Case 3878 – Andrena ovatula: proposed conservation of current usage by designation of a neotype for Melitta ovatula Kirby, 1802 (currently Andrena ovatula; Hymenoptera, Andrenidae)

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Case 3878 – *Andrena ovatula*: proposed conservation of current usage by designation of a neotype for *Melitta ovatula* Kirby, 1802 (currently *Andrena ovatula*; Hymenoptera, Andrenidae)

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Abstract. The purpose of this application, under Article 75.5 of the ICZN Code, is to conserve the current usage of the specific name *Andrena ovatula* (Kirby, 1802) by setting aside all previous types and designating a neotype for *Melitta ovatula*. The name *Andrena ovatula* has been used as the senior name for what is a complex of species for more than 100 years. The principal confusion has been with *Andrena afzeliella* (Kirby, 1802), described from a female specimen, whereas *Andrena ovatula* was described from three male specimens. Within this group, males are morphologically more challenging to recognise than females, and as the existing male type material of *A. ovatula* possibly does not conform to the current use of *A. ovatula*, this poses a risk of nomenclatural instability. A female neotype is designated for *Andrena ovatula*, fixing the current interpretation of *Andrena ovatula* as distinct from *A. afzeliella*.

Keywords. Nomenclature; taxonomy; Insecta; Hymenoptera; Andrenidae; *Andrena*; *ovatula*; small gorse mining bee; West Palearctic.

1. *Andrena ovatula* was described by Kirby (1802: 149) from England (in the genus *Melitta* Kirby, 1802). Four additional names also from England were proposed in the same publication: *Andrena afzeliella* (Kirby, 1802: 169), *Andrena fuscata* (Kirby, 1802: 167), *Andrena picipes* (Kirby, 1802: 127) and *Andrena barbata* (Kirby, 1802: 150). Under a broad species concept, all five names have been applied to the same nominal taxon (Gusenleitner & Schwarz, 2002: 564). Type material of *A. ovatula*, *A. afzeliella* and *A. fuscata* is present in the Kirby Collection at the Natural History Museum, London. The location of the type material of *A. picipes* and *A. barbata* is unknown (Praz et al., 2022).

2. *Andrena ovatula* was not used as the priority name for what was thought to be a single taxon for 116 years following its publication. Instead, the name *A. afzeliella* was used (Perkins, 1888: 128; Saunders, 1896: 268; Alfken, 1905: 89; Frey-Gessner, 1899–1907; Schmiedeknecht, 1907: 85).

3. Perkins (1918) was the first author to revise the relevant material in the Kirby Collection, resurrecting *A. ovatula* as the senior name for this single taxon and placing *A. afzeliella* in synonymy with it. Three males are preserved under *A. ovatula* in the Kirby collection, one labelled with the number "89", the species entry for *A. ovatula* in Kirby (1802: 149). The original description of Kirby mentions a female ("Descr: Acul." [the "aculeate sex" = the female]); however, as noted by Perkins (1918: 36), this was likely a typographical error and Kirby's description probably corresponds to a male (the flocculus is not mentioned, unlike in other descriptions of females). These three males agree with the brief original description and are considered to be syntypes, as the Kirby collection has been well-curated over time and the original numerical labels used by Kirby are conserved. No lectotype has been designated.

4. When treated as a single species, *Andrena ovatula* females show variation in the colour of the terminal fringe (the hairs on tergum 5 and flanking the pygidial plate). These hairs are either dark brown or golden orange. This variability in the colour of the female terminal fringe was noted by several authors, for example by Schmiedeknecht (1907: 85), who attributed it to inter-generational variation, *Andrena ovatula* flying in two distinct generations from the spring to the summer. Stöckhert (1930: 936) was the first to suggest the presence of two distinct and bivoltine species in Europe: he recognised a slightly larger species with comparatively dark vestiture (including a dark terminal fringe), *A. ovatula* sensu stricto, and a smaller species with light vestiture (including a light terminal fringe), *A. albofasciata* Thomson, 1870 (described from southern Sweden, Thomson 1870: 154).

5. Niemelä (1949: 119) maintained the system of Stöckhert, distinguishing between *A. ovatula* and *A. albofasciata.*

6. *Andrena albofasciata* was later synonymised by Warncke (1967: 206)—an author known for his broad species concepts in bees, see for example Wood (2023)—under *A. ovatula*, returning to a single species concept.

7. The two names *A. ovatula* and *A. albofasciata* were mentioned in the identification key by Schmid-Egger & Scheuchl (1997), who listed the criteria of Niemelä (1949), stating however that they did not examine specimens of *A. albofasciata* from Germany.

8. The use of *A. ovatula* and *A. albofasciata* as distinct species was then advocated by Smissen (2001, 2002, 2010: 262) and Nilsson (2010: 79), a view followed by Herrmann (2007: 80) and Le Divelec (2021: 110).

9. Other authors have retained a single-species concept, always using *A. ovatula* as the priority name (Gusenleitner & Schwarz, 2002: 564; Amiet et al., 2010: 163; Schmidt et al., 2015: 990).

10. In a recent study, Praz et al. (2022: 380) demonstrated that two distinct species exist in Europe, including in England, based on morphology and DNA barcoding analyses: *A. ovatula* sensu Stöckhert (1930) and *A. afzeliella* (Kirby, 1802). That is to say, two distinct species co-occur over much of Europe, a bivoltine species with females displaying a dark terminal fringe (*A. ovatula*) and a bivoltine species with females displaying a light terminal fringe (*A. afzeliella*). *Andrena albofasciata* was placed in synonymy with *A. afzeliella* (Praz et al., 2022: 383) based on the inspection and designation of a lectotype

for *A. afzeliella* (Praz et al., 2022: 383). Identification of the females of these two taxa is usually possible, but an unambiguous identification of the males is not always possible. Morphology and DNA barcoding confirmed the presence of two species in southern England, the *terra typica* for both *A. ovatula* and *A. afzeliella*.

11. This two-species concept has been largely adopted after 2022 (e.g., Ghisbain et al., 2023; Reverte et al., 2023; Praz et al., 2023; Scheuchl et al., 2023; Zimmerman et al., 2023). Both species are currently recognised under these names by several national data centres (e.g., in France and Germany), and will be evaluated under these names in the upcoming Red List of the bees of Europe (Michez et al., in prep).

12. The three syntypic males of *A. ovatula* conserved in the Kirby collection are inadequately diagnostic: the tergal structure is suggestive of *A. ovatula* sensu Stöckhert (1930), but the antennal ratio character explained by Praz et al. (2022: 416) is not clear and rather suggestive of *A. afzeliella*. A genetic analysis of these specimens is unlikely to succeed given the age of the specimens, which were collected prior to 1802.

13. Consequently, there is a possibility that the type material of *A. ovatula* does not correspond to its current usage, leading to the possibility of nomenclatural instability and inconsistency with the current literature and regulatory framework (European Checklist [Ghisbain et al., 2023] and European Red List of bees [Michez et al., in prep.]). If the type material of *A. ovatula* were demonstrated to be conspecific with *A. afzeliella*, then the name *A. ovatula* would apply to the taxon with a light terminal fringe (the opposite of the use of Stöckhert [1930] and subsequent authors), and the priority name of the taxon with the dark terminal fringe would be unclear and might be one of the names described by Schenck (1853), which have never been used in this context and for which no syntypes appear to exist (Praz et al., 2022: 388–389); see also comments on the missing type material of *A. picipes* and *A. barbata*, above.

14. The proposed neotype specimen (Praz et al., 2022: 388), under Art. 75.5 of the Code (ICZN, 1999), is a female (United Kingdom, Surrey, Headley, Headley Heath, 51.2687°N, -0.2788°W, 13 April 2016) collected from southern England; unique identifier TJW_0562. This specimen is held in the Oberösterreichische Landesmuseum, Linz, Austria. This site is approximately 140 kilometres south-west of the locus typicus of *A. ovatula*, which is Barnham, Suffolk. Both *A. ovatula* sensu Stöckhert (1930) and *A. afzeliella* are found across southern England.

15. The specimen possesses the morphological characters that allow unambiguous separation from females of the cryptic *A. afzeliella* (colour of the hairs of tergite 5 and the hairs flanking the pygidial plate, colour of the hairs flanking the basitibial plate of the hind tibia, presence of short dark hairs intermixed with longer pale hairs on the scutum). The specimen is also barcoded and falls within the cluster of *A. ovatula* sensu Stöckhert (1930) sequences (specimen with number TJW_0562 in Praz et al. [2022: fig. 2]) and is unambiguously separated from the cluster of *A. afzeliella* sequences. This proposed neotype would therefore provide clarity and stability for the application of the name *A. ovatula*.

16. The International Commission on Zoological Nomenclature is accordingly asked:
    (1) to use its plenary power to set aside all previous type fixations for the name *Andrena ovatula* (Kirby, 1802), as published in the binomen *Melitta ovatula*, and to designate as neotype the specimen from Headley Heath deposited in the Oberösterreichische Landesmuseum, Linz, Austria;
    (2) to place on the Official List of Specific Names in Zoology the name *Andrena*

ovatula (Kirby, 1802), as published in the binomen *Melitta ovatula* and as defined by the neotype designated in (1) above.

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