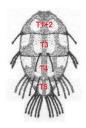
Genus Sarcophaga

Key to UK species adapted and updated from van Emden (1954) Handbooks for the Identification of British Insects Vol X, Part 4(a), Diptera Cyclorrhapha Calyptrata (1)

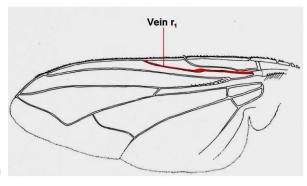
Since the publication, various species have changed their names and three further species have been added to the British list. *Sarcophaga compactilobata* Wyatt and *Sarcophaga portschinskyi* (Rohdendorf) were both added by Wyatt (1991). *Sarcophaga discifera* has been added to the British list but is only recorded from Ireland. *Sarcophaga carnaria* has been revised and split into two species.

Note on the nomenclature of the tergites.

The tergites are parts of the segments of the abdomen visible from above. The first and second tergites are fused together. In the original paper this first segment was referred to as the "first tergite". This has been changed here to T1+2 and subsequent tergites becoming a number one more than they were in the original. The four large tergites are thus T1+2, T3, T4 and T5. In females T6 which appears to protrude a little below T5 is actually two tergites fused together and is referred to here as T6+7. In males there are two small segments visible beyond T5 and these are called the first and second genital segments.



Marginals are bristles towards the middle of the segment on the hind edge. They are best seen from the side.



Vein r₁ bare on the dorsal surface. Postsutural dorsocentrals three or more.<u>6</u>

2	Genital segments to a large extent orange, although the first genital segment in males is largely dark brownish-grey to black, glossy, with a small dorsal patch of dusting and strong marginal setae. Female: T6+7 orange, with a double row of marginals the more distal (interior) ones finer
	Genital segments more or less wholly dark brownish-grey to black4

3 Male: hind femora with strong anteroventral setae, which are as thick as the preapical one, in addition to the fine long hairs. Dusted spot of first genital segment inconspicuous, small and longer than wide.



Female: T6+7 quite soft or membranous on the dorsal median line, the apical opening therefore somewhat spindle shaped and angular at dorsal median line. Setulae on vein r₁ present or absent. Length 8-10 mm.

..... Sarcophaga vagans

Generally distributed and common in England; woodland and waste ground. Here termed S frenata

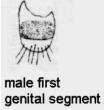
Male: hind femora with weak or indistinct anteroventral setae, apart from the preapical, which is twice as thick. Dusted spot of first genital segment large, wider than long.



Female: T6+7 sclerotised on the dorsal median line, apical opening inverted drop shaped or subtriangular, truncate or broadly rounded at dorsal median line. Length 5-10 mm.

...... Sarcophaga haemorrhoa

Chalk wastes, sea cliffs, woods and heaths; common in England south of Lincolnshire, and in Wales. Parasite of the snail *Helix hortensis* Müll



Here termed *S setipennis* Rondani. Sea cliffs and grassy wastes on chalk; common in England from Lancashire southwards. Parasitic on *Helix acuta* Müll (IF male has the first genital segment shining with a rather broad dusted hind margin and without marginal setae and frons less than a sixth of the width of the head OR female has T6+7 as in *anaces* but the shifting pattern of abdomen consists of longitudinal spots, see *sexpunctata*, which may or may not have a few setulae on vein r₁)

Male: apical scutellars absent. First genital segment with a median spot of dust on the posterior half.
Female: abdominal segments each with three black stripes; these are separated by a pair of dusted brownish bronze to grey stripes which almost reach the hind margins of the segments. Abdomen less broad and more convex. Length 4.5-8.5 mm.
Sarcophaga depressifrons Zetterstedt

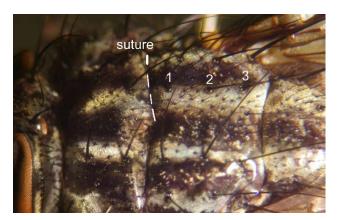
A scarce species associated with limestone; South Wales and England south of Shropshire.

Male: apical scutellars strong, about as long as the scutellum. First genital segment without dust except along the extreme hind margin behind the setae (viewed from below appearing as a thin brownish-grey band along the hind margin.

Female: abdominal segments largely black, the pale dusted paramedian and dorsolateral stripes distinct only near the front margin of each segment. Abdomen broader and more flattened. Length 4-8.5 mm.

.....Sarcophaga dissimilis

Woodland and waste ground, south of Yorkshire.

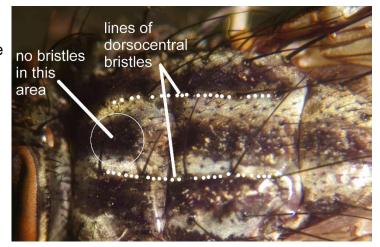


7 Several pairs of distinct presutural acrostichals present. T3 with strong marginals. Genital segments black. Hind femur always with a number of well-developed anteroventral setae in addition and similar to the preapical and in male in addition to any long hairs.

Male: first genital segment without outstanding setae.

Female: T6+7 of vagans-type (see couplet 3a).8

No distinct presutural acrostichals among the hairs, though one pair of hairs on the anterior half of the presutural part of the thorax may be somewhat stronger.10



Prescutellars strong and long. Abdominal hairs long and fine, largely a third the length of the segment, erect in the male.

Male: frons less than a sixth of the width of the head; apical scutellars present, decussate; first genital segment shining on the anterior half, with a broad dusted hind margin.

Female: shifting pattern of abdomen consisting of longitudinal spots, the posterior half of each of which does not contrast strongly with the anterior half, and which are separated by a complete black stripe along the middle of each lateral half of the segments. Length 5.5-9 mm.

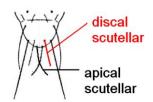
..... Sarcophaga sexpunctata

England from Herefordshire and Lincolnshire southwards; parasite in egg cocoon of *Epeira cornuta* Koch and abroad on locusts

9	Male: apical crossed scutellars present in addition to the
	discal scutellars. End process of penis not lengthened.
	Length 4-8 mm.

......Sarcophaga nigriventris Meigen

Chalk waste ground and woodland; common. Parasite on various snails and also reared from locust and some beetles





Male: apical scutellars absent (but discal scutellars are present, slightly in front of hind margin and not crossing). End process of penis lengthened. Length 4-8 mm.

.......... Sarcophaga villeneuvei Böttcher

Rare marshland species recorded from scattered localities in southern England. The only post-1960 records are from Carmarthenshire, Chew Valley Lake and Flordon Common, Norfolk. Van Emden gave a flight period of June to August, but the Norfolk specimen was caught in late April.



penis

T3 without distinct erect marginals.15 Marginals are bristles towards the back of the tergite in the central part, not those that are on the lateral surface of the abdomen



11 Front surface of middle femora with an oblong patch of whitish to brown golden hair-scales lying on the surface on the apical two fifths.

Male: frons almost a quarter the width of the head. First genital segment without dusting and glossy without distinct marginal setae.

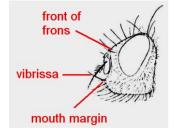
Female: frons almost two-fifths the width of the head. T6+7 thinly dusted and rather glossy, of the vagans-type (couplet 3a). Length 4-9 mm.



............Sarcophaga sinuata Meigen

Scarce species of marshy areas; records in Wales and from Cheshire and East Anglia southwards in England. Male recorded from water trap at Kennexstone Farm, Llangennith, Glamorgan, SS447917, 24th June, 1992.

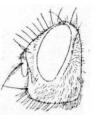
12 Mouth margin slightly projecting between the vibrissae, somewhat more projecting than the anterior extremity of the frons. Vibrissae inserted slightly above the mouth margin. Dusting grey tinged with coppery-brown. Abdomen elongate, even in the female.



Male: frons more than a quarter of the head width (about 0.27). First genital segment without appreciable dusting but with conspicuous marginal setae. Hind tibiae without

long anteroventral hairs (though with a strong anteroventral setae and a few short anteroventral setulae).

Uncommon species of chalk grassland; South Wales, England south of Derbyshire



13 Epistoma hardly wider than the parafacialia, facial ridges strongly curved; presutural acrostichals often present.

Male: middle femora with some strong posteroventral setae on the basal half and a comb of short strong posteroventral setulae at the apex,

these setulae much shorter than the width of the femur. Hind tibiae with only 3-5 long anteroventrals near the middle as well as the strong anteroventral, and a moderate number of long posteroventral setulose hairs.

parafacial

Female: the spot of pale reflections just below the descending frontal setae broadly V-shaped, much wider than high. Frons not guite a third of the width of the head. Length 7-10 mm.

.......... **Sarcophaga agnata** Rondani

Uncommon species in woodland, from Lancashire southwards. Parasitic on Helix aspersa Müll

Epistoma considerably wider than the parafacialia, facial ridges only moderately curved.

Male: mid femur without strong posteroventral setae, setulose posteroventral hairs near the apex as long as the width of the femur or long. Hind tibia with long setulose anteroventral hairs over half its length or more and with dense very long setulose posteroventral hairs.

Female: the spot of pale reflections just below the descending frontal setae bullet shaped, not or hardly wider than high. T6+7 of vagans-type (see couplet 3a).14



14 Male: hind femora with the anteroventral and posteroventral setae conspicuously differentiated and very long, many much longer than the width of the femur, forming a complete row. Superior forceps with the outer margins (in posterior or ventral view) very strongly converging from the base to the middle, apical half glossy with few and small punctures.

Female: marginal setae of T6+7 hardly one third of the thickness of those of the T5. Length 5-9 mm.

.......... Sarcophaga crassimargo Pandellé

Common species of hedges and marshes, generally distributed





Male: hind femora with the anteroventral and posteroventral setae indistinct among the hairs, especially on the basal half where only one or two are longer than the width of the femur. Superior forceps broad and stout, everywhere strongly punctured and not very shining.

Female: marginal setae of T6+7 only slightly weaker than those of T5. Length 6.5-11 mm.

.......... Sarcophaga rosellei Böttcher

A scarce species of woodlands and gardens, southern half of England and Wales; also recorded from Perthshire.







Second genital segment of male and T6+7 of female red, first genital segment of male with marginal setae. Head at least as long at the mouth margin as at the lunule. Male: mid femora without a comb of stout short setae at the apex.20

16 Scutellum without cruciate apicals in both sexes and without or with small discals in both sexes. Head as long (male) or slightly longer (female) at the mouth margin than at the lunule. Length 3-6(-8) mm.

Male: first genital segment almost twice as long as wide, glossy with a small dusted apical spot and with long but not very strong marginals. Hind femur without distinct anteroventral setae. Frons one fifth the width of the head.



male first genital segment

Female: T6+7 with very thin and inconspicuous dusting. Frons a third the width of the head.

...... Sarcophaga pumila Meigen

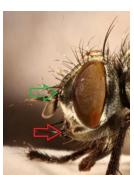
Chalk grassland in the southern half of England and Wales and from northern Scotland

Scutellum with the central pair of bristles crossing one another in the male, and with long discals (red arrows). Head distinctly shorter at the mouth margin (red arrow) than at the lunule (green arrow). Length 5.8-13 mm.

Male: first genital segment only slightly longer than wide, its dorsal surface completely dusted (except for the basal depression) or completely undusted and glossy (except for a narrow apical margin behind the marginal setae).

Female: T6+7 conspicuously dusted, not markedly less than the preceding tergites.17





17	Male: first genital segment dusted and without black
	marginal bristles but with pale brown hairs.
	Female: frons just over one third the width of the head (up to
	0.36)18
	,



Male: first genital segment with conspicuous marginal setae.

Female: frons either two-fifths or slightly less than a third of the width of the head.

18 Male: hind femora without anteroventral setae but with dense long hairs on the ventral surfaces. Middle femora densely setulose on the apical part of the posteroventral surface, without a comb of stout short pointed setae. Middle tibiae villous like the hind one.

Female: marginal row of T6+7 consisting of strong and fine setae, the strong ones equal to those of the outer row. Middle femora with a long bare pale ferruginous undusted streak extending over the apical half of the posterior surface above the posteroventral setae. Length 7.5-13 mm.

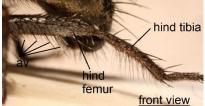


T6+7

.......... Sarcophaga hirticrus Pandellé

Common in southern counties especially around coastal cliffs.

Male: hind femora with stout anteroventral setae in addition to the hairs of the ventral surfaces. Middle femora with a comb of stout short pointed setae on the apical part of the posteroventral surface. Middle tibiae with short hair only; hind tibiae with sparse long hairs.



Female: marginal row of T6+7 consisting of fine setae of very uneven length, but all of them very much thinner than the setae of the outer row. The bare undusted streak on the posterior surface of the middle femur fuscous black, restricted to less than the middle third and inconspicuous. Length 5.8-13 mm.



T6+7

.......... Sarcophaga incisilobata Pandellé

A common generally distributed species. Larvae in droppings

19 Frons of normal width, in male one-fifth of the width of the head, in female slightly less than a third of the width.

Male: first genital segment with quite conspicuous grey dusting. Anteroventral setae of hind femora long and fine, more or less indistinct among the long hairs, especially indistinct on the basal half.

Female: setae at margin of T6+7 hardly half as thick and long as the marginals of T5; T6+7 of normal shape. Length 7.5-11 mm.

.......... Sarcophaga subulata Pandellé

Scattered records from the southern half of England

Frons unusually broad, in the male more than a quarter (0.26-0.29) and in female two-fifths of the width of the head.

Male: first genital segment glossy, undusted but for a narrow hind margin. Anteroventral setae of hind femora short and strong, conspicuous among the long hairs, even on the basal half.

Female: setae at the hind margin of T6+7 hardly thinner and shorter than the marginals of the fourth; T6+7 laterally compressed, the dorsal part with an oblong black vertical pit-like median impression, which makes the anal opening appear to lie on the dorsal surface. Length 6.5-12.5 mm.

.......... Sarcophaga melanura Meigen

Generally distributed through the UK; larvae in decaying organic matter, sometimes parasitic on snails, insects, birds or mammals.

20 Dusting yellowish to brownish grey, rather dense, the fly therefore appearing cinereous grey. Male: first genital segment with a large transverse spot of grey dust on the posterior third. Female: marginal setae of T6+7 half as thick and two thirds as long as the marginals of the fourth, separated from each other by 2-3 times their own width. Length 7-10 mm. Sarcophaga arcipes Pandellé Few records from Southern England; chalk areas Dust silver grey and rather thin, the fly appearing blackish grey. Male: first genital segment with at most a small longitudinal dot of dusting, otherwise glossy fuscous black. Female: marginal setae of T6+7 almost as thick as those of the fourth, very closely placed, separated from each other by hardly their own width. Length 8.5-13 mm. Sarcophaga vicina Macquart Very few records (Scotland and Gloucestershire).

21	Second genital segment of male and T6+7 of female <i>completely</i> red. T3 without marginals. Male: mid femur with a posteroventral apical comb of short stout pointed setae; hind femur with distinct anteroventral setae among the long hairs.
	Note that there may be an orange membrane between the second genital segment and the cerci; if this is the case then follow the second lead.
	Genital segments black (at least towards the base), or if not, then with marginals on T3. Female: T6+7 of <i>vagans</i> -type (see <u>couplet 3a</u>)24

22 Prescutellar acrostichals absent. Anterior postsutural dorsocentrals weak.

Male: first genital segment wholly dusted except for the basal depression, with strong marginal setae. Superior forceps at the base of the hind (and median) margin with a triangular excision.

Female: dorsal half or third of T6+7 undusted and glossy, of the *vagans*-type (see couplet 3a), sixth and seventh sternites very broadly exposed, red, sixth broadly embossed before the apex, apical margin on either side with 2-3 setae, those two groups separated by a wide space, seventh sternite visible only as a narrow seam. Length 8-14 mm.

........... Sarcophaga africa Wiedemann

Widely scattered in England; larvae in decaying organic matter, including dead animals, sometimes parasitic, even in man, causing myiasis

Prescutellars present and well developed.

Male: first genital segment either only partly dusted and with small marginals, or wholly dusted and without marginals. Superior forceps without a triangular excision at the base.

Female: T6+7 wholly dusted, though the dust is conspicuous in certain views only; sixth sternite red and with a knob shaped tubercle at the base, or fuscous and plane and the seventh longer and distinct, with a prominent median tubercle.

23 Anterior postsutural dorsocentrals very small and tending to be indistinct.

Male: first genital segment glossy with a broadly triangular dusted spot on the posterior half or third, and with small but distinct marginal setae.

Female: T6+7 angular in posterior view as in vagans (see couplet 3a), though not membranous on the dorsal median line; sixth sternite red with a knob like median tubercle on the basal half. Length 7-13 mm.

Sarcophaga argyrostoma Robineau-Desvoidy

Scattered records from southern and central England. On decomposing animals, including snails and

Anterior postsutural dorsocentrals rather long and conspicuous.

locusts

Male: first genital segment wholly dusted, except for the basal depression, and without marginal setae.

Recorded from Norfolk coast; in decaying organic matter, including dead animals, sometimes parasitic in snails, lepidopterans, orthopterans etc.

T3 normally with strong marginals. Four strong postsutural dorsocentrals but sometimes the *second* is weaker.

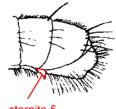
Male: first genital segment with marginal setae.

Male: first genital segment with marginal setae, conspicuously dusted; second genital segment slightly but distinctly flattened on the disc. Hair of ventral and lateral surfaces of abdomen very dense and long, largely about as long as the greatest diameter of the hind femur, tips conspicuously wavy.
Female: T6+7 almost as long as T5, strongly protruding and laterally compressed; fifth and sixth sternites very broadly exposed, fifth half as wide again at the apex as the fourth, the sixth trapezoidal. Dusting not very dense, therefore a rather blackish species. Anterior postsutural dorsocentrals rather strong. Length 9-15 mm.
Sarcophaga caerulescens Zetterstedt
Generally distributed in England with scattered records from the rest of the UK. Woodlands and marshy

Generally distributed in England with scattered records from the rest of the UK. Woodlands and marshy areas. Has been bred from *Lymantria monacha* Linn (Notodontidae, Lepidoptera)

Male: first genital segment without marginal setae; second genital segment evenly convex on disc. Ventral and lateral surfaces of abdomen with normal hair which is largely shorter and not or hardly wavy at apices.

26 Male: median part of fifth sternite gradually raised from base to apex, so that in lateral view it forms a large triangular glossy tooth. Apical fifth or sixth of mid femora with curved half-erect setulae only on the posteroventral surface, but fourth, fifth with about 4-6 not very closely set short pointed comb-setae. Hind femur with strong anteroventral setae on the apical three fifths, these forming as a rule, a double or triple row at middle of femur or are somewhat more ventral in position at this part.



sternite 5

Female: marginal setae of ventral three fifths of T6+7 hair-like, not much longer than the setulose hairs in front of them. Anterior postsutural dorsocentrals rather strong. Length 7.5-13 mm.

.......... Sarcophaga aratrix Pandellé

Kent to Cornwall to Glamorgan to Herefordshire to Norfolk; May to September; woods and marshes. Bred from *Lymantria monacha* and *Prionus coriarius*.

Male: median part of fourth sternite not forming a tooth-like elevation.

Female: marginal setae of T6+7 gradually becoming somewhat finer on ventral half or so, but always conspicuously stronger than the setulose hairs in front of them.

Pair of presutural acrostichals clearly differentiated and fairly strong
No clearly differentiated pair of presutural acrostichals present28

28 Male: lobes of fourth sternite with the ventral edge gradually dilated to base and on basal half or third of this with a well-defined pad of evenly short stubby thickly set setulae, the edge otherwise with the normal erect short setae which are mainly directed towards the middle. Long hairs of hind tibia absent from the anteroventral surface and not very dense and moderately long on the posteroventral surface. Penis without a blunt, half soft terminal section beyond the strap-like processes.

Female: marginal setae of T6+7 all very fine, long and rather widely spaced, separated from each other by 4-5 times their own diameter, halves of T6+7 very broadly separated dorsally. Sixth sternite with a pair of large roundish glossy tubercles near base. Anterior postsutural dorsocentral weak. Length 7-13 mm.

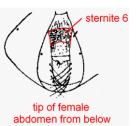


.......... Sarcophaga similis Meade

Sandy shores, recorded from coastal sites in Hampshire and Dorset; May-September.

29 Male: anteroventral surface of hind tibiae apart from the setae without any hairs which are markedly longer than greatest diameter of tibia. Posteroventral surface with a moderate number of long erect hairs. Penis with a blunt half-soft end section beyond the strap-like processes.

Female: sixth sternite (the last conspicuously sclerotised one) with some very fine hairs only in an oblique transverse row along either side of the apical margin, these hairs even smaller towards the middle, sternite entirely covered with fine whitishgrey pile. Anterior postsutural dorsocentral strong. Length 8-12.5 mm.



........... Sarcophaga teretirostris Pandellé

Common in woodland, coastal habitats and waste ground, from Kent to Cornwall to Pembrokeshire to Norfolk. April to September.

Male: anteroventral surface of hind tibiae in addition to the setae with a moderate number of long outstanding hairs, the longest of which have about twice the length of the greatest diameter of the tibia. Posteroventral surface with a large number of similar hairs; penis without a projecting blunt half-soft terminal section.

Female: sixth sternite with a transverse row of about five strong setae across the middle. Anterior postsutural dorsocentral weak. Length 9-14 mm.

.......... Sarcophaga albiceps Meigen

Quite widely distributed but not common. June-September. Bred from *Lymantria* and other Lepidoptera and from beetles of family Scarabaeidae.

30 Male: first genital segment thinly but distinctly dusted, except on basal part, hind margin densely dusted. Hair denser, finer, longer; largely with wavy tips, those on disc largely half as long as width of segment. Apical hook of superior forceps small but strongly set off and strongly curved, its tip not projecting towards body beyond level of distal half of anterior margin; parameres more or less equal. Female: 8th tergite absent. Length 8-15 mm.



........... Sarcophaga subvicina Rohdendorf

Generally distributed and very common in England; May to October.

Male: first genital segment perfectly glossy and undusted, except for the densely dusted hind margin, which is dull brownish to ferruginous). Hair shorter, less dense, only the strongest with wavy tips, those on disc largely less than a third as width of segment. Apical hook of superior forceps moderately long, its tip projecting towards body beyond level of anterior edge. Anterior parameres half as long again as posterior one and somewhat clubbed. Apical part of penis bent forward at an angle of between 120-150°.

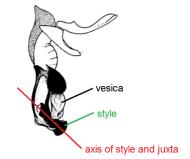
Female: 8th tergite present, visible in fresh and in relaxed dry specimens.

Length 8-16 mm.31

Male. Thorax with four postsutural dorsocentrals. A few presutural acrosctichals may be differentiated. Legs: mid femur with a complete row of anteroventral bristles and an apical row of short posteroventral bristles. Hind trochanter with numerous short stout setae ventromedially. Hind tibia with long hairs on the posterior, posteroventral and ventral surfaces. Abdomen with a pair of median marginal bristles on T3, but occasionally these may be rather weak or absent.

Female. Narrowest part of frons 0.33-0.36 of the width of the head. Fore femoral organ present although sometimes only indicated. Mid femoral organ large. Scutellum with 3 pairs of lateral bristles. Terminalia varying from black to red, most often reddish dorsally and blackish ventrally. T6 desclerotised dorsally, each half gradually narrowing medially and with long bristly hairs posterior to the marginal bristles. Lateral marginal bristles of T6 stronger than the dorsal (= median) marginals. T8 present as two sclerites, often weakly sclerotised but always distinctly setose. S7 with several bristles in the postero-lateral position. Length 8-18 mm.

31 Males. Narrowest part of frons 0.2-0.24 of the width of the head. Tip of cerci projecting beyond the ventral margin. Styles large, projecting beyond margin of ventral plates. Styles and juxta forming an angle of 120-130 degrees with the longitudinal axis of the aedeagus.



Female indistinguishable from carnaria.

...... Sarcophaga variegata

Length 6-18 mm. Predator of earthworms, e.g. *Lumbricus terrestris*. Also attracted to decaying substances and larvae have been reared from such substrates.

Male. Narrowest part of frons 0.2-0.23 of the width of the head. Tip of cerci level with ventral margin or slightly projecting beyond this. Styles large and forming an angle of 140-150 degrees with longitudinal axis of aedeagus. Vesica sclerotised and shining. ..

...... Sarcophaga carnaria

Line drawings from Pape (1987) The Sarcophagidae (Diptera) of Fennoscandia and Denmark.



Check list

africa (Wiedemann, 1824) agnata Rondani, 1860 albiceps Meigen, 1826 anaces Walker, 1849 aratrix Pandellé 1896 arcipes Pandellé, 1896 argyrostoma (Robineau-Desvoidy, 1830) caerulescens Zetterstedt, 1838 carnaria (Linnaeus, 1758) compactilobata (Wyatt, 1991) (not included) crassimargo Pandellé, 1896 depressifrons Zetterstedt, 1845 discifera Pandellé, 1896 (not included) dissimilis Meigen, 1826 filia Rondani, 1860 haemorrhoa Meigen, 1826 hirticrus Pandellé, 1896 incisilobata Pandellé, 1896 jacobsoni (Rohdendorf, 1937). melanura Meigen, 1826 nigriventris Meigen, 1826 portschinskyi (Rohdendorf, 1937) (not included) pumila Meigen, 1826 rosellei Böttcher, 1912 sexpunctata (Fabricius, 1805) similis Meade, 1876 sinuata Meigen, 1826 subulata Pandellé, 1896 subvicina Rohdendorf, 1937 teretirostris Pandellé 1896 uliginosa Kramer, 1908 vagans Meigen, 1826 variegata (Scopoli, 1763) vicina Macquart, 1835 villeneuvei Böttcher, 1912