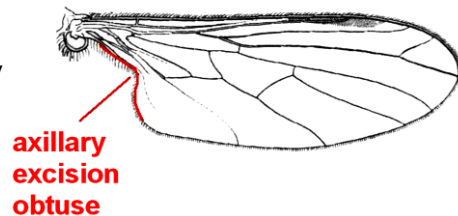


Genus *Empis*

Key to British species

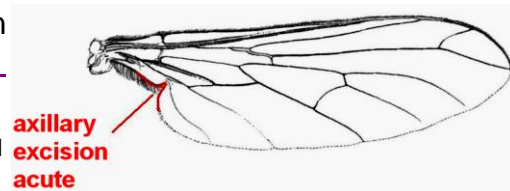
Derived from Collin (1960) by Mike Hackston
original photographs by Mike Hackston

- 1 Axillary excision of wing very obtuse (right angles or more).[2](#)
If you are in doubt and you have a specimen that is mainly orange-brown without acrostichal bristles follow this lead.



Axillary excision in wing acute (less than a right angle).[11](#)

At first sight the excision may appear to be only slightly less than a right angle but take care that you consider the actual angle of the "nick" in the wing and not the angle between the two sections of the wing. With a single exception the species in this lead are dark and have acrostichal bristles.



acrostichal bristles



Thorax from the front, head removed

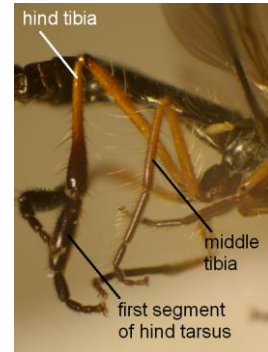


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- 2 Shining black species (top of thorax conspicuously shining, only dusted just in front of the scutellum); acrostichal bristles present. About 4 mm. Male with conspicuous long hairs on the middle leg above and below the femur and tibia and above the first segment of the tarsus; apex of hind tibia swollen; first segment of the hind tarsus swollen.

..... ***Empis (Lissempris) nigratarsis***

Collin states this species is apparently uncommon but suggests this may be due to being overlooked because of a short flight season. He lists records from the southern half of England.



Species with a substantial area of yellow or orange-brown colour, for example on the sides of the thorax and legs; acrostichal bristles absent. (Subgenus *Xanthempis*).3

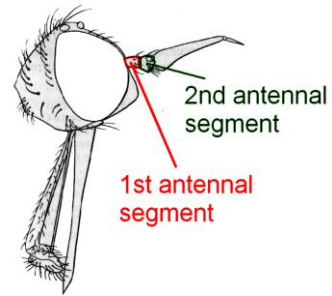


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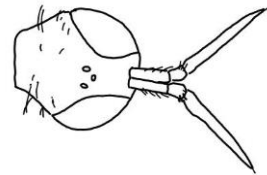
- 3 First antennal segment short, very little longer than second.

..... ***Empis (Xanthempis) scutellata***

Southern distribution; absent from Scotland. Late April to late July peaking late May



First antennal segment elongate *much* longer than second segment.[4](#)



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- 4 Thorax conspicuously striped or darkened on top. ...[5](#)



Thorax yellowish without stripes, or with a very indistinct central stripe.[9](#)



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- 5 Thorax with two dark stripes on a greyish background; all thoracic bristles very short.
..... ***Empis (Xanthempis) digramma***
Widely distributed; much commoner in the north and in Scotland.
May to June.



Thorax with one or three dark stripes.[6](#)



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6 Thorax with one narrow black stripe on a yellowish background.7

Thorax more extensively darkened (with three darker stripes which have either a reddish-brown or grey area in between.8

At this point check again the length of the 1st antennal segment. If it is only slightly longer than the 2nd and neither of the above really fit the appearance of the thorax then check *Empis scutellata*, couplet 3a.

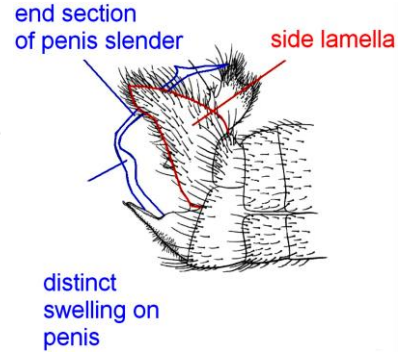


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- 7 Male genitalia with upper margin of side lamellae not concave; penis with a swelling on inner side close to the distinct bend which occurs at about the middle, the end half beyond slender. Female difficult to distinguish but usually larger and darker (7-9.5 mm.); dark pubescence on abdomen apparently more extensive; front and hind tibiae with 1-2 small but distinct bristles above; tarsi blacker.

..... ***Empis (Xanthempis) aemula***

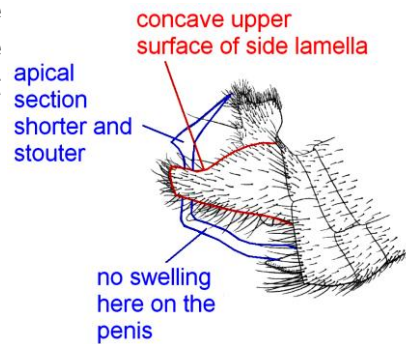
Widespread but local; more common to the north. Late April to mid August, peaking from late June to late July.



Male genitalia with the upper margin of the side lamellae concave; penis bent beyond its middle without a previous swelling and the shorter part beyond bend stouter. Female smaller (5.5-8 mm.) with front and hind tibiae with no distinct bristles above.

..... ***Empis (Xanthempis) stercorea***

Common and widely distributed species. Early May to mid August, peaking late May to early June.



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- 8 No supra alar bristle; thorax with grey areas between the darker stripes.
..... ***Empis (Xanthempis) punctata***

Widespread but commoner to the north. Late April to late July, peaking in June.

A distinct supra alar bristle present (white arrow);
thorax with reddish-yellow areas between the stripes
(take care as these areas are sometimes grey dusted
and the insect should be viewed with different
directions of light).

..... ***Empis (Xanthempis) trigramma***

Widespread and often common. Mid April to early August, peaking in
May.



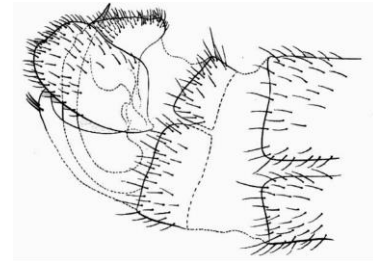
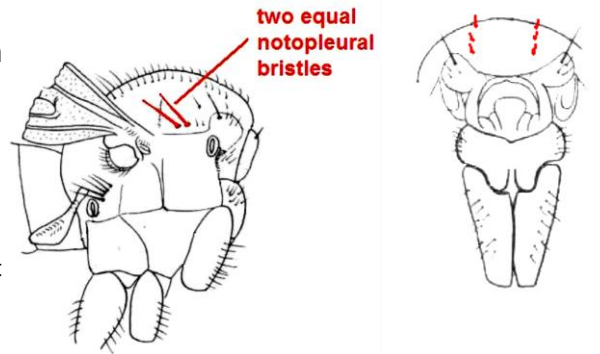
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- 9 Thorax shining, or if slightly dull then lines of dorsocentral bristles of more than one row of bristles.10

Thorax slightly dusted greyish and consequently dull; dorsocentrals in single rows; no supra alar bristle; two equally strong notopleural bristles; male hypopygium small and inconspicuous.

..... ***Empis laetabilis***

Subgenus *Xanthempis*. Rare; very few recent records, from woodland sites on limestone in Gloucestershire and Yorkshire.



- 10 No supra alar bristle; dorsocentrals in a single row. Back of head (occiput) with a darkened patch behind the ocellar triangle. More than three metapleural bristles present.

..... ***Empis (Xanthempis) concolor***

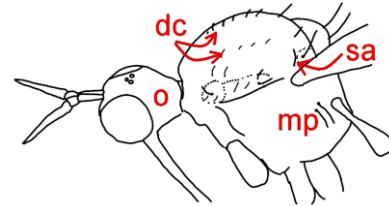
Widespread but local; June to mid August.



A supra alar bristle is present (sa); dorsocentrals in one irregular row each side (dc) in males, longer and becoming more clearly in two rows in females. Occiput (o) not darkened. 2-3 metapleural bristles (mp).

..... ***Empis (Xanthempis) lutea***

Common and widespread in England and Wales; rare in Scotland; end of May to August.

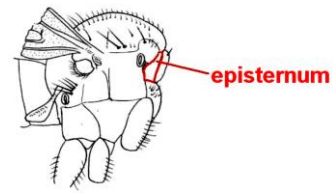


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- 11 Thorax with darker (or in some black species more shining) stripes *between* the lines of bristles.

Episterna usually bare.12

The dark thoracic stripes are persistent remaining in the same position when viewed from the front or back.



If stripes are present on the thorax, they are darker stripes along the lines of bristles. Episterna hairy. 15

The top of the thorax should be inspected with light from the front and from the rear. Darker stripes may be between the lines of bristles from one point of view and on the lines from the other.

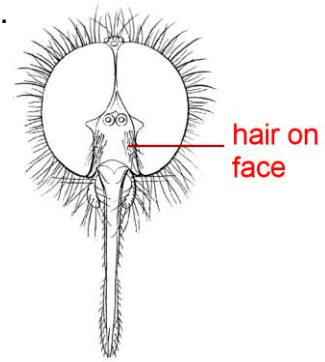


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12 Face hairy. Wings in female very broad and brown. ...

..... ***Empis (Platyptera) borealis***

Upland areas of Scotland, northern England and north Wales, usually along streams and damp areas. Mid April to late June.



Face bare. Wings in female normal.[13](#)



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- 13 Thorax brownish grey with darker brown stripes. Legs mainly reddish yellow.

..... ***Empis (Polyblepharis) opaca***

Widespread but not particularly common; open habitats like grassland, woodland edges and hedgerows. late April to early July, peaking in May to early June.

Thorax black, slightly dusted except on the shining black stripes; legs black. .

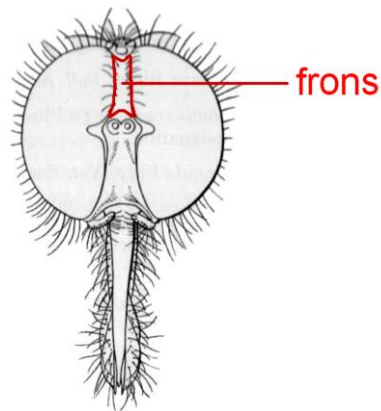
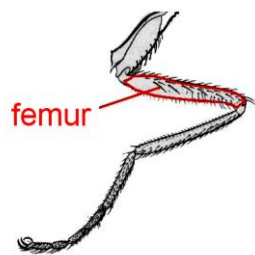
.....[14](#)



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- 14 Larger species (6-8 mm.); posterior femora with small spiny bristles beneath; frons of female polished black.
..... ***Empis (Anachrostichus) lucidus***

Smaller species (4-5 mm.); no spiny bristles beneath posterior femora; frons of female slightly dusted greyish.
..... ***Empis (Anachrostichus) verralli***

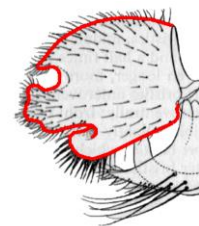
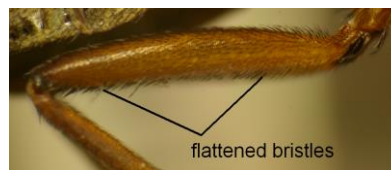
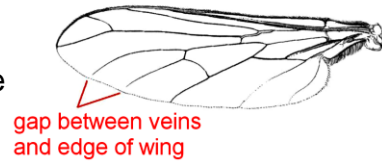


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- 15 The two upper veins from the discal cell do not reach the wing margin. Comparatively large species (7-10 mm.) with three black stripes on the thorax and the dorsocentral bristles in a single row. Male upper lamella divided into three lobes by deep clefts, the lowest lobe with black spines (best viewed ventrally). Female with flattened bristles along the front surface of the front femora and along the posteroventral surface of the hind femora (photographed).

..... ***Empis (Kritempis) livida***

The commonest species in the genus. Late April to late September, peaking in late June.



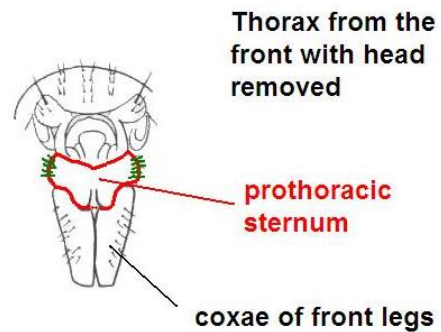
Veins extend right to the wing margin or (rarely) only the upper vein from the discal cell is abbreviated and then a much smaller species (in this case go to [couplet 23](#)). Dorsocentrals in two or more rows.16



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- 16 The whole of the prothoracic sternum is hairy. Thorax with more than two rows of dorsocentral bristles and hind femora often stout. Legs of female without pennate fringes.17

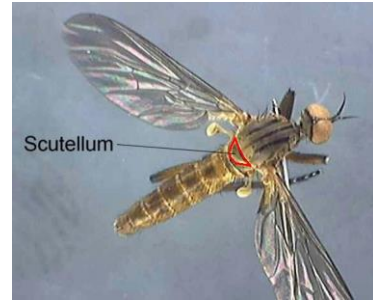
Only the sides of the prothoracic sternum are hairy. Thorax with the dorsocentrals in two rows or three irregular rows. Hind femora rarely (*grisea*) stout. Legs of female usually with pennate fringes (i.e. with flattened bristles that taper each end, looking rather feather-like. If only two scutellar bristles are present, follow this lead.21



17 Only four bristles on the scutellum; 5-6 mm.

.....***Empis (Euempis) picipes***

Most records from south eastern Britain. Prefers dry open habitats but recorded from damper places as well. Early May to early July.



More than four scutellar bristles.[18](#)



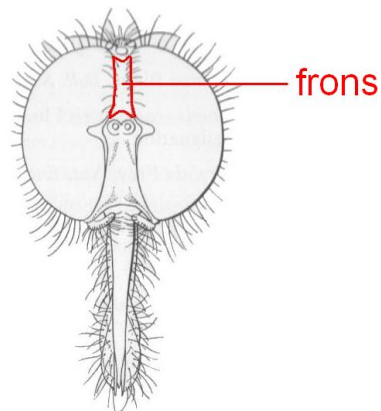
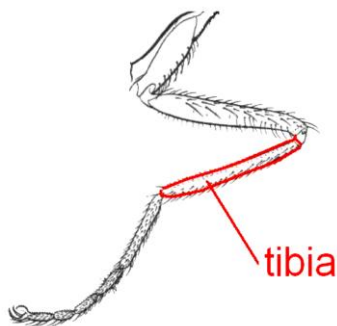
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- 18 Eyes practically touching on the frons in males; very large species (9-12 mm.) with tessellated abdomen and all tibiae with numerous strong spinose bristles.

.....***Empis (Euempis) tessellata***

One of the commonest species. Late April to late September, peaking between mid May and late June.

Eyes well separated on the frons in males; smaller species; tibiae, especially hind tibiae, with very weak bristles. [19](#)



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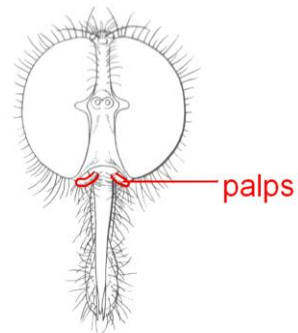
19 Palps yellow to orange-brown.[20](#)



Palps black.

.....***Empis (Pachymeria) scotica***

An upland species, recorded from Scotland, northern England, Wales and Dartmoor. Mid June to mid September.



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- 20 Male hypopygium very large and boat shaped;
abdomen of female pale hairy.

.....***Empis (Pachymeria) femorata***

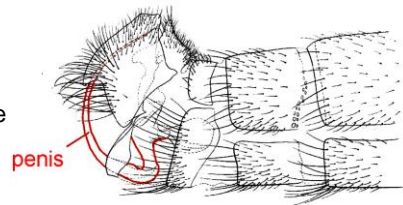
A common species in at least the southern half of England. Late
April to late June, peaking May to early June.



Male hypopygium small, penis visible at base
and at tip; female abdomen dark hairy.

.....***Empis (Pachymeria) tumida***

Lowland species with a preference for calcareous habitats. Late
June to early September.

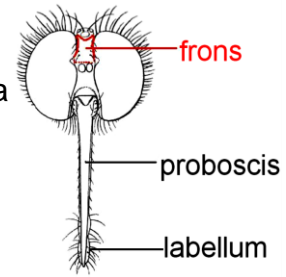


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- 21 Eyes of male well separated on the frons. Labellae of proboscis not pointed, stouter and distinctly hairy. Legs generally orange-brown. Female middle and hind femora with distinct thickened bristles along the upper and lower surfaces; hind tibiae without such bristles.

.....***Empis (Leptempis) grisea***

Widespread species. Early May to late August, peaking mid June to mid July.

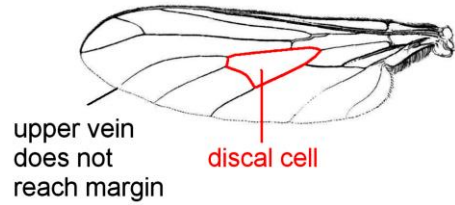


Eyes of male touching on the frons. Labellae of proboscis slender, pointed and very short hairy. Female hind tibiae seldom yellowish and often with thickened bristles.22



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- 22 Upper vein from discal cell not reaching the wing margin. (Subgenus *Coptophlebia*). [.23](#)



All veins from the discal cell reach the wing margin.[.27](#)



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23 Acrostichal bristles absent.

..... ***Empis (Coptophlebia) hyalipennis***

A northern species with most records from Yorkshire and Cumbria northwards. Late June to late August.

no central row of bristles - i.e.
acrostichals absent



Thorax from
the front,
head
removed

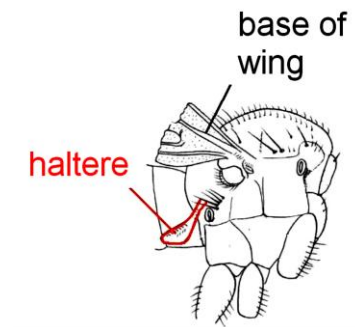
Acrostichal bristles present. [24](#)



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24 Halteres yellow.[25](#)

Halteres blackened.[26](#)

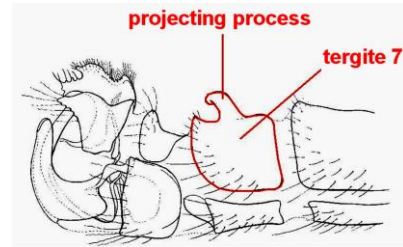


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- 25 Small, more shining black species; male abdomen without any process above near end; female legs devoid of pennation or fringes.
..... ***Empis (Coptophlebia) impennis***
A rare species found only in the south and east of England.

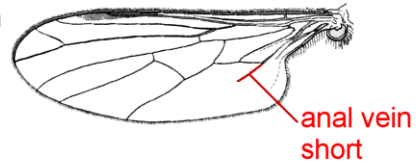
Rather larger, duller, greyer species. Male abdomen with a projecting process at the base of the 7th tergite dorsally. Female legs fringed.

..... ***Empis (Coptophlebia) albinervis***
A common southern species. Early May to mid September,
peaking late May to early June.



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- 26 Scutellum with only two apical bristles; anal vein abbreviated. Male with only 1-4 anterodorsal bristles on basal third of middle tibiae, and another at tip. Female without pennate hairs above front tibiae and basal segment of front tarsi.



..... ***Empis (Coptophlebia) vitripennis***

Widespread east of a line from Cumbria to Dorset. Late June to mid September, peaking in mid August.

Scutellum with two long and two short bristles; anal vein if faint about middle, distinct again at wing margin. Male with a row of 6-8 anterodorsal bristles on middle tibiae, apical ones longest. Female with pennate hairs above front tibiae and basal segment of front tarsi.

..... ***Empis (Coptophlebia) volucris***

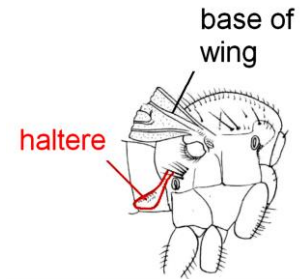
Widespread in southern England with most records south of the Bristol Channel and the Thames. Mid May to late August, peaking in early July.



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27 Halteres yellow or brownish yellow.[28](#)

Halteres black.[36](#)



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- 28 Front half of thorax rather densely clothed with soft, pale, silky hairs.
.....***Empis (Empis) decora***
A local southern species from Essex to Somerset southwards with most records from near the coast.
Late may to late June.

Front half of thorax with the usual dark bristly hairs.29



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29 Hairs about basal sides of abdomen and on sides of prothoracic sternum yellowish.[30](#)

Care must be exercised with this character, especially in the case of the common *E nigripes* which might almost be included in the next section. The colour of the hairs on prosternum appears to be the more reliable.



Hairs about basal sides of abdomen and on sides of prothoracic sternum black or brownish.[34](#)



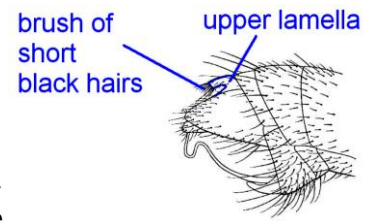
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30 Abdomen black but dulled by greyish dust.31

Abdomen black and rather shining, not dusted except on basal tergite. Upper lamellae of male genitalia with a little brush of short black hairs at the tip.

..... ***Empis limata***

Very rare; the only recent record is from hogweed flowers on a river bank in Herefordshire. Only previously known from Gloucestershire and Herefordshire about a century ago.



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- 31 Four scutellar bristles the side ones short and close to the base. Middle tibiae of female not pennate.[32](#)
The side bristles do not appear to leave scars when they fall off, so the scutellum can then seem to have two bristles. Check the combination of other characters below.

Only two scutellar bristles. Middle tibiae of female pennate.

..... ***Empis planetica***

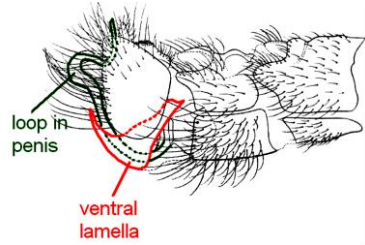
Thorax practically without stripes; metapleural fan partly of dark bristles; ventral lamella in male very small; legs black.

Widely distributed with clusters of records from Kent, Dorset and Yorkshire. It may well be an overlooked species. Early May to mid July, peaking in late May.



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- 32 Abdomen in both sexes entirely pale hairy. Penis in male with a distinctive small outward loop near the tip and ventral lamella with a distinct shining curved apex (in the intact abdomen just the shining tip is visible and the rest is hidden within the large lateral lamella).....



..... ***Empis nuntia***

A very common and well distributed species. Early April to late July peaking in mid May. The dull grey thorax has two slightly darker grey stripes between the rows of bristles when viewed from in front (both sexes). Females have the dorsal hairs on the hind femora more thickened than the males; females with conspicuous pennate hairs on the middle and hind femora and at the base of the hind tibiae.

Abdomen in both sexes partly black haired. No loop in penis.[33](#)

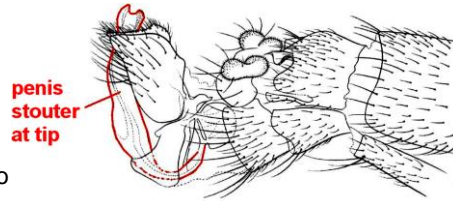


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- 33 Male penis stouter at tip. Upper metapleural bristles black.

..... ***Empis nigripes***

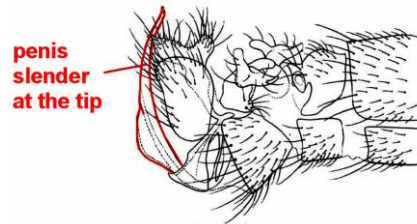
One of the commonest species occurring throughout much of England, Scotland and Wales. Early April to late July, peaking from the middle of May to early June. Collin had so few specimens of *bicuspidata* that he was unable to differentiate the females.



Penis slender at tip. Metapleural bristles all pale.

..... ***Empis bicuspidata***

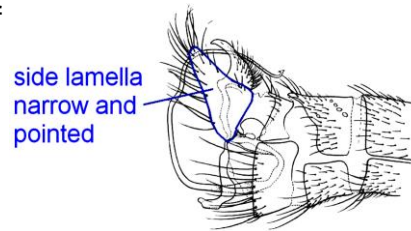
Widespread but perhaps rather local. Late April to late June.



- 34 Slightly shining black species. Side lamellae of male genitalia narrow and pointed. Female with conspicuous flattened bristles on the top and bottom surfaces of the middle and hind tibiae and femora, towards the tip of the upper surface of the front tibia and along the top surface of the basal two front tarsal segments and the basal middle tarsal segment. Proboscis exceptionally long and slender, as long as the female body from head to where the abdomen slims right down at the apex.

..... ***Empis pennipes***

All recent records are from Durham southwards. Appears to favour well wooded localities. Late April to early July, peaking in the second half of May.



Rather duller, greyer species. Side lamellae of male genitalia broader and blunter. Female hind tibiae only pennate on the basal half beneath.[35](#)

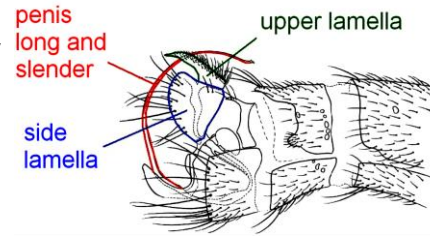


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- 35 Abdomen slightly shining in both sexes.
Upper lamellae of male genitalia considerably longer than the side lamellae; penis slender. Female with more distinct pennation above middle and hind tibiae, on the latter equally strong to tip.

..... ***Empis rufiventris***

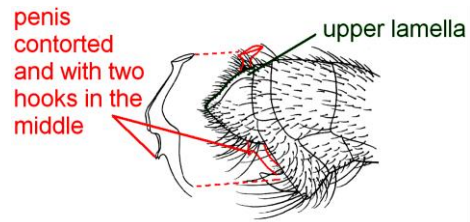
Very local species with records from the south coast to north Yorkshire and Cumbria. Many sites are calcareous. May to early June.



Abdomen duller and greyer in both sexes. Upper lamellae almost hidden; penis stout, contorted in the middle and there armed with two small hooks. Female with less distinct pennation above four posterior tibiae, that above hind tibiae weaker towards tip. Scutellum, with only two bristles; if with four see *nigripes*.

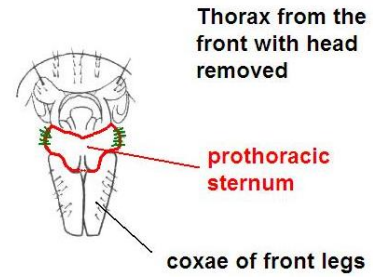
..... ***Empis woodi***

Most records are from the south east of England. Seems to favour ancient woodland but has been taken in a variety of habitats. Early April to early June, peaking from late April to early May



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- 36 Hairs about base of abdomen and on sides of prosternum, black or brownish.[37](#)
E. prodromus might almost come into this section; it has a complete anal vein and only two scutellar bristles.



Hairs about basal sides of abdomen and on sides of prosternum yellowish.[39](#)

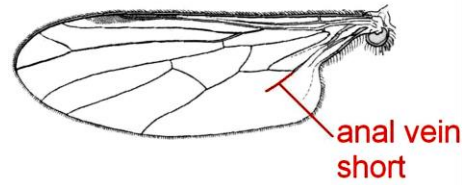


37 Anal vein complete. Scutellum with four bristles. Wings in male milk-white. ...

..... ***Empis caudatula***

Widespread and often common in England and south Wales; apparently absent from north Wales and Scotland. Late April to late July, peaking in May to early June; a few late September records.

Anal vein not reaching the margin of the wing. Scutellum usually with only two bristles. Wings not conspicuously milk-white in male.[38](#)



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- 38 Anterior dorsocentrals not so long as distance separating them from acrostichals. Male front tibiae and tarsi quite short-haired, basal segments of front tarsi somewhat spindle-shaped. Female with conspicuously pennate legs.

..... ***Empis aestiva***

A common and widely distributed species. Mid April to late September, peaking in late June to early July.

Anterior dorsocentrals longer than distance between them and acrostichals. Male front tibiae and tarsi long-haired, basal segment of front tarsi simple and bearing conspicuous terminal bristles. Female legs not pennate.

..... ***Empis praevia***

Scattered records from much of England and SE Wales but apparently absent from the English SW peninsula, and Scotland. Mid April to mid September, peaking from mid May to early June.



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- 39 More shining black, slightly smaller, species. Legs shorter haired in male with basal segment of front tarsi only slightly stouter than end of tibiae and not longer than other four segments together. Female hind femora not pennate beneath, hind tibiae stout and more distinctly fringed above.

..... ***Empis prodromus***

Rare, local species. Dry sandy heathland habitats with trees. Records from Breckland and Yorkshire. Mid May to late June.

Duller, greyer species. Legs longer haired in male with basal segment of front tarsi much stouter than end of tibiae and longer than other four segments together. Female hind femora pennate beneath, hind tibiae not so stout nor so distinctly pennate above.

..... ***Empis chioptera***

Widespread and often very common in Great Britain. Late March to early July, peaking in late May to mid June; a few September records.



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