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## A new species of *Anarta* Ochsenheimer, 1816 from Mongolian and Russian Altai (Lepidoptera, Noctuidae)

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*Anarta* Ochsenheimer, 1816 is a hadenine genus restricted to Palaearctic and Nearctic Regions. The genus includes about 80 described species and subdivided into seven subgenera (Hacker 1998; Fibiger *et al.* 2011): *Trichoclea* Grote, 1883 (= *Hadula* Staudinger, 1889), *Cardiestra* Boursin, 1963, *Ptochicestra* Hacker, 1998, *Aglossestra* Hampson, 1905, *Calocestra* Beck, 1991, *Pulchrohadula* Hacker, 1998 and *Anarta* Ochsenheimer, 1816 (= *Discestra* Hampson, 1905). The group has been revised by Hacker (1998). *Anarta*, *Trichoclea*, *Hadula* and *Discestra* were been synonymized by Fibiger & Hacker (2005).

By examining the spring materials collected in western Mongolia and southeastern Russian Altai Mts. we found a new species of *Anarta*, described below. The new species resembles some *Calocestra* species, e.g. *A. hoplites* (Staudinger, 1901) and *A. armata* (Staudinger, 1901) externally, but its male genital structures indicate its belonging to the subgenus *Trichoclea*. The depositary of the types of the new species is stated in the paragraph "Type material". Acronyms of collections are as follows: AVB—coll. A.V. Volynkin, Barnaul, Russia; MČK—coll. M. Černila, Kamnik, Slovenia; ZISP—Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia.

### *Anarta (Trichoclea) mirabilis* Volynkin, sp. n.

(Figs 1–5, 11, 12, 15, 17)

**Type material. Holotype:** male, 15–16.v.2012, W Mongolia, Hovd aimak, Dzhungarian Gobi, Arshantyn-Nuruu Ridge, h=1700–2100 m, 46°22' N, 91°15' E, Yakovlev R.V. & Černila M. leg. Slide AV0885 Volynkin (Coll. ZISP).

**Paratypes:** 4 males, 1 female, with the same data as holotype (Colls AVB, MČK); 4 males, 17.v.2012, W Mongolia, Hovd aimak, Mongolian Altai Mts., Hundijn-Gol river valley (Bodonchijn-Gol river basin), h=1800 m, 46°07.473' N, 92°30.752' E, Yakovlev R.V. leg. (Coll. AVB). 1 male, 13.vi.2010, Russia, Altai Republic, Kosh-Agach district, Kuraisky Ridge, 5 km E of Chagan-Uzun village, arid stony steppe. 50°24'27" N, 87°35'50" E. h = 2130 m. At UV-light trap. Volynkin A.V. leg. (Coll. AVB). Slides AV0890, AV1115 Volynkin (males), AV1114 Volynkin (female).

**Diagnosis.** The new species well differs externally from other members of *Trichoclea* (Figs 9, 10) and resembles some *Calocestra* species, e.g. *A. hoplites* (Staudinger, 1901) (Figs 6, 15, 19) and *A. armata* (Staudinger, 1901) (Figs 6, 16, 20). *A. mirabilis* sp. n. (Figs 1–5) can be distinguished externally from *A. hoplites* by the somewhat narrower forewing, the less dentate antemedial line, the postmedial line located farther from the reniform stigma, the smaller orbicular stigma, the narrower and less curved reniform stigma, the larger pale spot located outwardly from the claviform stigma, the subterminal line less dentated on veins M1, M2 and Cu2, the terminal line presented as a dotted line and not as row of large triangular strokes, the more concolorous hindwing; from *A. armata* it differs by the more dentate antemedial line, the wider medial area, the postmedial line located farther from the reniform stigma, the subterminal line less dentate on the veins M1, M2 and Cu2, the terminal line presented as a dotted line and not as row of small triangular strokes, the concolorous hindwing. The wing pattern of the new species also resembles that of the sympatric species *A. dianthi* (Tauscher, 1809) (Fig. 8), but differs by the more monotonous colouration of forewing, the more dentate antemedial line, the narrower orbicular and reniform stigmata and the monotonous colouration of hindwing. The male

**n.** is unusual for the subgenus, so *A. mirabilis* **sp. n.** forms a well separated species-group which is more or less close only to the *A. sabulorum* (Alphéraky, 1882) species-group (Figs 10, 13, 18). The structure of the male genitalia of *A. mirabilis* **sp. n.** (Figs 11, 12) differs from that of the species of the *A. sabulorum* (Alphéraky, 1882) species-group (Fig. 13) by the short, shield-like juxta, the small, triangular costal process, the broad and poorly separated cucullus, the much shorter saccular processes not reaching the ventral margin of the valva. The female genitalia (Fig. 17) differ from those of *A. sabulorum* by the shorter and somewhat broader ductus bursae, the broader and less sclerotised appendix bursae and smaller number of signa; from *A. hoplites* (Fig. 19) differ by the narrower antrum, the shorter ductus bursae and the larger appendix bursae; from *A. armata* (Fig. 20) differ by the longer and narrower apophyses anteriores without ribbed sclerotised basal plates, the shorter ductus bursae, the broader and less sclerotised appendix bursae.

**Description. Adult** (Figs 1–5). Wingspan 29–31 mm, length of forewing 14–15 mm. Head, thorax and abdomen pale brown. Forewing moderately broad, triangular; ground colour of forewing pale brown. Basal line double, blackish, dentate; antemedial line double, blackish, irregularly serrate-waved; postmedial line thin, blackish, serrated; subterminal line thin, pale, W-like serrated on the M3 and Cu1 veins; terminal line as thin dotted black line. Medial area darkened, with more or less expressed large pale serrated spot between the Cu2 and A1 veins outwardly from the claviform stigma. Claviform stigma long, dark brown, with black bordering line; orbicular stigma small, elliptical, pale ochreous-brown with dark brown core; reniform stigma narrow, almost straight, pale brown with pale brown core bordered by thin dark brown line. Subterminal area inwardly from the subterminal line has long triangular black strokes between the veins. Cilia brown. Hindwing uniformly dark brown; discal spot diffuse, dark brown, semilunar; cilia brown.

**Male genitalia** (Figs 11, 12). Uncus broad, dorso-ventrally flattened, elliptical, with narrow base; tegumen short, moderately broad; juxta broad, shield-like; vinculum short, more or less V-like. Valva elongated, moderately broad, with broad, relatively poorly separated cucullus; corona presented; costa strongly sclerotised, with short, broad triangular extension directed apically; sacculi large, strongly asymmetrical: left one very short, while right one with long, distally narrowed and apically rounded extension completely covers the clasper; clasper almost straight, parallel the ventral margin of valva, distally broadened; harpe small, presented as a short triangular lobe. Aedeagus elongated, slightly curved; vesica with moderately long, broad diverticulum with a small, thin cornutus at the sclerotised conical base.

**Female genitalia** (Fig. 17). Ovipositor short, broad, conical. Apophyses anteriores and posteriores thin, apophyses posteriores longer than the anteriores. Ostium bursae moderately broad, ductus bursae short, heavily sclerotised. Corpus bursae pear-like, membranous, with a few small signa. Appendix bursae relatively small, sack-like, apically rounded, weakly sclerotised, wrinkly.

**Distribution and bionomics.** The new species is known from southern part of the Mongolian Altai Mts. and south-eastern part of the Russian Altai Mts. The species inhabits dry stony steppes (Fig. 21).

**Etymology.** '*Mirabilis*' is 'amazing' in Latin. The species name refers to the unusual habitus and the separate position of *A. mirabilis* within the subgenus *Trichoclea*.

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## References

- Fibiger, M. & Hacker, H. (2005) Systematic list of the Noctuoidea of Europe (Notodontidae, Nolidae, Arctiidae, Lymantriidae, Erebididae, Micronoctuidae, and Noctuidae). *Esperiana*, 11, 83–172. Available from: [http://esperiana.net/mediapool/86/862516/data/Esperiana\\_Band\\_11\\_93-206.pdf](http://esperiana.net/mediapool/86/862516/data/Esperiana_Band_11_93-206.pdf) (accessed 27 March 2014)
- Fibiger, M., Yela, J.L., Zilli, A., Varga, Z., Ronkay, G. & Ronkay, L. (2011) Check list of the quadrid Noctuoidea of Europe. In: Witt, T.J. & Ronkay, L. (Eds.), *Lymantriinae and Arctiinae. Noctuidae Europaeae. Vol. 13*. Entomological Press, Sorø, pp. 23–44.
- Hacker, H. (1998) Revision der Gattungen *Hadula* Staudinger, 1889 (= *Discestra* Hampson, 1905; *Aglossestra*, Hampson, 1905; = *Cardiestra* Boursin, 1963), *Anartomorpha* Alphéraky, 1892, *Trichanarta* Hampson, 1895, *Anarta* Ochsenheimer, 1816 und *Cardepija* Hampson, 1905 mit Beschreibung einer neuen Gattung *Hadumorpha* gen. n. (Lepidoptera, Noctuidae). *Esperiana*, 6, 577–843.