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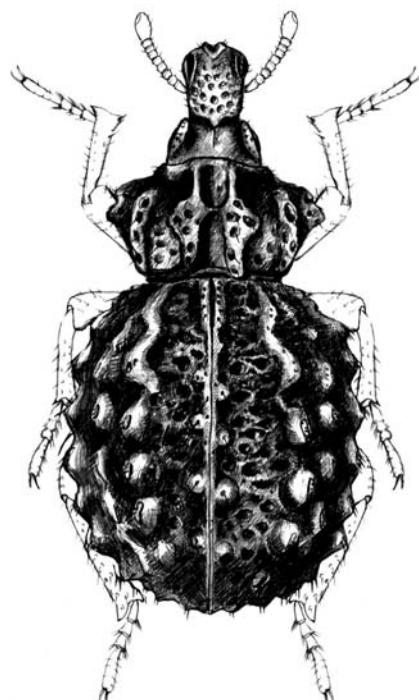


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Materials on the Geometrid Moth fauna of the Northern Caucasus with description of *Entephria cyanata alanica* ssp. n. (Lepidoptera: Geometridae)

Материалы по фауне пядениц Северного Кавказа с описанием *Entephria cyanata alanica* ssp. n. (Lepidoptera: Geometridae)

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Key words: Lepidoptera, Geometridae, Caucasus, *Entephria*, new subspecies.

Ключевые слова: Lepidoptera, пяденицы, Кавказ, *Entephria*, новый подвид.

Abstract. Four Geometrid Moth species are reported as new for the fauna of the Northern Caucasus: *Narraga tessularia* (Metzner, 1845), *Horisme corticata* (Treitschke, 1835), *Nebula senectaria* (Herrich-Schäffer, 1852) and *Entephria cyanata* (Hübner, [1809]). *N. senectaria* is recorded for the first time for Russia. Caucasian populations of *E. cyanata* are attributed to a new subspecies *E. cyanata alanica* ssp. n.

Резюме. Четыре вида пядениц впервые приводятся для фауны Северного Кавказа: *Narraga tessularia* (Metzner, 1845), *Horisme corticata* (Treitschke, 1835), *Nebula senectaria* (Herrich-Schäffer, 1852) и *Entephria cyanata* (Hübner, [1809]). *N. senectaria* – новый вид для фауны России. Кавказские популяции *E. cyanata* отнесены к новому подвиду *E. cyanata alanica* ssp. n.

Narraga tessularia (Metzner, 1845)

Material. Kabardino-Balkaria: Verkhnyaya Balkaria, 1–3.07.1992, 17.07.1992, 3♂, 2♀, leg. Tikhonov (coll. Tikhonov).

This species is distributed in South-East Europe and in Kazakhstan. In European Russia it inhabits south-east of steppe zone (Lower and Middle Volga, South Ural). Finding of this species in mountains of the Central Caucasus was rather unexpected.

Horisme corticata (Treitschke, 1835)

Material. Krasnodar Prov.: W env. of Varvarovka, 27.04–19.05.2008, 3♂, leg. E. Tsvetkov (coll. E. Tsvetkov).

This species was found on bushy terraces at seashore. It inhabits South and Central Europe, Turkey. The species is rare in steppe zone of European Russia. Crimea is the closest locality. According to catalogue of the Lepidoptera of Russia *H. corticata* is present in Volga-Don and European central regions [Mironov et al., 2008]. However it has not been recorded in the Caucasus till now.

Nebula senectaria (Herrich-Schäffer, 1852)

Material. Krasnodar Prov.: W env. of Varvarovka, 27.04–21.05.2008, 6♀, leg. E. Tsvetkov (coll. E. Tsvetkov); Markotkh ridge, 22.05.2007, 18.05.2007, 1♂, 1♀, leg. V. Shchurov (coll. Tikhonov).

Near Varvarovka *N. senectaria* flies at seashore on bushy dry slopes with Juniperus, Carpinus orientalis.

Imagines usually sit at open places on bushes during the daytime. Second generation is supposed to appear in summer or autumn. The species is distributed in Mediterranean, Transcaucasus, Kopet-Dagh, North Iran. And it is first-time record for the Caucasus and Russia.

Entephria cyanata (Hübner, [1809])

The Northern Caucasus is inhabited by a few *Entephria* species, among them *E. muscosaria* (Christoph, 1893), *E. ignorata* (Staudinger, 1892), *E. flavicinctata elbrusensis* Tikhonov, 1994, *E. tejmurovi* Tikhonov, 1994 and *E. calcephila* Tikhonov, 1994. All of them are recorded at high altitudes from 1200 m above sea level.

Entephria cyanata (Hübner, [1809]) is known from mountain parts of Europe: from the Pyrenees in the west to the Carpathians and Crimea in the east. It was listed in catalogue of the Lepidoptera of Russia, basing on possibly erroneous record from Voronezh Region. And the presence of this species in the Northern Caucasus was indicated with a question sign [Mironov et al., 2008].

Dr. V. Tikhonov (Pyatigorsk) collected material from the region on a representative of *cyanata* group. The material was granted to me for the next studying. It came out then, that the butterflies are not distinguished from *E. cyanata* by genitalia structure (Color plate 16: fig. 1, 2), but some external differences from typical European *E. cyanata* are found. Taking into account the remoteness and isolation of Caucasian populations, I attribute them to a new subspecies of *E. cyanata*.

Entephria cyanata alanica ssp. n.

(Color plate 16: fig. 3, 4)

Material. Holotype, ♂, Kabardino-Balkaria, Verkhnyaya Balkaria, 17.07.1992, leg. V. Tikhonov. Deposited in collection of Zoological Institute of Russian Academy of Sciences (Saint-Petersburg).

Paratypes: Kabardino-Balkaria, Verkhnyaya Balkaria, 17.07.1992, 3♂, 2♀, leg. V. Tikhonov (coll. V. Tikhonov); Krasnodar Prov., r. Bezomyanka, near Pyaterykh pass, 19.07.2007, 1♂, leg. V. Schtchurov (coll. V. Tikhonov); Karachaevo-Cherkessia, Teberda, 22–27.08.1912, 27.08.1970, 2♂, 2♀ (coll. V. Tikhonov); Karachaevo-Cherkessia, Uchkulan, 17.07.1989, 14.08.1992, 2♂, leg. V. Tikhonov (coll. V. Tikhonov); Karachaevo-Cherkessia, Damkhruts, 19.08.1987, 2♀, leg. V. Tikhonov (coll. V. Tikhonov); North Ossetia, Chekhtsirikit ridge, 7.08.2005, 3♂, 2♀, leg. V. Tikhonov (3♂, 1♀ in coll.

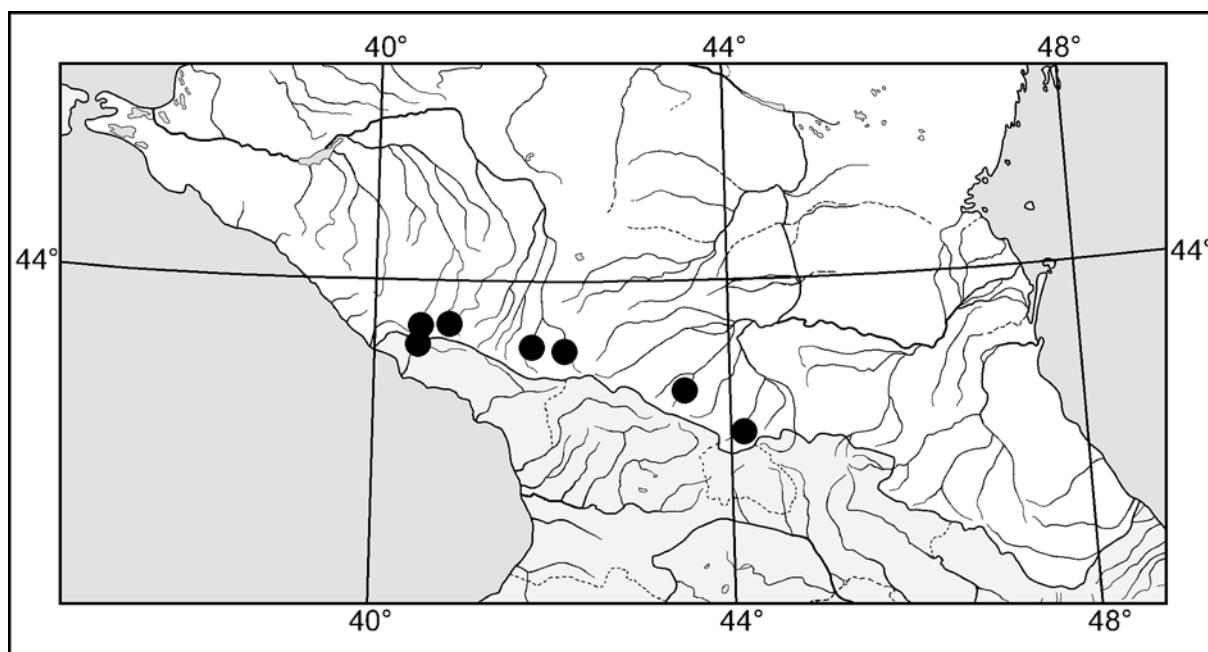


Fig. 6. Distribution of *Entephria cyanata alanica* in the Northern Caucasus.
Рис. 6. Распространение *Entephria cyanata alanica* на Северном Кавказе.

Tikhonov, 1♀ in coll. of ZISP); Abkhazia, Avadkhara, 30.08.70, 1.09.1970, leg. Milianowski, 2♂ (coll. V. Tikhonov).

Description. Holotype. Forewing length 16 mm. Frons and body grey; legs grey with white rings; antennae simple, brown, chequered on the upper side; fringe chequered. Hindwing white; forewing grey with darker medial band and rare dark dots at veins; veins are lighter than ground color (to almost white like marginal wavy line) in postdiscal area. Outer border of medial band interrupted at vein M_3 base.

Paratypes. Forewing length 15–19 mm. Wing coloration is similar with coloration of *E. cyanata cyanata*. But in *alanica* wing pattern is always sharpened, motley with clear dark dots at veins in basal, discal and sometimes postdiscal areas. European *E. cyanata* are often represented with form with blurred forewing pattern (fig. 5). Sometimes European *cyanata* show delicate motley sharp pattern but rarely so heterogeneous like in *alanica*. Outer border of the medial band on the forewing in *alanica* is always interrupted with light-grey, whitish or yellow (in a form with developed yellowish pattern) spot. Such form rarely can be met

in European populations. A half of the samples from the series of *alanica* has reduced dark pattern and lighter postdiscal area on the forewing (fig. 3). Another half is with extended dark pattern in postdiscal area: a row of clear dark dots at veins and blurred dark-grey spots (fig. 4). Forewing ground color in *alanica* is grey, brown-grey, never can be yellowish like in some European forms. However, veins are sometimes covered with yellow (not light-grey as usual) scales and yellowish spots can be present.

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Fig. 1–2. Genitalia of *Entephria cyanata alanica* ssp. n. Scale bar 1 mm.
1 – paratype, ♂, Abkhazia, Avadkhara, 1.09.1970, leg. E. Milianowsky (aedeagus extracted); 1a – aedeagus; 2 – paratype, ♀, North Ossetia, Chekhatsirtit ridge, 7.08.2005, leg. V. Tikhonov; 2a – signum.

Рис. 1–2. Гениталии *Entephria cyanata alanica* ssp. n. Шкала 1 мм.
1 – параптип, ♂, Абхазия, Авадхара, 1.09.1970, лег. Е. Мильяновский (эдеагус извлечен); 1а – эдеагус; 2 – параптип, ♀, Северная Осетия, хр. Чехациртит, 7.08.2005, лег. В. Тихонов; 2а – сигнум.



Fig. 3–5. *Entephria cyanata*. Scale bar 1 cm.
3 – *Entephria cyanata alanica* ssp. n., holotype, ♂, Kabardino-Balkaria, Verkhnyaya Balkaria, 17.07.1992, leg. V. Tikhonov; 4 – *Entephria cyanata alanica* ssp. n., paratype, ♀, North Ossetia, Chekhatsirtit ridge, 7.08.2005, leg. V. Tikhonov; 5 – *Entephria cyanata cyanata*, ♂, Austria, Schneeberg (coll. V. Tikhonov).

Рис. 3–5. *Entephria cyanata*. Шкала 1 см.
3 – *Entephria cyanata alanica* ssp. n., голотип, ♂, Кабардино-Балкарья, Верхняя Балкарья, 17.07.1992, лег. В. Тихонов; 4 – *Entephria cyanata alanica* ssp. n., параптип, ♀, Северная Осетия, хр. Чехациртит, 7.08.2005, лег. В. Тихонов; 5 – *Entephria cyanata cyanata*, ♂, Австрия, Шнееберг (колл. В. Тихонова).

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