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# Two new Noctuidae species from Iran (Lepidoptera)

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**Two new Noctuidae species from Iran (Lepidoptera)** — Two new Noctuidae species from Iran, *Autophila deleta* sp. n. and *Perigrapha (Rororthosia) gyurirani* sp. n., are described. With 12 figures.

**Key words**: Noctuidae, new species, Iran.

## INTRODUCTION

The lepidopterological exploration of Iran has been started rather lately, only at the beginning of the twentieth century. It has been intensified at the 1930s, based mostly on the studies of Bytinsky-Salz, Pfeiffer, Schwingenschuss, Wiltshire and, on the most famous collectings of this area, of the Brandt brothers. As a result of these investigations, a large number of new Noctuidae taxa were discovered and described, making this very interesting and faunistically very rich area even more attractive for the subsequent explorers.

The exploration of the Noctuidae fauna had continued until the end of the seventies, the largest and most representative materials were collected by Austrian lepidopterists, especially of Kasy and the Vartians (wife and husband). The field investigations had stopped radically in the very beginning of the eighties, due to the political changes in Iran and the war between Iran and Iraq, but the elaboration of the large collection material was started and continued uninterruptedly up to day.

A new era for field studies has been opened a few years ago and numerous lepidopterological expeditions were carried out in the last two-three years. These expeditions were usually very effective, collecting often an enormously large number of insects, particularly due to the applications of modern methods and equipments. Most of the expeditions being organized by Hungarian entomologists and participated also by lepidopterists were also successful, thus, the taxonomic elaboration of their large and interesting Noctuidae material is still in an initial phase.

The present paper contains the first results of this work, providing the descriptions of two new Noctuidae species. Another new Noctuidae species (an *Agrochola* Hübner, 1821) is described from Iran by Benedek & Ronkay (2001) in a separate article.

## SYSTEMATIC PART

### **Autophila deleta** sp. n.

Holotype — Male: "Iran, Prov. Mazandaran, Elburz Mts, 20 km E of Valiabad, 3190 m, 3614' N, 5116' E, 26.X.2000., leg. B. Benedek and Gy. Fábián" (coll. Gy. Fábián, deposited in the Hungarian Natural History Museum (HNHM), Budapest).

Slide No. BB1 Benedek (male).

Diagnosis — The new species is a close relative of the *Autophila hirsutula* (Alphéraky, 1894) – *A. fuscolampra* Hacker et Ronkay, 1990 species-pair. The three species are rather similar externally and the genitalia of the taxa show also slight, although clearly recognisable differences. *Autophila deleta* differs externally from the other two taxa by its paler, more ochreous, practically patternless fore wings, while the two other species are darker in colouration, and the two main crosslines are present, though they are often diffuse or obsolescent. The male genital capsula of *A. deleta* is confusingly similar to that of *A. fuscolampra*, only the saccular extensions appear to be slightly longer. The main differences between the two taxa can be found in the carina and the configuration of the vesica: the small, folded, finely dentate plate of the carina of the new species is smaller, and it is situated dorsally (this plate is larger, rather flat in case of *A. fuscolampra*, originating from the ventral edge of the carina), the vesica of *A. deleta* is somewhat more elongate, having only ventro-lateral and ventral diverticula (see Fig. 7) while *A. fuscolampra* has well-developed dorsal diverticulum, besides the ventro-lateral and ventral ones (see Hacker & Ronkay 1990, p. 390, Fig. 78).

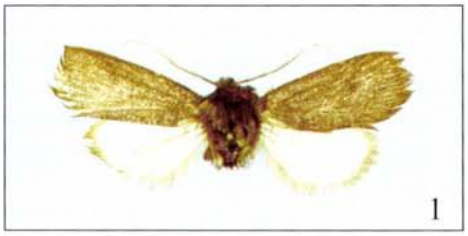
Description — Male: Wingspan 30 mm, length of fore wing 12 mm. Body robust, dorso-ventrally flattened, pubescence of head and thorax very long, roughly shaggy. Head pale greyish brown; palpi short, ochreous-brownish; antenna filiform, dorsal surface covered densely with whitish-ochreous scales. Vestiture of thorax ochreous brown with intense golden shining; legs golden ochreous; abdomen paler greyish, strongly shiny. Fore wing elongate, rather narrow, with apex finely pointed. Ground colour unicolorous, pale brown with ochreous shade; noctuid maculation reduced to pale greyish shadow of reniform stigma, all other elements deleted. Cilia long, as ground colour. Hind wing unicolorous, patternless, ochreous white, with intense greasy shine; cilia long, golden-ochreous. Underside of both wings metallic ochreous, very shiny, without darker pattern. Female unknown.

Male genitalia (Fig. 7): Uncus large, robust, distally broadened, rather horn-bill-like, with apex finely hooked, tegumen narrow, long, sclerotized, without peniculi. Fultura inferior triangular, membranous with broad, reversed V-shaped marginal sclerotization; vinculum long, strong, V-shaped. Valva elongate, narrow at base, dilated distally towards rounded, broad apical part. Sacculus narrow, very long, heavily sclerotized; apical saccular extensions very small, fine, acutely triangular. Aedeagus rather short, strong, slightly sinuous, broader at distal end. Carina sclerotized, with small, folded, finely dentate ventral plate. Vesica an elongate, ample sac, everted forward, ductus ejaculatorius originating proximad from near lateral edge of carina. Walls of vesica membranous, frontal (apical) part covered sparsely with minute teeth, most parts of all diverticula finely verrucose. Dorsal surface more or less convex, without diverticulum, ventral side with large, semiglobular basal diverticulum, and with two smaller, pocket-like ventro-lateral diverticula medially.

Bionomics and distribution — The species is known only from the type locality (Elburz Mts). The habitat is the highest pass of the Mazandaran valley (3190 m), with typically xerophilous, rocky steppe vegetation (see Fig. 5). The unique type specimen was collected at light, in good weather conditions, together with numerous specimens of different *Dasypolia* species. The early stages and the foodplant are unknown.

The discovery of this species in the Elburz Mts is quite surprising, as both of its closest relatives, *A. hirsutula* and *A. fuscolampra*, are known only from the Karakoram Mts and there is a large gap between the ranges of the sister species (probably as a result of the insufficient exploration of the highest regions of the Central Asian large mountain systems where the supposed relatives may exist).

Etymology — The specific name refers to the obsolete fore wing pattern.



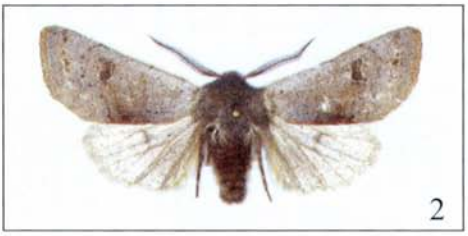








Fig. 1. *Autophila deleta* sp. n., holotype. – Fig. 2. *Perigrapha (Rororthosia) gyurirani* sp. n., holotype. – Fig. 3. *Perigrapha (Rororthosia) gyurirani* sp. n., paratype male. – Fig. 4. *Perigrapha (Rororthosia) gyurirani* sp. n., paratype female. – Fig. 5. The Mazandaran valley, the type locality of *Autophila deleta* sp. n. – Fig. 6. The mountains near Ardakan, the type locality of *Perigrapha (Rororthosia) gyurirani* sp. n.

**Perigrapha (Rororthosia) gyurirani** sp. n.

Holotype — Male: "Iran, Prov. Fars, 5 km S of Komehr, 5151'10"E, 3027'15"N, 17.04.1999., 2900 m, leg. Gy. Fábián, L. Nádai and K. Székely" (coll. Gy. Fábián, deposited in the HNHM Budapest).

Paratypes — Iran. Prov. Fars: 3 males, with the same data as the holotype; 1 male, Zagros Mts, 10 km E Persepolis, 1000 m, 11.IV.2000., leg. B. Benedek; 3 males, 2 females, Zagros Mts, Küh-e-Barm Firuz, 5 km S Komehr, 3000 m, 12–13.IV.2000., leg. B. Benedek. Prov. Lorestan: 1 female, Bongale, 13.IV.2000., leg. I. Juhász (coll. Gy. Fábián, G. Ronkay, P. Gyulai, HNHM Budapest).

Slide Nos RL6784 (male), RL7176 (female).

Diagnosis — Externally the new species resembles members of the *P. (R.) rorida* species-group (i.e. *P. (R.) rorida* (Frivaldszky, 1835), *P. (R.) mundoides* (Boursin, 1940), *P. (R.) wolfi* (Hacker, 1988), *P. (R.) sellingi* Fibiger, Hacker et Moberg, 1996 and *P. (R.) wimmeri* Hacker, 1996) but is easily distinguished by its more sharply defined, sinuous postmedial line, usually prominent, more or less completely encircled, large orbicular and reniform stigmata, and by the well-discernible discal spot of the hind wing, in addition, the fore wing is more elongate with more acute apex.

The male genitalia of the new species differ from those of *P. (R.) wimmeri* by their shorter, broader, medially strongly dilated valvae with more acute apices, narrower necks of cuculli, shorter, thicker ampullae, shorter, weaker serrate dorsal plate of carina and by smaller bundle of cornuti in terminal part of vesica, consisting of considerably longer, finer spines. The valvae of *P. (R.) gyurirani* are more asymmetrical, medially more dilated, than those of either *P. (R.) rorida* or *P. (R.) sellingi*, and the cuculli are shorter, broader, the ampullae are thicker than is the case of the two congeners. In addition, the shape and size of the fultura inferior, the structure of the carina penis and the diverticula and cornuti of the vesica are also different in the three related taxa. The male genitalia of *P. (R.) wolfi* are, as yet, unknown.

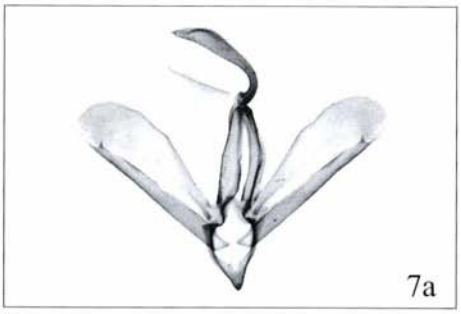
The female genitalia of the new species differ from those of *P. (R.) wimmeri* (Fig. 10) and *P. (R.) mundoides* (see Hacker & Talhouk 1998, p. 378) by their generally larger size, equally broad ostium and ductus bursae (the ostium of the two related species are considerably broader at junction to ductus bursae), larger, slightly bilobate, strongly ribbed appendix bursae (it is smaller, weaker, simple, weakly ribbed in *P. (R.) wimmeri* and *P. (R.) mundoides*) and the larger, elliptical corpus bursae having four, more or less equal signa (*P. (R.) wimmeri* has small, ovoid corpus bursae with two, strongly unequal signa). The differences between the female genitalia of *P. (R.) gyurirani* and *P. (R.) wolfi* (see Hacker, Huber & Kuhna 1988, Fig. 5a) are as follows: the sclerotized part of the ductus bursae of *P. (R.) gyurirani* is straight, anteriorly slightly dilated, that of *P. (R.) wolfi* is curved anteriorly, the appendix bursae of the new species is larger, stronger, more ribbed and the corpus bursae is shorter, more elliptical, with prominent signa (the corpus bursae is elongate-sacculiform in *P. (R.) wolfi* and the signa are obsolete). The female genitalia of the fourth species of the subgenus, *P. (R.) sellingi* (Fig. 12), differ from those of *P. (R.) gyurirani* by their slit-like, strongly asymmetrical ostium bursae, broader anterior part of ductus bursae having sclerotized ribs on ventral side, much smaller, membranous appendix bursae and shorter, rather globular corpus bursae with four strongly unequal signa. Finally, the female genitalia of the type species of the subgenus, *P. (R.) rorida*, have (Fig. 11), comparing with those of the new species, broader ostium bursae, more strongly sclerotized anterior part of the ductus bursae and the appendix bursae and the signa are more unequal.

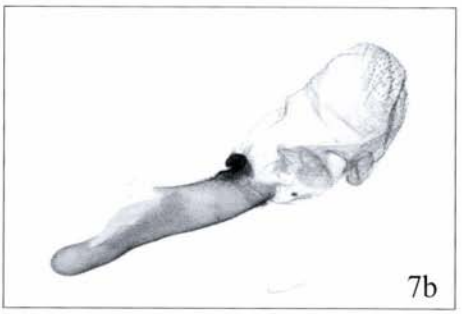
Description — Male: Wingspan 38–40 mm, length of fore wing 17–18 mm. Head small, eyes large, globular, densely hairy, palpi very short, porrect, blackish laterally, proboscis rather short. Frons smooth, antenna broadly bipectinate, slightly asymmetrically with longer branches on dorsal side, especially in basal half; final segments biserrate, axis of antenna brown, dorsal surface covered with whitish scales. Vestiture of head and thorax rather homogeneous, long, hair-like scales, dark ash-grey mixed with pinkish and red-brownish hairs, abdomen somewhat browner with reddish lateral ridges, dorsal crest absent. Legs reddish-ochreous, tibial spurs short, obtuse. Fore wing elongate, with apex rather acute, outer margin evenly arcuate. Ground colour dark, slightly ochreous ash-grey, with weak pinkish-reddish and dark grey irroration, medial area suffused variably strongly with reddish-brown scales. Antemedial line obsolescent or relatively weak, simple, dark grey, more or less straight, slightly waved, postmedial line rather sharply defined, strongly sinuous, dark grey, marked with blackish dots on veins. Median fascia broad, diffuse, upper half shadow-like or deleted, lower part usually stronger, reddish brown. Orbicular and reniform stigmata present, encircled with fine reddish and ochreous lines, lower quarter (sometimes most parts) of reniform filled also with plumbeous scales. Claviform absent or obsolete, defined mostly by its paler greyish ground colour. Upper part of subterminal line relatively strong, whitish-ochreous, defined with reddish-brown spots, lower parts obsolete or missing. Terminal line pale ochreous, cilia as ground colour, apical part often more reddish. Hind wing shiny whitish-ochreous, irrorated with brownish grey, veins covered with brown, discal spot present, round, transverse line absent. Terminal line rather diffuse, greyish, cilia pinkish-ochreous. Underside of both wings ochreous-whitish, inner areas of fore wing suffused with pale greyish, discal spot strong, upper part of transverse line marked with blackish spots on veins. Hind wing irrorated sparsely with dark grey-brown, discal spot strong, rounded, transverse line represented by fine dots on veins.

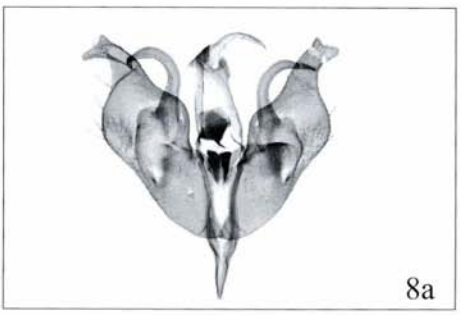
Female: Somewhat smaller in size, with slightly shorter fore wing, antenna shortly bipectinate, otherwise sexes similar.

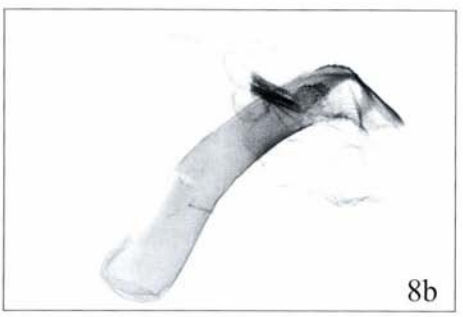
Male genitalia (Fig. 8): Uncus short, slender, with apex pointed, tegumen narrow, relatively high, penicular lobes very narrow. Fultura inferior rather small, heavily sclerotized, shield-like, transtilla also heavily sclerotized, vinculum long, strong, V-shaped. Valva elongate, medial part strongly dilated, slightly asymmetrically, left valva somewhat broader. Cuculli small, bird-head-like, also slightly asymmetrical, lateral process longer on left valva, apex acute, corona absent. Costa heavily sclerotized, with strong, rounded lobe at medial third. Sacculus broad, strong, setose, distal ends partly heavily sclerotized, clavi reduced. Pulvillus (editum) short, bar-like, densely setose with long, strong setae. Erect parts of harpes also slightly asymmetrical, flattened, rounded quadrangular, more elongate on left valva. Ampullae long, strong, thick, falciform with apices acute. Aedeagus rather long, cylindrical, carina sclerotized, with rounded, dentate ventro-lateral plate on left side, and with two long, flattened dorsal laminae, left one strongly serrate. Vesica broadly tubular, membranous with fine scobination, everted ventrally, recurved dorso-laterally. Basal part with two small, more or less globular diverticula, medial part with an additional small diverticulum. Distal third with two large terminal diverticula, one armed with a bundle of long, acute, spiniform cornuti.

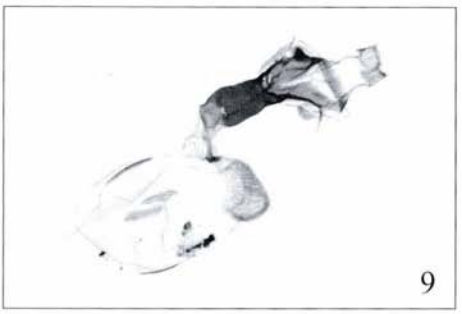
Female genitalia (Fig. 9): Ovipositor short, papillae anales rather weak, apophyses slender; penultimate segment very short, dorsal part half-ring-like. Ostium bursae huge, more or less infundibuliform, heavily sclerotized, with strongly unequal dorsal and ventral plates (dorsal plate much larger), entrance of ostial complex U-shaped.



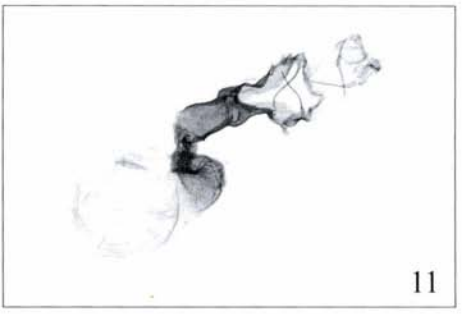







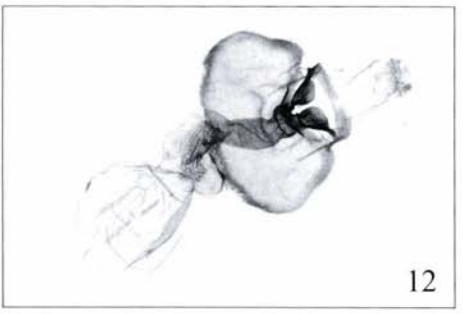




Fig. 7. *Autophila deleta* sp. n., male genitalia, holotype. – Fig. 8. *Perigrapha (Rororthosia) gyurirani* sp. n., male genitalia, holotype. – Fig. 9. *Perigrapha (Rororthosia) gyurirani* sp. n., female genitalia, paratype. – Fig. 10. *Perigrapha (Rororthosia) wimmeri* Hacker, female genitalia. – Fig. 11. *Perigrapha (Rororthosia) rorida* Frivaldszky, female genitalia. – Fig. 12. *Perigrapha (Rororthosia) sellingi* Fibiger, Hacker et Moberg, female genitalia

Posterior two-thirds of ductus bursae heavily sclerotized, flattened, bent laterally at medial third, as broad as ostium, only slightly dilated at proximal end. Anterior third membranous with verrucose ribs and wrinkles. Appendix bursae finely bilobate, semi-globular, membranous with sclerotized ribs and wrinkles. Corpus bursae relatively long, elliptical, with four rather short, more or less equal signum-stripes.

Bionomics and distribution — The species is known to inhabit, according to our knowledge, the medium-high and high altitudes of the Zagros Mts (Iran: Farsistan, Lorestan; a view from the type locality of the species is given in the Fig. 6). The imagines are on the wing in the early spring aspect (first half of April), all specimens were collected at light. The early stages are unknown.

Etymology — The new species is dedicated to Mr. György ("Gyuri") Fábián, the first collector of the new species. The specific epithet is a pseudacronym (from "Gyuri" and "Iran").

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