

Short paper

Strophedra weirana (Douglas, 1850) (Tortricidae: Olethreutinae, Grapholitini): A genus and species new to Iran

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Abstract: The larvae of *Strophedra weirana* (Douglas, 1850) were discovered in Shast Kola forest (Golestan Province) and few adult specimens were collected in Rasht (Gilan Province) and Ramsar (Mazandaran Province). In Golestan Province, the caterpillars had attached two leaves of the host plant, *Fagus orientalis* Lipsky, with their silk and were feeding within this shelter. The genus *Strophedra* and *S. weirana* are new reports for the fauna of Iran. A brief taxonomic characterization of the species, as well as figures of the adults and male and female genitalia are provided.

Keywords: Tortricidae, Grapholitini, *Strophedra weirana*, *Fagus orientalis*, new record, Iran

Introduction

The genus *Strophedra* is represented by 13 species worldwide which are mainly distributed in the Oriental and Palaearctic Regions (Komai, 1999; Razowski, 2003; Gilligan *et al.*, 2014; Lu & Li, 2017). Only two species, *S. nitidana* Fabricius, 1794 and *S. weirana* Douglas, 1850 occur in the Palaearctic Region (Brown, 2005; Gilligan *et al.*, 2014). Members of the genus are essentially restricted to Fagaceae as their larval hosts (Komai, 1999). The presence of a distal thorn-like process at the subgenital (7th) sternite of the female and a pair of tufts of long hair-like scent scales arising from shallow membranous concavities on each side of the 8th abdominal tergite of the male are supposed synapomorphies of the genus (Komai, 1999;

Razowski, 2003). The larvae of *Strophedra* feed between leaves of the host spun together with silk. Hibernation takes place in the larval stage and pupation occurs in a cocoon in the ground. As stated by Razowski (1989, 2003), species of *Strophedra* usually have one generation per year, but there may be more in the southern portions of their range.

During a study of the insects in the forests of the Golestan Province, larvae of a small tortricid species were found in Shast Kola forest. The larvae had attached two leaves of the host, *Fagus orientalis* Lipsky, with silk and fed within this shelter. The larvae were then reared in the laboratory, and the emerged adults were identified as *Strophedra weirana*. Additional materials, adults of the same species, were found in the Lepidoptera collection of the Hayk Mirzayans Insect Museum (HMIM), Iranian Research Institute of Plant Protection (IRIPP) which were collected as adults in Gilan and Mazandaran Provinces. This genus has not previously been reported from Iran, therefore this is a new

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record of both the genus and species from the country.

Materials and Methods

Genitalia dissections followed Robinson (1976). Photographs were taken using a digital Still camera DSC-F717 and a Dino-Eye Microscope Eye-piece camera. The scale bar in the figure of adult specimen indicates 5 mm. The examined specimens are deposited in the Hayk Mirzayans Insect Museum (HMIM) of the Iranian Research Institute of Plant Protection (IRIPP).

Results

Strophedra weirana (Douglas, 1850) (Fig. 1A)

Material examined: Golestān Province: 3 ♂♂, 2 ♀♀, Gorgān, Shast Kolā forest, N 36° 44', E 54° 23', 889 m, 9.VII.2017, Omid leg. (GS: HA-2227, HA-2230, HA-2288, HA-2289); Gilān Province: 3 ♂♂, Rasht, Shaft, Ahmad Goorāb, Siāhmezgi vill., N 37° 0.00' 54.86", E 49° 15' 7.95", 626 m, 23.VII.2010, Ālipanāh leg. (GS: HA-1297); Māzandarān Province: 1 ♂, Rāmsar- Javāherdeh Rd. (km. 6), N 36° 54' 29.3", E 050° 35' 13.2", 554 m, 23.VII.2007, Ālipanāh, Zahiri leg. (GS: HA-858).

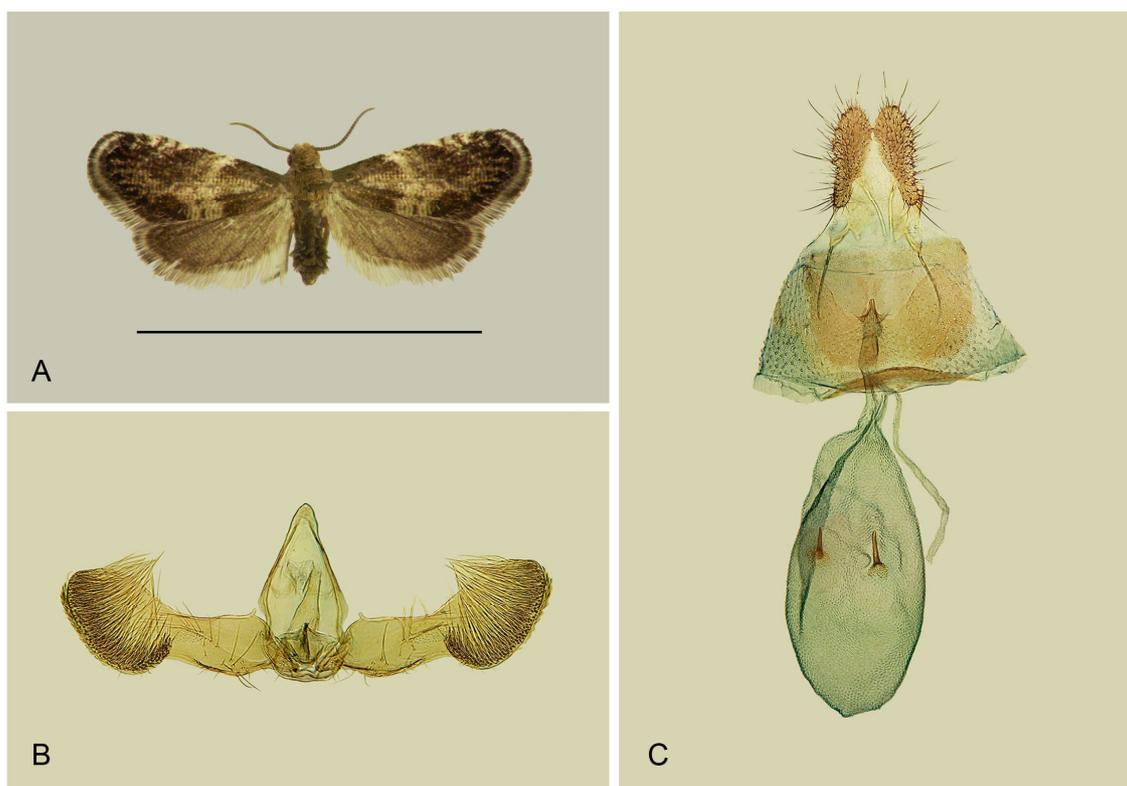


Figure 1 *Strophedra weirana* (Douglas), A. Adult male, B. Male genitalia (main body and phallus in ventral view), C. Female genitalia in ventral view.

Diagnosis: Forewing length 6.8-9.0 mm (n = 7) in males, 8.0-8.5 mm (n = 2) in females; forewing whitish suffused with brown, with distinct submedian interfascia and creamy costal strigulae, the poorly defined post-median interfasciae slender, cilia brownish.

Hindwing brownish, cilia pale brown (Razowski, 2003).

Male genitalia (Fig. 1B). Uncus vestigial; top of tegumen fairly broad and relatively shorter than that of *S. nitidana* (Fabricius, 1794); anterior end of valvae relatively broad,

ventral incision moderate; cucullus short, broad, distinctly rounded ventrally and slightly convex dorsally; distal part of phallus distinctly slender, cornuti deciduous (Razowski, 2003). As in the genus, posterior edge of subgenital sternite armed with a blunt prominence.

Female genitalia (Fig. 1C). Lamella postvaginalis broad, cingulum slender compared to that of *S. nitidana* (Razowski, 2003).

This species is similar to *S. nitidana* but is less distinctively marked than the latter (Bradley et al., 1979). Wingspans of the examined specimens are distinctly smaller than that given by Razowski (2003). In the female genitalia of the examined specimen, the ductus bursae is membranous and not sclerotized, the cingulum is well developed, and the ductus seminalis arises nearly at the mid-length of the ductus bursae. The posterior edge of the subgenital sternite of the examined female is armed with a blunt thorn-like projection.

Distribution: A West Palaearctic species known from most parts of Europe (Razowski, 2003).

Biology: According to the available literature, the larvae feed on beech (*Fagus*) (Bradley et al., 1979), *Caprinus betulus* Linnaeus, 1753, and *Castanea sativa* Miller, 1768 (Swatschek, 1958). They attach two leaves together with silk and feed within this shelter, causing a noticeable blotch on the leaf surfaces (Bradley et al., 1979). Pupation takes place in a weak web in the shelter, and larvae subsequently exit to the ground where they over-winter as pupae (Razowski, 2003). The Iranian specimens were found feeding on *Fagus orientalis*.

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References

- Bradley, J. D., Tremewan, W. G. and Smith, A. 1979. British Tortricid moths, *Tortricidae: Olethreutinae*. The Ray Society, London, 251 pp., 47 pls.
- Brown, J. W. 2005. World Catalogue of Insects. Volume 5: Tortricidae (Lepidoptera). Apollo Books, Stenstrup, 741 pp.
- Gilligan, T. M., Baixeras, J., Brown, J. W. and Tuck, K. R. 2014. T@RTS: Online World Catalogue of the Tortricidae (Ver. 3.0). <http://www.tortricid.net/catalogue.asp>. (Accessed October, 1, 2017).
- Komai, F. 1999. A taxonomic review of the genus *Grapholita* and allied genera (Lepidoptera: Tortricidae) in the Palaearctic Region. *Entomologica Scandinavica*, 55 (Supplement), 1-226.
- Lu, S. and Li, H. 2017. Review of the species of *Strophedra* Herrich-Schäffer, 1853 from China (Lepidoptera: Tortricidae: Olethreutinae: Grapholitini). *Zootaxa*, 4318: 339-350.
- Razowski, J. 1989. The genera of Tortricidae (Lepidoptera). Part II: Palaearctic Olethreutinae. *Acta Zoologica Cracoviensia*, 30 (7): 107-328.
- Razowski, J. 2003. Tortricidae of Europe, Vol. 2, Olethreutinae. Frantisek Slamka, Slovakia. 301 pp.
- Robinson, G. S. 1976. The preparation of slides of Lepidoptera genitalia with special reference to the microlepidoptera. *Entomologist's Gazette*, 27: 127-132.
- Swatschek, B. 1958. Die Lavalsystematik der Wickler (Tortricidae und Carposinidae). *Abhandlungen zur Larvalsystematik der Insekten*, 3, 269 pp.

***Strophedra weirana* (Douglas, 1850) (Tortricidae: Olethreutinae): گزارش جنس و گونه**

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چکیده: لاروهای متعلق به گونه *Strophedra weirana* (Douglas, 1850) در جنگل شصت کلای استان گلستان یافت شدند و تعدادی نمونه بالغ نیز در رشت (استان گیلان) و رامسر (استان مازندران) جمع‌آوری شدند. در استان گلستان لاروهای این گونه درحالی‌که با متصل کردن دو برگ درخت راش (*Fagus orientalis* Lipsky) توسط ترشحات ابریشمی خود مشغول تغذیه از بافت برگ در داخل آن بودند، مشاهده شدند. جنس *Strophedra* و گونه *S. weirana* برای اولین بار از ایران گزارش می‌شوند. در این مقاله این گونه به اختصار معرفی شده و تصاویر مربوط به افراد بالغ و اندام‌های تناسلی نر و ماده ارائه شده‌اند.

واژگان کلیدی: Tortricidae، Grapholitini، *Strophedra weirana*، *Fagus orientalis*، گزارش جدید، ایران