



A New Species of *Leptologia* Prout, 1901 (Lepidoptera: Noctuidae) from South-west Iran

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Abstract: A new species of the genus *Leptologia* Prout, 1901, *L. malaqai* sp. n., is described from a female holotype, which was collected from Malaqa Village in Khuzestan Province, south-west Iran. The new taxon and the closely related species are illustrated with imagines in colour. A description of the female genitalia is presented.

Key words: new species, description, faunistics.

Introduction

The genus *Leptologia* Prout, 1901 contains three species of two subgenera: *Leptologia* (*Leptologia*) *lota* (Clerck, 1759), *Leptologia* (*Xandria*) *macilentata* (Hübner, [1808-1809]) and *Leptologia* (*Xandria*) *blidaensis* (Stertz, 1915) (RONKAY et al. 2017). The two subgenera can be separated based on their habitus and characters of genitalia. Members of the subgenus *Leptologia* usually are larger on average, with more robust body and more greyish forewing ground colour. The species of *Xandria* are smaller and have more gracile body.

Leptologia lota has been placed in the genus *Agrochola* Hübner, 1821 in most of the previous sources (e.g. HACKER 1990, LÖDL et al. 2012) until a recent taxonomic revision by RONKAY et al. (2017). For many years, *Agrochola* was regarded as a very large polyphyletic genus distributed in the Holarctic-Oriental Region, in which the majority of the species are similar in habitus. RONKAY et al. (2017), in their thorough revision of the agrocholoid generic

complex, suggested to separate the former *Agrochola* into two large clades: *Anchoscelis* Guenée and *Agrocholorta* Ronkay et al. and some further mono- or oligobasic lineages (e.g. *Leptologia*), apart from *Agrochola* sensu stricto. AHMADI et al. (2021) recently updated the data of this group in Iran and listed 18 taxa placed in *Agrochola* s. l. among them, three of which, *Agrochola imitata* Ronkay, 1984, *A. consueta* (Herrich-Schäffer, 1852) and *A. helvola pallescens* (Warren, 1911), were newly recorded for the fauna of Iran. So far, the only species of *Leptologia* reported from Iran is *L. lota*. It has been recorded in the Iranian provinces of Kermanshah, Markazi, Golestan, Khorasan-e-Shomali and Fars, according to the information on distribution of the recently synonymised taxa for *L. lota* by RONKAY et al. (2017).

Studies on the family Noctuidae from the Khuzestan Province are generally lacking over the recent decades and this motivated us to explore this area since 2009. Our efforts resulted in publishing several papers including some new findings

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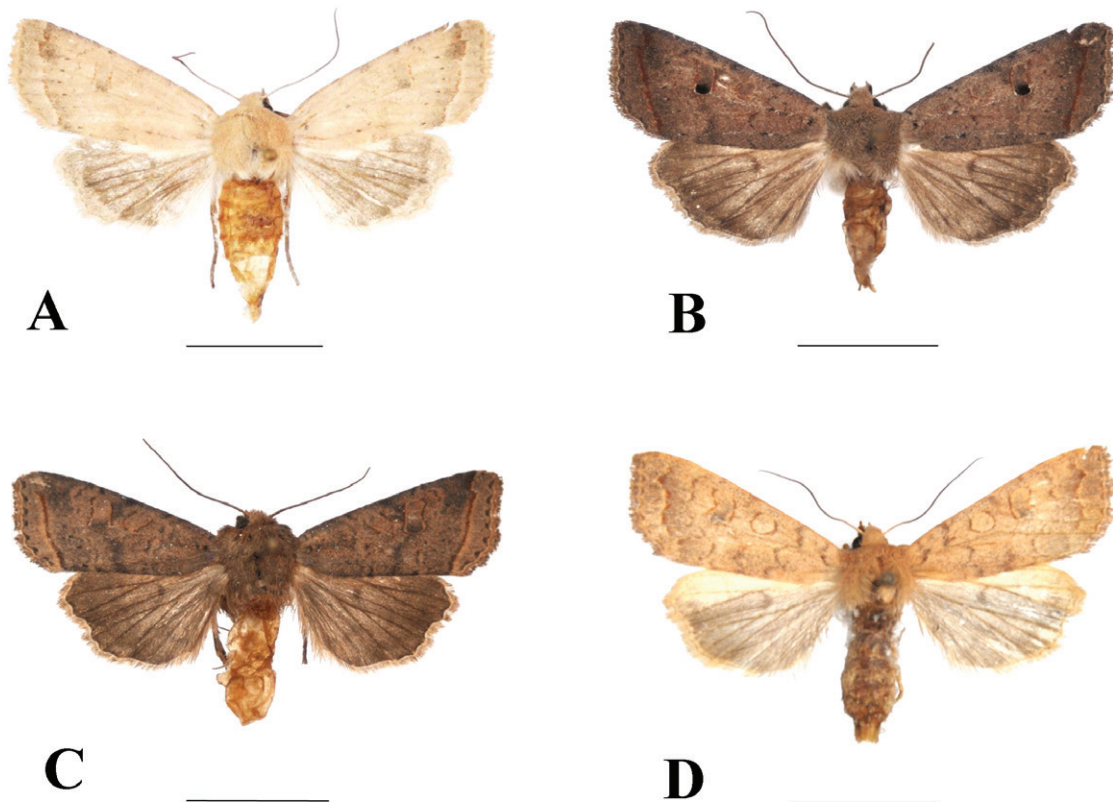


Fig. 1. Wing patterns of **A.** *Leptologia malaqai* sp. n., Iran, Prov. Khuzestan, Malaqa, 1100 m, 31°35'57"N; 50°00'50"E, 14.XI.2015, leg. M. Esfandiari, slide no. GYP 4804; 36 mm. **B.** *Leptologia lota* (Clerck, 1759), N Hungary, Jósvalfő, Tohonya v., 1-11-12.X.1985, leg. light trap, GYP 5005, (PGM); 36 mm. **C.** *Leptologia lota* (Clerck, 1759), Morocco, High Atlas Mts., Oukaimeden, 2500 m, 1-20.XI.2012, leg. Révay, GYP 4972 (PGM); 34 mm. **D.** *Sunira circellaris* (Hufnagel, 1766), Turkey, Prov. Bursa, Geyve-Adapazari, 20 km S of Adapazari, 21.X.1989, leg. P. Gyulai, GYP 4820 (PGM); 32 mm; scale bars: 10 mm.

(e.g. ESFANDIARI et al. 2015, SHAHREYARI-NEJAD et al. 2017, 2018, 2020). The present paper provides a description of a new species of *Leptologia* from the Khuzestan Province, south-western Iran. The new species was collected in Malaqa Village, in the Qaleh Tol rural district, in the central part of Baghe Malek County, Khuzestan Province. Malaqa is located on the hillside of Mongasht Mountains of Zagros Range, which is connected to the Shalu and Mongasht Protected Area. It has a beautiful natural landscape with a rich fauna and flora, covered mostly with oak (*Quercus* spp.) and other tree species, including of the genera *Pistacia*, *Salix* and *Acer*. It has a temperate semi-humid climate with average annual temperature less than 22°C and snow-capped high mountains.

Materials and Methods

Sampling was made using an 8-Watt black-light tube surrounded by three transparent panes, all perched over a funnel on top of a bucket. The genitalia were

prepared and examined using standard methods (e.g. HARDWICK 1950) – stained with chlorazol black and mounted in Canada balsam. The holotype now is deposited in the private collection of P. Gyulai (Hungary); later, it is to be preserved in the Hungarian Natural History Museum, Budapest, Hungary. The adult specimens were photographed using a Nikon D 90 with Nikon 1:4 – 5,6 D objective; the genitalia slides were photographed using a Super Cool-scan 5000 (scanning programme VueScan32); further processing was done using Adobe Photoshop software. The genitalia terminology follows FIBIGER (1997) and systematics and nomenclature used here follow RONKAY et al. (2017).

Results

Noctuidae Latreille, 1809

Xyleninae Guenée, 1837

Xylenini Guenée, 1837

Xylenina Guenée, 1837

Leptologia malaqai sp. n. (Figs 1A and 2A)

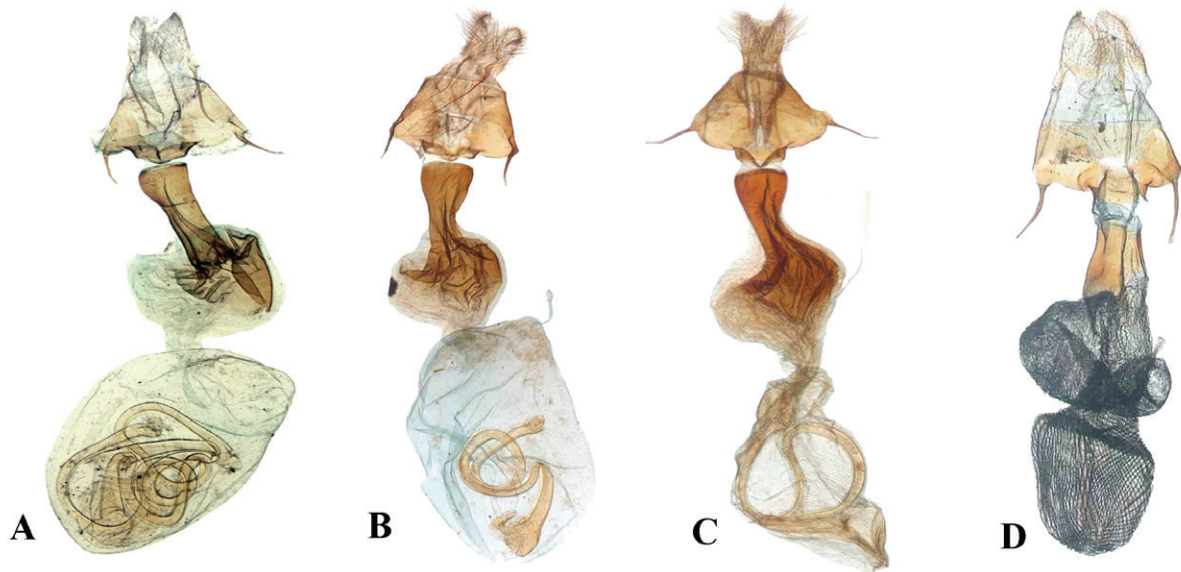


Fig. 2. Female genitalia of **A.** *Leptologia malaqai* sp. n., Iran, Prov. Khuzestan, Malaqa, 1100 m, 31°35'57"N; 50°00'50"E, 14.XI.2015, leg. M. Esfandiari, slide no. GYP 4804. **B.** *Leptologia lota* (Clerck, 1759), N Hungary, Jósvafő, Tohonya v., 1-11-12.X.1985, leg. light trap, GYP 5005, (PGM). **C.** *Leptologia lota* (Clerck, 1759), Morocco, High Atlas Mts., Oukaimeden, 2500 m, 1-20.XI.2012, leg. Révay, GYP 4549 (PGM). **D.** *Sunira circellaris* (Hufnagel, 1766), Turkey, Prov. Bursa, Geyve-Adapazari, 20 km S of Adapazari, 21.X.1989, leg. P. Gyulai, GYP 4820 (PGM).

Holotype. Female, Iran, Prov. Khuzestan, Malaqa, 1100 m a.s.l., 31°35'57"N; 50°00'50"E, 14.XI.2015, leg. M. Esfandiari, slide no. GYP 4804f.

Diagnosis. *Leptologia malaqai* Esfandiari, Gyulai, Shahreyari-Nejad & Rabieh sp. n. (Fig. 1A) is the sister species of *Leptologia lota* (Clerck, 1759) (Figs. 1B, C), from which it differs in the broader forewings with shorter apex; pale ochre ground colour of thoracic vesture, forewings and cilia; more obscure wing pattern, apart from reniform stigma and postmedian line, and paler hindwings, particularly in the conspicuous pale yellowish-brownish marginal field. In female genitalia, the best distinctive key feature is the strongly sclerotized ductus bursae in the new species (Fig. 2A), which is conspicuously longer than that of *L. lota* (Figs. 2B, C), almost straight, without the asymmetric concave depression medially, but with asymmetrically enlarged posterior region.

Description. *Adult female* (Fig. 1A). Wingspan 36 mm. Antennae filiform, whitish. Vesture of body and ground colour of forewings and cilia pale ochre; orbicular and reniform stigmata concolorous with ground colour, obscure, only reniform stigma better defined, incompletely edged with fine, reddish line, with a diffuse brownish patch on lower part; claviform stigma absent; antemedian and postmedian crosslines fine, obscure, hardly visible, latter shaded outside with few brown dots on main veins;

subterminal line conspicuous, reddish-orange, slightly sinuous, with large, elongate diffuse brownish patch on inner side in initial section. Hindwings pale ochre with light brown suffusion, much darker on main veins and at edge of significantly lighter, broad marginal field; cilia pale ochre.

Female genitalia (Fig. 2A). Papillae anales strongly setose, pointed apically; apophyses posteriores much longer but more slender than apophyses anteriores. Antrum plate broadly calyculate, strongly sclerotized, with bilateral, symmetrical distally narrowing parts; ductus bursae strongly sclerotized, long, almost evenly broad, asymmetrically enlarged posteriorly, with large, more or less strongly sclerotized, wrinkled-folded anterior extension toward globular appendix bursae, which connects large, globular-ovoid corpus bursae through short neck.

Male unknown.

Etymology. The species is named in honour of the kind people of Malaqa Village, the type locality (Fig. 3) in the Khuzestan Province, south-west Iran.

Discussion

The description of *Leptologia malaqai* sp. n. is an important addition to both knowledge of Xyleninae Guenée, 1837 and fauna of Noctuidae of south-western Iran, revealing the rich diversity of this area. A small but important correction to the revision



Fig. 3. Type locality of *Leptologia malaqai* sp. n., near Malaqa Village, Khuzestan Province, Iran.

of the *Agrochola* generic complex in the Witt Catalogue vol. 9, Xyleninae I. by RONKAY et al. (2017) is as follows: the female genitalia of *Leptologia lota* (Clerck, 1759) and the close relative *Sunira circellaris* (Hufnagel, 1766) were transposed. Correctly, Fig. 63, p. 259 is the female genitalia of *S. circellaris*, and Fig. 66, p. 262 is that of *L. lota* (see also Figs. 2B, C, D in this paper). To correct this error, the present authors publish here the figures of a female of *S. circellaris* and its genitalia (Figs 1D, 2D).

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