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Two new Noctuidae species from Asia (Lepidoptera)

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Abstract –*Ctenoceratoda leucostigma* sp. n. (China, Qinghai) and *Xenophysa huberi persica* ssp. n. (Iran, Alborz Mts) are described. With 22 figures.

Key words – *Ctenoceratoda, Xenophysa*, Central Asia, Iran, new species.

INTRODUCTION

The genus *Ctenoceratoda* was erected by VARGA (1992), dividing the genus *Haderonia* STAUDINGER, 1896; he also described three new species in the genus. Further contributions were provided by VARGA & GYULAI (1999, 2002) with descriptions of eight new species.

The type species of the genus *Xenophysa* BOURSIN, 1967, *X. junctimacula* (CHRISTOPH, 1887) was originally described in the genus *Agrotis* OCHSENHEIMER, 1816. Later, the genus was revised by VARGA in two consecutive papers (1985, 1989), describing seven new species and one new subspecies. Another new species was recognised and published by EBERT & HACKER (2002).

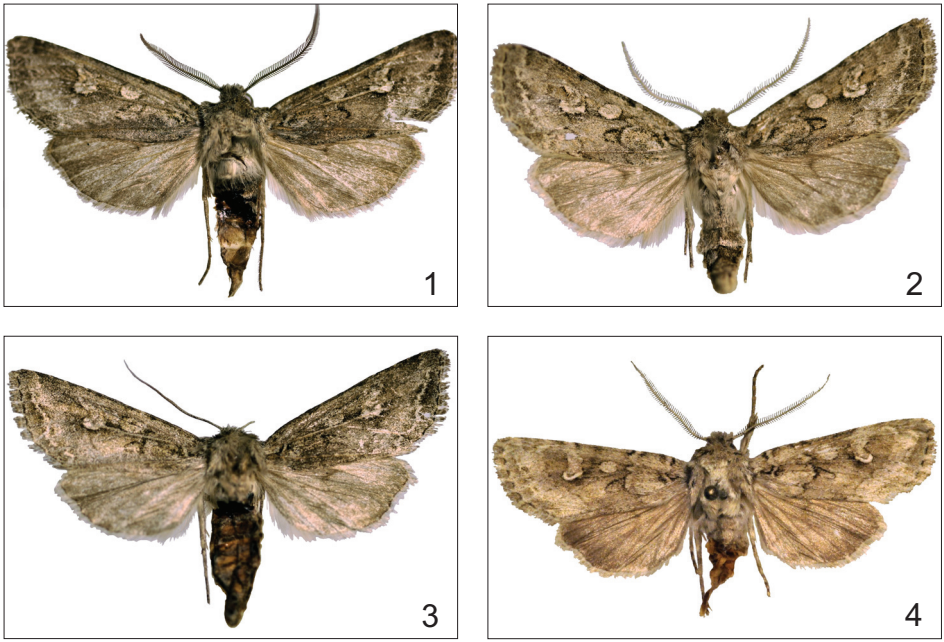
The present paper contains the descriptions of a new *Ctenoceratoda* species from NE Tibet and the eastern subspecies of *X. huberi* from the Alborz Mts in Iran.

SYSTEMATIC PART

Ctenoceratoda leucostigma sp. n.
(Figs 1–3, 9–13)

Type material – Holotype: Male. China, Qinghai [Kuku-Noor region], 20 km N of Da Qaidam city, 4,000 m, 20–23.VII.2004, leg. M. KOPP & S. NYKL; slide No. 1899 GYULAI (coll. P. GYULAI, Miskolc). The holotype is deposited in the Hungarian Natural History Museum, Budapest (HNHM). Paratypes: 1 male and 1 female, with the same data as the holotype; slide Nos 2269, 2266 GYULAI (coll. P. GYULAI).

Diagnosis – The new species belongs to the *C. nefasta* species-group which is characterised by the short, acute triangular shape of the uncus and the relatively short and broad neck of cucullus in the male genitalia. The most closely related species is *C. nefasta* (PÜNGELER, 1907) (Figs 4, 14–16).



Figs 1–4. Adults. 1 = *Ctenoceratoda leucostigma* sp. n., holotype, male, China, Da Qaidam, 2 = *Ctenoceratoda leucostigma* sp. n., paratype, male, 3 = *Ctenoceratoda leucostigma* sp. n., paratype, female, 4 = *Ctenoceratoda nefasta* PÜNGELER, 1907

The external differences between the two taxa are very conspicuous. The new species can be distinguished easily from its sister species (and other congeners) by its remarkably larger size, more elongated fore wings with concolorous ochreous-greyish ground colour, without orange-reddish irroration and patches, the conspicuous whitish defined reniform stigma, and the simple whitish subterminal line. The male antenna of *C. leucostigma* is about twice as long as of *C. nefasta* (Fig. 22) and is completely black, without whitish covering. The male genitalia of the two species are in general similar, but the new species has slightly less swollen cucullus with about twice as broad neck and much longer and broader vesica with remarkably longer field of fasciculate cornuti. The female genitalia of the two sister species are also similar, but the new species has slightly longer and slender ductus bursae.

The new species shows closer relationships also with the members of the *C. sukharevae* (VARGA, 1973) species-group, in certain features in the genitalia (especially the shape of the uncus and the cucullus), but the species of the *sukhareva*-group have shorter and more rounded ampulla, moreover, their forewings are much more colourful and more distinctly marked. The externally somewhat similar *C. turpis* STAUDINGER (1900) 1899 has shorter pectination of the male antenna and uniformly grey(ish) orbicular and reniform stigmata; the species belongs to another species-group of the genus considering the characters of the male genitalia.

Description – Length of forewing 18.3–21.0 mm, wingspan 38.0–42.0 mm. Male. Pubescence of head and body grey to brownish-grey, shinier on ventral side; collar and tegulae with blackish apical line. Antennae long, black, strongly bipectinated with long branches. Forewing elongated-triangular, outer margin slightly arcuate. Ground colour grey to brownish-grey, irrorated by some ochreous scales, inner half of marginal field (between postmedial and subterminal lines) paler. Noctuid maculation typical, orbicular and reniform stigmata incompletely encircled by black scales, filled with white and whitish-brown; claviform stigma obsolescent, marked with a few black scales and filled with ground colour. Transversal lines oblique, dark brown, antemedian line slightly sinuous, upper part of postmedian line curved, then oblique, simple, densely but finely toothed. Subterminal line simple, whitish, marked by numerous fine brown arrowheads. Cilia pale brown, slightly variegated by darker brown. Hindwing paler, brownish grey, with obsolescent medial line and discal spot, and somewhat darker marginal suffusion; cilia fawn-coloured. Underside of wings pale brown-grey, sparsely scattered with brownish scales; costal and marginal fields of fore wing and entire hind wing considerably paler. Traces of orbicular and reniform stigmata and subterminal line somewhat lighter than ground colour; discal spot and medial and subterminal lines of hindwing darker brown; cilia of both wings as on upperside. Female: as male, but antennae filiform, forewing somewhat more elongated.

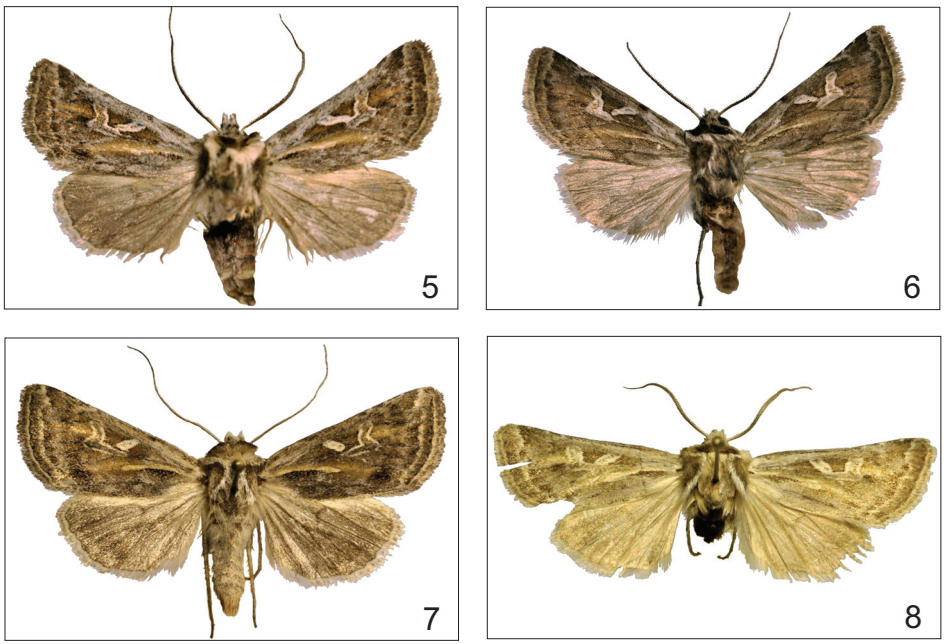
Male genitalia – Uncus short, conical, apically acute and slightly hooked. Tegumen broad, fultura inferior subdeltoidal, apical process thorn-like, vinculum U-shaped. Ventral process of sacculus short, obtuse. Ampulla long, slightly curved laterally, tapering terminally. Neck of cucullus broad, "head" of cucullus rather rounded-discoidal, dorsally extended, ventro-apically obtuse; corona with broad, heavily setose field. Aedeagus long, evenly arched, with sclerotized, elongated-triangular carinal plate. Vesica long, tubular,

membranous, subbasally slightly broader, once twisted, distally with long field of fasciculate cornuti.

Female genitalia – Similar to those of *C. nefasta*. Papillae anales obtuse, rather quadrangular with thin and long setae, terminally with narrow, sclerotized area. Posterior apophyses thin, about three times longer than anterior apophyses. Ostium bursae evenly sclerotized, with narrow incision medially. Ductus bursae long, evenly sclerotized, medially slightly dilated, then extending, ribbed, distally narrower with some long wrinkles in the terminal part. Corpus bursae globular, appendix bursae large, distally narrower.

Habitat – The specimens were collected on a high mountain plateau with sandy and marshy areas.

Distribution – A rather isolated south-eastern representative of the genus, *Ctenoceratoda leucostigma* sp. n. is the eastern sibling species of *C. nefasta* (PÜNGELER, 1907); the latter is distributed in the Lop Nur region of the Altun Shan (Altyn Tagh) range.



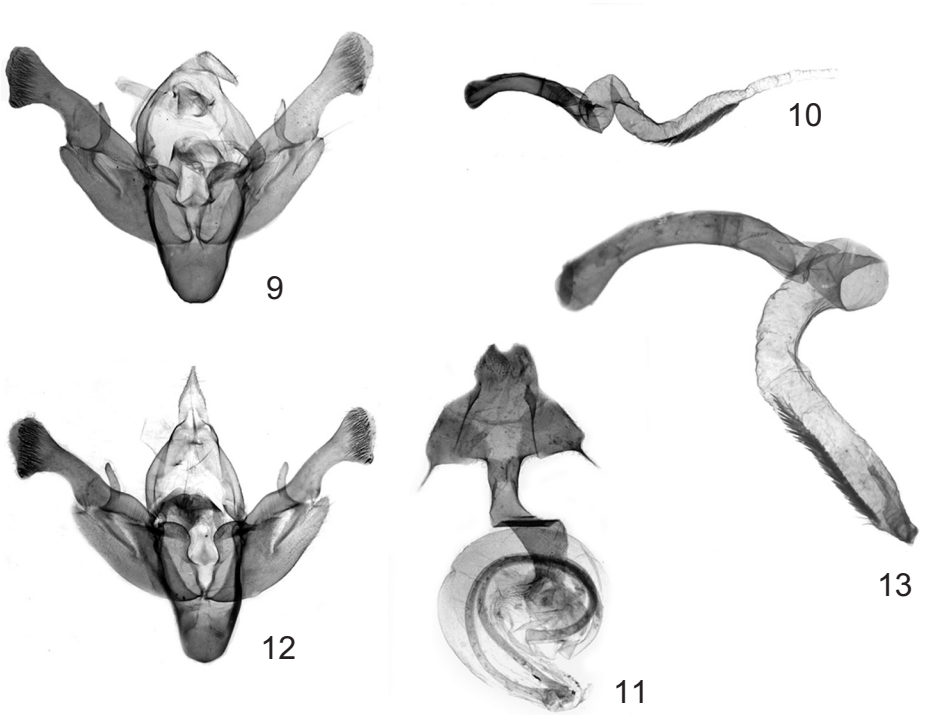
Figs 5–8. Adults. 5 = *Xenophysa huberi persica* ssp. n., holotype, male, Iran, Alborz, 6 = *Xenophysa huberi persica* ssp. n., paratype, male, Iran, Alborz, 7 = *Xenophysa huberi persica* ssp. n., paratype, female, Iran, Alborz, 8 = *Xenophysa huberi huberi* VARGA, 1989, male, paratype, Turkey, Güseldere pass

Xenophysa huberi persica ssp. n.

(Figs 5–7, 17–19)

Type material – Holotype: male. Iran, Prov. Mazandaran, Alborz Mts, Pel pass, 3000 m, 22.VI.2005, leg. T. Hácz, G. Petrányi & I. Juhász; slide No. 1850 Gyulai (coll. P. Gyulai, Miskolc). The holotype is deposited in the HNHM. Paratypes: 1 male, with the same data as the holotype, slide No. 2256 Gyulai; 1 female, Prov. Mazandaran, Alborz Mts, Balade, 2400 m, 19.VI.2007, leg. T. Hácz (coll. P. Gyulai, Miskolc).

Diagnosis – The eastern populations of the species differ externally from the nominotypical *X. huberi huberi* Varga, 1989 occurring in SE Turkey (see Figs 5–8) by their shorter forewing, darker ground colour of both wings, somewhat differently shaped (slightly more oblique) postmedial line, brownish cilia of forewing (which is whitish of the typical *huberi*), and the slightly darker underside of both wings. In the male genital capsula (Figs 17–19 and 20–21) the apical process of fultura inferior of the new subspecies is conspicuously longer than in the *X. huberi huberi*, and the costal extension of the valva has only one process.

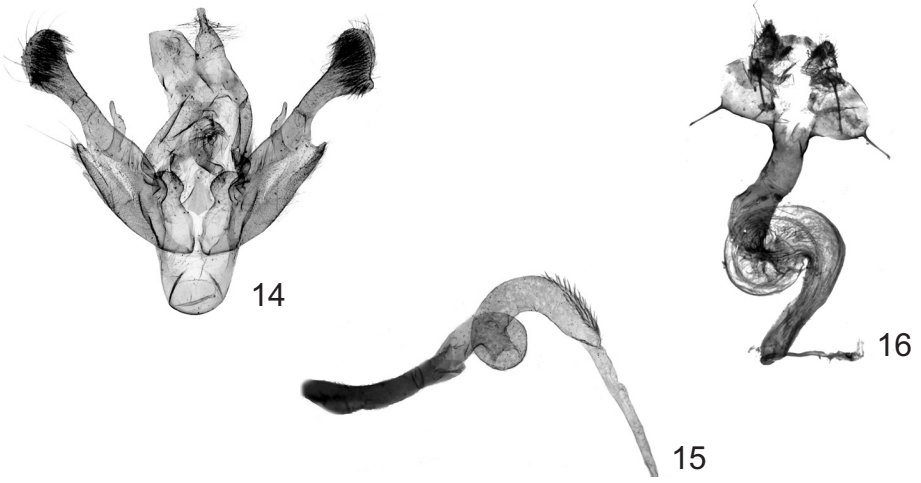


Figs 9–13. Genitalia. 9–10 = *Ctenoceratoda leucostigma* sp. n., holotype, male, China, Da Qaidam, slide No. 1899 Gyulai, 11 = *Ctenoceratoda leucostigma* sp. n., paratype, female, slide No. 2266 Gyulai, 12–13 = *Ctenoceratoda leucostigma* sp. n., paratype, male, slide No. 2269 Gyulai

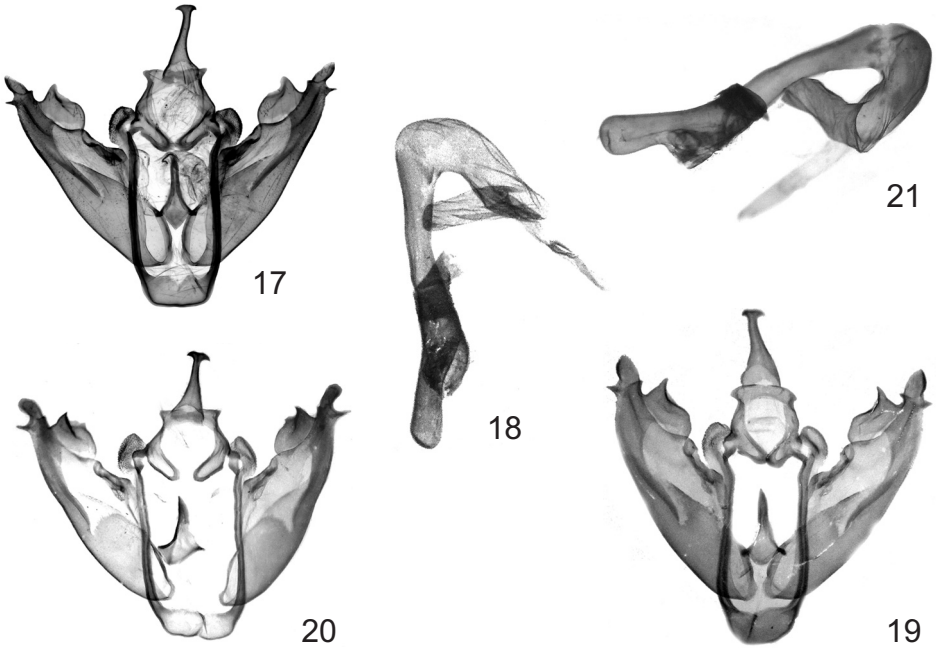
Description – Wingspan 30–34 mm, length of forewing 15.5–16.5 mm. Male. The new subspecies is similar to *X. huberi huberi* VARGA, 1989 in most external and genital features, the diagnostic features are as follows: the forewing of the *X. huberi persica* are rather broadly triangular with less elongated apex and evenly arcuate outer margin, the forewing ground colour is dark greyish brown, sparsely scattered with few white scales, especially on the costa. Postmedial line conspicuous, upper section arcuate, lower part oblique; subterminal line fawn- coloured with interrupted brown shadow at inner side; cilia brown. Hindwing brownish with whitish cilia. Underside of forewing unicoloured greyish, with diffuse traces of reniform macula and postmedial and subterminal lines. Underside of hindwing whitish, scattered sparsely with brown scales; discal spot and medial line present, brown. Female: as male, antennae filiform, forewing colouration slightly darker and more contrasting than in male.

Male genitalia – Tegumen and vinculum rather narrow, apical process of fultura inferior very long. The costal extension of valva with only one process. Aedeagus and vesica similar to that of *X. huberi huberi* VARGA, 1989.

Habitat and distribution – The new subspecies is restricted to the higher parts of the Central Alborz, with high mountain Iranian steppe vegetation with Caspian influence (it can be characterised by *Iris, Astragalus, Artemisia*, numerous Apiaceae and tall Poaceae species). In the lower area of its range (2400 m) it occurs sympatrically with *X. junctimacula* (CHRISTOPH, 1887), but the latter species has a remarkably wider distribution in western Asia and is more frequent in the Alborz Mts where the adults are on the wing in July, ca. 3 weeks later than those of *X. huberi persica*.



Figs 14–16. Genitalia. 14–15 = *Ctenoceratoda nefasta* PÜNGELER, 1907, male, slide No. 848 GYULAI, 16 = female genitalia of *Ctenoceratoda nefasta* PÜNGELER, 1907



Figs 17–21. Genitalia. 17–18 = *Xenophysa huberi persica* ssp. n., holotype, male, Iran, Alborz, slide No. 1850 GYULAI, 19 = *Xenophysa huberi persica* ssp. n., paratype, male, Iran, Alborz, slide No. 2256 GYULAI, 20–21 = *Xenophysa huberi huberi* VARGA, 1989, male, paratype, Turkey, Güzeldere pass, slide No. 2263 GYULAI

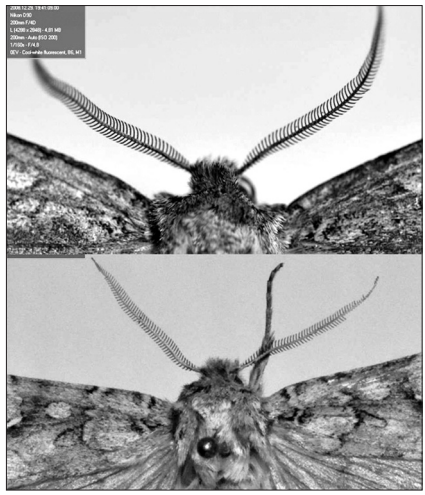


Fig. 22. Male antennae of *Ctenoceratoda leucostigma* sp. n. and *C. nefasta* PÜNGELER, 1907

Remarks – The occurrence of a *X. huberi* population in Iran has already been published by VARGA (1989) based on a single male (labelled as "Persia", without exact locality and date). He has noted that this specimen represents probably a new subspecies of *X. huberi* but resisted to describe the taxon in lack of larger material and without exact locality. It is important to note that the costal extension of this specimen has a double costal process of the valva, as in the case of the nominotypical *X. huberi huberi*, albeit this character shows certain variation within the larger series from the Güseldere pass. The forewing shape of this specimen is similarly short as in the subspecies *persica*, but the ground colour is darker with some reddish-brown irroration and more contrasting whitish suffusion. This specimen, consequently, does not agree reasonably well with the three specimens from the Alborz Mts, and thus was excluded from the type series of the new subspecies.

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