

A guide to British soldier beetles

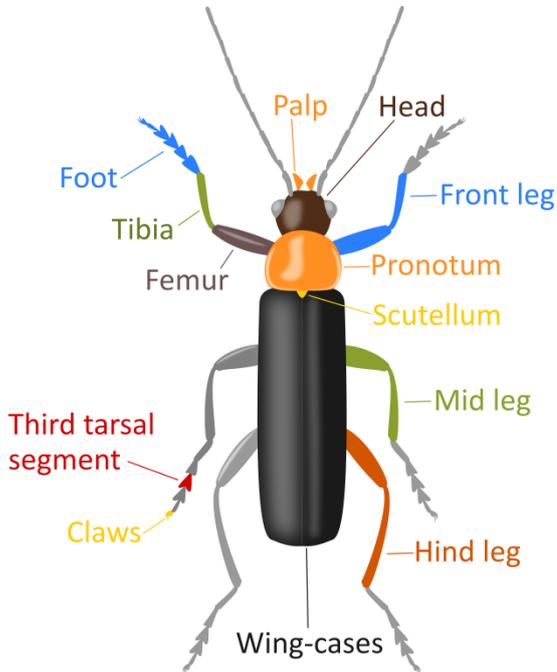
Soldier beetles include some of our commonest and most conspicuous beetles. They comprise the species of *Cantharis*, *Rhagonycha*, *Podabrus*, *Silis*, and *Ancistronycha*.

They are easily recognised by their soft wing-cases, long antennae, and black and red or yellow colours, but a few beetles might be confused with them:

Osphya bipunctata with eyes indented around the antennae, more coarsely pitted wing-cases, longer palps, and only four segments in the hind foot, the first one very long.

Denticollis linearis, a click beetle with sharp hind angles to the pronotum, and rows of pits down the wing-cases.

Phymatodes testacea, a longhorn beetle, with spindle-shaped femurs, and eyes indented around the antennae.

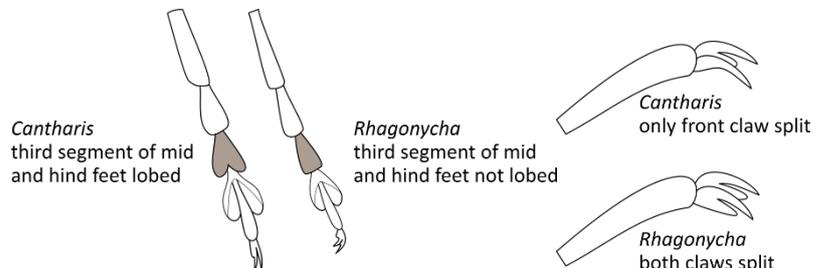


Note that in this guide, leg means the tibia and femur: it **excludes the foot** (tarsus).

There are two basic colours in soldier beetles: black; and red, yellow, orange, or pale brown. In this guide, **red includes all the yellowish to red or orange-brown colours**, in contrast to black, dark grey, or blackish brown. The beetles are illustrated using the same orange-red for a lot of the colours. In life this may vary slightly between and within species, from yellowish to darker red.

Separating *Cantharis* and *Rhagonycha*

These two genera are separated by the shape of the third tarsal segment of the mid and hind feet, and the claws.



Note that the third tarsal segment of the front feet is lobed in both *Cantharis* and *Rhagonycha*, so you must look at the mid or hind feet. The lobe may not be easy to see because of the hairs on the feet. Neither of these features is that easy to see, especially on the smaller species, but you can identify all soldier beetles without knowing whether they are *Rhagonycha* or *Cantharis* first. There are only a few cases where you might need to check these features until you are familiar with the species (such as separating pale *Cantharis rufa* and female *Rhagonycha translucida*).

Most species can be identified by colour patterns, and shapes of various parts. The problems are in the variability of some species (especially *Cantharis figurata* and *rufa*), and two tricky species pairs (*Cantharis figurata/rufa*, and *Cantharis cryptica/pallida*).

Mike Fitton's keys will help with these, and other cases where you might have problems. They are available here:

http://www.wildlifebcn.org/sites/bcnp.live.wt.precedenthost.co.uk/files/files/Cantharidae%20Keys_v3.pdf. I find they work well, but you do need to separate *Cantharis* from *Rhagonycha* before you start; they do not account for some forms of *figurata* and *rufa* with black heads; and the mathematical logic required at couplets 2 and 6 is quite a test.

Distribution maps and ecological information are in the provisional atlas by Keith Alexander at

<http://nora.nerc.ac.uk/9540/1/N009540BK.pdf>. There are now many more records than are shown on the maps, but the ecological notes are still useful.

Martin Harvey's notes to Keith Alexander's [field key](#) are also useful too. The field key itself is a useful starting point, but I find it does not allow for all the variation, and I misinterpret some of the choices.

The status of British soldier beetles is included in the Natural England species status review, available at

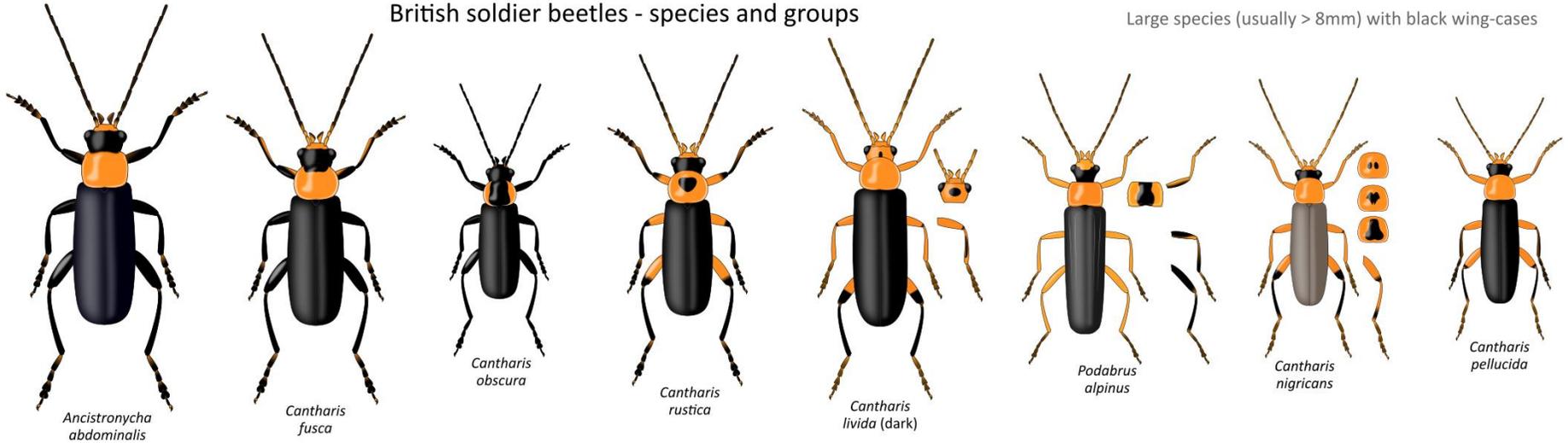
<http://publications.naturalengland.org.uk/publication/6314340407836672>. None of our species is rare. Five species are widespread but scarce, and one (*Rhagonycha elongata*) is restricted to Scotland.

***Cantharis nigra*: an important name change.** [Michael Geiser and Fabrizio Fanti](#) have recently shown that the species with black wing-cases and a red scutellum is the true *Cantharis nigra*. In most of the references above, *nigra* is used for the similar species with a black scutellum, which should be called *flavilabris*; they use *thoracica* for the species with a red scutellum. In this guide, the corrected names are used: *nigra* for the species with a red scutellum; *flavilabris* for the one with a black scutellum. When recording the red scutellum species, please use *thoracica* until you are sure that your list uses the correct names.

Quick guide to the species and groups. See if you can find a match for your beetle, then check the species accounts to identify it.

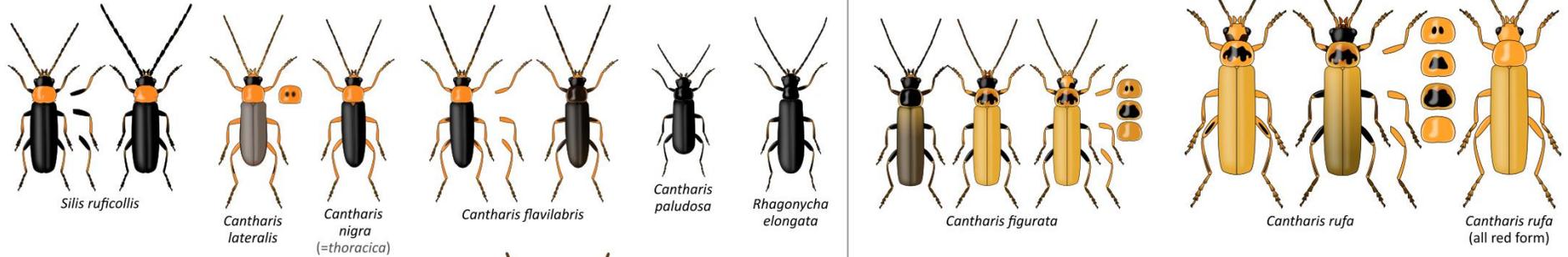
British soldier beetles - species and groups

Large species (usually > 8mm) with black wing-cases



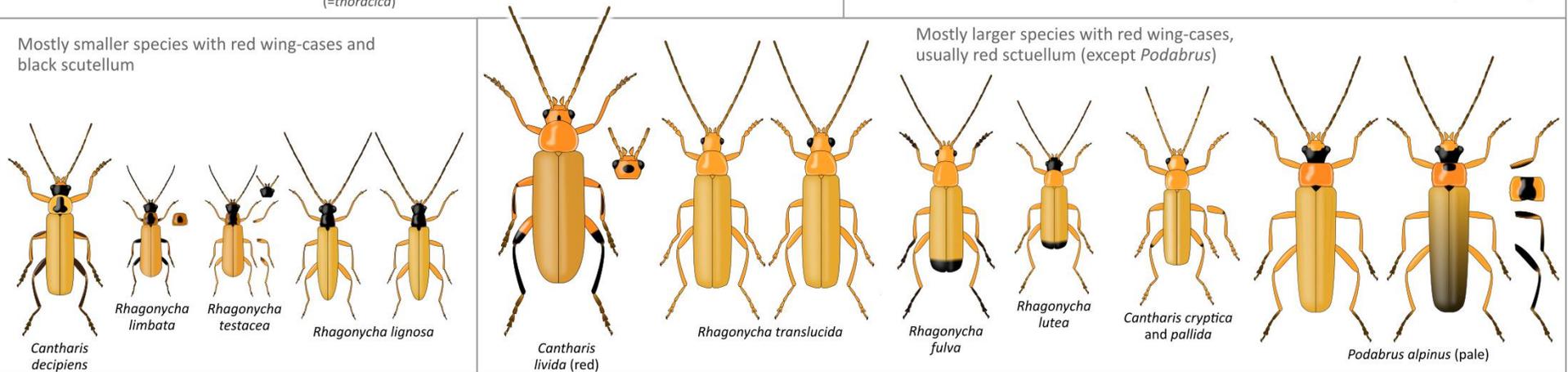
Smaller species (usually <7 mm) with black wing-cases

Cantharis figurata and *rufa*
Variable, wing-cases red to blackish



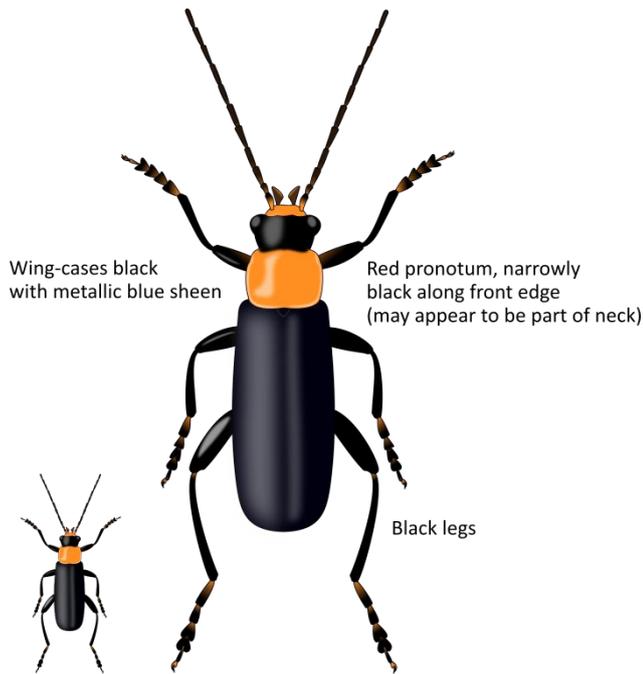
Mostly smaller species with red wing-cases and black scutellum

Mostly larger species with red wing-cases,
usually red scutellum (except *Podabrus*)



Large species (usually >8 mm) with black wing-cases. Main beetles ×4 at A4, insets life size.

Ancistronycha abdominalis

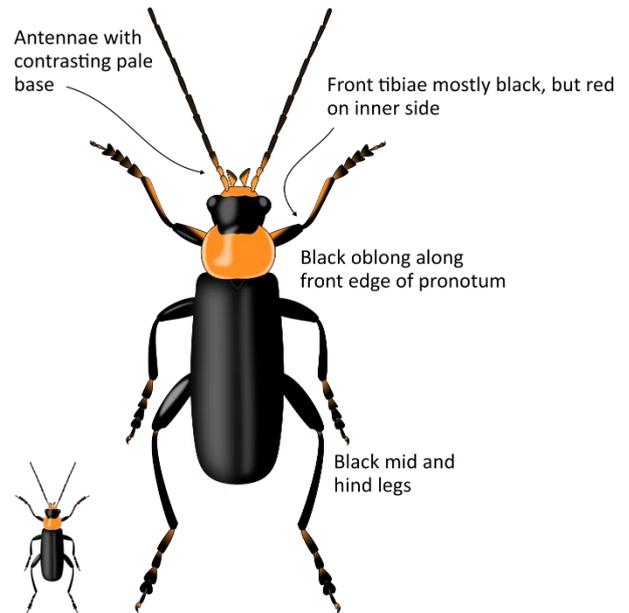


12-15 mm. Wales, Scotland, and northern England. **Scarce.**

Red-pronotum and **all-black legs** are characteristic, even if the **blue sheen** is not obvious. Abdominal segments **entirely orange**.

From *fusca* by narrower black along front of pronotum, and at most only basal 1.5 antennal segments slightly paler.

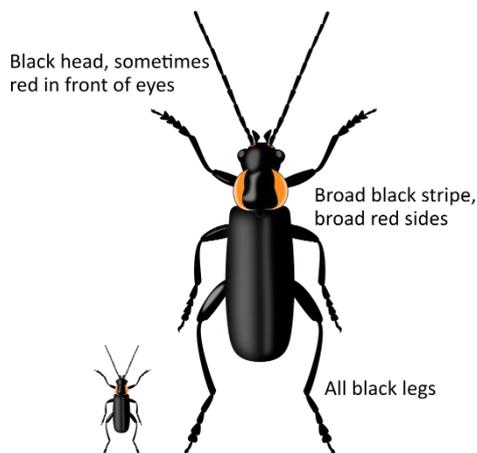
Cantharis fusca



10-13 mm. Widespread but uncommon in England and Wales, very rare in Scotland. **Scarce.**

Pronotum with black spot at **front**, and **dark** legs are shared only with *Ancistronycha abdominalis*. Note also the antennae, which have more contrasting pale bases than in other species.

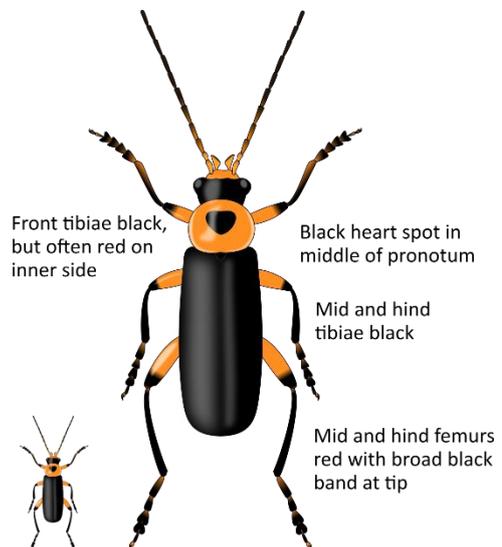
Cantharis obscura



8.5-10 mm. Wales, Scotland, and northern England. **Scarce.**

Distinctive: **all black legs** and wing-cases, **red sides** to pronotum.

Cantharis rustica



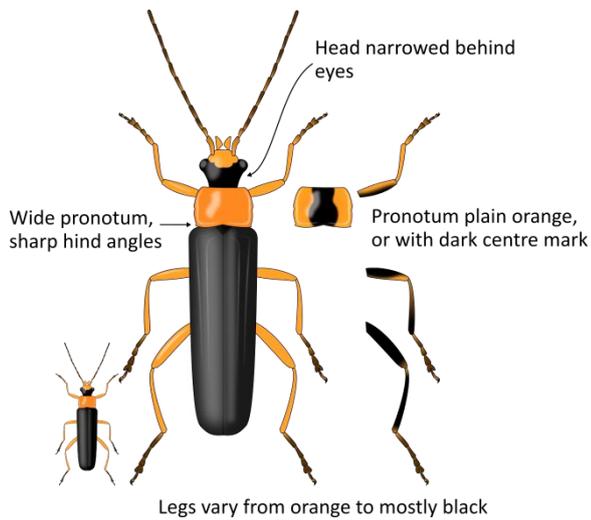
9-12.5 mm. Common in England and Wales, scarce in Scotland.

Black wing-cases, **blackish tibiae**, and heart-shape **spot on pronotum** are unique.

From other species with black wing-cases by spot in the middle of the pronotum, or the blackish front tibiae.

From *figurata* and *rufa* by the black tips and red bases to hind femurs.

Podabrus alpinus (dark form)

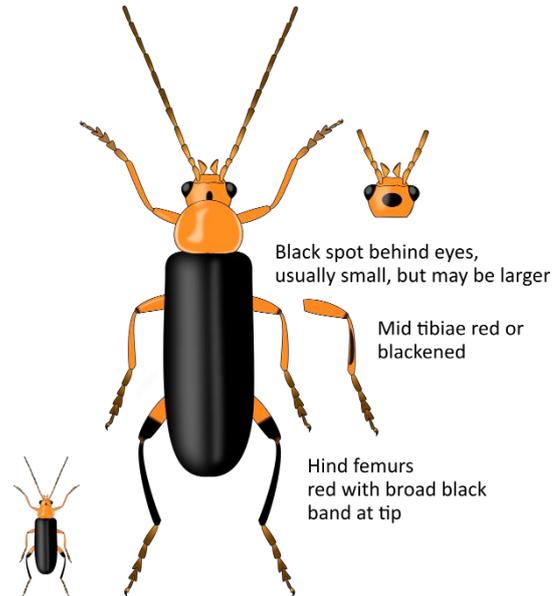


11-13 mm. Widespread.

Pronotum proportionately wider than in similar *Cantharis*, and squarer, with distinct **sharp hind angles**. Body slimmer, with faint ribs down the wing-cases. Head pinched in behind the eyes.

From all other species by the shape of the head and pronotum.

Cantharis livida (dark form)



11-14 mm. Widespread and common.

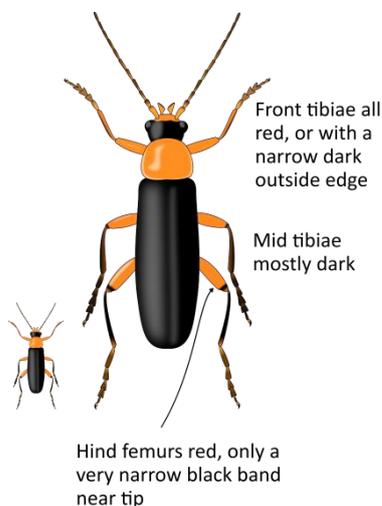
Oval spot behind eyes is unique. Note also **broad black band** at the tip of the hind femurs, **red front legs**, and plain red pronotum.

From *nigricans* by shining black wing-cases and largely red rear of head.

From *pellucida* by broader black band on hind femurs, and black centres of abdominal segments.

From *figurata* and *rufa* by larger size, black tips and red bases to hind femurs, and blacker wing-cases.

Cantharis pellucida



9-12 mm. Widespread and common.

Narrow black band at tip of hind femur. Abdominal segments **entirely orange** or orange with only slightly dusker middle.

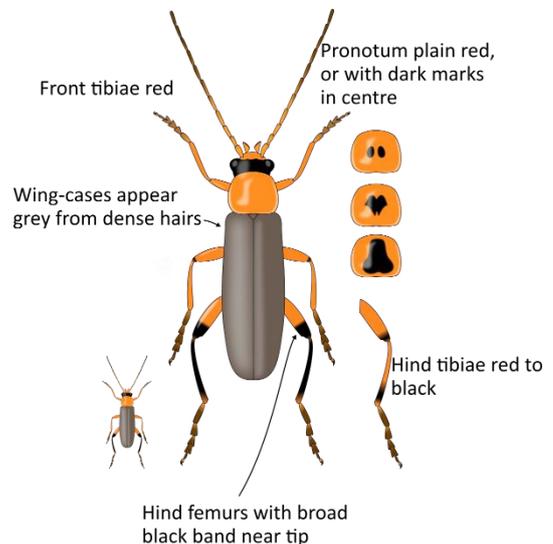
From *figurata* and *rufa* by black tips and red bases to hind femurs, blacker wing-cases, all orange abdominal segments, and (usually) more black on rear of head.

From *flavilabris* by black hind tibiae, proportionately longer pronotum, and larger size.

From *pellucida* by largely black abdominal segments and broader black band on hind femurs.

See *nigricans*, *Silis ruficollis*, *Podabrus alpinus*.

Cantharis nigricans



7-11 mm. Widespread and common.

Wing-cases appear greyish from coating of **short flat hairs** among the longer erect ones (shared only with *lateralis* among the black species). Even if this is not obvious, the **broad black band** on the hind femurs is a good feature (but see *livida*.)

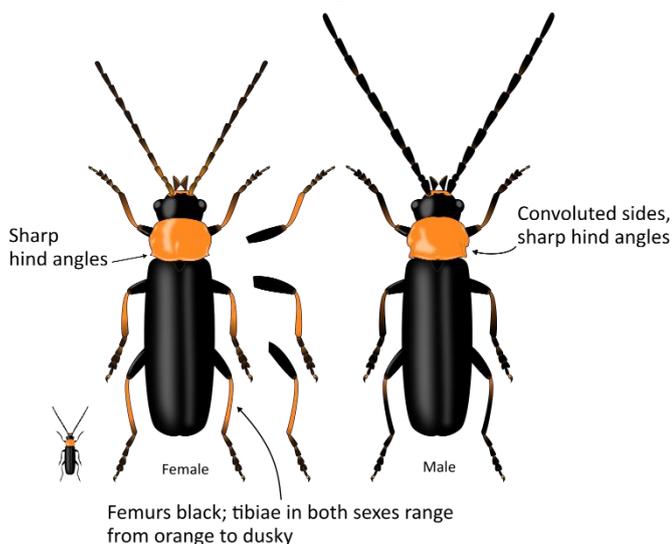
From *figurata* and *rufa* by black tips and red bases to hind femurs, blacker wing-cases, short flat hairs on wing-cases, and (usually) more black on rear of head.

From *rustica* by red front tibiae

See *pellucida rustica*, *livida*, *lateralis*, *flavilabris*, *Podabrus alpinus*.

Smaller species (usually <7 mm) with black wing-cases. Main beetles ×6 at A4, insets life size.

Silis ruficollis



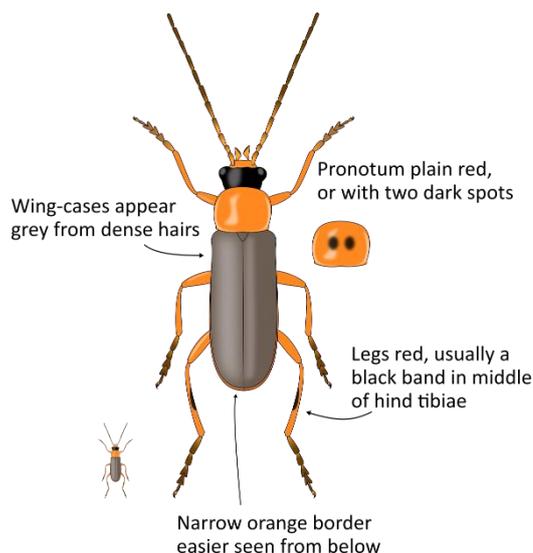
6-7 mm. Widespread in southern England and Wales.

Pronotum with obvious **pits** and **sharp hind angles**, surface lumpy. Male has large and almost comb-like antennae.

From all *Cantharis* by the sharp hind angles and pitted surface of the pronotum.

Also differs from *flavilabris* and *pellucida* by the more solidly dark femurs.

Cantharis lateralis

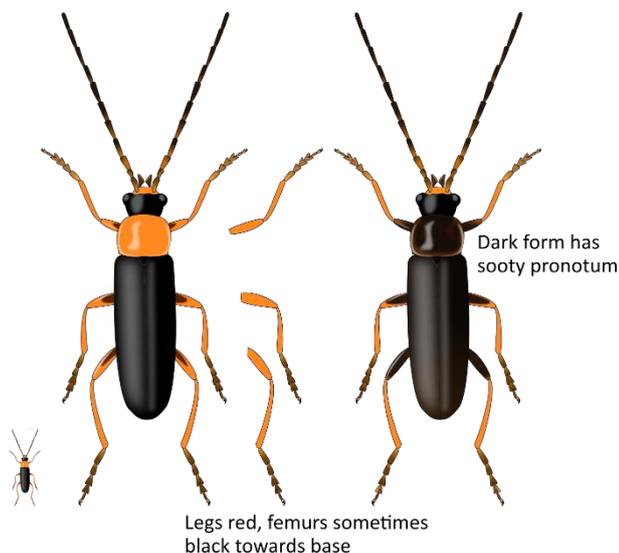


5.5-6.5 mm. Common in England and Wales, rare in Scotland.

Wing-cases appear greyish from coating of **short flat hairs** among the longer erect ones. The rim of the wing-cases is orange, but this is not easy to see from above, so look from slightly below.

From all other black species by the orange rim to the wing-cases. Also differs from *nigricans* by smaller size, and no black band at tip of hind femurs.

Cantharis flavilabris



4.5-7 mm. Widespread and common.

Red pronotum form is like *nigra*, but has black scutellum. Dark form has dark red to sooty pronotum. Note red tibiae in both forms.

From *pellucida*, *nigricans*, and *livida* by smaller size, and no black band at tip of hind femur.

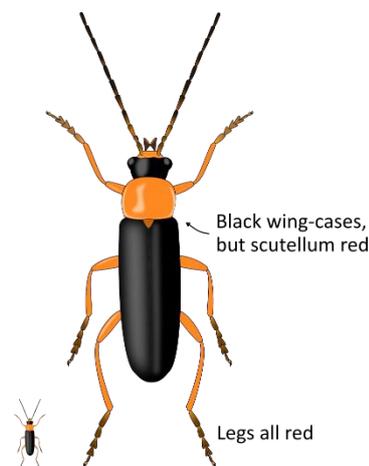
From other larger black *Cantharis* by red tibiae and small size.

From *paludosa* by red tibiae.

See *figurata* and *rufa*, and *Rhagonycha elongata*.

This species has been mistakenly and confusingly called *nigra* in some recent British works. Be careful when entering records of *flavilabris*, because the list you are using might interpret it as the species with the red scutellum. To remove any doubt about which species you are referring to, you might have to state somewhere that you mean the one with the black scutellum.

Cantharis nigra (=thoracica)



4.5-7 mm. Widespread in England, Wales, and south Scotland.

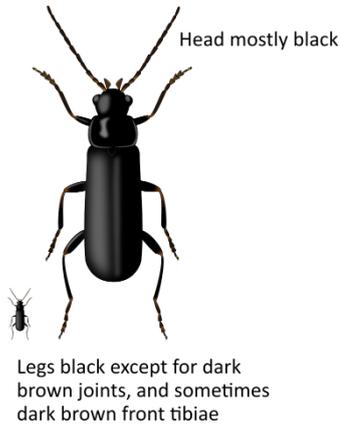
Black wing-cases, but dull **orange scutellum**. Check the scutellum colour carefully, as it is not always obvious,

From *Silis ruficollis* and all other black *Cantharis* by the orange scutellum. Also differs from *pellucida*, *nigricans*, and *livida* in no black at tips of femurs.

See *figurata* and *rufa*.

The name *nigra* has been mistakenly used for *flavilabris* in some recent British works. In those works, the species with the red scutellum is called *thoracica*. Be careful when entering records of *nigra*, because the list you are using might interpret it as the species with the black scutellum. Enter them as *thoracica* until you know the lists are updated. To remove any doubt about which species you are referring to, you might have to state somewhere that you mean the one with the red scutellum.

Cantharis paludosa



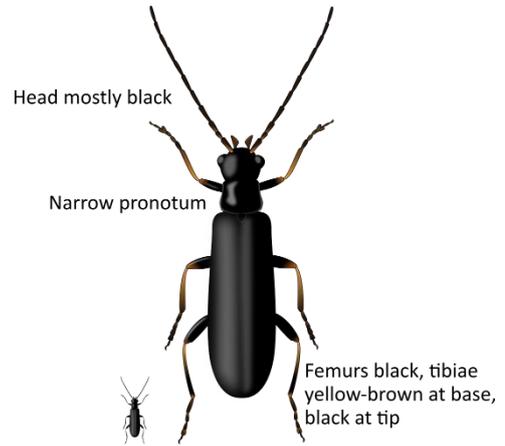
4-5 mm. Widespread in northern and western Britain.

The darkest *Cantharis*, with **black** wing-cases and pronotum.

From *flavilabris* by dark mid and hind tibiae, mostly black head, and proportionately wider pronotum.

See *figurata* and *rufa*, and *Rhagonycha elongata*

Rhagonycha elongata



6-7 mm. Scotland only. **Scarce.**

The only *Rhagonycha* with **black** wing-cases. Pronotum clearly **narrower** than wing-cases, like a tight collar around the neck. Shape of third tarsal segment differs from *Cantharis* (see introduction).

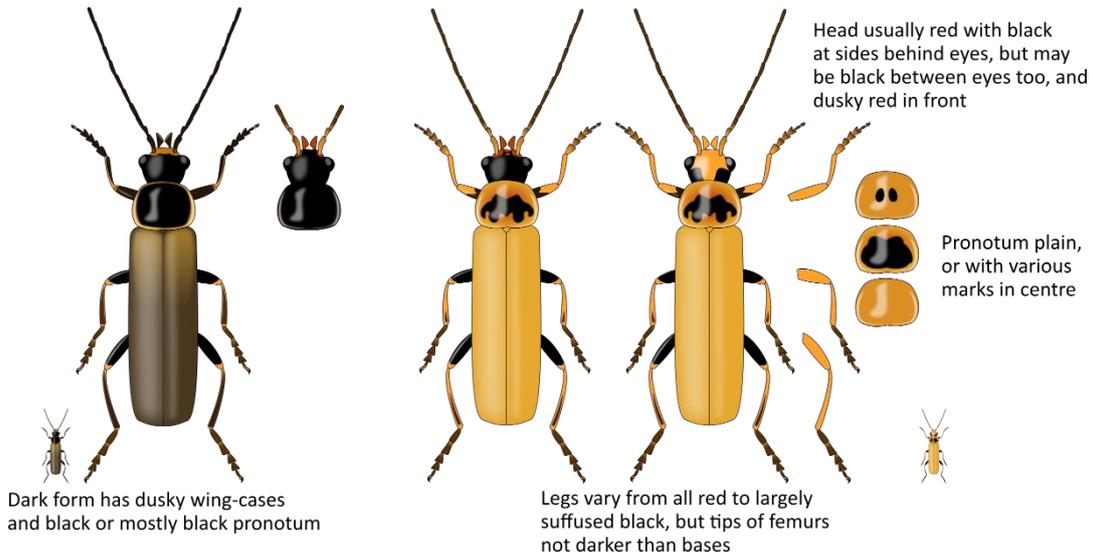
From *Cantharis paludosa* by paler tibiae, narrower pronotum.

From *Cantharis flavilabris*, narrower pronotum, duskier tibiae, and mostly black head.

See *figurata* and *rufa*.

Cantharis figurata and *rufa*. Variable, wing-cases red to blackish. Main beetles ×6 at A4, insets life size.

Cantharis figurata

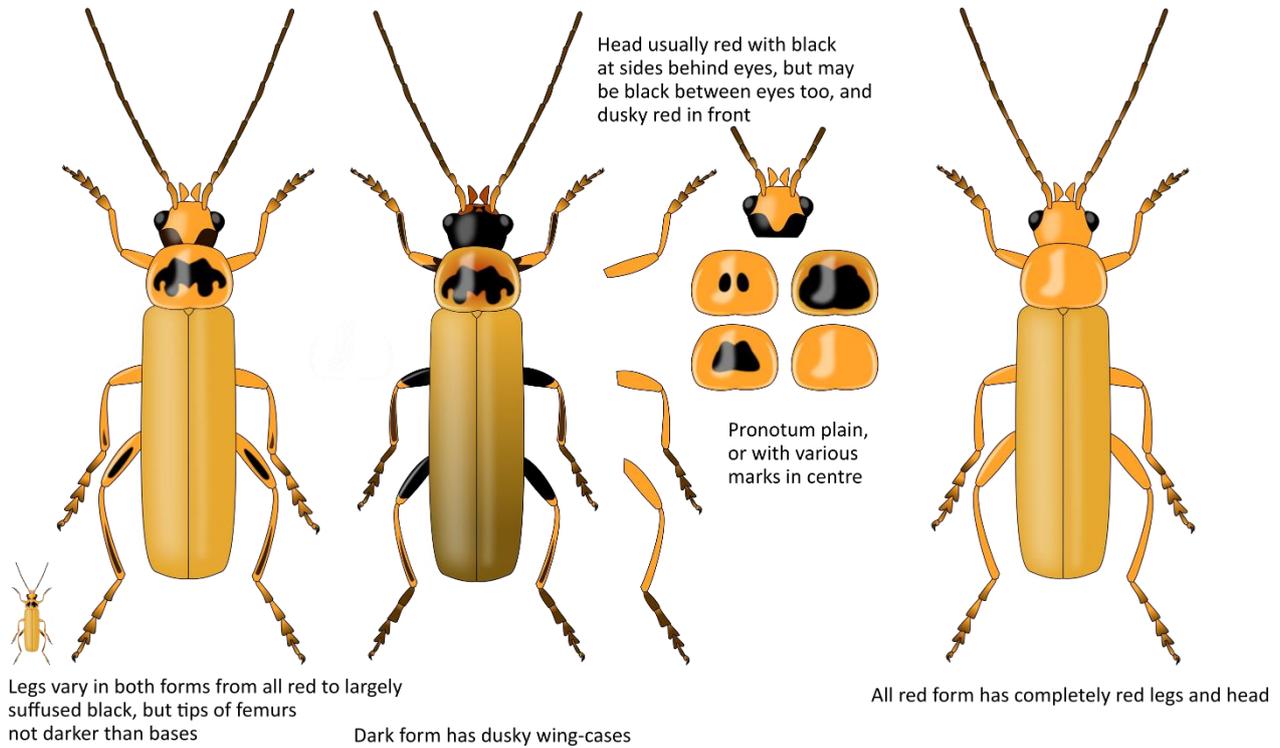


6.5-8 mm. Widespread and common.

Wing-cases dusky to red or yellow-brown. Commonest head pattern, shared with *rufa*, is black at sides **behind eyes** only, but both dark and pale forms can have black between eyes, or even all black heads. Legs are similarly variable, from all red to largely suffused with black, but the mid and hind femurs always seem to be **darkest in the middle** or at the **base**, **never** red at the base with black tips. The pronotum may be plain, but it usually has a black mark in the centre. The commonest shape of the mark is like an M, but it varies from two small dots to a single large blotch. In dark forms, the whole pronotum may be dusky or black, often with a hint of the M mark.

See below for separation of both *figurata* and *rufa* from other species.

Cantharis rufa



8-11 mm. Widespread and common.

Like a large *figurata*, and just as variable, except the dark form is not as dark.

From *figurata* by usually larger size, antenna openings in male, and shape of abdominal segments in female. Males and females can be separated by the shape of the claws of the front feet. See Mike Fitton's keys for how to separate these two species: http://www.wildlifebcn.org/sites/bcnp.live.wt.precedenthost.co.uk/files/files/Cantharidae%20Keys_v3.pdf.

These are the most confusing species. Not only are they very similar to each other, but they are both highly variable.

Both species (*figurata* and *rufa*)

Those with a dark blotch behind each eye are easily recognisable as *figurata* or *rufa*. Otherwise:

Dark forms have usually have dusky wing-cases rather than black ones. In case of black wing-cases, see *livida*, *nigricans*, *pellucida*, and *rustica*, all with dark band at **tips** of hind femurs. The dark forms usually have a blackish pronotum, or some dark marks on the pronotum, so they are unlikely to be confused with other black and red species, except in rare cases where the pronotum is plain red and the wing-cases are black. Check the size, and the pattern of the legs and head. In case of doubt you can check the shape of the last abdominal segments (see Mike Fitton's key).

From *paludosa* by proportionately longer and narrower pronotum, less slender legs, and larger size.

From *Rhagonycha elongata* by wider pronotum, less slender legs, and lobed third tarsal segment of mid and hind feet.

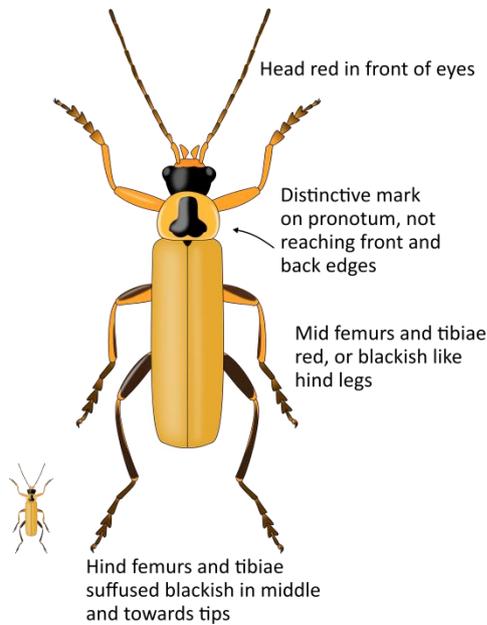
From dark form of *flavilabris* by darker tibiae, and larger size.

Red forms could be confused with any of the red species. The all red form of *rufa* is especially similar to female *Rhagonycha translucida*. See each of the red species for differences, and remember that *Cantharis* has a lobed third tarsal segment in the mid and hind feet, and the claws are not split to the base.

Intermediate forms with dusky wing-cases are quite distinctive. In other species the wing-cases are usually black or dark grey, or yellow-brown to red.

Smaller species with red wing-cases and black scutellum. Main beetles ×6 at A4, insets life size.

Cantharis decipiens



7.5-8.5 mm. Widespread in England, Wales, and south Scotland.

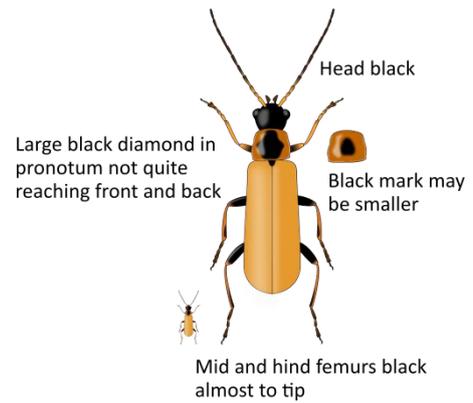
Distinctive mark on pronotum, **black scutellum**, and largely **blackish** hind legs are characteristic.

From *figurata* and *rufa* by black scutellum, blackish hind femurs, black between eyes, and the shape of the mark: no form of *figurata* or *rufa* combines **all** these.

From *Rhagonycha testacea* by larger size, more extensively dark hind femurs, black mark not reaching front and rear edges, wider pale edges to abdominal segments, and shape of segments of mid and hind feet (see introduction)

From *Rhagonycha limbata* by less extensively dark front and hind femurs, head red in front of eyes, wider pale edges to abdominal segments, and shape of segments of mid and hind feet (see introduction)

Rhagonycha limbata



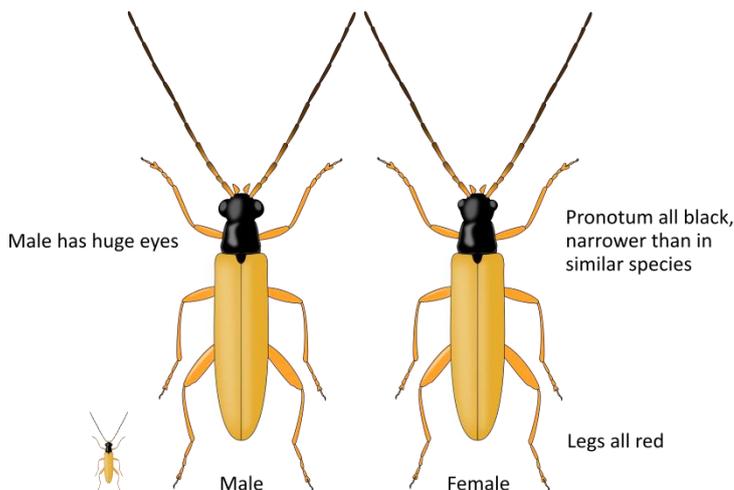
4.5-6 mm. Widespread and common.

Black mark on pronotum, usually diamond-shape, but may be a smaller blotch.

From *testacea* by more extensively dark legs, and black on pronotum not quite reaching the front and rear edges.

From *figurata* and *rufa* by smaller size, black scutellum, blackish hind femurs, black between eyes, and the shape of the mark: no form of *figurata* or *rufa* combines **all** these. Check shape of tarsal segments if in doubt (see introduction).

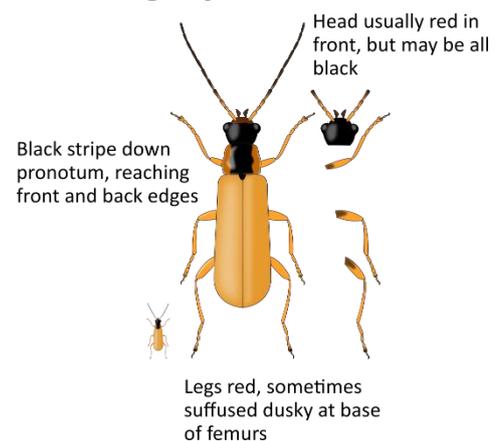
Rhagonycha lignosa



6-7.5 mm. Widespread and common.

The **narrow, all black pronotum**, easily distinguishes this species. Males, with their huge eyes, are especially distinctive.

Rhagonycha testacea



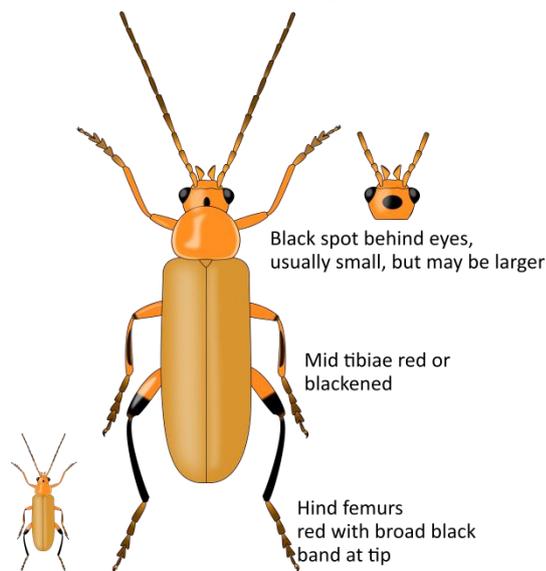
4.5-7 mm. Widespread and common.

From *limbata* by mark on pronotum reaching front and rear edges, usually red on front of head, and legs all pale, or dusky only in basal part of femurs.

From *figurata* and *rufa* by smaller size, black scutellum, black between eyes, and the shape of the mark: no form of *figurata* or *rufa* combines **all** these. Check shape of tarsal segments if in doubt (see introduction).

Mostly larger species with red wing-cases. Scutellum usually red (except *Podabrus alpinus*). Main beetles ×4 at A4, insets life size.

Cantharis livida (pale form)

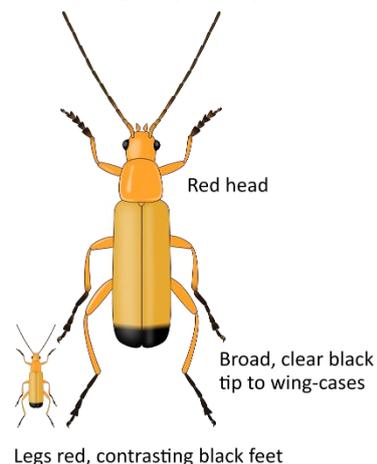


11-14 mm. Widespread and common.

Oval spot behind eyes is unique. Note also **broad black band** at the tip of the hind femurs, **red front legs**, and plain red pronotum.

From *figurata* and *rufa* by larger size, black tips and red bases to hind femurs, and black oval behind and between eyes.

Rhagonycha fulva



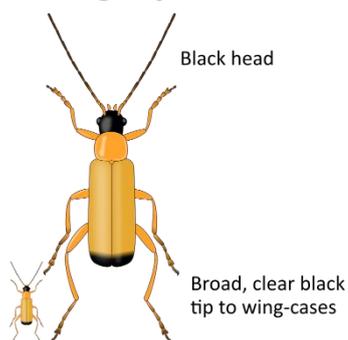
8-10 mm. Widespread and common.

Clear, broad **black tip** to wing-cases. This is shared only with *lutea*, which has a black head.

From *Cantharis figurata* and *rufa* by clear black tips to wing-cases, and proportionately longer pronotum.

From *lutea* by red head.

Rhagonycha lutea



8-10 mm. Widespread in England, Wales, and southern Scotland.

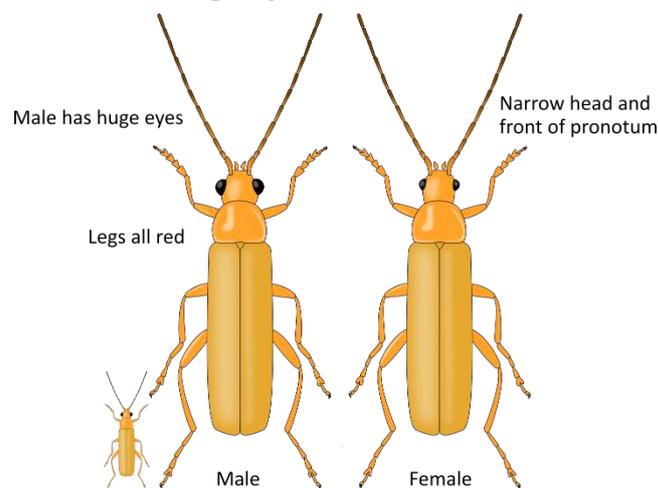
Scarce.

Clear, broad **black tip** to wing-cases. This is shared only with *fulva*, which has a red head.

From *Cantharis figurata* and *rufa* by clear black tips to wing-cases.

From *fulva* by black head.

Rhagonycha translucida



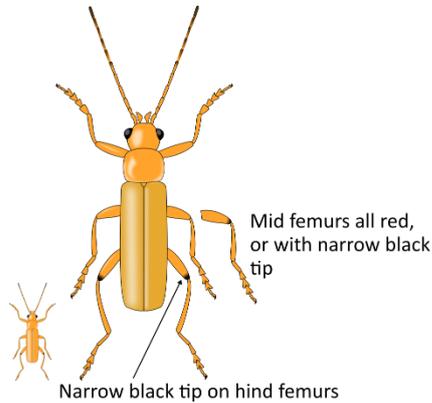
10-12 mm. Widespread in England, Wales, and southern Scotland. **Scarce.**

All red, but may have a slightly darker scutellum. Males, with their big eyes, are distinctive. Females are very like all red form of *Cantharis rufa*.

From all red *Cantharis figurata* and *rufa* by proportionately narrower head and front of pronotum, and shape of segments of mid and hind feet (see introduction).

From *Cantharis cryptica* and *pallida* by larger size, and no black on hind femurs.

Cantharis cryptica



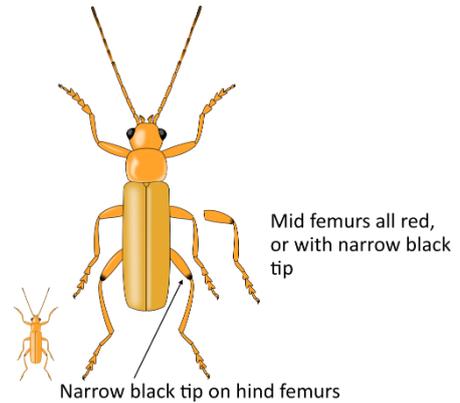
7-8.5 mm. Widespread and common.

Mostly red, but tips of hind femurs blackish. Has **flat hairs** among the long erect ones on the wing-cases.

From all red *Cantharis figurata* and *rufa* by blackish tips of hind femurs, and flat hairs.

From *pallida* by flat hairs, and all yellow palps.

Cantharis pallida



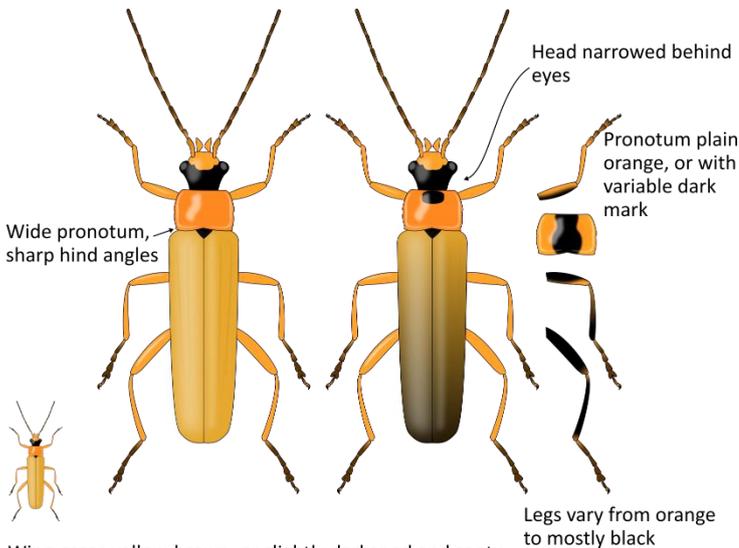
7-8.5 mm. Widespread and common.

Mostly red, but tips of hind femurs blackish, and tips of palps suffused dusky or blackish. Has only long erect hairs on the wing-cases.

From all red *Cantharis figurata* and *rufa* by blackish tips of hind femurs.

From *cryptica* by no flat hairs, and dark tips to palps.

Podabrus alpinus (pale form)



Wing-cases yellow-brown, or slightly darkened and sooty

11-13 mm. Widespread.

Pronotum proportionately wider than in similar *Cantharis*, and squarer, with distinct **sharp hind angles**. Body slimmer, with faint ribs down the wing-cases. Head **pinched in** behind the eyes. Scutellum usually dark.

From all other species by the shape of the head and pronotum.



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This guide was made using the collections at the University Museum of Zoology, Cambridge, thanks to Russell Stebbings and Ed Turner.