

Identifying soldierflies and allies: horseflies in genus *Hybomitra*

Compiled by Martin C. Harvey for the Soldierflies and Allies Recording Scheme

Version 1 at 20 August 2023

These guides are only possible thanks to the generosity of the brilliant photographers who have allowed their images to be used. Special thanks to Steven Falk and Malcolm Storey, whose photo collections form the backbone for this species guide:

Steven Falk's [photo collections on Flickr](#) – Malcolm Storey's [BioImages website](#)

Other photos included in this guide are by Ab H Baas, Judy Webb, Martin Harvey (some using specimens from the Natural History Museum in London, taken with the photo-stacking camera equipment in the Angela Marmont Centre at the NHM), Neil Marks, Rob Petley-Jones and Tim Hodge.

Males are shown first, one page for each species, then females. The pages for males include distribution maps taken from the recording scheme database as displayed on iRecord, along with summary information about habitats and statuses from the scheme's [provisional atlas](#) (Harvey 2017) – this information is repeated for the females where space allows.

As far as possible, these guides show features that can be seen on live insects in the field, or are likely to be visible in photographs. For comprehensive identification keys and species accounts see:

- [British soldierflies and their allies](#), by Alan Stubbs and Martin Drake (and also the recording scheme's [additional notes](#) on these keys).
- [Field guide to flies with three pulvilli](#), by Theo Zeegers and André Schulten (but note that this guide takes a different view of the taxonomy relating to *H. ciureai* and *H. solstitialis*, see accounts below).

For lots more information on soldierflies and allies go to the recording scheme [website](#), [Twitter](#) page or [Facebook](#) group.

For lots more information and events, and to support the study and conservation of flies, please consider joining [Dipterists Forum](#).

Records wanted!

Once you have identified your fly, please let the recording scheme have the details! Add to [iRecord](#) or send to the [recording scheme](#) so that we can share the records for conservation and research.

The Soldierflies and Allies Recording Scheme is part of Dipterists Forum



The Soldierflies and Allies Recording Scheme is supported by the UKCEH Biological Records Centre



Recognising the genus: *Hybomitra*

Nine UK species are currently included in the genus *Hybomitra*. They are relatively large flies, between 12 and 18 mm long, and have the typical horsefly 'bullet' shape, with large eyes that have three bands across them in most species. The wings are clear, the same as for genus *Tabanus*, but *Hybomitra* species have hairy eyes (usually obviously so, although the hairs can wear off). In addition, the females have a raised ocellar tubercle on top of the head, which is not the case for *Tabanus*. Male *Hybomitra* have the eyes meeting on top of the head, females have a reasonably obvious gap between the eyes.

Despite their size, *Hybomitra* species present challenges for identification, in part because the markings on head and body are rather variable for some of the species, and there are few structural features to distinguish them, at least when trying to do so from photos. In the females, dissection of the last abdominal segments may be needed to confirm some specimens.

As a result, this identification guide needs to be used with care, and it should be recognised that it will not always be possible to be certain of an identification from a photo. As always, taking multiple photos from different angles will give a better chance of confirming an ID, but in some cases a specimen will be required for records to be accepted.

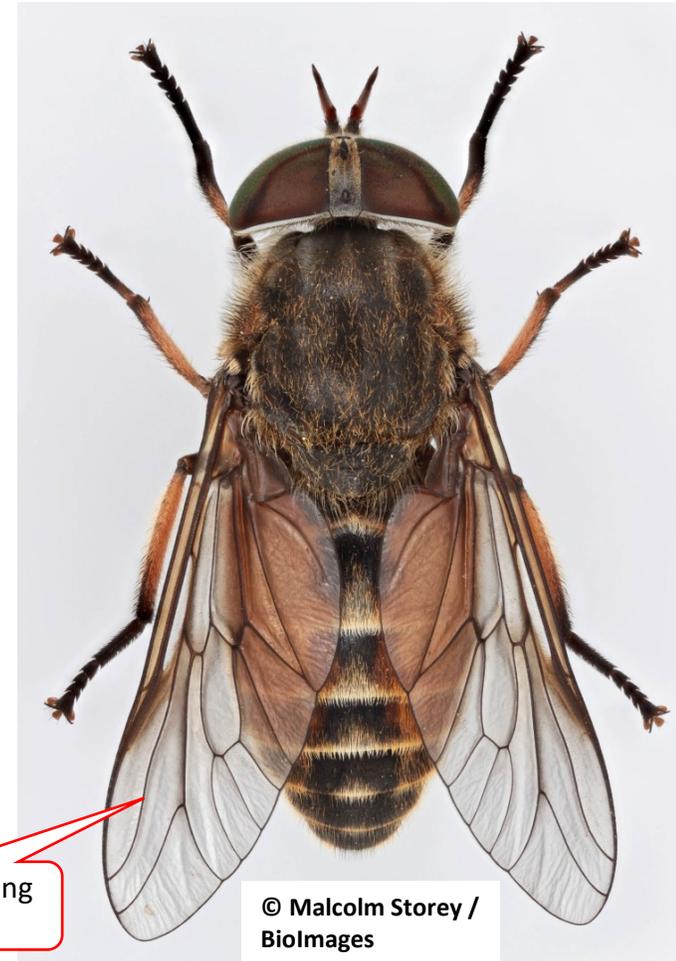
There are still unresolved taxonomic issues in this genus, and in particular it is not clear if the species we call *H. solstitialis* (Scarce Forest Horsefly) in the UK is a distinct species or a variety of *H. bimaculata*. To confuse matters further, the species we currently call *H. ciureai* (Levels Yellow-horned Horsefly) in the UK has recently been renamed as *H. solstitialis* on the continent, maintaining a long tradition of unstable species names in this genus. As a result records need to be interpreted carefully, especially the older records.

All *Hybomitra* are associated with wet habitats, including wet woodlands, bogs, marshes, fens and saltmarshes. Three species are fairly widespread inland: *H. bimaculata* in the southern half of Britain, *H. distinguenda* over much of Britain, and *H. montana* in the northern half of Britain. Three are confined to coastal areas: *H. ciureai*, *H. expollicata* and *H. muehlfeldi*. And the last three are all quite rare: *H. lurida* in upland areas, *H. micans* in just a few sites and *H. solstitialis* which seems to be the most restricted of all (assuming it is a separate species!).

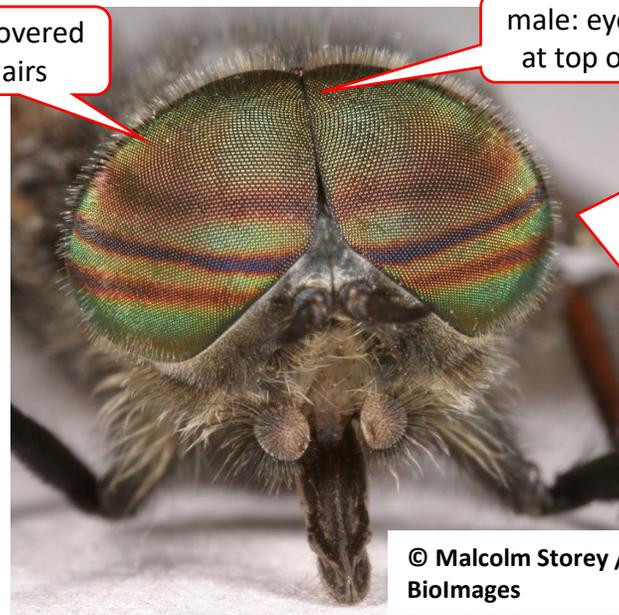
Most of the species in this genus fly in the summer months, peaking in June or July.

See the 'guessing guide' on the next page to help narrow down your choices before checking the more detailed species accounts (but note that the guessing guide on its own is not enough to confirm an identification!).

Typical appearance of female *Hybomitra*



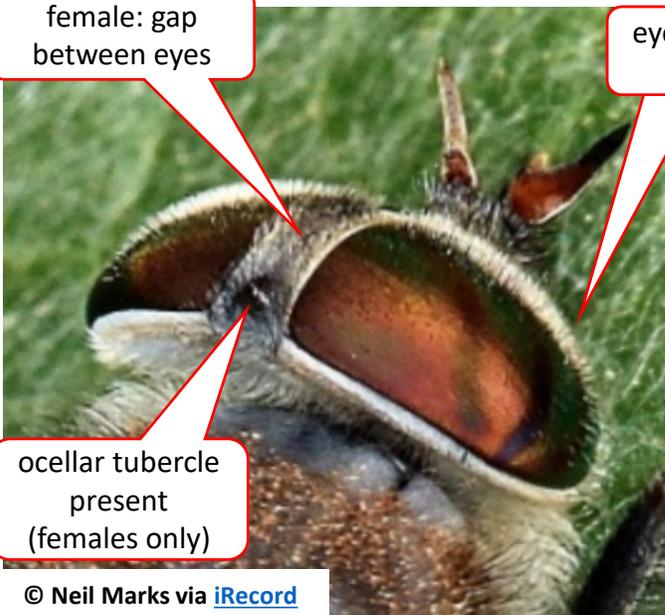
© Malcolm Storey / Biolmages



© Malcolm Storey / Biolmages

most species have three eye bands when alive (except for *H. expollicata*, which may have one or none); the only other horsefly with three eye bands is *Tabanus glaucopsis* (which does not have hairs on the eyes)

no dark shading on wings



© Neil Marks via iRecord

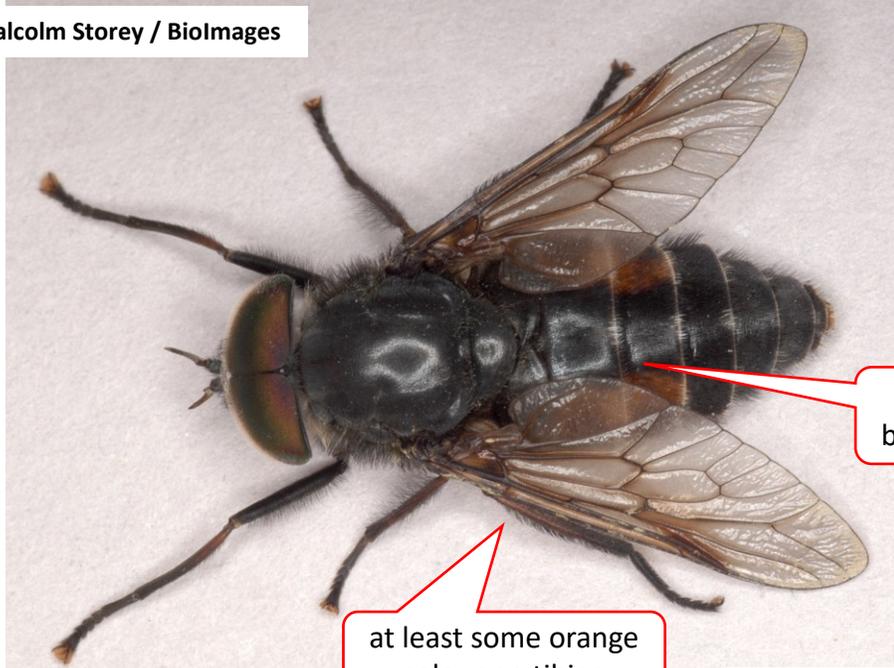
Guessing guide

This table gives very brief summaries of colour and distribution. It is **not an identification key!**

However, it may help narrow down options for comparison with the detailed species pages above.

Species	Overall colour	Antennae	Distribution
<i>H. bimaculata</i>	Usually dark, variable amount of orange at sides of abdomen	Dark	Widespread in southern half of Britain
<i>H. ciureai</i>	With bright orange at sides	Mostly orange	Coastal, south-east England, south Wales, scarce
<i>H. distinguenda</i> *	With bright orange at sides	Dark at base	Widespread
<i>H. expollicata</i>	With bright orange at sides, pale halteres, eyes bright green in life	Entirely dark	Coastal, south-east England, rare
<i>H. lurida</i>	Mainly dark, some orange; subcallus glossy	Dark at base	Mostly Scotland, also North Wales and Cumbria, scarce
<i>H. micans</i> *	Almost entirely black; subcallus mostly glossy	Entirely dark	Scattered records, rare
<i>H. montana</i>	Males with bright orange at sides, females darker, eyes bright green in life	Dark at base	Widespread in northern half of Britain
<i>H. muehlfeldi</i> *	With bright orange at sides	Dark at base	Coastal, East Anglia and south Wales
<i>H. solstitialis</i>	With pale orange at sides	Dark at base	New Forest + Oxfordshire fens, very rare

* : males of these species can be found persistently hovering while awaiting females (in *H. distinguenda* this behaviour seems to be confined to the early morning); males of the other species rarely if ever hover, and have sometimes been found sitting on foliage, flowers or mud



at least some orange colour on tibiae

median stripe broad on tergite 3

notopleural lobe usually black



some long dark hairs above vertex

long hairs above 1st antennal segment

mid tibia with long anterior hairs

Hybomitra bimaculata (Hairy-legged Horsefly) – MALE

[go to female](#)

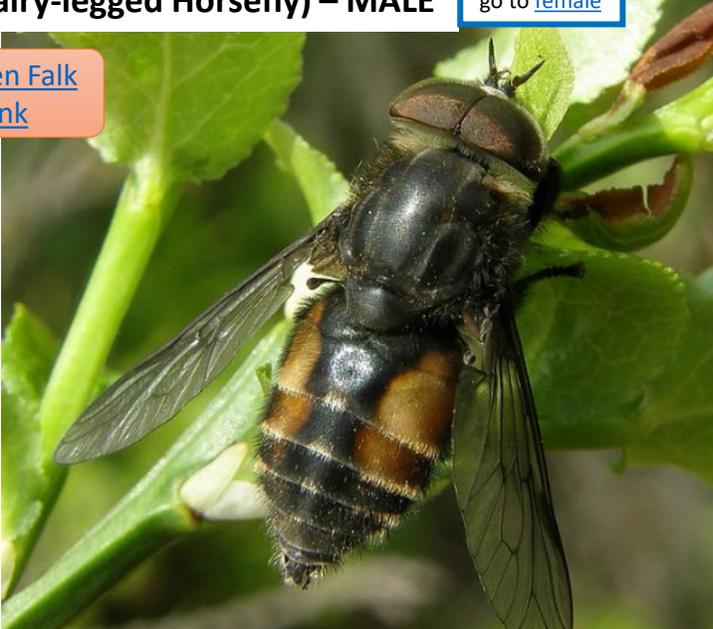
[Biolimages link](#)

[Steven Falk link](#)

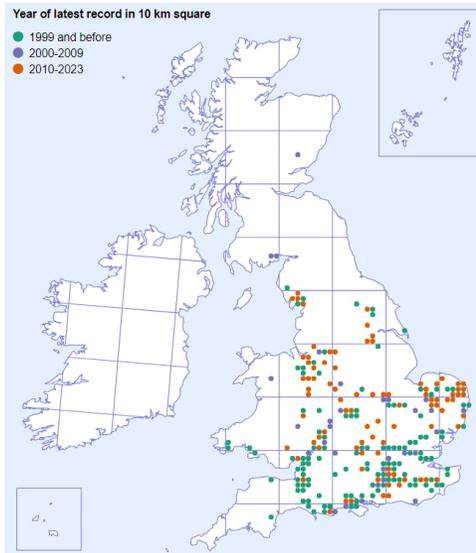


all eye facets about the same size

males do not hover, but sit on vegetation to watch for females



- ID difficulty: 3
- Flight period: May to Aug, peak Jun to mid Jul
- GB threat: Least Concern
- scattered, mostly southern but north to Scotland
- lowland woods on boggy heaths, fens and marshy grassland near woods
- No. of records: 618 • % since 2000: 22%



I have been unable to find any UK photos of a male *Hybomitra ciureai* – if you have one please [get in touch!](#)

Photos of continental specimens can be seen on [Diptera.info](#) and on [Waarneming.nl](#) (named as *H. solstitialis*).

Features to look for are:

- median stripe narrow on tergite 3
- antennae mostly orange (some grey dusting dorsally on segment 1)
- notopleural lobe usually yellowish
- upper eye facets larger than lower
- scutellum entirely greyish

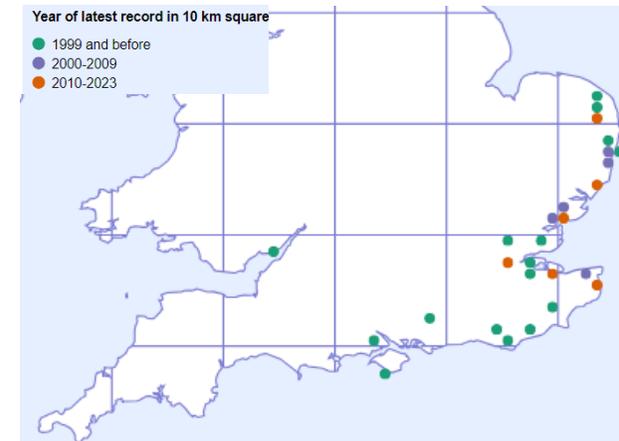
Hybomitra ciureai (Levels Yellow-horned Horsefly) – MALE

[go to female](#)

The species we call “*Hybomitra ciureai*” in the UK checklist is treated in the Zeegers and Schulten field guide as a synonym of *H. solstitialis* (Meigen 1820) nec Lyneborg (1959) (and note that the species we call “*Hybomitra solstitialis*” in the UK checklist is not recognised in the field guide, and is treated as a variety of *H. bimaculata*).

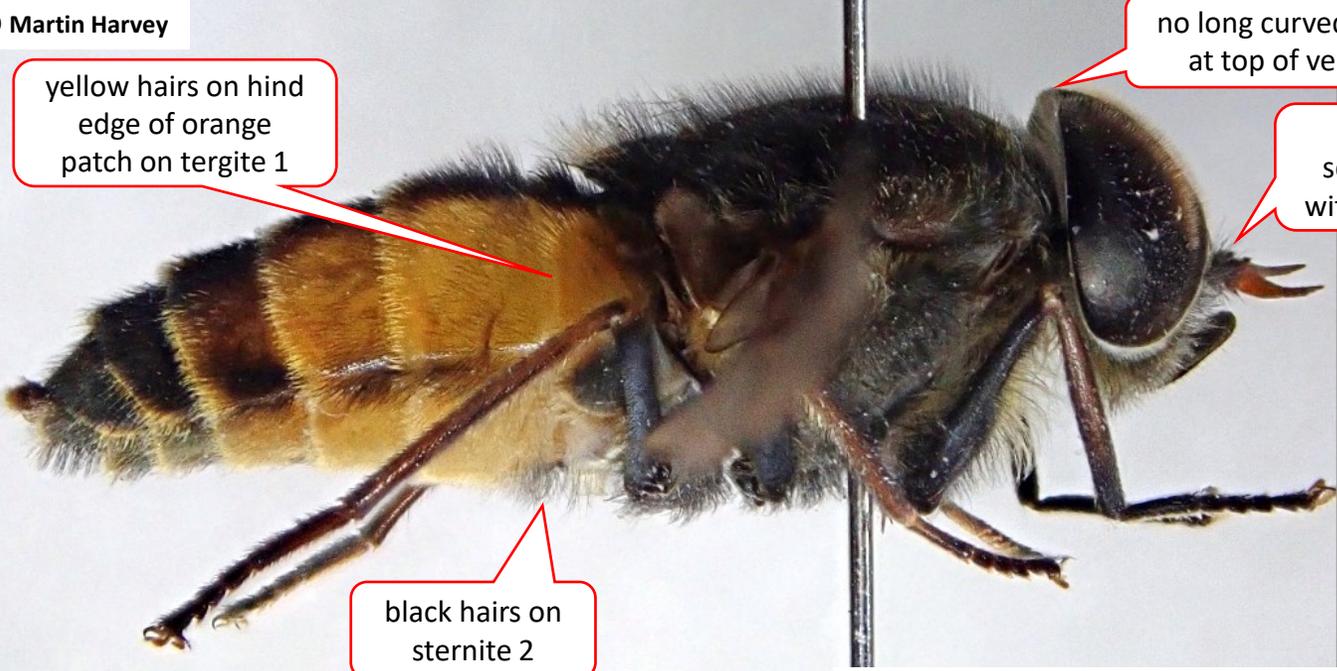
males are elusive: they do not hover, but sit on vegetation (sometimes high up) to watch for females

- ID difficulty: 3
- Flight period: mid Jun to mid Aug
- GB threat: Least Concern • GB rarity: Nationally Scarce
- coastal, south-east, south Wales
- grazing levels, freshwater ditches
- No. of records: 83 • % since 2000: 34%



© Martin Harvey

yellow hairs on hind edge of orange patch on tergite 1



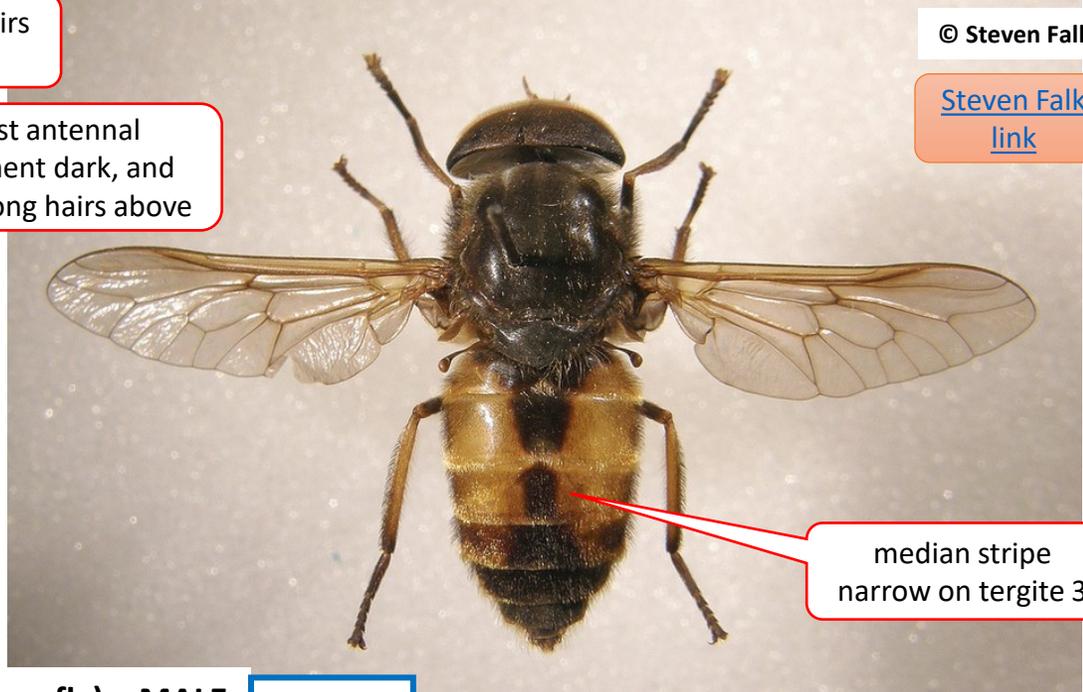
no long curved hairs at top of vertex

first antennal segment dark, and with long hairs above

black hairs on sternite 2

© Steven Falk

[Steven Falk link](#)



median stripe narrow on tergite 3

Hybomitra distinguenda (Bright Horsefly) – MALE

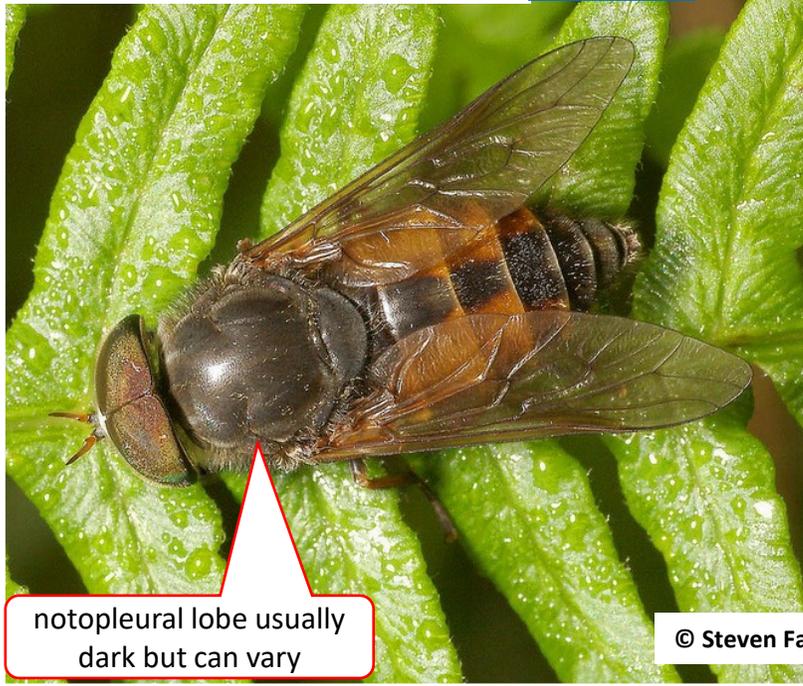
[go to female](#)

upper eye facets larger than lower



males can be seen hovering persistently, usually early in the morning, e.g. along woodland rides

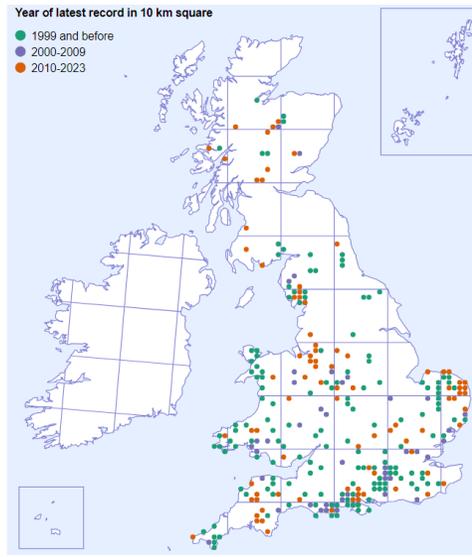
© Martin Harvey / NHM specimen



notopleural lobe usually dark but can vary

© Steven Falk

- ID difficulty: 4
- Flight period: early Jun to Sep, peak in late Jun to mid Jul
- GB threat: Least Concern
- widespread, scarcer in north
- wet meadows and pastures, wet woods, heaths and bogs
- No. of records: 589 • % since 2000: 26%



eyes usually bright green in life

antennae entirely dark

notopleural lobe usually yellowish

males sit in vegetation, and do not hover

[Steven Falk link](#)

halteres fairly pale

broad dark stripe

© Steven Falk

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Hybomitra expollicata (Striped Horsefly) – MALE

[go to female](#)

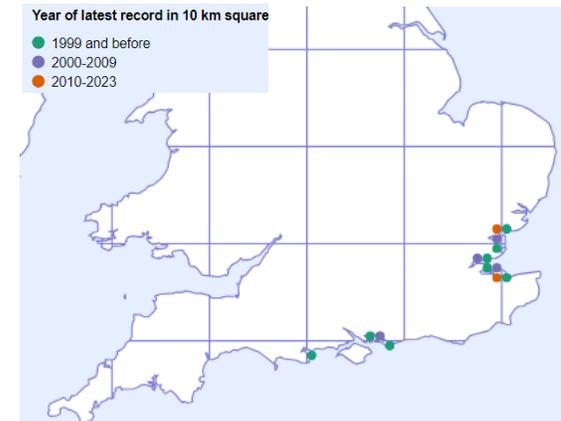
© Steven Falk

mid tibia has short hairs on anterior face

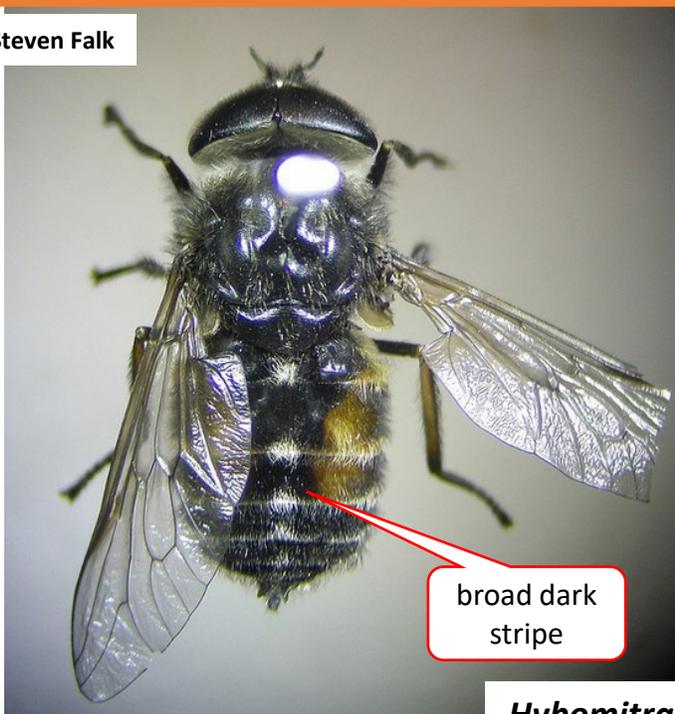
continuous median stripe on underside of abdomen

© Steven Falk

- ID difficulty: 4
- Flight period: early Jul to early Aug
- GB threat: Near Threatened • GB rarity: Nationally Rare
- coastal, south-east
- brackish marshes
- No. of records: 51 • % since 2000: 27%



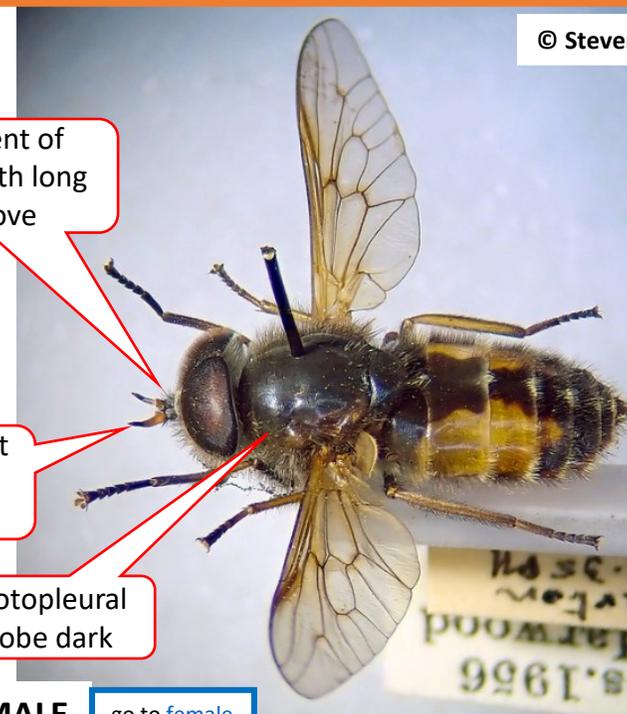
© Steven Falk



broad dark stripe

[Steven Falk link](#)

© Steven Falk



first segment of antennae with long hairs above

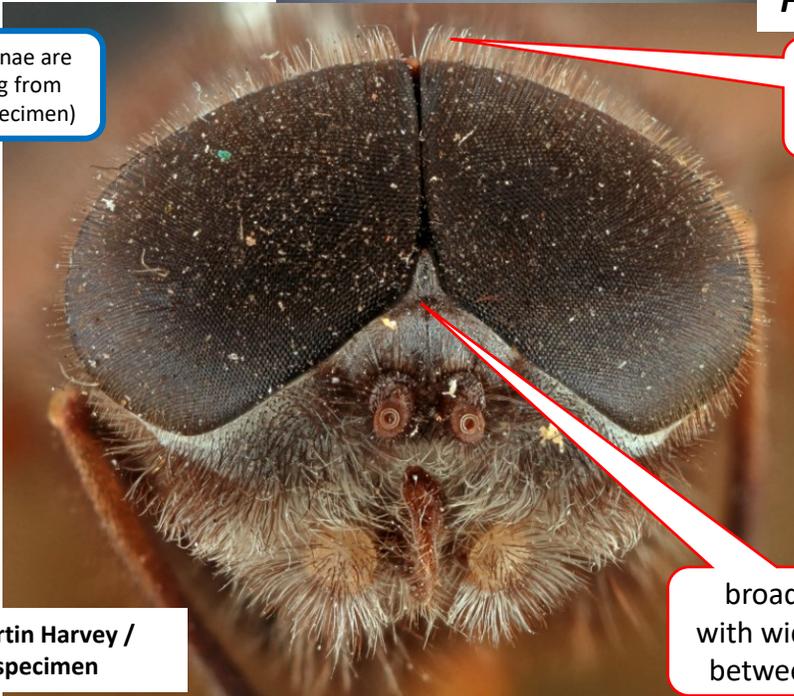
third segment of antennae orange

notopleural lobe dark

Hybomitra lurida (Broad-headed Horsefly) – MALE

[go to female](#)

(antennae are missing from this specimen)



no long dark hairs above vertex

broad head with wide angle between eyes

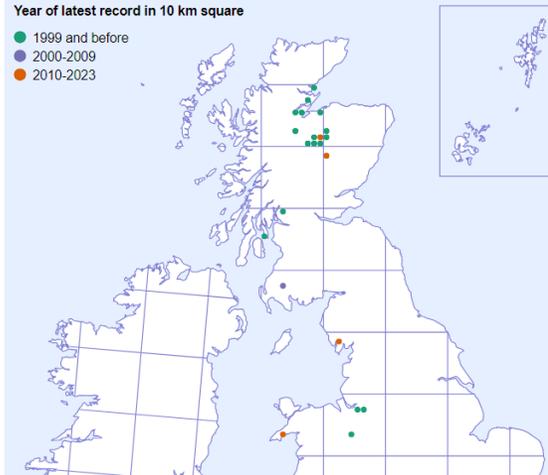
© Martin Harvey / NHM specimen

slightly smaller than most *Hybomitra*, and flies earlier in the summer; males are not known to hover

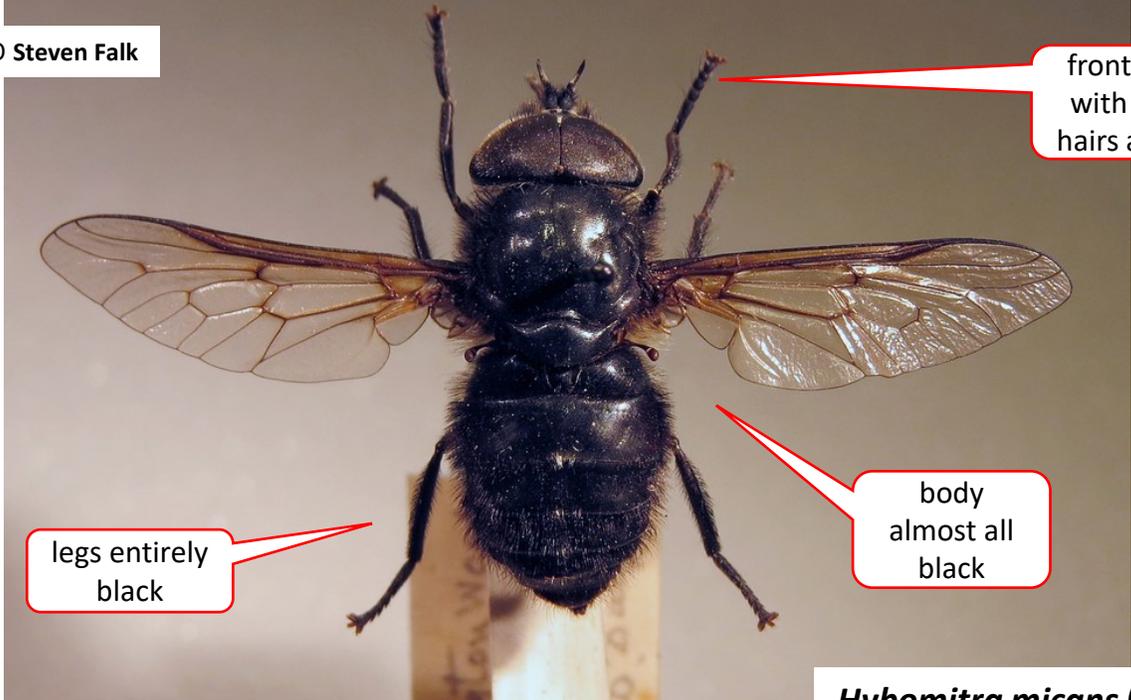
- ID difficulty: 4
- Flight period: May to late Jul, peak in early Jun
- GB threat: Vulnerable • GB rarity: Nationally Rare
- Scotland, north Wales, Cumbria, Shropshire/Cheshire
- mires, Shropshire/Cheshire mosses
- No. of records: 63 • % since 2000: 11%
- **Caveats:** records outside the above counties require confirmation

Year of latest record in 10 km square

- 1999 and before
- 2000-2009
- 2010-2023



© Steven Falk



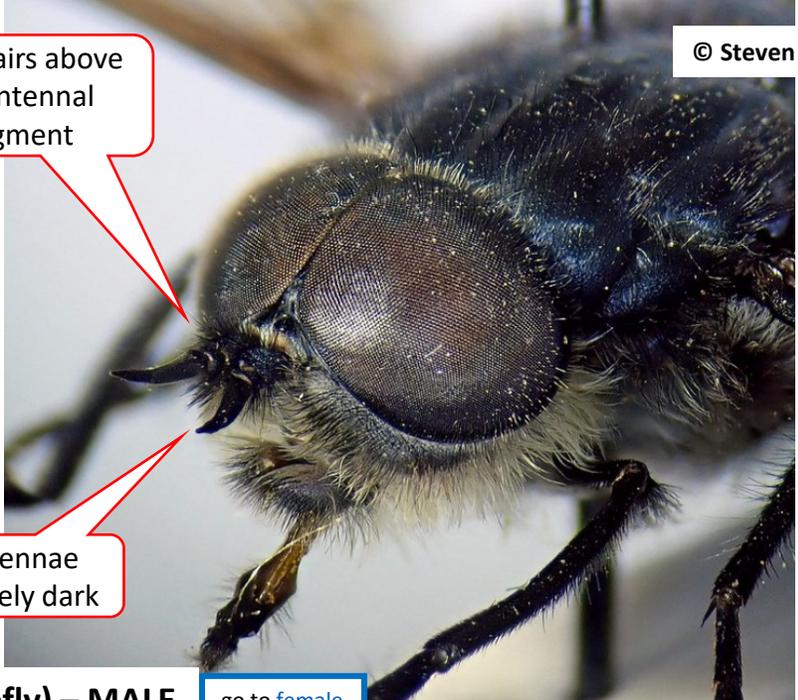
legs entirely black

front tarsi with long hairs above

body almost all black

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long hairs above 1st antennal segment

antennae entirely dark

males have been seen hovering low above the ground

Hybomitra micans (Black-legged Horsefly) – MALE

[go to female](#)



© Rob Petley-Jones via [iRecord](#)

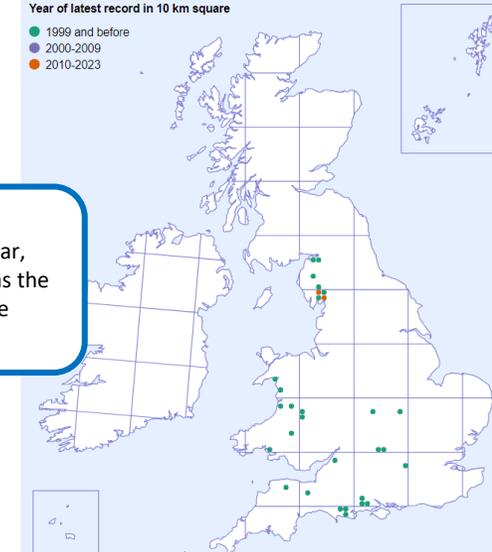


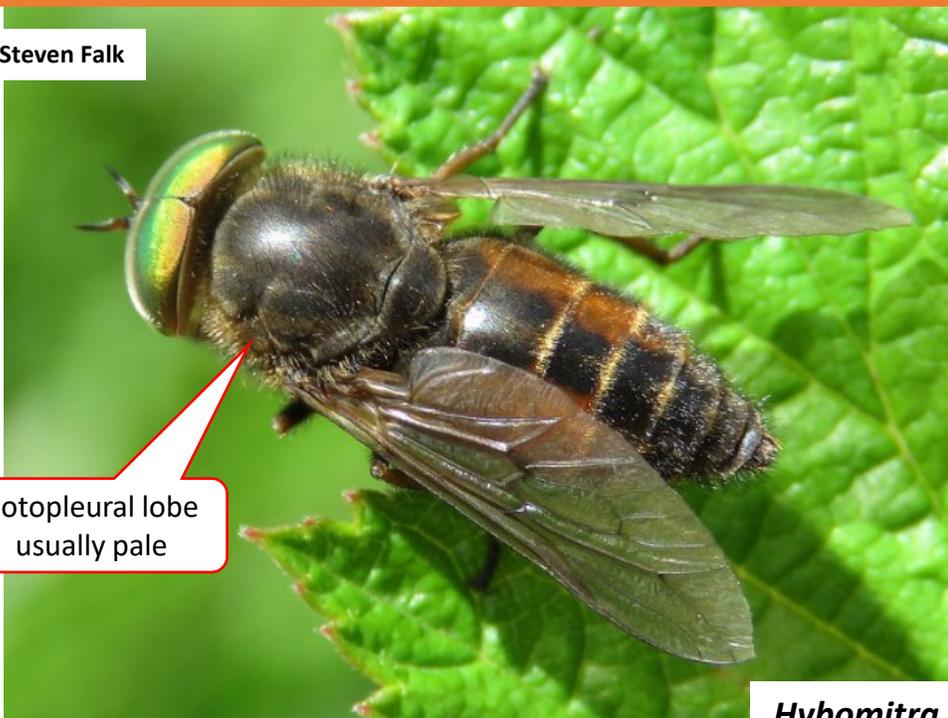
front tarsi with long hairs above

dark forms of *Hybomitra bimaculata* can look similar, but *bimaculata* always has the legs partly reddish (can be difficult to see)

© Steven Falk

- ID difficulty: 3
- Flight period: mid May to Jun, peak in mid Jun
- GB threat: Vulnerable • GB rarity: Nationally Rare
- scattered in England and Wales, an old record for Scotland
- wet grassland next to woodland
- No. of records: 57 • % since 2000: 0%



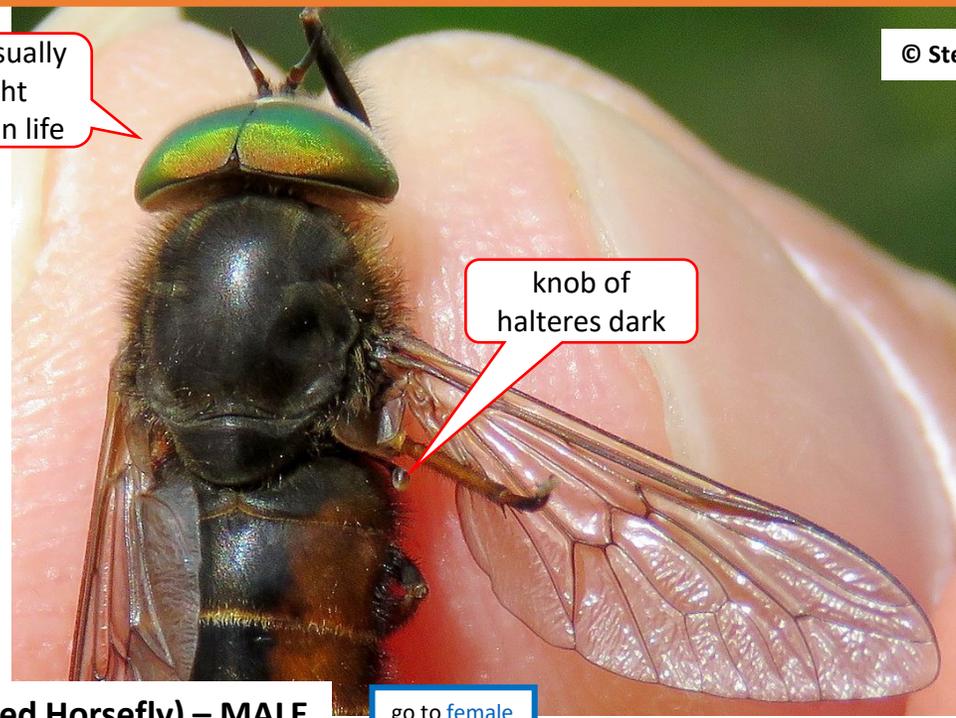


notopleural lobe usually pale

eyes usually bright green in life

[Steven Falk link](#)

males rarely hover

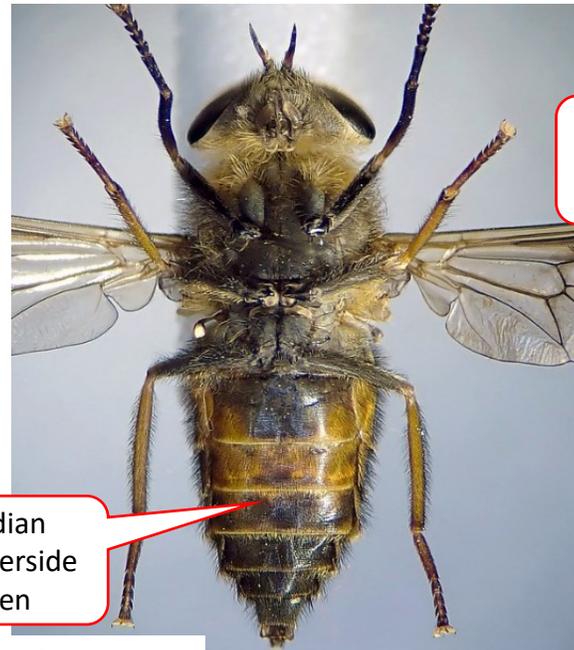
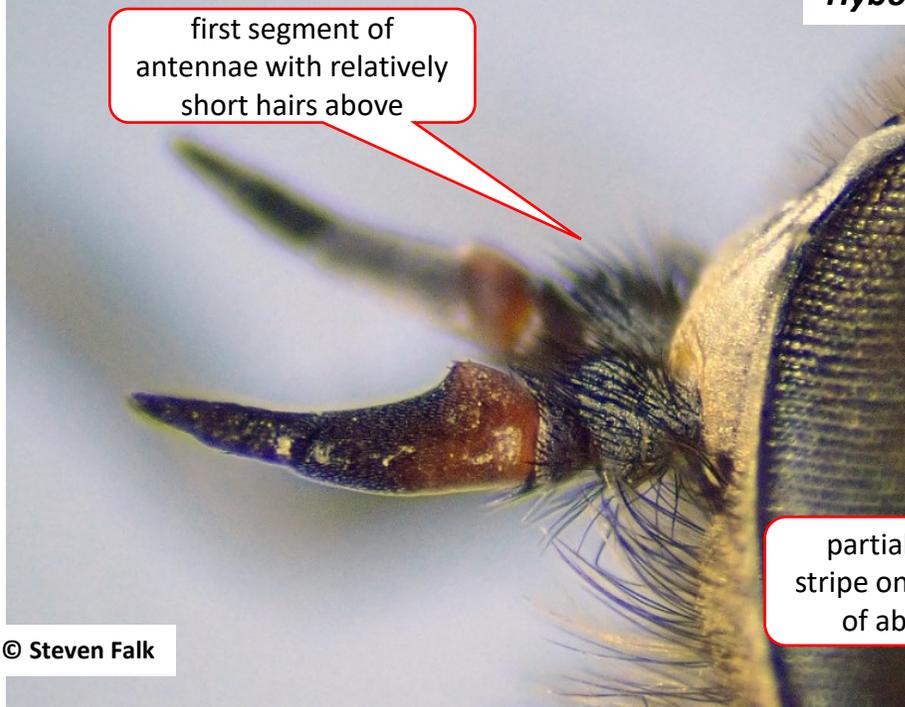


knob of halteres dark

go to [female](#)

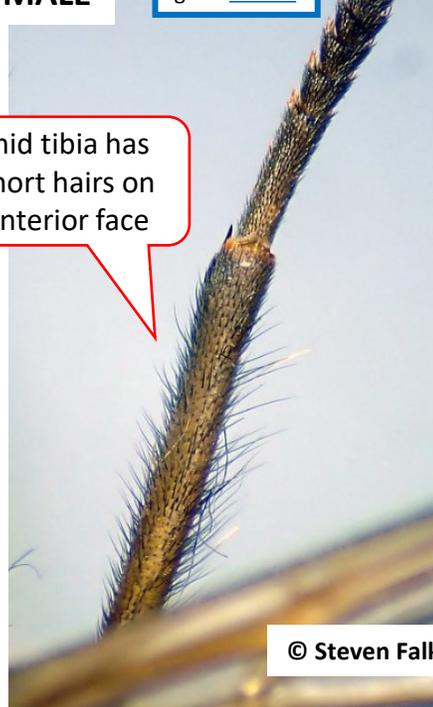
***Hybomitra montana* (Slender-horned Horsefly) – MALE**

first segment of antennae with relatively short hairs above

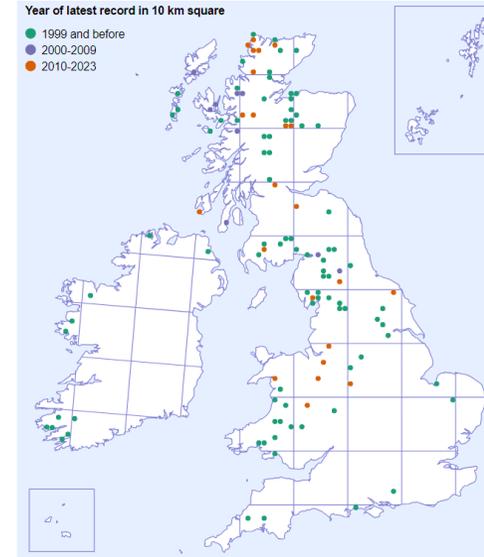


partial median stripe on underside of abdomen

mid tibia has short hairs on anterior face



- ID difficulty: 4
- Flight period: May to Aug, peak Jul
- GB threat: Least Concern
- Scotland, Wales, northern England, New Forest, Sussex
- bogs, mires, wet heaths
- No. of records: 205 • % since 2000: 17%



© Tim Hodge (det. Andy Grayson) via [iRecord](#)

© Tim Hodge (det. Andy Grayson) via [iRecord](#)

some long curved hairs at top of vertex

notopleural lobe usually pale at least in centre

dark hairs on hind edge of tergite 1

hairs on sternite 2 entirely pale

males hover persistently, sometimes in small groups

median stripe narrow on tergite 3

Hybomitra muehlfeldi (Broadland Horsefly) – MALE

[go to female](#)

first segment of antennae mostly dark, and with long hairs above

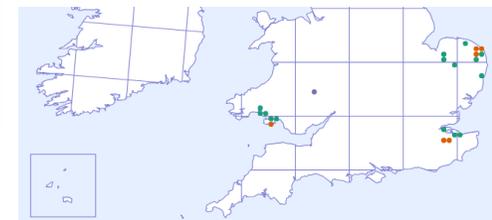
gradual change from smaller lower eye facets to larger upper eye facets

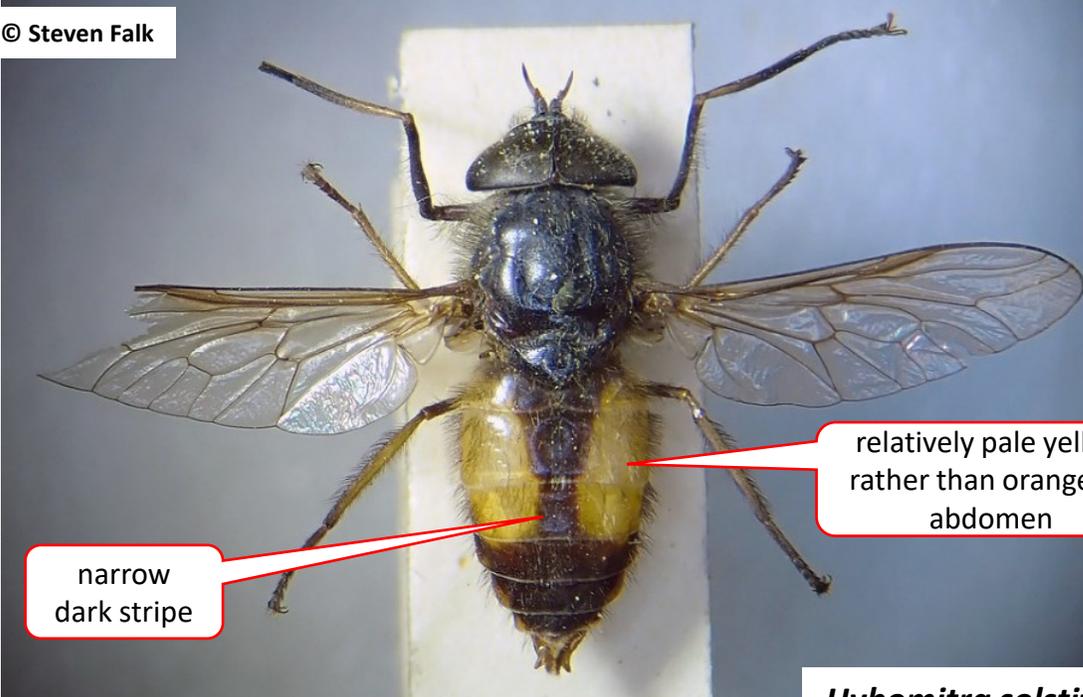
[Steven Falk link](#)

© Steven Falk

© Martin Harvey / NHM specimen

- ID difficulty: 4
- Flight period: Jun to Aug
- GB threat: Least Concern • GB rarity: Nationally Scarce
- Norfolk, Wales, many unconfirmed records from elsewhere
- fens, in conjunction with pingos and bogs
- No. of records: 87 • % since 2000: 24%





narrow dark stripe

relatively pale yellow rather than orange on abdomen

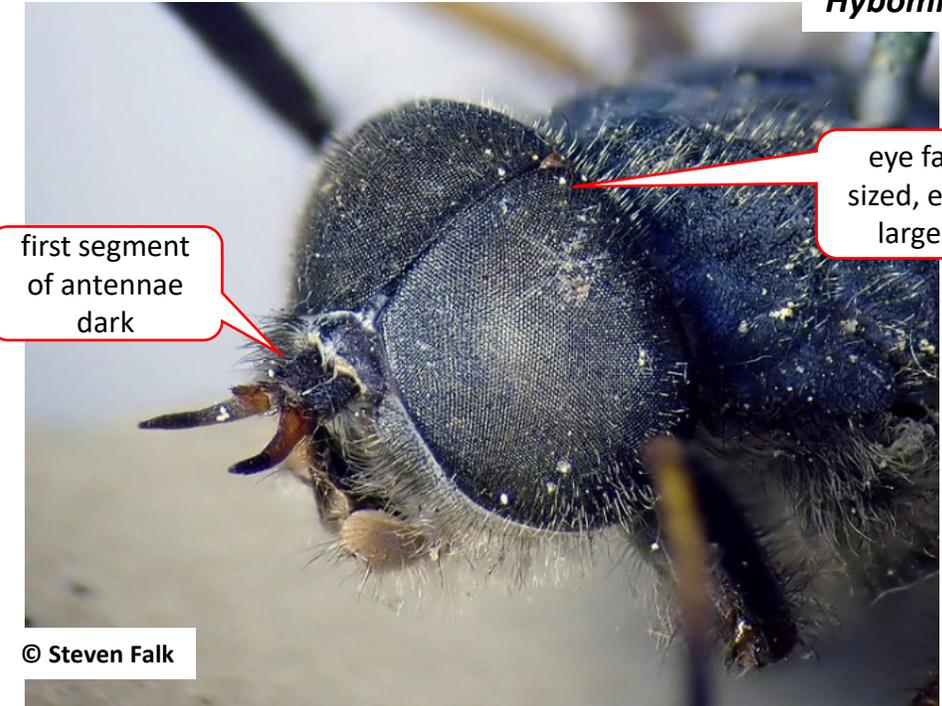
[Steven Falk link](#)



males are not known to hover

Hybomitra solstitialis (Scarce Forest Horsefly) – MALE

[go to female](#)

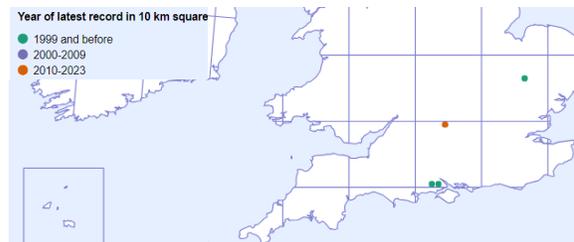


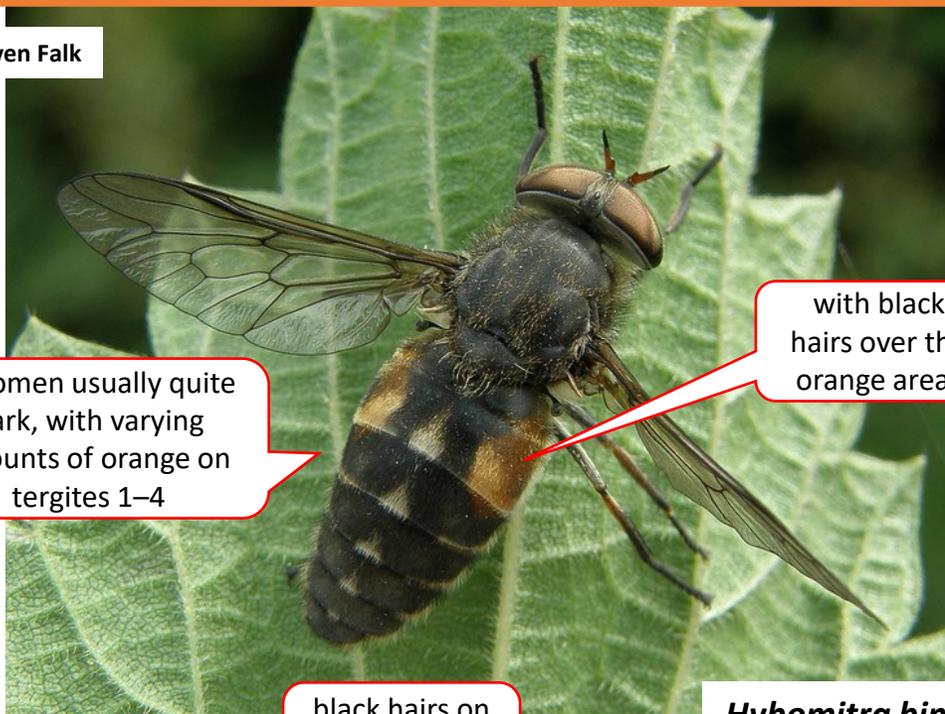
first segment of antennae dark

eye facets evenly sized, except slightly large near frons

In the Zeegers and Schulten field guide the species we have called *Hybomitra solstitialis* in the UK has been synonymised with *Hybomitra bimaculata*, while the *Hybomitra ciureai* of the UK is renamed as *Hybomitra solstitialis* (Meigen 1820) nec Lyneborg (1959). The ID features highlighted on this page are based on the UK concept of *Hybomitra solstitialis*.

- ID difficulty: 4
- Flight period: Jun to Jul
- GB threat: Endangered • GB rarity: Nationally Rare
- New Forest, Oxfordshire
- mires and fens
- No. of records: 15 • % since 2000: 0%

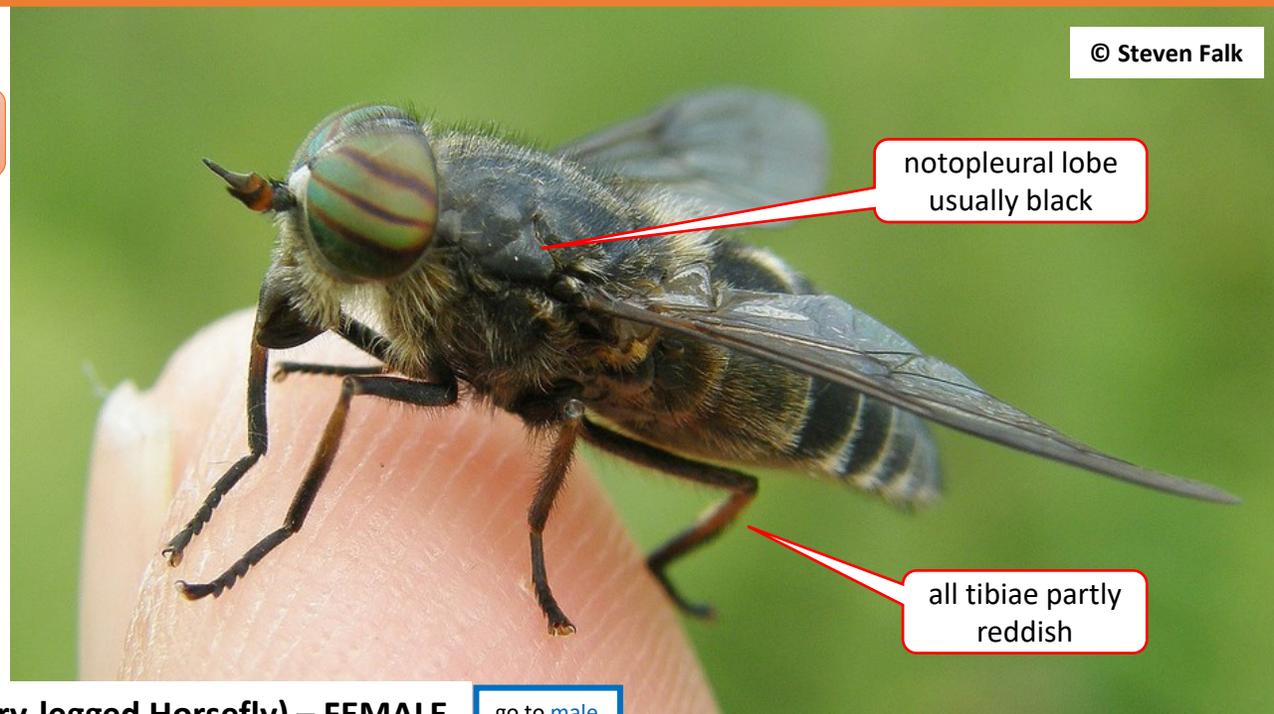




abdomen usually quite dark, with varying amounts of orange on tergites 1-4

with black hairs over the orange areas

[Steven Falk link](#)

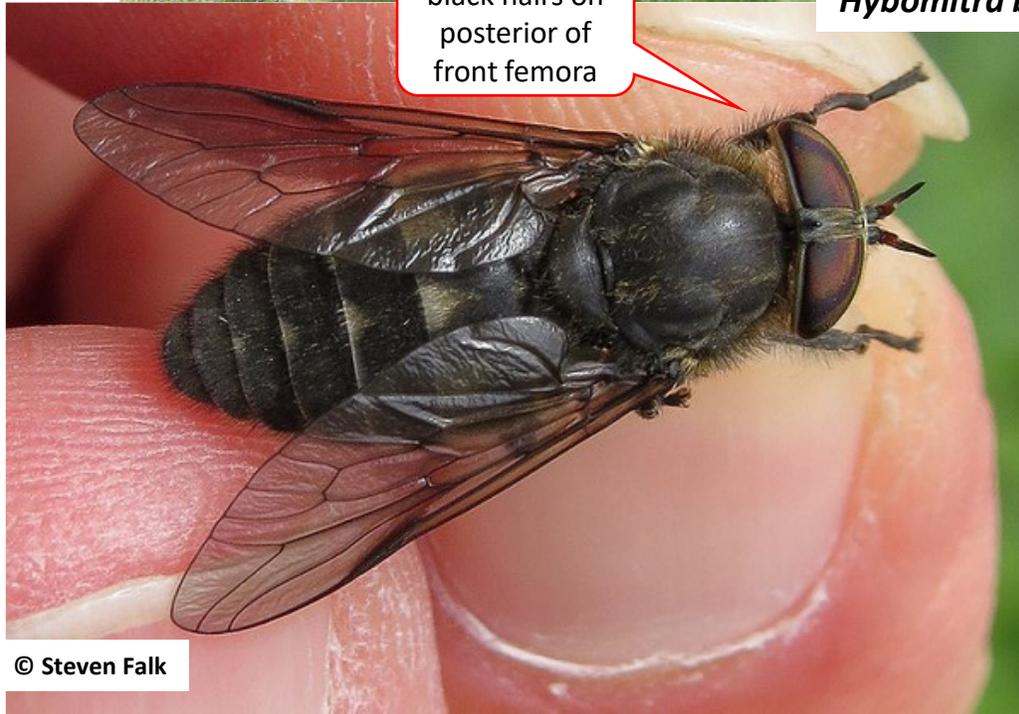


notopleural lobe usually black

all tibiae partly reddish

***Hybomitra bimaculata* (Hairy-legged Horsefly) – FEMALE**

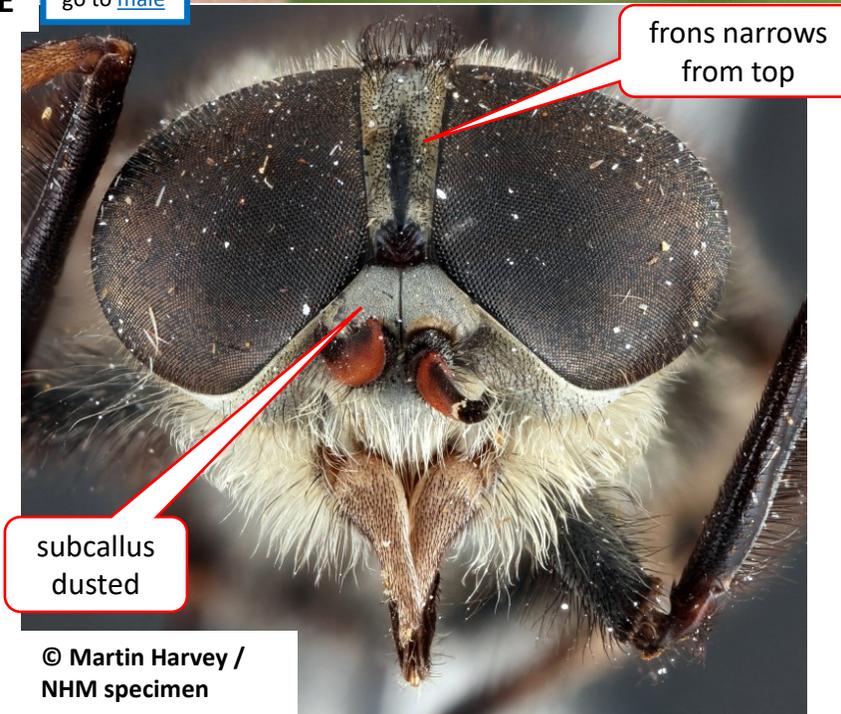
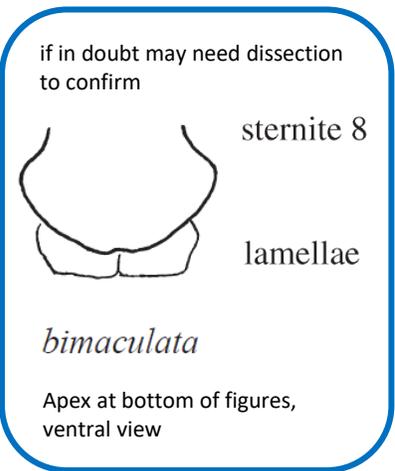
[go to male](#)



black hairs on posterior of front femora

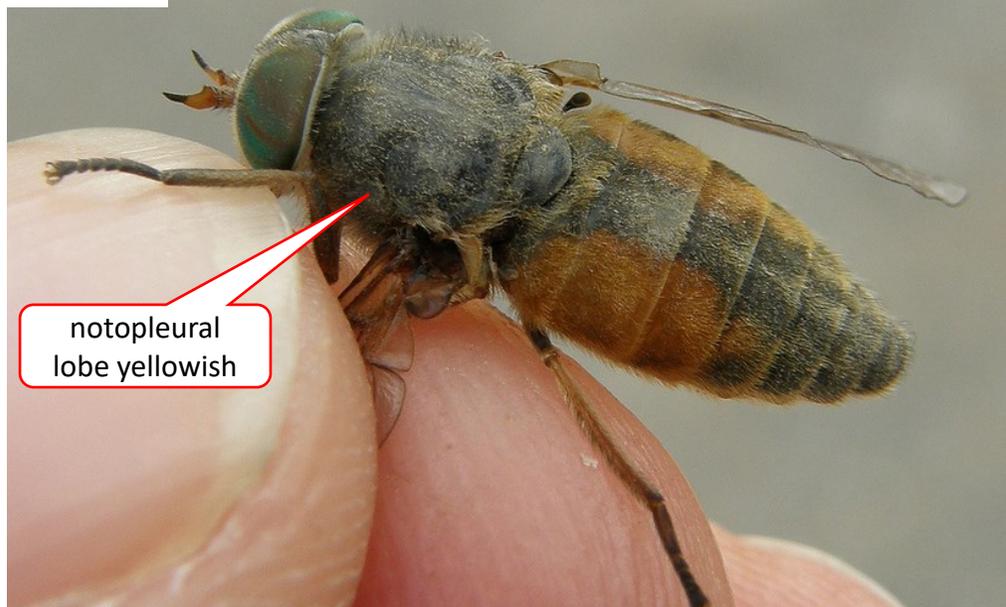


mid tibia with long anterior hairs

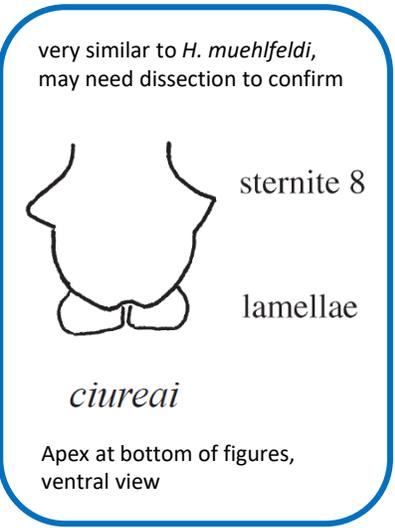


frons narrows from top

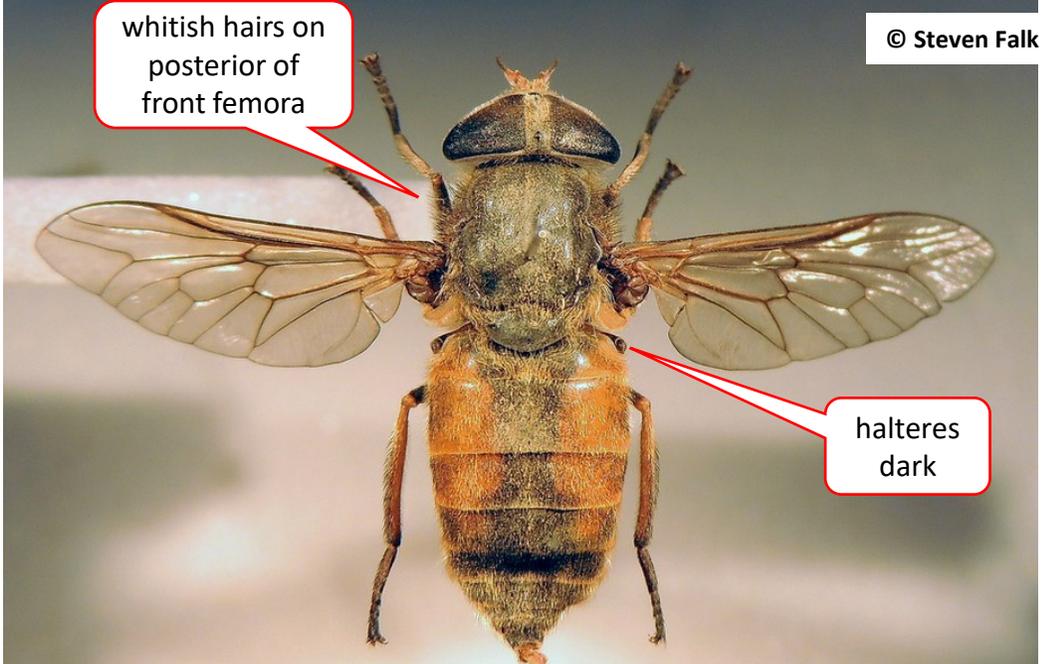
subcallus dusted



notopleural lobe yellowish



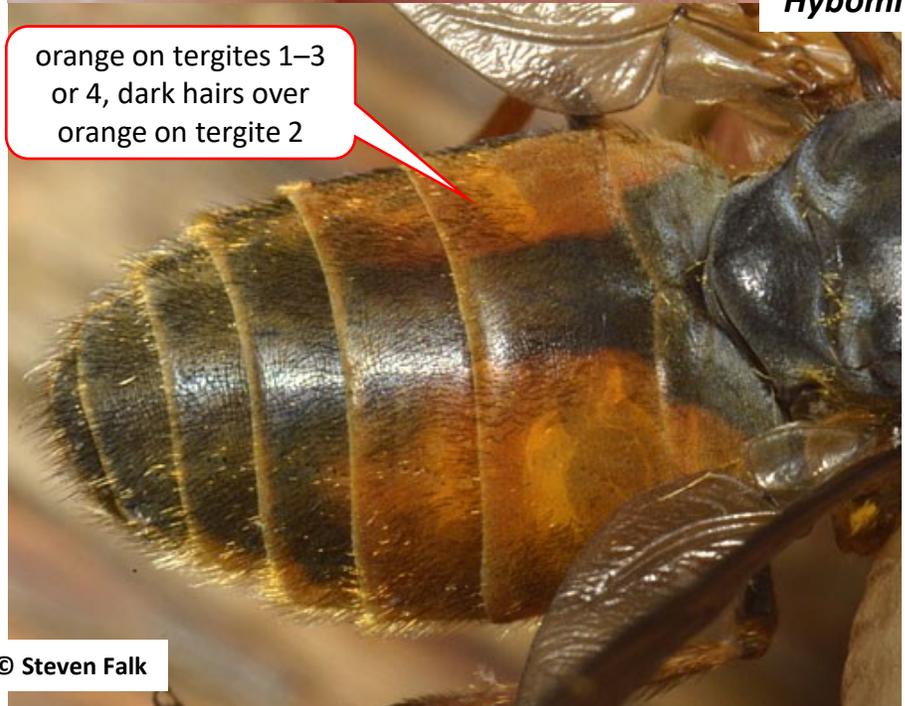
[Steven Falk link](#)



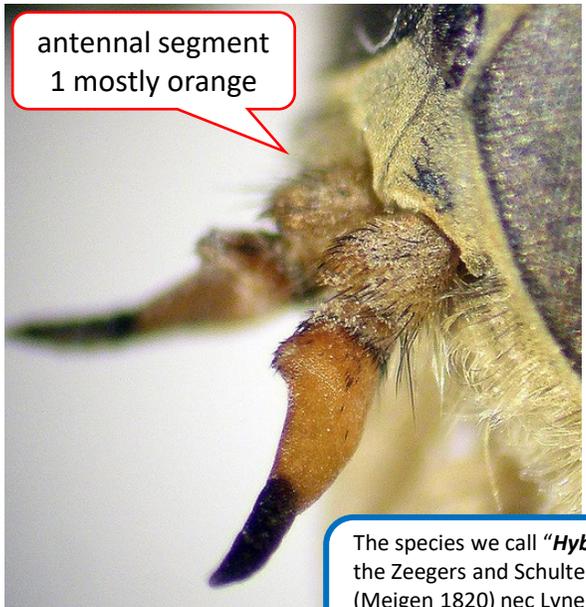
whitish hairs on posterior of front femora

halteres dark

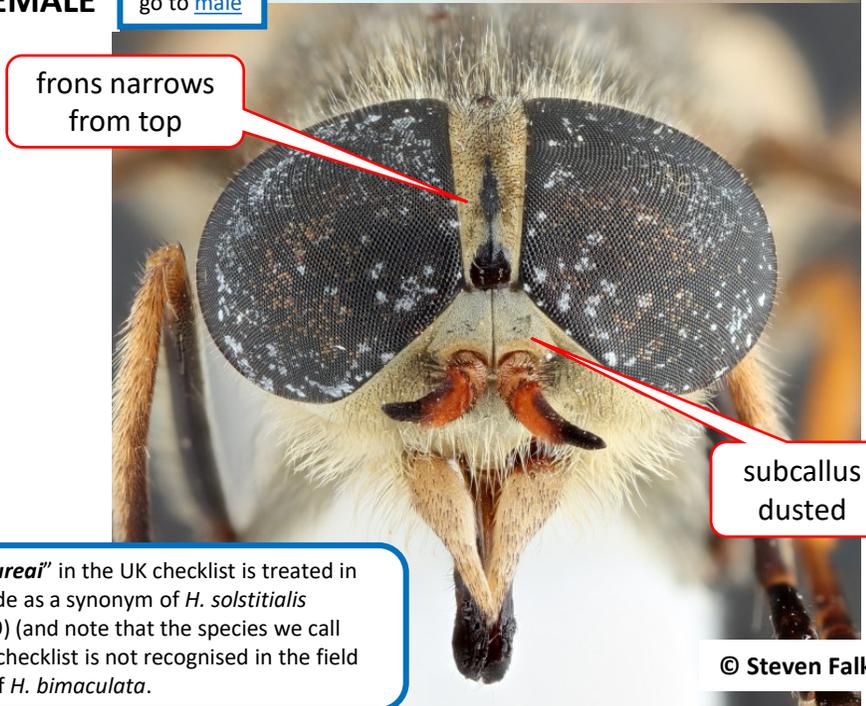
Hybomitra ciureai (Levels Yellow-horned Horsefly) – FEMALE [go to male](#)



orange on tergites 1-3 or 4, dark hairs over orange on tergite 2



antennal segment 1 mostly orange



frons narrows from top

subcallus dusted

The species we call "**Hybomitra ciureai**" in the UK checklist is treated in the Zeegers and Schulten field guide as a synonym of *H. solstitialis* (Meigen 1820) nec Lyneborg (1959) (and note that the species we call "**Hybomitra solstitialis**" in the UK checklist is not recognised in the field guide, and is treated as a variety of *H. bimaculata*).

mid tibia with short anterior hairs



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dark median stripe narrow on tergite 3

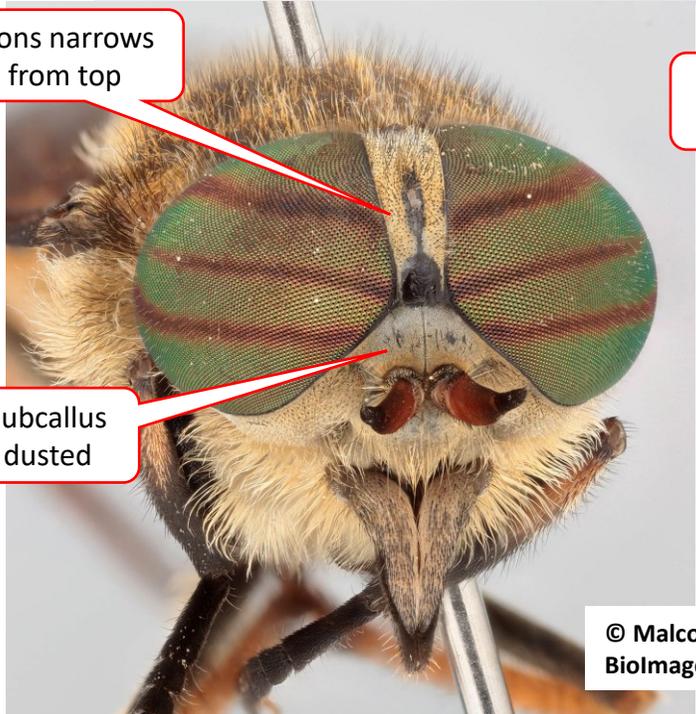


orange on tergites 1–3 or 4, pale hairs over orange on tergite 2

***Hybomitra distinguenda* (Bright Horsefly) – FEMALE**

[go to male](#)

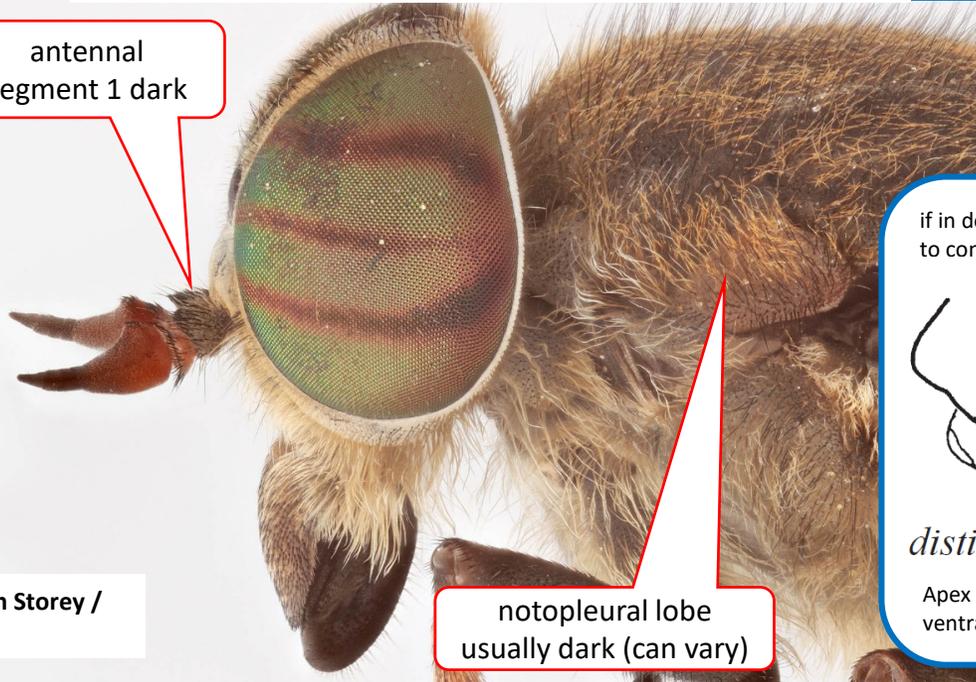
frons narrows from top



subcallus dusted

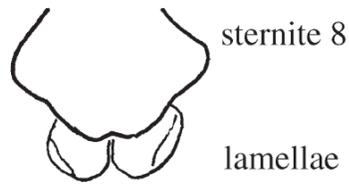
© Malcolm Storey / Biolimages

antennal segment 1 dark



notopleural lobe usually dark (can vary)

if in doubt may need dissection to confirm



distinguenda

Apex at bottom of figure, ventral view



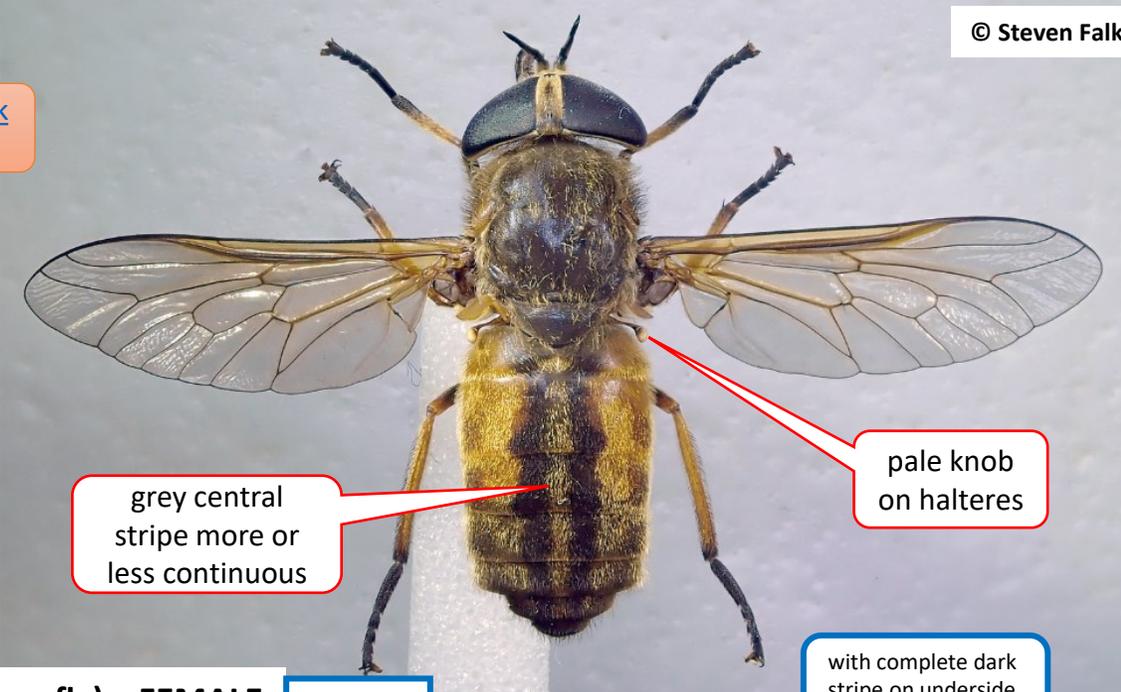
© Malcolm Storey / Biolimages



eyes usually bright green in life

relatively short hairs on eyes

[Steven Falk link](#)



grey central stripe more or less continuous

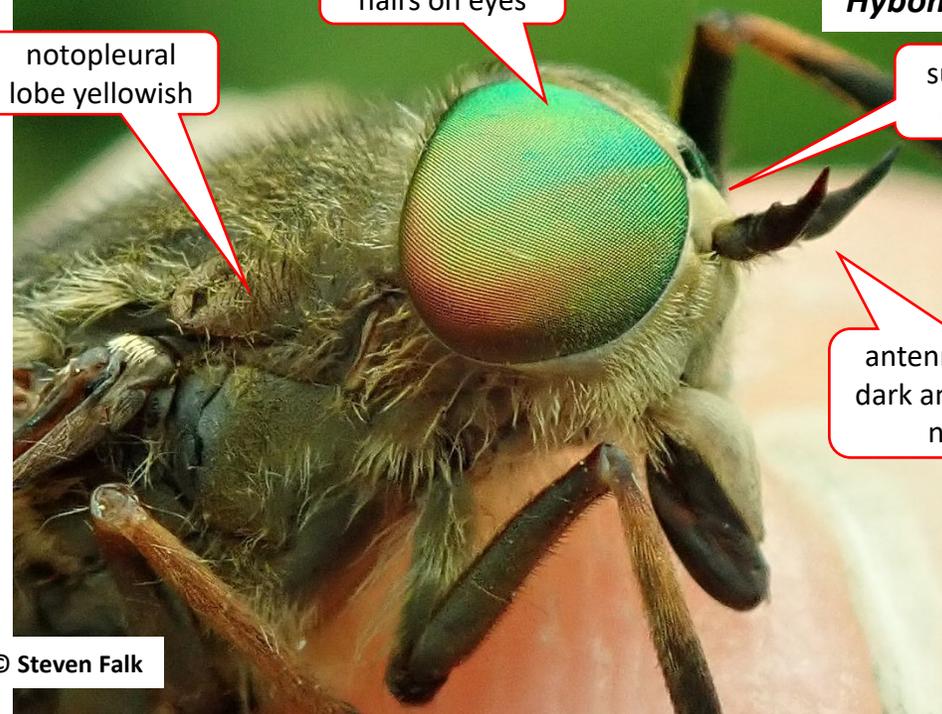
pale knob on halteres

with complete dark stripe on underside of abdomen

[go to male](#)

***Hybomitra expollicata* (Striped Horsefly) – FEMALE**

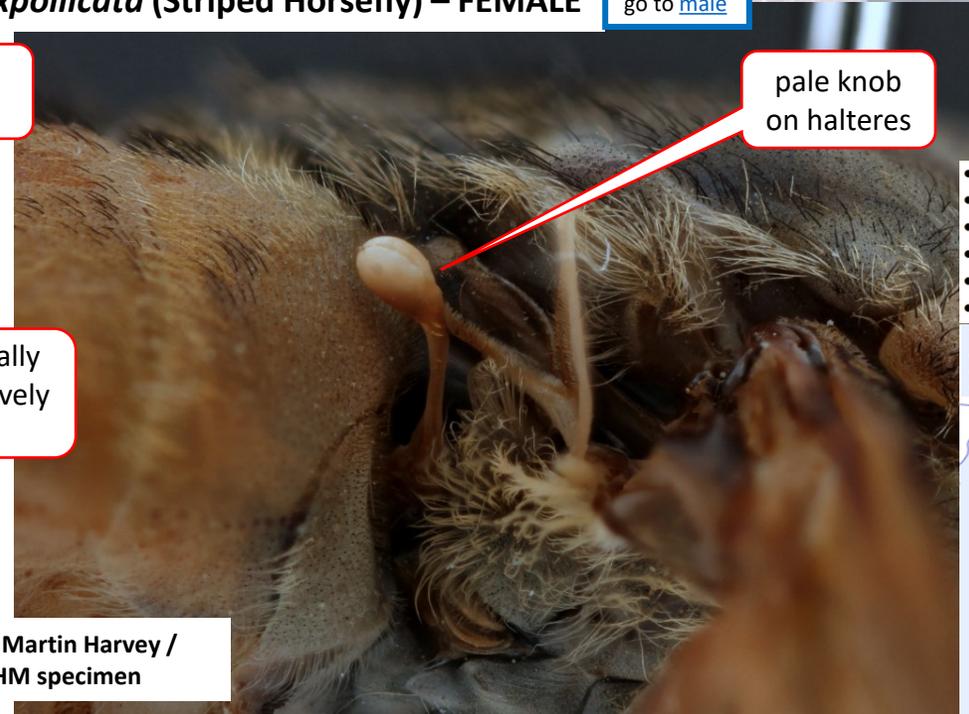
notopleural lobe yellowish



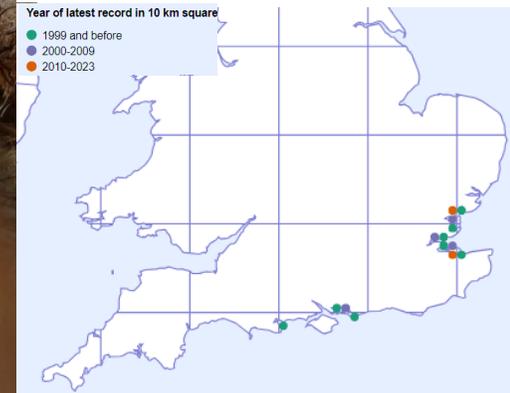
subcallus dusted

antennae usually dark and relatively narrow

pale knob on halteres



- ID difficulty: 4
- Flight period: early Jul to early Aug
- GB threat: Near Threatened • GB rarity: Nationally Rare
- coastal, south-east
- brackish marshes
- No. of records: 51 • % since 2000: 27%

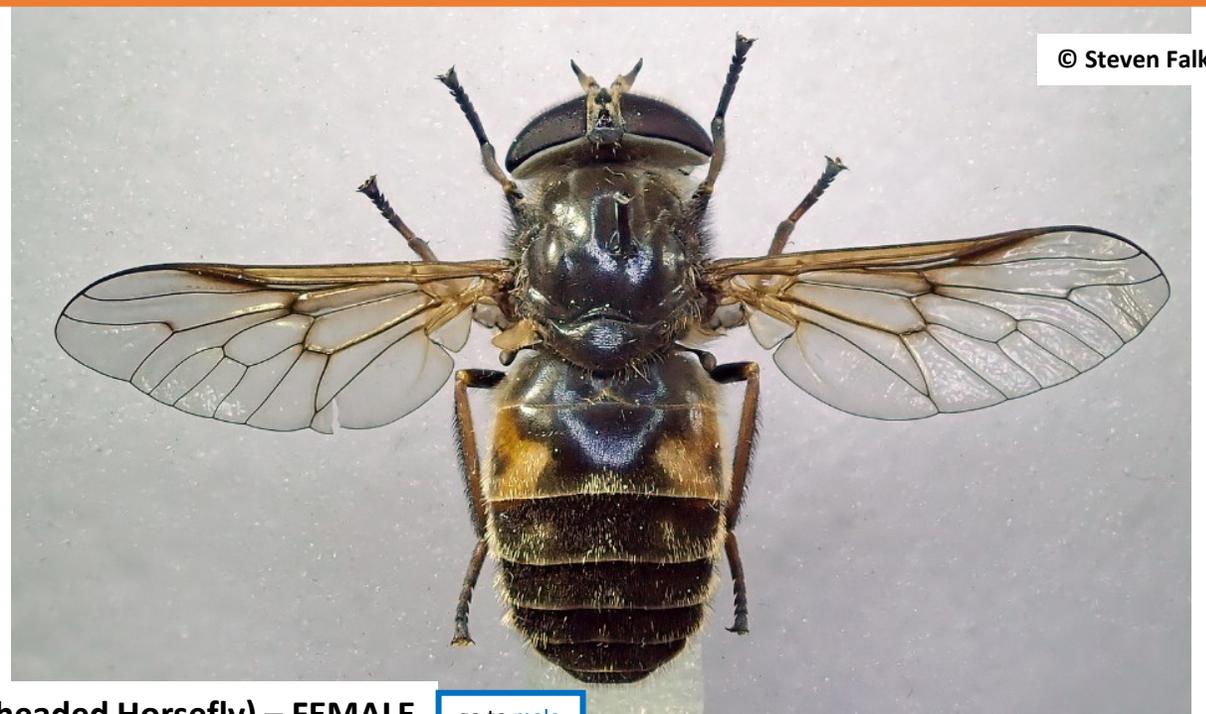


© Steven Falk



[Steven Falk link](#)

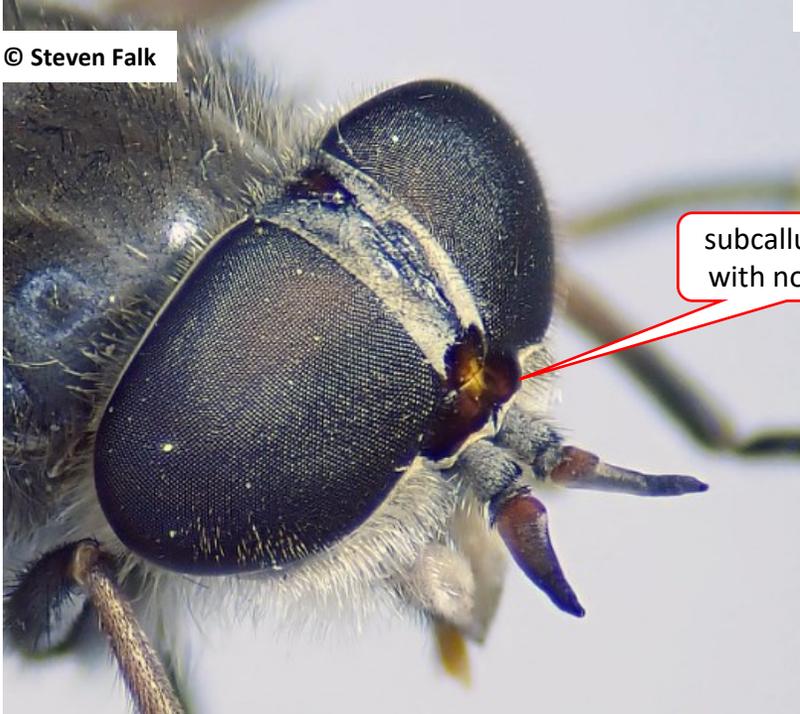
© Steven Falk



***Hybomitra lurida* (Broad-headed Horsefly) – FEMALE**

[go to male](#)

© Steven Falk

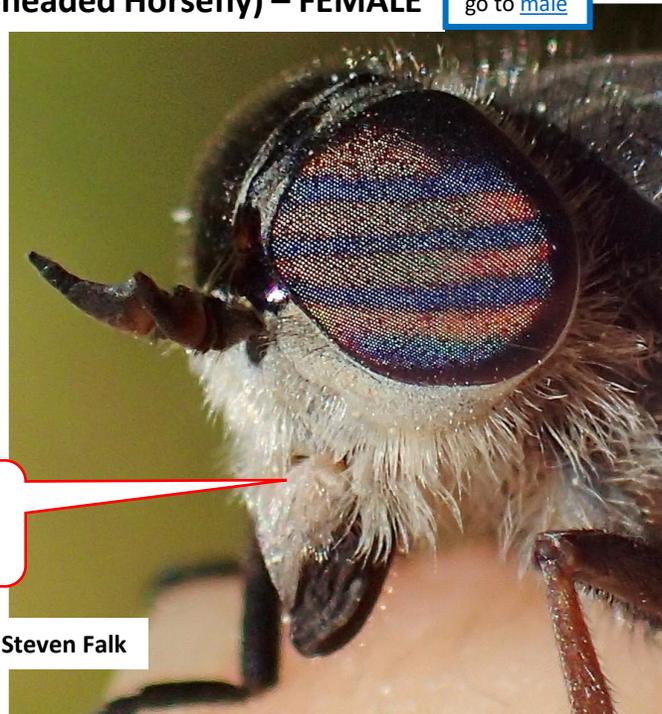


slightly smaller than most *Hybomitra*, and flies earlier in the summer

subcallus glossy, with no dusting

palps thickened at base

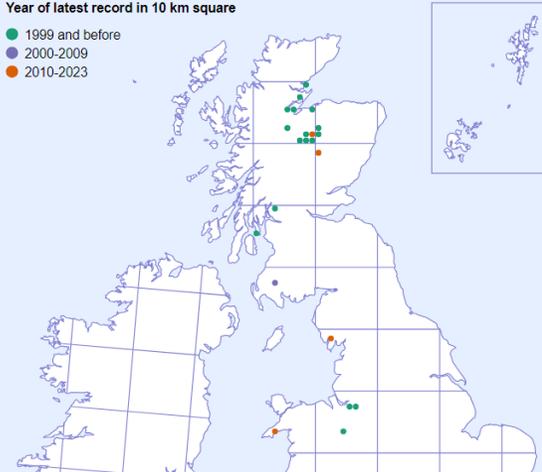
© Steven Falk

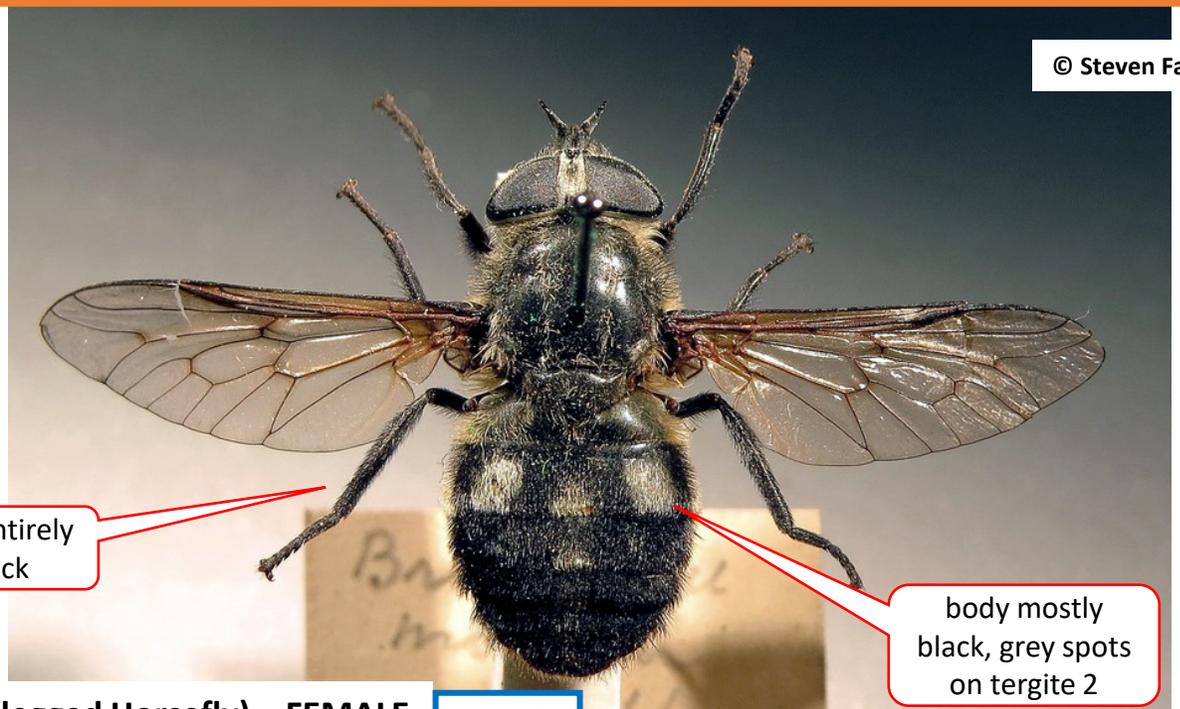


- ID difficulty: 4
- Flight period: May to late Jul, peak in early Jun
- GB threat: Vulnerable • GB rarity: Nationally Rare
- Scotland, north Wales, Cumbria, Shropshire/Cheshire
- mires, Shropshire/Cheshire mosses
- No. of records: 63 • % since 2000: 11%
- **Caveats:** records outside the above counties require confirmation

Year of latest record in 10 km square

- 1999 and before
- 2000-2009
- 2010-2023





legs entirely black

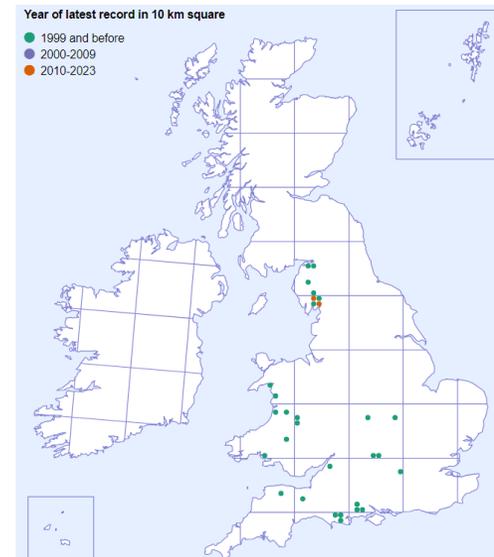
body mostly black, grey spots on tergite 2

Hybomitra micans (Black-legged Horsefly) – FEMALE

[go to male](#)

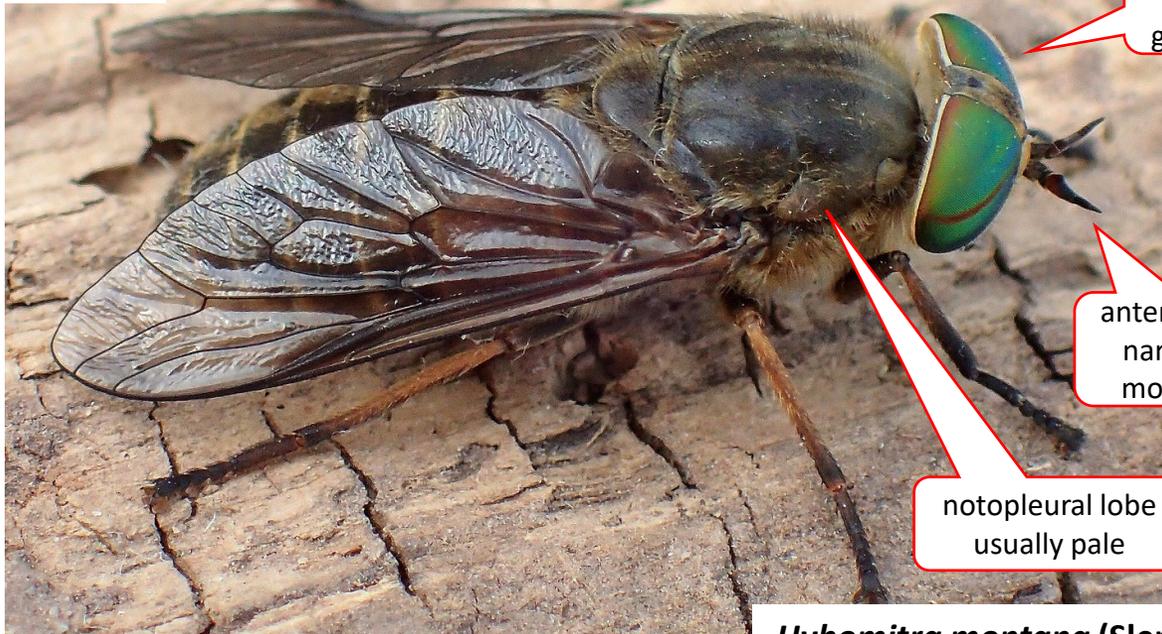
[Steven Falk link](#)

- ID difficulty: 3
- Flight period: mid May to Jun, peak in mid Jun
- GB threat: Vulnerable • GB rarity: Nationally Rare
- scattered in England and Wales, an old record for Scotland
- wet grassland next to woodland
- No. of records: 57 • % since 2000: 0%



subcallus mostly glossy

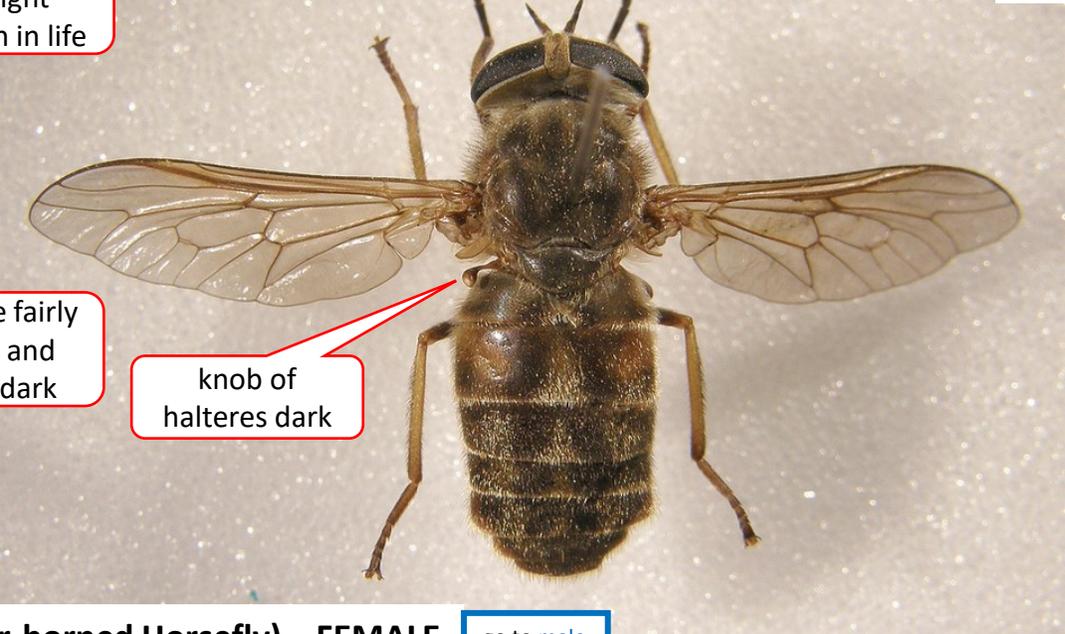
dark forms of *Hybomitra bimaculata* can look similar, but *bimaculata* always has the legs partly reddish (can be difficult to see)



eyes usually bright green in life

antennae fairly narrow and mostly dark

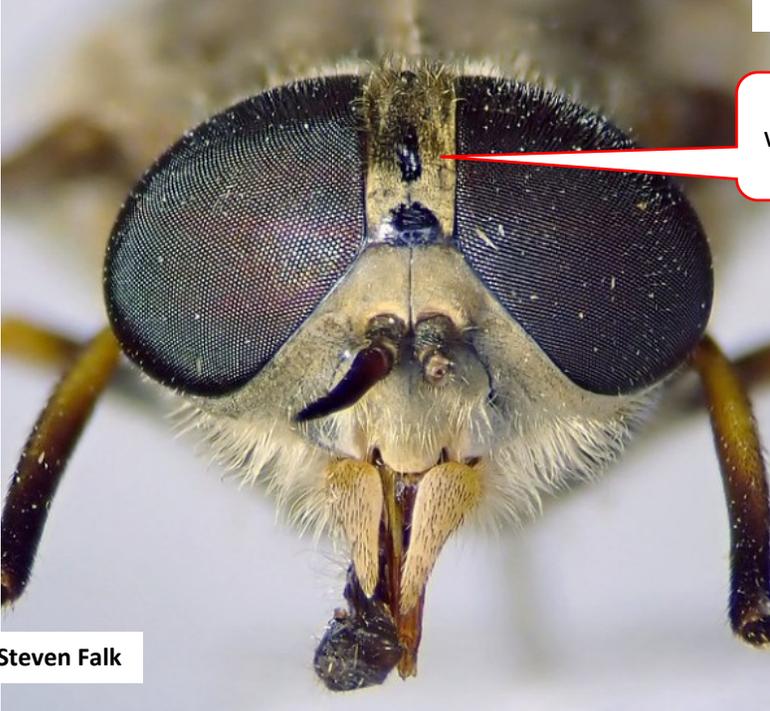
notopleural lobe usually pale



knob of halteres dark

***Hybomitra montana* (Slender-horned Horsefly) – FEMALE**

[go to male](#)

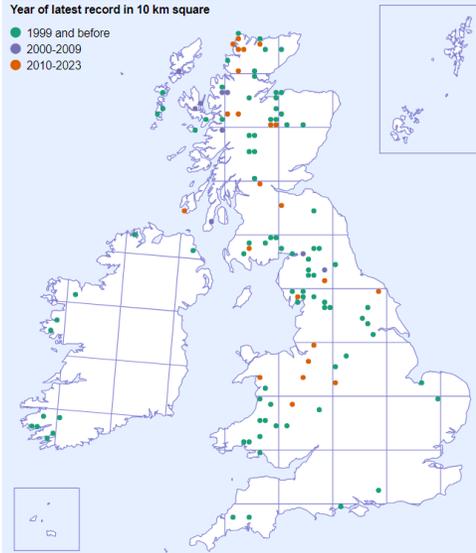


frons broad, with edges more or less parallel

[Steven Falk link](#)



- ID difficulty: 4
- Flight period: May to Aug, peak Jul
- GB threat: Least Concern
- Scotland, Wales, northern England, New Forest, Sussex
- bogs, mires, wet heaths
- No. of records: 205 • % since 2000: 17%



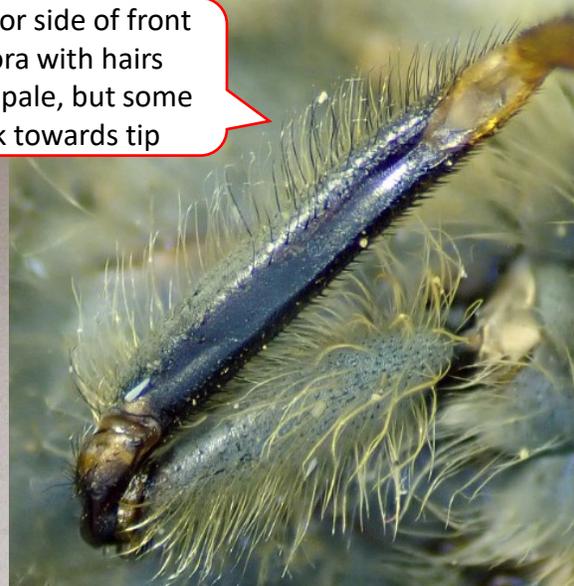
© Ab H Baas via [Saxifraga](#)

notopleural lobe usually pale



© Steven Falk

posterior side of front femora with hairs mostly pale, but some black towards tip



© Steven Falk

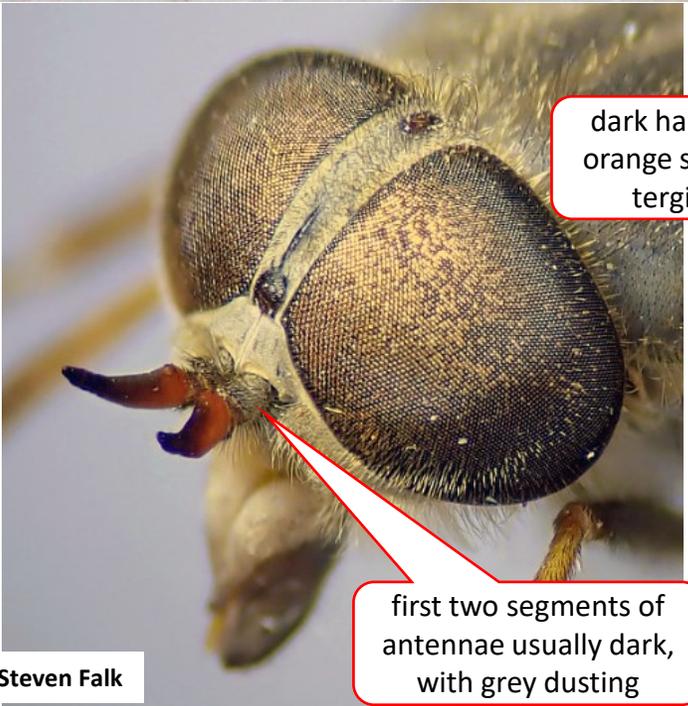


***Hybomitra muehlfeldi* (Broadland Horsefly) – FEMALE**

[go to male](#)

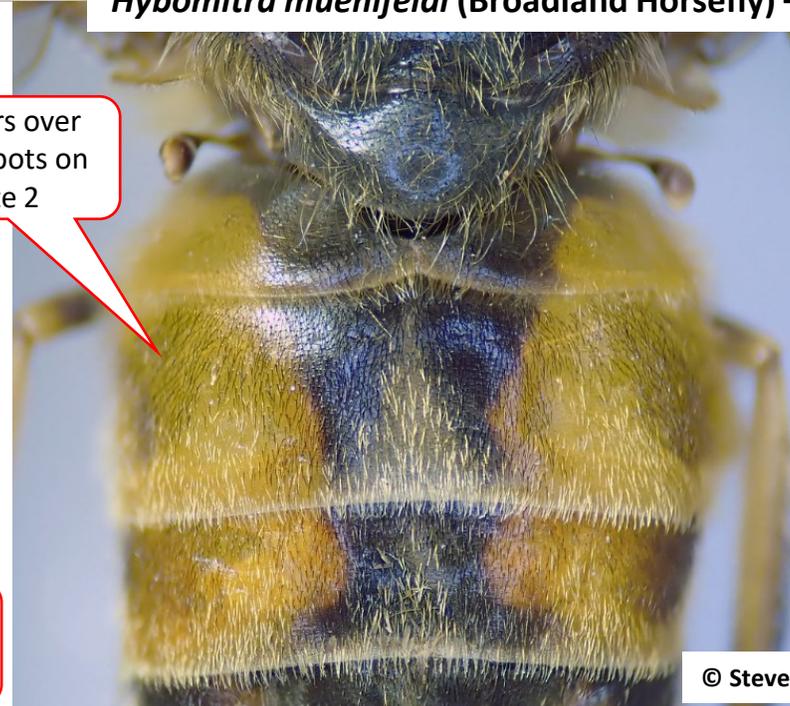
[Steven Falk link](#)

dark hairs over orange spots on tergite 2

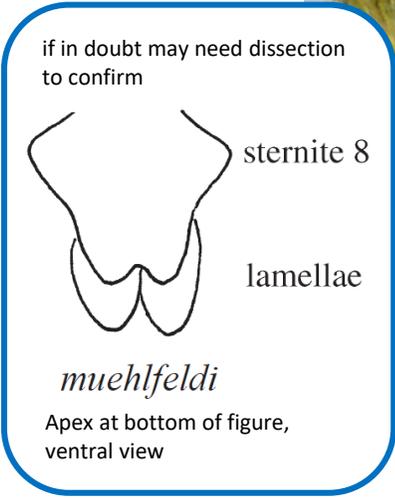


first two segments of antennae usually dark, with grey dusting

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[Steven Falk link](#)

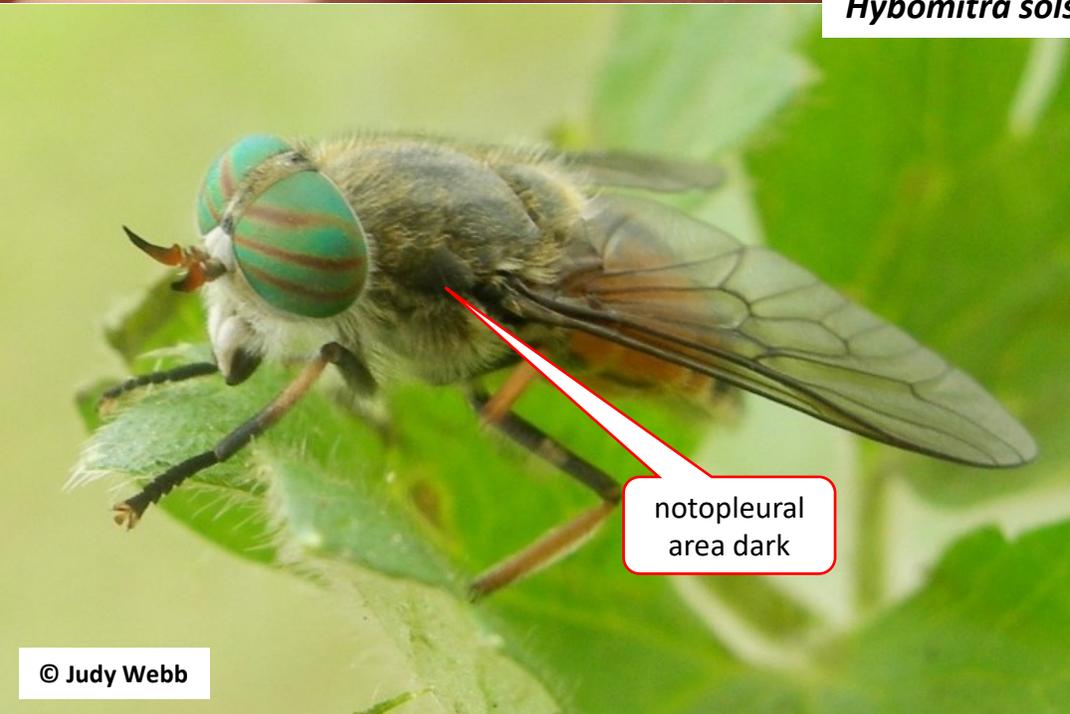
In the Zeegers and Schulten field guide the species we have called *Hybomitra solstitialis* in the UK has been synonymised with *Hybomitra bimaculata*, while the *Hybomitra ciureai* of the UK is renamed as *Hybomitra solstitialis* (Meigen 1820) nec Lyneborg (1959). The ID features highlighted on this page are based on the UK concept of *Hybomitra solstitialis*.

UK specimens are may not be a good match for the Zeegers and Schulten key. Specimens should be retained for further investigation.

mix of pale and dark hairs over orange spots

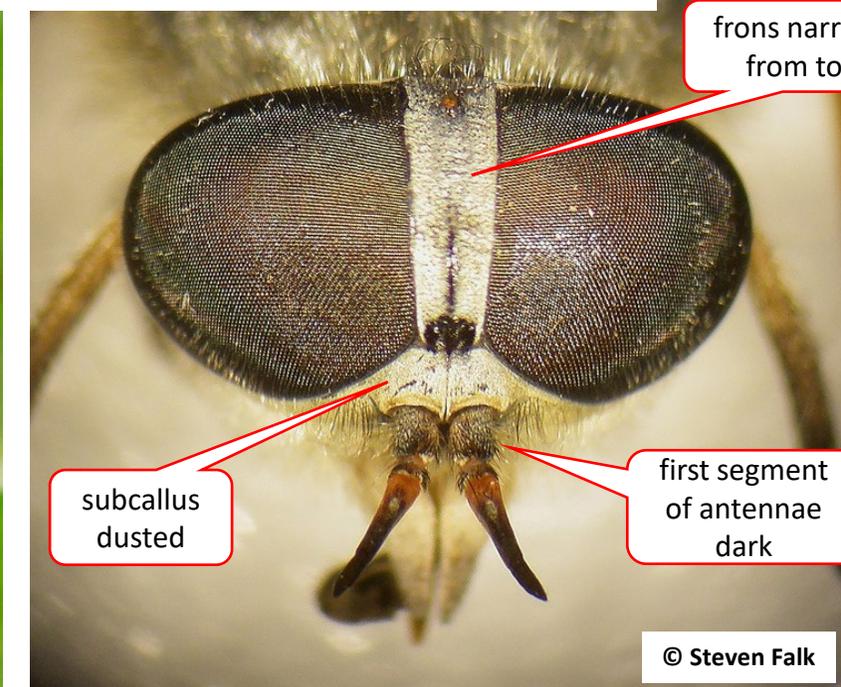
Hybomitra solstitialis (Scarce Forest Horsefly) – FEMALE

[go to male](#)



notopleural area dark

© Judy Webb



frons narrows from top

subcallus dusted

first segment of antennae dark

© Steven Falk

shape of sternite 8 and lamellae very similar to *Hybomitra bimaculata*

- ID difficulty: 4
- Flight period: Jun to Jul
- GB threat: Endangered • GB rarity: Nationally Rare
- New Forest, Oxfordshire
- mires and fens
- No. of records: 15 • % since 2000: 0%

