# Subfamily Elaterinae (Elateridae)

Key to British species

#### Source material

Translated and adapted by Mike Hackston using Lompe (2015) Käfer Europas, Elateridae, published at http://www.coleo-net.de/coleo/texte/elateridae.htm and Lohse (1979) Die Käfer Mitteleuropas, volume 6, Diversicornia.

#### Checklist

From the Checklist of Beetles of the British Isles, 2012 edition, edited by A. G. Duff. Species with over 100 records on the NBN Atlas are highlighted in red, those with over 500 have a red asterisk and over 1000 have two red asterisks (accessed May 2020)

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Tribe AGRIOTINI Laporte, 1840
                                              Tribe ADRASTINI Candèze, 1863
Genus AGRIOTES Eschscholtz, 1829
                                              Genus ADRASTUS Eschscholtz, 1829
       acuminatus (Stephens, 1830)**
                                                     pallens (Fabricius, 1792)
       lineatus (Linnaeus, 1767)
                                                     rachifer (Fourcroy, 1785)
       obscurus (Linnaeus, 1758)**
                                              Genus SYNAPTUS Eschscholtz, 1829
       pallidulus (Illiger, 1807)**
                                                     filiformis (Fabricius, 1781)
       sordidus (Illiger, 1807)
                                                     sanguinicollis (Panzer, 1793)
       sputator (Linnaeus, 1758)**
                                              Tribe MEGAPENTHINI Gurjeva, 1973
Genus DALOPIUS Eschscholtz, 1829
                                              Genus MEGAPENTHES Kiesenwetter, 1858
       marginatus (Linnaeus, 1758)**
                                                     lugens (Redtenbacher, 1842)
Tribe AMPEDINI Gistel, 1848
                                              Genus PROCRAERUS Reitter, 1905
Genus AMPEDUS Dejean, 1833
                                                     tibialis (Lacordaire, 1835)
                                              Tribe ELATERINI Leach, 1815
       balteatus (Linnaeus, 1758)
       cardinalis (Schiødte, 1865)
                                              Genus ELATER Linnaeus, 1758
       cinnabarinus (Eschscholtz, 1829)
                                                     ferrugineus Linnaeus, 1758
       elongantulus (Fabricius, 1787)
                                              Genus SERICUS Eschscholtz, 1829
       nigerrimus (Lacordaire, 1835)
                                                     brunneus (Linnaeus, 1758)
       nigrinus (Herbst, 1784)
                                              Genus PANSPAEUS Sharp, 1877
       pomonae (Stephens, 1830)
                                                     guttatus Sharp, 1877
       pomorum (Herbst, 1784)
       quercicola (du Buysson, 1887)
       rufipennis (Stephens, 1830)
       sanguineus (Linnaeus, 1758)
       sanguinolentus (Schrank, 1776)
       tristis (Linnaeus, 1758)
Genus BRACHYGONUS du Buysson, 1912
       ruficeps (Mulsant & Guillebeau, 1855)
Genus ISCHNODES Germar, 1844
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#### **Image Credits**

sanguinicollis (Panzer, 1793)

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# Subfamily Elaterinae (Elateridae) Key to British species

1	Claws with a comb of small teeth on the underside. Tribe Adrastini	2
	This is very difficult to see in specimens stuck to card and requires a magnification of over 40x to see anyway. If you are uncertain the tribe is "caught" later in the key.	_
	Claws smooth or at most with a single tooth	3

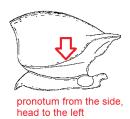
- 2 Length 9-12 mm. Lateral line of the pronotum almost straight, slightly curving onto the underside. Third segment of the tarsi with large lobes which completely cover the small fourth segment underneath.
  - ...... Synaptus filiformis

A rare species associated with some river valleys in southern England and Wales, possibly only found in three sites after long period of decline. Subject of a Biological Action Plan.

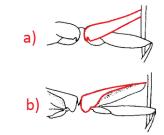


Length under 7 mm. Lateral line of the pronotum almost completely curving onto the underside. Third segment of the tarsi without lobes.

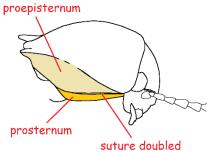
...... Genus Adrastus



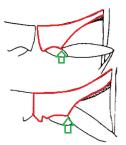
Hind coxal plates are either a) evenly narrowing towards the edge of the beetle or b) narrowing in a broad curve (sometimes quite abruptly) but without an angle or tooth at the point where the narrowing begins. Hairs on the pronotum usually mainly directed towards the rear at least in the front half. Second segment of the antennae more than half the length of 3<sup>rd</sup> segment. Sutures between the prosternum and proepisternum usually doubled towards the front. Length 3.5-10 mm.

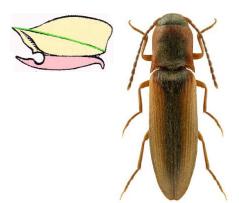


Tribe Agriotini. Head, viewed from the side, curving from the front of the pronotum to the clypeus, with the mouthparts directed downwards or even slightly backwards.



The hind coxal plates are broad towards the middle of the beetle and then narrow towards the edge with the point where this narrowing begins marked by a sharp angle or tooth (green arrow). Second antennal segment at most half the length of 3<sup>rd</sup> segment, or both the second and third segments are shorter than the 4<sup>th</sup> segment. Sutures of the prosternum usually single.

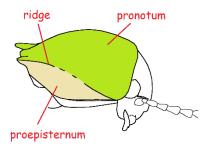




Lateral ridge separating the pronotum from the proepisternum distinctly curved between the hind angles and the front, sometimes becoming rather indistinct in the middle.

...... Genus Agriotes

Length 3.5-10 mm.



Lateral ridge separating the pronotum from the proepisternum distinctly curved and remaining the same strength throughout. Check again for tiny teeth on the claws.

...... Genus Adrastus

#### Dalopius marginatus

Slender, parallel-sided species. Pronotum longer than wide, appearing parallel-sided, shortly narrowing towards the front. Antennae almost filamentous. Head and pronotum densely and quite finely punctured. Upper surface distinctly yellow-grey hairy. Dark reddish brown with the sides of the pronotum broadly brownish yellow. Elytra with a broad brownish yellow longitudinal marginal band from the shoulders to the tip. Antennae and legs reddish yellow. The dark colour of the upper surface may be reduced to a small area in the middle of the pronotum and a narrow stripe along the elytral suture, or may be absent altogether. Rarely specimens occur where the pronotum and the elytra are almost completely darkened. Larvae are found in the soil in woodland, probably mainly predaceous on insect larvae but also feeding on plant roots.



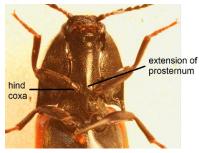
5	Upper surface coarsely hairy. Frons with a ridge running from the front margin of
	the eye, over the base of the antennae and then turning across the front of the
	frons to meet the ridge on the other side. This ridge forms the overhanging front
	of the frons and the clypeus is hidden below it6
	In <i>Procraeus</i> the ridge may be interrupted at the front but this species has a slight ridge running from the front of the frons up the centre to approaching half way.

Upper surface with dense fine hairs that lie on the surface. Frons with a ridge running from the front margin of the eye, over the base of the antennae and then meeting the furrow that separates the frons and the clypeus. The frons and clypeus are separated by a narrow furrow and are both visible from above. .....10

6 Hind margin of the front coxae broadly open to the rear. Process of the prosternum that runs between the front coxae, flat. Apex of the elytra smoothly rounded. Tribe Ampedini. Colour of upper surface uniformly dark or with the pronotum or elytra orange-brown-red to some extent. ..... 7

The three dark coloured species are illustrated. Note the shape of the elytra and the shape of the pronotum in terms of length and width







Hind margin of the front coxae narrowing to the rear. Process of the prosternum hollowed out between the front coxae. Apex of the elytra appearing sheared off at the tip (left illustration) or with a fairly broad horizontal flange towards the tip (right illustration). Colour of upper surface more or less uniformly dark. Tribe Megapenthini. ..........9
Both the species in this lead are very rare, dark in colour and are between 6-10 mm. in length.



# 7 Prosternal suture not deepened towards the front. ........... *Ischnodes sanguinicollis*

Southern England, designated Nationally Notable A. Shining species with the head and elytra black and the pronotum orange-brown. Pronotum comparatively elongate with the sides narrowing forwards in a weak curve; punctures on the pronotum fine and quite disperses. Upper surface with black hairs. Third segment of the antennae about as long as the fourth, triangular, but not as wide as the fourth. Length 8.5-11 mm. Larvae develop in damp mulch within hollow deciduous trees where there is a connection between the hollow and soil level, particularly in beech, oak and birch. Adults are active in the afternoon.



Prosternal suture with a short furrow to accommodate the antennae. .....8

8 Process from the hind angles of the pronotum with an additional short fine keel between the normal keel and the side margin (easily overlooked and confused with lines of hairs - view with light from various angles). More or less uniformly dark brown. Length 5.0-6.5 mm.

..... Brachygonus ruficeps

Image from Elateridae.com. Rare species, dependent on ancient trees and associated deadwood. Point of the process of the prosternum appearing clearly rounded viewed from the side. Upper surface with long golden-yellow hair. Pronotum as wide as the elytra, parallel-sided from the middle to the rear or slightly narrowing just before the hind angles. Punctures on the top of the pronotum and towards the base sparser and less pronounced than those towards the front and sides



Process of the hind angle without an additional keel (sometimes there appears to be one due to the presence of a very regular line of punctures - the area in between these can look like a keel). Includes uniformly coloured and bicoloured species.

...... Genus Ampedus



9 Frontal keel narrowly interrupted in the middle. Frons with a weak longitudinal ridge running from the front to about half way back. Pronotum with the lateral keel curving onto the underside towards the front meeting the front of the pronotum level with just above the lower margin of the eye. Antennae with segment two as broad as long or longer and segment three longer than wide so that these two combined are longer than segment four. Length 6-8 mm.

..... Procraerus tibialis

Local in southern half of England and the Welsh borders.



Frontal keel complete. Frons without a longitudinal keel. Lateral keel of the pronotum straight, located on the side. Antennae with segment 2 broader than long and segment 3 as broad as long so that these two segments combined are shorter than segment 4. Length 8-10 mm.

..... Megapenthes lugens

Rare, possibly only in Windsor forest. Associated with ancient trees and associated deadwood.



10 Elytra dark brown each with 2-3 patches of yellowish-brown. Length about 3 mm. Hind angles of pronotum and first few segments of the antennae paler yellowish-brown. .....

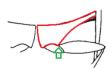


Elytra more or less uniformly reddish-brown. Length at least 8 mm. .....11 Tribe Elaterini

11 Large species, length 17-24 mm. Hind coxal plates with a distinct angle or tooth at the widest point.

..... Elater ferrugineus

South east England. Rare species, dependent on ancient trees and associated deadwood.





Much smaller species, length 8-9 mm. Hind coxal plates with a blunt or indistinct angle at the widest point.

..... Sericus brunneus

Widely distributed and fairly common.



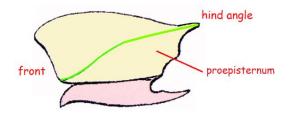


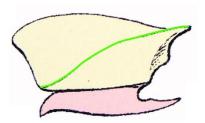
## Genus Agriotes

The line along the sides of the pronotum is curved towards the lower surface at the front – it is sometimes interrupted in the middle or is reduced to short sections towards the front and hind angles (e.g. *pallidulus*). The inner edges of the proepisterna are quite broadly bordered, becoming deeper and broader towards the front (the doubled "prosternal furrow"). Antennae almost filamentous with weakly broadened segments. Hind coxal plates narrowing towards the outside. Claws without a fine comb of hairs on the inner surface. Upper surface densely hairy with those on the pronotum laying towards the rear at least in the middle of the front half (often most of the pronotum has the hairs so directed). Upper surface pale yellowish-brown to almost black with the antennae and legs pale.

Many species are very variable (including in the structure of the genitalia) and form local races. All species develop in the soil around plant roots and their larvae (wireworms) are amongst the worst pests on crops.

Adults are mainly found in the spring and early summer, being most active in the afternoon and evening, or even at night (*lineatus*). If grass or clover is cut and placed in piles, large numbers may gather underneath in three to four days.





2 Smaller species, 3.5-5.7 mm. Very similar in appearance to *Adrastus* but easily distinguished by the simple claws, lacking a comb and the hairy scutellum. Pronotum shining, less densely punctured. Elytra with lines of strong punctures with the surface in between them with sparser and finer punctures, forming at most two irregular rows. Lateral keel on the pronotum clear towards the front and broadly interrupted in the middle. Pronotum black with the hind angles rather paler, the paler colour often extending along the edges. Elytra usually brownish-yellow or more rarely the whole upper surface is brownish-yellow.



#### ...... Agriotes pallidulus

The commonest species of the genus; widespread and common in England and Wales; uncommon in Scotland.

#### ..... Agriotes acuminatus

Quite common in England and Wales, but becoming scarce further north.



3	Elytra with alternate intervals broader and more densely hairy and often more convex. This means that the elytra appear to have paler and darker stripes. Length 7.5-10
	mm

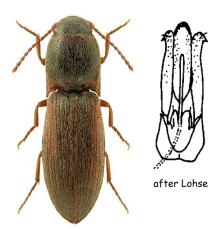


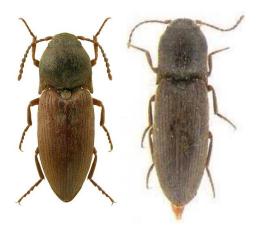
Elytra with the intervals about the same width with at most small areas with denser hair and thus appearing more or less uniformly coloured. ......4

4 Prosternum shining in the middle with the punctures there finer and less dense. Pronotum with the punctures less dense with the spaces between many of the punctures on top being wider than the diameter of the punctures, at least in males. Viewed from the side the rear half of the elytra is reddish-brown clearly contrasting with the darker underside. Antennae entirely pale. Legs orange-brown. Length 5.5-8 mm.

...... Agriotes sputator

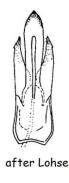
Frequent in the southern half of England and Wales, becoming uncommon to the north and scarce in Scotland. Pronotum with the front edge pale reddish brown and the hind angles reddish. In rare cases the pronotum and elytra are uniformly pale reddish contrasting with the black head. The German key gives the length range 6.5-8 mm.





More robust and compact species with the elytra only about twice as long as wide. Pronotum clearly broader than long, strongly convex in section and very densely punctured, those towards the sides almost running into one another. Hind margin of the hind coxal plates almost straight, narrowing only slightly towards the sides. Striae on the elytra fine, scarcely indented. Elytra narrowing evenly from half way towards the tip. Blackish brown or reddish brown, uniform in colour or with the pronotum dark brown and the elytra paler reddish brown. Pronotum broader compared to its length and the sides clearly concave before the hind angles. Length 7-9 mm.





...... Agriotes obscurus

Common and widely distributed in England and Wales, becoming scarce into Scotland.

More elongate species with the elytra more than twice as long as wide. Hind margins of the hind coxal plates slightly concave and very distinctly narrowing towards the sides. Striae on the elytra deeper with denser punctures along them. Upper surface blackish brown; scutellum pale reddish or the pronotum has the front margin and the hind angles paler or in some specimens the whole insect is pale brown. Length 8-11 mm.

..... Agriotes sordidus

Uncommon.





(C) Christoph Benisch

## Genus Ampedus

Head sloping with the mouthparts downwardly-directed at rest. Ridges on the frons curving towards the middle over the insertion points of the antennae and meeting at an angle, forming a sharp division between the frons and the clypeus. Clypeus well-developed and at right angles to the frons; if viewed obliquely below from the front the labrum is divided from the frons by a distinct gap. Hairs on the pronotum coarse, mainly or completely directed towards the rear. Prosternal suture doubled, becoming deep towards the front. Hind coxal plates broad towards the middle with their hind margin concave with a tooth or sharp corner before narrowing to the sides. Third segment of the tarsi without lobes.

Many of the species are very similar to one another and can be identified only by comparison with positively named specimens. Examination of the genitalia is often no help as they are very variable in several species. In species with uniformly red or brownish elytra, the colour of the upper surface is often diagnostic, but again there will be specimens that don't fit. The larvae are predacious in dead wood.

1	Head, pronotum and elytra black2
	Upper surface otherwise coloured. In species with black elytra, either the base of
	the elvtra is paler or the pronotum is partly paler.

..... Ampedus nigrinus

Widely distributed but rare. Designated Nationally Notable B.



Middle segments of the antennae from segment four onwards triangular, toothed inwards, some of these segments not longer than wide. Pronotum with coarse dense punctures at least around the front corners with the distance between the punctures less than their diameter. Dark hairs present on the upper and lower surfaces. Antennae and legs dark. Length 8-10 mm.

..... Ampedus nigerrimus

Rare species, dependent on ancient trees and associated deadwood.



3 Elytra usually predominantly black with the sides (or at least the epipleura), the base and a longitudinal patch next to the scutellum pale brownish-yellow. The black colour on the elytra may be reduced to a broad longitudinal patch in the middle which is usually forms a branch over the shoulders. Pronotum with coarse dense punctures with a microscopic texture between them resembling leather. Length 7-9 mm. ......



#### ..... Ampedus tristis

Very rare. Scotland. A specimen examined from Aviemore had the sides of the elytra orange-brown and a long V of orange-brown with the broad end at the shoulders, narrowing to a little beyond half way – this patch was interrupted by black colour going up the suture almost to the scutellum.

Elytra otherwise coloured. If a longitudinal black patch is present along the	
suture, the background colour is clearly red and the pronotum is shining, wi	thout
a leathery texture	<u>4</u>

4 Third segment of the antennae triangular and flattened, in males the same shape as the fourth segment but smaller (less pronounced in females). Segment three has the same leathery surface texture and punctures as the following segments.

.......... Ampedus rufipennis

Possibly rare species, dependent on ancient trees and associated deadwood but possibly increasing. Jon Cole (2018, pers. comm.) has let me know that Howard Mendel says that this couplet does not work for females as the distinction in the antennae is not clear enough. If you proceed through the key from couplet 5 onwards and find other descriptions do not fit, this might well be the species you have.



Third segment of the antennae elongate or broadening towards the tip – if the latter then the third segment is not flattened and it is shining with at most very few punctures, thus contrasting with the fourth segment which has a dull leathery texture – this is easy to see if you get the lighting right when segments four onwards appear grey with a dull sheen and segments 1-3 look black and shining.

5 Pronotum alongside the side margins, back to the hind angles with a dense covering of large rounded punctures. Elytra usually bright red, with at most the extreme tips black. .....6



Pronotum alongside the side margins at least in the posterior half without rounded and/or dense punctures. Elytra normally more brownish or yellowish, often with the tips broadly black (red only in *quercicola*). .......10



6	Pronotum with punctures of the same size and density all
	over the central part (except for the middle line and the base).
	The distance between the punctures in the posterior half are
	considerably smaller than the diameter of the punctures,
	meaning the pronotum only has a dull shine. Length 12-15.5
	mm
	A



Punctures becoming much less dense towards the rear	. Pronotum shining in
species of a similar size.	7

7	Punctures of the pronotum strong and dense in the front half, becoming less dense towards the rear but the punctures remaining the more or less the same size. Larger species between 11 and 17.5 mm. Elytra bright red, rarely yellow, with at most the extreme tips weakly darker. Pronotum with a short, often very indistinct, middle furrow at least at the base
	Punctures towards the front of the pronotum fine and less dense, becoming fine and even less dense towards the rear. Length under 12 mm. Elytra usually dull red or with a black marking along the suture9

8 A median furrow is usually visible running from the rear to well beyond the middle. Pronotum more elongate with the side margin narrowing from the base towards the front in a gentle slight curve. Pronotum, elytra and under surface usually black hairy (only with the shoulders sometimes with yellow hairs; exceptionally the underside and/or the elytra with yellow hairs). A very rare variety has yellow elytra. Length 12-17.5 mm.

..... Ampedus sanguineus

Probably extinct and possibly never native.

Median furrow on the pronotum only visible in the rear quarter but often just a slight indication. Pronotum more strongly narrowed towards the front. Pronotum and underside usually conspicuously golden-yellow hairy; elytra with black hairs in the centre and golden-yellow hairs towards the sides. Rarely the pronotum and underside have black hairs (e.g. at the front of the prosternum). Length 12-14.5 mm.

..... Ampedus cinnabarinus

Rare. Southern England and Wales. If you arrive here, check the note in couplet 4a.

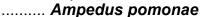


9 Punctures of the side margins of the pronotum somewhat smaller and with the areas between narrow and shining; they are more dense before the hind angles. Base of the pronotum relatively flat at the base in the middle. Elytra bright red with a longitudinal black patch centrally over the suture, reaching sideways to the 2<sup>nd</sup> or 3<sup>rd</sup> stria (exceptionally to the 7<sup>th</sup> or only over the first interval or absent altogether). Pronotum with yellowish-brown hairs (rarely black). Elytra with black hairs or with yellow hairs near the sides (occasionally more extensive). Length 9-11.5 mm.



#### ...... Ampedus sanguinolentus

Specimens without darkening on the elytra are very difficult to distinguish from the next species. Rare, the larvae developing on birch. Mainly Hampshire and Surrey with isolated records elsewhere.



Very uncommon on peaty habitats in southern England.



10	Tips of the elytra to a large extent black.	.11
	Elytra uniform in colour or at most with the extreme tip slightly darkened	12

11 Intervals of the elytra between the striae towards the rear finely transversely wrinkled giving only a slightly shine.

Punctures of the top of the pronotum of the same size and density throughout. Last third of the elytra black. Third segment of the antennae distinctly longer than the second. Length 7.5-10 mm.

..... Ampedus balteatus

Fairly common and widely distributed.



Intervals towards the rear of the elytra between the striae smooth and shining. Punctures on the top of the pronotum becoming much less dense towards the back. Last fifth of the elytra black. Third segment of the antennae narrower and only slightly longer than the second segment. Length 7-8.5 mm.

..... Ampedus elongantulus

Local species from the south Midlands southwards. Larvae feed in rotting oak, beech and pine.

12	becoming only slightly finer towards the rear. Elytra brownish-red with black hairs.
	Top surface of the pronotum with the punctures becoming much finer and less dense towards the rear or with the punctures less dense throughout13

- 13 Small, slender species, 7-8.5 mm. Third segment of the antennae narrower, although a little longer than the second segment; segments 5-9 not longer than wide. Pronotum and elytra with black hairs.
  - ...... Ampedus elongantulus

Aberrant examples of this species without significant darkening towards the tips of the elytra key here.



Length 9-13 mm. Third segment of the antennae rarely only a little longer than the second segment – in this case segments 5-9 are clearly longer than wide. .14

14 Elytra bright red. Punctures on the sides of the pronotum in the middle third not clearly umbilicate, appearing rather elongate with the areas between shining and about equal to the diameter of the punctures. The punctures of the striae on the elytra are strong and remain so right to the tip. Upper surface with black hairs (rarely with yellowish hairs on the pronotum). Length 9-11 mm.



..... Ampedus quercicola

Southern half of England and Wales, designated Notable B.

Elytra brownish-red. Punctures on the pronotum dense and fine with those on the sides to a large extent umbilicate. Punctures on the striae of the elytra finer. Pronotum with yellow, reddish-brown or black hairs.

..... Ampedus pomorum

Widely distributed but rare, designated Notable B.



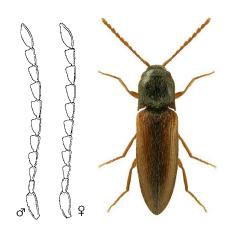
#### Genus Adrastus

Small, more or less shining species, under 5.5 mm. Easily recognised from the comb of teeth on the claws. Head curving downwards. Pronotum moderately densely punctured, with the hairs mostly directed backwards. Scutellum shining, not clearly punctured, sparsely hairy. Elytra usually yellowish-brown with a darker suture or dark brown with a paler longitudinal area over the shoulders; rarely the upper surface may be completely dark. The size and colour are quite variable so that identification of some females may be difficult. Often found in numbers on shrubs, particularly in grassland and on low vegetation. Active in the afternoons. Larvae are found in the soil in damp grassland.

1 Larger species, 4.2-5.2 mm. Segments 2 and 3 of the antennae elongate, the second only slightly shorter, being about the same length in both sexes. Segments four onwards of the antennae roundly toothed.

..... Adrastus pallens

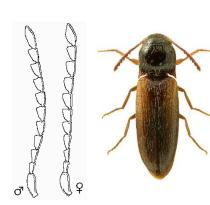
The commoner species. England and Wales, reaching to the Scottish borders.



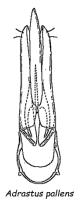
Smaller species, 3.0-4.2 mm. Segment 2 of the antennae usually distinctly shorter than the third, always shorter in males. Segments four onwards sharply toothed.

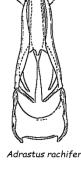
...... Adrastus rachifer

Rare, Kent.



#### Male genital capsule





from Lesegneur

