

The Elachistidae of southern Siberia and Central Asia, with descriptions of five new species (Lepidoptera)¹

Lauri Kaila

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The Elachistidae material collected during the joint Soviet-Finnish entomological expeditions to the Altai mountains, Baikal region and Tianshan mountains of the previous USSR is listed. Previous literature dealing with the Elachistidae in Central Asia is reviewed. A total of 40 species are dealt with, including descriptions of five new species: *Stephensia jalmarella* sp. n. (Altai), *Elachista baikalica* sp. n. (Baikal), *E. talgarella* sp. n. (southern Kazakhstan), *E. esmeralda* sp. n. (southern Kazakhstan) and *E. filicornella* sp. n. (southern Kazakhstan). The previously unknown females of *E. bimaculata* Parenti, 1981 and *Biselachista zonulae* Sruoga, 1992 are described.

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1. Introduction

The Elachistidae fauna of Europe is at present fairly well known, although some difficult species groups still await critical revisions. The fauna of other parts of the Palaearctic region is still poorly known, and only fragmentary information concerning this family is available (see e.g. Parenti 1981, 1983, 1991). The literature dealing with the Elachistidae fauna of the USSR has recently been reviewed by Sruoga (1990). His review clearly shows that the fauna of this region has been very poorly studied. He himself contributed to our knowledge of the Elachistidae with descriptions of seven new species from Central Asia and from the Soviet Far East, although the status of some of these taxa is uncertain. After

that review, the Elachistidae fauna of a nature reserve in the Crimea peninsula has been published (Budashkin & Sinev 1991). The Elachistidae fauna of Far East should be published in the near future (S. Sinev, pers. comm.). In 1992 Sruoga & Puplesis published seven new species from Central Asia.

This paper is largely based on the joint Soviet-Finnish expeditions of 1983 to the Altai mountains, of 1984 to the Baikal region and of 1990 to the Tianshan mountains in Kazakhstan and Kirgisia (Fig. 1). In addition, the previous literature records of Elachistidae in Central Asia are listed. No previous information is available about the Elachistidae of Siberia. Obviously the 40 species of Elachistidae reported in this paper from the large area of Southern Siberia and Central Asia constitute only a small part of the whole Elachistid fauna of these regions. As a comparison it may be mentioned that from both Finland and Denmark more than fifty species of Elachistidae have been reported.

¹ Reports nr. 13 of the joint Russian-Finnish entomological expeditions to Siberia and Central Asia.



Fig. 1. The main collecting sites of the material presented.

2. Material

The material collected on the three expeditions consists of a total of 288 specimens of Elachistidae belonging to 30 species. Two of these species are not treated in this paper, as they are represented by only one or two specimens in poor condition. They probably belong to still undescribed species. The rest of the material can be summarized as follows: the Novosibirsk region, Akademgorodok two species (13 ex.), the Altai region nine species (61 ex.), the Baikal region ten species (99 ex.), the Tianshan region (Kirgisia and southern Kazakhstan) in Central Asia 11 species (111 ex.). The localities are shown in Fig. 1. The material, including type material, has been preserved in the collections of the Zoological Museum, University of Helsinki (MZH) and the Zoological Institute of the Russian Academy of Sciences in St. Petersburg (ZIN). The Elachistidae records of Falkovitsh (1986), Sruoga (1990, 1991) and Sruoga & Puplesis (1992) in respect of the Central Asian Elachistidae are also listed. Falkovitsh mentions three species from Uzbekishtan and Turkmenia, Sruoga three species from Tadjikistan and a further two from Turkmenia, Sruoga & Puplesis three species from Kazakhstan, three from Tadjikistan and two from Kirgisia. A total of 40 species are dealt with.

3. Species

Perittia biloba Sruoga, 1990

Described from one specimen collected from Tadjikistan, 30 km N Dushanbe, env. Varzob (Kondara) 27.6.1986 R. Puplesis leg. (Sruoga 1990).

Perittia petrosa Sruoga, 1992

Described from two specimens collected from Tadjikistan, 60 km N Dushanbe 7.–24.7.1990 V. Sruoga leg. (Sruoga & Puplesis 1992).

Kumia integra Falkovitsh, 1986

Material. Uzbekishtan: Buharskaja obl., Shafrikan; Dshingild region; Shamansaj; Tamdybulak region; Turkmenia: Repetek (Falkovitsh, 1986). Turkmenia: Sandykatshi (Sruoga 1991).

Elachistoides sinevi Sruoga, 1992

Described to a new monotypic genus from three specimens collected from Kazakhstan, Alma-Atinsk obl. 28.5.1981 S. Sinev leg. (Sruoga & Puplesis 1992).

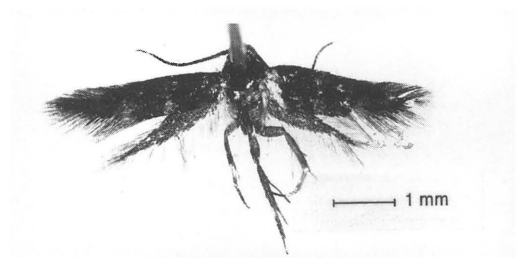


Fig. 2. *Stephensia jalmarella* sp. n. holotype (♂).

***Stephensia jalmarella* sp. n.**

Figs. 2, 3

Type material. ♂ holotype USSR, SW-Altai, Katun valley 10 km W katanda 1200 m 15–19.7.1983 1 ♂ Exp. Mikkola, Hippa & Jalava leg. L. Kaila prep. nro 386. Coll. MZH. — Additional material. 1 ♂ from same locality and date, in poor condition, abdomen destroyed. Coll. MZH.

Diagnosis

Habitually rather close to *S. brunnichella* (Linnaeus, 1767) and *S. staudingeri* Nielsen & Traugott-Olsen, 1981 (Fig. 2). It can be distinguished from these species by the following characters: labial palpi are as long as the diameter of eye, being longer in *S. brunnichella* but shorter in *S. staudingeri*. The colour of antenna differs from both these species: in *S. staudingeri* the flagellum lacks light patches in its outer part; in *S. brunnichella* there is a conspicuous white patch beyond the middle. In *S. jalmarella* the tip of flagellum is light grey. The differences in male genitalia are the following: the uncus lobes are much smaller than in *S. brunnichella* and in *S. staudingeri*, the indentation between the lobes being wider. The valva is shorter and broader than in these species (Fig. 3).

Description

Forewing length 3 mm. Labial palpi shining grey, as long as the diameter of the eye; head, neck tufts and scape of antenna shining bronze grey; flagellum of antenna from base to four-fifths of length unicolorous shining dark brown, the last fifth lighter grey; legs dark grey, hind tibia with white spots in the middle and with white distal ring. Ground colour of forewing bronze brown with reddish and bluish sheen,

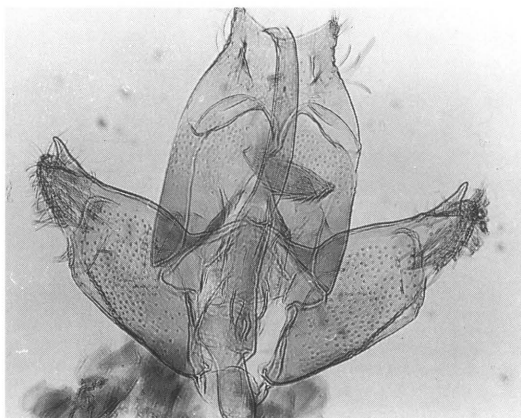


Fig. 3. *Stephensia jalmarella* sp. n. male genitalia (holotype).

with four shining white markings with bluish sheen: a transverse, broad fascia at base, a distinct, transverse fascia before middle, a rather rounded costal spot near apex and a tornal spot of the same size at two-thirds from base; cilia brown; hindwing dark brown; underside of wings bronze grey.

Male genitalia. Uncus lobes short, triangular, apex and outer margin with some long, curved setae; between the lobes a very wide, U-shaped indentation; gnathos elongate; valva broad at base, tapering apically; costa smoothly rounded, distally produced into a pronounced thorn-like process; cucullus distinct, apically rounded, setose; ventral margin curved, in the middle with a projecting lobe; sacculus rounded; digitate process long and relatively broad, tip setose; vinculum short, tapering into a very short saccus; aedeagus long, bent at one-fifth from caecum and smoothly bent from the half to tip, without cornuti.

Female unknown.

***Elachista gleichenella* (Fabricius, 1781)**

Material. Novosibirskaja oblast, Akademgorodok, *Pinus-Betula* forest 30.6.1984 1 ♂ ad luc. Mikkola & Viitasaari leg. SW-Altai, Katun valley 10 km W katanda 1200 m 15–19.7.1983 1 ♂ Exp. Mikkola, Hippa & Jalava leg.

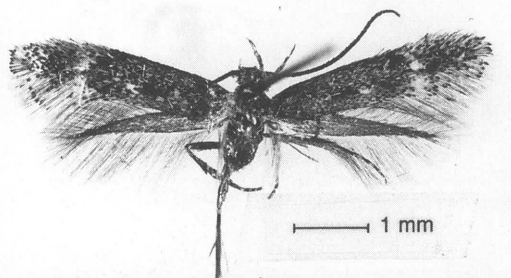


Fig. 4. *Biselachista zonulae* Sruoga ♂ habitus.

Widespread in Europe (Traugott-Olsen & Nielsen 1977). In addition, reported from Japan (Parenti 1983).

***Elachista biatomella* (Stainton, 1848)**

Material. Kazakhstan, Dzhambul'skaja oblast 43°24'N 75°2'E 70 km NNE Frunze 18.7., 15.8.1990 6 ♂♂ ad luc. L. Kaila leg.

According to Traugott-Olsen & Nielsen 1977, previously recorded from Italy, central and western Europe. Reported also from Uzbekistan: 90 km W Tshimkent, Aksu-Dzhabagly (Sruoga 1991).

***Elachista abiskoella* Bengtsson, 1977**

Material. Irkutskaja oblast, Hamar-Daban, taiga, Meteorol. st. 1450 m 14–28.7.1984 3 ♂♂ Mikkola & Viitasaari leg. Irkutskaja oblast, Sljudjanka 50 km E, river hara-Murin, taiga, 12.7.1984 ad luc. 1 ♂ Mikkola & Viitasaari leg. Irkutskaja oblast, 20 km S Sljudjanka 11–26.7.1984 9 exx S. Sinev leg.

Previously known only from northern Sweden (Bengtsson 1977). Apparently this species is boreomontane in the Palaearctic Region.

***Biselachista spinigera* Sruoga, 1990²**

Described from one specimen collected from Turkmenia, western Kopet Dag, 30 km E Kara-

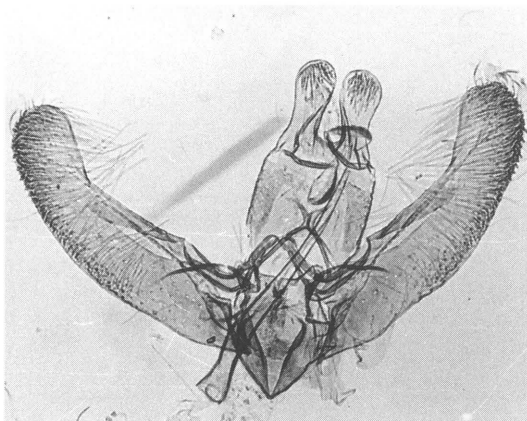


Fig. 5. The male genitalia of *B. zonulae*.

Kala (Juvan-Kala) 18.8.1988 V. Sruoga leg. (Sruoga 1990).

***Biselachista zonulae* Sruoga, 1992²**

Figs. 4–9

USSR, Kirgisia 41°30'N 75°35'E 10 km SE lake Song Kol, steppe/river bed 26.7.1990 2 ♂♂ L. Kaila leg.; Kirgisia 41°40'N 76°31'E 45 km NE Naryn, 2650 m dry meadow 31.7.1990 3 ♂♂ 1 ♀ L. Kaila leg.; 41°20'N 76°26'E Kirgisia 41 km E Naryn 2850 — 3300 m steppe-alpine meadow 10 ♂♂ L. Kaila leg.

Originally described from a material which consists of 14 male specimens collected from Kazakhstan, Kirgisia and Tadzhikistan. As our material includes also a female specimen, I shall give the description of the female:

Diagnosis

Biselachista zonulae is closely related to *Elachista freyi* Staudinger, 1870 and *E. serricornis* Stainton, 1854, but it is smaller than these species. The forewing is much narrower than in these species, ground colour being grey in the male (Fig. 4). The strong sexual dimorphism, which is absent in the other species mentioned above, is characteristic of this species. In the male genitalia the form of uncus lobes is club-shaped, rather near to that of *E. freyi* and *E. serricornis*, being broader than in *E. serricornis* but narrower than in *E. freyi* (Fig. 5). The male

² The status of the genus *Biselachista* Traugott-Olsen & Nielsen, 1977 will be reviewed in a separate paper.

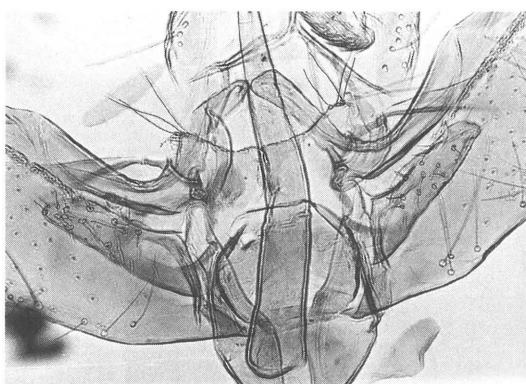


Fig. 6. Aedeagus, digitate process and juxta lobes of *B. zonulae*.

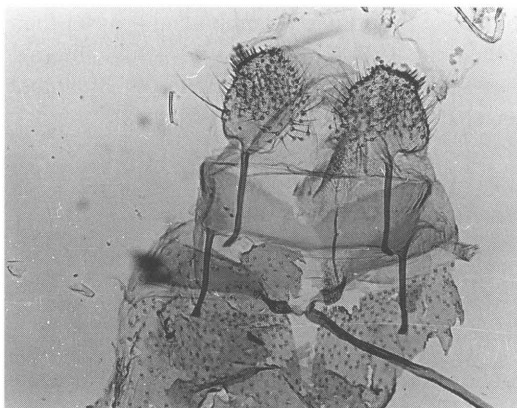


Fig. 8. Female genitalia of *B. zonulae*: ostium bursae, papillae anales.

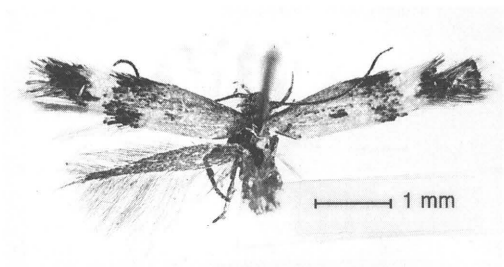


Fig. 7. The female of *B. zonulae*.

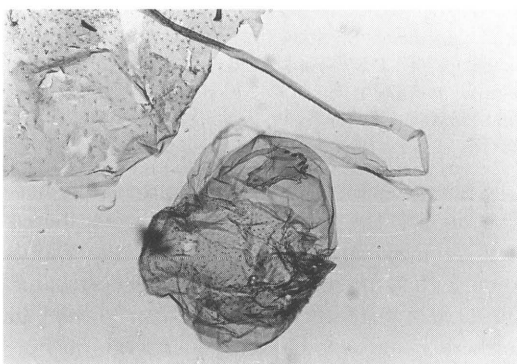


Fig. 9. Female genitalia of *B. zonulae*: corpus bursae with signum.

of *E. serricornis* can easily be distinguished from *B. zonulae* by the peculiar form of its antenna segments. The uncus lobes of related *E. igaloensis* Amsel, 1951 are much shorter, not club-shaped. The aedeagus is curved in *B. zonulae* (Fig. 6), straight in *E. freyi* and *E. serricornis*. No cornuti is present in *B. zonulae*, whereas in *E. serricornis* and *E. freyi* one elongated cornutus exists. The female is externally quite different from the other species (Fig. 7), see description below. It is worth noting that this species lacks the membranous zone between the antrum and colliculum in the female genitalia, which is one of the four synapomorphies mentioned for the genus *Biselachista* in Traugott-Olsen & Nielsen 1977 (Figs. 8–9).

Description of female

Forewing from base to two-fifths of wing greyish white, scattered with black scales; inner fascia white, suffused in the middle by light grey

scales, bound outwardly by an blackish area; costal and tornal spots large, white, confluent; apex of forewing blackish, mottled by grey basal parts of scales; cilia grey with black cilia line; hindwing unicolorous grey with cilia and underside of same colour.

Female genitalia. Papillae anales small, rounded, with short, straight setae. Apophyses short, of almost equal length. Antrum narrow, ventral margin of ostium bursae very broadly V-shaped, dorsal wall with small spines. Colliculum very long, narrow, chitinized from antrum to two-thirds of its length, without membranous zone between antrum and colliculum. Ductus bursae

short, one-fourth of colliculum and broader than colliculum. Corpus bursae with small internal spines; signum a large patch with two blunt and one sharp corner, margins with spines.

Elachista parasella Traugott-Olsen, 1974

Material. Irkutskaja oblast, Hamar-Daban meteorol. st. 1450 m 14–15.7.1984 1 ♂ Mikkola & Viitasaari leg.

Previously reported from northern Fennoscandia and Tatra mountains (Traugott-Olsen & Nielsen 1977, Buszko & Baraniak 1989). Apparently a boreomontane species.

Elachista diderichsiella Hering, 1889

Material. Irkutskaja oblast 5 km E Sljudjanka *Betula* meadow/*Ledum* 6–8.7.1984 1 ♂ Mikkola & Viitasaari leg. Irkutskaja oblast, Sljudjanka 50 km E, river Hara-Murin, taiga ad luc 12.7.1984 1 ♂ Mikkola & Viitasaari leg. Irkutskaja oblast 20 km S Sljudjanka, pik Tserskovo 1430–1900 m 11–16.7.1984 5 ♂♂ S. Sinev leg.

This species is apparently taxonomically heterogeneous. The nominate form is distributed over southern and central Europe, the Baltic countries and the southern parts of Fennoscandia. The larva of this form feeds on *Milium effusum*. In northern Fennoscandia, e.g. in *Li*: Ivalo in Finland and the Tromsø region in Norway a smaller and generally lighter form occurs. In the swarming places of this form, which are open fields and road sides, *Milium effusum* does not exist, so this form probably has another foodplant. I have failed to find any differences in genitalia between the North European and central European forms. The specimens collected in Siberia are habitually similar to those in northern Fennoscandia.

Elachista griseella (Duponchel, 1842)

Material. Irkutskaja oblast 5 km E Sljudjanka *Betula* meadow ad luc 6–7.7.1984 1 ♂ Mikkola & Viitasaari leg.

Distribution South Europe and southern parts of central Europe. Recently reported from Poland (Buszko 1989a). This record indicates this species as being Eurosiberian.

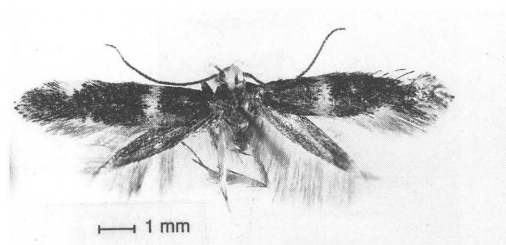


Fig. 10. *Elachista baikalica* sp. n. holotype (♂).

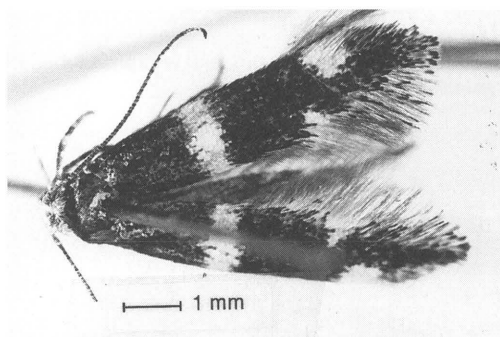


Fig. 11. *Elachista baikalica* sp. n. paratype (♀).

Elachista baikalica sp. n.

Figs. 10–16

Type material: ♂ holotype USSR, Irkutskaja obl. Sljudjanka 5 km E, *Betula*/meadow ad luc. 6–7.7.1984 Mikkola & Viitasaari leg. L. Kaila prep. nro 441. Coll. MZH. Paratypes: 1 ♂ USSR, SW-Altai Katun valley 10 km W Katanda 1200 m, 28.6.1983 Exp. Mikkola, Hippa & Jalava leg. L. Kaila prep. nro 318, 5 ♂♂ 2 ♀♀ Irkutskaja oblast 3 km E Sljudjanka 5–7.7.1984 S. Sinev leg., L. Kaila prep. nro 551, 552, 553, 554, 555. Coll. MZH and ZIN.

Diagnosis

The closest relative of this species seems to be *E. luticomella* Zeller, 1839. *E. baikalica* sp. n. is larger, the wings are more elongate and the head paler, creamy white (Figs. 10–11) compared to *E. luticomella*. In the male genitalia the uncus lobes are more rounded, valva broader, digitate process longer and narrower, aedeagus almost straight (in *E. luticomella* bent at one-fourth from caecum), and the only cornutus clearly larger than in *E. luticomella* (Figs. 12–14). In the female genitalia the antrum is more deeply pouched

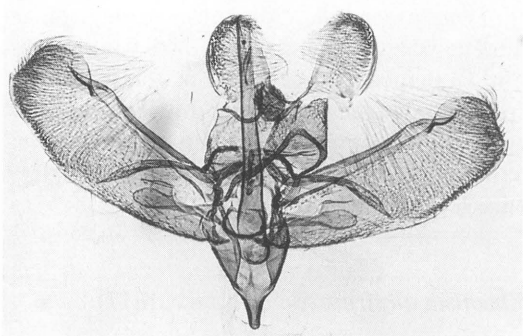


Fig. 12. Male genitalia of *Elachista baikalica* sp. n. (holotype).

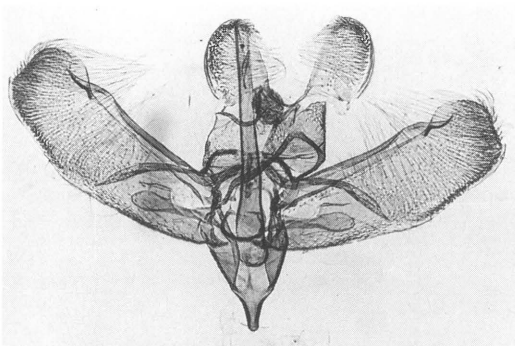


Fig. 14. Male genitalia of *Elachista baikalica* sp. n. (paratype): tip of aedeagus and the cornutus.

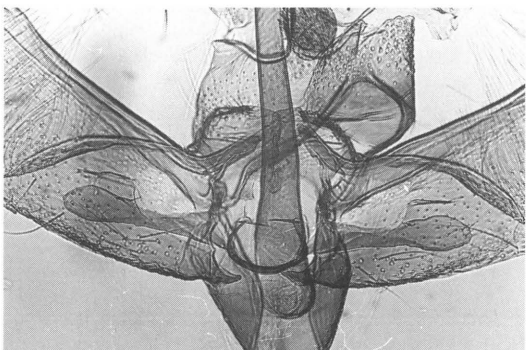


Fig. 13. Male genitalia of *Elachista baikalica* sp. n. (holotype): digitate process, juxta lobes.

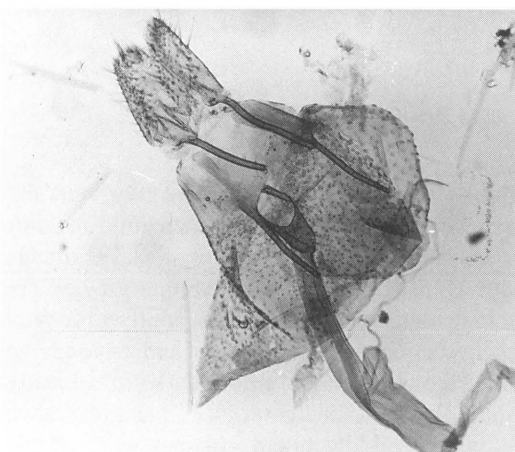


Fig. 15. The female genitalia of *Elachista baikalica* sp. n. (paratype): papillae anales, ostium bursae.

in *E. baikalica*, the colliculum is longer, and the signum in corpus bursae is medially only slightly enlarged compared to *E. luticomella* (Figs. 15 and 16). From *E. alpinella* Stainton, 1854 *E. baikalica* sp. n. can be distinguished as follows: *E. baikalica* is generally larger; in *E. alpinella* the head is dark brownish grey, in *E. baikalica* creamy white; the inner fascia in the forewing reaches costa in *E. baikalica*, not in *E. alpinella*; in the male genitalia the distal half of valva tapers in *E. alpinella*, whereas the valva is as broad in the distal end as in the base in *E. baikalica*; cucullus is rounded in *E. baikalica*, strongly processsed in *E. alpinella*; uncus lobes are larger in *E. baikalica* than in *E. alpinella*; digitate process is conspicuously longer in *E. baikalica* than in *E. alpinella*; in the aedeagus

of *E. baikalica* is one large, bent cornutus, whereas in *E. alpinella* there is one small and one large, straight cornutus; in the female genitalia the most conspicuous difference between these species is the large signum of *E. baikalica*, the signum being absent in *E. alpinella*.

Description

Male. Forewing length 5–6 mm. Labial palpi long, upwards curved, creamy white, length of third segment two-thirds of second; head and neck tufts creamy white; scape and flagellum of antenna unicolorous grey; tegulae grey with some

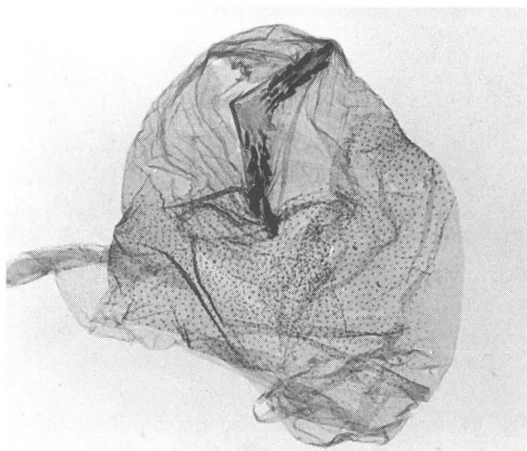


Fig. 16. The female genitalia of *Elachista baikalica* sp. n. (paratype): corpus bursae with signum.

whitish scales; thorax dorsally dark grey, ventrally grey with whitish scales; abdomen grey, anal tuft yellowish; fore and mid leg grey tarsal segments with whitish distal rings; hind femur grey except whitish outer side, hind tibia white with grey patches on outer side at base and beyond the half. Forewing: ground colour dark grey; distally mottled because of lighter basal parts of scales; before the middle broad, distinct white fascia from costa to dorsum; at two-thirds of costa a broad, triangular, creamy white costal spot beyond small, triangular white tornal spot; cilia dark grey; underside dark grey. Hindwing dark grey with grey cilia.

Female similar to male, but slightly smaller.

Male genitalia. Uncus lobes large, oval, between them a rather narrow indentation. Gnathos small, rounded. Valva short and broad, slightly bent at half; costa with prominent, rounded hump; cucullus rounded towards costa and at a right angle to sacculus; sacculus with distal spine. Digitate process narrow at base, widest near apex, clavated. Juxta lobes widest distally, rounded, inner margin straight, apical margins with short setae. Vinculum without medial ridge, produced into tapering, rather short saccus. Aedeagus slightly bent near caecum, gradually tapering, with one large, bent spoon-like/spatulate cornutus.

Female genitalia. Apophyses strong, of almost equal length; antrum pouched, ventral margin U-shaped; dorsal wall without spines; colliculum rather broad, almost twice as long as apophyses anteriores; corpus bursae with thin internal spines, signum angulate, medially slightly enlarged, apically strongly dentate.

Elachista albifrontella (Hübner, 1817)

Material. Irkutskaja oblast, Sljudjanka 5 km E, *Betula* meadow/*Ledum*, 6–8.7.1984 1 ♂ Mikkola & Viitasaari leg., 22 ♂ S. Sinev leg. SW-Altai, Katun valley 10 km W Katanda, 1200 m, 6–8.7.1983 1 ♀ Exp. Mikkola, Hippa & Jalava leg. SW-Altai, Kuragan valley 15 km S Katanda, 1200 m, taiga, 6.7.1983 1 ♂ Exp. Mikkola, Hippa & Jalava leg. Irkutskaja oblast, 20 km E Baikal, Hara-Murin 9–12.7.1984 4 ♂ S. Sinev leg.

Widespread in Europe (Traugott-Olsen & Nielsen, 1977), not previously reported from Asia.

Elachista subnigrella Douglas, 1853

Material. Kirgisia 41°26'N 76°29'N 41 km E Naryn, 2850–2900 m, 4.7.8.1990 5 ♂ L. Kaila leg.

Widespread in Europe (Traugott-Olsen & Nielsen, 1977). Not previously reported from Asia.

Elachista ingvarella Traugott-Olsen, 1974

Material. SW-Altai 15 km S Katanda, Bert-Kum 2000–2500 m 10–14.7.1983 1 ♂ Exp. Mikkola, Hippa & Jalava leg. Irkutskaja oblast, Hamar-Daban Meteorol. st. 14–15.7.1984 1 ♂ 1 ♀ Mikkola & Viitasaari leg., 16.7.1984 2 ♂ S. Sinev leg.

Previously recorded only from northern Fennoscandia (Traugott-Olsen & Nielsen 1977). Apparently a boreomontane species.

Elachista bicingulella Sruoga, 1992

Described from two specimens collected from Kazakhstan, 90 km E Tshimkent, Aksu-Dshambagli Nat. p., mt. Talasskiy Alatau 30.6.1981 Falkovitsh leg. (Sruoga & Puplesis 1992).

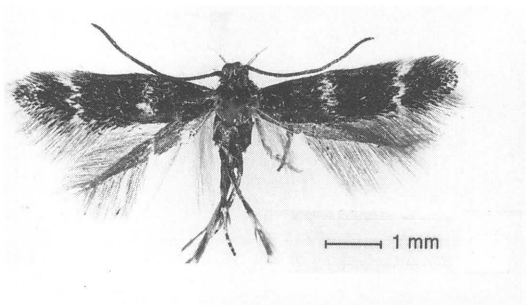


Fig. 17. *Elachista talgarella* sp. n. holotype (♂).

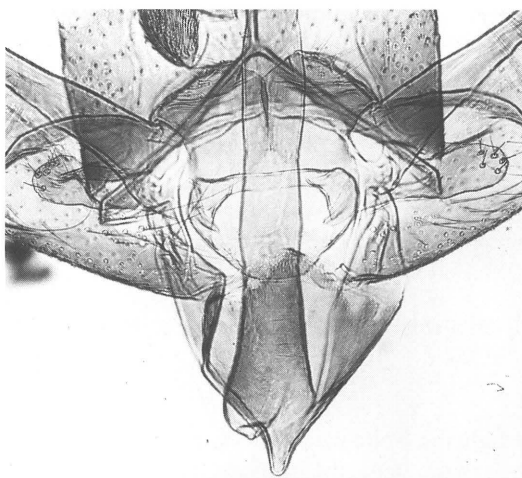


Fig. 19. Male genitalia of *Elachista talgarella* sp. n. (holotype): digitate process, juxta lobes.

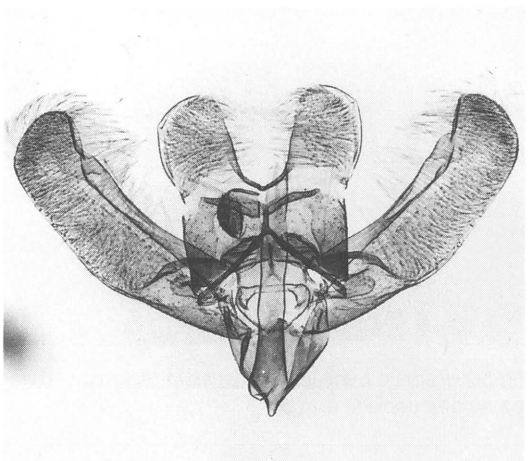


Fig. 18. Male genitalia of *Elachista talgarella* sp. n. (holotype).

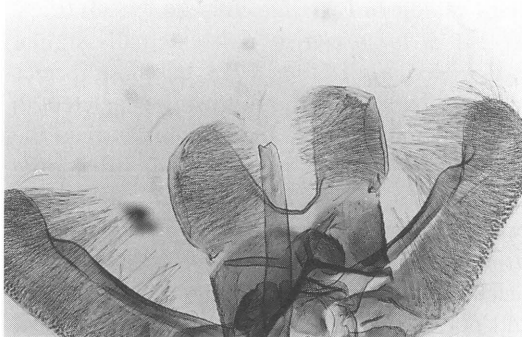


Fig. 20. Male genitalia of *Elachista talgarella* sp. n. (paratype): tip of aedeagus.

Elachista grandiferella Sruoga, 1992

Described from two specimens collected from Kirgisia, Naryn reg. 3.–6.8.1981 S. Sinev leg. (Sruoga & Puplesis 1992).

Elachista talgarella sp. n.

Figs. 17–24

Type material. ♂ holotype USSR 43°5'N 77°15'E Zailiskiy Alatau, Alma-Atinskij Nat. p. 3000 m alpine meadow 6.7.1990 L. Kaila leg. L. Kaila prep. nro 46 1. Paratypes: same locality 2750–3000 m alpine meadow 30.6.8.7.1990 34 ♂♂ 3 ♀♀ L. Kaila leg., 1900–2300 m Piceal meadow 27.6.1990 1 ♀ L. Huldén & L. Kaila leg.

Diagnosis

Because of similarities in the male genitalia *E. talgarella* sp. n. is apparently a close relative of *E. irenae* Buszko, 1989. It is larger and ground colour darker grey compared to *E. irenae*. In the male forewing the fascia, costal and tornal spots are more pronounced, whitish (Fig. 17). In the male genitalia the uncus lobes are broader, their outer margin less rounded and the indentation between them narrower compared to *E. irenae*. The tip of aedeagus is laterally widely open in *E. irenae*, but it is more sclerotized in *E. talgarella* sp. n., so that the distal opening of the aedeagus is smaller in this species (Figs. 18–20). In the

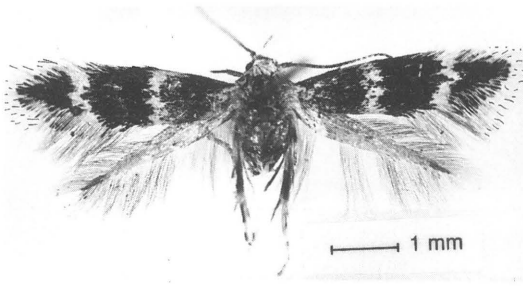


Fig. 21. Female of *Elachista talgarella* sp. n. (paratype).

female the white markings are more pronounced than in the male, the head also being white (Fig. 21). In the female genitalia the ventral margin of ostium bursae is more rounded in *E. talgarella* sp. n. The signum of corpus bursae is broadest in the middle, whereas it is conical and not broadened in the middle in *E. irenae* (Buszko 1989b) (Figs. 22–24). *E. talgarella* sp. n. is externally similar to *E. albicapilla* Höfner, 1918, but these species can be separated by the following characters in the male genitalia: the indentation between the uncus lobes is very narrow in *E. albicapilla* compared to that of *E. talgarella*; cucullus of valva is short and rounded in *E. albicapilla*, strongly produced in *E. talgarella*; distal end of saccus produced in *E. albicapilla*, but rounded and not produced in *E. talgarella*. For further details about *E. albicapilla*, see Parenti (1987).

Description

Male. Forewing length 3.5–4 mm. Labial palpi long, almost straight, length of third segment about two-thirds of second, greyish white, ventral side suffused with grey; head and neck tuft grey, mottled by lighter basal parts of scales; antenna unicolorous grey; tegulae, thorax and abdomen grey, anal tuft yellowish grey; legs grey except white distal rings on tarsal segments and white inner side of hind tibia. Forewing: ground colour dark grey; at one-third from base narrow, white, almost straight inner fascia not reaching costa; at two-thirds of costa a triangular white costal spot, opposite a rather narrow white tornal spot, these two confluent to a narrow fascia angled outward in the middle; cilia light grey, with an indistinct blackish cilia line; underside grey. Hindwing grey, cilia and underside of same colour.

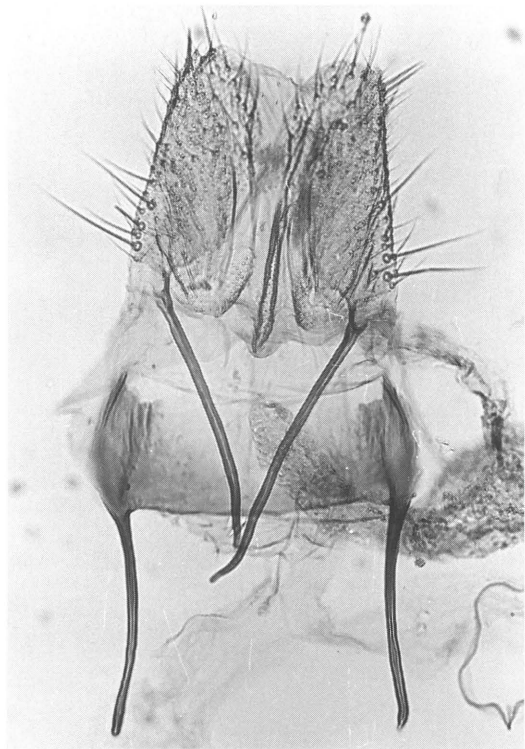


Fig. 22. Female genitalia of *Elachista talgarella* sp. n. (paratype): papillae anales.

Female. Labial palpi, head, neck tuft and scape of antenna whitish, flagellum of antenna grey, every second segment on upper side whitish, thorax dorsally grey, ventrally whitish grey; abdomen dark grey. Forewing: ground colour blackish, mottled by dark grey basal parts of scales; base of forewing creamy white to one-third from base where situated broad, almost straight, white inner fascia; at two-thirds, white costal spot and opposite tornal spot confluent forming an almost straight fascia.

Male genitalia. Uncus with steep U-shaped indentation; uncus lobes very large, widest at base, apically rounded; gnathos rather small, slightly elongate and widening distally; valva rather short, with almost parallel sides; costa with prominent, rounded hump before strongly produced cucullus; digitate process with parallel sides; juxta lobes distally broadening, apical margin rounded, setose; vinculum V-shaped, tapering into short but distinct saccus, without me-

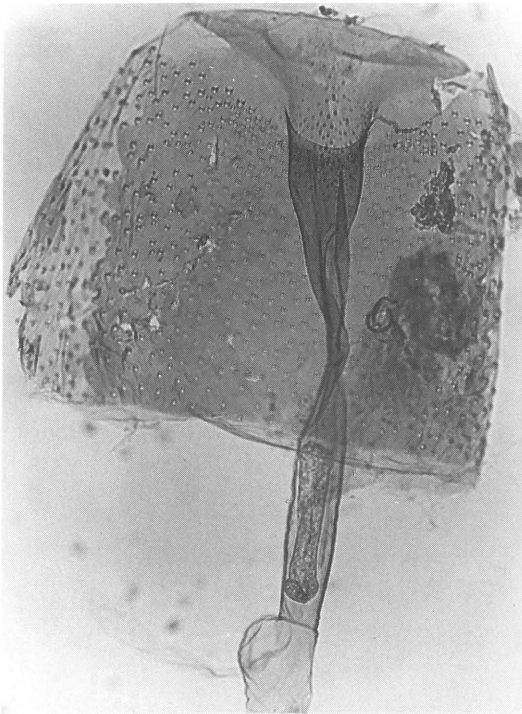


Fig. 23. Female genitalia of *Elachista talgarella* sp. n. (paratype): ostium bursae.

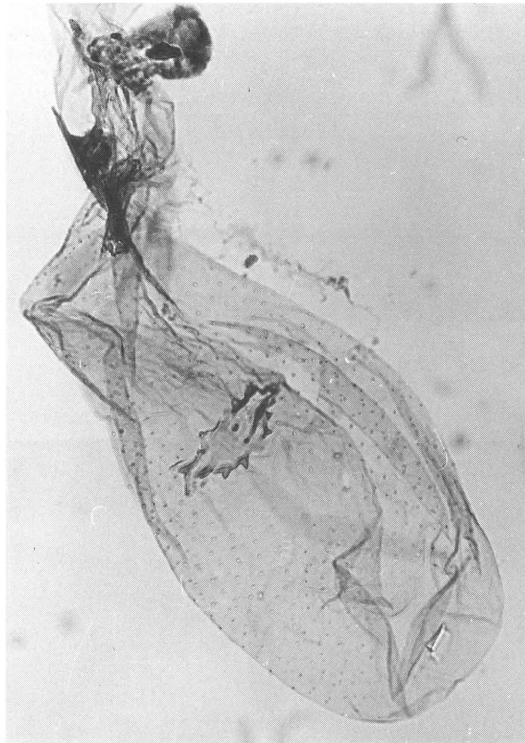


Fig. 24. Female genitalia of *Elachista talgarella* sp. n. (paratype): corpus bursae with signum.

dial ridge; aedeagus straight, distal end bifurcated, sclerotized; no cornuti present.

Female genitalia. Apophyses slender, posteriores slightly longer than anteriores; antrum funnel-shaped, gradually tapering into colliculum, ventral margin slightly curved; dorsal wall weakly spined; colliculum long and narrow, almost twice as long as apophyses anteriores; ductus bursae long and relatively wide, without chitinized spines; corpus bursae with very fine internal spines; signum oval, spinous.

***Elachista anserinella* Zeller, 1839**

Material. Novosibirskaja oblast, Akademogorodok 10-20.6.1983 3 ♂♂ Exp. Mikkola, Hippa & Jalava leg.

According to Traugott-Olsen & Nielsen (1977) this species is widely distributed in southern, central and eastern Europe. Previously not reported from Asia.

***Elachista monosemiella* Rössler, 1881**

Elachista cerusella (Hübner, 1796)

Material. Novosibirskaja obl., Akademogorodok 10-20.6.1983 2 ♂♂ Exp. Mikkola, Hippa & Jalava leg., 10.6-3.7.1984 8 exx. Mikkola & Viitasaari leg. Kazakhstan, 43°5'N 77°15'E Zailiskiy Alatau, Alma-Atinskij Nat. p. 2100 m, moist Aconitum-meadow 1.7.1990 14 ♂♂ L. Kaila leg., 1700 m steppe slope/Carex creek 2.7.1990 2 ♂♂ L. Kaila leg.

This species is widespread in Europe. It has also been recorded from the USSR and Asia Minor (Traugott-Olsen & Nielsen 1977). The specimens collected in Kazakhstan are externally similar to *E. monosemiella* from Europe and Siberia, but the male genitalia show some minor differences, especially in the form of juxta lobes, which are less rounded in the specimens from Tianshan. As these differences seem unimportant to me, I shall treat these specimens under the taxon *E. monosemiella* Rössler.

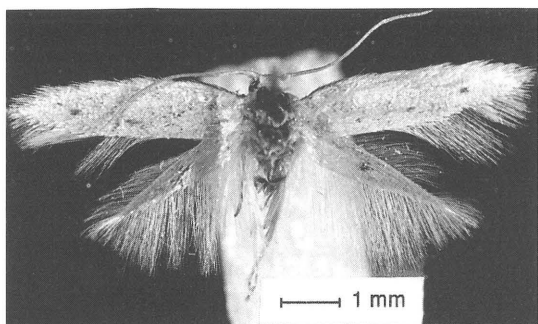


Fig. 25. *Elachista bimaculata* Parenti ♂ habitus.

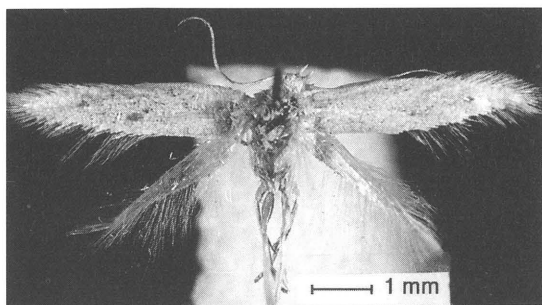


Fig. 26. *Elachista bimaculata* Parenti ♀ habitus.

Note that *Elachista cerusella* (Hübner, 1796) is not an available name, because according to the International Code of Zoological Nomenclature, article 58(8) *Tinea cerusella* Hübner, 1796 (Elachistidae) is a primary homonym to *Tinea cerussella* Denis & Schiffermüller, 1775 (Pyralidae). According to Traugott-Olsen & Nielsen (1977) the next available name is *monosemiella* Rössler, 1881 (O. Karsholt, pers. comm.).

***Elachista bimaculata* Parenti, 1981**

Figs. 25–29

Material. Kazakhstan, Dzhambul'skaya oblast 43°24'N 75°2'E 70 km NNE Frunze 18.7.1990 6 ♂♂ 2 ♀♀ L. Kaila leg.

This species has been described from material consisting only of males collected in North Iran (Parenti 1981). This species is habitually close to *E. triatomea* (Haworth, 1828), but the two spots in the forewing are yellowish brown

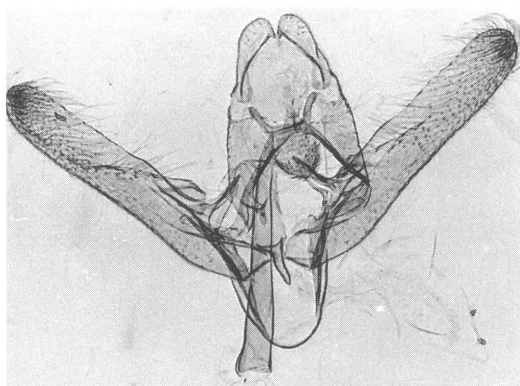


Fig. 27. Male genitalia of *Elachista bimaculata* Parenti.

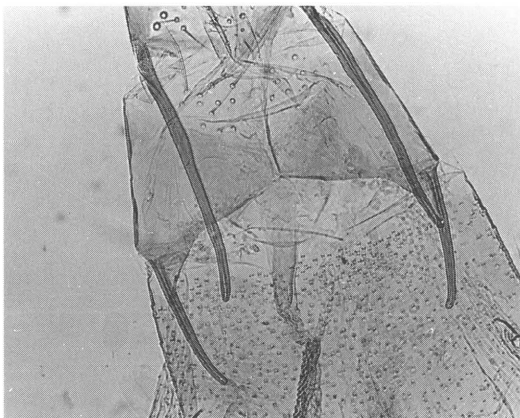


Fig. 28. Female genitalia of *Elachista bimaculata* Parenti: ostium bursae.

(Figs. 25–26). The structure of uncus lobes gives further support to this grouping (Fig. 27). As our material includes two females, I shall give the description of female genitalia (Figs. 28–29):

Papillae anales laterally sclerotized, ventrally weakly sclerotized, apical and dorsal margins with short, straight setae. Apophyses posteriores more than twice as long as anteriores. Region of ostium bursae weakly sclerotized, dorsal wall without spines, ventral margin very broad, narrow, U-shaped; antrum narrow, colliculum membranaceous, long. Ductus bursae as long as colliculum, gradually widening to corpus bursae. Corpus bursae without internal spines; signum large, oval, with minute spines in the middle and larger spines on the margin.

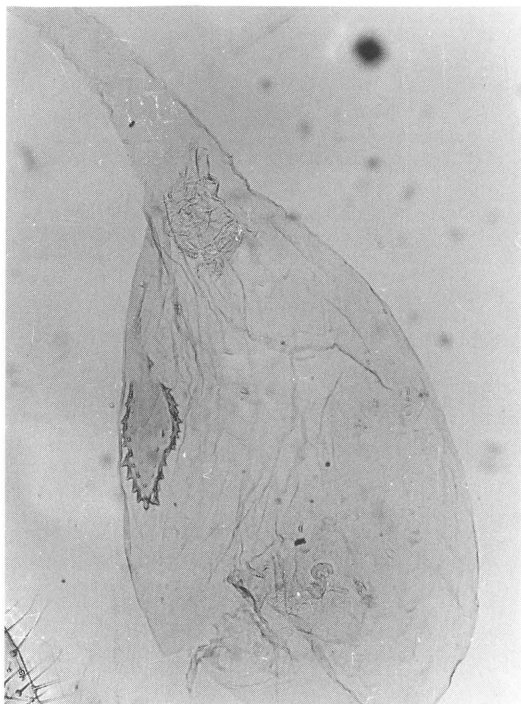


Fig. 29. Female genitalia of *Elachista bimaculata* Parenti: Corpus bursae with signum.

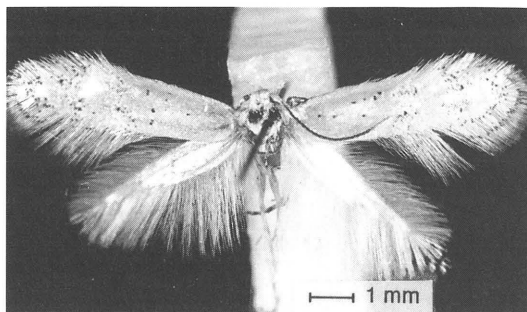


Fig. 30. *Elachista manca* Falkovitsh ♂ habitus.

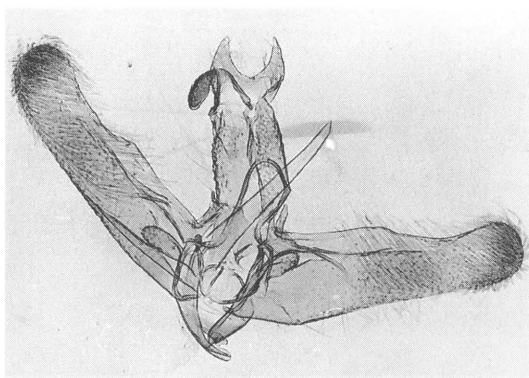


Fig. 31. Male genitalia of *Elachista manca* Falkovitsh.

***Elachista manca* Falkovitsh, 1986**

Figs. 30–31

Material. SW-Altai, Katun valley 10 km W Katanda, 1200 m 22.6–19.7.1983 10 ♂♂ Exp. Mikkola, Hippa & Jalava leg.

Only the holotype has previously been known. It has been collected from Uzbekistan: Shamansaj, 140 km NW Shafrikan 12.5.1966 Falkovitsh leg. (Falkovitsh, 1986). This species is similar to *E. heringi* Rebel, 1899, from which it can be separated by its silky white hind wings (Fig. 30). In the male genitalia the form of uncus lobes is very characteristic (Fig. 31).

***Elachista heringi* Rebel, 1899**

Material. SW Altai, 10 km W Katanda 22.6–19.7.1983 21 ♂ 4 ♀ Exp. Mikkola, Hippa & Jalava leg.

According to Gaedike (1975) previously known only from Central Europe.

***Elachista ilicrina* Falkovitsh, 1986**

Only one specimen is known: Uzbekistan: Shamansaj, 140 km NW Shafrikan 27.5.1972 Falkovitsh leg. (Falkovitsh 1986).

***Elachista multipunctata* Sruoga, 1990**

Described from one specimen: Tadzhikistan, 30 km N Dushanbe, env. Varzob (Kondara) 20.8.1986 R. Puplesis leg. (Sruoga, 1990). This species is apparently very close to, if not conspecific with, *E. constitella* Frey, 1859.

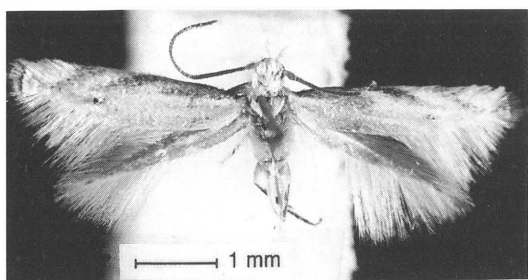


Fig. 32. *Elachista esmeralda* sp. n. holotype (♂).

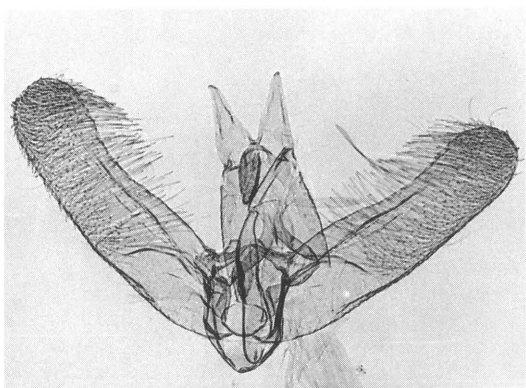


Fig. 33. Male genitalia of *Elachista esmeralda* sp. n. (holotype).

***Elachista esmeralda* sp. n.**

Figs. 32–34

Type material: ♂ holotype USSR 43°24'N 75°2'E Kazakhstan, Dzhambul'skaya oblast 70 km NNE Frunze, 950 m rocky slope, 19.7.1990 ad luc. L. Kaila leg. L. Kaila prep. nro 367. Coll. MZH.

Diagnosis

A relatively small species. Its habitus is peculiar, as the oblique lines in the forewing give to it an appearance of a *Bucculatrix* Zeller or *Phyllonorycter* Hübner species rather than *Elachista* (Fig. 32). Externally it is similar to *Elachistoides sinevi* Sruoga, 1992. The male genitalia show, however, this species to belong to the *Elachista bedellella* group (sensu Traugott-Olsen & Nielsen 1977), probably rather close to *E. squamosella* (Herrich-Schäffer, 1855) (Figs. 33–34). The male genitalia are in general similar to

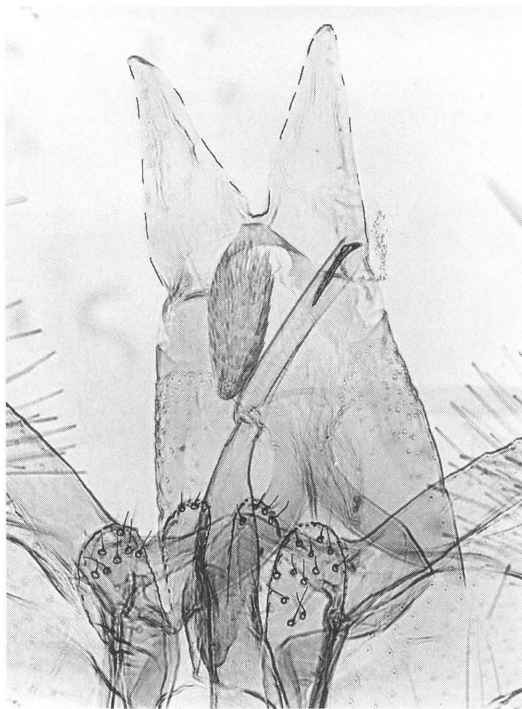


Fig. 34. Male genitalia of *Elachista esmeralda* sp. n. (holotype): digitate process, juxta lobes, aedeagus, gnathos and uncus lobes.

those in *Elachista nolckeni* Šulcs, 1992. *E. esmeralda* sp. n. and *E. nolckeni* can be distinguished not only by the quite different external appearance but also in following characters in the male genitalia: the aedeagus is short and broad, bottle-shaped in *E. nolckeni*, but almost twice as long and more slender in *E. esmeralda* sp. n.; the cucullus of *E. nolckeni* is distally projected, so that the tip of valva is slightly angular, whereas the tip of valva is quite rounded in *E. esmeralda*.

Description

Male. Forewing length 3 mm. Head and neck tufts silky white. Labial palpi silky white, long, porrect, almost straight; second segment as long as third, with long hairlike scales at tip; second segment on ventral side with brown colour. Antennae unicolorous brownish grey. Tegulae, thorax and abdomen white. Fore and mid legs on inner side white, outer side dark grey, tarsal segments with white distal rings. Ground colour of

forewing whitish, densely powdered with ochreous yellow scales, a dark brown stripe from basal edge of costa extending to two-thirds of costa and after that point turning towards fold. Outside it parallel white and brownish stripes extending to fold. Cilia greyish with brown cilia line. Hindwing grey with cilia of same colour. Under-side of wings dark grey.

Male genitalia. Uncus lobes elongate, triangular, widest at base, gradually tapering to rather sharp apex, outer margin with a few setae. Gnathos elongate, tapering to apex. Valva rather narrow, widest at base, costa slightly curved, cucullus rounded, slightly enlarged. Digitate process very broad, club-shaped, narrowest at base, with setae. Juxta lobes short, narrow, not widening distally, apical margin with short setae. Vinculum short and rounded. Basal end of aedeagus rather broad, tapering at one-third from caecum, bent and widening at half and beyond half gradually tapering; one large, elongate, at distal part bent cornutus.

Female unknown.

***Elachista spumella* Caradja, 1920**

Material. SW-Altai Katun Valley 10 km W Katanda 28.6–19.7.1983 8 ♂♂ Exp. Mikkola, Hippa & Jalava leg. USSR 43°24'N 75°2'E Kazakhstan, Dzhambul'skaya oblast 70 km NNE Frunze, 950 m rocky slope, 18.7.1990 1 ♂ 1 ♀ ad luc. L. Kaila leg.

This species has previously been known from eastern parts of Central Europe. The specimens from Altai region are conspicuously larger than those from Kazakhstan. The material available does not permit the drawing of any conclusions on the taxonomic status of these populations.

***Elachista filicornella* sp. n.**

Figs. 35–37

Type material. ♂ holotype USSR, Kazakhstan 43°5'N 77°15'E, Zailiyskiy Alatau, Alma-Atinskij Nat. p. 1700 m steppe/*Carex* 14.7.1990 L. Kaila leg. L. Kaila prep. nro 559. — Paratypes: same locality; 23.6.1990 2 ♂♂ 1700 m steppe slope/*Picea* L. Kaila leg.; 26.6.1990 2 ♂♂ 1700 m steppe slope L. Kaila leg.; 2.7.1990 5 ♂♂ 1850 m steppe slope/*Carex* creek L. Kaila leg.; 14.7.1990 1 ♂ 1650 m *Populus* river valley ad luc. L. Kaila leg. 14.7.1990 3 ♂♂ 1800 m steppe/*Carex* L. Kaila leg. L. Kaila prep. nro 359, 360, 393, 394, 516, 557, 558.

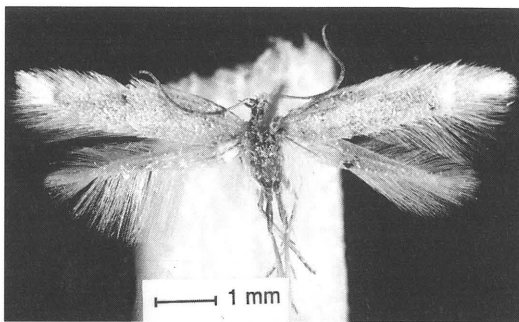


Fig. 35. *Elachista filicornella* sp. n. holotype (♂).

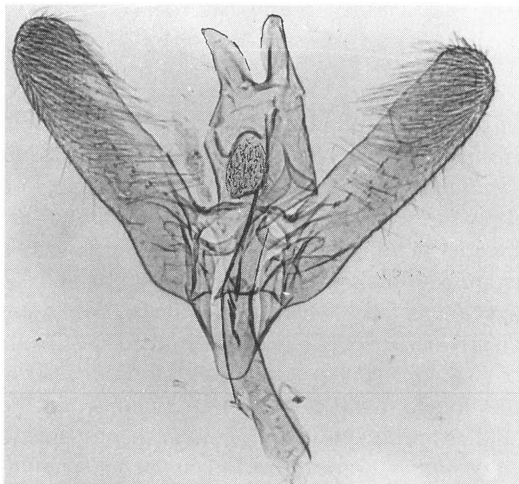


Fig. 36. Male genitalia of *Elachista filicornella* sp. n. (holotype).

Diagnosis

This species belongs to the *E. dispilella*-complex (sensu Traugott-Olsen 1990). It lacks the two spots present in most species belonging to this complex. The ground colour is light yellow, which distinguishes it from most of the related species. Habitually it is close to *E. flavescens* Parenti, 1981 (Fig. 39). From the latter it is easy to distinguish by the antennae, which are of the usual *Elachista* type, in *E. flavescens* the segments being sharply outward enlarged. The genitalia also show some differences between these species (Figs. 40–41). The genitalia of *E. filicornella* sp. n. are similar to those of *E. dispilella* Zeller, 1839. These species can be dis-

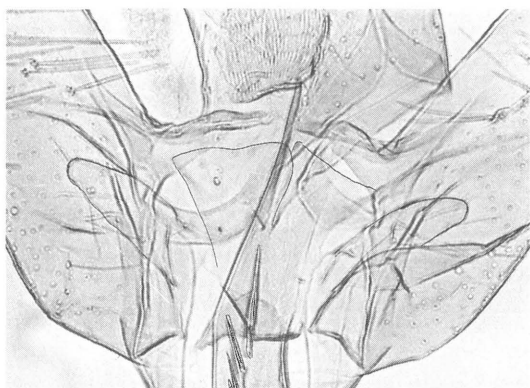


Fig. 37. Male genitalia of *Elachista filicornella* sp. n. (holotype): digitate process, juxta lobes.

tinguished by following characters: *E. filicornella* is unicolorous yellowish white, whereas *E. dispilella* is silky white with two dark spots on forewing; valva of *E. filicornella* is shorter and broader in all seven specimens of *E. filicornella* examined than in *E. dispilella*, of which 13 specimens were studied; the uncus lobes are clearly narrower at base in all studied specimens of *E. filicornella* sp. n. compared to *E. dispilella*; the conglomeration of cornuti is longer in the studied specimens of *E. filicornella* compared to *E. dispilella*. Some characters in the male genitalia, especially the form of gnathos and the position of cornuti in the aedeagus, in preparations exhibit a great deal of variation. This is, however, apparently artificial, and is due to the mounting technique.

Description

Forewing length 3.5–4 mm. Head and neck tufts yellowish white; labial palpi porrect, almost straight, relatively short; scape of antenna creamy white, flagellum unicolorous greyish brown, segments almost cylindrical, not enlarged outward; legs, thorax and abdomen creamy white; forewing unicolorous yellowish white, cilia of same colour; hindwing yellowish white; underside of forewing unicolorous grey, or with whitish longitudinal stripe in the fold.

Male genitalia. Uncus lobes broad at base, outer margin slightly concave, inner margin slightly rounded; tapering into slightly rounded apex, with 2–4 setae; between the uncus lobes a

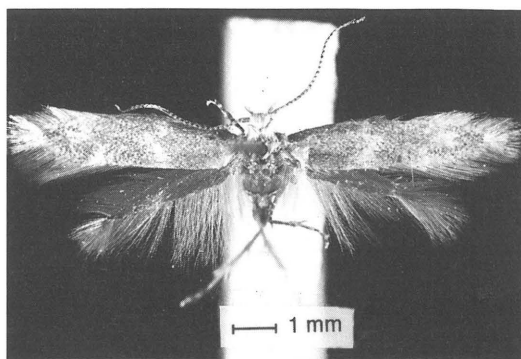


Fig. 38. *Elachista* sp. near *bedellella* ♂ habitus.

U-shaped indentation; gnathos slightly elongate (in some preparations almost rounded, apparently due to a different position in the slide); valva relatively short and broad, costa and sacculus almost parallel; cucullus rounded, not pronounced; digitate process rather short, gradually tapering to blunt apex, with some setae; juxta lobes weakly sclerotized, triangular, outer margin produced distally; vinculum V-shaped; aedeagus long, curved, broadest at caecum, gradually tapering to apex; one side of apex sclerotized; 7–10 cornuti, increasing in length towards apex of aedeagus.

Elachista rudectella Stainton, 1851

Material. SW-Altai, Katun valley 10 km W Katanda, 1200 m 28.6–27.7.1983 13 exx. Exp. Mikkola, Hippa & Jalava leg. Kirgisia 41°25'N 76°20'E 30 km E Naryn 2500 m, agric. land/steppe 25.7.1990 1 ♂ L. Kaila leg. Kirgisia 41°26'N 76°29'E 40 km E Naryn 2750 m, grazed steppe 2.8.1990 1 ♂ L. Kaila leg.

Previously recorded from southern and central Europe (Traugott-Olsen & Nielsen, 1977). The new records show this species to be widespread in Asia, too.

Elachista sp. near *E. bedellella* (Sircom, 1848)

Figs. 38–40

Material. USSR, Kirgisia 41°26'N 76°29'E 41 km E Naryn, Picea, 7.8.1990 K. Mikkola leg. L. Kaila prep. nro 381.

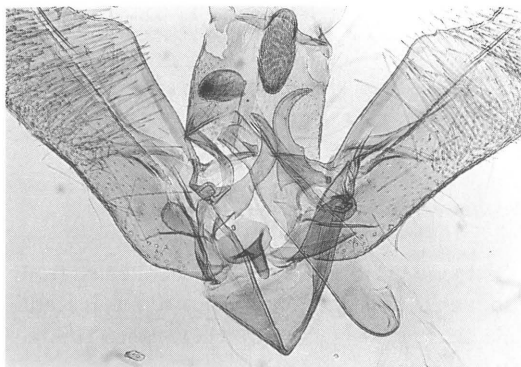
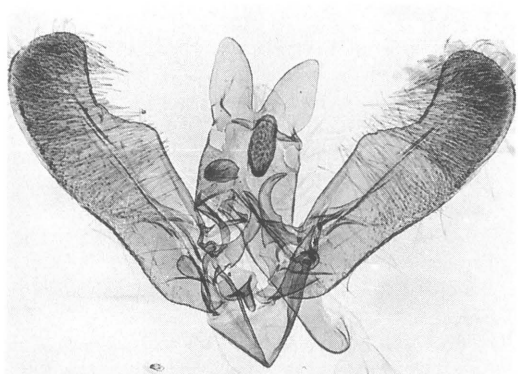


Fig. 39. Male genitalia of *Elachista* sp. near *bedellella*.

Fig. 40. Male genitalia of *Elachista* sp. near *bedellella*: digitate process, uncus lobes, aedeagus with cornutus.

Diagnosis

The morphology of the male genitalia shows this species to be a close relative of *E. bedellella* (Sircom, 1848) and *E. coeneni* Traugott-Olsen, 1990 (Figs. 38–40). From these species it can obviously be distinguished by its larger size and more elongated wing form. In the male genitalia the possible diagnostic characters appear to be the almost triangular uncus lobes and more rounded cucullus of valva. As only one specimen is known from this taxon, nothing can be said about the intraspecific variation within this species. As it is very close to *E. bedellella* and *E. coeneni*, I consider it best not to describe and name it on the basis of this material.

Elachista pullicomella Zeller, 1839

Material. Kazakhstan 43°5'N 77°15'E, Zailiskiy Alatau, Alma-Atinskij Nat. p. 1650 m meadow 23.6–14.7.1990 4 ♂ L. Kaila leg.

Previously recorded from northern and central Europe (Traugott-Olsen & Nielsen 1977), this is first record from Asia.

Elachista subalbidella Schläger, 1847

Material. Irkutskaja oblast, Sljudjanka 50 km E, river Hara-Murin, Betula bush, ad luc. 8–11.7.1984 1 ♂ Mikkola & Viitasaari leg. Irkutskaja oblast, Hamar-Daban, taiga, Meteorol. st. 1450 m ad luc. 14–15.7.1984 3 ♂ Mikkola & Viitasaari leg., 12.15.7.1984 22 ♂ S. Sinev leg. Irkutskaja oblast, 3 km E Sljudjanka 6.7.1984 1 ♂ S. Sinev leg.

Widespread in Europe (Traugott-Olsen & Nielsen 1977), not previously reported from Asia.

Elachista revinctella Zeller, 1850

Material. Irkutskaja oblast, Sljudjanka 70 km E, Sneknaja reka 31.7.1.8.1984 1 ♂ Mikkola & Viitasaari leg. Irkutskaja oblast, Sljudjanka 50 km E, Hara-Murin, *Betula* bush, 8–11.7.1984 1 ♂ ad luc. Mikkola & Viitasaari leg. Irkutskaja oblast 20 km S Sljudjanka 25.7.1984 2 ♂ S. Sinev leg. Irkutskaja oblast 20 km E Baikal, Hara-Murin 10–12.7.1984 4 ♂ S. Sinev leg.

Widespread in Europe (Traugott-Olsen & Nielsen 1977), not previously reported from Asia.

Elachista bisulcella (Duponchel, 1843)

Material. SW-Altai, Katun Valley 10 km W Katanda, 1200 m 26–27.7.1983 1 ♂ Exp. Mikkola, Hippa & Jalava leg.

Widespread in northern, western and central Europe (Traugott-Olsen & Nielsen 1977). Not previously reported from outside Europe.

Elachista phragmitella Sruoga, 1992

Described from a series of 31 specimens collected from southern Tadzhikistan 13.–27.7.1990 V. Sruoga leg. (Sruoga & Puplesis 1992).

***Cosmiotes consortella* (Stainton, 1851)**

Material. Tadzhikistan: 30 km W Dushanbe, Kondara (Sruoga 1991).

***Cosmiotes pallens* Sruoga, 1990**

Described from one specimen collected from Turkmenia, western Kopet Dag, 40 km E Kara-Kala, 28.5. 1988 V. Sruoga leg. (Sruoga 1990).

***Cosmiotes vakshi* Sruoga, 1992**

Described from two specimens collected from southern Tadzhikistan 26.7.–18.8.1990 V. Sruoga leg. (Sruoga & Puplesis 1992).

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