

SIMPLE GUIDES TO SOLITARY BEES IN IRELAND

PART 4

Guide to *Andrena* females

Andrena (Mining bees)

- ✓ 26 Irish species
- ✓ Very variable in form and occur from large species to very small
- ✓ Found in a variety of habitats
- ✓ The solitary bee most often spotted by most people

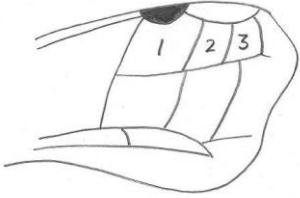


Andrena angustior
Andrena apicata
Andrena barbilabris
Andrena bicolor
Andrena cineraria
Andrena clarkella
Andrena coitana
Andrena denticulata
Andrena fucata
Andrena fulva
Andrena fuscipes
Andrena haemorrhhoa
Andrena humilis
Andrena lapponica
Andrena marginata
Andrena minutula
Andrena nigroaenea
Andrena pilipes
Andrena praecox
Andrena rosae
Andrena semilaevis
Andrena scotica
Andrena subopaca
Andrena tarsata
Andrena trimmerana
Andrena wilkella

* *Andrena stragulata* has recently been removed following DNA work

Special thanks to Josef Dvořák who has very kindly allowed his photographs of pinned specimens to be used in this guide.

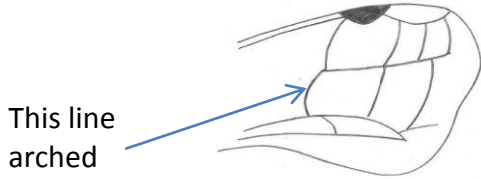
<http://www.biolib.cz/en/gallery/dir388>



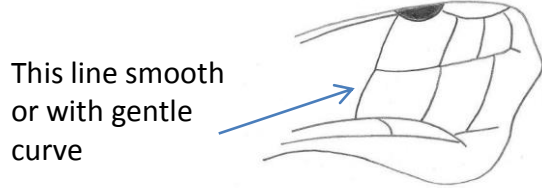
3 cells in wing

Very simple key to the genera known from Ireland

Not *Xylocopa* or *Sphecodes*



This line arched



This line smooth or with gentle curve

Very obvious hair bands on abdomen

Hair bands absent or not obvious

Lasioglossum

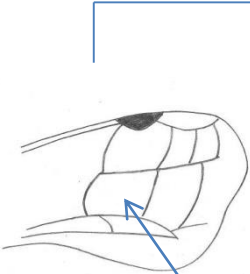
Hairy

Andrena

Almost hairless

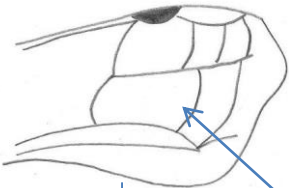
Nomada

Wasp like – abdomen with yellow, black or red bands



Cell on left similar to one on right

Colletes

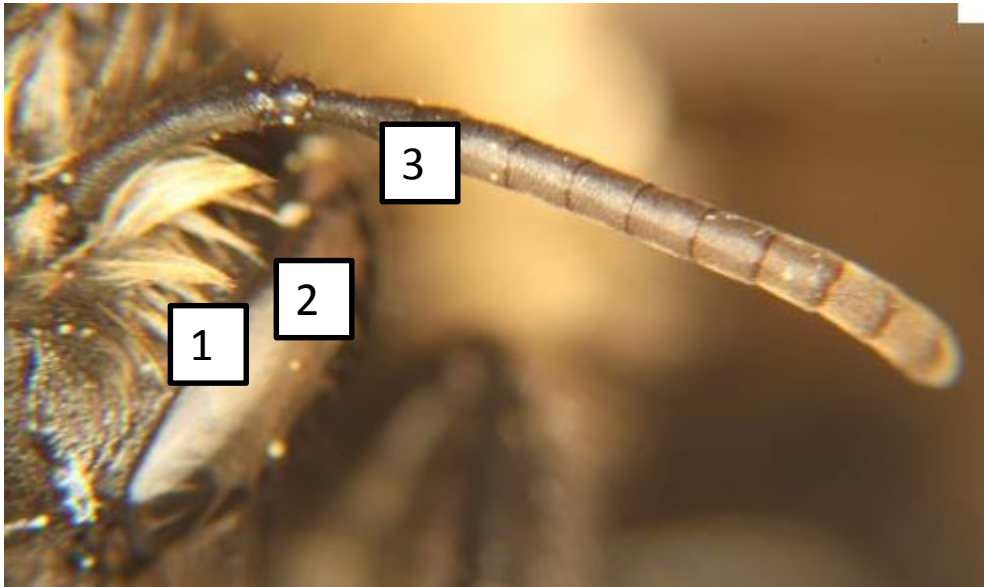


Cell on left larger than one on right

Halictus

IS IT A MALE OR A FEMALE?

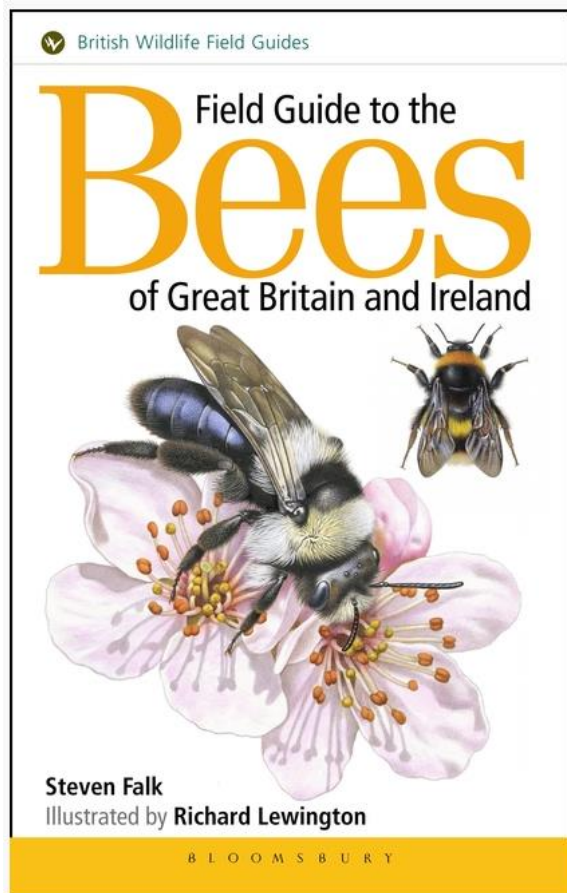
1. Length of the antennae. Males have 13 segments, females have 12
2. Only females have a sting



You need to use different keys for males and females.

In general male solitary bees are more difficult to identify to species than females

Recommended keys to *Andrena*



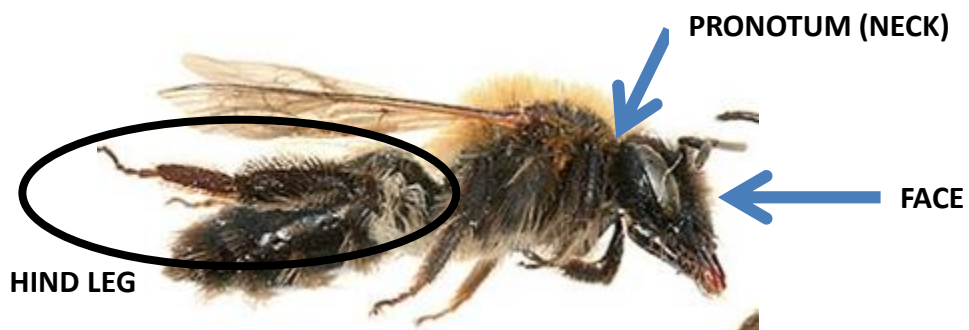
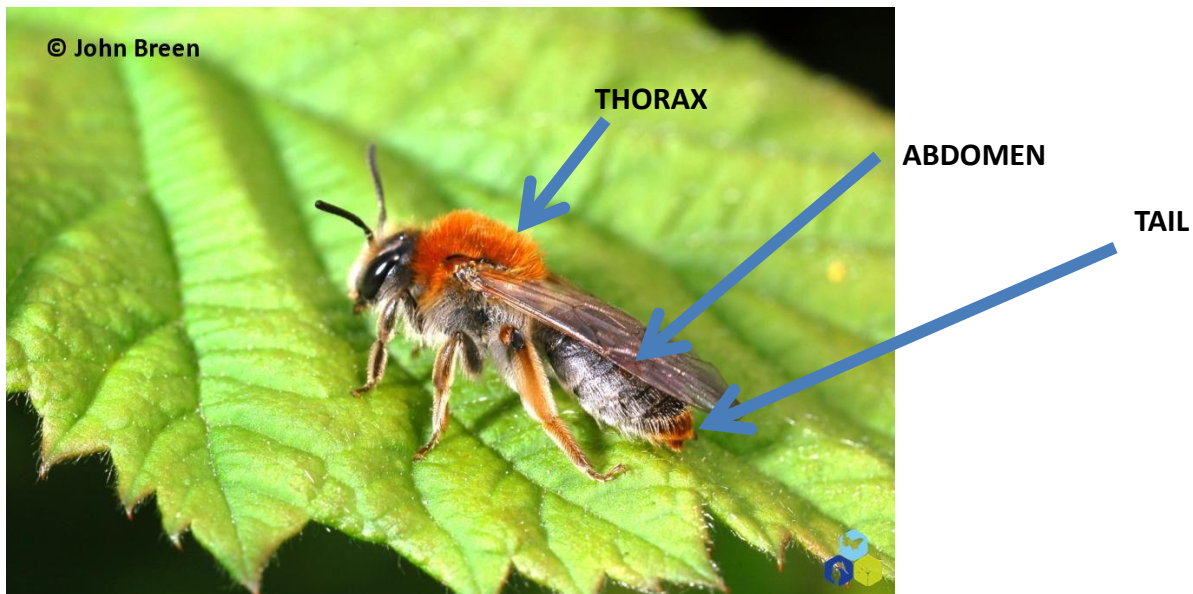
***ANDRENA* FEMALES**

This is a guide to **females** within the *Andrena* genus. It is **NOT** intended as a scientific key but as a guide to help make the genus more accessible to beginners. It has not been fully tested. It contains only species commonly observed in Ireland. Where possible it tries to point out features that could be observed with a hand lens.

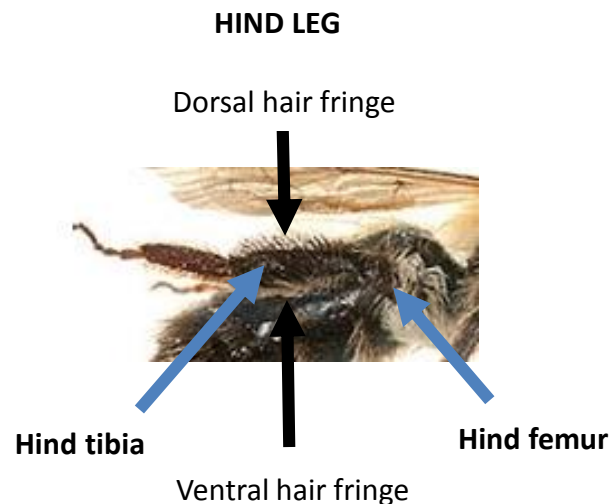
Reference specimens

Having reference specimens for comparison is important for accurate solitary bee identification. It is the intention of the National Biodiversity Data Centre to maintain a reference collection of Irish species which will be available for public use during office hours.

KEY FEATURES MENTIONED IN THIS GUIDE



©Josef Dvořák: <http://www.biolib.cz/en/gallery/dir388>



Three *Andrena* species have females that can be identified in the field



Andrena cineraria

- The females are black, and have two distinctive grey hair bands across the thorax (there are no other solitary bees like this known from Ireland)
- Large sized species (13-16mm)
- It is a spring species and is generally observed between March – June. The earliest it has been recorded in Ireland is 22nd March (2011).
- Widespread. It is found in a range of habitats, but in Ireland it often relies on Willow as an early forage source
- It nests in the ground. The nest entrances will be surrounded by a volcano-like mound of excavated spoil. Nests are often in dense aggregations

Three *Andrena* species have females that can be identified in the field



Andrena haemorrhoa

- The females are black, with a ginger thorax, orange hind legs, and distinctive red hairs at the tip of the abdomen (there are other *Andrena* species that look similar but none with a red tipped abdomen).
- Medium sized solitary species (11-13mm)
- It emerges in spring, and can be seen from March – August
- Common and widespread. It is found in a range of habitat types, including parks and gardens

Three *Andrena* species have females that can be identified in the field

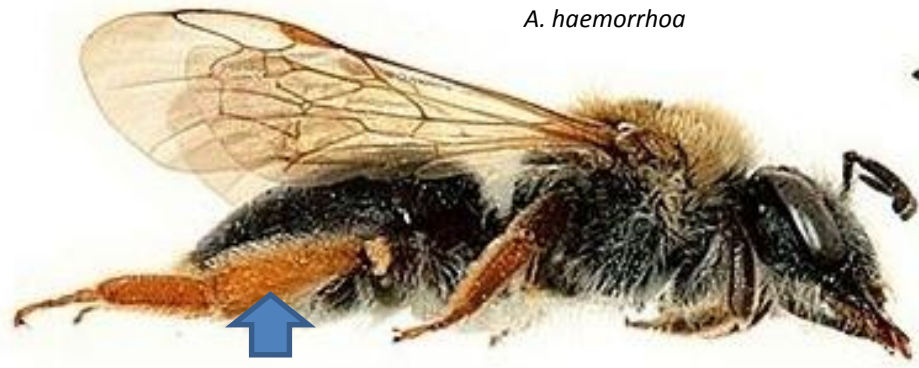


Andrena fulva

- *A. fulva* was last recorded in Kilkenny in 1925, and was assumed extinct in Ireland until 2012.
- In 2012 it was recorded in two locations: Co. Kilkenny (close to its 1925 location) and Co. Wicklow.
- Females are very distinctive with bright red hairs on the thorax and abdomen.
- Medium-large sized solitary species (12-14mm).
- It is a spring species (March – June).
- It nests in the ground. The nest entrances will be surrounded by a volcano-like mound of excavated spoil.

Three *Andrena* species have females that have an orange hind leg

©Josef Dvořák: <http://www.biolib.cz/en/gallery/dir388>



Orange hind leg (both leg & hairs are orange)

* *Andrena haemorrhoa* also has an orange hind tibia (photo above)

Three *Andrena* species have females that have an orange hind leg

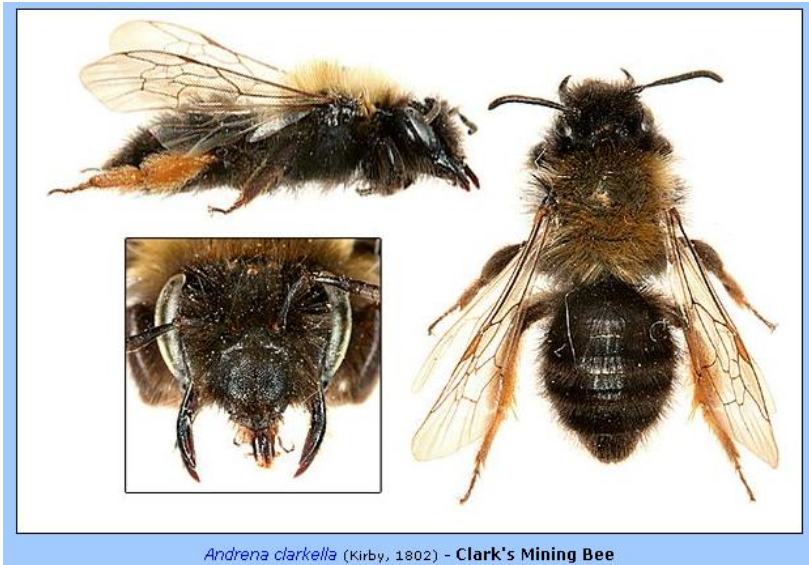


Andrena tarsata

- ✓ Medium sized (8-11mm)
- ✓ Mandible with 3 teeth
- ✓ Feeds specifically on *Potentilla*
- ✓ Summer flight period (June- August)

©Louise Hislop

Three *Andrena* species have females that have an orange hind leg



Andrena clarkella (Kirby, 1802) - Clark's Mining Bee

Andrena clarkella:

- ✓ Large (11-15mm)
- ✓ Tail hairs dark. Abdomen hairy
- ✓ Spring flight period (March-June)
- ✓ Feeds specifically on willow



Andrena wilkella (Kirby, 1802)

Andrena wilkella:

- ✓ Large (10-12mm)
- ✓ Tail hairs golden. Abdomen bald
- ✓ May - August
- ✓ Found in a range of habitats

Three *Andrena* species have females that have an abdomen with red markings (all very rare)



Andrena marginata

- ✓ Tail red
- ✓ Summer flight
- ✓ Grassland species (associated with *Succisa*, *Knautia*)
- ✓ Very rare



Andrena rosae

- ✓ Tail black
- ✓ Summer flight period (July-September)
- ✓ Very rare (last recorded 1896)



Andrena stragulata

- ✓ Tail black
- ✓ Spring flight (March-April)
- ✓ Very rare (last recorded 1977)

* *Andrena stragulata* is no longer recognised as a species following DNA work

Three *Andrena* species are very small (6-8mm)

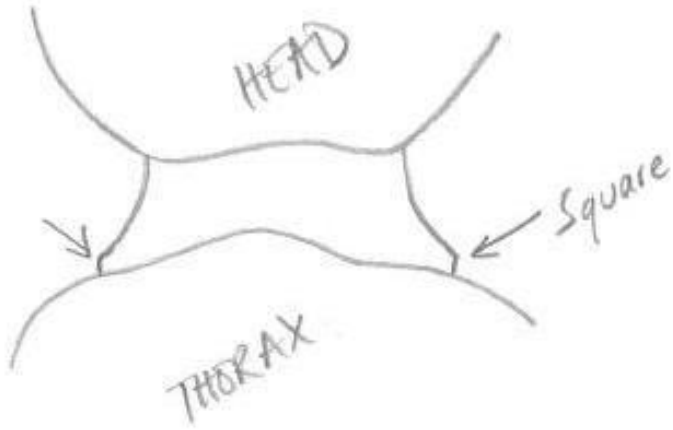
Andrena semilaevis
Andrena subopaca
Andrena minutula



They all have a neck that is smooth and pale hairs on the dorsal surface of the hind tibia

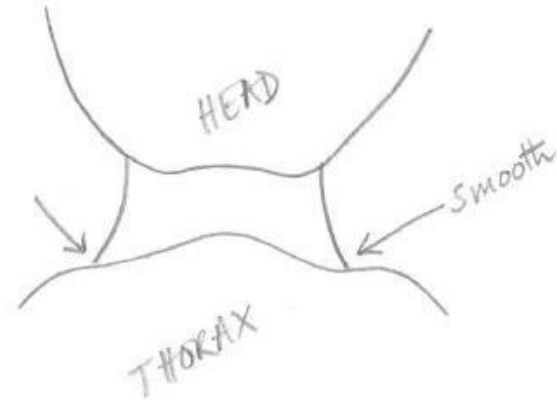
Distinguishing between these three small species is difficult and requires the use of full scientific keys

The remaining 14 species are divided up according to the shape of their pronotum (referred to as neck here). It requires practise to see this feature.



NECK SQUARE

6 SPECIES

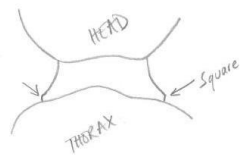


NECK SMOOTH

8 SPECIES

DRAFT 2013

Neck square



Summer species
July-September

- Hind tibia dorsal hair fringe dark ***A. denticulata***
- Hind tibia dorsal hair fringe pale ***A. fuscipes***

Spring species
March-July

- Face hairs dark ***A. lapponica***
- Face hairs pale
 - Abdomen shiny, few hairs ***A. fucata***
 - Abdomen matt, pale hairs
 - 9-15mm ***A. apicata***
 - 7-12mm ***A. praecox***

Hind tibia dorsal hair fringe dark. Large sized bee (11-15mm)

- Underside of hind tibia with white upswept hairs. (Face hairs dark) ***A. carantonica (scotica)***

- Underside of hind tibia with orange upswept hairs ***A. trimmerana***

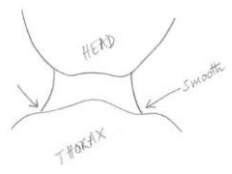
Hind tibia dorsal hair fringe dirty grey (hard to tell if dark or pale). Ventral fringe whitish

- Thorax & face with ginger or yellowish hairs. Medium sized (9-12mm) Face with hair strips. ***A. barbilabris***
- Thorax & face with sparse whitish hairs. Smaller sized (7-10mm) ***A. coitana***

Hind tibia dorsal hair fringe



Neck smooth



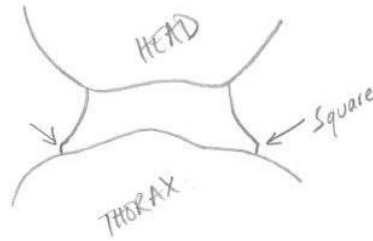
Hind tibia dorsal hair fringe ginger or dirty yellowish

- Tail hairs golden. Extremely rare ***A. humilis***
- Tail hairs dark
 - Face hairs dark. Hind tibia hairs ginger
 - Large (12-15mm) ***A. nigroaenea***
 - Medium sized (9-11mm) ***A. bicolor***
 - Face hairs pale. Hind tibia hairs dirty yellow-ginger ***A. angustior***

NECK SQUARE

**MID TO LATE SUMMER
SPECIES (JULY-SEPT)**

2 SPECIES



Andrena denticulata

- ✓ Hind tibia can appear wedge shaped
- ✓ Face hair pale
- ✓ Abdomen with pale hair bands
- ✓ Hind tibia with dorsal hair fringe dark
- ✓ Needs Yellow Asteraceae but found in a range of habitats
- ✓ 10-12mm

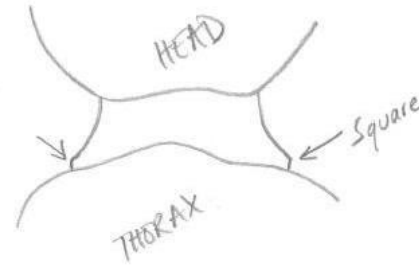
Andrena fuscipes

- ✓ Hind tibia can appear wedge shaped
- ✓ Face hair pale
- ✓ Abdomen with pale hair bands
- ✓ Hind tibia with dorsal hair fringe pale
- ✓ Found on heaths/bogs as feeds specifically on heathers
- ✓ 9-11mm

NECK SQUARE

EARLY SPECIES (MAR-JULY)

4 SPECIES



Face hairs dark



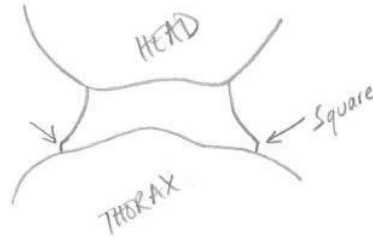
Andrena lapponica

- ✓ 12-14mm
- ✓ Ginger hairs on thorax
- ✓ Abdomen black
- ✓ Hind tibia with dark hairs but femur with shock of white hairs (often difficult to see as covered in pollen)
- ✓ Found on heaths/bogs as feeds specifically on Bilberry (*Vaccinium myrtillus*)

NECK SQUARE

EARLY SPECIES (MAR-JULY)

4 SPECIES



Face hairs pale

©Josef Dvořák: <http://www.biolib.cz/en/gallery/dir388>

© Steven Falk



Andrena fucata

- ✓ Abdomen shiny, few hairs
- ✓ Early species – March-June
- ✓ 10-13mm

Andrena apicata

- ✓ Abdomen matt, with pale hairs
- ✓ Early species – March-May
- ✓ 9-15mm
- ✓ Associated with willow
- ✓ Very rare

Andrena praecox

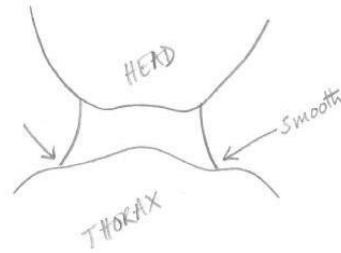
- ✓ Abdomen matt, with pale hairs
- ✓ Early species – March-June
- ✓ 7-12mm
- ✓ Associated with willow

These two species are difficult to tell apart

NECK SMOOTH

**HIND TIBIA DORSAL
HAIR FRINGE DARK**

2 SPECIES



Very large (11-15mm)



© BWARS

Andrena carantonica (scotica)

- ✓ Hind tibia with distinctive whitish upswept hairs on outer side
- ✓ Common
- ✓ Long flight period (March-August)
- ✓ Range of habitats

Very large (11-15mm)



© Steven Falk

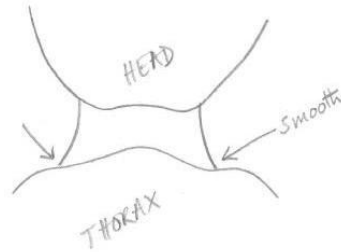
Andrena trimmerana

- ✓ Hind tibia with distinctive orange-brown upswept hairs on outer side
- ✓ Rare
- ✓ March-August

NECK SMOOTH

**HIND TIBIA DORSAL HAIR
FRINGE DIRTY GREY (HARD
TO TELL IF DARK OR PALE)**

2 SPECIES



©Josef Dvořák: <http://www.biolib.cz/en/gallery/dir388>

© Robin Williams



Photo by Robin Williams
Female *Andrena coitana*. Cynon Valley, Wales

Andrena coitana

- ✓Thorax & face with sparse whitish hairs
- ✓Smaller species (7-10mm)
- ✓Hind tibia with whitish hairs on lower (ventral) surface
- ✓Range of habitats
- ✓Largely black
- ✓June - August



© Steven Falk

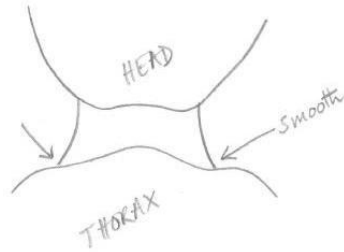
Andrena barbilabris

- ✓Thorax & face with ginger or yellowish hairs.
- ✓Larger species (9-12mm)
- ✓Hind tibia with whitish hairs on lower (ventral) surface
- ✓Seems to be associated with sandy areas in Ireland
- ✓Face with two blonde strips of hair running lengthways
- ✓March-August

NECK SMOOTH

**HIND TIBIA DORSAL HAIR
FRINGE GINGER OR DIRTY
YELLOW**

4 SPECIES



Tail hairs golden yellow



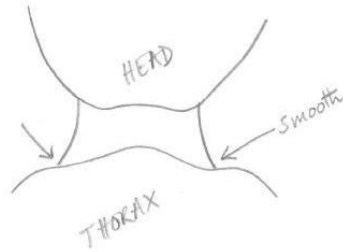
Andrena humilis

- ✓ June-July
- ✓ 10-12mm
- ✓ Very rare
- ✓ Feeds specifically on Asteraceae, strong association with yellow flowers

NECK SMOOTH

**HIND TIBIA DORSAL HAIR
FRINGE GINGER OR DIRTY
YELLOW**

4 SPECIES



Tail hairs dark, dark hairs on face



©Louise Hislop

Andrena nigroaenea

- ✓ Large (12-15mm)
- ✓ Hind tibia hairs ginger
- ✓ April-August
- ✓ Range of habitats

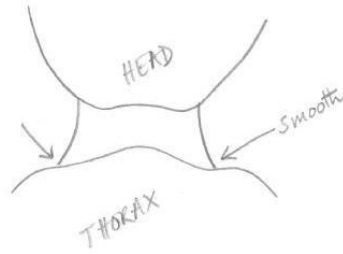
Andrena bicolor

- ✓ Medium (9-11mm)
- ✓ Hind tibia hairs ginger
- ✓ March-September
- ✓ Common. Range of habitats
- ✓ Hairs on hind tibia can look like orange 'leg warmers'

NECK SMOOTH

**HIND TIBIA DORSAL HAIR
FRINGE GINGER OR DIRTY
YELLOW**

4 SPECIES



Tail hairs dark, pale hairs on face



Andrena angustior

- ✓ Hind tibia hairs dirty yellow-ginger
- ✓ 10-12mm
- ✓ May-June
- ✓ Not common

***ANDRENA* MALES**

Andrena males are much more difficult to identify to species than females. Most identification features can only be observed using a stereomicroscope.

Unlike females, there aren't species that can be identified in the field.

The males of three *Andrena* species are very small (5-8mm)

Andrena semilaevis
Andrena subopaca
Andrena minutula



The males of four *Andrena* species have a yellow or cream coloured clypeus



© BSBI

Andrena marginata

Andrena tarsata

Andrena coitana

Andrena humilis