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RESEARCH ARTICLE

A new species of *Ecebalia* (Lepidoptera: Coleophoridae) from the Central Caucasus

Новый вид рода *Ecebalia* (Lepidoptera: Coleophoridae) с Центрального Кавказа

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Abstract. A new species of casebearer moths, *Ecebalia zolotuhini* **sp. nov.**, is described from the Central Caucasus (Kabardino-Balkarian Republic, Russia).

Резюме. Новый вид молей-чехлоносок – *Ecebalia zolotuhini* **sp. nov.**, – описан с Центрального Кавказа (Кабардино-Балкария, Россия).

Key words: Central Caucasus, casebearer moths, Lepidoptera, Coleophoridae, *Ecebalia,* new species

Ключевые слова: Центральный Кавказ, моли-чехлоноски, Lepidoptera, Coleophoridae, *Ecebalia,* новый вид

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Introduction

Since the beginning of the 21st century, only a few publications contained information on the fauna of casebearer moths (Lepidoptera: Coleophoridae) of the Caucasus (Anikin, 2001a, 2001b; Anikin & Shchurov, 2001, 2004; Anikin & Bolov, 2003; Budashkin et al., 2015; Baldizzone, 2016).

Identification of Microlepidoptera collected in 2003 in the mountainous area of the Central Caucasus in the territory of the Kabardino-Balkarian Republic led to the discovery of a new species of Coleophoridae in the genus *Ecebalia* Căpuşe, 1973. The new species is described in the present article, which brings the species number of the casebearers known from the Caucasus to 180 (Budashkin et al., 2015; Baldizzone, 2016; Anikin, 2019).

Materials and methods

The material examined is deposited in the following collections abbreviated in the text as follows: Saratov State University, Russia (SarSU); Zoological Institute of the Russian Academy of Science, St Petersburg, Russia (ZIN).

The genitalia were prepared following standard techniques for morphological studies of Lepidoptera (Robinson, 1976). The photo of the paratype habitus was taken by N.M. Paramonov (ZIN) using a Canon EOS 800D camera with a MP-E 65 mm lens, stitched and processed using Helicon Focus 6 software. The genitalia and other morphological details were photographed by the author from slides using a Levenhuk C1400 NG camera at a Mikmed-6 microscope. Photos of the genital structures were taken in the ventral view.

Taxonomy

Order **Lepidoptera**

Family **Coleophoridae**

Subfamily **Coleophorinae**

Tribe **Casignetellini**

Genus ***Ecebalia*** Căpuşe, 1973

***Ecebalia zolotuhini* sp. nov.**
(Figs 1–11)

Holotype. Male, "Rossiya, Ts. Kavkaz, Kabardino-Balkariya, Priel'brus'e, r. Adyrsu, h=2400, okr. a/l Ulu-Tau, subalpiyskie luga, dnem 8.08.2003 [in Russian], V. Anikin col." [**Russia**, Central Caucasus, *Kabardino-Balkarian Republic*, area of Elbrus Mt., River Adyrsu, 2400 m, nr. Ulu-Tau alpine camp, subalpine meadows, at daytime, 8.VIII.2003, V. Anikin leg.] (ZIN).

Paratypes. 9 females, same locality and date as for holotype (4 paratypes in ZIN, 5 paratypes in SarSU).

Description. Wingspan 11–13 mm. Head beige-coloured with light grey scales around eyes. Labial palp greyish-coloured, lower side of middle segment whitish grey. Antenna grey-white, basally ringed with light brown; thorax beige. Abdomen grey. Forewing grey-ochreous, with costa creamy grey-white in basal two-thirds, grey-white lines along veins, and dark brown scales in distal part of forewing. Hind wing grey; cilia greyish. Sexual dimorphism not expressed.

Male genitalia (Figs 3–5). Knob of gnathos globular-oval. Distal part of tegumen narrow, broadening into a long pedunculus. Transtilla broad. Valvula as broad as cucullus, distinct. Cucullus large and broad, ear-shaped, not tapered basally. Sacculus broad, its dorsocaudal angle with three teeth: inner tooth the longest, medial and outer teeth smaller; ventrocaudal angle pointed, with apex almost rectangular-shaped, with a tooth. Phallotheca with two strongly sclerotised, slightly arched rods of equal length; upper rod with two triangular apical teeth, lower rod with pointed apex (Fig. 4). Vesica with one short cornutus (Fig. 5).

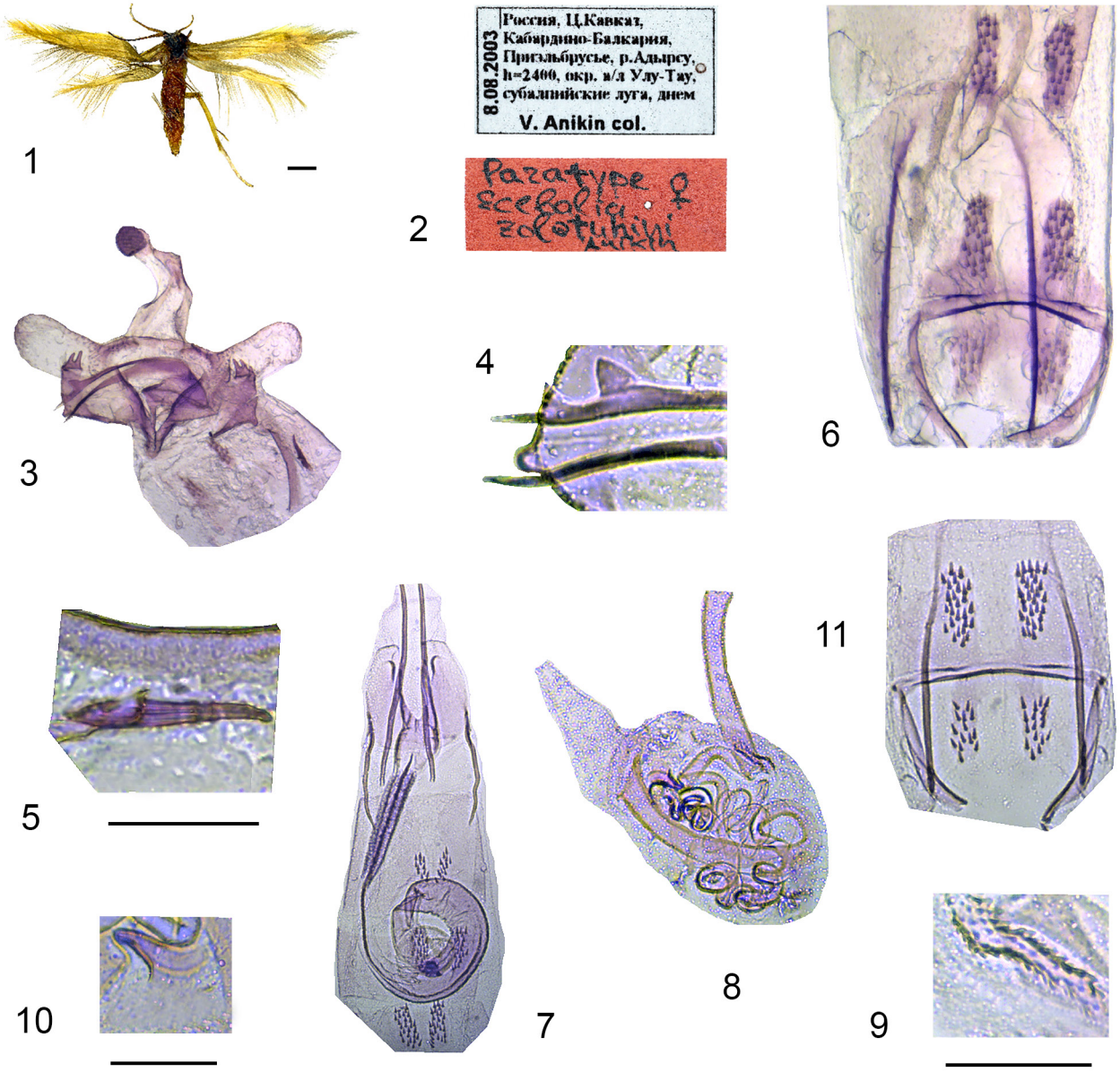
Male abdominal tergites (Fig. 6). Tergal disc twice as long as wide. First abdominal tergite elongate, with 12–14 spinelets on each plate. Subsequent tergites with patches of 23–26 spinelets on each tergite.

Female genitalia (Figs 7–10). Papillae anales long, narrow. Apophysis posterioris about 2.3 times as long as apophysis anterioris; apophysis anterioris curved at apex. Subgenital plate triangular-shaped, with width almost equal to length. Distal margin rounded, medially with a deep slit, bordered with subapical fold. Ostium bursae V-shaped; antrum elongate, asymmetrical, in anterior part on both sides without or only with small rounded swellings (Fig. 7). Ductus bursae long; first spinulate section slightly longer than apophyses anteriores; central rod with well-sclerotised second section with several coils; oral section evenly membranous; all sections of ductus elongate. Corpus bursae spherical (Fig. 8), with one curved rasp-like signum (Fig. 9) and one small thorn-like signum (Fig. 10).

Female abdominal tergites (Fig. 11). Tergal disc about twice as long as wide. First abdominal tergite with 13–16 spinelets on each plate. Subsequent tergites with patches of 27–30 spinelets on each tergite.

Taxonomic position and comparison. A combination of characters, namely, the wing coloration with dark grey veins on a brown background, the shape of the labial palps, the abdominal tergites and the structure of the genitalia, indicates that the new species belongs to the genus *Ecebalia*. The new species belongs to the *E. virgaurea* species–complex and is similar to *E. obscenella* (Herrich-Schäffer, 1855) in the male characters and to *E. proterella* (Wikström et Tabell, 2016) in the female characters.

In contrast to *E. obscenella* whose male genitalia have a sacculus with a dorsocaudal process with two short straight teeth, in *E. zolotuhini* **sp. nov.** the sacculus is rectangular-shaped with three teeth, of which the third (outer) tooth is smaller. *Ecebalia obscenella* has a phallotheca with two strongly sclerotised, slightly arched rods of equal length: the upper rod with one triangular apical tooth and the lower rod with a blunt apex; *E. zolotuhini* **sp. nov.** has the upper rod with two triangular apical teeth and the lower rod with pointed apex. In *E. obscenella*, the vesica bears 5–6 cornuti tightly compacted into



Figs 1–11. *Ecebalia zolotuhini* **sp. nov.** [1, 2, 7–11, female (paratype, ZIN); 3–6, male (holotype, ZIN)]. **1**, habitus of female (dorsal view); **2**, labels; **3**, male genitalia; **4**, upper rod with two triangular apical teeth and lower rod with pointed apex; **5**, cornutus; **6**, male abdominal tergites; **7**, female genitalia; **8**, sphaerical corpus bursae; **9**, curved rasp-like signum; **10**, small thorn-like signum; **11**, female abdominal tergites. Scale bars: 1 mm (1), 10 μm (5, 7, 10).

a curved bundle, which is distally longer, whereas in *E. zolotuhini* **sp. nov.** the vesica has one short cornutus.

In female *E. proterella*, the antrum is elongate, with a rounded swelling in anterior part on both sides, whereas in *E. zolotuhini* **sp. nov.** the swellings on both sides are not pronounced. The anterior apophyses of *E. zolotuhini* **sp. nov.** are shorter and not straight as in *E. proterella*. Corpus bursae of *E. proterella* has a large thorn-like signum and a long straight rasp-like signum, while in *E. zolotuhini* **sp. nov.** it has a small thorn-like signum and a curved rasp-like signum.

Etymology. The species is dedicated to the Russian entomologist Prof. Vadim V. Zolotuhin in acknowledgement of his activities on and devotion to the study of Lepidoptera during all of his life.

Distribution. Central Caucasus. The type locality is situated in the area of the Elbrus Mountain (Kabardino-Balkarian Republic, Russia).

Bionomics. The adult moths of *E. zolotuhini* **sp. nov.** were collected on a subalpine meadow in the valley of the mountain River Adyrsu (Electronic supplementary material; see Addenda) in early August, when feeding on the flowers of *Solidago*. Apparently, the larva of *E. zolotuhini* **sp. nov.** is carpophagous as in other species of *E. virgaurea* species–group and feeds on seeds of *Solidago* in late August and September.

Addenda

Electronic supplementary material. Type locality of *Ecebalia zolotuhini* **sp. nov.** (photo by D. Gonnov). File format: JPEG. Available from: https://doi.org/10.31610/zsr/2022.31.1.130

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