

## New and little known Ennominae from Turkmenistan with the description of two new species

(Lepidoptera, Geometridae)

by

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received 2.XII.1997

**Summary:** Descriptions of *Ramitia kuhitangiensis* spec. nov. and *Eumannia neoppositaria* spec. nov. are given, a new combination *Aleucis kuznetzovi* (VIIDALEPP, 1992) comb. nov. is proposed, the genitalia of *Apochima diaphanaria* (PÜNGELER, 1903) and *Dyscia leucogrammaria* (PÜNGELER, 1900) are illustrated for the first time, and the description of the male genitalia of *Cnestrognophos usbekistanica* VIIDALEPP, 1988 has been refined. Six species, i. e. *Dysgnophos sibirata* (GUENÉE, 1857), *Cnestrognophos saprjagaevi* VIIDALEPP, 1980, *Zystrognophos nimbata* (ALPHÉRAKY, 1888), *Nychiodes antiquaria* STAUDINGER, 1892, *Alcis nobilitaria* (STAUDINGER, 1892), *Biston betularius* (LINNAEUS, 1758) are recorded from Turkmenistan for the first time; new data for the little known species *Apochima diaphanaria* (PÜNGELER, 1903), *Dyscia leucogrammaria* (PÜNGELER, 1900) and *Habermannia oxygonaria* (PÜNGELER, 1899) are given.

**Zusammenfassung:** In den vorliegenden Arbeit werden zwei neue Spannerarten beschrieben: *Ramitia kuhitangiensis* spec. nov. und *Eumannia neoppositaria* spec. nov. Eine neue Kombination ergibt sich durch *Aleucis kuznetzovi* (VIIDALEPP, 1992), comb. nov. Zum ersten Mal werden die Genitalapparate von *Apochima diaphanaria* (PÜNGELER, 1903) und *Dyscia leucogrammaria* (PÜNGELER, 1900) abgebildet und die Beschreibung des männlichen Genitalapparats von *Cnestrognophos usbekistanica* VIIDALEPP, 1988 präzisiert. Sechs Arten werden das erste Mal von Turkmenistan gemeldet: *Dysgnophos sibirata* (GUENÉE, 1857), *Cnestrognophos saprjagaevi* VIIDALEPP, 1980, *Zystrognophos nimbata* (ALPHÉRAKY, 1888), *Nychiodes antiquaria* STAUDINGER, 1892, *Alcis nobilitaria* (STAUDINGER, 1892), und *Biston betularius* (LINNAEUS, 1758). Neue Fundortangaben werden für folgende seltene Arten gemacht: *Apochima diaphanaria* (PÜNGELER, 1903), *Dyscia leucogrammaria* (PÜNGELER, 1900) und *Habermannia oxygonaria* (PÜNGELER, 1899).

**Резюме:** В статье даны описания пядениц *Ramitia kuhitangiensis* spec. nov. и *Eumannia neoppositaria* spec. nov., предложено новое сочетание названий *Aleucis kuznetzovi* (VIIDALEPP, 1992), comb. nov., впервые изображены гениталии у *Apochima diaphanaria* (PÜNGELER, 1903) и *Dyscia leucogrammaria* (PÜNGELER, 1900), уточнено описание гениталий самца и *Cnestrognophos usbekistanica* VIIDALEPP, 1988. Впервые для Туркменистана указаны шесть видов: *Dysgnophos sibirata* (GUENÉE, 1857), *Cnestrognophos saprjagaevi* VIIDALEPP, 1980, *Zystrognophos nimbata* (ALPHÉRAKY, 1888), *Nychiodes antiquaria* STAUDINGER, 1892, *Alcis nobilitaria* (STAUDINGER, 1892), *Biston betularius* (LINNAEUS, 1758); приведены новые данные по малонизвестным видам *Apochima diaphanaria* (PÜNGELER, 1903), *Dyscia leucogrammaria* (PÜNGELER, 1900) и *Habermannia oxygonaria* (PÜNGELER, 1899).

The present paper is the continuation of a publication series on Middle Asian Geometridae from the collection of the Siberian Zoological Museum (Institute of Systematic and Ecology of Animals of Siberian Branch of Russian Academy of Sciences) (VASILENKO, 1993, 1995, 1996, in litt.). In this publication, part of the geometrid moths from the subfamily Ennominae collected by the scientific workers of the Zoological Museum during the expeditions into South and East Turkmenistan in 1981 and 1986/1991 is presented.

Moths mentioned in the paper were collected in biotops such as:

Bush semidesert (West Kopetdag, 5 km N Kara-Kala Sttl.; Central Kopetdag, Vanovskii; Kuhitang Mts., Suv-Doker Canyon);

transition zone between orchard and bush semidesert (Central Kopetdag, Firuza);

orchard (West Kopetdag, Kara-Kala);

wild almond stands (*Amygdalus bucharica* KORSH.) in the mountain steppe belt (Kuhitang Mts., 7 km NE Bazar-Depe, Kara-Belenet Mt.; ditto, Kara-Belenet Sttl.; ditto, higher Khadzhi-Karaul Sttl.);

sparse juniper stand (*Juniperus turkmenika* KOM.) in the mountain steppe belt (Central Kopetdag, 15 km W Firuza, Dushak Mt.; ditto, Mirzadag Mts., Myrzedag Mt.; Kuhitang Mts., Dzhejlau Plateau);

mountain steppe (Kuhitang Mts., near Bazar-Depe Sttl., Khelpe-baba Mound).

Holotypes and part of the paratypes of the described species are located in the Siberian Zoological Museum (Novosibirsk), the other paratypes are located in the Institute of Biology and Pedology (Vladivostok).

*Aleucis kuznetzovi* (VIIDALEPP) **comb. nov.**

*Epitherina kuznetzovi* VIIDALEPP, 1992: 125, fig. 4.

#### Material

18 ♂♂, 4 ♀♀: Turkmenistan, Central Kopetdag, Firuza, 31.III., 1, 2.IV.1991 (DUBATOLOV).

#### Taxonomic notes

In the male and female genitalia (fig. 1), shape of the head and wing pattern this species is similar to the well known European species *Aleucis distinctata* (HERRICH-SCHÄFFER, [1839]) designated as type species for the genus *Aleucis* GUENÉE, [1845]. Originally *A. kuznetzovi* (VIIDALEPP) was included in the genus *Epitherina* WEHRLI, 1938, probably because of the similarity with the type species *Epitherina rhodopolepis* WEHRLI, 1938 in its pale colour of the wings. But it differs well by flat, not conic frons, long vein anastomoses R1 with Sc and R2 and less serrate transverse lines on the forewing (WEHRLI, 1938, 1940; WILTSHIRE, 1946). Therefore the taxon *kuznetzovi* VIIDALEPP, 1992 has to be included in the genus *Aleucis* GUENÉE, [1845].

Morphologically *A. kuznetzovi* is closely related to the Near Eastern species *Aleucis orientalis* (STAUDINGER, 1892) (HAUSMANN, 1991), but it is slightly smaller, with a paler wing colour, and the following differences in genitalia: shorter uncus and saccus in male, and corpus bursae without signum in female. the latter character in the female is similar to that of *A. dis-*

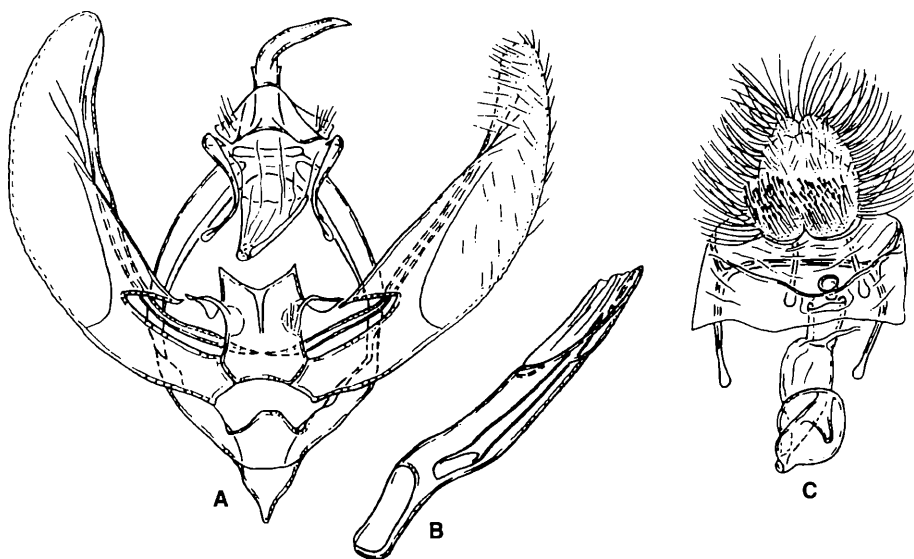


Fig. 1: *Aleucis kuznetzovi* (VIIDALEPP), Turkmenistan, Firuza. A – male genitalia, B – aedeagus, C – female genitalia.

*tinctata*, but *A. kuznetzovi* differs well from that species by the long, relatively thin cornutus and a narrower base of the uncus in male genitalia.

### *Ramitia kuhitangiensis* spec. nov.

Holotype ♂: Turkmenistan, Kuhitang Mts., higher Khadzhi-Karaul Sttl., plateau 900–1000 m. 7.IV.1991 (DUBATOLOV). Paratypes: 1 ♂: Turkmenistan, Kuhitang Mts., higher Khadzhi-Karaul Sttl., 7.IV.1991 (DUBATOLOV); 7 ♂♂, 8 ♀♀: Turkmenistan, Kuhitang Mts., Kara-Belenet Mt., 7 km NE Bazar-Depe 3., 6.IV., 10., 11., 22.V.1991 (DUBATOLOV, ZINCHENKO).

#### Male

Length of forewing 10.2–11.1 mm. Antenna filiform. Wings narrow, forewing much extended towards apex, brownish-grey, densely dusted by dark-grey scales. Transverse lines irregular serrate, forewings' discal spots large, dark grey, without light medial stroke, on the hindwings discal spots dotted.

#### Male genitalia (figs. 2A–C)

Uncus thin, moderately long, slightly dilated to the apex. Socii small, slightly sclerotized. Gnathos broad, arched, flat along its length. Juxta moderately broad, longer than wide. Valva

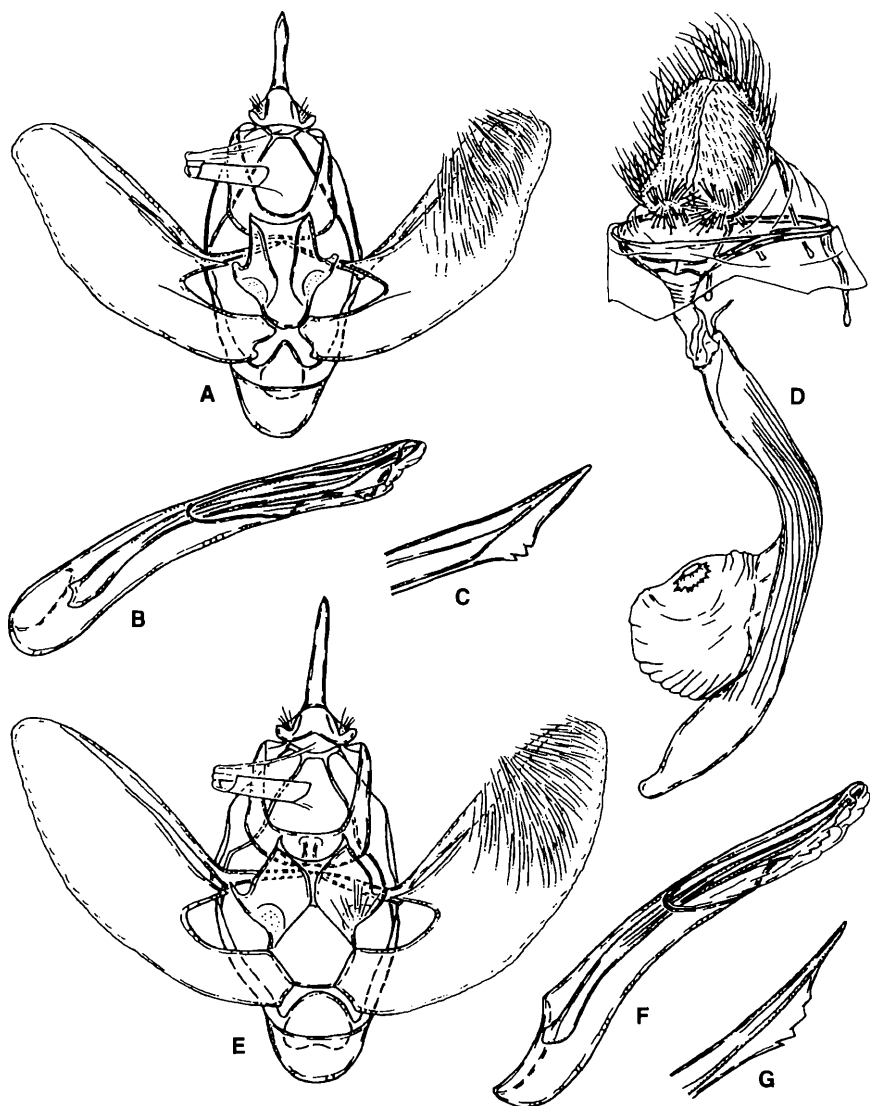


Fig. 2: A–D *Ramitia kuhitangiensis* spec. nov., holotype; E–G *Ramitia obliquelineata* VIIDALEPP, Tadzhikistan, Darvaz Mts., 8 km S Leningradskii, 23.IV.1987 (TSHISTJAKOV). A, E – male genitalia; B, F – aedeagus; C, G – apex of cornutus; D – female genitalia.

moderately broad, slightly sclerotized, covered with soft hair-like setae. Outer margin of valva slightly concave. Saccus large, rounded. Aedeagus long, its length approximately the same as the distance from the apex of the saccus to the apex of the uncus. Cornutus single, very long, slightly arched, needle-shaped with a serrate lobe before the apex.

#### Female

Length of forewing 11.1–11.9 mm. In appearance it is similar to the male but differs by thinner antenna, and broader wings.

#### Female genitalia (fig. 2D)

Genital segment ring-like, very narrow, strongly sclerotized. Ostial area membranous, funnel-shaped. Ductus bursae short, membranous. Corpus bursae long, narrow, strongly sclerotized, its membranous sac-like extension on the dorsal side with a large asteroid signum. Ovipositor very short, anterior and posterior apophyses approximately equal in length, moderately long, strongly sclerotized. Anal papillae inflated, densely covered by hair-like setae, which are longest along the papillae base, forming there a ciliate corolla. Ventral margin of anal papillae with a brush of strong pin-like setae (floricornus).

#### Distribution

Turkmenistan, Kuhitang Mts.

#### Taxonomic notes

This species is very close to *Ramitia obliquelineata* VIIDALEPP, 1988 distributed more eastern, in the Gissar-Darvaz Ranges and West Pamir. But it differs by narrower wings, especially in the male, more waved transverse lines, larger discal spots and wings heavily dusted by dark-grey scales. The new species is distinguished from *R. obliquelineata* (figs. 2E–G) by its strongly narrower juxta, more narrow valva with concave outer margin, uncus narrowed at the middle, gnathos with flat (not convex) medial part, and the broader lobe of the cornutus. Because the original description of the female genitalia of *R. obliquelineata* is extremely short and we have no material at hand, it is impossible to compare it with the newly described species.

#### *Apochima diaphanaria diaphanaria* (PÜNGELER, 1900)

*Zamacra diaphanaria* PÜNGELER, 1903: 295, pl. VI, fig. 14.

*Apochima diaphanaria* PÜNGELER, 1900 [sic!]: VIIDALEPP et al., 1992: 126.

Material examined: 5 ♂♂: Turkmenistan, Central Koppehdagh, 15 km W Firusa, Dushak Mt., 2100 m, 5.IX.1988 (DUBATOLOV).

#### Taxonomic notes

This taxon was known until now by the two ♀♀ from Ashkhabad and North only, which had been collected in March and June. On the whole the male genitalia (figs. 3 A, B) corresponds to the ground plan of that of *Apochima flabellaria* HEEGER, 1838, the type species of this genus. But it differs greatly from the latter by its symmetrical uncus, the entire juxta, the presence of a dorsal process on the valva and a single long cornutus in the aedeagus. Besides the nominotypical taxon, the subspecies *A. d. rjabovi* (WEHRLI, 1936: 34, pl. II, figs. 2, 6.) had been described on 6 ♂♂ collected in August and October in East Turkey (Van) and

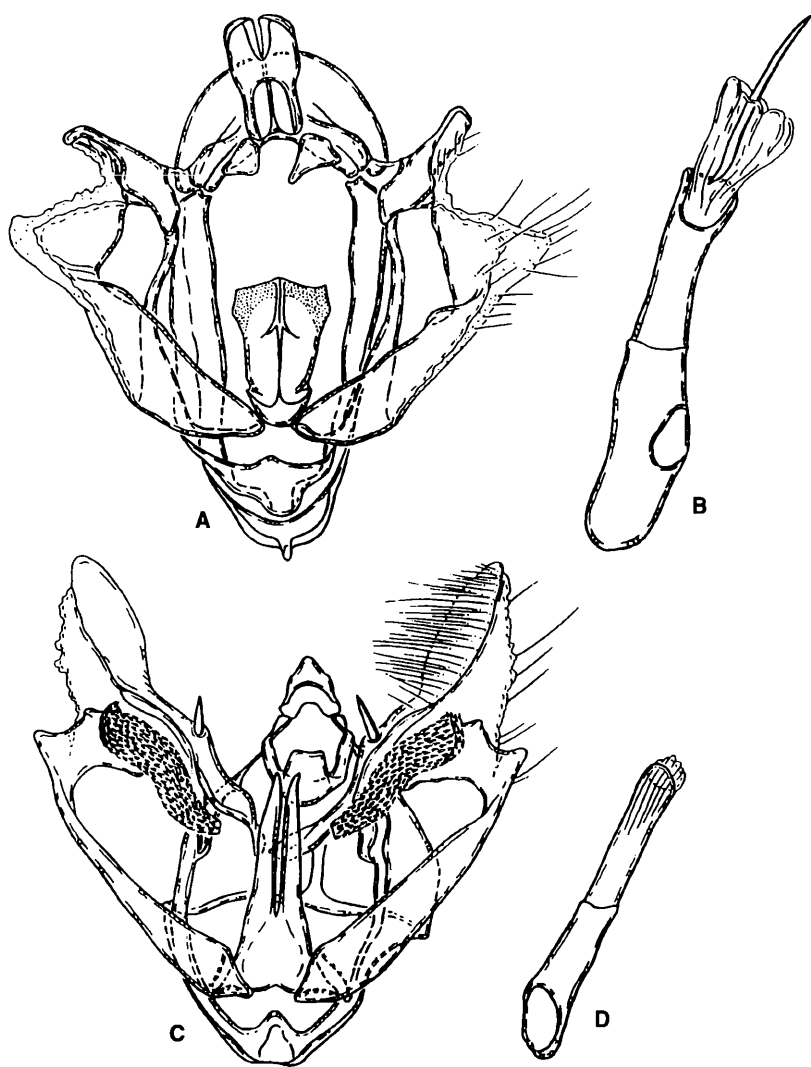


Fig. 3: A, B – *Apochima diaphanaria* (PÜNGELER), Turkmenistan, Central Kopetdagh, Dushak Mt.; C, D – *Cnestrognophos usbekistanica* VIIDALEPP, Turkmenistan, Firusa. A, C – male genitalia; B, D – aedeagus.

Transcaucasus.(Negram). Based on the published photographs (WEHRLI, 1936) the moths of this subspecies are very similar to the ♂♂ of the nominotypical form in appearance.

*Dysgnophos sibirata* (GUENÉE, 1857)

*Gnophos sibirata* GUENÉE, 1857: 300.

**Material**

4 ♂♂: Turkmenistan, Central Koppehdagh, 15 km W Firuza, Dushak Mt., 5.7 VII.1990 (DUBATOLOV).

This species is reported for the first time from Turkmenistan. It is distributed widely in the mountains of Central Asia. The new locality is the westernmost for this species. In appearance, male and female genitalia of the specimens from Kopetdagh are very similar to the figures of the genitalia and photographs of the moths from Tien-Shan and Pamir (VIIDALEPP & STSHETKIN, 1980; VIIDALEPP, 1988).

*Cnestrognophos saprjagaevi* VIIDALEPP, 1980

*Cnestrognophos saprjagaevi* VIIDALEPP, in VIIDALEPP & STSHETKIN, 1980: 22, pl. I, 1920, fig. 2, 15–18.

**Material**

4 ♂♂: Turkmenistan, Kuhitang Mts., Kara-Belenet, 11.V.1991 (DUBATOLOV); 1 ♂: Turkmenistan, Central Koppehdagh, 15 km W Firuza, 4.VI.1987 (BARKALOV); 7 ♂♂: ditto, 20.–22.V.1991 (DUBATOLOV); 2 ♂♂: Turkmenistan, West Koppehdagh, 5 km N Kara-Kala Sttl., 20., 21.IV.1991 (DUBATOLOV).

This species was hitherto known by the type specimen from Tadjikistan only. No differences in external appearance and genitalia could be found between the specimens from Kopetdagh and figures of the genitalia and photographs of the moths of this species from Pamir and Gissar ranges (VIIDALEPP & STSHETKIN, 1980; VIIDALEPP, 1988).

*Cnestrognophos usbekistanica* VIIDALEPP, 1988

*Cnestrognophos usbekistanica* VIIDALEPP, 1988: 175, pl. III, 4, 16, fig. 37, 1.

*Cnestrognophos usbekistanica*: VASILENKO, 1993: 120.

**Material**

131 ♂♂: Turkmenistan, Central Kopetdagh, Firuza, 20.–26.X.1990 (DUBATOLOV) (in the material previously published by VASILENKO, 1993, the ♀♀ are misidentified).

This species had been recorded for Turkmenistan by VASILENKO (1993) (in the paper of VIIDALEPP et al. (1992: fig. 6B) the figure of the male genitalia of this species was placed without any comments in the text). However, the first identification of the specimens from Kopetdagh was doubtful, because their juxta was almost symmetrical, whereas on the published figures of the male genitalia from the type series of *C. usbekistanica* the juxta had a broad left dorsal

process and a very narrow right one, the apices of both processes strongly curved to the left (VIIDALEPP, 1988: fig. 37, 1). During a new examination of the genitalia of the Kopetdag specimens it was found that the dorsal processes of the juxta gain the described shape as a result of a deformation against the aedeagus when strong pressure on the preparation via the cover glass is applied. Because of the importance of the juxta shape for the identification of species from the genus *Cnestrognophos* WEHRLI, 1951, the male genitalia of *C. usbekistanica* are illustrated again (figs. 3C, D).

*Zystrognophos nimbata* (ALPHÉRAKY, 1888)

*Gnophos nimbata* ALPHÉRAKY, 1888: 68.

#### Material

13 ♂♂, 7 ♀♀: Turkmenistan, Kuhitang Mts., Dzhejlau Plateau, 2100 m, 13., 14.VII.1991 (DUBATOLOV).

This species is reported for the first time from Turkmenistan. The new locality is the westernmost for this species, hitherto known from South Kazakhstan, Kirghizstan, Tadjikistan and North India. In external appearance specimens from Kuhitang Mts. are similar to those of the North Tien-Shan subspecies *Z. nimbata alexandra* WEHRLI, 1953.

*Dyscia leucogrammaria* (PÜNGELER, 1900)

*Scodion leucogrammaria* PÜNGELER, 1900: 121, pl. 4, fig. 6.

#### Material

1 ♀: Turkmenistan, Central Kopetdag, Myurzedagh, 7.VI.1986 (DUBATOLOV); 1 ♀: ditto, Vannovskii, 13.VI.1986 (DUBATOLOV); 7 ♂♂: ditto, 15 km W Firuza, Dushak Mt., 1.–12.V.1987 (DUBATOLOV); 1 ♂: ditto, 22.V.1991 (DUBATOLOV).

This species is a little known endemic of the Kopetdag. Its male and female genitalia are figured for the first time (figs. 4A–C). All the moths were collected in the forest mountain belt at a height of about 2000 m.

*Nychiodes antiquaria* STAUDINGER, 1892

*Nychiodes lividaria* var. *antiquaria* STAUDINGER, 1892: 172.

#### Material

2 ♂♂, 2 ♀♀: Turkmenistan, Kuhitang Mts., Suv-Doker Canyon, 18.V.1991 (DUBATOLOV, RONKAY, HREBLAY).

This species is reported for the first time from Turkmenistan. It is widely distributed in the Tien-Shan and the Pamirs. The new locality is most south-west known for this species.

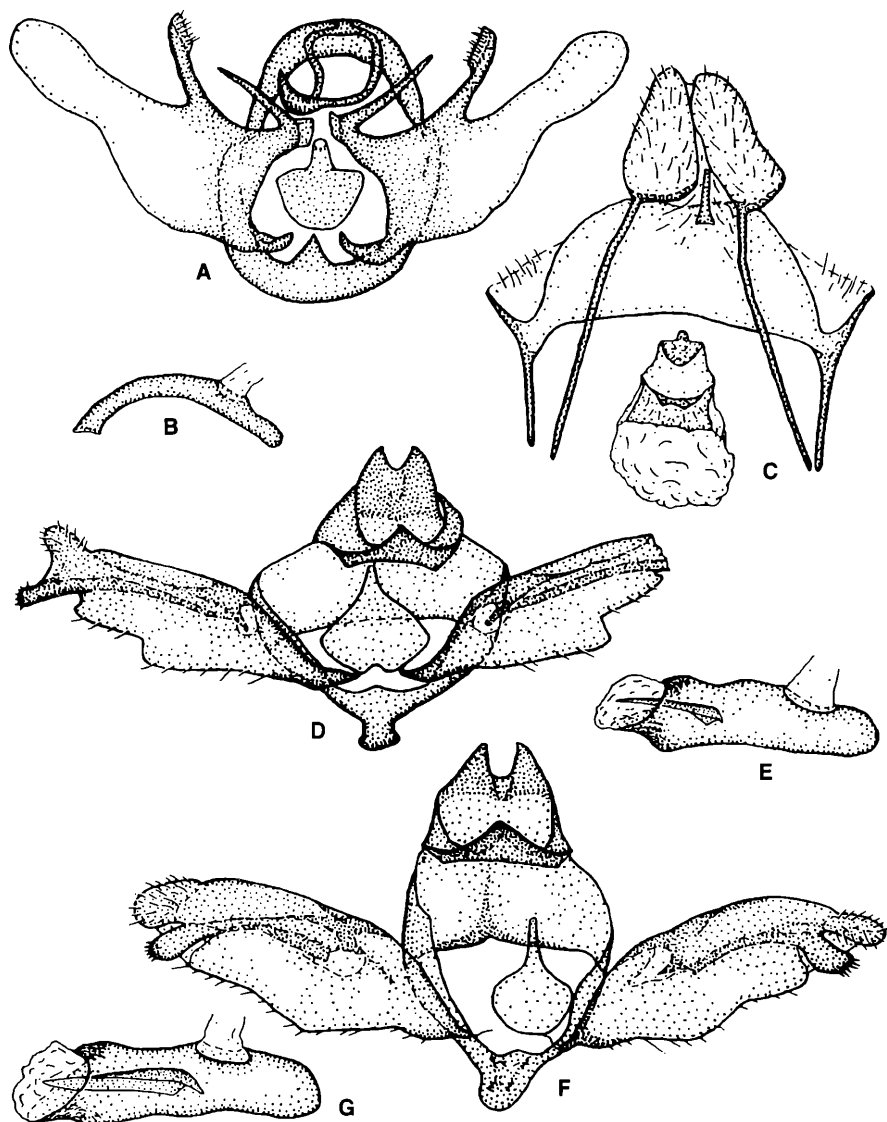


Fig. 4: A–C – *Dyscia leucogrammaria* (PÜNGELER), Turkmenistan, Central Kopetdagh; D, E – *Eumannia neoppositaria* spec. nov., holotype; F, G – *Eumannia oppositaria* (MANN), Turkey, Prov. Ankara, Dutozu Koyu 1300 m, 32°E 40°13'N, 25.VII.1988 (GYULAY, HREBLAY, RONKAY & RONKAY). A, D, F – male genitalia; B, E, G – aedeagus; C – female genitalia.

*Habermannia oxygonaria* (PÜNGELER, 1899).

*Tephronia oxygonaria* PÜNGELER, 1899: 297; pl. IX, fig. 16.

#### Material

6 ♂♂: Turkmenistan, Kuhitang Mts., near Bazar-Depe Sttl., Khelpe-baba Mound, 11.V.1991 (DUBATOLOV, ZINCHENKO).

This species has been known for Turkmenistan only from the original description. It is widely distributed in valleys and the forest mountain belt in Middle Asia, but rare.

### *Eumannia neoppositaria* spec. nov.

#### Material

Holotype ♂: Turkmenistan, Central Kopetdagh, 15 km W Firuza, Dushak Mt., 2000 m, 11.VIII.1990 (DUBATOLOV).

#### Male

Length of forewing 8.5 mm. Antenna bipectinate. Head, thorax and abdomen light-grey. Groundcolour of wings grey with silvery lustre, forewing with rarely disseminated brown scales. Forewing with five transverse lines: basal, antemedial, medial, postmedial and subterminal. Antemedial and postmedial lines distinct, thin, the first of them strongly arched and curved twice as sharp angle outwards on the veins Cu and A2, the second line almost straight, serrate on the veins. Basal, medial and subterminal lines broad, vague. Discal spots stroke-like, brown. Fringe silvery grey, with brownish spots at the ends of the veins. Hindwing with postmedial line only.

#### Male genitalia (figs. 4D, E)

Uncus broad, lobe-like, moderately narrowed towards apex, with a wide rounded cut on the apex. Gnathos broad, with a short triangular, sharp medial process. Valva narrow, long, apex of cucullus slightly sclerotized, narrow, slightly wider than apex of harpa. Harpa strongly sclerotized, narrow, long, its apex located more distal than the apex of the cucullus. Ventral margin of the valva with two deep cuts: one near the middle and another before the harpa. Juxta broad, triangular, with a short distal process. Saccus short, with lateral extensions on the apex. Aedeagus short, thick, with a single, moderately long cornutus.

#### Female

Unknown.

#### Taxonomic notes

In appearance this species is similar to *Eumannia oppositaria* (MANN, 1864), the type species of the genus *Eumannia* FLETCHER, 1979, but it can be separated by the wider forewing which is more extended towards the apex, the light colour having almost no brown and the more distinct pattern. In the male genitalia this species is close to *E. oppositaria*<sup>1</sup> (figs. 4F, G), but

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1 In the Siberian Zoological Museum collection are 2 ♂♂ of *Eumannia oppositaria* collected in Central Turkey. The forewings of both of them are dark, greyish-brown in colour, with distinct antemedial and postmedial lines only. By these characters the specimens correspond to the

it differs well by the narrower and longer harpa, the hollowed ventral margin of valva, the short distal process of the juxta and the thinner and shorter cornutus. The new species is distinguished from all the West-Asian species of this genus (HAUSMANN, 1995) by the dilation on the apex of the saccus.

#### Distribution

Turkmenistan, Kopetdagh. Probably, two light-grey North Iranian ♀♀ (Elburs range, Tach i Suleiman, 1900–2200 m) from the collection of PFEIFFER and FORSTER (WEHRLI, 1953) belong to this species, too.

*Alcis nobilitaria* (STAUDINGER, 1892)

*Boarmia nobilitaria* STAUDINGER, 1892: 173.

#### Material

12 ♂♂, 3 ♀♀: Turkmenistan, Kuhitang Mts., Dzhejljau Plateau, 2100 m, 14.VII.1991 (DUBATOLOV).

It is reported for the first time from Turkmenistan. The new locality is the westernmost of this species.

*Biston betularius* (LINNAEUS, 1758)

*Phalaena betularia* LINNAEUS, 1758: 521.

#### Material

1 ♀: Turkmenistan, West Kopetdagh, Kara-Kala, V.1947 (collector unknown).

This species is reported for the first time from Turkmenistan. A holarctic forest species, hitherto known in Middle Asia from the Tien-Shan only (VIIDALEPP, 1988).

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original description of *E. oppositaria obscuraria* (STAUDINGER, 1892). But no differences were found between genitalia of the examined specimen (fig. 4F, G) and the figure of the genitalia of the nominate form *E. oppositaria oppositaria* (HAUSMANN, 1995, fig. 3).

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Band/Volume: [28](#)

Autor(en)/Author(s): Beljaev Evgeny A., Vasilenko Sergej S.

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