

Description of *Elachista tanaella* sp. n. (Elachistidae) from Arctic Norway

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Abstract. *Elachista tanaella* sp. n. is described from northernmost Norway. It differs from other *Elachista* species of the region by plain grey forewings, distally wide valvae with large hump in the male genitalia and in the female genitalia by a long tube-like colliculum gradually widening into the antrum. The habitat are bogs just above the timberline dominated by *Carex rotundata*.

Key words. Lepidoptera, Elachistidae, *Elachista*, new species, Norway.

Introduction

The North European fauna of the micro-moth family Elachistidae s. str. is well documented (Traugott-Olsen & Nielsen 1977). The family is richly represented in the region, and since 1974 nine new species have been described from northernmost Fennoscandia (Traugott-Olsen 1974; Svensson 1976; Bengtsson 1977; Traugott-Olsen & Nielsen 1977; Kyrki & Karvonen 1985; Kaila & Kerppola 1992; Kaila 1998). These discoveries result from rather intensive collecting. Every summer lepidopterists visit northern Fennoscandia. In spite of this, single species may escape discovery for a long time because of local occurrence and strong variation in abundance from year to year. Populations may be low for many seasons, before suddenly in one year there is a peak. Arctic species, in particular, have the ability to survive in low numbers through several unfavourable seasons.

In 2002 the authors collected an unknown *Elachista* species in two localities in Finnmark in Arctic Norway. Both sexes were found in reasonable numbers and were compared with descriptions in the literature of other *Elachista* species. The North Palaearctic species have been treated by Traugott-Olsen & Nielsen (1977) and Sinev & Sruoga (1997), and the Nearctic fauna has been dealt with by Kaila (1999). In addition to the shorter papers mentioned, the following papers containing descriptions of a few or single species were checked: Kaila (1992), Albrecht & Kaila (1994) and Kaila & Jalava (1994).

Abbreviations

KBE – coll. K. Berggren, Kristiansand, Norway; LAA – coll. L. Aarvik, Ås, Norway; ZMO – Zoological Museum, University of Oslo, Norway; ZMUH – Zoological Museum, University of Helsinki, Finland.



Fig. 1. *Elachista tanaella* sp. n., adult male (wingspan 11 mm).

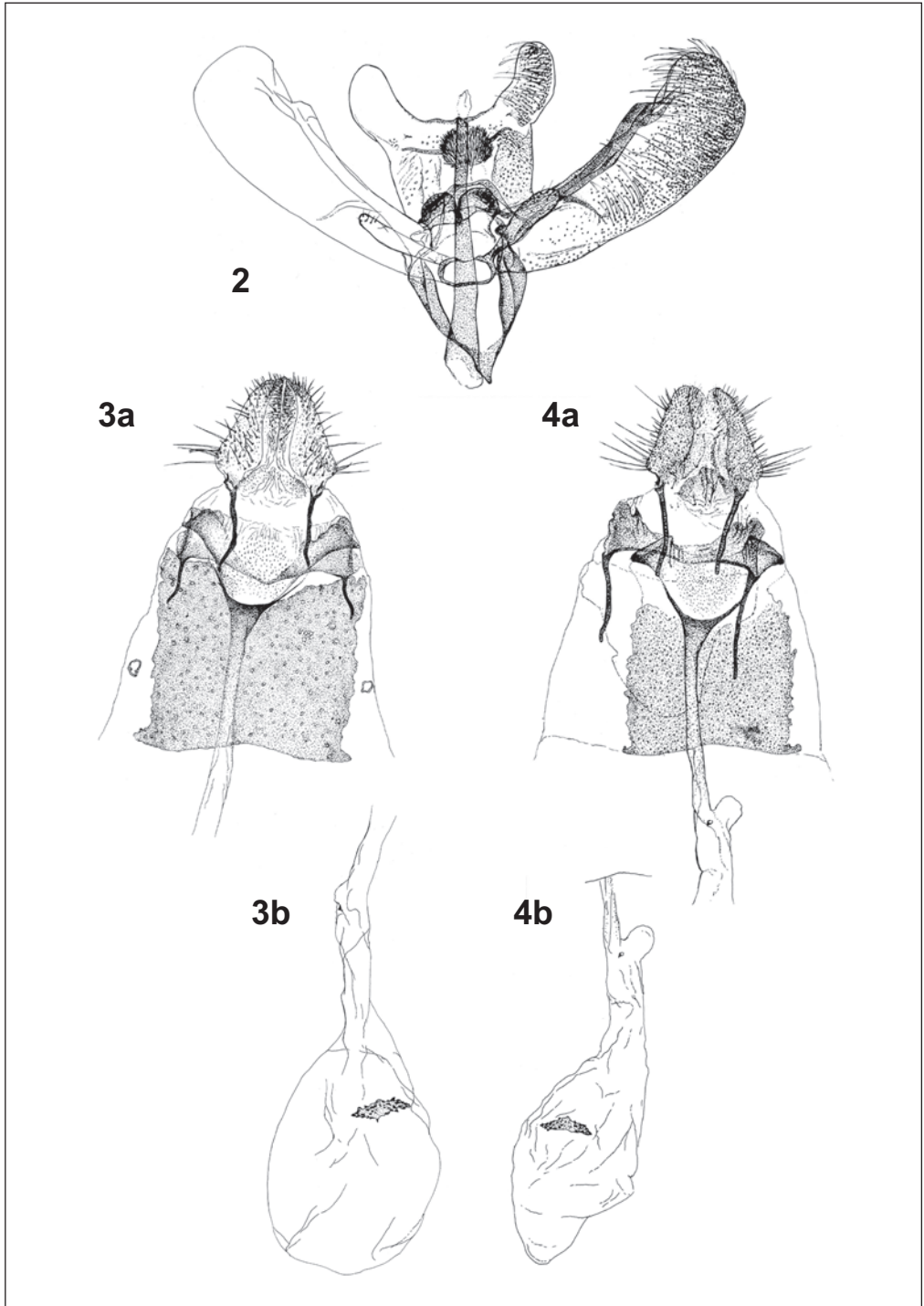
Elachista tanaella sp. n.

Material. Holotype ♂, **Norway**, FN Tana: Faccabæljåkka (UTM 35WNU 722 198, EIS 184) 270 m, 15.vii.2002, Aarvik leg. (genitalia slide ZMO 1188) ZMO. – 26 Paratypes: 1♂1♀ same data as holotype (genitalia slides ZMO 1189, 1190); 1♂ same data, but ZMUH; 2♂1♀ same data, but coll. Aarvik; 6♂ same data, but leg. & coll. Berggren; 3♂1♀ same data, but 14.vii.2002, Aarvik leg. & coll.; 5♂ Norway, FN Tana: Ifjordfjellet, Ammunjavrit (UTM 35WNU 2113, EIS 183) 350 m, 15.vii.2002, Berggren leg. & coll.; 1♂ same data, Aarvik leg. & coll.; 2♂2♀ same data (genitalia slides 1♀ LAA 2646, coll. Aarvik, 2♂1♀ KBE 4561, 4604, 4592 coll. Berggren).

Description of imago (Fig. 1). Wingspan 8.5–11.5 mm. Head brownish grey, posterior scales of neck tufts lighter, almost white; labial palpus and antenna grey, scape with some light scales. Thorax brownish grey, with some lighter dark-tipped scales, tegulae posteriorly with light scales, some of them dark-tipped. Abdomen brownish grey, anal tuft yellowish grey in male, ochreous in female. Forewing unicolorous brownish grey, at higher magnification appearing mottled because scales are basally light and have dark tips. Cilia light grey, basally light and with ochreous sheen. Hindwing grey, with grey cilia which are basally light. Abdominal sternites are sclerotized in both sexes, and males have the anterior margin of tergites 5–7 strongly sclerotized.

Male genitalia (Fig. 2). Uncus lobes longer than wide, wide apart; gnathos almost circular; valva becoming wider distally, costa with well developed hump, cucullus rounded ventrally, sacculus with weak distal spine; digitate process rather narrow; juxta lobes ventrally setose, with rounded edge, laterally produced; aedeagus straight, no cornuti.

Female genitalia (Figs. 3a, 3b, 4a, 4b). Papillae anales longer than wide; ostium bursae wide; dorsal wall of antrum with spinules; colliculum gradually widening into antrum, length of colliculum exceeding length of sternum 7; ductus seminalis inserted in anterior end of colliculum, basally bulbous; small sclerotized tooth



Figs. 2–4. Genitalia of *Elachista tanaella* sp. n.: **2.** Male genitalia, slide KBE 4604. **3–4.** Female genitalia. **3a, 4a:** Posterior part of female genitalia; **3b, 4b:** Corpus bursae and ductus bursae (3a, 3b: slide KBE 4592; 4a, 4b: slide ZMO 1190).



Fig. 5. Type locality of *Elachista tanaella* sp. n., North Norway, Tana: Faccabæljåkka.

present in ductus bursae near insertion point of ductus seminalis; corpus bursae longer than wide; signum an elongate dentate plate, widest in middle. There is great variation in the length of the apophyses anteriores. In three dissected females the ratios of the length of the apophyses posteriores and the length of the apophyses anteriores are 0.9, 1.6 and 1.9. The ratio for each specimen is the mean value of the ratio of the left and the ratio of the right pair of apophyses. Figs. 3a and 4a show the extremes.

Habitat. Both localities, situated just above the timberline, are wet bogs dominated by *Carex rotundata* Wahlenberg. Some *Eriophorum angustifolium* Honckeny also grow in the bogs. *Salix glauca* Linnaeus grows in patches inside the bogs and also around them. Not a single specimen was observed flying. The specimens were all swept from *Carex rotundata*. We believe that this represents the foodplant. At least one related species in the *bifasciella* complex (see below) uses *Carex* as foodplant, *E. alpinella* Stainton, 1854 (Traugott-Olsen & Nielsen 1977). *E. kilmunella* Stainton, 1854, also belonging to the *bifasciella* complex, feeds on *Eriophorum* (Kaila 1999).

Remarks. *Elachista tanaella* sp. n. is easily distinguished from most other North European species of the genus due to its plain grey forewings. At first the unicolorous grey moths were thought to belong to some *Scythris* species which typically have unmarked blackish or greyish forewings. *Elachista pigerella* (Herrich-Schäffer, 1854) from Central and South Europe is a brownish, unicolorous species in the *tetragonella*-group. The male of *Elachista lastrella* Chrétien, 1896, distributed in Central Europe, also has grey forewings, but they are much narrower than in *E. tanaella*. *E. lastrella* belongs to the *bifasciella*-group, as does *E. tanaella*, but in a different subgroup, the *cerusella*-subgroup (Traugott-Olsen & Nielsen 1977). Both *E. pigerella* and *E. lastrella* have genitalia that differ strongly from those of *E. tanaella*

(cf. illustrations in Traugott-Olsen & Nielsen 1977). The external appearance and the genitalia of *E. tanaella* are distinct, and there are no other *Elachista* species known from Arctic Fennoscandia that could be confused with it.

Elachista tanaella belongs to the *bifasciella*-subgroup of the *bifasciella*-group (Traugott-Olsen & Nielsen 1977). According to Kaila's (1999) classification of the North-American species, it seems to fit in his *Elachista bifasciella* complex (which is somewhat different from the concept of Traugott-Olsen & Nielsen 1977). In particular the long, tubular colliculum in the female genitalia speaks for the inclusion in this complex. However, *E. tanaella* has male antennae with short visible cilia, and this character contradicts placement in the *bifasciella* complex. We believe that *E. tanaella* has an isolated position within this complex, and with the present knowledge it is not possible to state which species are the closest relatives of *E. tanaella*. In the male genitalia the distally widened cucullus with large costal hump, and in the female genitalia the wide ostium bursae, combined with the long colliculum gradually widening into the antrum, are unique characters among North European Elachistidae.

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