

**Three new Noctuidae species from Western and Central Asia  
(Lepidoptera)**

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**Abstract** – Description of *Heterographa vargai* sp. n. (Tajikistan), *Dichagyris haczi* sp. n. (Iran) and *Dichagyris (Stenosomides) helix* (Tajikistan) are given. With 19 figures.

**Key words** – New species, *Heterographa*, *Dichagyris*, Iran, Central Asia.

INTRODUCTION

This paper is a continuation of the series of publications dealing with the recent taxonomic and biogeographical exploration of the Noctuidae fauna of the western and central Asian ranges initiated by European (mostly German, Austrian, Danish, Swedish and Hungarian) lepidopterists (see for instance, HACKER 1990, 2001, EBERT & HACKER 2002, VARGA & RONKAY 1991, etc.). It contains the descriptions of new Xyleninae and Noctuinae species from Iran and Tajikistan; the holotypes of the new taxa are available through the Hungarian Natural History Museum, Budapest (HNHM).

## DESCRIPTIONS

**Heterographa vargai** sp. n.

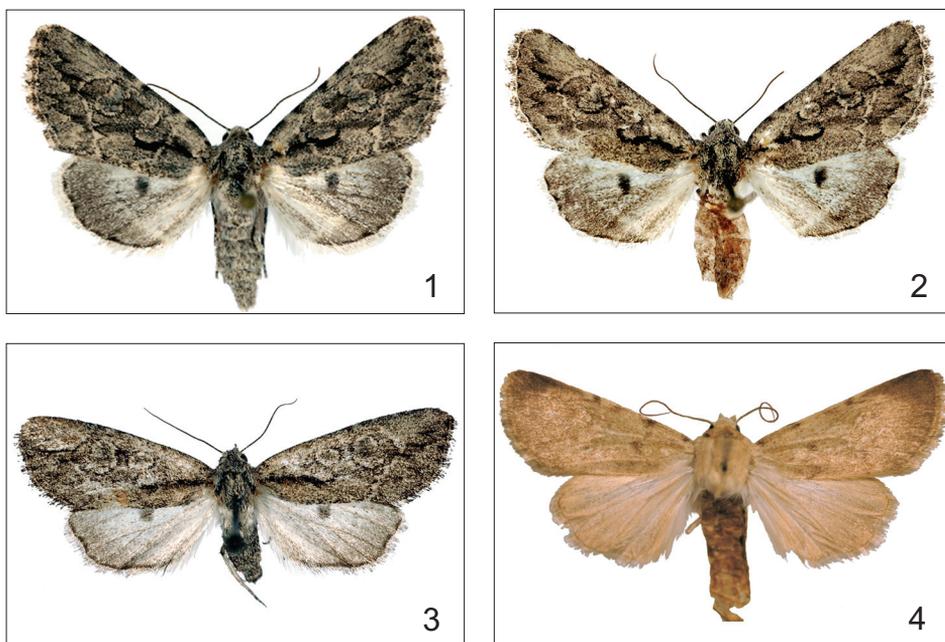
(Figs 1–2, 9–10)

*Type material* – Holotype: female, Tajikistan, down stream of Planj river, Tigrovaja Balka nature reserve, 30.VIII.–10.IX.2006, leg. V. GURKO; slide No. 2220 GYULAI. The specimen is preserved in the collection of P. GYULAI (Miskolc, Hungary) and is available through the HNHM. Paratype: female, with the same data as the holotype; slide No. 2110 GYULAI (coll. P. GYULAI).

*Diagnosis* – The new species belongs to the small-sized *Heterographa* species. This group comprises three externally rather similar species of problematic phylogenetic relationships, *H. tetrastigma* BRANDT, 1941, *H. thoenyi* RONKAY, VARGA & GYULAI, 2002, and *H. vargai* sp. n. The colouration and wing pattern of *H. vargai* (Figs 1–2) is more similar to those of *H. thoenyi* (Fig. 3) but the new species is smaller in size with shorter and more grey fore wing, shorter and sharper, more sinuous black basal dash, more distinct and more whitish-grey filled antemedial and postmedial lines, smaller, medially more constricted reniform stigma and stronger and more zigzagged subterminal line; the hind wing marginal suffusion is also somewhat stronger. The female genitalia of the two closely related species are strikingly different (see Figs 9–11), the differences between the two species are significant in all parts of the copulatory organ. The most conspicuous differences are as follows: the ductus bursae of the new species is remarkably longer, broader and sclerotised (that of *H. thoenyi* is much shorter, just a short membranous neck between ostium bursae and appendix bursae), and the appendix bursae is much larger, having heavily sclerotised walls while the appendix bursae of *H. thoenyi* is smaller, subconical, with a small sclerotised-ribbed postero-lateral patch only.

*Description* – Rather small species: wingspan 23.2–24.0 mm, length of fore wing 12.3–12.5 mm. Female. Head small, eyes large, globular; antennae medium-long, filiform, brown. Pubescence of head, palpi and body short, greyish mixed with white hair-scales, tip of collar and edges of tegulae with dark brown stripe. Fore wing rather narrow triangular, with finely pointed apex and slightly arched outer margin. Ground colour pale greyish, weakly irrorated with brown and grey scales; costa striolate with blackish-grey and whitish striae. Wing pattern rather distinct, basal dash black, long, confluent with black lower edge of claviform stigma forming sinuous black stripe. Orbicular and reniform stigmata well-defined, former small, rounded, latter large, medially constricted; both stigmata encircled

with fine black line and inner pale annulus, and filled with ground colour. Subbasal, antemedial and postmedial crosslines well-visible, narrow greyish-white stripes defined by fine, partly interrupted blackish lines on both sides. Basal and antemedial lines sinuous and oblique, upper part of postmedial line strongly arched, then straight below cell, with finely dentate inner line. Subterminal line conspicuous, strongly wavy, grey-white with stronger or weaker blackish suffusion at inner side and with a few long, black chevron-marks. Terminal line marked by a row of tiny black dots; cilia whitish, chequered by blackish grey. Hind wing greyish white, marginal field evenly suffused with greyish brown, transverse line fine, shadow-like; discal spot large, rounded dark grey; cilia white with diffuse dark inner line. Underside of wings whitish, irrorated with brown scales. Fore wing costa striolate, traces of transverse lines fine, diffuse on both wings, discal spots conspicuous, large, blackish grey; cilia as on upperside.



**Figs 1–4.** Adults. 1 = *Heterographa vargai* sp. n., holotype female, Tadjikistan, Planj river, 2 = *Heterographa vargai* sp. n., paratype female, Tadjikistan, Planj river, 3 = *Heterographa thoenyi* RONKAY, VARGA & GYULAI, 2002, paratype female, Kazakhstan, 4 = *Dichagyris haczi* sp. n., holotype female, Iran, Azad Shar

*Female genitalia* (Figs 9–10) – Ovipositor medium-long, rather broadly conical; papillae anales more or less quadrangular, basal stripe broad, sclerotized; penultimate segment narrow, ring-like; both pairs of gonapophyses equally long, slender. Ostium bursae finely calyculate, broad, weakly sclerotized. Ductus bursae long, broadly tubular, flattened,

with evenly sclerotized, proximally slightly dilated ventral lamina; proximal third of ductus bursae narrower, sclerotized, with fine longitudinal wrinkles. Appendix bursae large, recurved ventro-laterally, with sclerotized, asymmetrical horseshoe-shaped area; corpus bursae globular, without signum.

*Bionomics and distribution* – The species is known from the type locality only; the moths are on the wing at the end of the summer. It is worth mentioning that the type series of *H. thoenyi* was collected at the beginning of May.

*Etymology* – The new species is dedicated to Prof. ZOLTÁN VARGA, the renowned expert of the triline Noctuidae and the biogeography of the oreol biomes.

### **Dichagyris (Dichagyris) haczi sp. n.** (Figs 4, 12)

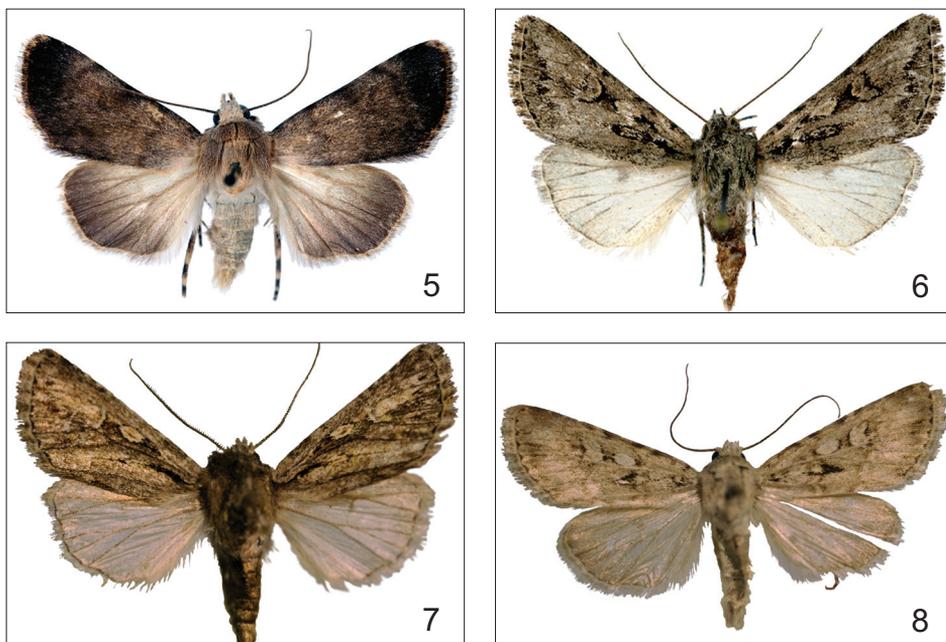
*Type material* – Holotype: female, “Iran, Prov. Mazandaran Azad Shar, 1000 m, 3.VI.1999, leg. T. Hác & G. Kőszegi”; slide No. 2232 GYULAI. The specimen is deposited in the collection of P. GYULAI and is available through the HNHM.

*Diagnosis* – The only externally similar congener of the new species is *Dichagyris (D.) herzi* (KOZHANCHIKOV, 1930) (Fig. 5). The most conspicuous differences between the two species are as follows: the new species has more slender body, narrower, apically more pointed fore wing, significantly narrower and more diffuse marginal suffusion, especially on the hind wing and the underside and the less curved postmedial line.

In the female genitalia, *D. (D.) haczi* has, in comparison with those of *D. (D.) herzi*, longer apophyses anteriores, somewhat broader ostium bursae, more coiled appendix bursae and more dilated and rounded fundus bursae (see the Figs 12–13).

*Description* – Medium-sized species, wingspan 35.5 mm, length of fore wing 13.6 mm. Female. Pubescence of head and body fawn-coloured, venter, palpi, frons and legs shiny; antennae filiform, brown. Fore wing long, rather narrow triangular with apex finely pointed, outer margin slightly arcuate. Ground colour brownish fawn with silky shining; noctuid pattern diffuse, orbicular and claviform stigmata poorly visible, reniform stigma represented by a small dot encircled with fine brown line. Crosslines dusty brown, antemedial line the strongest, tortuous and confluent with claviform stigma. Medial line represented by a diffuse brown patch at costa; postmedial line obsolescent, sinuous, arcuate around cell, costal dark patch well-visible. Subterminal and terminal lines dissolved in brown marginal suffusion although terminal line somewhat stronger, darker; cilia as ground colour. Hind wing somewhat lighter than fore wing, with intense silky-greasy

shine; marginal suffusion relatively narrow, diffuse, dusty brown, darker on terminal parts of the veins; discal spot invisible; cilia whitish. Underside of wings shiny brown, trace of postmedial line present but pale; discal spots absent; darker brown marginal suffusion narrow and diffuse, strongest at apical area of fore wing, tapering towards inner angle of hind wing. Male unknown.



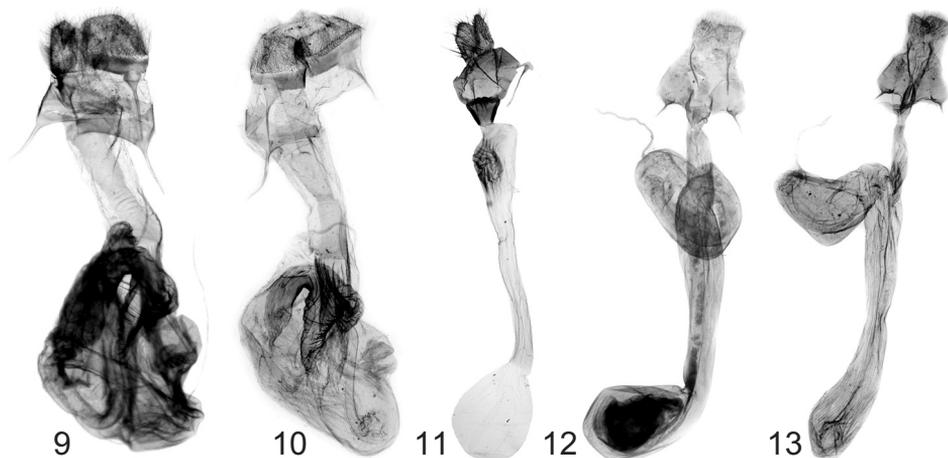
**Figs 5–8.** Adults. 5 = *Dichagyris herzi* (KOZHANCHIKOV, 1930), female, Turkmenistan, 6 = *Dichagyris (Stenosomides) helix* sp. n., holotype male, Tadjikistan, Hissar Mts, 7 = *Dichagyris (Stenosomides) sureyae facunda* (DRAUDT, 1938), male, Iran, Zagros Mts, 8 = *Dichagyris hissariensis* VARGA, 1996, Tadjikistan, Hissar Mts

*Female genitalia* (Fig. 12) – Papillae anales setose, apophyses posteriores medium long, apophyses anteriores shorter. Ostium bursae calyciform-pendulous with sclerotised lateral edges; ductus bursae long, tubular, membranous, proximally weakly ribbed. Appendix bursae long, curved, basally tubular, distally discoidal-globular; corpus bursae long, sacculiform, fundus bursae ovoid; signum absent.

*Habitat and distribution* – The habitat at the type locality is rather unusual for a *Dichagyris* species. The unique type specimen was collected at the edge of a Caspian deciduous

forest with small meadow patches at medium-high altitude. The new species is supposedly rare and local because this is its single record despite the intense collectings of several expeditions at this locality.

*Etymology* – The new species is dedicated to Mr. TAMÁS HÁCZ, Hungarian lepidopterologist, collector of the new species and of other interesting Noctuidae species during his expeditions to Iran.

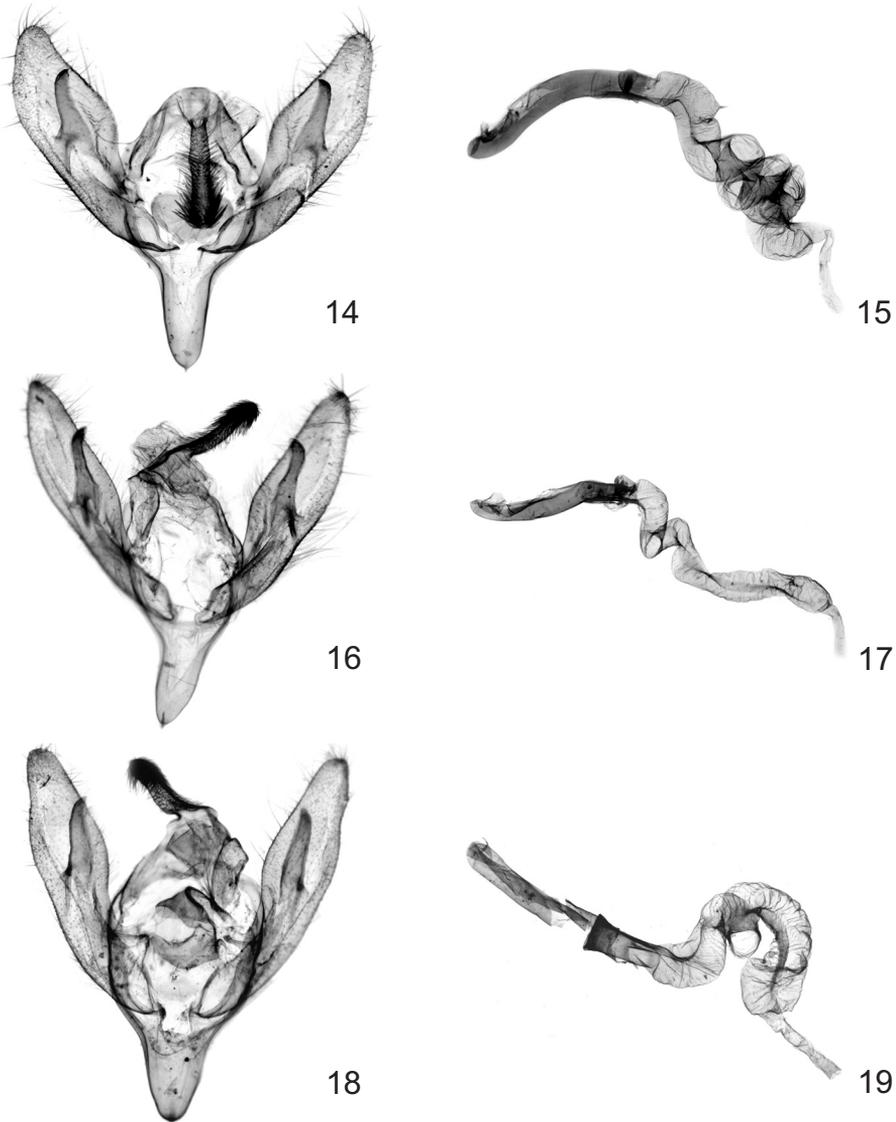


**Figs 9–13.** Genitalia. 9 = *Heterographa vargai* sp. n., female genitalia, holotype, slide No. 2220 GYULAI, 10 = *Heterographa vargai* sp. n., female genitalia, paratype, slide No. 2110 GYULAI, 11 = *Heterographa thoenyi* RONKAY, VARGA & GYULAI, 2002, female genitalia, paratype, slide No. RL5913f, 12 = *Dichagyris haczi* sp. n., female genitalia, holotype, slide No. 2232 GYULAI, 13 = *Dichagyris herzi* (KOZHANCHIKOV, 1930) female, slide No. 2250 GYULAI

### ***Dichagyris (Stenosomides) helix* sp. n.**

(Figs 6, 14–15)

*Type material* – Holotype: male, Tajikistan, “Romit” reserve, 1400 m, 4–6.IX.2006, leg. V. GURKO; slide No. 1956 GYULAI. The holotype is preserved in coll. P. GYULAI and is available through the HHNM. Paratypes: 4 males, with the same data as the holotype; slide No. 2226 GYULAI (coll. P. GYULAI).



**Figs 14–19.** Genitalia. 14 = *Dichagyris (Stenosomides) helix* sp. n., holotype male, genital capsule, slide No. 1956 GYULAI, 15 = *Dichagyris (Stenosomides) helix* sp. n., holotype male, aedeagus with everted vesica, slide No. 1956 GYULAI, 16 = *Dichagyris (Stenosomides) sureyae* (REBEL, 1931), male, genital capsule, slide No. 2261 GYULAI, 17 = *Dichagyris (Stenosomides) sureyae* (REBEL, 1931), male, aedeagus with everted vesica, slide No. 2261 GYULAI, 18 = *Dichagyris (Stenosomides) sureyae facunda* (DRAUDT, 1938), male, genital capsule, slide No. 2254 GYULAI, 19 = *Dichagyris (Stenosomides) sureyae facunda* (DRAUDT, 1938), male, aedeagus with everted vesica, slide No. 2254 GYULAI

*Diagnosis* – The new species belongs to the subgenus *Stenosomides* STRAND, 1942, although is unique within this lineage having the longest and most coiled vesica and the complementer appendix bursae in the genitalia. *Dichagyris (Stenosomides) helix* resembles mostly the two subspecies of *D. (S.) sureyae* (REBEL, 1931), ssp. *sureyae* (type locality: Turkey, Ankara) and ssp. *facunda* (DRAUDT, 1938) (type locality: Turkey, Marash). The new species differs from its closest relatives by the conspicuous black-encircled noctuid maculation, the darker, more dark grey suffused fore wing ground colour, the variegated cilia of fore wing and the clear white hind wing (see Figs 6–7). The male genitalia of *D. (S.) helix* (Fig 14–15) can be easily distinguished from those of *D. (S.) sureyae* (Figs 16–19) by their broader, medially more extended valva and the much longer and more coiled helicoid vesica with fine cornuti on each coils. Less closely allied but also similar congener of *D. (S.) helix* is *D. (Y.) hissariensis* VARGA, 1996, from which the new species can be separated by its darker fore wing ground colour, the intense black definition of the stigmata, the differently marked transverse lines, the more chequered fore wing cilia and the white hind wing, and comparing their male genitalia, by the different shape of the valva and the much longer and more coiled vesica.

*Description* – Relatively small species, wingspan 28.3–31.0 mm, length of fore wing 14.5–15.2 mm. Male. Body light greyish brown, collar and tegulae marked with black lines. Antennae filiform, brown, with fine whitish setae. Fore wing relatively narrow triangular with apex acutely pointed, ground colour pale brownish-grey with fine ochreous shade and greasy shine. Noctuid maculation typical, all stigmata encircled by fine black lines and some ochreous scales inside. Orbicular stigma elongated, reniform stigma narrow, lunulate, its outer black line rather sagittiform, with dark suffusion between stigmata in cell; black outline of claviform stigma fused with distal end of black basal dash. Antemedial and postmedial lines obsolete, shadow-like or deleted, antemedial usually somewhat better visible, both crosslines double and slightly sinuous. Subterminal line much more prominent, defined by paler inner and darker outer colouration of marginal area and by a row of black(ish) arrowheads at inner side. Terminal line fine, dark brown, more or less interrupted into a row of tiny dots; cilia brownish grey, chequered with dark blackish-brown spots between veins. Hind wing pure, somewhat translucent white, discal spot and transverse line absent; cilia white with a few brownish scales around apex and scattered along outer margin. Underside of fore wing whitish, irrorated with pale brown; traces of reniform stigma and postmedial line present, diffuse, dark brown; cilia as on the upperside. Hind wing white, with fine brown discal spot and diffuse transverse line; cilia white. Female unknown.

*Male genitalia* – Uncus typical of *Stenosomides*, long and rather thick, slightly spatulate, medially slightly curved and dilated, distally hairy, with apex rounded. Tegumen broad, penicular lobes small; vinculum long, U-shaped. Fultura inferior subtriangular, ventrally broad, dorsally with medial incision. Valva somewhat lanceolate, dilated medially, cucullus rounded triangular with less pointed apex. Harpe large, basally broad, distally tapering, apically hooked. Aedeagus curved, carina with long, narrow sclerotized field. Everted vesica very long, coiled almost four times, helicoid, with tiny cornuti on the subbasal diverticulum and the coils of the vesica.

*Habitat and distribution* – The new species was found at rather low altitude in the Hissar Mts. The type locality of *D. (S.) helix* and *D. (Y.) hissariensis* is in the same area but the phenology of the two species is different: the adults of the new species are on the wing in September while those of *D. (Y.) hissariensis* fly in June. A long series of specimens with both sexes of *D. (Y.) hissariensis* were found in Tajikistan after the description of the species (Gushary, Hodshamulin, Tursunsade, between 640–1400 m; slide Nos: 937, 962 GYULAI (males) 2221, 2224 GYULAI (females), all in coll. P. GYULAI), these specimens were also collected in June.

*Etymology* – The specific name refers to the coiled, helicoid vesica of the male genitalia of the new species.

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