

Identification guide to the *Amara* and *Curtonotus* (Carabidae) of Britain and Ireland

Mark G. Telfer, March 2012, updated September 2012 (measurements added for all species; minor corrections to *aenea* and *eurynota* species accounts; *famelica* distribution notes updated). Version 3 of 18.ix.2016 includes *majuscula* as a species recently discovered in Britain (with additional minor updates in 3.1 of 16.x.2016), as well as minor annotations for *aenea* and *eurynota*.

Most *Amara* and *Curtonotus* species are probably generalist seed-feeders, supplementing their diet by scavenging. They typically require open vegetation on light soils (e.g., sand, gravel, chalk), bare ground, soil disturbance, and abundant seeds from a diverse flora of ruderal plants (i.e., weeds). Most species prefer hot, dry places (e.g., sand dunes) but some can occur in wet grassland. It's not unusual to find several species together and 17 species have been recorded from one short section of roadside verge in Breckland.

This key covers all 29 species¹ of *Amara* and 3 species of *Curtonotus* which have been recorded from Britain and Ireland. Nomenclature follows [Duff \(2012\)](#) which should be consulted if authority names are required.

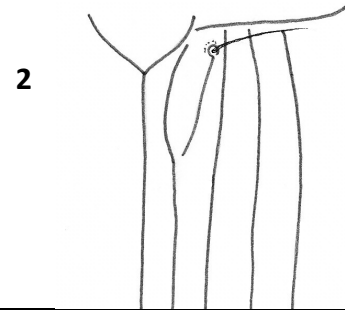
The aim of this guide is to enable coleopterists to accurately identify *Amara* and *Curtonotus* from Britain and Ireland. The name *Amara* is reputedly derived from the Latin word for bitter (*amarus*) in reference to the bitter experience of trying to identify them (Allen, 2002)! It is certainly true that many coleopterists have had difficulty with identifying these species. In this guide I have given much more detail, where necessary, about the identification characters than will be found in either of the two RES Handbooks to Carabidae (Lindroth, 1974; Luff, 2007) although both the Handbooks will still provide useful supplementary information. Hieke (1976) is also a valuable identification resource, providing line drawings of all species in dorsal view, and of the aedeagi of all species. Note that in Lindroth (1974) and Hieke (1976), *Curtonotus* is treated as a subgenus within *Amara*.

It is the variability of characters in these genera which makes them difficult to identify and makes it difficult to write a key. This more detailed treatment takes account of more of the possible variations but it will still be possible on rare occasions to find aberrant specimens for which this key will not work. For example, I have seen one specimen of *A. eurynota* which did not have a scutellar pore-puncture on either elytron. With experience, and with a reference collection, it was recognisable as *eurynota* but it would go the wrong way at couplet 1 of this key.

Males of all species can be distinguished by having the front tarsi much broader than the middle or hind tarsi. All tarsi are of similar breadth in females. Males of some species also have modifications to the middle and hind tibiae on the lower sides.

¹ It includes *Amara majuscula*, discovered in August 2015 and awaiting formal addition to the British list.

- 1a** With a pore-puncture at the base of the scutellar stria.



- 1b** Without a pore-puncture at the base of the scutellar stria.²

8

- 2a** Largest apical spur of front tibia three-pronged (on carded specimens in dorsal view, usually only two of the three prongs can be seen, as in the photo).
(*Amara* subgenus *Zezea*). **3**



- 2b** Largest apical spur of front tibia simple, with a single point.

4



- 3a** Smaller: 6.3 - 7.8 mm. Base of pronotum with puncturation extending over a third or more of its width, centred on the inner foveae.

Amara plebeja

Common; one of the commonest *Amara*. Widespread except for the north of Scotland; also Ireland. Preferring damper habitats than most *Amara*, e.g. damp grassland, but can be found in a wide range of habitats including very dry sites.

- 3b** Larger: 8.0 - 9.6 mm. Base of pronotum unpunctured or with a few punctures around the inner foveae.

Amara strenua

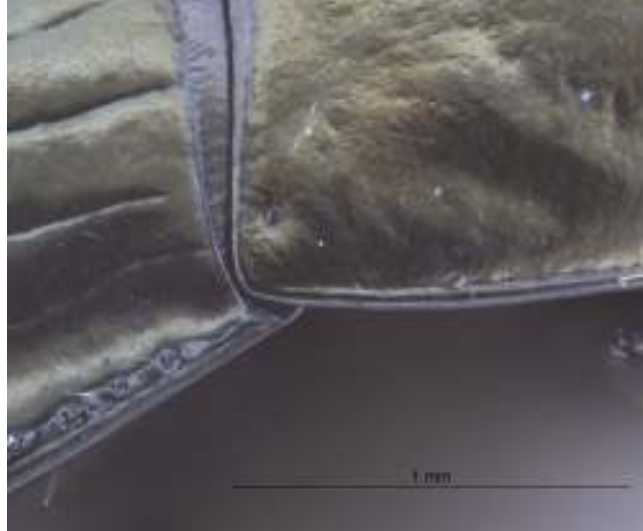
RDB3, BAP. Though it has been described as a saltmarsh species, the true habitat of this species is on ditch-banks in coastal grazing marshes and equivalent arable systems. Very scattered on the coasts of southern England from Somerset to Suffolk.

² One species, *A. nitida* keys both ways at this couplet: about 40% of specimens lack scutellar pore-punctures, about 20% have a scutellar pore-puncture on one side only, the remaining 40% have a scutellar pore-puncture on both sides.

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- 4a** Antenna entirely and uniformly pale. Legs entirely and uniformly pale. [6.2 - 8.2 mm.]
- (*Amara* subgenus *Celia* (part 1 of 2)).
- Amara praetermissa***
- Nationally Scarce (Nb). Very scattered in England, Wales and southern Scotland; old records only for Ireland. As well as occurring in natural habitats such as sand dunes, chalk grassland, heathland and eroding soft-rock cliffs, *A. praetermissa* has successfully colonised some man-made habitats which provide equivalent conditions, including colliery spoil-heaps and disused railway tracks.
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- 4b** Antenna with the first three segments and the base of the fourth pale; the remainder contrastingly dark blackish. Legs EITHER entirely and uniformly pale (*anthobia*) OR with at least femora, often also tibiae, dark blackish.
- 5**
-
- 5a** Legs entirely and uniformly pale. Smaller: 5.0 - 6.8 mm. Maxillary palps with the last (4th) segment contrastingly darker than the 2nd (the contrast is the same as between the outer and basal antennal segments).
- Amara anthobia***
- Uncommon; probably non-native and thus has no conservation status. Scattered in southern England, especially in the east. On light sandy/gravelly soils. Often in gardens, or seen crossing paths. Predominantly in April and May.
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- 5b** Legs with at least femora, often also tibiae, dark blackish. Larger: 7.2 - 12.6 mm. Maxillary palps uniformly dark; if the 2nd is paler than the last (4th), the contrast is nowhere near as distinct as between the outer and basal antennal segments.
- 6**
-
- 6a** Inner pronotal fovea with a distinct, deep, longitudinal groove (similar to *aenea*); unpunctured or with a few shallow punctures. Elytral apices flatter, intervals becoming only slightly narrower and striae slightly deeper but intervals no more convex. Averaging larger: (8.1) - 8.8 - 12.6 mm.
- Amara eurynota***
- Fairly common. Preferring very weed-rich arable margins, brownfield sites and other disturbed ground on light soils. Widespread in England and Wales, rare in Scotland and Ireland.
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- 6b** Inner pronotal fovea without a longitudinal line or if present it is much shallower and less distinct; extensively punctured in some species. Elytral apices steeper, intervals becoming much narrower, striae much deeper and intervals distinctly more convex than at the base of the elytra. Averaging smaller: 7.2 - 10.0 mm.
- 7**
-

7 NOTE: Four options for four very similar species.

7a Femora and tibiae uniformly blackish. Pronotal base unpunctured. Pronotal foveae absent or indistinct; at most the inner fovea discernible as a shallow mark. Both 2nd and 3rd antennal segments with a sharp dorsal ridge running almost the full length of the segment. Pore-puncture inside the pronotal hind-angle further from the side-margin: the centre of the pore-puncture separated from the side-border by at least 2.5× the width of the side-border (usually obviously at least 3×). 7.8 - 9.2 mm.



Amara montivaga

Uncommon; probably non-native and thus has no conservation status. Much misidentified but seems to be increasing in south-east England in early-successional habitats. Occurs in Ireland in the Killarney district of Co. Kerry.

7b Femora and tibiae uniformly blackish. Pronotal base usually unpunctured but frequently with a very restricted scatter of punctures around the inner foveae. Pronotal foveae very weak, the inner discernible as a shallow longitudinal line. Dorsal ridge on 2nd antennal segment blunt and indistinct, sharp on 3rd segment but not running the full length of the segment. Pore-puncture inside the pronotal hind-angle nearer to the side-margin: the centre of the pore-puncture separated from the side-border by no more than 2.5× the width of the side-border. 8.0 - 9.5 mm.

Amara ovata

Common. Found in many open habitats including arable margins, garden flower-borders, road-verges, etc. Widespread, including Ireland. Frequently found with the very similar *A. similata*.

7c Femora blackish; tibiae usually contrastingly paler reddish but frequently extensively darkened (thus approaching *ovata* and *montivaga*). Pronotal base with weak but extensive puncturation, especially around the inner foveae but usually also around the outer foveae and often across most of the base.



Pronotal foveae weak, the inner discernible as a shallow punctate depression. Dorsal ridge on 2nd antennal segment blunt and indistinct, sharp on 3rd segment but not running the full length of the segment. Pore-puncture inside the pronotal hind-angle nearer to the side-margin: the centre of the pore-puncture separated from the side-border by no more than 2.5× the width of the side-border. 7.8 - 10.0 mm.

Amara similata

Common. Widespread in England and Wales, rarer in Scotland. Occurs in Ireland. Found in many open habitats, often with the very similar *A. ovata*, extending into wetter habitats than *A. ovata*.

7d Femora blackish; tibiae contrastingly paler reddish. Pronotal base usually with a scatter of punctures around the inner foveae, sometimes unpunctured. Pronotal foveae extremely weak, the inner discernible as a shallow mark. Dorsal ridge on 2nd antennal segment blunt and indistinct, sharp on 3rd segment but not running the full length of the segment. Pore-puncture inside the pronotal hind-angle further from the side-margin: the centre of the pore-puncture separated from the side-border by at least 2.5× the width of the side-border (usually obviously at least 3×). 7.2 - 8.5 mm.

Note: these characters have only been tested on a relatively few specimens.

Amara nitida

Nationally Scarce (Na). A very enigmatic and frequently misidentified species. Known from a few scattered sites throughout England and Wales including a wet meadow on clay in Lincolnshire, a small heathy clearing in woodland in Norfolk, and upland limestone grassland in Upper Teesdale. Perhaps it favours damp and/or shady places, unlike most *Amara*.

8 NOTE: Underside characters are used here to divide the remaining species into **four** groups. The rest of the key does not refer to the underside again.³

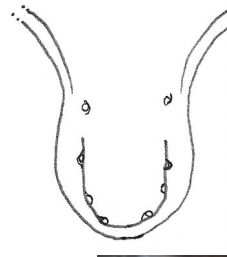
³ If you need a key to *Amara* and *Curtonotus* which works without reference to underside characters (e.g. for carded specimens which you don't want to soak off), see Lindroth (1974).

I have not personally examined the undersides of all the species which reach this couplet. The underside characters are given on the authority of Lindroth (1974) and Luff (2007). Please let me know if you experience any difficulty with these characters.

- 8a** Prosternal process without a border and without apical setae. Side-margin of pronotum strongly sinuate towards base; pronotum narrowest at or just before the hind-angles; hind-angles either clearly protruding laterally and clearly acute, or usually slightly protruding and slightly acute (i.e., a little less than 90°).

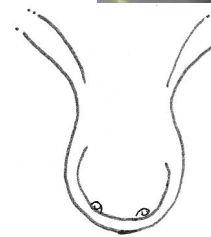
Genus *Curtonotus*. 9

- 8b** Prosternal process with a narrow border and with 6 or more apical setae. Side-margin of pronotum smoothly convex throughout; hind-angles slightly rounded, obtuse. [7.5 - 10.5 mm.]

Amara equestris

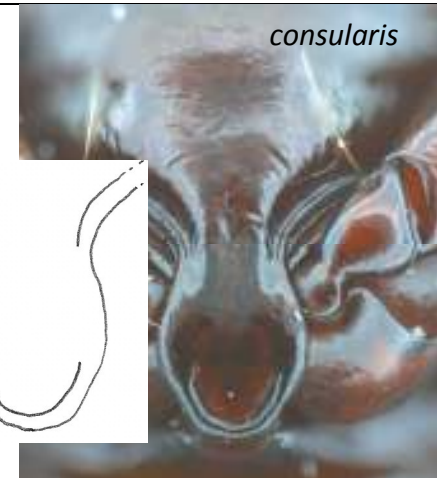
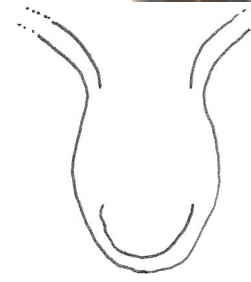
Nationally Scarce (Nb). Widespread, northwards to SE Scotland but very scattered. Usually on calcareous grassland on chalky, sandy and gravelly soils but also found on acid grassland and heathland. It favours a slightly broken sward with patches of bare ground, and a fairly loose soil. More tolerant than many *Amara* species of a fairly closed and grazed sward.

- 8c** Prosternal process with a narrow border and with 2 - 4 apical setae (if these have been broken off, the punctures from which they grew will be visible but they are tiny: high power required). Side-margin of pronotum smoothly convex until just before the hind-angles which usually protrude laterally by a very short distance (less than the width of the marginal bead of the pronotum). [6.4 - 9.5 mm.]

***Amara quenseli***

Nationally Scarce (Na). Scotland only: Deeside, Speyside and the Dorback Burn. On disturbed, sandy ground, usually moraines being eroded by streams or rivers. Also known from Rhum.

- 8d** Prosternal process with a narrow border, without apical setae. Side-margin of pronotum may be either smoothly convex throughout, or (*Celia*) smoothly convex until just before the hind-angles which usually protrude laterally by a very short distance (less than the width of the marginal bead of the pronotum), or (*Bradytus*) smoothly convex to more-or-less sinuate towards the base, with a more-or-less protruding hind-angle.

***consularis***

- 9a** Antennae mostly dark with up to four paler basal segments. Palps dark. Legs often entirely or extensively dark. Averaging smaller: 8.0 - 11.0 mm.
Montane species.

Curtonotus alpinus

RDB3. Scotland only: an Arctic-montane species. Known from the Cairngorms and Creag Meagaidh. Very hard to find. On the north slope of Cairn Gorm, one was found in deep, wet, dirty lf-litter below a large mat of ?Bearberry? at the edge of a moraine scree.

- 9b** Antennae, palps and legs entirely pale. Averaging larger: 10.8 - 14.3 mm.
Lowland species.

10

- 10a** Side-margin of pronotum with a bead for most of its length but fading out basally, in front of the narrow part. Body broader, less elongate and averaging larger: 11.0 - 14.3 mm.


Curtonotus aulicus

Common. Throughout, including Ireland. Can be found even in quite rank grassland. It climbs up to feed on ripening seed in flower-heads of ragwort, common knapweed, burdock, hogweed, wild carrot, etc., especially at night but also by day.

- 10b** Side-margin of pronotum with a bead throughout its length, reaching the hind-angles. Body narrower, more elongate and averaging smaller: 10.8 - 12.2 mm.

Curtonotus convexiusculus

Fairly common. Typically replaces *aulicus* in more saline habitats on the coast, though it can also be found in dry, open habitats inland, especially in eastern England. Rare in southern Ireland.

<p>11 NOTE: These antennal colour characters work very well for the vast majority of specimens but intermediates can occur on both sides of the couplet. The photo shows a specimen of <i>Amara familiaris</i> with unusually pale antennal segments 4 - 11, an aberration which probably occurs in all the species which normally match the characters in 11b.</p>	
<p>11a Antenna entirely and uniformly pale. Legs entirely and uniformly pale. 12</p>	
<p>11b Antenna mostly dark with between 1 and 3½ paler basal segments. Legs MAY BE entirely and uniformly pale BUT ALSO entirely dark, or mostly dark with contrastingly pale tibiae. 19</p>	
<p>12a Outer pronotal fovea more-or-less sharply delimited externally by a bulging ridge. Pronotal hind-angles often distinctly protruding; the rest of the side-margin of pronotum ranging from smoothly convex throughout to more-or-less sinuate towards the base. Head broader. Male: hind tibia usually with a dense brush of hairs lining the underside in the apical half; without a brush in <i>majuscula</i>. <i>(Amara</i> subgenus <i>Bradytus</i>). 13</p>	
<p>12b Outer pronotal fovea weakly delimited externally, sometimes with a weakly bulging ridge. Pronotal hind-angles usually protrude laterally by a very short distance (less than the width of the marginal bead of the pronotum); the rest of the side-margin of pronotum smoothly convex throughout. Head narrower. Male: hind tibia without a brush. <i>(Amara</i> subgenus <i>Celia</i> (part 2 of 2)). 16</p>	
<p>13a Body orange-brown; elytra with a superficial metallic green tinge. Pronotum more transverse (almost twice as broad as long); more strongly sinuate at the sides; hind-angles without an abrupt protrusion, usually slightly acute. 8.0 - 10.5 mm. <i>Amara fulva</i></p> <p style="text-align: right;">Nationally Scarce (Nb). Very widespread but very thinly scattered. On very dry sand or fine gravel, mostly inland on heaths, sandpits, in golf bunkers, etc. Rarely in arable margins. Also found on dunes and sandy exposed riverine sediments.</p>	
<p>13b Body darker (when mature), dark brown to blackish-brown. Pronotum less transverse (little more than 1½ times as broad as long); sides evenly curved until just before the hind-angles then turning outwards to create a small protruding hind-angle. 14</p>	

14 NOTE: Near the pronotal hind-angle, a ridge runs roughly longitudinally, separating the outer fovea from the side-margin. Very close to the hind-angle a puncture bears a long seta.

14a Ridge does not meet the pronotal hind margin but is interrupted by the puncture; ridge slightly more oblique. Elytral sides less widened just behind front angles which are therefore less obtuse.
[Side-margin of pronotum smoothly convex with a weakly protruding hind-angle. 8.0 - 9.5 mm. Male: hind tibia with a dense brush of hairs lining the underside in the apical half].

Amara consularis



Nationally Scarce (Nb). Found in arable margins, quarries, on road verges, etc. Requires a broken sward and fairly loose sandy/gravelly/chalky soil. Widespread in England but declining and increasingly scattered away from core areas (Breckland, Corallian Sands, South Downs); rare in Ireland.

14b Ridge meets the pronotal hind margin without interruption; puncture lies outside of the ridge; ridge less oblique (more nearly parallel to the longitudinal axis of the body). Elytra widened just behind front angles which are therefore obtuse.

15

15a Side-margin of pronotum more-or-less sinuate in the basal quarter, in front of the distinctly protruding hind-angle. Pronotal ridge narrower. Pronotum (in full dorsal view) broadest a little in front of middle. Body smaller (6.5 - 9.0 mm) and narrower with less transverse pronotum. Pronotal foveae a little deeper; the puncturation throughout the base of the pronotum is deeper, sparser, more distinct and more confined to the foveae. Male: hind tibia with a dense brush of hairs lining the underside in the apical half.

Amara apricaria



Fairly common. Widespread in Britain, north to Shetland but much scarcer in the wetter west and in Ireland. In a wide range of weedy, often cultivated, places on light soils.

- 15b** Side-margin of pronotum smoothly convex in the basal quarter, in front of the distinctly protruding hind-angle. Pronotal ridge broader. Pronotum broadest at middle. Body larger (8.3 - 9.2 mm) and broader with more transverse pronotum. Pronotal foveae a little shallower; the puncturation throughout the base of the pronotum is shallower, denser, less distinct and more extensive. Male: hind tibia without a brush.

Amara majuscula



First recognised at Horsey, East Norfolk, by Tim Hodge in 2015, with four further specimens from East Winch, West Norfolk, by Steve Lane in 2016. All records so far of individuals at light. Presumed a recent colonist from the continent (Hodge, Telfer and Lane, in prep.). An earlier individual, from Berrow, Worcestershire, by Martin Skirrow at MV on 4.ix.2014 has recently been identified.

- 16a** Averaging smaller: 4.9 - 5.7 mm. Scutellar stria absent, or weak and very incomplete. Last segment of maxillary palp blackish with a pale tip. Antennae very short; segments 5 - 10 only slightly elongate, almost quadrate.

Amara infima

Nationally Scarce (Na). A heathland specialist, largely restricted to the Breckland and the Surrey heaths. Found under prolifically-seeding heather plants on loose, sandy soils: presumably feeding on heather seeds.

- 16b** Averaging larger: 5.3 - 8.8 mm. Scutellar stria present and as well-marked as the other striae. Last segment of maxillary palp entirely pale. Antennae longer; segments 5 - 10 clearly elongate (> 1½ times longer than broad).

17

- 17a** Averaging smaller: 5.3 - 7.4 mm. Body paler, mid-brown. Legs paler, yellow-brown.

Amara bifrons

Fairly common. Widespread throughout Britain to Shetland, commoner in the east. Uncommon in Ireland. On sandy soils in weedy places. Climbs up to feed on ripening seeds at night and is associated with taller weedy vegetation than many other *Amara* species, e.g. Common Mugwort *Artemisia vulgaris*.

- 17b** Averaging larger: 7.0 - 8.8 mm. Body darker, dark brown. Legs darker, orange-brown.

18

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- 18a** Palps and all antennal segments entirely pale. Pronotum broader relative to the width of the elytra. Pronotal hind-angles without or with a very small lateral protrusion. Body more convex. 7.3 - 8.8 mm.

Amara fusca

RDB1, BAP. Its main foodplant is Field Wormwood *Artemisia campestris*, a characteristic species of the steppes of eastern Europe but an Endangered plant in Britain known mainly from the Breckland and the South Wales coast. These are the two areas in which *fusca* may be found, also using Common Mugwort *Artemisia vulgaris*. Search the seed-heads by torchlight after dark from early September to mid-October.

- 18b** Palps and outer antennal segments darkened. Pronotum narrower relative to the width of the elytra. Pronotal hind-angles with a larger lateral protrusion. Body less convex. 7.0 - 8.8 mm.

Amara cursitans

Known from a single British specimen, found by A.A. Allen in his garden at 63, Blackheath Park, London, SE3 on 16th April 1953 (Allen, 1956); confirmed by Lindroth and more recently by MGT⁴. It seems increasingly amazing that *A. cursitans* has not been refound in London despite the considerable surge of discoveries and rediscoveries on brownfield sites in the region in recent years. Maybe it is not established in Britain or perhaps, like *A. fusca*, it is strongly nocturnal and extremely well hidden by day.

- 19a** Antennae darker at base. At most the two basal antennal segments pale; third almost entirely dark; fourth and subsequent segments completely dark. Usually the third segment is entirely dark and the second is partly darkened. Occasionally all three basal segments are extensively darkened.

20

- 19b** Antennae paler at base. Usually with basal 3½ antennal segments entirely pale; remainder of antenna completely dark. Darkest individuals have the third segment diffusely darkened to a greater or lesser extent but the basal stalk of the fourth segment is still pale.

23

- 20a** Elytral intervals quite flat but becoming slightly convex towards the apex, where the elytral striae are more deeply impressed. In side view, the elytra slope down more steeply to the apex; in dorsal view, the elytra are a little less pointed at their apex.

21

- 20b** Elytral intervals very flat throughout. Elytral striae not deeper at apex. In side view, the elytra slope down less steeply to the apex; in dorsal view, the elytra are a little more pointed at their apex.

22

⁴ There has been some confusion over this. Luff (2007) wrote "two specimens ... were recorded from London in 1956" but there was only one and it was in 1953.

21a	Larger: 7.3 - 9.0 mm. Antennal segments 7 - 10 about twice as long as broad. Female: last sternite with 2 punctures, each bearing a seta.	<i>Amara lunicollis</i>
	Common. Found in a wide range of open habitats including dense, matted grassland swards with little or no bare ground. Tolerates damp conditions, and commoner in western Britain than other <i>Amara</i> . Occurs in Ireland.	
21b	Smaller: 5.5 - 7.4 mm. Antennal segments 7 - 10 barely 1½ times as long as broad. Female: last sternite with 4 punctures, each bearing a seta.	<i>Amara curta</i>
	Nationally Scarce (Nb). Occurring in very scattered sites throughout England and Wales on carboniferous or oolitic limestone grassland with bare ground and disturbance. Very rare on chalk in southern England: few chalk grasslands get properly disturbed now but the species has a stronghold on Salisbury Plain relying on tank tracks and other military disturbances. Also a peculiar record from a site in southern Scotland on acidic igneous geology.	
22a	The two basal antennal segments predominantly or entirely pale. Tibiae often paler than the black femora and tarsi. Male: aedeagus with a parallel-sided portion before the apex. Female: last sternite with 2 punctures, each bearing a seta. 7.8 - 9.5 mm.	<i>Amara spreta</i>
	Nationally Scarce (Nb). Found in sand dunes and other very dry, loose sandy habitats on the coast. Frequently misidentified: all inland records need to be re-checked. Glamorganshire, East Sussex, Kent, NE Yorkshire and Co. Durham.	
22b	The two basal antennal segments predominantly or entirely dark. Legs usually entirely dark. Male: aedeagus tapering gradually to the apex. Female: last sternite with 4 punctures, each bearing a seta. 6.6 - 9.0 mm.	<i>Amara famelica</i>
	RDB3, BAP. Very rare (or very elusive). A heathland specialist, it has been collected from areas of open, flat, disturbed or bare ground within sandy or gravelly lowland heathland in southern and eastern England and the Midlands (Leicestershire (1935 and 1936), Staffordshire (up to 1949) and Warwickshire (1997)). Most records are very early in the season (March and early April) so it may be under-recorded.	
23a	Smaller: 4.5 - 5.9 mm. Scutellar striae usually very weakly marked or absent. Outer pronotal fovea small and deep, usually deeper than the inner fovea.	<i>Amara tibialis</i>
	Common. Very widespread, predominantly coastal but also in sandy and heathy areas inland. Characteristically on very short, very dry turf with lichens, moss and bare ground.	
23b	Averaging larger: 4.6 - 8.8 mm. Scutellar striae present and usually as well-marked as the other striae. Outer pronotal fovea shallower and less well-marked.	
		24
24a	Legs entirely and uniformly pale.	
		25
24b	Legs with at least femora darkened, blackish.	
		26

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- 25a** Front angles of pronotum clearly protruding forwards (view from directly above the midpoint of the pronotum): see photo at couplet 11. Averaging larger: 5.5 - 7.3 mm.

Amara familiaris

A very common *Amara* though probably less so than *A. aenea*. Similarly widespread and common in southern Britain, becoming patchy and more coastal in northern England and Scotland; Ireland. Common.

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- 25b** Front angles of pronotum very slightly protruding forwards (viewed from directly above the midpoint of the pronotum, the front edge is almost straight). Averaging smaller: 4.6 - 6.5 mm.

Amara lucida

Nationally Scarce (Nb). Largely coastal in England and Wales; rare in Ireland. Sand dunes and dry sandy inland habitats. Sites for this species are characterised by extensive areas of bare or sparsely-vegetated ground, a fairly loose soil, and by low-growing ruderal plants of a range of species, providing a plentiful and diverse seed resource.

- 26a** Elytral intervals very flat throughout. Elytral striae not deeper at apex. Third antennal segment entirely pale. Inner pronotal fovea marked by a distinct longitudinal groove. Pronotal base usually unpunctured or with a few punctures around the inner foveae. Pore-puncture inside pronotal hind-angle closer to side margin (cf. *ovata* and *similata* (7b and 7c)). [6.2 - 8.8 mm.]

*Amara aenea*

The commonest species of *Amara* in southern Britain, where it is widespread in association with weeds on bare or disturbed ground. Patchy and largely coastal in northern England and Scotland; also Ireland.

- 26b** Elytral intervals quite flat but becoming slightly convex towards the apex, where the elytral striae are more deeply impressed. Third antennal segment almost always darkened to some extent (*convexior* and *communis*) or entirely pale (*nitida*). Inner pronotal fovea never marked by such a deep, distinct longitudinal groove, and usually obscured by extensive puncturation. Pore-puncture inside pronotal hind-angle further from side margin (cf. *montivaga* and *nitida* (7a and 7d)).



- 27a** Third antennal segment entirely pale. Front angles of pronotum more rounded and protruding forwards a little less (viewed from directly above the midpoint of the pronotum). Pronotal base usually with weaker and less extensive puncturation, sometimes unpunctured.

Amara nitida

See 7d.

- 27b** Third antennal segment almost always darkened to some extent. Front angles of pronotum more angular and protruding forwards a little further (view from directly above the midpoint of the pronotum). Pronotal base with more distinct and more extensive puncturation. [6 - 8.2 mm.]

28

- 28a** Marginal row of elytral punctures more or less continuous. Male: apex of aedeagus with a slender apical portion, parallel-sided or slightly constricted.

Amara convexior



Common. England and Wales, especially the south-east. Rare in Ireland. Where the range overlaps with *communis*, it is *convexior* which is most likely to be found in dry, early-successional sites, though it is not unusual to find the two species together.

- 28b** Marginal row of elytral punctures interrupted, with an unpunctured gap in the middle. Male: aedeagus tapering gradually to the apex.

Amara communis



Common. Widespread in Britain and Ireland. A generalist species which can be found in a wide range of open habitats but often found in damp grasslands or closed, matted swards in which few other *Amara* live.

Species accounts

These species accounts are presented in the order in which the species key out. They give new English names to the species, and explain the etymology of these names where necessary, and discuss diagnostic features in comparison to similar species. They are followed by whole-insect dorsal photographs of set specimens of all species (except *cursitans*).

Amara plebeja**Lesser Trident Sunshiner**

Of similar size and shape to *aenea*, *familiaris* and other less common *Amara*. The strongly contrasting leg colouration (black femora, reddish tibiae, black tarsi) is noticeable in the field and suggests *plebeja* though it is not in itself diagnostic (*strenua*, amongst others, has similar leg colouration). *Amara plebeja* sometimes has a greenish-metallic pronotum and more purplish metallic elytra (recalling *Agonum muelleri* though not as distinct as in that species) which is a pattern rarely, if at all, seen in other *Amara*. The three-pointed spur ('trident') on the front tibia is only present in *plebeja* and *strenua*.

Amara strenua**Great Trident Sunshiner**

Easily distinguished from all but *plebeja* on the three-pointed spur of the front tibia. Other differences from *plebeja* include more strongly punctate elytral striae, less protruding pronotal front-angles and elytral intervals more convex apically.

Amara praetermissa**Brownfield Moonshiner**

Differs from all other species with a scutellar pore-puncture by having uniformly pale antennae and maxillary palps; and from all except *anthobia* in having uniformly pale legs. A fairly small species: 6.2 - 8.2 mm. Pronotum strikingly broad, often broader than the elytra, especially in males.

Amara anthobia**Garden Sunshiner**

Apart from the scutellar pore-punctures, *anthobia* is very similar to *familiaris* and *lucida*. The front-angles of the pronotum protrude forwards to an intermediate extent: not as strongly as on *familiaris*, and not as weakly as on *lucida*. Eyes rather more convex than *familiaris*, similar to *lucida*.

Amara eurynota**Rumple-backed Sunshiner**

The sharp linear inner pronotal fovea of *eurynota* (like *aenea*) is absent or very weakly defined on *ovata*, *similata*, *montivaga* and *nitida*. The outer pronotal fovea of *eurynota* is extremely shallow but generally more distinct than on the other four species. The elytra are the most distinctive feature of *eurynota*, though not easy to describe. As well as the features described in the key, in *eurynota*, the situation of the side-margin of the elytra near the apex (where the epipleura cross) is stronger than in the other four species. The elytral intervals of *eurynota* have a unique appearance with the 3rd, 5th and 7th intervals raised in very shallow blunt ridges, the other dorsal intervals being flatter. Because the raised intervals are not smoothly convex, if lit from one side, they appear quite sharply light on one face and dark on the other. The new English name of Rumple-backed Sunshiner is a reference to this character. The three basal antennal segments have sharper dorsal ridges than *ovata*, *similata* and *nitida*, though the ridges in *montivaga* are equally sharp, if not more so.

A specimen with no scutellar pore-punctures on either elytron has been observed - such specimens would fail to key out correctly.

Amara montivaga**Invading Sunshiner**

Most often confused with *ovata*, with which it shares the dark legs and usually unpunctured pronotum. The traditional distinction from *ovata* (and *similata*) using the position of the pore-puncture at the pronotal hind-angle is a very useful character for most individuals but it is prone to variation in all species which means some individuals fall near the borderline. The new character described here of the antennal ridges should prove useful. The jizz of *montivaga* is of a strongly convex *Amara*, with a relatively broad pronotum, sometimes broader than the elytra.

Amara ovata**Broad Dimpled Sunshiner**

Separation of *ovata* and *similata* is something that anyone studying British carabids is going to get used to doing on a frequent basis. Apart from the characters in the key, *ovata* often looks a little broader, shinier and more convex than *similata*. The pronotum especially tends to be broader and fits the width of the base of the elytra, whereas in *similata*, the base of the pronotum is often narrower than the base of the elytra.

Amara similata**Narrow Dimpled Sunshiner**

See *ovata*.

Amara nitida**Confounding Sunshiner**

About 40% of *nitida* specimens lack scutellar pore-punctures, about 20% have a scutellar pore-puncture on one side only, the remaining 40% have a scutellar pore-puncture on both sides⁵. For this reason, *nitida* is the only species in this key which keys out in two places, in both of which it is difficult to separate from its neighbouring species.

Specimens with scutellar pore-puncture. The position of the pore-puncture at the pronotal hind-angle is as in *montivaga* but the leg colour is (apparently consistently) contrasting as in *similata*.

Specimens without a scutellar pore-puncture are probably much more likely to have been overlooked in Britain, probably as *communis* or *convexior*. In which case, the true percentage of *nitida* specimens without scutellar pore-punctures would be greater than 40%. The marginal row of elytral punctures in *nitida* appears to be intermediate between *communis* and *convexior* but this is based on seeing only a few specimens.

Amara equestris**Bristle-chested Sunshiner**

The setae on the prosternal process (the "bristle-chest") is a character shared only with *quenseli*. Otherwise *equestris* resembles *apricaria/ consularis* or *fusca/ cursitans*. Like those four similarly-sized species, it has pale appendages. Like *apricaria/ consularis*, it has the outer pronotal fovea sharply delimited externally by a bulging ridge but unlike those, it has smoothly convex sides to the pronotum with no

⁵ I have now seen a sample of 19 *nitida* pitfalled at Newborough Warren by Dick Loxton in 2015 in which there was 1 specimen with no scutellar pore-punctures, 5 with a pore-puncture on one side only, and 13 with a pore-puncture on both sides.

protruding hind-angle. A characteristic feature of *equestris* is a particularly thick beaded side-margin to the pronotum, which is contrastingly paler/translucent, especially towards the base.

Amara quenseli

Boreal Moonshiner

Resembling a larger, darker, broader *bifrons*. *Amara quenseli* has a broader, more transverse pronotum than *bifrons*, with deeper foveae but shares the punctate pronotal base and tiny lateral protrusions at the hind-angles of that species. The elytral intervals are absolutely flat throughout, as in *aenea*. *Amara quenseli* is variable in colouration: often with legs, antennae and palps uniformly pale but all appendages can be partly darkened.

The Scottish populations belong to subspecies *quenseli sensu stricto*. A lowland subspecies *A. quenseli silvicola* occurs on sand dunes, sandy grassland and sandy river-banks as close as Belgium and the Netherlands and may yet be discovered in southern Britain.

Curtonotus alpinus

Alpine Stem-climber

Whether *C. alpinus* shares the stem-climbing behaviour of *C. aulicus* is not known. This species should be straightforward to identify using the characters in the key. It is however, a variable species in terms of colour. The antennae may be entirely dark except for the basal segment, or may have the first three segments, most of the fourth, and the last segment pale, and probably all gradations in between. Leg colour is also variable, especially the femora which can vary from all black to all reddish. The elytra are usually black but may be extensively reddish.

Curtonotus aulicus

Common Stem-climber

This is the stem-climbing species from which all three *Curtonotus* have been named "Stem-climbers". It is usually a distinctly more robust species than *convexiusculus* with more strongly protruding and more sharply-angled pronotal hind-angles. But in some individuals the differences can be quite subtle, in which case the character of the beaded sides to the pronotum will always be the clincher.

Curtonotus convexiusculus

Saltmarsh Stem-climber

Whether *C. convexiusculus* shares the stem-climbing behaviour of *C. aulicus* is not known. A slightly blacker species than *aulicus*, usually with a stronger greenish-metallic sheen to the elytra.

Amara fulva

Green-tinged Sunshiner

With specimens lined up against *apricaria* and *consularis*, this is an obviously paler and easily recognised species but the characters described in the key are rather comparative. *Amara fulva* averages the largest and broadest of the three *Bradytus* species. It shares the faintly punctate elytral striae and interrupted pronotal ridge of *consularis*.

Amara consularis

Great Brown Sunshiner

Dark brown with only a weak metallic sheen, though teneral specimens may be of a similar colour to *fulva*. The shape of the pronotum of *consularis* (less transverse,

much less sinuate at sides and with less protruding front-angles) will distinguish general individuals from *fulva*.

Amara majuscula**Predicted Sunshiner**

Rather intermediate between *consularis* and *apricaria*. The specific name *majusculus* means 'somewhat larger', presumably the describer (Chaudoir) was comparing it to *apricaria*. The arrival of this species in Britain was predicted by Carl Lindroth in a 1972 paper and his prediction came true in 2015.

Amara apricaria**Lesser Brown Sunshiner**

Dark brown with only a weak metallic sheen. The pronotum is less transverse than *consularis* and more sinuate at the sides.

Amara infima**Heather Moonshiner**

Amara (Celia) infima and *Amara (Amara s.s.) tibialis* are the two smallest *Amara* and are similar in appearance; both have small, deep, inner and outer pronotal foveae, and both usually lack scutellar striae. They are distinguished in the key on antennal colouration but *infima* is particularly prone to having slightly darkened antennae from the third or fourth segment outwards. Such specimens can be distinguished from *tibialis* by their shorter antennae with near-quadrate segments, blackish-brown and only faintly metallic body (black and strongly metallic in *tibialis*), and distinctly punctate pronotal base around the inner fovea and from there to the hind-angle (impunctate or with vague punctures around the inner fovea in *tibialis*).

Amara bifrons**Pale Moonshiner**

The palest *Amara*. The base of the pronotum is distinctly punctate all the way across, though with fewer punctures medially in some specimens. The keys by Lindroth (1974) and Luff (2007) describe *fusca* and *cursitans* as having less extensive puncturation on the base of the pronotum. However, British specimens of *fusca* are rather variable in this respect and although the puncturation is finer, it is commonly as extensive as *bifrons*.

Amara fusca**Wormwood Moonshiner**

Of superficially similar appearance to *consularis* but differing in the narrower head (a useful field character in torchlight) and in the weakly delimited outer pronotal foveae. More closely related to *bifrons* with which it is often found by nocturnal sweeping in the autumn. It differs from *bifrons* by being larger, broader and darker. Also, the elytra of *fusca* are broader than the pronotum and more abruptly narrowed to the shoulder compared to *bifrons* (a similar difference exists between *apricaria* and *consularis*: see couplet 14).

Amara cursitans**Allen's Moonshiner**

Only one specimen seen. Most likely to be confused with *Amara fusca*; see also *Amara bifrons*.

Amara lunicollis**Mesophile Sunshiner**

Often misidentified as either *spretta* or *famelica* but those two species have clearly flatter elytral intervals in direct comparison. Distinction from the very similar *curta* is

usually straightforward on size, and there is a good additional character for females on the number of setiferous punctures on the last abdominal tergite. The proportions of the antennal segments are rather variable but always more elongate than in *curta*. *Amara lunicollis* typically has the inner pronotal fovea marked by a distinct longitudinal streak, and the outer pronotal fovea marked by an equally distinct diagonal streak at about 45° to the pronotal base.

Amara curta**Limestone Sunshiner**

As well as the characters in the key, *curta* differs from *lunicollis* in having a relatively small pronotum, less elongate body and shorter legs. The pronotal foveae of *curta* are similar to *lunicollis* but generally much less well marked. There are two preapical punctures on the 7th elytral stria, compared to three in *lunicollis* but these punctures are difficult to see.

Amara spreta**Kentish Sunshiner**

Very similar to *famelica* except for the characters described in the key: see that species for further distinguishing characters.

Amara famelica**Early Sunshiner**

Very similar to *spretta*. Apart from the characters in the key, *famelica* differs in having the body a little more elongate and more convex. The pronotal base of *famelica* is often unpunctured whereas *spretta* always has some punctures, at least around the inner foveae.

Amara tibialis**Ballpoint Sunshiner**

The smallest *Amara*, only really confusable with the other two very small species: *infima* and *lucida*. All three tend to show weak scutellar striae, and in *tibialis* and *infima*, the scutellar striae may be absent. The small, deep, rather round outer pronotal fovea of *tibialis* (looking like they have been poked with a ballpoint pen) are quite characteristic (though *infima* is similar). See *infima* for further distinguishing characters.

Amara familiaris**Red-legged Sunshiner**

The pale legs of *familiaris*, *lucida* and *anthobia* are particularly obvious when viewed from the underside. See those two species for further distinctions.

Amara lucida**Dune Sunshiner**

Very similar to *familiaris*. As well as the characters in the key, *lucida* has more convex eyes and a greater tendency for the scutellar striae to be weakly marked. Males with front tarsi more weakly expanded (more similar to females).

Amara aenea**Streak Sunshiner**

It is regrettable that the commonest *Amara* is not a more distinctive species. The very flat elytral intervals (particularly at the apex) are shared only with *spretta* and *famelica* (and are also very similar in *eurynota* though that species has the 3rd, 5th and 7th intervals raised in very shallow blunt ridges). But although the very flat elytral intervals is a good character when comparing directly to specimens with more convex elytral intervals, it can be difficult to judge on lone specimens. Note also that

on very rare occasions, *aenea* specimens may be found with convex intervals; I have seen two such specimens. The distinct longitudinal groove of the inner pronotal fovea (the 'streak' of the English name) on an unpunctured background is a useful diagnostic character with experience. On extremely rare occasions, *aenea* may have a scutellar pore-puncture on both elytra (1 specimen seen) - such specimens would not key out correctly.

Amara convexior

Continuous Sunshiner

Very similar to *communis* and the continuous row of marginal elytral punctures is probably the only useful identification feature without dissection. The body of *convexior* does tend to be more convex in side view than *communis* but this is too subtle to be much use in identification.

Amara communis

Interrupted Sunshiner

See *convexior*.

Acknowledgements

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Amara plebeja Lesser Trident Sunshiner



Amara strenua Great Trident Sunshiner



Amara praetermissa Brownfield Moonshiner



***Amara anthobia* Garden Sunshiner**



***Amara eurynota* Rurple-backed Sunshiner**



***Amara montivaga* Invading Sunshiner**



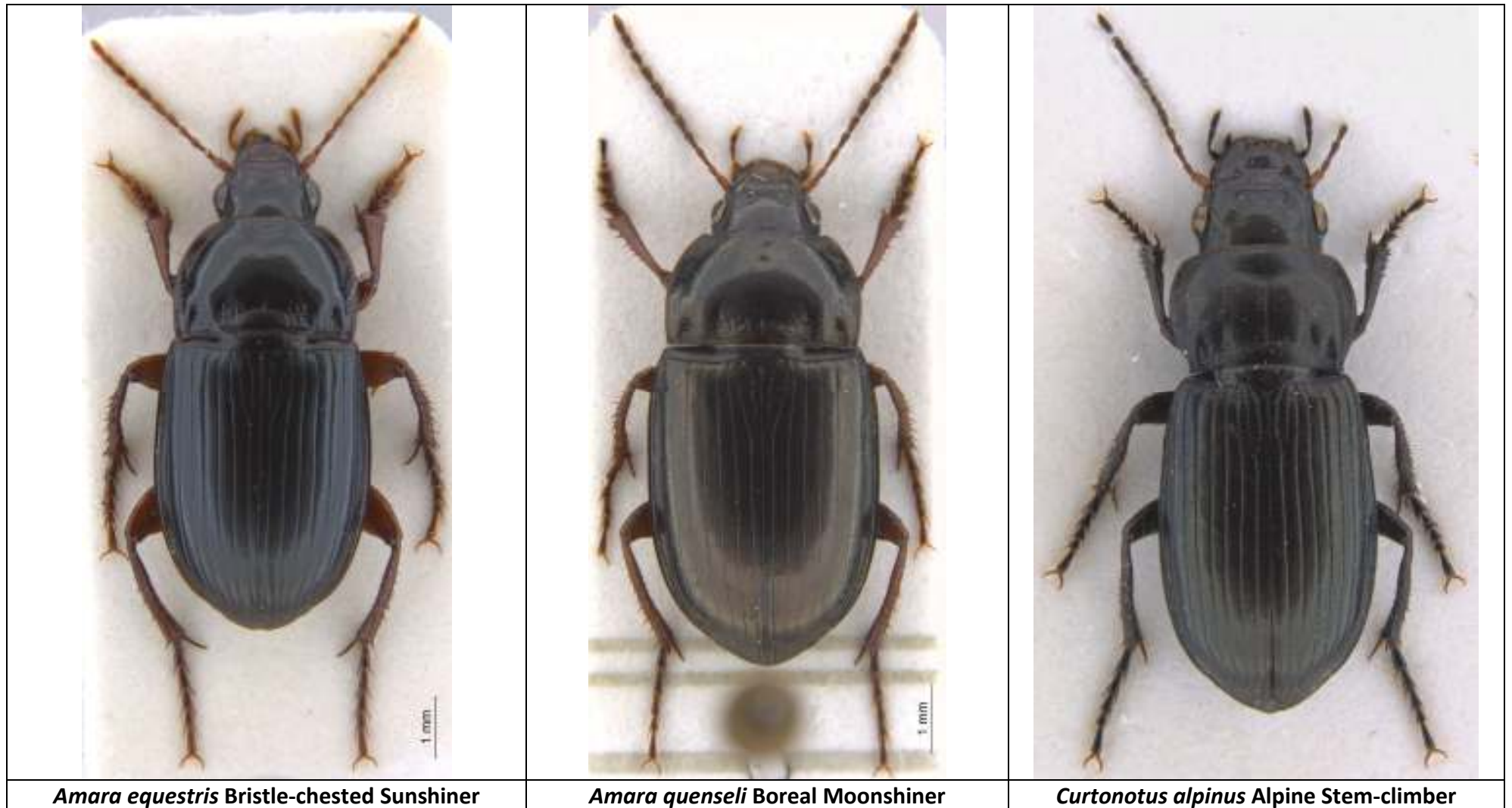
***Amara ovata* Broad Dimpled Sunshiner**



***Amara similata* Narrow Dimpled Sunshiner**



***Amara nitida* Confounding Sunshiner**





Curtonotus aulicus Common Stem-climber



Curtonotus convexiusculus Saltmarsh Stem-climber



Amara fulva Green-tinged Sunshiner



Amara consularis Great Brown Sunshiner



Amara majuscula Predicted Sunshiner



Amara apricaria Lesser Brown Sunshiner



***Amara infima* Heather Moonshiner**



***Amara bifrons* Pale Moonshiner**



***Amara fusca* Wormwood Moonshiner**

[Can you provide a photograph of *cursitans*, or better still a specimen?]



***Amara cursitans* Allen's Moonshiner**

***Amara lunicollis* Mesophile Sunshiner**

***Amara curta* Limestone Sunshiner**



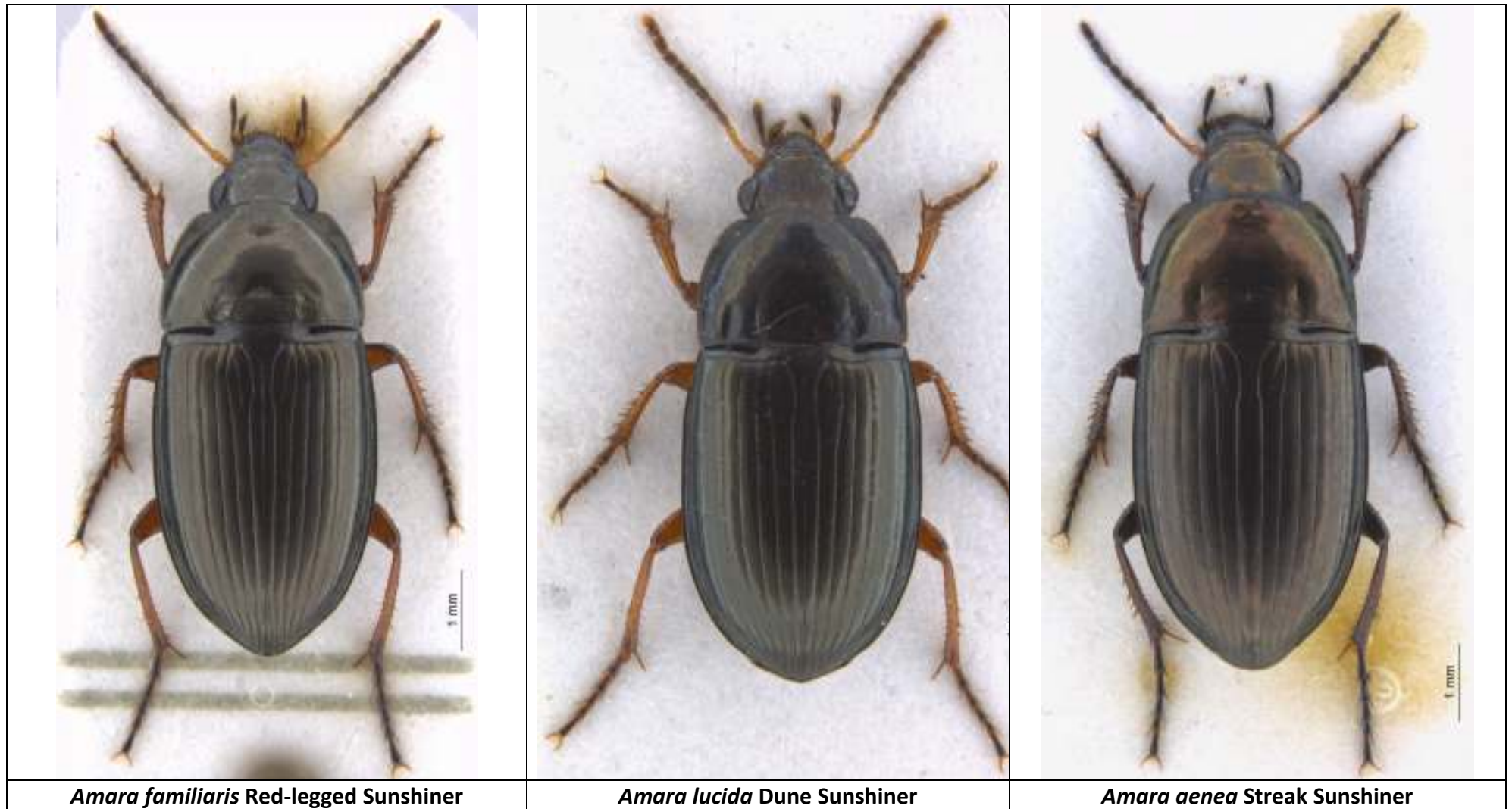
***Amara spreta* Kentish Sunshiner**



***Amara famelica* Early Sunshiner**



***Amara tibialis* Ballpoint Sunshiner**





***Amara convexior* Continuous Sunshiner**



***Amara communis* Interrupted Sunshiner**