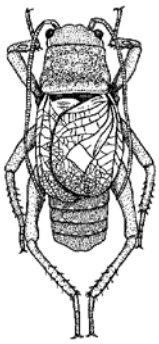

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REVIEW OF THE GENUS *ACANTHOPHILA* HEINEMANN, 1870 (LEPIDOPTERA, GELECHIIDAE)

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Review of the genus *Acanthophila* is given. Key to the species is proposed on the base of male genitalia. Six new species are described from south of Russian Far East: *Acanthophila* (*A.*) *lucistrialella* **sp. n.**, *A.* (*A.*) *magnimaculata* **sp. n.**, *A.* (*A.*) *pusilella* **sp. n.**, *A.* (*A.*) *silvania* **sp. n.**, *A.* (*Mimomeris*) *vixidistinctella* **sp. n.**, *A. imperviella* **sp. n.** New combinations with generic name are proposed for four species: *A.* (*A.*) *bimaculata* (Liu et Qian, 1994), **comb. n.**, *A.* (*M.*) *obscura* (Li et Zheng, 1997), **comb. n.**, *A. angustiptera* (Li et Zheng, 1997), **comb. n.**, *A. nyingchiensis* (Li et Zheng, 1996), **comb. n.** One species, *A.* (*M.*) *latipennella* (Rebel, 1937), is recorded from Primorskii krai for the first time.

KEY WORDS: Acanthophila, Gelechiidae, Far East, taxonomy, new species.

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Дан обзор рода *Acanthophila*. Предложены определительные таблицы видов по гениталиям самцов. С юга Дальнего Востока описано шесть новых видов: *Acanthophila* (*A.*) *lucistrialella* **sp. n.**, *A.* (*A.*) *magnimaculata* **sp. n.**, *A.* (*A.*) *pusilella* **sp. n.**, *A.* (*A.*) *silvania* **sp. n.**, *A.* (*Mimomeris*) *vixidistinctella* **sp. n.**, *A. imperviella* **sp. n.** Дано новое сочетание с родовым названием для 4 видов: *A.* (*A.*) *bimaculata* (Liu et Qian, 1994), **comb. n.**, *A.* (*M.*) *obscura* (Li et Zheng, 1997),

comb. n., *A. angustiptera* (Li et Zheng, 1997), **comb. n.**, *A. nyingchiensis* (Li et Zheng, 1996), **comb. n.** Впервые для Приморского края указывается *A.* (*M.*) *latipennella* (Rebel, 1937).

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INTRODUCTION

The present paper is devoted to the genus *Acanthophila* Heinemann, 1870, which is remaining incompletely studied to present time. Its position within family Gelechiidae was treated differently. This genus more often was included into group of genera related to *Anacampsis* Curtis, 1827 (Meyrick, 1925; Gaede, 1937; Kloet et Hincks, 1945; Karsholt, 1985; Vives, 1985), or was considered within group of genera related to *Dichomeris* Hübner, 1818 (Ivinskis & Piskunov, 1976; Piskunov, 1981; Povolný, 1978, 1980; Ivinskis et al, 1984). The opinion about *Acanthophila* as separate genus was brought into challenge after publication of R. Hodges (1986), where its generic name was treated as junior synonym of *Dichomeris* Hübner. In succeeding publications the authors split into like-minded ones (Park & Hodges, 1995; Karsholt & Riedl, 1996; Li & Zheng, 1996; Li et al., 1997; Li, 2002), and dissentient ones (Ponomarenko, 1992, 1997a, 1997b, 1998, 1999; Elsner et al, 1999; Omelko, 1999a, 1999b).

The genus *Acanthophila* was established on the base of *Gelechia alacella* Zeller, 1839 as monotypic and remains such for a long time until *A. piceana* Šulcs, 1968 (junior synonym of *Aristotelia* (*Xystophora*) *latipennella* Rebel, 1937) was described. In review of this genus it was proposed to divide the *Acanthophila* into two subgenera (Povolný, 1980). The present investigations confirm that decision. Recently genus *Acanthophila* was replenished by new Asiatic species (Ponomarenko, 1998). The examination of the additional materials allowed to find new species closely related to type species of the genus and revise the taxonomic position of some newly described species. As result, *Acanthophila* is almost threefold in volume, which confirms rather insufficient knowledge about this genus. Thus, none species was reported from Korea and Japan to the present time.

In the paper all species included into the genus *Acanthophila* are listed. A key to the species based on the male genitalia is proposed. The terminology of the genitalia mainly follows Klots (1970) with subsequent additions (Ponomarenko, 1992). The holotypes and part of paratypes of new species are deposed in Institute of Biology and Soil Sciences (Russia, Vladivostok), the rest paratypes are in the entomological collection of Gornotaezhnaya Station (Russia, Primorskii krai).

The present research was supported by the grants of Far East Branch of the Russian Academy of Sciences N 03-3-A-06-018 «Terrestrial arthropods of rare vegetative communities in Primorskii krai» and N 03-1-0-06-028 «Estimation of state and dynamics of most important components of forest ecosystems in East Asia».

Genus *Acanthophila* Heinemann, 1870

Acanthophila Heinemann, 1870: 320.
Acantophila Osthelder, 1951: 151, misspelling.
Dichomeris: Hodges, 1986: 10 (part.).

Type species: *Gelechia alacella* Zeller, 1839: 199, by monotypy.

DIAGNOSIS. Majority of the species included into *Acanthophila* was originally described in the genus *Dichomeris*. Genus *Acanthophila* is morphologically compact group well differing from *D. ligulella* Hübner, the type species of *Dichomeris*, by follow combination of characters. Habitually moths remarkable for their labial palpi without scaletuft on ventral margin of second segment; lanceolate forewings with more or less distinct 3-4 sports at the middle and end of cell, and along anal fold, also with indistinct light fascia in distal part of wing, sometimes only with costal light stroke. Male genitalia with parategnimal sclerites stretched anteriorly, usually backing androconial tuft of hair-like and with rounded apex modified scales; sacculus long, curved dorsally; aedeagus with several cornuti, narrow, long, ankylozed with anellus and vinculum. Female genitalia: antrum relatively narrow, with longitudinal plicated sclerotization stretched from ostium to corpus bursae; the latter often with setaceous zone.

HOST PLANT. Lichenes, Musci, coniferous trees from families Pinaceae and Taxodiaceae.

REMARKS. Genus includes 2 subgenera and 17 species from Europe, Mediterranean region, Middle East, Iran, Georgia, Russia (European part, North Caucasus, Primorskii krai), and China. The key to the species proposed below is compiled on the base of male genitalia. The species known by female only don't included in key.

Key to the species by males

1. Parategminal sclerites long, band-like and S-shaped (subgenus *Acanthophila*) . 2

– Parategminal sclerites shorter, curved at the angle (subgenus *Mimomeris*) . . . 12
2. Vinculum band-like, pieceless 3
– Vinculum divided into two arms 9
3. Sacullus with lobe on ventral margin 4
– Sacullus without lobe on ventral margin 5
4. Sacullus with lobe on ventral margin at the base. Aedeagus with single cornutus (Figs 10, 11) . . . . ***A.* (*A.*) *qinlingensis***
– Sacullus with lobe on ventral margin at the middle. Aedeagus with 3 cornuti: one right, long and needle-like, one left hook-like and one middle claw-like (Figs 12, 13) . . . . ***A.* (*A.*) *beljaevi***
5. Posterior margin of vinculum with wide and long ventral plate bilobed distally. Anellus with heavily sclerotized arched process placed at left side of aedeagus. Aedeagus with two curved dorsally cornuti (Figs 7, 8) . . . . ***A.* (*A.*) *magnimaculata* sp. n.**

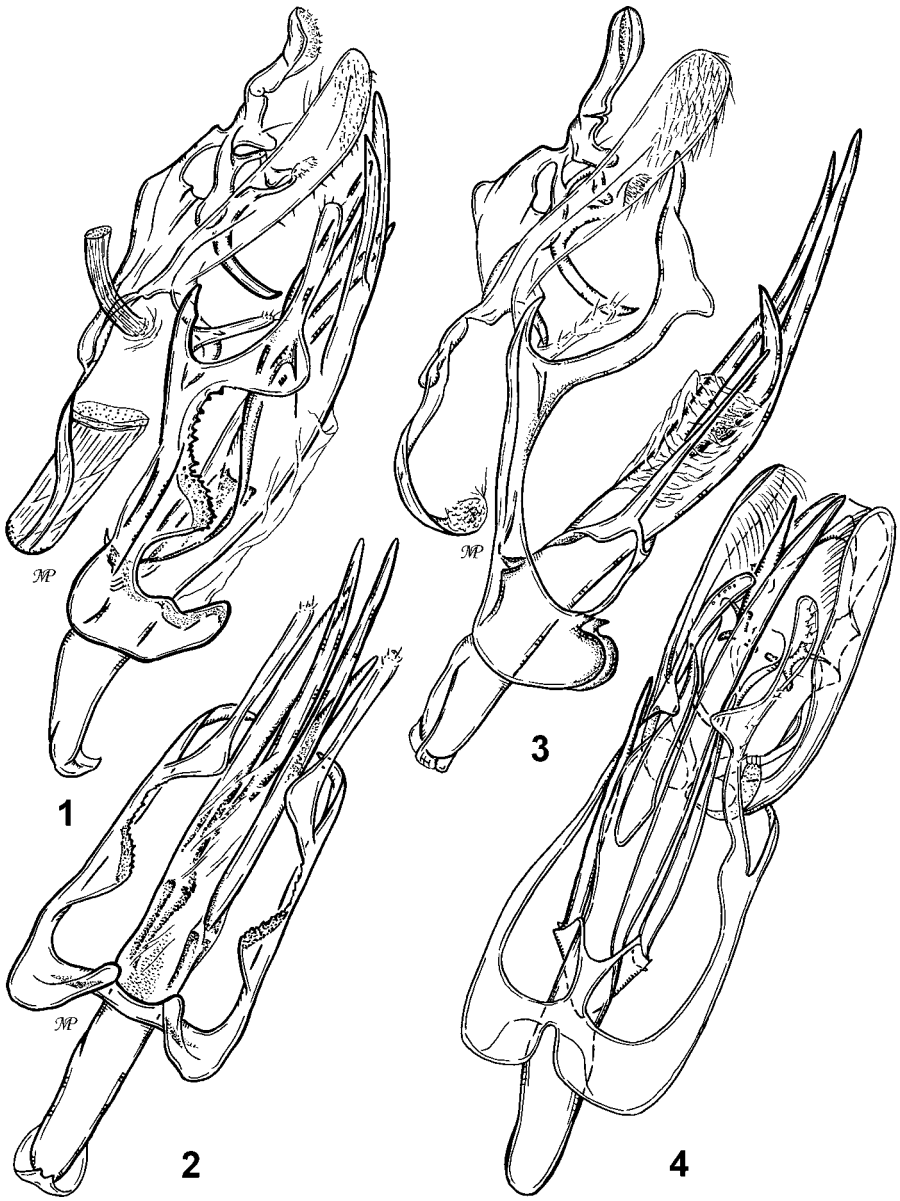
− Posterior margin of vinculum with narrow pieceless plate 6
6. Aedeagus with two cornuti (Fig. 5) . . . . . ***A.* (*A.*) *alacella***
− Aedeagus with more than two cornuti 7
7. Aedeagus with four cornuti 8
− Aedeagus with five cornuti: three right cornuti stretching from common base, one lateral left cornutus slightly sinuous, and one median cornutus twice shorter than latter (Figs 16, 17) . . . . . ***A.* (*A.*) *silvania* sp. n.**
8. Three cornuti of aedeagus with apices on a same level and one cornuti shorter (Figs 18, 19) . . . . . ***A.* (*A.*) *silvestrella***
− Two cornuti of aedeagus with apices on a same level and two other cornuti shorter (Fig. 22) . . . . . ***A.* (*A.*) *bimaculata***
9. Anellus with two lateral processes 10
− Anellus with one long, arched process placed at right side of aedeagus. Aedeagus with two long cornuti (Figs 20, 21) . . . . . ***A.* (*A.*) *kuznetzovi***
10. Vinculum without pair of lateral processes on posterior margin. Aedeagus with three cornuti 11
− Vinculum with pair of lateral processes on posterior margin. Aedeagus with four cornuti: two lateral more or less curved ventrally and two medial curved dorsally (Figs 1, 2) . . . . . ***A.* (*A.*) *pusilella* sp. n.**
11. Anellus more or less symmetric, with two straight wedge-shaped processes placed astride aedeagus. Left ventral cornutus of aedeagus thick, claw-like; the apices of right and left dorsal cornuti are level with one another (Figs 3, 4) . . . . . ***A.* (*A.*) *lucistrialella* sp. n.**
− Anellus asymmetric, with two short, horn-like processes placed astride aedeagus. Right cornutus of aedeagus thin and almost straight; the apex of dorsal cornutus placed at the half of right cornutus length (Figs 14, 15) . . . . . ***A.* (*A.*) *liui***
12. Ventral lobe of vinculum wide and long, deeply hollowed distally and with two pointed processes. Anellus without processes. Aedeagus with three cornuti: one right straight needle-like, and two short hook-like cornuti on its ventral and dorsal sides (Figs 25, 26) . . . . . ***A.* (*M.*) *vixidistinctella* sp. n.**
− Ventral lobe of vinculum finger-like. Anellus with two crescent processes entwined aedeagus. Aedeagus with single S-shaped cornutus 13
13. Cornutus of aedeagus thick and shorter than half of total aedeagus length (Figs 23, 24) . . . . . ***A.* (*M.*) *latipennella***
− Cornutus of aedeagus thin and about 2/3 of total aedeagus length (Fig. 9) . . . . . ***A.* (*M.*) *obscura***

Subgenus *Acanthophila* Heinemann, 1870

Acanthophila (as subgenus of *Acanthophila*): Povolný, 1980: 322.

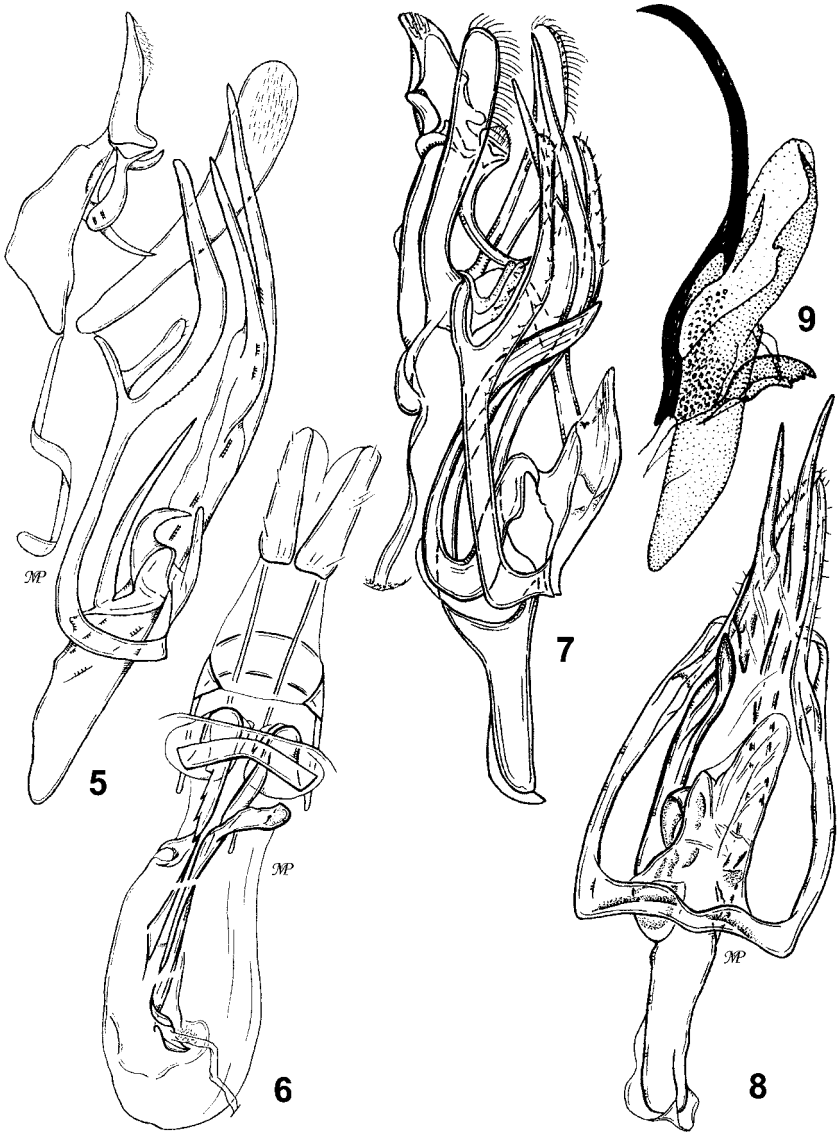
Type species: *Gelechia alacella* Zeller, 1839, by monotypy.

DIAGNOSIS: Parategminal sclerites elongate, band-like.



Figs 1-4. Male genitalia. 1, 2) *Acanthophila pusilella* sp. n.; 3, 4) *A. lucistrialella* sp. n. 1, 3) lateral aspect; 2) vinculum, anellus and aedeagus, ventral aspect; 4) ventral aspect.

SPECIES INCLUDED. There are 11 species from Europe, Russia (European part, North Caucasus, Far East), Georgia, Mediterranean region, Iran, China: *A.* (*A.*) *alacella* (Zeller, 1839), *A.* (*A.*) *beljaevi* Ponomarenko, 1998, *A.* (*A.*) *bimaculata* (Liu



Figs 5-9. Genitalia. 5, 6) *Acanthophila alacella*; 7, 8) *A. magnimaculata* sp. n.; 9) *A. obscura.* 5, 7) male genitalia, lateral aspect; 6) female genitalia; 8) vinculum, anellus and aedeagus, ventral aspect; 9) aedeagus. 9) after Li et al., 1997.

et Qian, 1994), comb. n., *A.* (*A.*) *kuznetzovi* Ponomarenko, 1998, *A.* (*A.*) *liui* (Li et Zheng, 1996), *A.* (*A.*) *lucistrialella* sp. n., *A.* (*A.*) *magnimaculata* sp. n., *A.* (*A.*) *pusilella* sp. n., *A.* (*A.*) *qinlingensis* (Li et Zheng, 1996), *A.* (*A.*) *silvestrella* Ponomarenko, 1998, *A.* (*A.*) *silvania* sp. n.

***Acanthophila* (*A.*) *alacella* (Zeller, 1839)**
Figs 5, 6

Gelechia alacella Zeller, 1839: 199 (type locality: Europe).
Acanthophila alacella: Heinemann, 1870: 320; Meyrick, 1925: 124; Gaede, 1937: 360; Piskunov, 1981: 732, fig. 663, *5*; Karsholt et al., 1985: 66; Ponomarenko, 1997a: 11; Elsner et al., 1999: 12, 13, 55, 56; taf. 27, *338*; taf. 39, *338*; taf. 81, *338*.

MATERIAL. Sweden: 1 ♂, Seberneby, 28.VII 1975 (Karsholt); Greece: 1 ♀, Olymp Karia, 18.VII 1974 (Arenberger); Georgia: 3 ♂, 1 ♀, Batumi, 11.VIII 1976; 10, 25.VII 1977 (Zagulyaev).
DISTRIBUTION. Europe; Russia (European part, North Caucasus); Georgia; Mediterranean region; Iran.
HOST PLANTS. Lichenes, Musci.
REMARKS. Full bibliography see in Gaede (1937).

***Acanthophila* (*A.*) *beljaevi* Ponomarenko, 1998**
Figs 12, 13, 31

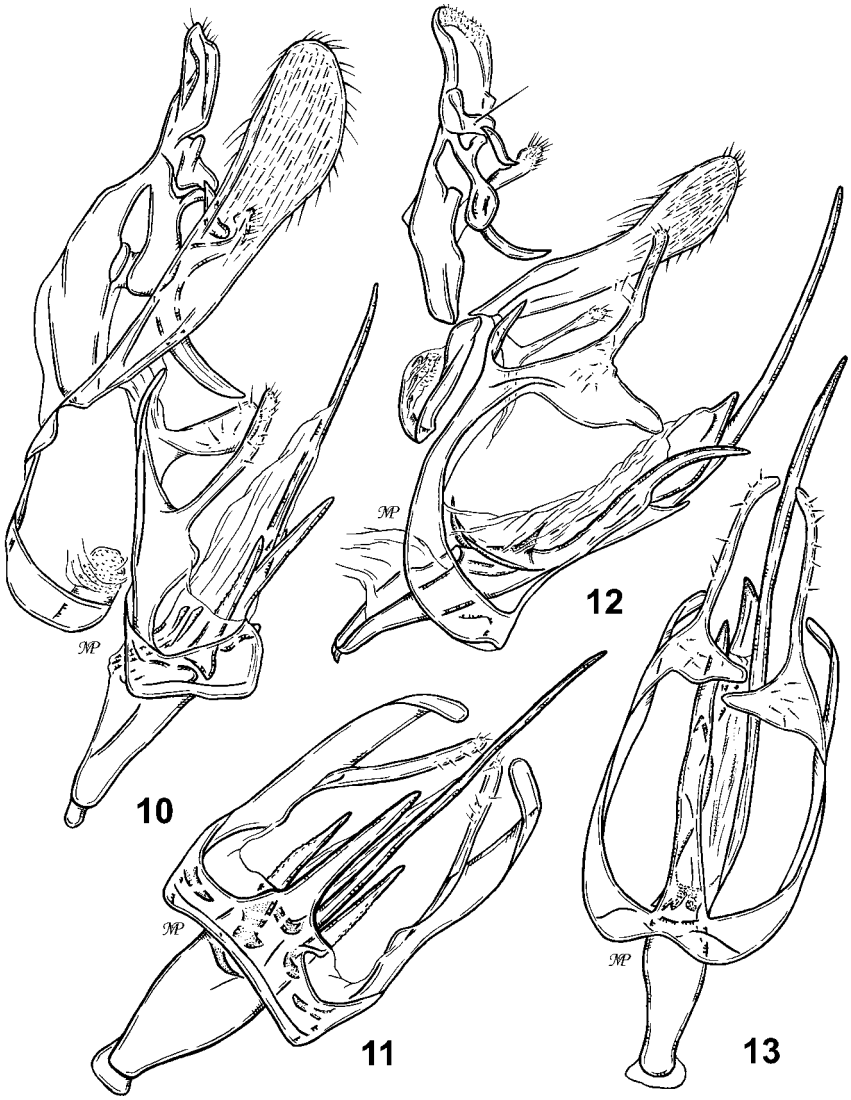
Acanthophila beljaevi Ponomarenko, 1998: 8, figs 13, 14, 17 (type locality: Russia, Primorskii krai); 1999: 215, figs 120, *3*, *4*; 121, *2*.

MATERIAL. Holotype - ♂, Russia, Primorskii krai, 25 km S Vladivostok, Rikord I., 13.VIII 1997 (Beljaev). Paratypes - 3 ♀, same locality, 11.VIII 1997 (Beljaev). Russia, Primorskii krai: 3 ♀, Khasanskii distr., Ryazanovka, 18, 19.VIII 1992; 6.IX 1998; 2 ♀, Ussuriiskii distr., 20 km SW Krounovka, 9.VIII 1999; 2 ♂, 12 km SW Partizansk, Lozovyi Range, 8.VIII 1995; 3.VIII 2002 (Ponomarenko).
DISTRIBUTION. Russia (south part of Primorskii krai).

***Acanthophila* (*A.*) *bimaculata* (Liu et Qian, 1994), comb. n.**
Fig. 22

Dichomeris bimaculatus Liu & Qian, 1994: 297, figs 1-13 (type locality: China, Fujian); Li & Zheng, 1996: 234.
Dichomeris bimaculata: Ponomarenko, 1997a: 16; Li, 2002: 335, figs 384, 385; pl. 24, fig. 188.

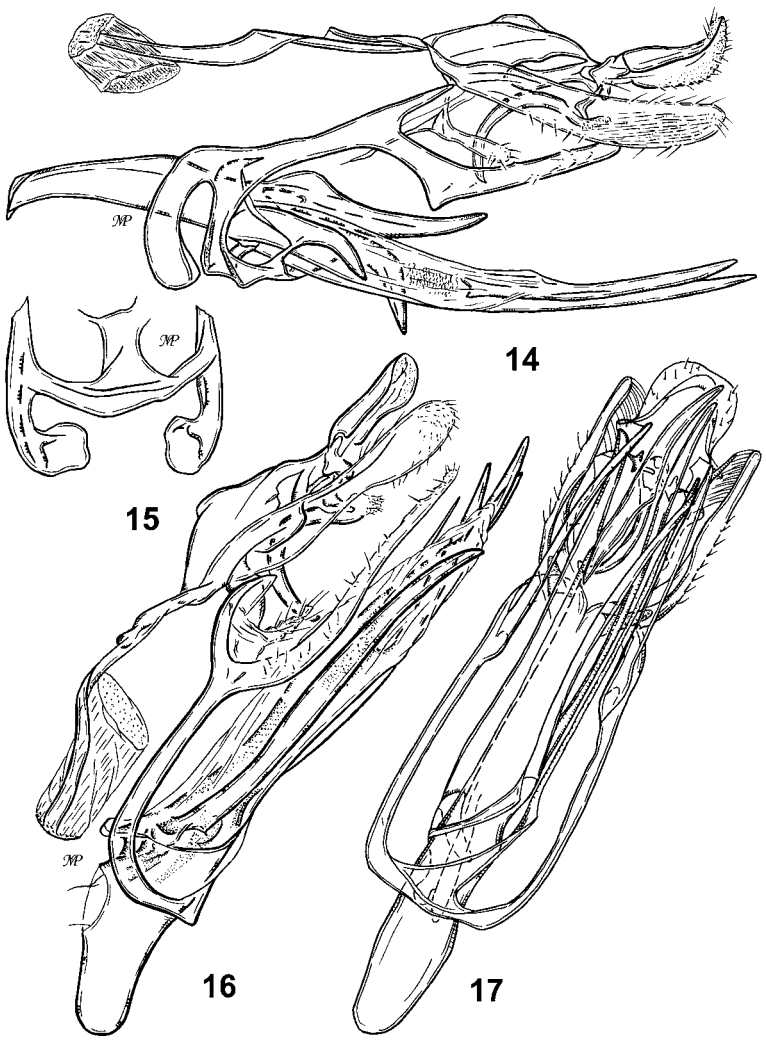
DISTRIBUTION. China (Shaanxi, Henan, Sichuan, Hubei, Anhui, Guizhou, Hunan, Jiangxi, Zhejiang, Fujian, Guangxi, Guangdong).
HOST PLANT. *Cunninghamia lanceolata* (fam. Taxodiaceae).
REMARKS. The species is transferred into genus *Acanthophila*, because it is very similar to *A.* (*A.*) *silvestrella* by vinculum with long narrow process on posterior margin and aedeagus with four cornuti in male genitalia and generally has genitalia of both sexes typical for the genus.



Figs 10-13. Male genitalia. 10, 11) *Acanthophila qinlingensis*; 12, 13) *A. beljaevi.* 10, 12) lateral aspect; 11, 13) vinculum, anellus and aedeagus, ventral aspect.

***Acanthophila* (*A.*) *kuznetzovi* Ponomarenko, 1998**
Figs 20, 21, 36

Acanthophila kuznetzovi Ponomarenko, 1998: 6, figs 9, 10, 18 (type locality: Russia, Primorskii krai); 1999: 216, figs 119, *5*, *6*; 121, *4.*



Figs 14-17. Male genitalia. 14, 15) *Acanthophila liui*; 16, 17) *A. silvania* sp. n. 14, 16) lateral aspect; 15) vinculum, ventral aspect; 17) ventral aspect.

MATERIAL. Holotype - ♂, Russia, Primorskii krai, 19 km NW Partizansk, Brovnichi, Tigrovaya river, 27.VII 1993 (Beljaev). Paratypes - 2 ♂, same locality, 27, 28.VII 1993 (Beljaev); 3 ♂, 1 ♀, 20 km SE Ussuriisk, Gornotaezhnoe, 20, 26.VII, 2.VIII 1994 (Ponomarenko); 1 ♂, Khorolskii distr., 7 km N Sivakovka (Marusik). Russia, Primorskii krai: 1 ♂, 20 km SE Ussuriisk, Gornotaezhnoe, 23. VI 1989; 2 ♂, Ussuriiskii distr., 20 km SW Krounovka, 9, 11.VIII 1999; 1 ♂, 36 km NE Yakovlevka, Ussuri river, 15.VII 2002 (Ponomarenko).

DISTRIBUTION. Russia (south part of Primorskii krai).

***Acanthophila* (*A.*) *liui* (Li et Zheng, 1996)**
Figs 14, 15, 28

Dichomeris liui Li & Zheng, 1996: 234, figs 19, 20 (type locality: China, Jiangxi); Li, 2002: 357, fig. 408; pl. 26, fig. 204.
Acanthophila liui: Ponomarenko, 1997a: 12; 1999: 216, figs 119, *1*, *2*; 121, *1*.

MATERIAL. Russia, Primorskii krai: 1 ♂, Pogranichnyi distr., Barabash-Levada, 25.VII 1989; 1 ♀, 20 km SE Ussuriisk, Gornotaezhnoe, 20.VII 1994; 5 ♂, 2 ♀, Khasanskii distr., Ryazanovka, 25-29.VII, 15.VIII 1997; 2 ♂, 12 km SW Partizansk, Lozovyi Range, 2.VIII 2002; 2 ♂, 2 ♀, 14 km NW Partizansk, 4,5.VIII 2002 (Ponomarenko); 3 ♂, 3 ♀, 25 km S Vladivostok, Rikord I., 10-13, 16.VIII 1997 (Beljaev); 1 ♂, Khasanskii distr., 3 km SE Andreevka, 5.VIII 1985 (Sinev).
DISTRIBUTION. Russia (Primorskii krai); China (Anhui, Jiangxi).

***Acanthophila* (*A.*) *lucistrialella* Ponomarenko et Omelko, sp. n.**
Figs 3, 4, 29

MATERIAL. Holotype – ♂ (gen. praep. N 117 Euparal, M. Ponomarenko), Russia, Primorskii krai, 20 km SE Ussuriisk, Gornotaezhnoe, 2.VII 1994 (Ponomarenko). Paratypes – 20 ♂, 4 ♀, same locality, 13.VIII 1980; 24.VI-19.VII, 11.VIII 1982; 4.VII 1984; 11.VII 1988 (Omelko); 2 ♂, 1 ♀ (gen. praep. N 118 Euparal, M. Ponomarenko), same locality, 15, 21.VII 1990 (Ponomarenko).
DESCRIPTION. Wingspread 11-12 mm. Head dark grey with light grey frons. Ocelli absent. Proboscis covered with dark grey scales. Scape of antenna and flagella dark grey. Labial palpi dark grey on the outer side, only top of third segment whitish; second segment light grey on the inner side; third segment with light grey scales on the inner side before top. Thorax and tegula dark grey. Fore, mid and hind legs dark grey on the outer side; hind tibia lighter because of alternated dark grey and light grey scales; tarsus with a light ring at apex of each segment. Forewing dark grey with only light grey costal stroke at 3/4 of wing length. Fringe dark grey. Hindwing and fringe dark grey.
MALE GENITALIA (Figs 3, 4). Uncus with rounded apex, fused with tegumen. Lateral sclerites, backing androconial tufts, S-shaped and almost equal to uncus+tegumen in length. Gnathos gently arched. Cucullus weakly sclerotized, dilated in distal triens. Valvella membranous, finger-like, and 3.2 times shorter than cucullus. Saculli curved dorsally and sinuous in distal part, bearing triangular lobe at the middle of ventral margin. Vinculum consists of two arms strongly dilated ventrally, both joined with aedeagus by ventral plate. The latter joined with bridle-like anellus entwined aedeagus and bearing two lateral wedge-shaped process, which about 1/3 of aedeagus length. Aedeagus with one right, long, relatively thick cornutus, about 2/3 of aedeagus length; and two left cornuti, arising from common base and curved dorsally, one of them thick, claw-like, another one thinner, and about half of aedeagus length.

FEMALE GENITALIA (Fig. 29). Ovipositor moderate, membrane between IX and VIII segments 1.5 times shorter than length of papillae anales. Papillae anales slightly sclerotized laterally. Apophyses anteriores two times shorter than apophyses posteriores. VIII segment with membranous ventral part and deep cuneate cut on the anterior margin. Antrum wide, with cupped sclerites laterally. Ductus bursae and corpus bursae with sclerotization reaching towards the bottom of bursae and longitudinal membranous sack ventrally. Main part of the sclerotization represented by long longitudinal gutter. Corpus bursae with right sclerotized inflation, extensive right latero-ventral setaceous zone and small left membranous protrusion on the bottom.

DIAGNOSIS. New species is similar to *A. liui* in male genitalia. *A. lucistrialella* sp. n. can be distinguishable from related species by wider ventral part of vinculum, by straight lateral processes of anellus and left claw-like cornutus of aedeagus.

DISTRIBUTION. Russia (south part of the Primorskii krai).

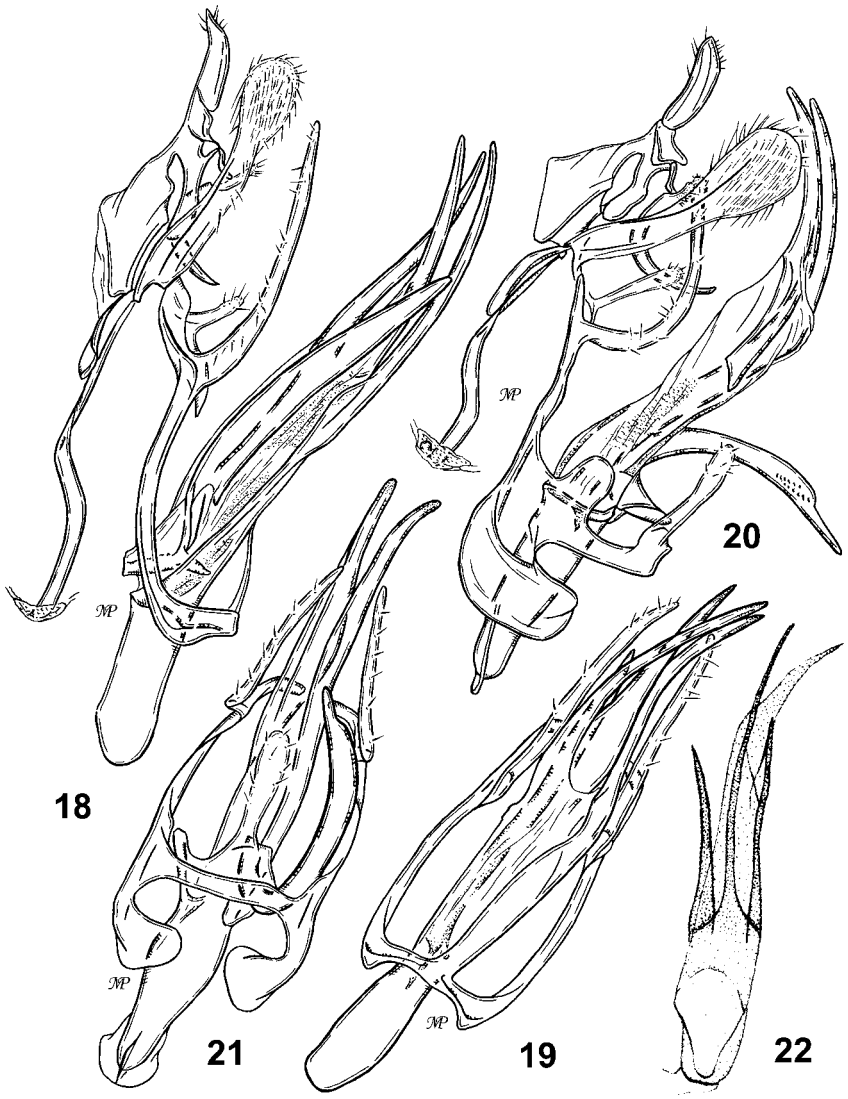
REMARKS. The species was illustrated at first time as *Acanthophila* sp. in Ponomarenko (1992: 167, fig. 19), where the functional morphology of its male genitalia was described.

***Acanthophila* (*A.*) *magnimaculata* Ponomarenko et Omelko, sp. n.**
Figs 7, 8, 32

MATERIAL. Holotype – ♂ (gen. praep. N 113 Euparal, M. Ponomarenko), Russia, Primorskii krai, Partizanskii distr., 12 km SW Partizansk, Lozovyi Range, 2.VIII 2002 (Ponomarenko),. Paratypes – 1 ♂, 1 ♀ (gen. praep. N 114 Euparal, M. Ponomarenko), Russia, Primorskii krai, 20 km SE Ussuriisk, Gornotaezhnoe, 18.VII, 14.VIII 1982; 1 ♂, 3 ♀, Khasanskii distr., 7 km N Zanadvorovka, 3-7.VIII 1984; 1 ♀, "Kedrovaya pad' " Reserve, 10.VIII 1988; 4 ♂, 2 ♀, Pozharskii distr., Verkhnii Pereval, 18-20.VII 1990 (Omelko).

DESCRIPTION. Wingspread 11-12 mm. Head blackish. Ocelli absent. Proboscis covered with dark grey scales. Scape of antenna blackish, flagella with alternate blackish and grey rings on every segment. Labial palpi blackish with whitish scales on the top of every segment; second segment light grey on the upper margin; third segment with dispersed light grey scales on the inner side. Thorax and tegula blackish. Fore and mid tibia blackish on the outer side and grey on the inner side; hind tibia lighter on the outer side because of alternated blackish and light grey scales; tibia and tarsus with a whitish ring at apex of each segment, last segments of hind tarsus almost all white. Forewing dark grey with light grey costal stroke at 3/4 of wing length and 4 indistinct blackish sports: two larger ones at the middle and end of cell, one smaller sport at 2/3 of anal fold and one bifid hardly distinguishable sport at 1/3 of anal fold. Fringe dark grey. Hindwing and fringe dark grey.

MALE GENITALIA (Figs 7, 8). Uncus with rounded apex, fused with tegumen. Lateral sclerites, backing androconial tufts, S-shaped and almost equal to uncus+ tegumen in length. Gnathos gently arched, its distal part longer than proximal one.



Figs 18-22. Male genitalia. 18, 19) *Acanthophila silvestrella*; 20, 21) *A. kuznetzovi*; 22) *A. bimaculata*. 18, 20) lateral aspect; 19, 21) vinculum, anellus and aedeagus, ventral aspect; 22) aedeagus. 22) after Li, 2002.

Cucullus weakly sclerotized, smoothly dilated distally. Valvella membranous, finger-like, slightly curved dorsally and about 3 times shorter than cucullus. Saculli slightly dilated before the middle and curved dorsally. Vinculum band-like, curved as right angle in ventral part, bears complicated plate on its posterior margin, which enlarged basally and with two lobes rounded at apex. The medial side of the latter joined with

anellus represented by placed at left side of aedeagus process, which heavily sclerotized, strongly curved ventrally and narrowed towards apex. Aedeagus with two curved dorsally cornuti: left of them shorter than 1/3 and right cornutus slightly longer than 2/3 of aedeagus length.

FEMALE GENITALIA (Fig. 32). Ovipositor moderate, membrane between IX and VIII segments almost 1.5 times longer than length of papillae anales. Papillae anales slightly sclerotized laterally. Apophyses anteriores slightly shorter than 1/3 of apophyses posteriores. VIII segment with membranous ventral part. Antrum wide, funnel-like, it backed by more or less trapezoidal ventral plate and dorsal plate, forming middle longitudinal gutter-like hollow edged by crests and lateral triangular pocket-like concavities. Ductus bursae and corpus bursae with sclerotization of complicated shape; most part of the latter presented by two ventral fabiform plates. Corpus bursae mainly membranous, excepting the described above sclerotization, with membranous protrusion on every lateral side before the bottom. The small sclerotized inflation with setaceous zone placed near base of right protrusion.

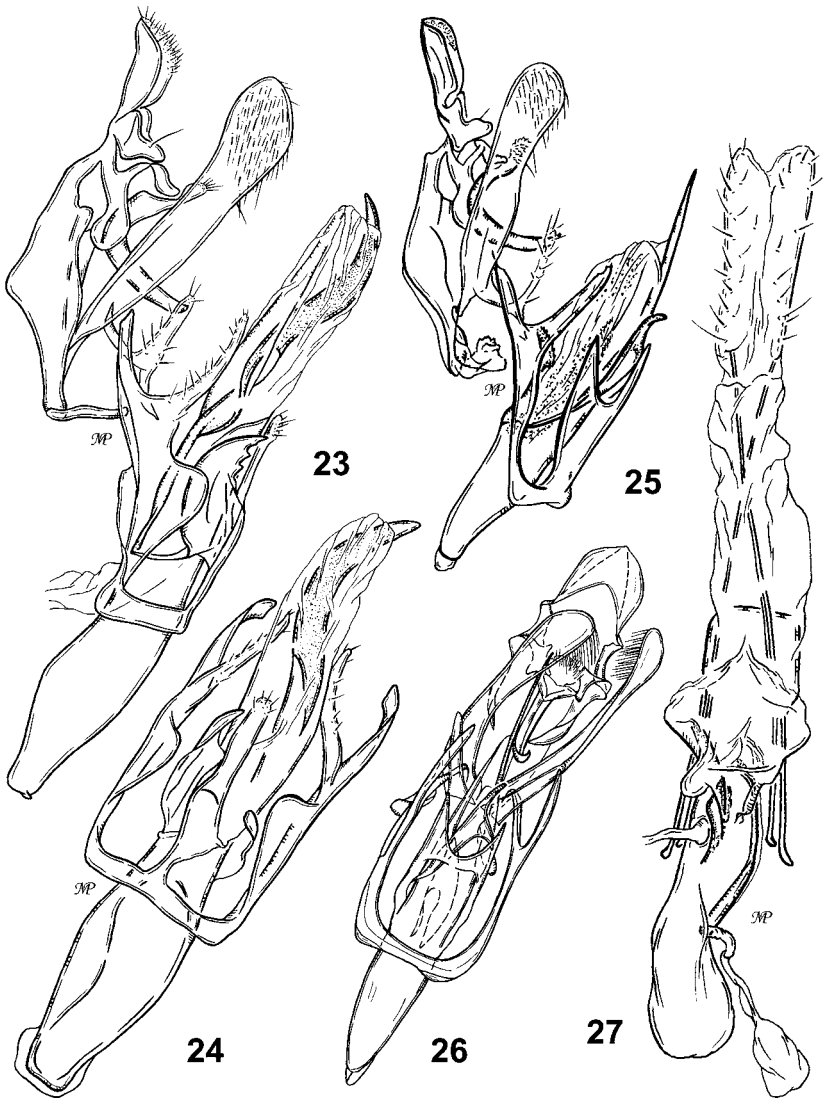
DIAGNOSIS. The new species is related to *A. kuznetzovi* in male genitalia. *A. magnimaculata* sp. n. differs by anellus with arched process at left side of aedeagus and by band-like vinculum in male genitalia, whereas related species has similar process of anellus at right side of aedeagus and vinculum consisting of two arms.

DISTRIBUTION. Russia (south part of the Primorskii krai).

***Acanthophila* (*A.*) *pusillella* Ponomarenko et Omelko, sp. n.**
Figs 1, 2, 37, 38

MATERIAL. Holotype – ♂ (gen. praep. N 109 Euparal, M. Ponomarenko), Russia, Primorskii krai, Partizanskii distr., 12 km SW Partizansk, Lozovyi Range, 20.VII 1999 (Ponomarenko). Paratypes – 16 ♂, 3 ♀, Russia, Primorskii krai, Khasanskii distr., 7 km N Zanadvorovka, 16.VII-06.VIII 1984; 3 ♀, "Kedrovaya pad' " Reserve, 5-7.VIII 1988; 1 ♀ (gen. praep. N 110 Euparal, M. Ponomarenko), near Andreevka, 6.VIII 1985 (Omelko).

DESCRIPTION. Wingspread 9.5-10 mm. Head dark grey with lighter frons. Ocelli absent. Proboscis covered with light grey scales. Scape of antenna dark grey, flagella with alternate dark grey and light grey rings on every segment. Labial palpi dark grey with whitish scales on the top of every segment; second segment whitish on the upper margin; third segment with narrow whitish stroke on the upper margin. Thorax and tegula dark grey. Fore and mid legs fuscous on the outer side and light grey on the inner side; hind legs lighter on the outer side because of alternated dark grey and whitish scales; tibia and tarsus with a whitish ring at apex of each segment. Groundcolour of forewing dark grey with scattered light grey scales. The pattern of forewing is formed by light grey costal stroke near 3/4 of length, by 5-6 indistinct blackish dots along the apex and termen, and by 4 more or less distinct blackish sports: at the middle and end of cell, at 1/4 and at the middle of anal fold. Fringe dark grey. Hindwing and fringe grey.



Figs 23-27. Genitalia. 23, 24) *Acanthophila latipennella*; 25-27) *A. vixidistinctella* sp. n. 23-26) male genitalia: 23, 25) lateral aspect; 26) ventral aspect; 24) vinculum, anellus and aedeagus, ventral aspect; 27) female genitalia.

MALE GENITALIA (Figs 1, 2). Uncus with rounded apex, fused with tegumen. Lateral sclerites, backing androconial tufts, S-shaped and equal to uncus+tegumen in length. Gnathos gently arched, its distal part longer than proximal one. Cucullus slightly sclerotized, it's distal 1/3 part dilated, setaceous and curved dorsally. Valvella membranous and finger-like, 3.6 times shorter than cucullus. Sacculi gently arched

dorsally and with triangular lobe on the ventral margin before the middle. Vinculum consists of two arms, joined ventrally; every of them strongly curved beyond 2/3 of length, dilated into flat wide plate ventrally and bearing pair of lateral processes, which shorter than saculli, more or less triangular, thorned mostly along the apex and on the medial side. Aedeagus with four cornuti, joined with vinculum by narrow long weakly sclerotized plate, arising from posterior margin of vinculum to the base of right cornuti. Pair of right cornuti with common base, arising from near 1/3 of total aedeagus length; dorsal of them almost straight and shorter, whereas ventral one slightly curved dorsally and with apex on the same level as left cornutus, arising from 2/3 of aedeagus length; more thick left cornutus narrowed towards apex, curved ventrally and about half of aedeagus length.

FEMALE GENITALIA (Figs 37, 38). Ovipositor moderate, membrane between IX and VIII segments almost 2 times longer than length of papillae anales. Papillae anales slightly sclerotized laterally. Apophyses posteriores 3 times longer than apophyses anteriores. VIII segment with membranous ventral part. Antrum wide and with two more or less oval heavily sclerotized plates dorsally. Ductus bursae and corpus bursae not distinctly separated; dorsal wall saddle-like curved at the beginning of ductus; folded sclerotization stretched almost to the bottom of corpus bursae, where small setaceous zone placed. Corpus bursae oval, and mainly membranous, without regard to anterior part of folded sclerotization. Near middle of the latter the small membranous sack separated, its base and ventral wall backed by heavily sclerotized plate.That additional sack bifid at the apex (see in lateral view).

DIAGNOSIS. The new species is similar to *A.* (*A.*) *silvestrella* in male genitalia and *A.* (*A.*) *beljaevi* in female genitalia. *A.* (*A.*) *pusillella* sp. n. can be separated from *A.* (*A.*) *silvestrella* by smaller size, by lateral triangular torned processes on the vinculum, and by aedeagus with four cornuti in male genitalia. In female genitalia the described species differs from *A.* (*A.*) *beljaevi* by dorsal oval sclerotized plates in antrum, by ductus and corpus bursae with narrower and longer sclerotization; by separated membanous sack at the middle of the latter; by smaller corpus bursae, lacking protrusion at the bottom; whereas *A. (A.) beljaevi* with more or less triangular dorsal plates in antrum; ductus and corpus bursae with shorter and wider sclerotization; with separated mebranous sack before the middle of the the latter; larger corpus bursae with left protrusion at the bottom.

DISTRIBUTION. Russia (south part of the Primorskii krai).

***Acanthophila* (*A.*) *qinlingensis* (Li et Zheng, 1996)**
Figs 10, 11

Dichomeris qinlingensis Li & Zheng, 1996: 235, figs 21-23 (type locality: China, Shaanxi); Li, 2002: 380, figs 430, 431; pl. 28, fig. 220.

Acanthophila qinlingensis: Ponomarenko, 1997a: 12; 1998: 12; 1999: 216, figs 120, *1*, *2*.

MATERIAL. Russia, Primorskii krai: 1 ♂, 16 km SW Partizansk, 16.VII 1995 (Beljaev).

DISTRIBUTION. Russia (Primorskii krai); China (Shaanxi).

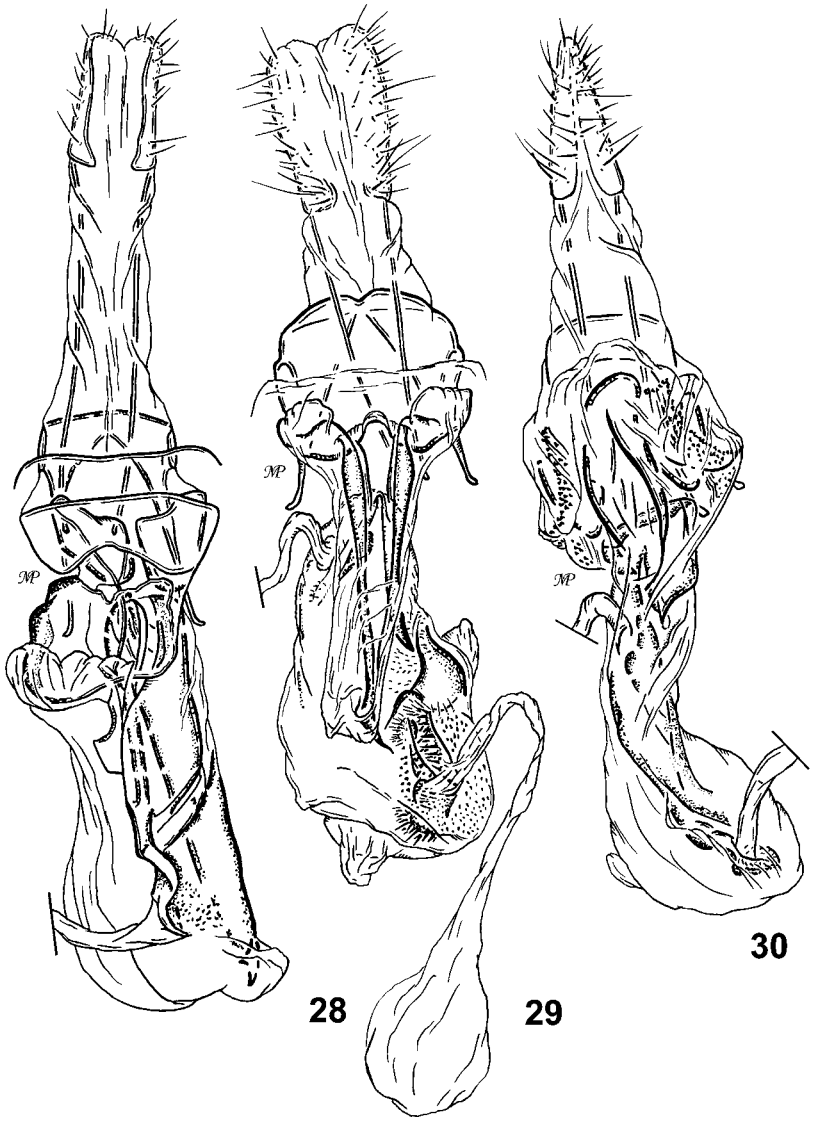
***Acanthophila* (*A.*) *silvania* Ponomarenko et Omelko, sp. n.**
Figs 16, 17, 33, 34

MATERIAL. Holotype – ♂ (gen. praep. N 111 Euparal, M. Ponomarenko), Russia, Primorskii krai, 20 km SE Ussuriisk, Gornotaezhnoe, 2.VIII 1994 (Ponomarenko). Paratypes – 4 ♂, 5 ♀, (♀ gen. praep. N 112 Euparal M. Ponomarenko), same locality, 17.VIII, 2.IX 1980; 16.VII, 1-20.VIII 1982; 9, 15.VIII 1983; 3.VIII 1991; 1 ♂, Nadezhdinskii distr., De-Friz Peninsula, 31.VII 1981 (Omelko); 1 ♂, 30 km NW Arsen'ev, the bottom of Mt Sinegorka, 4.VIII 1999 (Ponomarenko).

DESCRIPTION. Wingspread 11.5-12 mm. Head dark grey with lighter frons. Ocelli absent. Proboscis covered with dark grey scales. Scape of antenna dark grey, flagella with alternate dark grey and light grey rings on every segment. Labial palpi dark grey; second segment whitish on the upper margin; third segment with whitish top. Thorax and tegula dark grey. Legs fuscous on the outer side and light grey on the inner side; tibia and tarsus with a whitish scales at apex of each segment. Groundcolour of forewing dark grey. The pattern of forewing is formed by light grey oblique line at 3/4 of wing length; by 4 blackish sports: at the middle and end of cell, at 1/4 and at the middle of anal fold. Three spots at the middle of wing edged by light scales. The apex and termen of forewing outlined by blackish scales at first and further by whitish ones, rest fringe dark grey. Hindwing and fringe grey.

MALE GENITALIA (Figs 16, 17). Uncus with rounded apex, fused with tegumen. Lateral sclerites, backing androconial tufts, S-shaped are longer than uncus+tegumen length. Gnathos gently arched, its distal part longer than proximal one. Cucullus weakly sclerotized, slightly narrowed before 2/3 of its length. Valvella membranous, narrowed and dorso-ventrally flattened towards apex, slightly shorter than 1/3 of cucullus. Saculli curved dorsally, without dilation and lobe on ventral margin and truncated before apex. Vinculum band-like, slightly dilated and curved at right andle in ventral part; joined with right cornuti of aedeagus by obliqua triangular plate ventrally. Aedeagus with five cornuti. Three right cornuti stretch from common base; of them ventral cornutus slightly curved dorsally; middle one thicker and straight, backs the aedeagus side; and dorsal one shorter, needle-like and straight. Lateral left cornutus slightly sinuous, thicker and twice longer than medial cornutus, arising from near 2/3 of total aedeagus length.

FEMALE GENITALIA (Figs 33, 34). Ovipositor relatively short, membrane between IX and VIII segments shorter than length of papillae anales. Papillae anales slightly sclerotized laterally. Apophyses posteriores about 3 times longer than apophyses anteriores. VIII segment with membranous ventral part. Antrum wide and funnel-shaped, it's dorsal and lateral sides backed by gutter-like sclerites. Sclerotization of ductus and corpus bursae stretched from ring-like formation to the ventral side of bursae; it divided into three parts: right part arises directly from ring-like formation, gutter-like and convolute; left one flat, more shorter, backs narrow long membranous sack; central part wider than others, gutter-like, with hook-like process, protruding to the left, and small curvaceous plate, bearing relatively long setae. Corpus bursae oval, and mainly membranous, without regard to described above sclerotization; its right side with setaceous extensive zone.



Figs 28-30. Female genitalia. 28) *Acanthophila liui*; 29) *A. lucistrialella* sp. n.; 30) *A. imperviella* sp. n.

DIAGNOSIS. New species is closely related to *A. silvestrella* Ponom. in male and female genitalia. It can be easy distinguished by aedeagus with five cornuti in male genitalia; and shape of ductus and corpus bursae sclerotization divided into three parts, also by small additional membranous sack in female genitalia.

DISTRIBUTION. Russia (south part of the Primorskii krai).

***Acanthophila* (*A.*) *silvestrella* Ponomarenko, 1998**

Figs 18, 19, 35

Acanthophila silvestrella Ponomarenko, 1998: 7, figs 7, 8, 16 (type locality: Russia, Primorskii krai); 1999: 215, figs 119, *3*, *4*; 121, *3*.

MATERIAL. Holotype - ♂, Russia, Primorskii krai, Khasanskii distr., 14 km SW Slavyanka, Ryazanovka, 29.VII 1997 (Ponomarenko). Paratypes - 3 ♂, 1 ♀, same locality, 16, 20.VIII 1992, 29.VII 1997 (Ponomarenko). Russia, Primorskii krai: 1 ♀, Khasanskii distr., Ryazanovka, 20.VIII 1992; 1 ♂, Shkotovskii distr., Anisimovka, 27.VII 1998; 3 ♂, 14 km NW Partizansk, 4,5.VIII 2002 (Ponomarenko).

DISTRIBUTION. Russia (south part of the Primorskii krai).

Subgenus *Mimomeris* Povolný, 1978

Mimomeris (as subgenus of *Dichomeris*) Povolný, 1978: 142.

Mimomeris (as subgenus of *Acanthophila*): Povolný, 1980: 322.

Type species: *Dichomeris steueri* Povolný, 1978 [= *Acanthophila latipennella* (Rebel, 1937)], by original designation.

DIAGNOSIS. Parategminal sclerites shorter, curved at the angle.

SPECIES INCLUDED. There are 3 species from Europe, Russia (European part, Far East), and China: *A.* (*M.*) *latipennella* (Rebel, 1937), *A.* (*M.*) *obscura* (Li et Zheng, 1997), comb. n., *A.* (*M.*) *vixidistinctella* sp. n.

***Acanthophila* (*M.*) *latipennella* (Rebel, 1937)**

Figs 23, 24

Aristotelia (*Xystophora*) *latipennella* Rebel, 1937: 44 (type locality: Austria, SW Germany); Gaede, 1937: 558.

Acanthophila latipennella: Povolný, 1980: 324, figs 2-5; Piskunov, 1981: 732, fig 663, *6*; Elsner et al., 1999: 12, 13, 56; taf. 27, *339*; taf. 39, *339*; taf. 82, *339*.

Acompsia scotosiella Hackman, 1945: 110, figs 1-4 (type locality: Finnland, Kuolemajärvi).

Acanthophila piceana Šulcs, 1968: 427 (type locality: Lettland, Ogre).

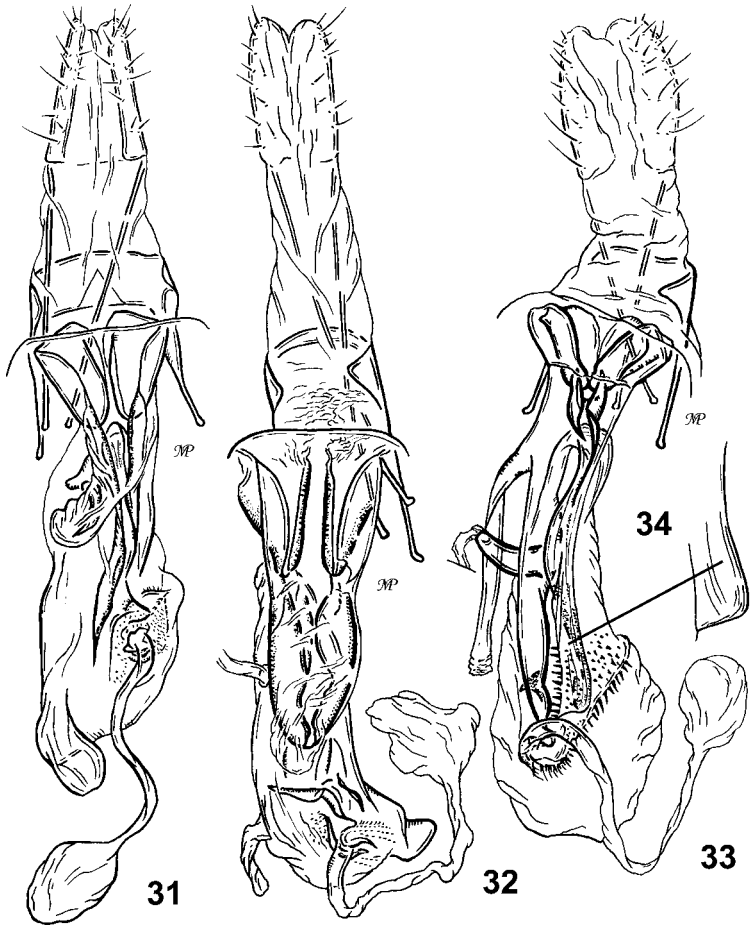
Dichomeris (*Mimomeris*) *steueri* Povolný, 1978: 144, figs 16-18, 25, 26 (type locality: Germany, Schwarzatal, Bad Blankenburg, Thüringerwald).

Dichomeris obscura: Ponomarenko, 1998: 12, figs 24, 25; 1999: 217, fig 123, *3*, *4* (nec Li et Zheng, 1997).

MATERIAL. Russia, Primorskii krai: 1 ♂, Ussuri river, 15 km SE Yasnoe, 20.VI 1998 (Beljaev).

DISTRIBUTION. Europe (north, central, east); Russia (north-west and west of European part), Primorskii krai (first record).

HOST PLANT. *Picea abies.*



Figs 31-34. Female genitalia. 31) *Acanthophila beljaevi*; 32) *A. magnimaculata* sp. n.; 33, 34) *A. silvania* sp. n.: 33) ventral aspect; 34) additional membranous sack, lateral aspect.

***Acanthophila* (*M.*) *obscura* (Li et Zheng, 1997), comb. n.**

Fig. 9

Dichomeris obscura Li & Zheng, 1997: 223, figs 5, 6 (type locality: China, Shaanxi); Li, 2002: 370, 371, fig. 420; pl. 27, fig. 213.

DISTRIBUTION. China (Shaanxi).

REMARKS. The species is extremely similar to *A*. (*M*.) *latipennella*. According to illustrations of male genitalia *A.* (*M*.) *obscura* with relatively longer cornutus of aedeagus, rounded uncus and weakly hollowed saculli on posterior margin in male genitalia, whereas related species has cornutus lessened by a third, uncus with blunted apex and strongly hollowed saculli on posterior margin.

***Acanthophila* (*M.*) *vixidistinctella* Ponomarenko et Omelko, sp. n.**
Figs 25-27

MATERIAL. Holotype – ♂ (gen. praep. N 115 Euparal, M. Ponomarenko), Russia, Primorskii krai, 28 km NW Lazo, Lazovskii Pass, 11.VII 2001 (Ponomarenko). Paratypes – 3 ♂, 4 ♀, Russia, Primorskii krai, 20 km SE Ussuriisk, Gornotaezhnoe, 3, 6, 12.VII, 24.VIII 1982; 27.VI 1984; 7.VII 1989; 1 ♀ (gen. praep. N 116 Euparal, M. Ponomarenko), Khasanskii distr., near Andreevka, 27.VII 1985 (Omelko); 1 ♀, Pogranichnii distr., Barabash-Levada, 5.VIII 1989; 2 ♂, Pozharskii distr., Verkhnii Pereval, 17, 18.VII 1990 (Omelko).

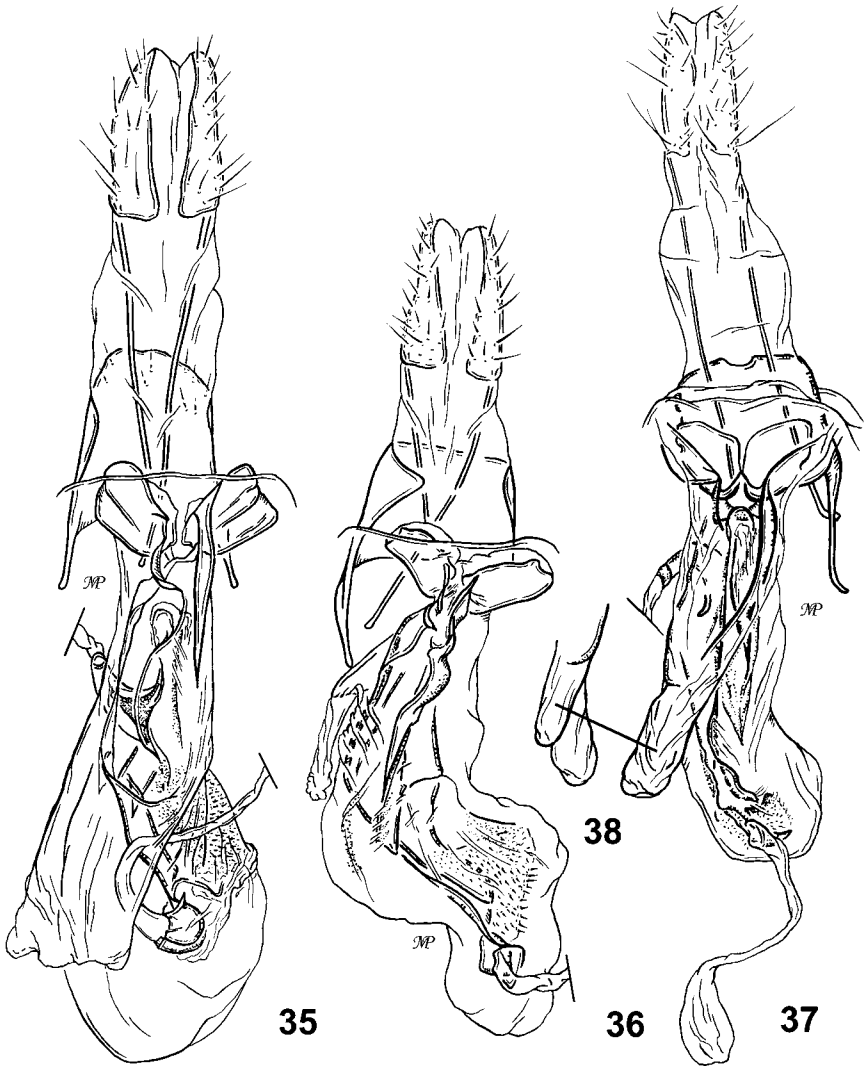
DESCRIPTION. Wingspread 8-10.5 mm. Head dark grey with grey frons. Ocelli absent. Proboscis covered with dark grey scales. Scape of antenna dark grey, flagella with alternate dark grey and grey rings on every segment. Labial palpi dark grey on outer and inner sides without whitish scales at the top of every segment. Thorax and tegula dark grey. Fore, mid and hind legs dark grey, only tarsus every of them with grey scales at the top of segments. Forewing dark grey, self-coloured, with indistinct darker spots at the middle and end of cell. Fringe dark grey. Hindwing and fringe dark grey.

MALE GENITALIA (Figs 25, 26). Uncus with rounded apex, fused with tegumen. Lateral sclerites, curved almost at the right angle and about 2.7 times shorter than length of uncus+tegumen. Gnathos gently arched, its distal part longer than proximal one. Cucullus weakly sclerotized, slightly narrowed between middle and distal dilations. Valvella membranous, finger-like, relatively narrow and long, 2.5 times shorter than cucullus. Saculli almost straight and narrowed towards apex. Vinculum band-like, almost of same width throughout the length, bears long ventral biforked lobe on the posterior margin. Aedeagus with three cornuti: one right straight needle-like cornutus, about 2/3 of aedeagus length; and two short hook-like cornuti on its ventral and dorsal sides.

FEMALE GENITALIA (Fig. 27). Ovipositor moderate, membrane between IX and VIII segments slightly longer than papillae anales. Papillae anales slightly sclerotized laterally. Apophyses anteriores 3 times shorter than apophyses posteriores. VIII segment with membranous ventral part. Antrum wide, funnel-like, weakly sclerotized mainly in posterior part, its membranous anterior part with left inflation. Ductus and corpus bursae donn't distinctly separated, with tube-like sclerotization curved to the left. Anterior part of corpus bursae membranous, without setaceous zone.

DIAGNOSIS. The described species is similar to *A.* (*A.*) *qinlingensis* in male genitalia. *A.* (*A.*) *vixidistinctella* sp. n. can be separated from related species by smaller size and dark grey forewings; by large biforked ventral lobe on posterior margin of vinculum and by small dorsal and ventral hook-like cornuti of aedeagus in male genitalia. Also a new species differs by female genitalia with relatively small sclerotization in ductus and corpus bursae.

DISTRIBUTION. Russia (south part of the Primorskii krai).



Figs 35-38. Female genitalia. 35) *Acanthophila silvestrella*; 36) *A. kuznetzovi*; 37, 38) *A. pusilella* sp. n.: 37) ventral aspect; 38) additional membranous sack, lateral aspect.

Species insertae sedis

There are 3 species known by female only and therefore not placed to any subgenus: *A. angustiptera* (Li et Zheng, 1997), comb. n., *A. imperviella* sp. n., *A. nyingchiensis* (Li et Zheng, 1996), comb. n. Both *A. angustiptera* and *A. nyingchiensis* have habitus and female genitalia generally typical for *Acanthophila* therefore transferred into the genus.

***Acanthophila angustiptera* (Li et Zheng, 1997), comb. n.**

Dichomeris angustiptera Li & Zheng, 1997: 228, fig. 12 (type locality: China, Shaanxi); Li, 2002: 330, 331, fig. 377; pl. 23, fig. 184.

DISTRIBUTION. China (Shaanxi).

***Acanthophila nyingchiensis* (Li et Zheng, 1996), comb. n.**

Dichomeris nyingchiensis Li et Zheng, 1996: 254, figs 86 (type locality: China, Xizang [Tibet]); Li, 2002: 378, fig. 429; pl. 28, fig. 218; Ponomarenko, 1997a: 27.

DISTRIBUTION. China (Xizang).

***Acanthophila imperviella* Ponomarenko et Omelko, sp. n.**

Fig. 30

MATERIAL. Holotype – ♀ (gen. praep. N 117 Euparal, M. Ponomarenko), Russia, Primorskii krai, Ussuriiskii distr., 20 km SW Krounovka, 9.VIII 1999 (Ponomarenko).

DESCRIPTION. Wingspread 12 mm. Head dark grey with lighter frons. Ocelli absent. Proboscis covered with grey scales. Scape of antenna dark grey, flagella with alternate dark grey and grey rings on every segment. Second segment of labial palpi dark grey on outer and inner sides, with light grey scales at the top and along upper margin; third segment dark grey basally only and whitish distally. Thorax and tegula dark grey. Fore, mid and hind legs dark grey on outer side and light grey on inner side; tarsus of every leg with light scales at the top of segments. Forewing dark grey, with light grey costal stroke at 3/4 of wing length; relatively large spots at the middle and end of cell and dark strokes at 1/4 and at the middle of anal fold. Fringe grey. Hindwing and fringe grey.

FEMALE GENITALIA (Fig. 30). Ovipositor moderate, membrane between IX and VIII segments 2 times longer than length of papillae anales. Papillae anales slightly sclerotized laterally. Apophyses anteriores about 1/4 of apophyses posteriores length. VIII segment with membranous ventral part. Antrum very wide, cupped and complicated in shape: its ventral part prominent and heavily sclerotized, backed by carpel-like sclerites laterally; inner surface of lateral folds spinulose; dorsal part slightly sclerotized and with two pocket-like concavities. Ductus with heavily scerotized transversal protrusion at the base. Further sclerotization of ductus and corpus bursae placed mainly along ventral side and reaches bottom of bursae. Small setaceous zone placed on the ventral side of corpus bursae near its bottom.

DIAGNOSIS. The described species has genitalia typical for other species included into the genus, but neither of the considered above species is related to *A. imperviella*. The described species differs by relatively wide antrum with large ventral protrusion backed by carpel-like sclerites laterally.

DISTRIBUTION. Russia (south part of the Primorskii krai).

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