Male genitalia (figs. 2-5, 7-10). – Capsule 285-315  $\mu\text{m}$  long. Vinculum with shallow anterior excavation. Tegumen narrow. Uncus relatively large, trapezoid, slightly bilobed, surface somewhat papillate dorsally. Gnathos with long posterior processes and short and broad anterior processes. Valva 180-185  $\mu\text{m}$  long, slender triangular, basally joined with juxta, at apex curved medially (inwards), ending in two distinct teeth-like processes. Transtilla with long sublateral processes; transverse bar narrowed in middle. Aedeagus (figs. 3, 4, 5, 9, 10) 275-310  $\mu\text{m}$  long, basally widened; vesica with several large cornuti, varying in shape and size; basally or medially with a group of many spinelike cornuti. Manica absent. Juxta between valvae, joined to valvae and aedeagus, apex bifid, resembling the juxta in *Stigmella viscerella* (Stainton) (Johansson & Nielsen 1990: figs. 247-249). Distally the scerite with well sclerotised, slightly bifurcated process.

Female genitalia (fig. 6). – Apophyses long, posteriores slightly wider than usually. Accessory sac small,

but distinct. Ductus spermathecae slightly longer than corpus bursae, but very slender, with some narrow convolutions. Corpus bursae relatively small and pectinations on bursae obscure.

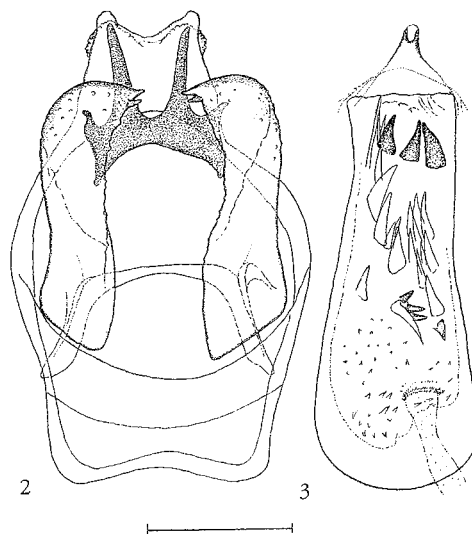
### Biology

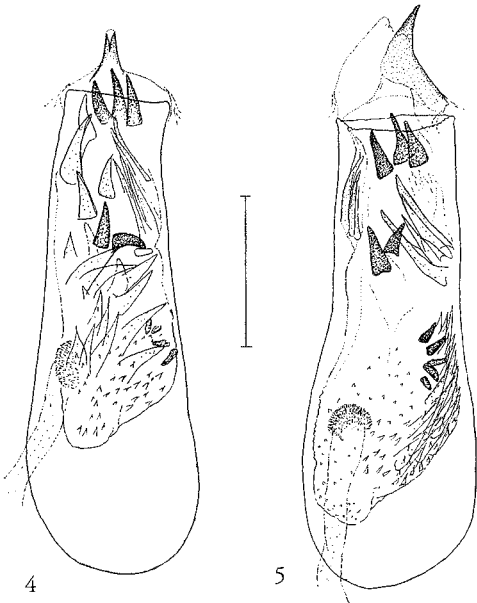
Host-plant unknown. Adults fly from late June to August.

### Distribution (fig. 11)

Turkmenistan (western part of Kopet Dag) and Turkey (Central Anatolia, Sivas province).

Figs. 2, 3. Male genitalia of *Stigmella divina*, sp.n., holotype (western Turkmenistan). - 2, Capsule; 3, Aedeagus. Scale 0.1 mm.

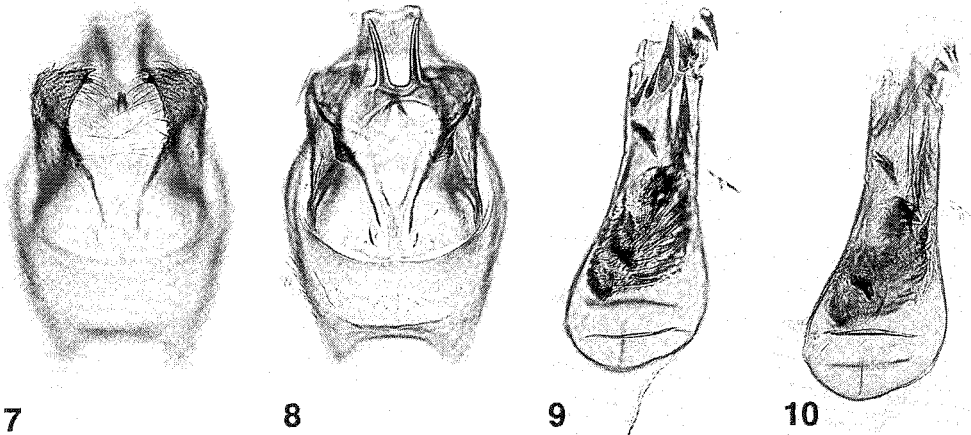




Figs 4, 5. Aedeagus of *Stigmella divina*, sp.n., paratype, (western Turkmenistan). – 4, Ventral view; 5, Lateral view (same specimen, figured in glycerine). Scale 0.1 mm.



Fig. 6. Female genitalia of *Stigmella divina*, sp.n., paratype (western Turkmenistan). Scale 0.1 mm.



Figs 7-10. Male genitalia of *Stigmella divina*, sp. n., paratype (Turkey), slide EJVN 3180.

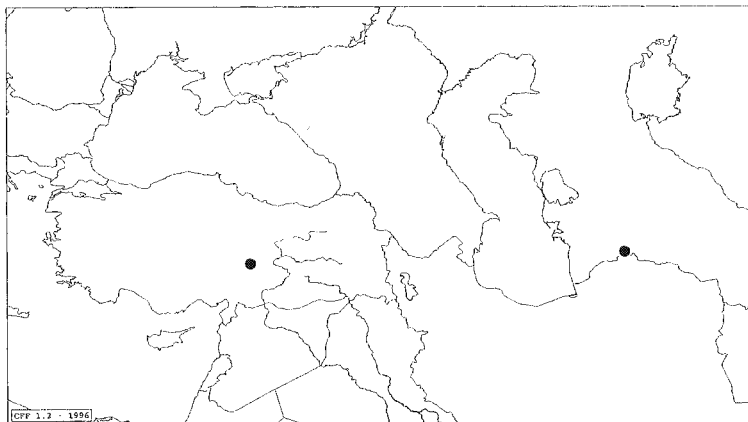


Fig. 11.

Distribution of *Stigmella divina*.

### Discussion

We have not been able to determine the position of *Stigmella divina* in any of the currently recognised species groups. It resembles somewhat species in the *S. ulmivora* group, but particularly the valvae and androconial scales are very different. Without a phylogenetic framework for *Stigmella*, we prefer to leave *S. divina* tentatively unplaced within the genus.

### ACKNOWLEDGEMENTS

We are particularly indebted to Roland Johansson, for preparing the water-colours and allowing us to use them. We thank Ole Karsholt for lending us the material collected by Fibiger & Esser. The research presented in this publication was made possible in part by Grant LAO000&LHX100 from the International Science Foundation.

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Received: 1 May 1997

Accepted: 30 June 1997