Notes on male mandibular structure of two widespread species of *Andrena* bee (Hymenoptera, Andrenidae)

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Introduction

Inclement weather during the spring of 2019 dealt a blow to some vernal bees. Several were found dead or moribund in my Little Comberton garden (SO94 30 m O.D.) and the opportunity was taken to tease information from the corpses.

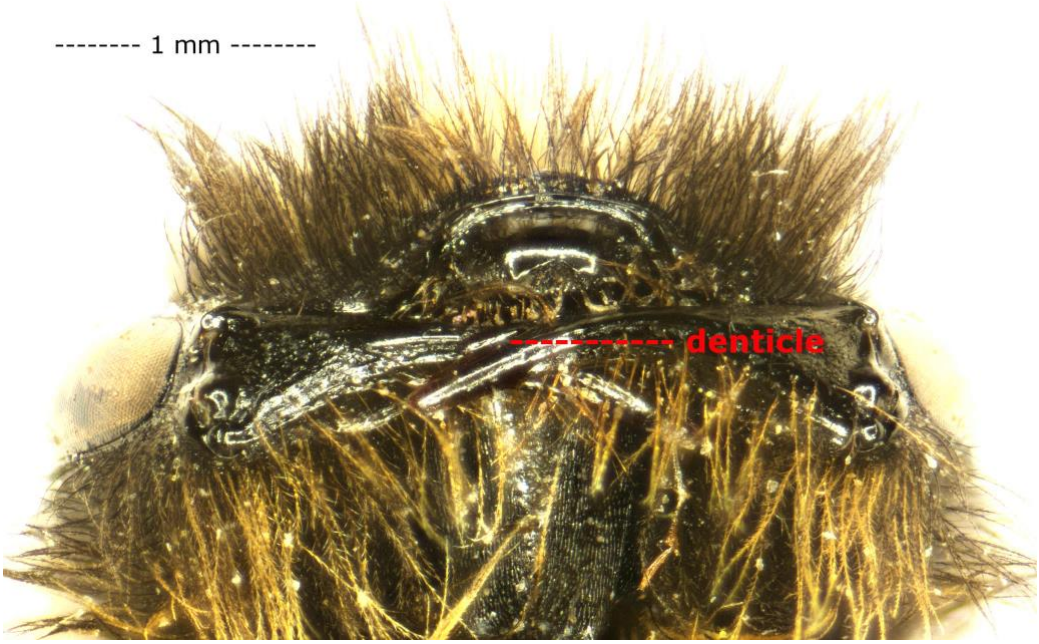
Discussion

The contribution made by Falk (2015) to the published British Hymenoptera archive is significant. To the non-specialist such as myself a great strength of this work has been the stated influence of variation, whether through gender, geography, periodicity or the individual. This may hinder the process of identification but in a world where taxonomy is now being radically reassessed by genetic bar-coding that may prove to be of little consequence.

Falk (2015) uses the mandibular structure of male mostly vernal *Andrena* bees to key them into groups which places some reliance on the need to examine specimens in some detail often with a lens. The metrical relationships of particular antennomeres may also be significant (01).

Male bees from one group have mandibles strongly triangularly denticulate at the base (01); those from another group have mandibles weakly denticulate subapically (02). The scaled images provided here indicate what this means in visual terms.

01. Mandibles of male *Andrena fulva* (Müller in Allioni, 1766), Little Comberton, Worcestershire, 5 April 2019. The subtriangular basal denticles are indicated.



02. Mandibles of male *Andrena scotica* Perkins, Little Comberton, Worcestershire, 25 April 2019. The linear apical denticle is marked.

Conclusion

The identification of some even large bees may rest on the presence of features that are hard to see; according to Falk (2015) male genitalia may only 'often' confirm identity.

In the case of the *Andrena scotica* Perkins, 1919, it should be observed that this species has been subject to recent taxonomic debate. On the basis that the use of Falk's keys have here led to the correct name, it is noted that seven males from a single population vary considerably in the extent of black investiture on the frons and clypeus (02).

Reference

Falk, S., 2015. *Field guide to the bees of Great Britain and Ireland*, pp. 1-432. British Wildlife Publishing.

Images

01. Mandibles of male *Andrena fulva* (Müller in Allioni, 1766), Little Comberton, Worcestershire, 5 April 2019. The subtriangular basal denticles are indicated.

02. Mandibles of male *Andrena scotica* Perkins, Little Comberton, Worcestershire, 25 April 2019. The linear apical denticle is marked.