A new species of *Meharia* Chrétien, 1915 (Cossidae) from the Lower Volga Region

Dmitry A. Komarov [1] & Vadim V. Zolotuhin [2]

[1] The laboratory preservation of surroundings of Volgograd department of Privolzhskoy train-service, ul. Buchanzeva 48, RUS-Volgograd; e-mail: komarov@tele-kom.ru

[2] Department of Zoology, Uljanovsk State Pedagogical University, pl. 100-letiya Lenina 4, RUS-432700 Uljanovsk, Russia; e-mail: ulgpu@mv.ru

Abstract. *Meharia scythica* sp. n. is described from the Astrakhan Region of Russia. A diagnosis of the genus *Meharia* Chrétien, 1915, is given, here listed for the first time from Russia and Europe as a whole. The holotype of the new taxon is kept in the collection of the entomological Museum of Thomas J. Witt (Germany, Munich).

Zusammenfassung. *Meharia scythica* sp. n. wird aus Rußland, Astrakhan Gebiet, beschrieben. Von der Gattung *Meharia* Chrétien, 1915, hier erstmalig für Rußland sowie Europa nachgewiesen, wird eine Gattungsdiagnose gegeben. Der Holotypus der neuen Art wird in der Sammlung des entomologischen Museums Thomas J. Witt (München) deponiert.

Резюме. С территории Астраханской области России описан *Meharia scythica* sp. n. Дан диагноз рода *Meharia* Chrétien, 1915, впервые отмечаемого для территории России и Европы в целом.

Key words. Lepidoptera, Cossidae, *Meharia*, new species, Russia, Volga Region.

Introduction

A small sample of remarkable cossid moths was collected in August 1996 in the Akhtuba District of the northern Astrakhan Province (the Lower Volga Region of Russia) near Baskuntschak Lake by the senior author. The moths were later identified by the junior author as an undescribed species of primitive cossids of the genus *Meharia* Chrétien, 1915. Taking into consideration that this genus is for the first time noted from Russia and is absent from the Key for the European part of the country (Zagulajev 1978), a description of the new species and a diagnosis of the genus are given below.

Meharia Chrétien, 1915 was established in the Tineidae as a monotypic genus for *Meharia incurvariella* Chrétien, 1915 with type locality Biskra, Algeria. Later, this species was considered conspecific with *Alavona semilactea* Warren & Rothschild, 1905. In 1951, the genus was transferred to the Cossidae by Bradley (1951: 178).

Blalia vittata Rungs, 1943, the type species of *Blalia* Rungs, 1943, described from Sahara, Morocco, is a junior synonym of *M. incurvariella*. Therefore, *Blalia* is a junior subjective synonym of *Meharia* (Fletcher & Nye 1982).

The species of the genus are mostly very similar, apart from color pattern. The mesepimeron is rather triangular and lacks a pale band; the labrum has more or less developed pilifers; the pronotum is low; the metascutum is medially wide; the metascutellum is medially wide and more or less antero-medially extended; tergite I is membranous in its anterior half; the parepisternum anteriorly is well separated from basisternum II; the upper parepisternal suture is set diagonally over pre-episternum II; the mesomeron is slightly narrower than eucoxa II; eucoxa III is wide; the midtibial spurs are located at or slightly beyond the middle of the tibia;

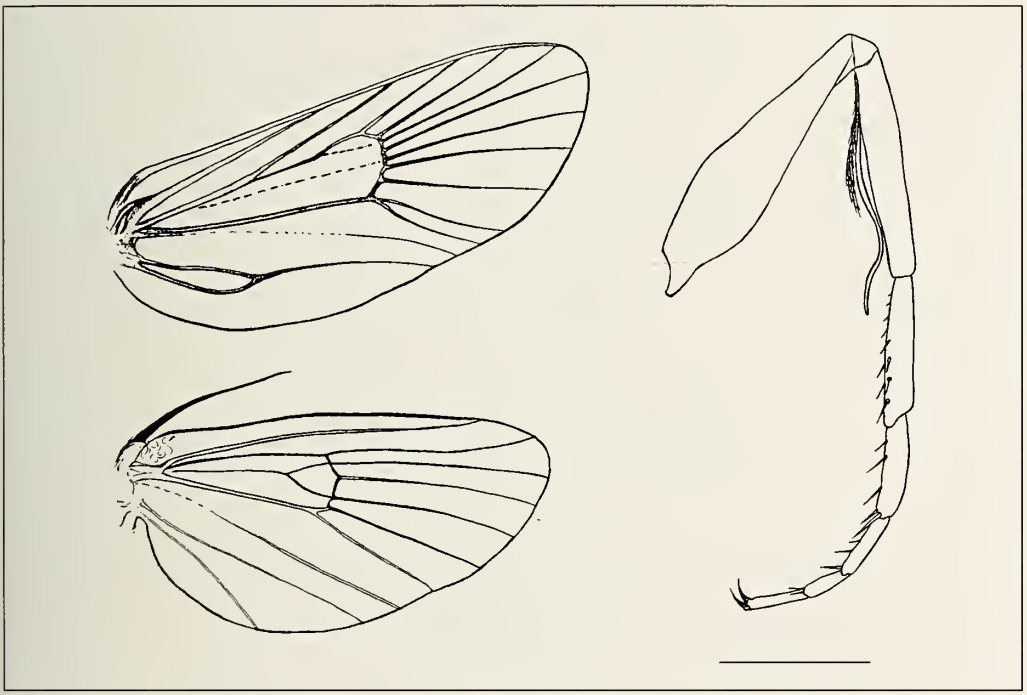
Fig. 1. *Meharia scythica*, holotype ♂.

the fifth tarsomere is approximately 0.8 times the length of the fourth; the forewing is widened at about one-third of its length; CuA2 in the forewing is very distal; the costal region of the hindwing is narrowing very distally; and the anal plate is long. Because of these characteristics, *Meharia* was excluded from the Cossidae, but not attributed to any family by Schoorl (1990: 244). However, in our opinion *Meharia* is considered to be part of the Cossidae. Knowledge on the peculiarities of the preimaginal stages would be especially interesting to define its phylogenetic relationships more precisely.

Meharia Chrétien, 1915: 367

Type species: *Meharia incurvariella* Chrétien, 1915: 368, fig. 11, by monotypy.
Blalia Rungs, 1943: 174. Type species: *Blalia vittata* Rungs, 1943, by original designation.

Diagnosis. Small cossids with elegant, long body. Wing expanse 20–32 mm. Eyes nude. Male antennae bipectinate until the apex, with long rami. Proboscis absent. Labial palpus about 1.5 time longer than eye diameter, horizontal; third segment about 3.5 time shorter than second and somewhat directed downward. Legs long and thin, foretibia without spurs but with long band-shaped epiphysis and hair pencil near base; metatibia with two pairs of spurs, the inner ones much stronger. Forewing narrow and elongated, with rounded external margin; pattern of primitive net-like type with lighter



Figs. 2–3. *Meharia scythica*. **2.** Venation. **3.** ♂ fore leg (scale bar 1 mm).

spots or bands on greyish or brownish ground color; stroke pattern elements as typical for the family are absent in *Meharia*. Hindwing without pattern, usually dark colored.

Venation (Fig. 2). Forewing Sc free as well as bases of all 5 R; M2 practically in the middle between M1 and M3; bases of both cubitals free or shortly stalked; A1 weak, distally developed as fold; A2 and A3 anastomosed on distal half but basal fork well developed; R-Cu cell with M branch and additional radial cellula. Hindwing bases of all veins free; three anals developed but A1 present in basal third only as fold; R-Cu cell with well developed, ramified medial branch.

Male genitalia. Simple, with unpaired uncus, cone-shaped gnathos, weakly sclerotized costa on valva and well-developed saccus; juxta as a plate, weakly attached with phallus and bases of valvae; phallus tubular, straight or slightly curved, with distinct sclerotized knob on distal edge, without cornuti but with zones of weak sclerotization on vesica.

Female. Unknown.

Preimaginal instars. Unknown.

Life history. The genus is native to arid (mainly desert, semi-desert and steppe) biotopes, where the larvae probably develop on (?in) roots and bulbs. Moths fly at dusk and first half of night low above the ground and are attracted to artificial lights.

Diversity and distribution. The specific composition of *Meharia* is not completely known. Apart from the new species describing here, the following taxa are known: the type-species *M. semilactea* Warren & Rothschild, 1905 (northern Africa to Arabia and

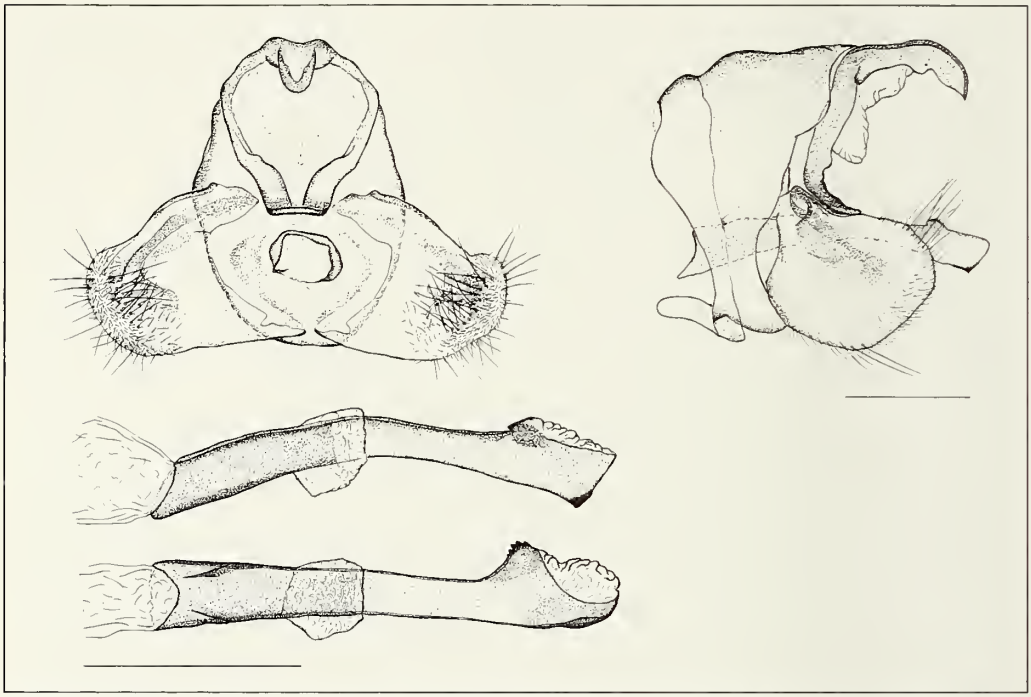


Fig. 4. *Meharia scythica* sp. n., paratype: male genitalia (above, left: caudal view; above, right: lateral view) and phallus shown lateral (above) and dorsal view below (scale bar 0.5 mm).

Iran, with further names introduced for local populations *incurvariella* Chrétien, 1915, *vittata* Rungs, 1943, *persica* Wiltshire, 1946 – their status needs special investigation), *M. philbyi* Bradley, 1952 (Saudi Arabia) and *M. tanganyikae* Bradley, 1952 (Africa, Tanganyika and Tindiga). Validity and rightfulness of the synonymization of the taxa listed above need special investigation. The genus is for the first time here noted from Russia and Europe as a whole.

Meharia scythica sp. n.

Material. Holotype: ♂ **[Russia]** Astrakhan Prov., Akhtuba Distr., passing-track Martovsky, outsk. Bolshoe Bogdo Mt., lum., 21.viii.1996, D. Komarov leg. (coll. Museum Thomas Witt, Munich, later assigned to Zoologische Staatssammlung München). – Paratypes: 3♂, same data, coll. Zoological Institute (St. Petersburg) and coll. D. Komarov.

Diagnosis. This taxon clearly differs from all other species of the genus by the more uniform coloration without contrasting bands and spots as well as by the dark hindwings. The male genitalia can be recognized by the rounded valvae and the weak sclerotization of their costal margins. The only known species from the western Palaearctic, *Meharia semilactea* Warren & Rothschild, 1905, can be separated nicely by the white or whitish transversal bands on the brown ground color in the forewing (de Freina & Witt 1990).
Description. Male (Fig. 1). Head and body with yellowish to cream-colored scales; abdomen darker. Underside with whitish scales; distal edges of abdominal segments ringed with yellowish scales. Forewing length 12 mm. Forewing with dark yellowish-

white ground color and darker reddish-brown to greenish-brown scales forming tessellate pattern with prominent basal, anal, and costal spots. Cilia with two rows of scales, the inner reddish with brown tips and the outer, checkered, yellowish and brown. Hindwings dark grey to blackish without pattern, basal field with prominent, whitish bunch of hair-like scales; cilia as in forewing but outer row unchecked, whitish. Venation (Fig. 2) as described for genus. Foretibia (Fig. 3) with long, S-shaped epiphysis and distinct hair bunch at about 2/3 of length.

Male genitalia (Fig. 4). Uncus narrow; valvae short and rounded with weak costa, covered on inner surface with numerous, elongated, strong setae; phallus long, slightly curved, with short dorso-lateral sclerotization.

Habitat. The type-series was collected at light in the Achtuba District of the Astrakhan Province in the vicinity of Baskuntschak Lake (by Bolshoe Bogdo Mt.). The natural vegetation in the area is that of desert steppes dominated by *Artemisia lerchiana*, *Agropyron desertorum*, *Stipa sareptana*, *Festuca valesiaca* s.l., frequently in an assemblage with wormwood (*Artemisia pauciflora*) on saline soils. Predominance of annual and biennial plants (*Descurainia sophia*, *Lepidium perfoliatum*, *Sisymbrium altissimum* etc.) is typical for passing-track Martovsky. Along the railway line, which is directed NNW-SSE, is a rather wide forest belt with a predominance of *Ulmus pumila*. The railway is a path for various weeds and adventive plants growing in appreciable quantities on the embankment. Many of these plants are not native to the area (for example, species of *Papaver*). Five to eight kilometres eastwards from the railroad the unique biotopes of Mount Bolshoe (Large) Bogdo contain significant floristic diversification and a lot of rare plants. In the south-east of the mountain lies an austral karst field (Shar-bulak) with numerous karst gullies, in which *Crataegus ambigua*, *Prunus spinosa*, and *Rosa* spp. can be found.

The climate of the area is sharply continental, droughty. The average precipitation for one year is about 250 mm, but the evaporation is much higher: about 1500 mm. The average annual temperature is +7.7°C. The strong daily and seasonal differences in temperature are characteristic. In summer, the air temperature can rise up to +44°C, while in winter it can go down to -37°C.

Life history. The moths were collected while flying to the light of mercury lamps (250 W). They sat on the ground some distance from the lamp.

Distribution. The species is known only from its type locality – the northern part of the Astrakhan Province of Russia. It undoubtedly has a wider distribution in desert and steppe biotopes of the Kalmyk Republic, Lower Volga, and western Kazakhstan.

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