

The identity of *Tinea megerlella* Hübner, [1810] – a long-lasting confusion between *Elachista* (Elachistidae) and *Adela* (Adelidae)

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Summary. Examination of Hübner's [1810] figure (p. 44, fig. 307) demonstrated that the current use of the name *Tinea megerlella* Hübner, [1810] for a species in the genus *Elachista* (Gelechioidea, Elachistidae) is incorrect. We provide evidence that Hübner may have figured a female of the species currently known as *Adela associatella* (Zeller, 1839) (Incurvarioidea, Adelidae). As this newly discovered senior subjective synonym, *Adela megerlella* (Hübner, [1810]), has not been used for the species of *Adela* for more than 100 years, whereas the junior synonym, *A. associatella*, is commonly accepted (at least 26 references, all by different authors, during the past 50 years), our discovery has no effect on the nomenclature of fairy moths (Adelidae): the junior synonym is protected in accordance with ICZN Article 23.9.1. However, the name *Elachista obliquella* Stainton, 1854, should be used for the species currently known as *Elachista megerlella* auct., because the latter name (misidentification) is invalid according to ICZN Article 49. Neotypes designated for both *Tinea megerlella* Hübner and *Elachista obliquella* Stainton are deposited in the Natural History Museum (London).

Zusammenfassung. Das Studium von Hübners [1810] Abbildung (p. 44, fig. 307) zeigte, daß die gegenwärtige Nutzung des Namens *Tinea megerlella* Hübner, [1810] für eine Art der Gattung *Elachista* (Gelechioidea, Elachistidae) nicht korrekt ist. Wir erbringen Beweise, daß Hübner vielleicht ein Weibchen der Art, welche gegenwärtig als *Adela associatella* (Zeller, 1839) (Incurvarioidea, Adelidae) bekannt ist, abgebildet hat. Da dieses neu entdeckte, ältere Synonym *Adela megerlella* (Hübner, [1810]) seit über 100 Jahren nicht für eine Art der Gattung *Adela* benutzt wurde, während das jüngere Synonym, *Adela associatella*, häufig Verwendung findet (in mindestens 26 Publikation, alle von verschiedenen Autoren innerhalb der letzten 50 Jahre), hat unsere Entdeckung keine nomenklatorischen Auswirkungen auf Langfühlermotten (Adelidae): das jüngere Synonym behält in Übereinstimmung mit den ICZN Artikel 23.9.1 seine Gültigkeit. Allerdings sollte der Name *Elachista obliquella* Stainton, 1854 für die Art, welche gegenwärtig als *Elachista megerlella* auct. bekannt ist, benutzt werden, da der letztgenannte Name in Übereinstimmung mit ICZN Artikel 49 ungültig ist. Neotypen wurden für *Tinea megerlella* Hübner und *Elachista obliquella* Stainton designiert: ihr Aufbewahrungsort ist das Natural History Museum (London).

Résumé. L'étude de la figure d'Hübner [1810] (p. 44, fig. 307) a permis d'établir que l'usage actuel du nom *Tinea megerlella* Hübner, [1810] pour une espèce appartenant au genre *Elachista* (Gelechioidea, Elachistidae) est incorrect. Nous apportons les éléments permettant d'affirmer que Hübner pourrait bien avoir figuré une femelle appartenant à l'espèce connue actuellement sous le nom de *Adela associatella* (Zeller, 1839) (Incurvarioidea, Adelidae). En vue du fait que ce synonyme subjectif plus ancien, *Adela megerlella* (Hübner, [1810]), n'a été employé pour aucune espèce d' *Adela* pendant plus de 100 ans, tandis que le synonyme plus récent *A. associatella*, est généralement accepté (au moins 26 références, toutes d'auteurs différents, durant les 50 dernières années), notre découverte n'a aucune incidence quant à la nomenclature des Adelidae: le synonyme plus récent étant valide conformément au Code (4^e éd., article 23.9.1). Néanmoins, le nom *Elachista obliquella* Stainton, 1854 devrait en fait être employé pour l'espèce actuellement connue comme *Elachista megerlella* auct., ce dernier nom étant non valide (erreur d'identification) d'après le Code (4^e éd., article 49). Des Néotypes, déposés au Natural History Museum (London), sont désignés aussi bien pour *Tinea megerlella* Hübner que pour *Elachista obliquella* Stainton.

Key words. Lepidoptera, Elachistidae, Adelidae, identity, type-material, nomenclature.

Introduction

The early history of many names of European Microlepidoptera appears rather confusing. In the course of revisionary work on fairy moths (Adelidae) one of us (MK) discovered two old references to *Tinea megerlella* Hübner as a member of the family

Adelidae (Incurvarioidea). However, this name has more recently been used, as *Elachista megerlella*, for a moth of the family Elachistidae (Gelechioidea). As Adelidae and Elachistidae are externally very different, we attempted to clarify the identity of *T. megerlella* Hübner and consider the nomenclatural implications for both families.

The identity of *Tinea megerlella* Hübner, [1810]

Hübner [1825] included *T. megerlella* in the genus *Antispila*, along with species currently placed in the families Micropterigidae, Nepticulidae, Tineidae, Oecophoridae and Elachistidae, whereas the species of Adelidae were placed in other genera. Stephens (1829: 226) listed *megerlella* without a generic name; later on, he published (Stephens 1834: 355) the very first, although short, description of this species (as *Amaurosetia megerlella*, with reference to Hübner's plate), mentioning in particular narrow ('slender') hindwings. We found no indication that Stephens doubted whether his species was the same as that illustrated in Hübner's work. Treitschke (1833) did not mention *T. megerlella*. Herrich-Schäffer (1835) included *T. megerlella* (as '- Megerl 307. 3') in his 'Nomenclator' (p. 32). He did not possess any specimen of this species, as shown by the minus sign in front of the species' name. However, he did not consider the species rare or very difficult to obtain, as indicated by a modest exchange value (3) ascribed to *T. megerlella*: the highest value among the *Tinea* (sensu lato) included in his list was 6. Douglas (1854) and Stainton (1854) redescribed '*megerlella*', using the combination *Elachista megerlella*, with reference to both Hübner (with a question mark in Douglas' work) and Stephens; examination of historical collections (Bradley 1963) demonstrated that both these authors possessed specimens of the species currently known as *Elachista megerlella* auct.

Herrich-Schäffer [1855] was probably the first to discover the mismatch between the figure by Hübner and the later use of Hübner's name: he attributed *Poeciloptilia megerlella* to Stainton (Herrich-Schäffer, [1855]: 303) and mentioned '? *megerlella* Hb.' as a synonym of *Adela associatella* Zeller, 1839 [Herrich-Schäffer, 1855: Index, p. 5]. However, a majority of subsequent researchers have used the specific name (attributed to Hübner) for the *Elachista* species, although occasionally (Curó & Turati 1882: 15) it was listed as a synonym of *A. associatella*. To the best of our knowledge, this name has not been associated with any other European moth, and therefore we have chosen to compare (Table 1) the characters of *Tinea megerlella* Hübner (Fig. 1), *Elachista obliquella* Stainton (= *megerlella* auct.) (Fig. 2) and *Adela associatella* Zeller (female, Fig. 3).

Although only a few characters can be seen in Hübner's figure, there is no doubt that *Tinea megerlella* has a wide hindwing with relatively short cilia (Fig. 1), whereas all *Elachista* species possess a narrow hindwing with long cilia (Fig. 2). Another important difference concerns the size of the moth, as measured from the original figure. Hübner appeared to be extremely precise in providing an 'average' size of the moths: for the remaining six species from the same plate (Tineae 1, Vol. 8) the correlation between the wing expanse measured from the figure and the median wing expanse published in recent revisions is extremely high (Fig. 4). *Tinea megerlella* Hübner is larger than *E. obliquella* but perfectly fits the size of *A. associatella* (Fig. 4). Two other

Tab. 1. Comparison between *Tinea megerlella* Hübner, *Elachista obliquella* Stainton (= *megerlella* auct.) and *Adela associatella* Zeller (female).

Character	<i>Tinea megerlella</i>	<i>Elachista obliquella</i>	<i>Adela associatella</i>
Wing expanse (mm)	11.2	8–10	10–12
Antenna/forewing ratio	0.8	0.65–0.70	0.85–0.95
Forewing colour	yellowish brown ¹	gray	yellowish brown
Forewing cilia at apex	unicolours	with white spot	unicolours
Shape of hindwing	wide	narrow	wide
Cilia of hindwing	short	long	short

characters, the relative length of the antenna and the colour of the forewing cilia, are less reliable; however in these points Hübner's figure also differs from *E. obliquella* but is similar to *A. associatella*.

The most problematic character of *T. megerlella* is the forewing colour, which is coppery brown in the printed (and hand-painted) copies of the Hübner's book. This character is clearly different from both *E. obliquella* (forewing grey) and *A. associatella* (forewing brown, with scattered pale yellow scales and bronze iridescence). However, on the original watercolour figure (Hübner [1785]: [71]) the forewing colour is brown, suffused with minor yellow spots; also the yellow band of the fascia is bordered by dark (coppery?) brown bands. We therefore conclude that *Tinea megerlella* Hübner is not a member of Elachistidae, but most likely the species currently known as *Adela associatella* (Zeller, 1839). Since the collection of Hübner is lost, and the figure of the holotype may not be sufficient to unequivocally reveal the species' identity, we have selected a female neotype of *Tinea megerlella* to assure further stability in the use of this specific name. However, to assure stability of the nomenclature we consider this newly discovered senior subjective synonym of *A. associatella* as *nomen oblitum*.

Adela megerlella (Hübner, [1810]) sp. rev.

Tinea megerlella: Hübner [1810], pl. 44 fig. 307.

Antispila megerlella: Hübner [1825]: 419.

Adela megerlella: Herrich-Schäffer [1855], index: 5; Curó & Turati 1882: 15 (both as a synonym of *A. associatella* Z.)

Neotype ♀ (here designated): Switzerland, Zürich; labelled: 8 mm circle with red border, print 'Neotype'; 4 × 12 mm, in black ink 'Zurich'; 6 × 11 mm, print 'Frey Coll. | Brit. Mus. | 1890-62'; 10 × 18 mm, print 'NEOTYPE ♀ | *Tinea megerlella* | Hübner [1810], Fig. 307 | design. M. Kozlov, 2001' (BMNH).

Diagnosis. For the differences from *Elachista obliquella*, see Table 1. For the differences from other species of the genus *Adela* Latr. consult the diagnostic traits of *A. associatella* (Wojtusiak 1972; Razowski 1978; Zaguljaev 1978; Küppers 1980).

Note. The exact type locality of *T. megerlella*, as of many other species described by Hübner, remains unknown. The only geographical information which can be extracted

¹ As on the original water-colour (brown to coppery brown in printed and hand-painted copies)



Fig. 1. *Tinea megerlella* Hübner (after Hübner, [1810], pl. 33, fig. 307). Fig. 2. Neotype of *Elachista obliquella* Stainton.



Fig. 3. *Adela associatella* (Zeller), female.

from Hübner [1825] is that this species was not recorded in Augsburg (because *T. megerlella* is not marked with an asterisk in the referred publication).

Adela associatella (Zeller, 1839), *nomen protectum*

Tinea megerlella Hübner, [1810], *nomen oblitum*

To the best of our knowledge, the newly discovered senior synonym had never been used as such for the species in question, and only twice (Herrich-Schäffer [1855]; Curó & Turati 1882) was listed as a possible synonym of *A. associatella*. Although the specific name *megerlella* had been repeatedly used for a species of the family Elachistidae, this use is invalid as based on misidentification (ICZN Article 49). Therefore we conclude that the conditions of ICZN Article 23.9.1.1 are met. We are aware of the fact that the latter conclusion can be contested²; however, we believe that our interpretation of the Article 23.9.1, aimed at maintenance of nomenclatural stability, is in line with the basic principles of ICZN.

The more or less comprehensive bibliography (to be published in the forthcoming revision of the genus *Adela* by MK) includes about 100 references to *A. associatella* (preferentially in combination with the generic name *Nemophora*), among which 26

² In particular, Dr. I. M. Kerzhner did not accept this conclusion and advised us to apply to the International Commission of Zoological Nomenclature in order to suppress the principle of priority in this specific case.

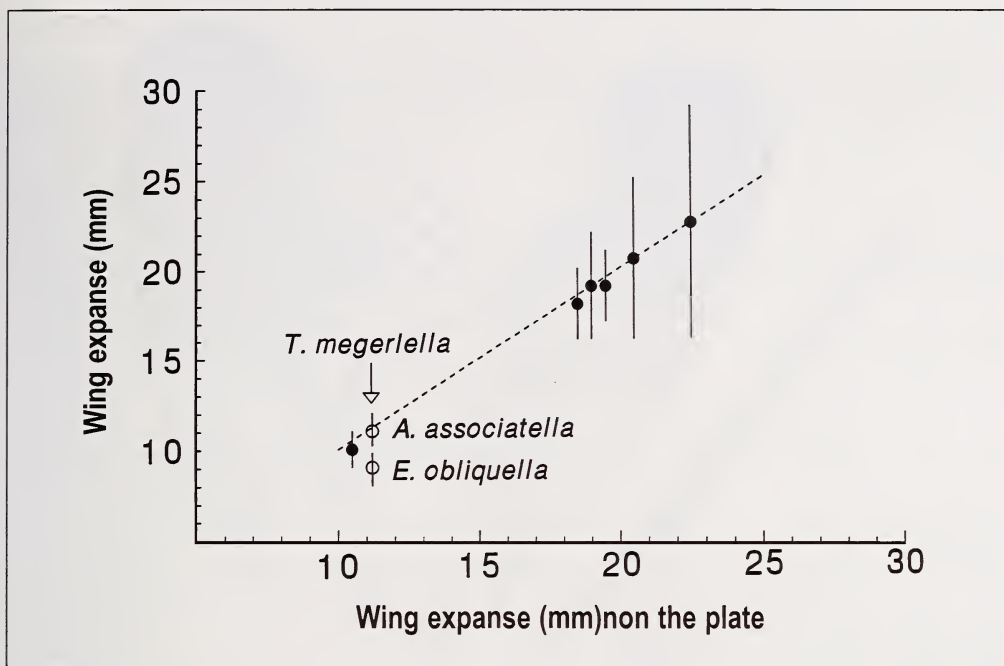


Fig. 4. Correspondence between the wing expanse of moth specimens figured on the plate 'Tineae 1' by Hübner [1810] (horizontal axis) and the wing expanse published in recent major revisions (vertical axis). Recent data are shown as the interval between minimum and maximum values; circles indicate median values; regression is calculated for the median values of all species except *Tinea megerlella* (filled circles): $y = 1.04 * x$ (H: intercept $\neq 0$ rejected, $P = 0.12$), $R^2 = 0.99$, $P < 0.0001$.

sources, all by different authors, were published in 1951–2000. Thus, the conditions of ICZN Article 23.9.1.2, which requires that the junior synonym is used as the valid name in at least 25 publications during the last 50 years, are also met. Furthermore, all major revisions (Razowski 1978; Küppers 1980), keys (Wojtusiak 1972; Zaguljaev 1978) and checklists (Wojtusiak 1996; Leraut 1997) have consistently applied this name, which can be considered as sufficient proof of its universal usage. Therefore, in accordance with the procedure described in ICZN Article 23.9.2), the application of the principle of priority is moderated, and the prevailing usage of the junior subjective synonym, *Adela associatella* (Zeller, 1839), is maintained.

Elachista obliquella Stainton, 1854

Amaurosetia megerlella auctorum, non Hübner [1810]: Stephens 1834: 355.

Elachista megerlella auctorum, non Hübner [1810]: Stainton 1854: 258–259; Douglas 1854: 211, pl. 18 fig. 2; Stainton 1858: 74–83, pl. 2 fig. 2; Bradley 1963: 153–155; Traugott-Olsen & Nielsen 1977: 119–120, figs. 108, 109, 208, 353, 354, 471, 472; Biesenbaum 1996: 84, pl. 7 fig. 41; Parenti 1996: 71.

Neotype ♀ (here designated): Great Britain, London; labelled: 8 mm circle with red border, print 'Neo-type'; 10 × 15 mm, in black ink 'E. megerlella | Pope's lane | Ealing | 26.5.[19]08'; 4 × 16 mm, print 'S. N. A. Jacobs Coll. | B. M. 1977-420'; 10 × 18 mm, print 'NEOTYPE ♀ | *Elachista obliquella* | Stainton, 1854 | L. Kaila design. 2001'; B.M. genitalia slide 29825 (BMNH).

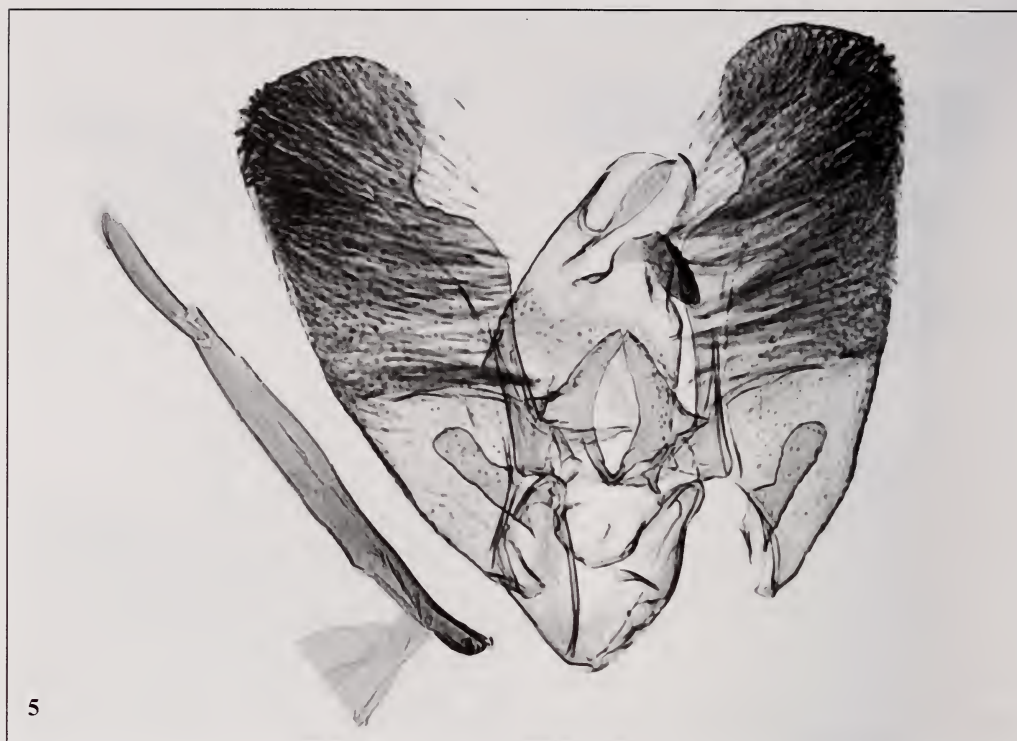


Fig. 5. Neotype of *Elachista obliquella* Stainton. Male genitalia (B.M. genitalia slide 29825).

D i a g n o s i s . External appearance (Fig. 2) and male genitalia characteristics (Fig. 5) allow reliable identification of the species. For more information, consult description of *E. megerlella* (auct.) by Traugott-Olsen & Nielsen (1977).

The original syntypes of *E. obliquella* (two specimens from London), according to the original description, were kept in the Edelstain collection; their whereabouts are unknown (presumably lost). Therefore we have selected a neotype to assure the stability of the further use of this specific name. The type locality for the selected neotype is now within the city of London; this fits perfectly to Stainton's note (1854: 258) that the syntypes were collected around London.

We see no such particular significance in the past application of the name *megerlella* to *E. obliquella* that it would justify an application to the International Commission of Zoological Nomenclature, asking for some actions required to conserve the recent use of *E. megerlella* auctorum. The species in question has no economic importance, and the total number of publications on the family Elachistidae is relatively small. The stability in the nomenclature of Elachistidae can anyway be questioned due to very frequent misconcepts of nominal taxa. All these facts justify the simple solution of the problem – replacement of an incorrectly used specific name by a valid name, which had long been considered a junior subjective synonym of *E. megerlella* auctorum. The name *E. obliquella* is also known to lepidopterists, and the identity of it can easily be revealed, because the major revisions (Traugott-Olsen & Nielsen 1977; Kaila 1999) list both names.

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