

Eriocrania cicatricella (Zetterstedt, 1839), the correct name of the moth currently known as *Eriocrania haworthi* Bradley, 1966 (Lepidoptera: Eriocraniidae).

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Eriocrania cicatricella (Zetterstedt, 1839) is a senior synonym of *E. haworthi* Bradley, 1966, not a junior synonym of *E. sparrmannella* (Bosc, 1791) as hitherto believed. A lectotype of *Adela cicatricella* is designated. Reasons are given for not seeking the senior synonym rejected under article 79 of the Code. A lectotype is designated for *E. auropulverella* (Eversmann, 1842), which is a junior synonym of *E. cicatricella*, not of *E. semipurpurella* (Stephens, 1835) as hitherto believed.

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The nomenclature of the common European eriocraniid moth which for almost 140 years was best known as *Eriocrania purpurella* (Haworth, 1828) has proved unusually confusing. In 1966 Bradley noted that the Haworth name *purpurella* was preoccupied, and since no valid younger synonyms were discovered, the replacement name *haworthi* Bradley, 1966 was introduced for the species. Somewhat surprisingly, however, another two eighteen-century names actually apply to the species in question.

Adela cicatricella, described in Zetterstedt's "Insecta Lapponica" (1839), has long been considered a junior synonym of the eriocraniid *Eriocrania sparrmannella* (Bosc, 1791). Already Stainton (1850: 37) suspected this name to be synonymous with Haworth's *purpurella*, but the synonymy with *sparrmannella* was expressly confirmed by Benander in his revision (1940) of the micro-moths described in the said Zetterstedt work. It was unexpected, therefore, that a renewed examination of Zetterstedt's type material of *A. cicatricella* revealed that Stainton's suspicion was indeed correct, i.e., that the taxon in question is identical not with *sparrmannella*, but with the species currently known as *haworthi* Bradley, 1966.

Adela auropulverella, described by Eversmann in 1842, is a little-known name. While it has long been considered a junior synonym of *Eriocrania semipurpurella* (Stephens, 1835) it was used by Za-

gulajev (1978/1987) as the name of a distinct species, keying out together with *cicatricella* (as "*purpurella* Hw."), but separated from the latter by differences in colour shades and in the hind tibia being longer than the tarsus. We have been unable to confirm the shorter relative tibial length as a diagnostic trait of *cicatricella*, and having examined a syntype of *auropulverella*, we are satisfied that this taxon is conspecific with *cicatricella*.

Eriocrania cicatricella (Zetterstedt, [1839])

E. purpurella (Haworth, 1828) [preoccupied], nec (Thunberg, 1788)

E. auropulverella (Eversmann, 1842) **syn.nov.**
auripulverella (Eversmann, 1844) [unjustified emendation]

E. violacella (Herrich-Schaeffer, 1851) [unavailable]

E. haworthi Bradley, 1966 **syn.nov.**

E. kaltenbachi auct., nec *kaltenbachii* (Wood, 1890)

E. rubroaurella auct., nec Haworth (1828)

Adela cicatricella Zetterstedt, 1839, Insecta Lapponica: 1008. LECTOTYPE (male) labelled "A. cicatricella Zett. ♀ [sic] Wittangi" (specimen mouldy; badly crushed genitalia preparation, made by P. Benander, mounted between two coverslips and borne on the specimen pin; slide preparation of maxillary palp segments 3-5); Zoological Mu-

seum, University of Lund, designated by N. P. Kristensen [examined].

There are two additional specimens under the name *cicatricella* in the Zetterstedt collection. They are mounted on the same pin, which bears no label, and like the lectotype they are mouldy. One is a dipteran, probably a chironomid, while the other is a female *E. cicatricella*.

Adela auropulverella Eversmann, 1842, Bull. Soc. Imp. Nat. Moscou XV: 565. LECTOTYPE (male) labelled "Kas. [an] 20.IV"; "B II d"; "[c]oll. Eversmann." "*Eriocrania auropulverella* Ev./J. Heath det. 10/1/1961"; "Holotypus *Eriocrania/auropulverella* Ev./Kasanj, 20.IV. ♂ // Coll. Zool. Inst. Leningrad/genitalia on slide N 223 ♂/A. Zagulajev X. [1]956"; slide labels: CO-TYPE, Kaf [sic] 20.VI [sic] B II d, coll Eversmann"; "*Eriocrania auropulverella* Ev. ♂ genitalia prep. N.223 J. H. [eath]"; Zoological Institute, Academy of Sciences, St. Petersburg; designated by N. P. Kristensen [examined].

The question arises, of course, whether an application should be made to the International Commission on Zoological Nomenclature to reject the senior synonym, which has been out of use for more than a century. The species in question is one of the most common eriocraniids in NW Europe, and it has repeatedly been referred to, under the name *haworthi*, in some of the principal modern studies of eriocraniid morphology (Kristensen, 1968; Birket-Smith & Kristensen, 1974). On the other hand it must be recalled, that up to the mid-sixties the species was known under other names, and as late as in 1978/1987 it was referred to as *purpurella* in a major identification manual (Zagulyaev, 1978/1987). Most of the taxonomic publications in which the specific name *haworthi* is mentioned are national/regional checklists. The only comprehensive identification works using *haworthi* are those of Heath (1976) and Razowski (1975), and as mentioned by Bond (1984) the diagnosis of the species in the former is marred by the fact that the drawings of the male genitalia actually represent *E. (Heringocrania) unimaculella* (Zetterstedt, 1839).

Therefore, since there has been no long-standing universal usage of the specific name *haworthi*, and since there has been ambiguity in recent published accounts of the characteristics of the taxon thereby referred to, we have decided against seeking rejection of *cicatricella* under article 79 of the *Code* in order to protect the name *haworthi*.

The fact that Per Benander, one of the foremost Scandinavian lepidopterists of his time, misidentified the type material of *E. cicatricella*, highlights the difficulty with identifying the few *Eriocrania* species in Europe. *E. cicatricella* in perhaps most easily recognized by the combination of relatively broad (not hair-like) scales in the central part of the hindwing, and the apically forked terminal segment of the long, folded maxillary palp; the lastmentioned trait is usually discernible at high magnification in a dissecting microscope. It is the only *Eriocrania* in Europe which has more than one larva per mine.

A review of the Old World Eriocraniidae is now in preparation by the present authors. The reason why we have chosen to publish this name change in advance of the said review, is that a whole suite of ecological studies involving the species in question are currently in progress. Effects of aerial pollution on densities and performance of *E. cicatricella* (referred to as *haworthi*) have been described by Koricheva and Haukioja (in press a, b) and further studies by these authors are nearing completion. The composition of the female sex attractant of the species has recently been established (Zhu *et al.*, MS). Obviously it is desirable that the valid name should be used in these publications, which will make the species known to a wider circle of biologists.

Dansk sammendrag

En ny undersøgelse af typematerialet af *Adela cicatricella*, beskrevet af Zetterstedt i 1839 i »Insecta Lapponica« viste overraskende, at dette navn er et senior synonym til *Eriocrania haworthi* Bradley, 1966 (tidligere kendt som *E. purpurella* (Haworth, 1828)), og ikke et junior synonym til *E. sparrmannella* (Bosc, 1791), som det almindeligvis har været antaget, og som Benander i 1940 udtrykkeligt anførte i sin revision af Zetterstedts laplandske småsommerfugle. Også Eversmann's noget senere (1842) navn *Adela auropulverella* viser sig ved en undersøgelse af typematerialet at være et senior synonym til *E. haworthi*. Af både *A. cicatricella* og *A. auropulverella* er der her udvalgt lectotyper.

Det kunne overvejes at søge at få de ældre synonymer »undertrykt« af Den Internationale Kommission for Zoologisk Nomenklatur. Vi har imidlertid valgt ikke at forsøge dette, fordi 1) navnet *haworthi* har kun været i brug siden 1966, og i et så vigtigt bestemmelsesværk som Zagulyaev 1978/87 har det stadig ikke afløst navnet *purpurel-*

la, og 2) identiteten af den art, som navnet *haworthi* dækker, har ikke entydigt kunnet ses af den nyere bestemmelseslitteratur: Billederne af de hanelige genitalia af »*haworthi*« hos Heath (1986) illustrerer fejlagtigt *Eriocrania* (*Heringocrania*) *unimaculella* (Zetterstedt, 1839).

Benanders fejlbestemmelse i 1940 illustrerer tydeligt problemerne ved bestemmelsen af vore få *Eriocrania*-arter i Europa. *E. cicatricella* kendes nok lettest på kombinationen af brede (ikke hårformede) skæl på bagvingens centrale felt, og på det i spidsen gaffeldelte yderste led af den lange, foldede maxillarpalpe; det er den eneste europæiske *Eriocrania*, som har 2 eller flere larver per mine.

Vi er i øjeblikket i gang med at udarbejde en oversigt (med illustreret bestemmelsesvejledning) over den gamle verdens Eriocraniidae. Grunden til, at nærværende navneskift publiceres forud for dette sammenfattende arbejde er udelukkende, at arten *E. cicatricella* i disse år er genstand for omfattende økologiske og feromonkemiske undersøgelser; det må anses for meget ønskeligt, at det er det gyldige navn, som bruges i de adskillige publikationer, som i den nærmeste fremtid vil omtale denne almindelige art.

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References

Benander, P., 1940. Revision von Zetterstedts lappländischen Microlepidoptera. - *Opusc. ent.* 5: 49-65.

Birket-Smith, J. & Kristensen, N. P., 1974. The skeletal-muscular anatomy of the genital segments of male *Eriocrania*. - *Z. Morph. Tiere* 77: 157-174.

Bond, K. G. M., 1984. Recent records of Eriocraniidae (Lepidoptera) including three species new to the Irish list. - *Irish Nat. J.* 21: 323-324.

Bradley, J., 1966. Some changes in the nomenclature of British Lepidoptera 4. Microlepidoptera. - *Ent. Gaz.* 17: 213-235.

Heath, J., 1976. Eriocraniidae. In: J. Heath (ed.): *The Moths and Butterflies of Great Britain and Ireland*, 1. Blackwell/Curwen.

Kristensen, N. P., 1968. The anatomy of the head and the alimentary canal of adult Eriocraniidae. - *Ent. Meddr* 36: 239-315.

Koricheva, J. & Haukioja, E., in press, a. The relationship between abundance and performance of *Eriocrania* miners in the field: effects of the scale and larval traits studied. - *J. Animal Ecol.* 63.

- in press, b. Variations in chemical composition of birch foliage under air pollution stress and their consequences for *Eriocrania* miners. - *Environm. Pollut.*

Razowski, J., 1975. Motyle (Lepidoptera) Polski II - Homoneura. - *Monografie Fauny Polski* 5.

Stainton, H. T., 1850. A monograph of the British species of the genus *Micropteryx* of Zeller. - *Trans. ent. Soc. Lond.* NS 1, 1850: 26-40.

Zagulyaev [Zagulajev], A. K., 1978. Eriocraniidae. In: G. S. Medvedev (ed.): *Opredelitel' Nasekomykh Evropiskoi Chasti SSSR IV, Cheshuekrylye, Pervaia Chast.* [English translation 1987: *Keys to the Insects of the European Part of the USSR IV, Lepidoptera, Part 1.* Amerind Publishing Co., New Delhi].

Zetterstedt, J. W., 1838-40. *Insecta Lapponica*: 1-867 (1838); 874-1013 (1839); 1022-1139 (1840).

Zhu, J., Kozlov, M. V., Philipp, P., Francke, W. & Löfstedt, C. (MS). Identification of a novel moth sex pheromone in *Eriocrania cicatricella* (Zetterstedt) (Lepidoptera: Eriocraniidae) and its phylogenetic implications.