

Identifying soldierflies and allies: deerflies in genus *Chrysops*

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

Version 1 at 6 September 2020

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

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

Other photographers included in this guide are David Basham and Ian Andrews.

Males are shown first, one page for each species, then females. The pages for males include distribution maps taken from the recording scheme's [provisional atlas](#) (Harvey 2017).

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. See also the recording scheme's [additional notes](#) to accompany the Stubbs and Drake keys.

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: *Chrysops*

The 'deerflies' in genus *Chrysops* are part of the horsefly family Tabanidae. *Chrysops* contains four species, and as a genus it is fairly distinctive: medium-sized flies (7–10mm long) with colourful eye patterns and dark markings on the wings, which are held in a characteristic swept-back position when at rest.

Careful checking is sometimes needed to tell the species apart, and when photographing them it is very useful to have side-on views as well as top-down views, so that the colours on the legs and side of the abdomen can be seen. The pattern of dusting on the face is also a useful feature if the rare *C. sepulcralis* is suspected.

In this guide the four species are arranged in two groups of two, with males shown first and then females:

- Darker-bodied species: *Chrysops caecutiens* and *C. sepulcralis*
- Paler-bodied species: *Chrysops relictus* and *C. viduatus*

Chrysops species are most often found in wet, marshy habitats, and have larvae that develop in mud or sand at the edge of water. Unlike other horseflies, the deerflies have larvae which are largely if not entirely vegetarian, feeding on decaying vegetable matter.

The adult females seek out large mammals (including humans) to obtain a blood meal, and are well known for approaching at head height from behind, biting on the back of the neck.

Chrysops relictus is the most widespread of the species, with *C. caecutiens* and *C. viduatus* more southerly in their distributions. *C. sepulcralis* is a rare specialist of Sphagnum bog habitats.



← *Chrysops* MALE

eyes meet at top of head

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Chrysops FEMALE →



wide gap between eyes at top of head

© Malcolm Storey / Biolimages

© David Basham

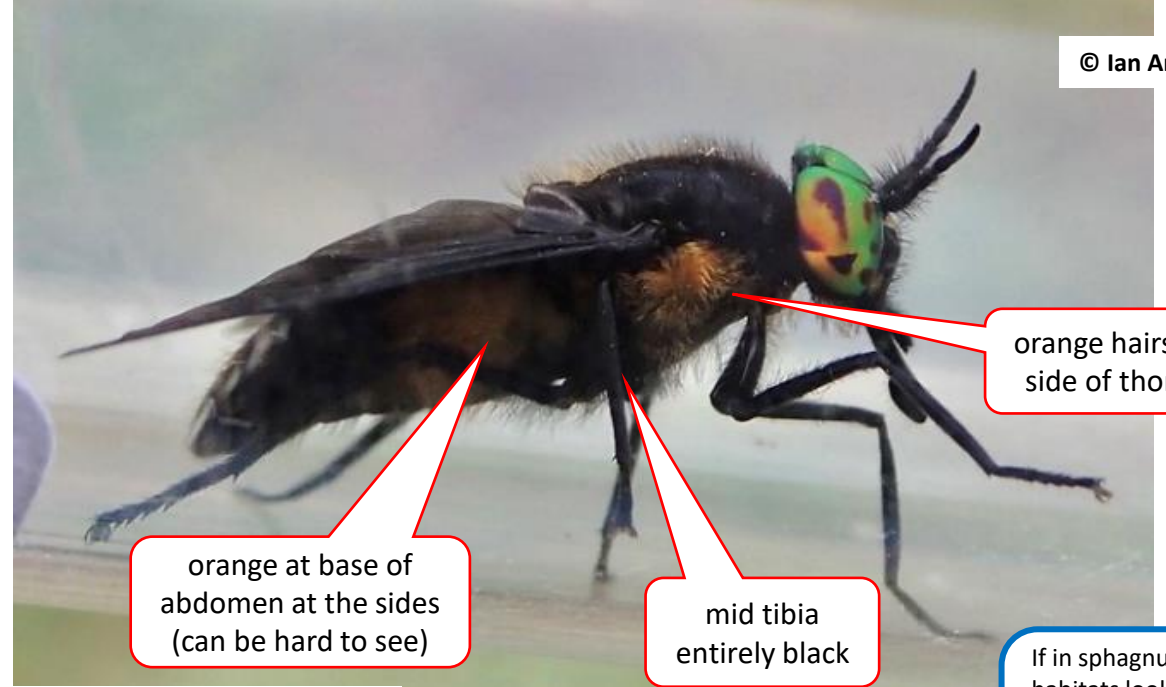
[iRecord link](#)



a dark species, with red and green eyes

Chrysops caecutiens (Splayed Deerfly) - MALE

© Ian Andrews

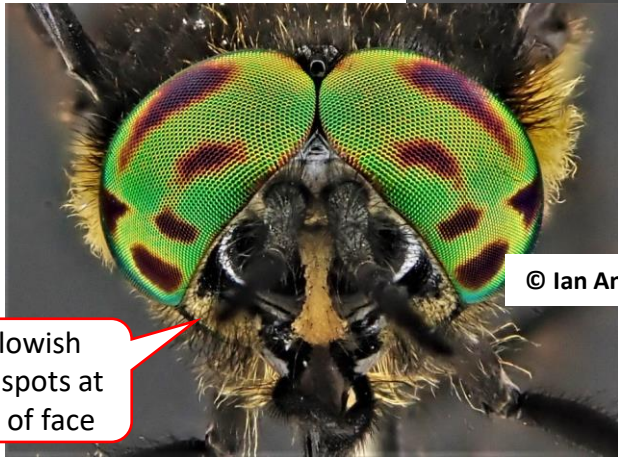


orange hairs on side of thorax

orange at base of abdomen at the sides (can be hard to see)

mid tibia entirely black

If in sphagnum bog habitats look out for the smaller and rarer *Chrysops sepulcralis* (which is even darker)



yellowish dust spots at side of face



© Ian Andrews

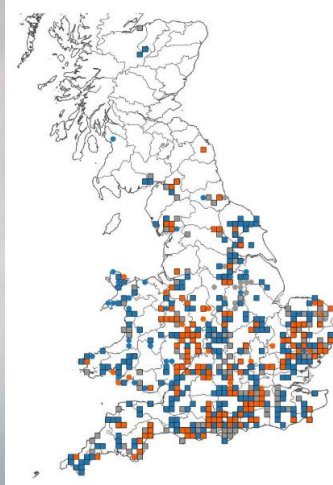
[Ian Andrews link](#)

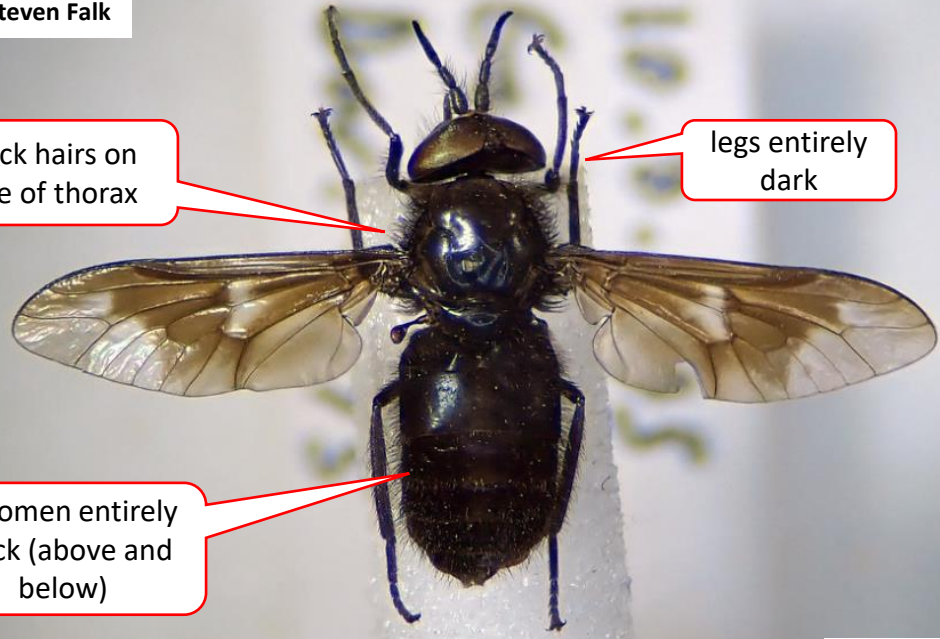


[Steven Falk link](#)

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- ID difficulty: 2
- Flight period: mid May to mid Sep, peak late Jun and Jul
- GB threat: Least Concern
- widespread in south, scarce in north
- wet woods, shaded bogs, fens and marshes
- No. of records: 1267 • % since 2000: 26%





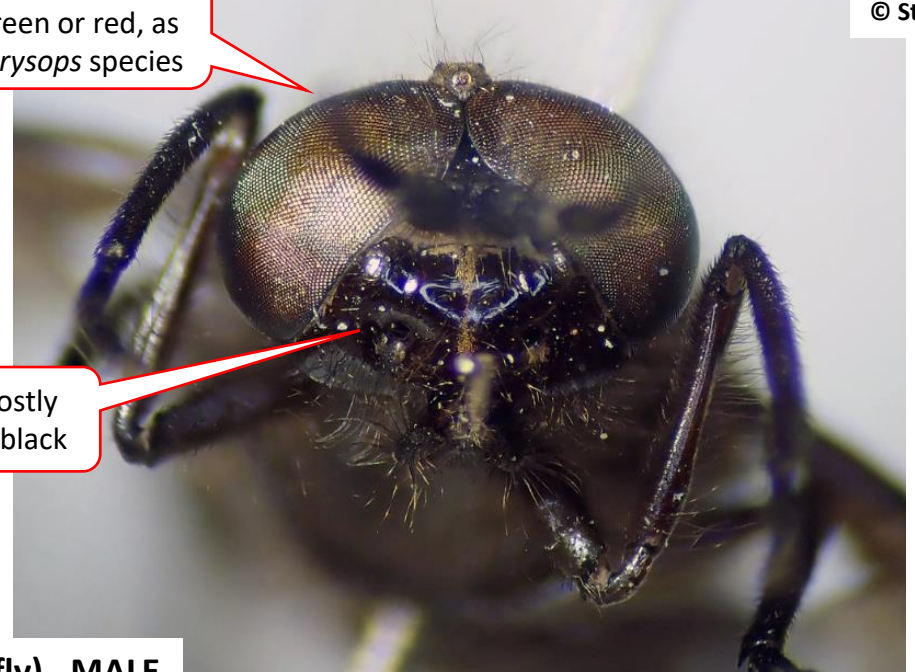
black hairs on side of thorax

legs entirely dark

abdomen entirely black (above and below)

in live specimens the eyes are green or red, as in other *Chrysops* species

face mostly shining black



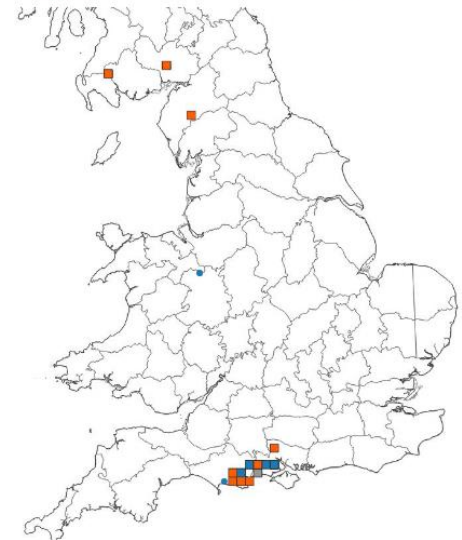
Chrysops sepulcralis (Black Deerfly) - MALE



[Steven Falk link](#)

- ID difficulty: 4
- Flight period: early Jul to late Aug, peak in Jul
- GB threat: Least Concern • GB rarity: Nationally Scarce
- scattered; New Forest, Cumbria, Scotland
- bog pools with Sphagnum
- No. of records: 83 • % since 2000: 27%
- **Caveats:** a Devon record (Stubbs and Drake 2014) is not mapped

A rare species associated with Sphagnum bogs, sometimes confused with the larger and more widespread [Chrysops caecutiens](#)



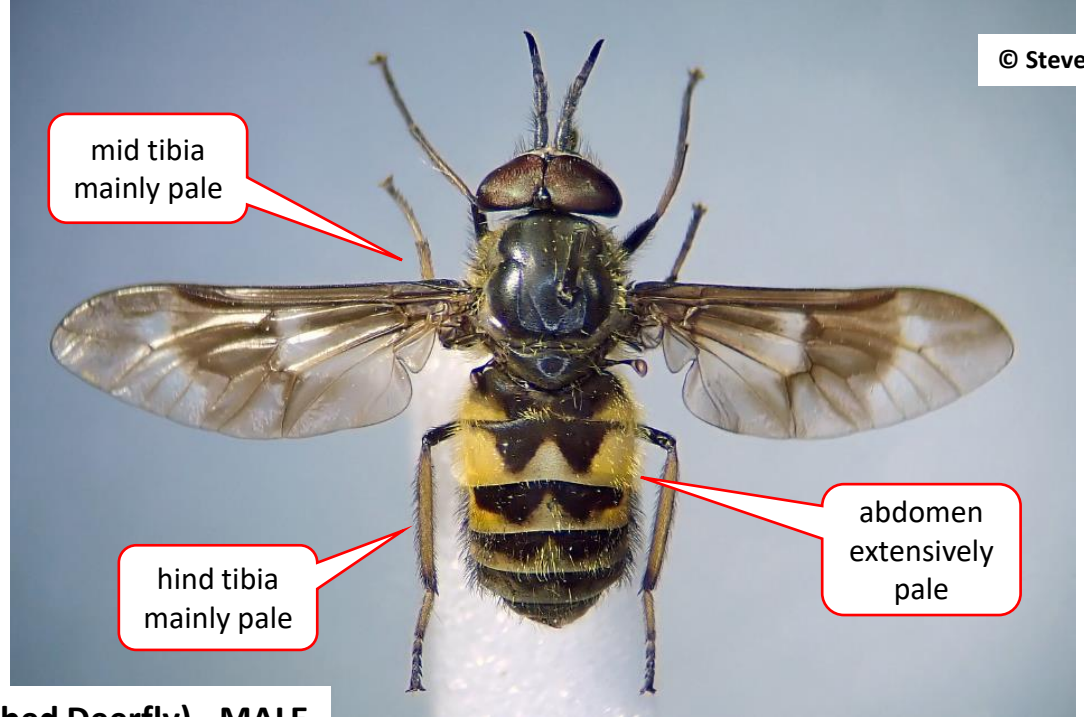
© Steven Falk



transparent 'window spots' in wing (can be hard to see)

dusky shading at hind margin of wing (can be hard to see)

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mid tibia mainly pale

hind tibia mainly pale

abdomen extensively pale

***Chrysops relictus* (Twin-lobed Deerfly) - MALE**

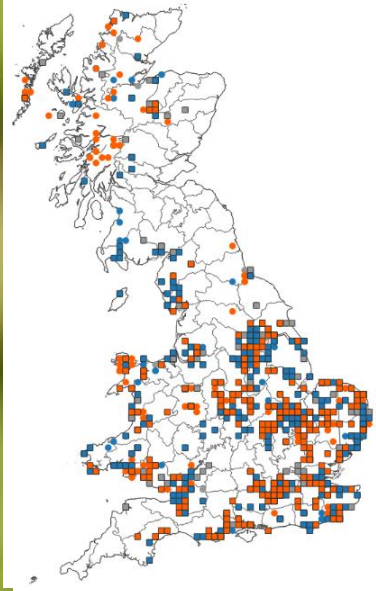
eyes are often bright green but may be red in some individuals



[Steven Falk link](#)



- ID difficulty: 3
- Flight period: mid May to mid Oct, peak late Jun and Jul
- GB threat: Least Concern
- widespread in south, scarce in north
- wet alluvial meadows, other damp habitats
- No. of records: 1594 • % since 2000: 39%

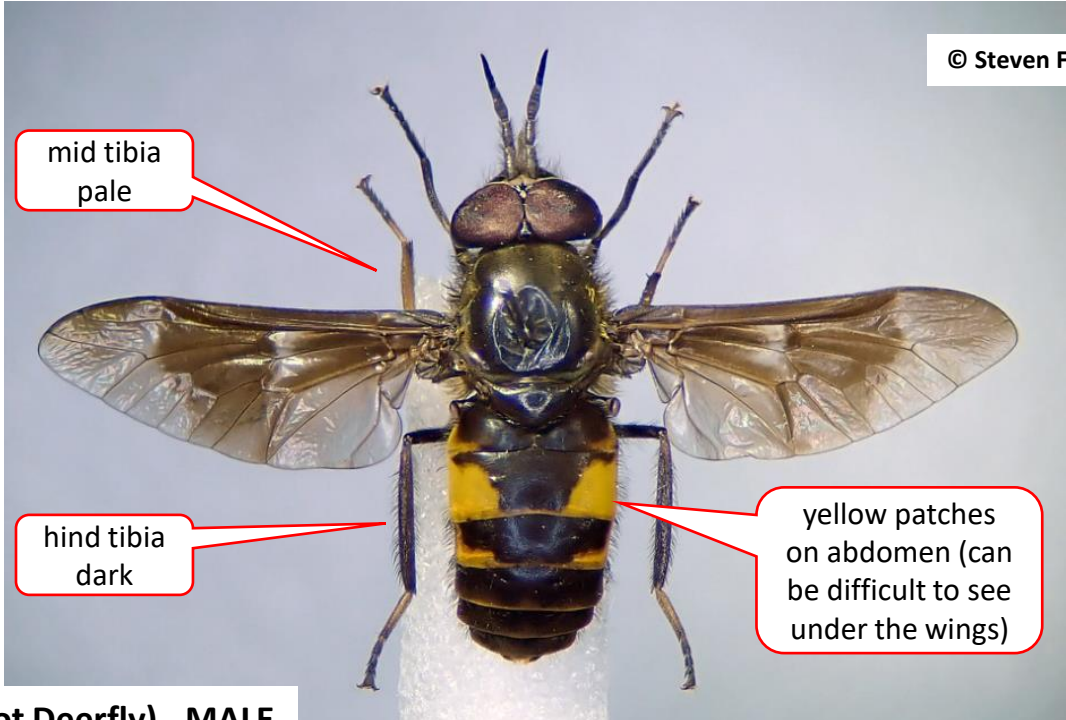


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***Chrysops viduatus* (Square-spot Deerfly) - MALE**

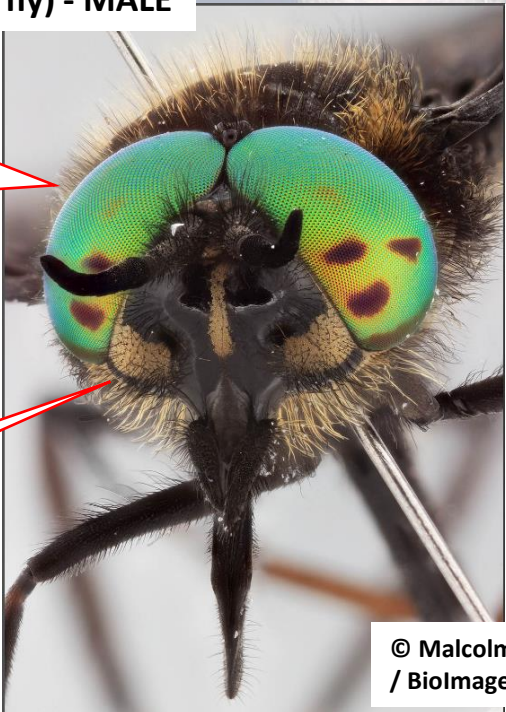


eyes are often bright green but may be red in some individuals

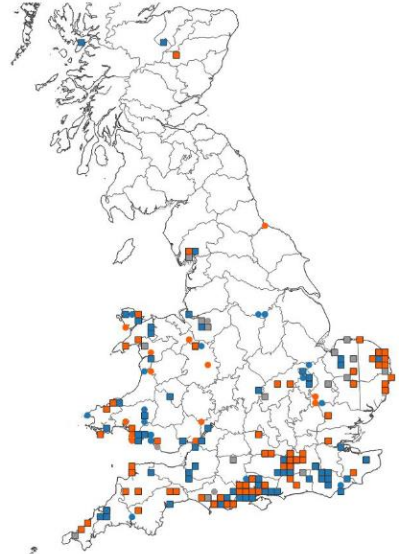
hind margin of wing transparent (can be hard to see)

dust spots on face

[Biolimages link](#)



- ID difficulty: 3
- Flight period: late May to Sep, peak in Jul
- GB threat: Least Concern
- widespread in south, scarce in north
- wet grassland, mires, water margins, wet woods
- No. of records: 461 • % since 2000: 34%

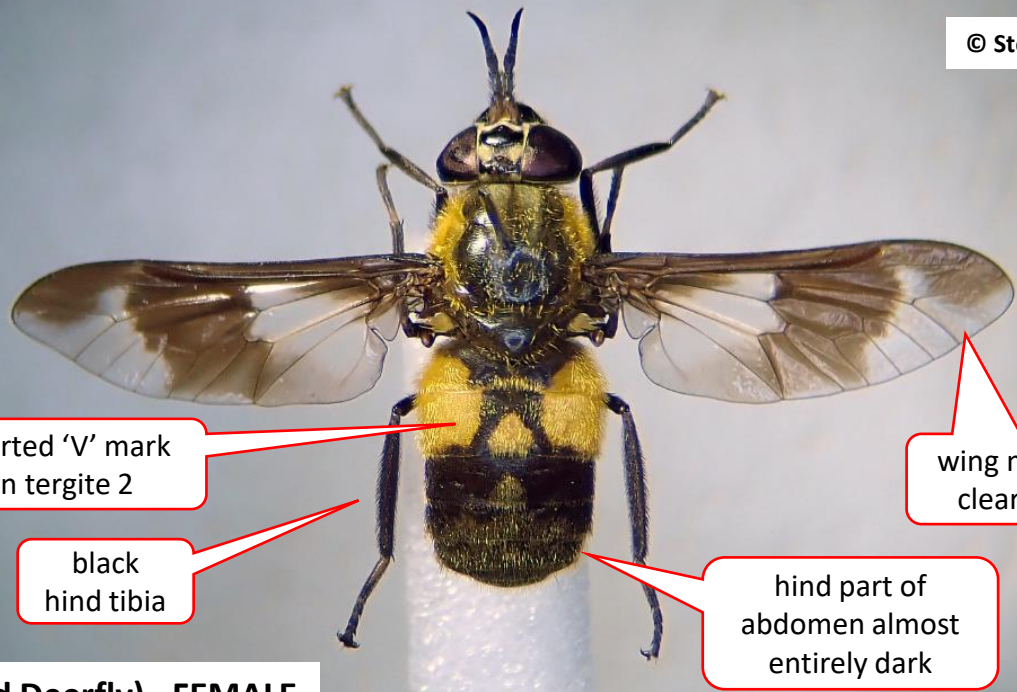


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inverted 'V' mark on tergite 2

black hind tibia

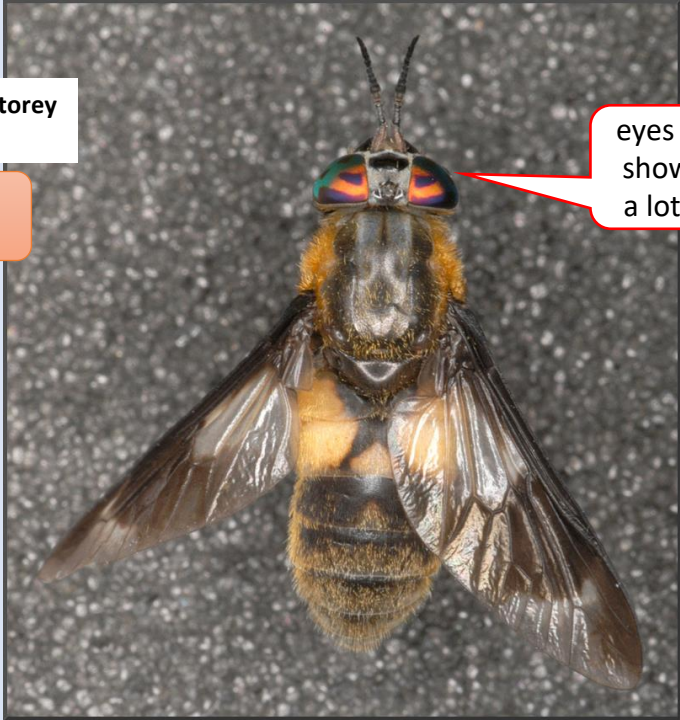
wing membrane clear near tip

hind part of abdomen almost entirely dark

Chrysops caecutiens (Splayed Deerfly) - FEMALE

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[Biomes link](#)



eyes usually show quite a lot of red

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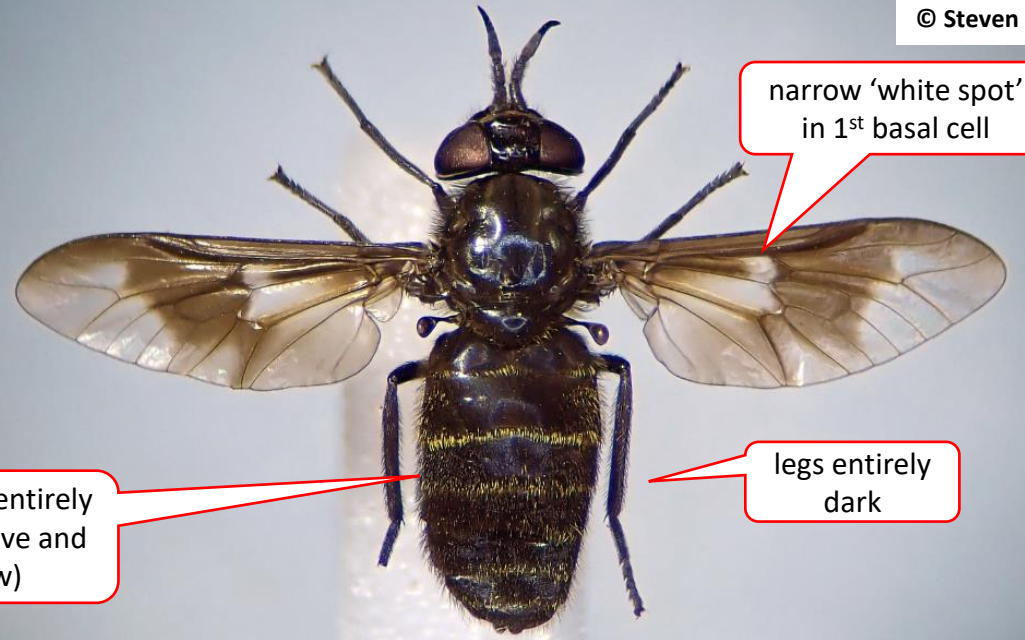


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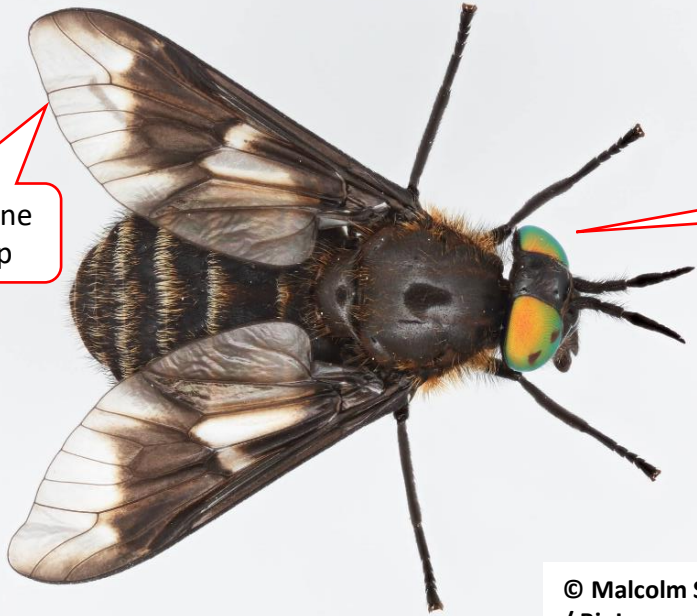
narrow 'white spot' in 1st basal cell

abdomen entirely black (above and below)

legs entirely dark

***Chrysops sepulcralis* (Black Deerfly) - FEMALE**

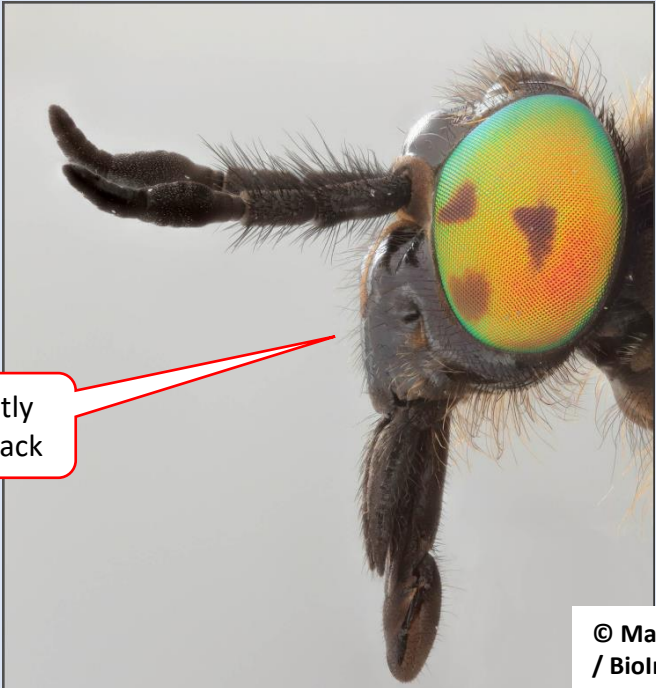
wing membrane clear near tip



eyes green or red

A rare species associated with Sphagnum bogs

face mostly shining black



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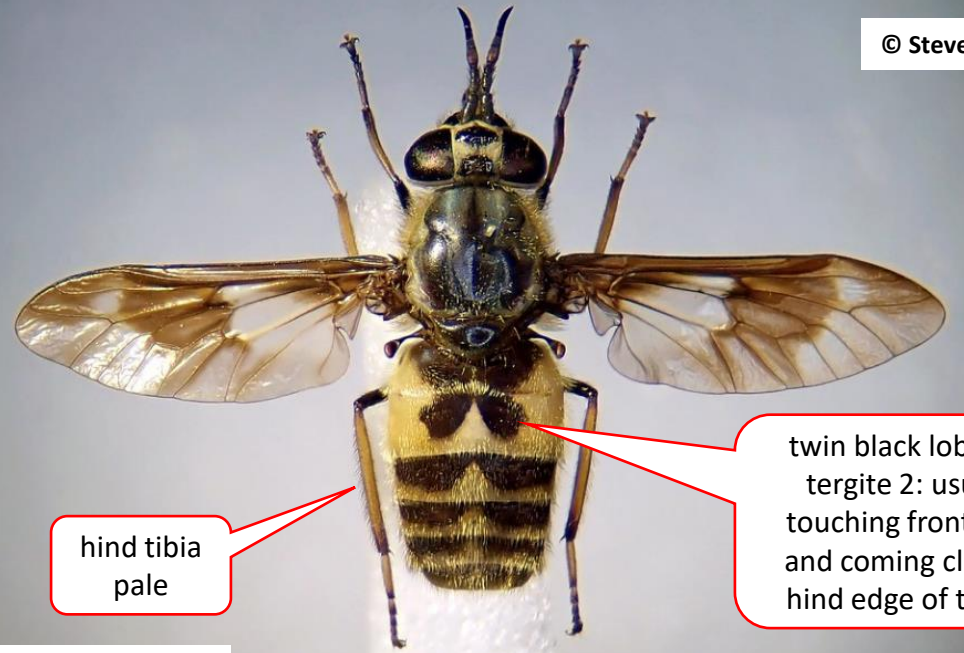
[Biolimages link](#)

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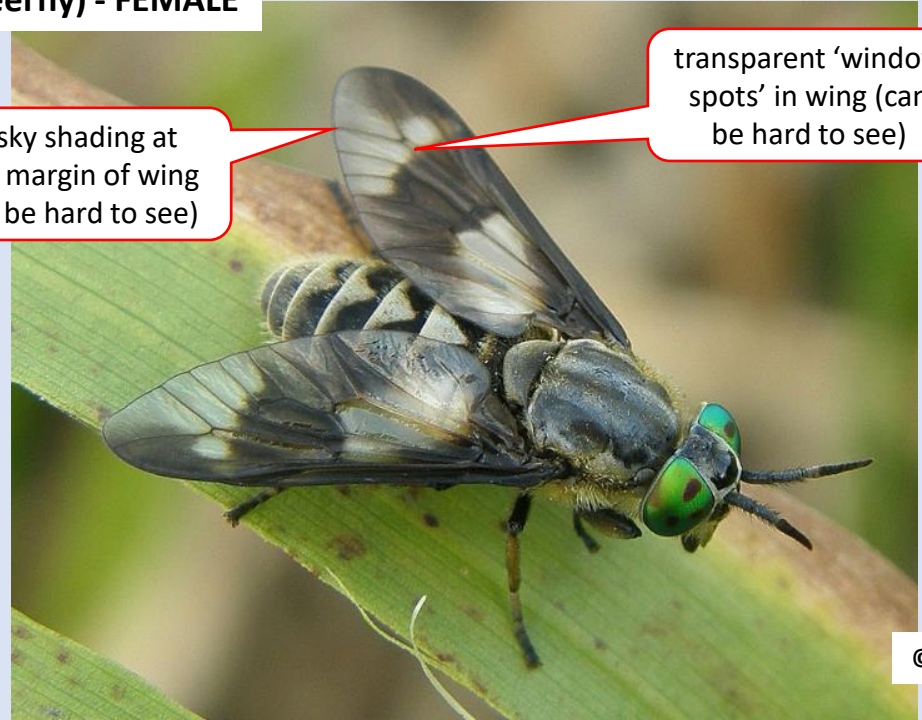
extensive pale markings on abdomen



hind tibia pale

twin black lobes on tergite 2: usually touching front edge and coming close to hind edge of tergite

Chrysops relictus (Twin-lobed Deerfly) - FEMALE



dusky shading at hind margin of wing (can be hard to see)

transparent 'window spots' in wing (can be hard to see)

[Steven Falk link](#)

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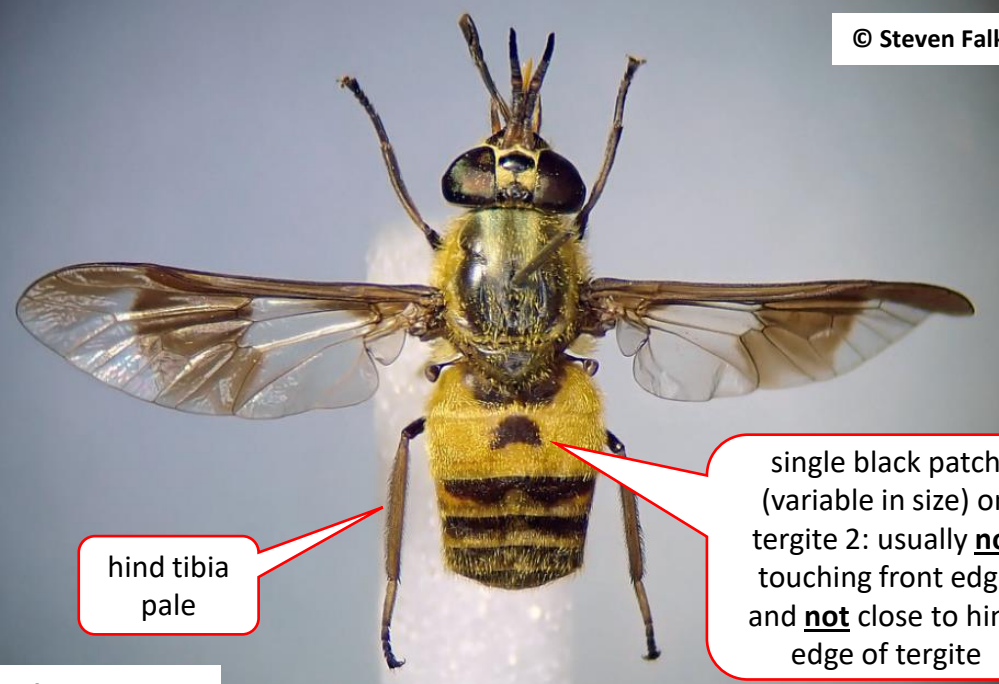


wing membrane clear near tip

extensive pale markings on abdomen

[Biolimages link](#)

© Steven Falk



hind tibia pale

single black patch (variable in size) on tergite 2: usually **not** touching front edge and **not** close to hind edge of tergite

Chrysops viduatus (Square-spot Deerfly) - FEMALE

[Steven Falk link](#)

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