

A new species of *Metanarsia* Staudinger, 1871 (Lepidoptera, Gelechiidae) from Morocco

OLEKSIY V. BIDZILYA¹

¹ Institute for Evolutionary Ecology of the National Academy of Sciences of Ukraine, 37 Academician Lebediev str., 03143, Kyiv, Ukraine; olexbid@gmail.com

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Abstract. *Metanarsia moroccana* sp. nov. is described from Eastern Morocco. The species is remarkable in having an unmodified recurved labial palpus and the adults active in October. Adults and male genitalia of the new species are illustrated, and the adults compared with the most superficially similar *Metanarsia dahurica* Bidzilya, 2005. An annotated list of the species of *Metanarsia* is provided.

Introduction

As a result of the first revision (Bidzilya 2005) ten species in the genus *Metanarsia* Staudinger, 1871 were reviewed and illustrated in detail. Later, five more species were described (Bidzilya 2008; Junnilainen and Nupponen 2010) and two new synonyms proposed (Bidzilya 2008). Finally, *M. trisignella* Bidzilya, 2008 has been transferred to *Catatinagma* Rebel, 1903 (Bidzilya 2014) and *M. amseli* Bidzilya, 2008 to *Chrysoesthia* Hübner, 1825 (Bidzilya et al. 2019). Currently, *Metanarsia* comprises thirteen Palearctic species distributed mainly in arid regions from NW Africa in the West to Zabaikalskiy krai of Russia, Mongolia and N China in the East. The large majority of species of *Metanarsia* are considered to be restricted to the type locality. The females are unknown in ten out of thirteen species. *Metanarsia alphetodes* (Meyrick, 1891) is the only species of the genus whose hostplant (*Nitraria* sp.) is known.

This contribution is devoted to the description of an additional new species from Morocco. The species can be easily recognized superficially by its reddish brown forewing in combination with a recurved labial palpus. The presence of these two characters in the newly described species is unique in *Metanarsia*: other species of the genus with similar forewing pattern have straight labial palpus, whereas species with recurved palpus differ in the colour of the forewing. Additionally, *M. moroccana* sp. nov. seems to be an obligatory autumnal species whose adults fly in October, uniquely among *Metanarsia*. An annotated list of species of *Metanarsia*, updated according to taxonomic changes proposed in the last few decades, is provided.

Materials and methods

Male genitalia were dissected and spread using standard methods (Huemer and Karsholt 2010) including the unrolling technique (Pitkin 1986; Huemer 1988; Huemer and Karsholt 2010). Terminology of genitalia and external morphology follows Bidzilya (2005).

Pinned specimens and details of external morphology were photographed with a Canon EOS 5DSR DSLR camera attached to an Olympus SZX12 stereomicroscope. Slide-mounted genitalia were photographed with a Canon EOS 600D DSLR camera mounted on an Olympus U-CTR30-2 trinocular head mounted on a Carl Zeiss compound microscope. For each photographed specimen, sets of 10–20 images were taken at different focal planes and focus-stacked using Helicon Focus 6 with the final image edited further in Adobe Photoshop CS5.

The material examined is deposited in Staatliches Museum für Naturkunde Stuttgart, Germany (SMNS).

Taxonomy

Metanarsia moroccana sp. nov.

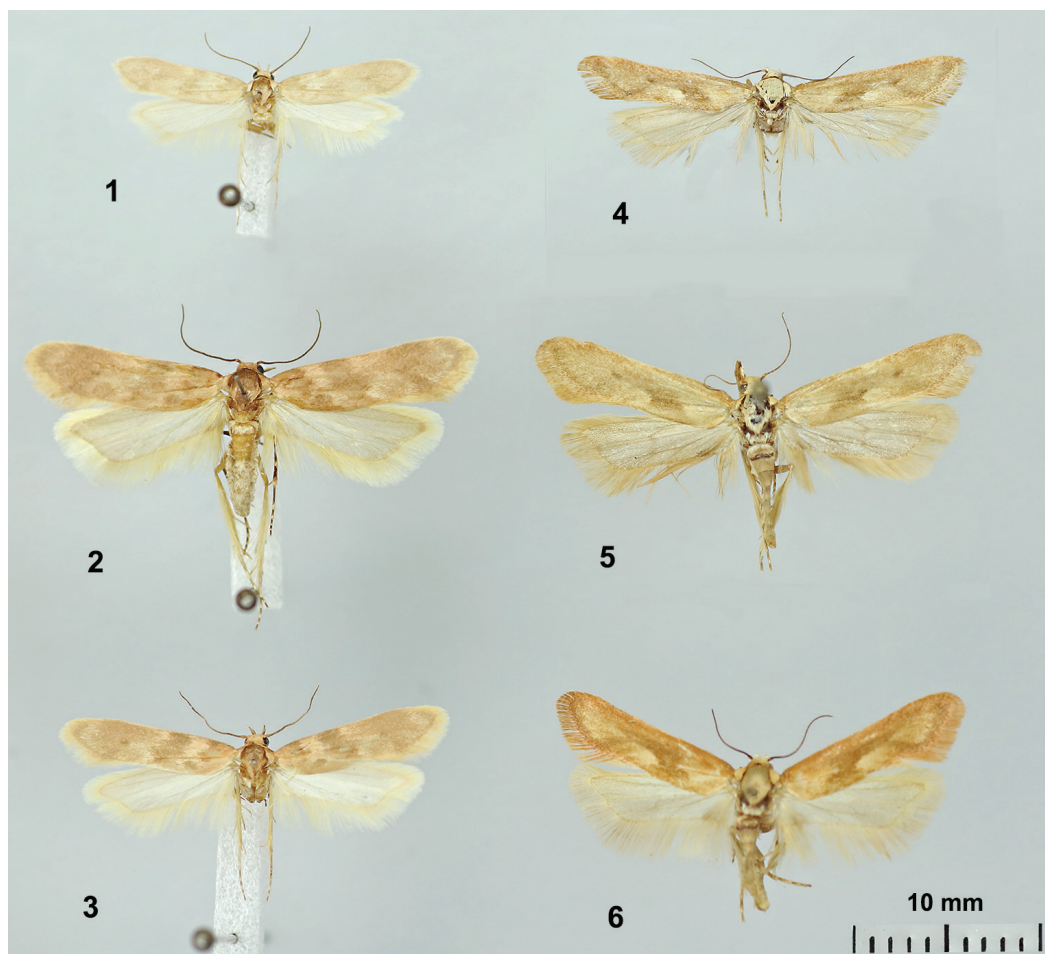
<https://zoobank.org/BCCBB26F-0FC1-4B89-A58E-7A7B951A42BE>

Figs 1–3, 7–11

Type material. *Holotype* ♂, Marokko: Sahara, Erfout/ Maadit, 800 m, 8.x.1996, lux [at light], leg. A. Lingenhöle | coll. A. Scholz, Vöhringen, SMNS-Lep: 1999-09 (gen. slide 290/21, O. Bidzilya) (SMNS). *Paratypes*: 2 ♂, same data as for holotype (gen. slide 65/22, O. Bidzilya) (SMNS).

Diagnosis. The new species is recognizable externally by its reddish brown forewing with diffuse reddish pink transverse fasciae (Figs 1–3) and recurved labial palps with an unmodified segment 2 and short segment 3 (Figs 7, 8). *Metanarsia kosakewitshi* Piskunov, 1990 and *Metanarsia guberlica* Nupponen, 2010 have somewhat similar reddish-brown forewings but differ in the absence of fasciae. Additionally, *M. kosakewitshi* is lighter, uniformly reddish brown and straight labial palps (Bidzilya 2005: figs 4, 20), and *M. guberlica* is brighter with distinct reddish irroration (see Junnilainen & Nupponen, 2010: fig. 12) and labial palps gently recurved. *Metanarsia dahurica* Bidzilya, 2005 (Figs 4–6) has a similar reddish-brown forewing, but differs in the presence of a pale subdorsal patch at about one-half and a distinctly broadened and straight segment 2 of the labial palpus. The new species differs clearly from the above superficially similar species in the male genitalia (Figs 10, 11) having the phallus shorter than the valva (equal to the valva in related species), the sacculus much narrower in comparison with the sacculus of *M. kosakewitshi* and shorter than in the sacculus of *M. guberlica*. *Metanarsia dahurica* differs additionally in the absence of teeth on the sacculus. *Metanarsia incertella* (Herrich-Schäffer, 1861) has somewhat similar male genitalia with a short phallus and comparatively narrow sacculus with three apical teeth, but can be separated by the uncus being deeply emarginated apically, the presence of a lateral tooth on the sacculus, the different forewing pattern and much longer labial palpus (Huemer et al. 1996, fig. 8; Bidzilya 2005: figs 44–46).

Description. Wingspan 16.5–23.0 mm. Head, thorax and tegula (Figs 7–9) dark yellow to reddish brown, labial palpus recurved, segment 2 light brown to greyish brown, apex and upper surface white or light yellow, segment 3 white to yellowish white, apex light brown, acute, $\frac{1}{2}$ width and about $\frac{1}{4}$ length of segment 2; haustellum reduced; scape reddish brown with pecten formed of a few hair-like scales; flagellomeres dark brown ringed with white; forewing (Figs 1–3) reddish brown with diffuse lighter reddish pink transverse oblique fasciae at $\frac{1}{4}$ and $\frac{1}{2}$, and reddish subapical rounded spot, indistinct brown spot at cell corner, fringe reddish yellow, lighter than adjacent part of forewing; hindwing light grey edged with light brown, fringe yellowish brown.



Figures 1–6. *Metanarsia* spp., dorsal view, males. 1–3. *M. moroccana* sp. nov.; 1, 2. Paratypes; 3. Holotype; 4–6. *M. dahurica*; 4, 5. Paratypes; 6. Holotype.

Male genitalia (Figs 10, 11). Uncus tongue-shaped, slightly longer than broad, covered laterally with dense setae; gnathos slender, rod like, weakly sclerotised; tegumen a nearly equilateral triangle, anterior margin straight, strongly edged; valva digitate, weakly constricted at middle, apex rounded, densely covered with hair-like setae, extending to tip of uncus; basal half of sacculus twice as broad as distal half and about 3.5 times as broad as valva at base, posterior margin with three short teeth, inner margin straight; juxta subtriangular, 1/3 length of sacculus; saccus triangular, slightly longer than broad at base; phallus entirely sclerotised in basal half and to 1/2–2/3 width in its distal half, apex rounded, dorsal margin with distinct short pointed subapical process, 2.5 times as long as broad at mid-length, about 3/4 length of valva, basal processes short, bulbus ejaculatorius long, coiled.

Female genitalia. Unknown.

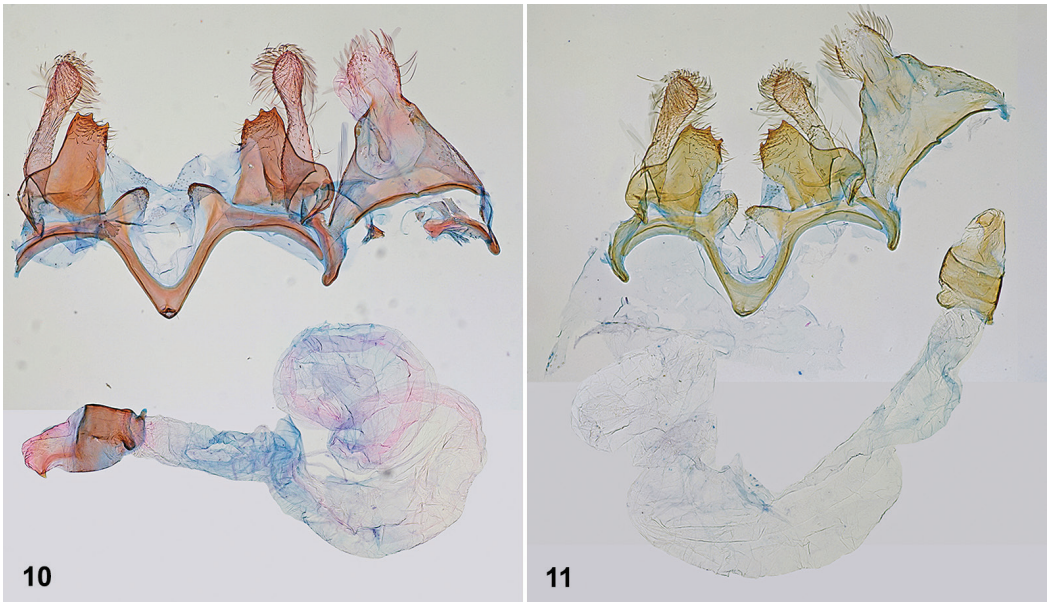
Biology. Host plant unknown. Adults were recorded flying in early October.

Distribution. Eastern Morocco.

Etymology. The specific name reflects the distribution of new species in Morocco.



Figures 7–9. *Metanarsia moroccana* sp. nov., head; 7, 8. Lateral view; 9. Dorsal view; 7. Holotype; 8, 9. Paratypes.



Figures 10, 11. *Metanarsia moroccana* sp. nov., male genitalia. 10. Holotype; 11. Paratype.

Discussion

The monophyly of *Metanarsia* is still unconfirmed. A combination of a very short ductus bursae and extremely long corpus bursae without a signum was considered as an autapomorphy of the genus (Bidzilya 2005). It was also postulated that the absence of a signum separates *Metanarsia* from the closely related *Chrysoesthia* and *Coloptilia* Fletcher, 1940 (Bidzilya 2005). However, Karsholt & Vives Moreno (2014) noted that the absence of a pecten on the antennal scape and the short labial palpus in *Chrysoesthia* are more reliable characters for separating this genus from *Metanarsia*. The monotypic genus *Coloptilia* and some species of

Catatinagma Rebel, 1903 show proximity to *Metanarsia* in respect of the male genitalia, but differ in having a prominent frontal modification of the head (Junnilainen and Nupponen 2010) and a pair of signa in the female genitalia. The synonymy of *Coloptilia* with *Catatinagma* (Junnilainen and Nupponen 2010) is not obvious due to considerable differences in male genitalia between the type species of both genera (Bidzilya 2014). *Coloptilia* was not reinstated formally as a separate genus, but listed as such by Huemer and Karsholt (2020). As regards *Metanarsia* it should be noted that the genus in its current concept is rather heterogeneous with rather variable external (shape of labial palpus) and male genitalia characters. The most isolated position within the genus is occupied by *M. partilella* (Christoph, 1887). The association of this species with *Metanarsia* is somewhat dubious as *M. partilella* possesses a set of external and genitalia characters (detailed by Bidzilya 2005), which is not present in other species of the genus. *Metanarsia moroccana* sp. nov. agrees well with the current determination of the genus as regards the male genitalia. Based on the well developed apical teeth on the sacculus and the recurved labial palpus with an unmodified segment 2, *M. moroccana* sp. nov. is placed into the *M. incertella* group of species.

It is obvious that additional species of *Metanarsia* will be described when more samples have been sequenced (Huemer and Karsholt 2020) and additional specimens of several unassigned species from the collections become available for study. To summarize, the current concept of *Metanarsia* is rather tentative and based exclusively on morphological data. One can suppose that some species currently placed in *Metanarsia* will be transferred to more appropriate genera after integrative generic revision of the tribe Apatetrini is provided. First efforts towards a tribal revision through DNA-study demonstrate good progress in resolving the relationships within the European genera of *Apatetris*-group including *Catatinagma* (Corley et al. 2020), but are still far from complete regarding the tribe as a whole.

An annotated list of the species of *Metanarsia*

Metanarsia Staudinger, 1871

=*Calyptritis* Meyrick, 1891.

=*Epipararsia* Rebel, 1914.

=*Parametanarsia* Gerasimov, 1930.

Metanarsia modesta-group

Metanarsia modesta Staudinger, 1871

Metanarsia modesta Staudinger, 1871: 315.

= *Metanarsia* (*M.*) *modesta kurdistanella* Amsel, 1959: 66; pl. 10, fig. 12; pl. 7, fig. 5.

Distribution. S Italy, Romania, S Ukraine, Russia (W Caucasus, S Ural, Lower Volga region, South of Krasnoyarskiy krai), Cyprus, Turkey, N and SE Kazakhstan, Uzbekistan, NE Iran, Iraq (Bidzilya 2005; Fauna Europaea 2022). The record from Armenia (Bidzilya 2005) needs verification as a specimen from this country has a separate DNA barcode BIN (Huemer and Karsholt 2020).

***Metanarsia monochroma* Bidzilya, 2008**

Metanarsia monochroma Bidzilya, 2008: 532, figs 3, 9, 10, 13.

Distribution. Afghanistan, Pakistan.

***Metanarsia onzella* Christoph, 1887**

Metanarsia onzella Christoph, 1887b: 120, pl. 5 fig. 13.

Distribution. Russia: South of European part (Volgograd and Astrakhan Regions), SE Kazakhstan
Uzbekistan, Turkmenistan.

***Metanarsia kosakewitshi* Piskunov, 1990**

Metanarsia (Metanarsia) kosakewitshi Piskunov, 1990: 95, figs 1–3.

Distribution. SE Kazakhstan.

***Metanarsia guberlica* Nupponen, 2010**

Metanarsia guberlica Nupponen, in Junnilainen and Nupponen 2010: 8, figs 12, 13.

Distribution. Russia: Orenburg Region.

***Metanarsia dahurica* Bidzilya, 2005**

Metanarsia dahurica Bidzilya, 2005: 285, figs 5, 21, 33, 34, 49.

Distribution. Russia: Zabaikalskiy krai.

***Metanarsia scythiella* Ponomarenko, 2000**

Metanarsia scythiella Ponomarenko, 2000: 223, figs 1–5.

Distribution. Russia: Tyva Republic.

***Metanarsia piskunovi* Bidzilya, 2005**

Metanarsia piskunovi Bidzilya, 2005: 288, figs 7, 23, 36, 50.

Distribution. Mongolia, China (Quinghai Province, Ningxia Hui Autonomous Region) (Bidzilya 2005, 2008).

***Metanarsia mongola* Bidzilya, 2008**

Metanarsia mongola Bidzilya, 2008: 533, figs 4, 11, 14.

Distribution. Mongolia.

Metanarsia juncivittella*-group**Metanarsia juncivittella* Christoph, 1885**

Metanarsia juncivittella Christoph, 1885: 161, pl. 8, fig. 11.

Distribution. S and SE Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, Afghanistan, Pakistan.

Metanarsia alphetodes*-group**Metanarsia alphetodes* (Meyrick, 1891)**

Calyptrotis alphetodes Meyrick, 1891: 56–57.

= *Metanarsia gobica* Lvovsky & Piskunov, 1989: 554, figs 43–45.

Distribution. Algeria, SE Kazakhstan, Uzbekistan, Turkmenistan, Mongolia.

Metanarsia incertella*-group**Metanarsia incertella* (Herrich-Schäffer, 1861)**

Anacamptis incertella Herrich-Schäffer, 1861: 31, pl. [23], fig. 156.

= *Epiparasia longivittella* Rebel, 1914: 276, pl. IV, fig. 12.

= *Epidola halmyropis* Meyrick, 1926: 270–271.

= *Gelechia rhamiferella* Lucas, 1940: 228.

Distribution. Morocco, Algeria, Tunisia, Spain, Russia (W Caucasus, Lower Volga region, S Ural, South of Krasnoyarskiy krai), Turkey, SE Kazakhstan, Uzbekistan, W China, Mongolia (Huemer et al. 1996; Bidzilya 2005; Ponomarenko 2019).

***Metanarsia moroccana* sp. nov.**

Distribution. Morocco.

Metanarsia partilella*-group**Metanarsia partilella* (Christoph, 1887)**

Teleia partilella Christoph, 1887a: 167.

Distribution. Turkmenistan, Uzbekistan.

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