

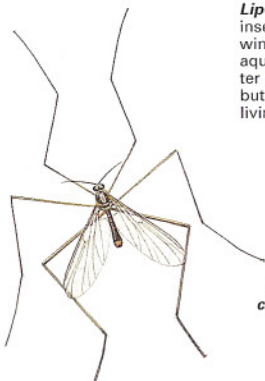


Tipula abdomen

CRANE-FLIES Tipulidae. Rather leggy flies commonly called **daddy-long-legs**. Legs readily break off when handled. Many are only mosquito-sized, but all can be recognised by the V-shaped thoracic suture and the lack of ocelli. A clear discal cell in outer half of wing, and two anal veins reaching wing margin. Larger species generally rest with wings extended: smaller species generally fold wings flat over body, and often bob up and down on their legs when at rest – hence an alternative name of bobbing gnats. Many of the smaller species form dense mating swarms. Female abdomen is pointed, for laying eggs in soil or other materials. Some females are wingless and can be seen on house walls in late autumn. Adults may lap nectar and other fluids, but do not feed much. Larvae live mainly as scavengers in soil or decaying matter, often in water.

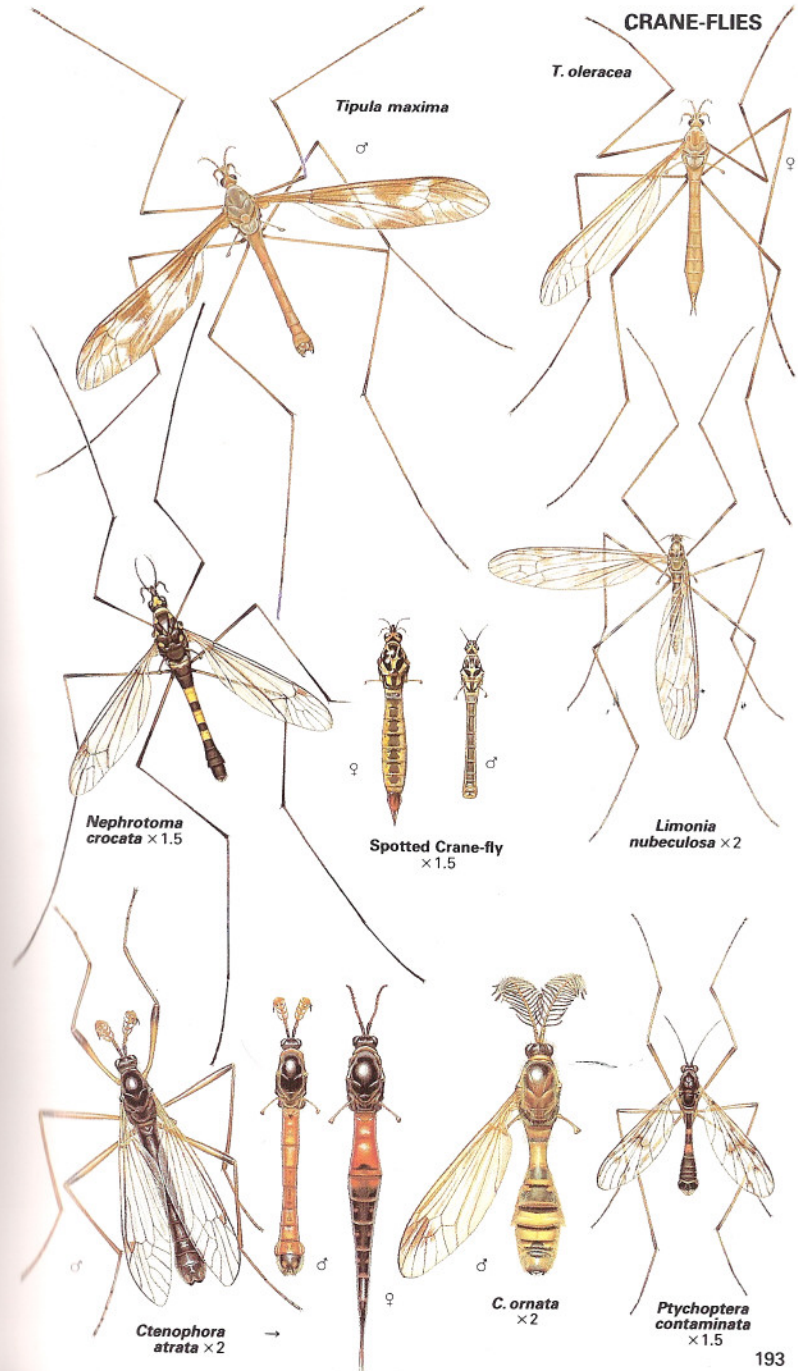
- ▲ *Tipula maxima*. One of the largest crane-flies. Like most *Tipula* species, it rests with wings at about 90° to each other. 4-8, mainly in wooded areas. ▲ *T. vittata* is smaller and has a less extensive pattern. 4-6 in damp woods.
- ▲ *T. oleracea* is one of the commonest species. The wing is brown along the front, with a brown stigma, but otherwise plain. Antennae 13-segmented, with at least the first 3 segments brick-coloured. Female wings as long as abdomen. 4-10, but most abundant 5-6. ▲ *T. paludosa* is very like *oleracea* but antennae are 14-segmented (terminal one minute) and only first 2 segments are brick-coloured. Female wings shorter than the abdomen, the latter often with rusty tinge. 4-10, but most abundant in autumn. Larvae of these two species are crop-damaging leatherjackets (p. 294).
- ▲ *Nephrotoma crocata*. Sides of thorax almost entirely black. Wings usually folded at rest. 5-8. Especially common in damp woods.
- ▲ **Spotted Crane-fly** *N. appendiculata* – illustrated here without its wings – has a very faint stigma: wing otherwise clear and shiny. 5-8, especially in cultivated areas. Larva, similar to that of *Tipula* is a common garden pest. ▲ *N. quadrifaria* is similar but has a dark stigma and dark streak below it. Both species fold wings flat over body at rest.
- ▲ *Limonia nubeculosa*. One of several species with spotted wings. Latter are folded flat at rest. Sub-costal vein runs into front margin, not into radius as in most other large crane-flies. No tibial spurs. Femur with 3 dark rings. All year, mainly in woodland.
- ▲ *Ctenophora atrata*. Antennae range from orange to black: strongly pectinate in male, toothed near tip in female. Male abdomen ranges from black to yellow, with spotted intermediate forms: female abdomen sometimes nearly all red. 4-7 in damp woods.
- ▲ *C. ornata* has female antennae toothed throughout. 5-7 in woods. Both species breed in decaying timber; *atrata*, with its tougher ovipositor, preferring harder and less rotted wood.
- ▲ *Ptychoptera contaminata* Ptychopteridae. Resembles crane-flies but thoracic suture is U-shaped. No discal cell and only one anal vein. Legs with strong tibial spurs – much more prominent than in crane-flies. Abundant in damp places 5-10. Larva (p. 296) is aquatic. There are several similar species, all with spotted wings.

Liponeura cinerascens Blepharoceridae. A weak-flying insect with very long legs and a network of fine creases on wings. Ocelli present. Female predatory. Larva and pupa aquatic. Wings fully expanded, although folded, in pupa: latter 'explodes' at surface and adult flies away immediately, but wings never lose creases. One of several similar species living around upland streams in summer. S & C.



Liponeura cinerascens
× 1.5

CRANE-FLIES



Tipula maxima

T. oleracea

Nephrotoma crocata × 1.5

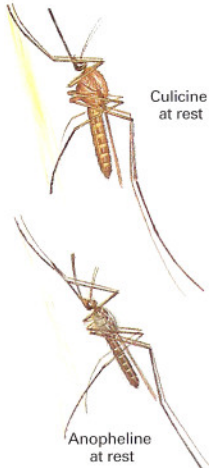
Spotted Crane-fly × 1.5

Limonia nubeculosa × 2

Ctenophora atrata × 2

C. ornata × 2

Ptychoptera contaminata × 1.5



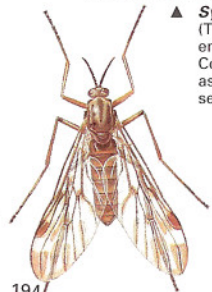
▲ *Trichocera relegationis* Trichoceridae. Like a small crane-fly, but 2nd anal vein very short and sharply bent. Legs not deciduous. Ocelli present. Abundant everywhere in winter, males forming dense mating swarms. Less common at other times of year. Larvae live in decaying matter. One of several similar species, mostly without a spot in middle of wing, known as winter gnats. ▲ *T. annulata* has a banded abdomen.

MOSQUITOES Culicidae. A large family of flies (over 1600 known species) with a long, forward-pointing proboscis that female uses to suck blood. Male, distinguished by bushy antennae, feeds on nectar. Male palps long and hairy; female palps always slender. Wing veins and margins clothed with scales. Mainly nocturnal, although some woodland species are active by day. Larvae (p. 296) are aquatic. Two groups are generally recognised – the culicines and the anophelines. Culicines rest with body slightly arched and abdomen almost parallel to surface; female palps very short. Anophelines, represented in Europe only by *Anopheles* species, are the malaria-carriers. They rest with body sharply inclined to surface and female palps are about as long as proboscis. Both groups fold wings flat over body at rest.

- ▲ *Culex pipiens*. Abdominal segments dark brown with white bands at front of each. Female abdomen blunt-ended. Male palps up-turned. Abundant everywhere, hibernating as adult in buildings. Rarely bites man in B. There are several similar species, but with less clearly banded abdomen.
- ▲ *Culiseta annulata*. One of the largest mosquitoes. Wings spotted. Legs and abdomen boldly banded. Common in many habitats, hibernating as adult in buildings. Bites man, often causing large blisters.
- ▲ *Aedes punctor*. Abdomen brown with yellowish bands, each notched in middle. Legs dark. Female abdomen pointed. Male palps swollen at tip. 3-10. Breeds in acidic pools, especially on heathland and in open woods. Regularly bites man. N & C.
- ▲ *Anopheles plumbeus*. Female palps long; male palps clubbed, with hairy tip. Wings unspotted. Tuft of pure white scales on head (creamy white in *A. claviger*, which is generally rather browner). 3-10, mainly in woods; breeds mainly in wet tree holes. Bites man readily. Many *Anopheles* species have spotted wings.

- ▲ *Chaoborus crystallinus* Chaoboridae. One of a group known as phantom midges, closely related to mosquitoes but non-biting. Scales confined to wing margins. Female wings reach tip of abdomen. Male antennae plumose. Abdomen unbanded. Common all year except in the coldest weather. Usually near water: aquatic larva (p. 296) is almost transparent and called phantom larva.
- ▲ *Dixella aestivalis* Dixidae. Closely related to mosquitoes, but non-biting. No scales on wings. Sub-costal vein only about half length of wing. Antennae not plumose. Most of year, usually near water. Larva aquatic, usually bent into U-shape at surface (p. 297). There are several similar species.
- ▲ *Chironomus plumosus* Chironomidae. Posterior cross-vein absent: rear veins very weak. Wings shorter than abdomen and held roofwise over body at rest. Only male antennae plumose. Non-biting, feeding little if at all as adults. Common everywhere 4-9, males forming dense swarms. Aquatic larva (p. 297) is one of the blood-worms. One of many similar species known as non-biting midges. Some are green.

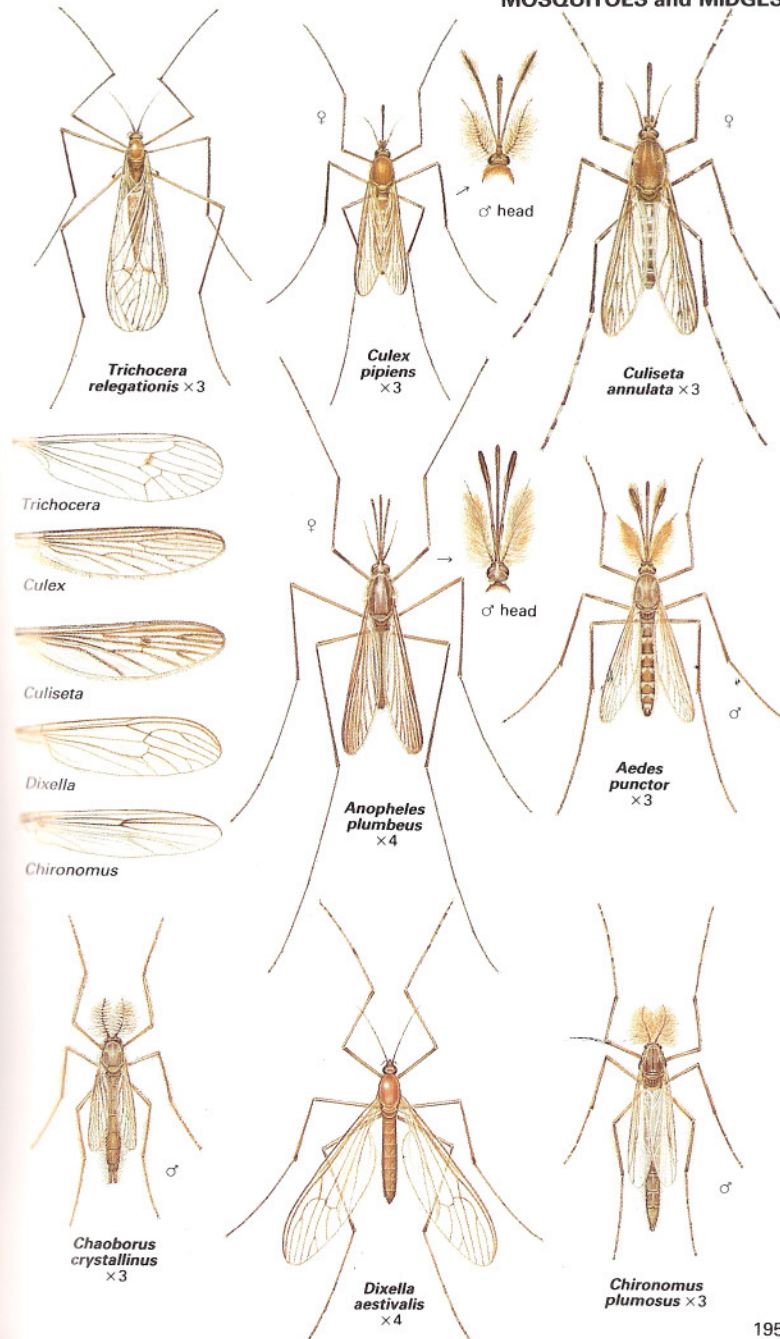
▲ *Sylvicola fenestralis* Anisopodidae. Resembles winter gnats (Trichoceridae) but has no V-shaped thoracic suture. Discal cell present. 2nd anal vein not sharply bent and not reaching wing margin. Common most of year, often in houses: one of several species known as window midges. Larvae live in decaying matter: very common in sewage beds.



Midge is a general term applied to small flies in several families and having no precise meaning

Sylvicola fenestralis
× 3

MOSQUITOES and MIDGES





Simulium at rest



gall of *Jaapiella*



Culicoides



Pericoma



front leg of St Mark's-fly



front leg of Fever-fly

▲ ***Simulium equinum*** Simuliidae. One of many very similar species known as black-flies – not to be confused with the blackfly aphids (p. 94). Broad wings have characteristic venation, very faint at the rear. Strongly-humped thorax, best seen from the side. Female sucks blood and often flies in such numbers as to be a serious nuisance to horses and cattle: also attacks people. 3-10, especially common around hill streams. Larva (p. 297) is attached to stones in running water.

▲ ***Scatopse notata*** Scatopsidae. Venation superficially like *Simulium* but wings narrower and thorax less humped. Ocelli present, unlike *Simulium*. Commonly enters houses and crawls over windows. Breeds in decaying matter. There are several similar species.

▲ ***Jaapiella veronicae*** Cecidomyiidae. Wings hairy, with very little venation. Antennae like minute strings of beads with whorls of hair. Swarms to lighted windows on summer nights. Larva causes hairy galls (left) on shoot tips of germander speedwell. Many very similar species, collectively known as gall midges, cause galls on a wide range of plants.

▲ ***Sciara thomae*** Mycetophilidae. Thorax strongly humped. Eyes meet above antennae. Tibiae spiny. Prominent fork in middle of wing. Common in houses, scuttling rapidly about or drifting slowly through the air. Breeds in all kinds of rotting matter. Abundant where mushrooms are grown, commonly damaging the crop. Many similar species. Larvae, like white worms with black heads, commonly feed in fungi and the insects in this family are known as fungus gnats.

▲ ***Cerotelion lineatus***. First 2 long veins not linked by cross-vein. 6-10 in woods and other damp places. Larva carnivorous on other insects in fungi, especially those on tree trunks.

▲ ***Platyrura marginata***. First 2 long veins linked by cross-vein near wing-tip. Thorax with yellow hair; abdomen shining black. Femora yellow. 6-9, especially in wooded areas. Larvae inhabit silken web and are carnivorous on other fungus-eaters. C.

▲ ***Culicoides obsoletus*** Ceratopogonidae. One of the biting midges – very small flies with blood-sucking females. Thorax strongly humped. Forked vein in centre of wing; latter folded flat at rest. Male antennae plumose. Many species attack other insects, but *Culicoides* species take vertebrate blood: *obsoletus* and several similar species swarm in vast numbers in summer and often make life intolerable in northern and upland areas. They breed in waterlogged soil and peat.

▲ ***Pericoma fuliginosa*** Psychodidae. One of the owl midges or moth-flies, which are easily recognised by their hairy wings with many long veins. Some species rest with wings partly spread: others hold them roof-like over the body. Smaller species are mostly uniformly grey. Breed in decaying matter of all kinds. Abundant at sewage works. Often come to lighted windows at night.

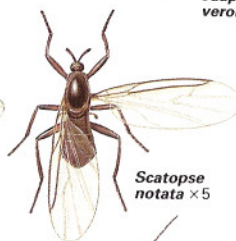
▲ **St Mark's-fly *Bibio marci*** Bibionidae. Named because it often appears close to St Mark's Day (April 25th), this fly drifts slowly over vegetation with legs hanging. Like other members of the family, it has short, stout antennae inserted below the eyes. The latter well separated in female. A beak-like spine at tip of front tibia. Breeds in soil and rotting vegetation. Several similar species. ▲ ***B. hortulanus***, with a brick-coloured upper surface in female, is not uncommon in gardens in spring, often pairing on sunny walls.

▲ **Fever-fly *Dilophus febrilis***. Distinguished from *Bibio* species by cirlet of small spines around tip of front tibia. Female has smoky wings: male wings clear with black spot like *Bibio*. On and around flowers, including apples and other fruit trees, 3-10: most common in spring. Flight is sluggish.

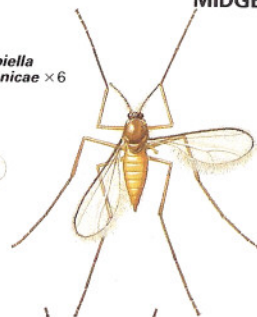
MIDGES



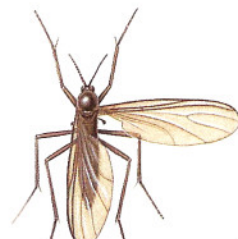
Simulium equinum ×5



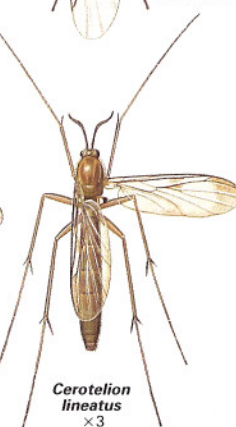
Scatopse notata ×5



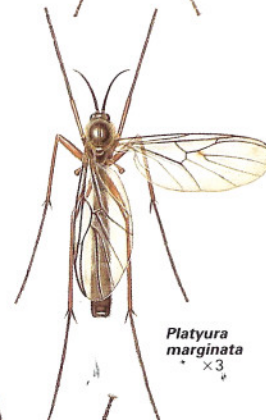
Jaapiella veronicae ×6



Sciara thomae ×3



Cerotelion lineatus ×3



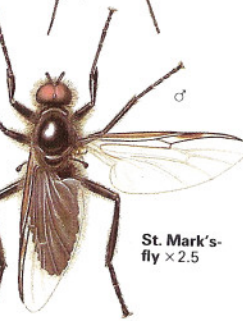
Platyrura marginata ×3



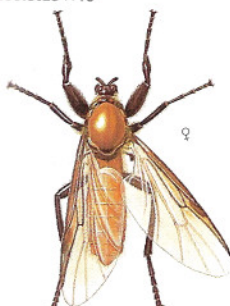
Culicoides obsoletus ×15



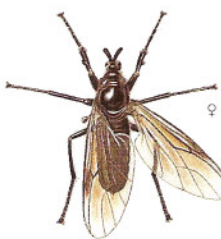
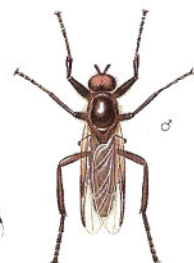
Pericoma fuliginosa ×6



St. Mark's-fly ×2.5



B. hortulanus ×2.5



Fever-fly ×3

*Stratiomys
potamida*
♀ at rest

SOLDIER-FLIES Stratiomyidae. Flattened flies named for their usually bright and often metallic colours. Feet with 3 pads. Veins crowded in front part of wing, with small discal cell and relatively faint veins beyond it. Flight often weak, although some males hover and 'dance'. They visit flowers for nectar, but are most often seen sunbathing on ground or low vegetation. Wings folded flat at rest (left), often concealing the bright colours.

▲ *Oxycera rara*. Scutellum with 2 spines. Legs largely yellow. 6-8 in damp woods and hedgerows. Breeds in moss and leaf litter. S & C. There are several similar species.

▲ *Stratiomys chameleon*. Antennae long and pointed: distinctly elbowed, with 1st segment long. Scutellum with 2 spines. 5-9 in marshy areas: especially fond of umbellifers. Larva aquatic and carnivorous. ▲ *S. potamida* has smaller yellow spots on 3rd abdominal segment in male and a narrow yellow band in female.

▲ *Chloromyia formosa*. Eyes very hairy. Scutellum not armed. Female abdomen less hairy than male, with blue-green and violet sheen showing through. 5-8 in woods, hedges, and gardens. Breeds in damp soil and leaf litter. *C. speciosa* has darker wings and yellowish hind tarsi. C.

▲ *Microchrysa polita*. Shiny green in both sexes. Antennae and legs black. Scutellum unarmed. 3-9 on shrubs and other lush vegetation: not uncommon in gardens. Breeds in dung and compost heaps.

▲ *Beris clavipes*. Venation less crowded than in most soldier-flies. Scutellum with 4-6 black spines. 5-7 in damp areas with lush vegetation. ▲ *B. vallata* has no dark bands on abdomen. Wings are clearer, especially in female, and stigma more conspicuous.

▲ *Sargus bipunctatus*. Scutellum without spines. Veins more distinct in this genus than in most soldier-flies. Sexes differ markedly in abdomen. 8-10. Breeds in dung. S & C.

▲ *S. iridatus* has sexes alike, although female is broader at rear end. Wings uniformly smoky. 5-8. Breeds in cow dung.

△s *Odontomyia ornata*. Resembles *Stratiomys*, but smaller and with shorter, non-elbowed antennae. Scutellum with 2 small spines. Abdominal spots yellow or orange. 5-8, usually on flowers and leaves near water. Breeds in muddy water.

▲ *Oplodontha viridula*. Abdomen varies from white to orange or green, always with a central black stripe. Green becomes yellowish after death. 6-8 among reeds and other waterside vegetation. Breeds in water.

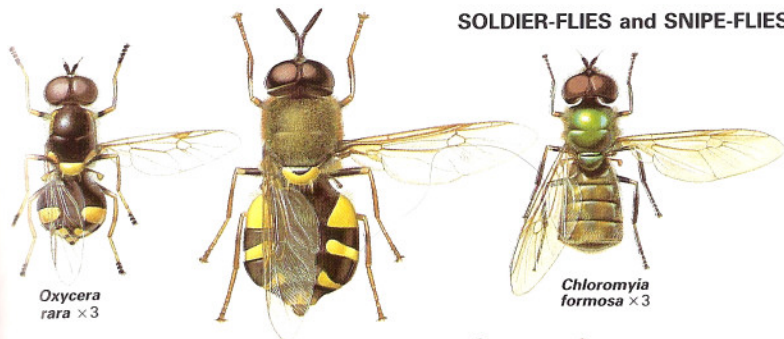
△s *Xylomya maculata* Xylomyidae. Related to soldier-flies, but venation is very different, with a closed cell behind discal cell. Mid and hind tibiae spurred. Feet with 3 pads. 5-6 in ancient woodland, usually around decaying stumps and logs in which the larvae feed.

△ *Xylophagus ater* Xylophagidae. Superficially like *Ctenophora* (p. 192), but venation and antennae quite different. Feet with 3 pads. Male thorax shiny all over: female thorax with 3 greyish stripes. 4-8, mainly in woodland. Breeds in dead deciduous trees. N & C. △n *X. cinctus*, in which female abdomen is reddish in middle, breeds in pine stumps. N & C.

▲ **Snipe-fly** *Rhagio scolopacea* Rhagionidae. Feet with 3 pads. 2nd long vein curves forward to enclose stigma. Anal cell open. Hind tibia with 2 spurs. 5-8, mainly in wooded areas. Rests head-down on tree trunks and other vertical surfaces. Larva (p. 294) lives in soil and is carnivorous. There are several related species, mostly with unspotted wings.

▲ *Chrysopilus cristatus*. Clothed with golden hairs and scales, although these easily rub off. Feet with 3 pads. Femora black. Hind tibia with 1 spur. 2nd long vein curves forward to enclose stigma. Anal cell closed and joined to wing margin by a stalk. 5-8 in woods and other damp or shady places. Breeds in rotting wood and leaf mould.

▲ *Atherix ibis*. Feet with 3 pads. Hind tibia with 2 spurs. 2nd long vein curves forward to enclose stigma. Anal cell closed and joined to wing margin by a stalk. Female greyer, with grey stripes on thorax. 5-7, rarely far from water. Larva is aquatic.



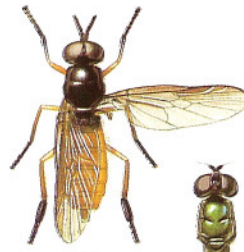
*Oxycera
rara* × 3

Stratiomys chameleon × 2.5

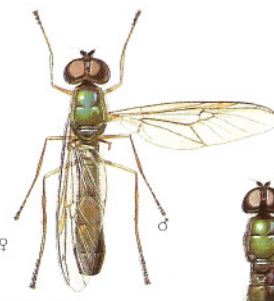
*Chloromyia
formosa* × 3



*Microchrysa
polita* × 4



*Beris
clavipes* × 3



*Sargus
bipunctatus*
× 2.5



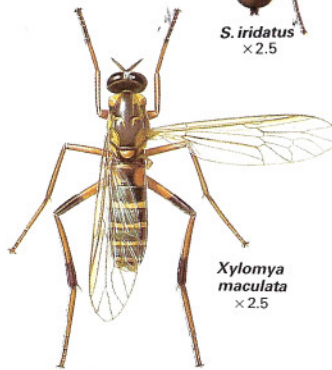
S. iridatus
× 2.5



*Odontomyia
ornata*
× 2.5



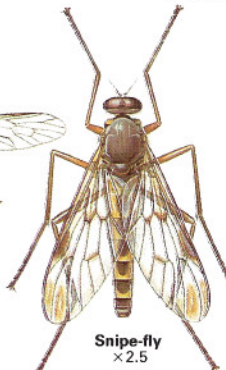
*Oplodontha
viridula* × 3



*Xylomya
maculata*
× 2.5



*Xylophagus
ater* × 2.5



Snipe-fly
× 2.5



*Chrysopilus
cristatus*
× 2.5



*Atherix
ibis* × 2.5

SOLDIER-FLIES and SNIPE-FLIES

HORSE-FLIES Tabanidae. Stoutly-built, fast-flying flies with robust antennae. Eyes large and often brilliantly coloured and patterned in life. Veins form a broad Y-shaped fork across wing-tip. Feet with 3 pads. Most females are voracious blood-suckers, attacking large mammals, including man, with their blade-like mouth-parts. Males, often with slightly different patterns from females, are nectar-feeders. Almost always diurnal. Larvae (p. 294) live in damp soil and mud: some are carnivorous, other feed on decaying plant matter. About 160 of the 3,500 known species occur in Europe.

▲ *Tabanus bovinus*. Hind margin of head concave when seen from above (as in all *Tabanus* species). Eyes unbanded. Pale triangles on abdomen indistinct but usually reaching well into front half of each segment. Female palps very pale. 5-8 in pastures, especially near rivers. Breeds in muddy river banks.

▲ *T. bromius* ranges from yellowish grey to almost black. Eyes with one band. 5-9 on pastures: commonest of several similar species.

▲ *T. sudeticus* is very variable and often very like *bovinus*, but pale triangles shorter and generally more distinct. Female palps brownish. 6-8 in pastures and open woodland. Mainly upland in B.

▲ *Hybomitra micans*. Eyes very hairy, especially in male, with 3 purplish bands. Palps, antennae, and legs all black. Sub-callus (swelling just above antennae) shiny black. 5-9 on moors and damp heaths. C and occasionally on mountains in S.

▲ *H. muhfeldi* is distinguished from several similar species by the brownish (not black) swelling just in front of wing base. 5-8. Common in many places, but especially on damp grassland around lakes. (This genus distinguished from most other horse-flies, including all British species, by the very hairy eyes.)

Heptatoma pellucens. Distinguished by very long antennae and clear wings. Eyes with 4 bands. 5-9 in many habitats, wooded or open.

▲ *Cleg-fly Haematopota pluvialis*. Eyes fairly hairy. 1st antennal segment deeply notched near tip in female. Mottled wings, held roofwise at rest, characterise this genus. Colour and pattern of abdomen vary. 5-10. Especially common in damp, wooded habitats: one of the commonest horse-flies and a real nuisance to man, especially in thundery weather. Approaches silently. Partially replaced in uplands by the very similar ▲ *H. crassicornis*, which has a pale V or Y in the discal cell. There are many similar species.

▲ *Chrysops relictus*. Middle tibia brownish yellow. Abdominal pattern varies, but always with black lobes on 2nd segment (less divergent in male than female). 5-9 on damp heaths and moors and in light woodland: rarely far from water. Breeds in muddy river banks and other wet places.

▲ *C. caecutiens* has black middle tibia. Male abdomen largely black: black marks on 2nd abdominal segment of female often much reduced. 5-9 in many habitats near water.

▲ *C. viduatus* has brownish middle tibia. 2nd abdominal segment has a single dark spot, variable in shape and much larger in male. 6-9 in grassland and woodland clearings. The last two species are absent from Ireland. There are several other species, all with brilliant eyes. Wings generally have more extensive dark area in males. All *Chrysops* species have spurred hind tibia.

▲ *Bombylius major* Bombyliidae. One of the bee-flies, so called for the furry appearance of many of the species. Common at spring flowers, sucking nectar through long, rigid proboscis. Quite harmless. Hovers in sunny spots with high-pitched whine. Larvae attack grubs of solitary bees and wasps in their underground nests.

▲ *Thyridanthrax fenestratus*. Has same hovering and darting flight as *Bombylius* and the rest of the family. Proboscis short and retracted into head when not in use. 6-8 in sandy habitats. Larvae parasitise caterpillars. N & C. Several similar species in S.

Anthrax anthrax. Dark body, more extensive dark areas of wing, and short proboscis distinguish this from *Bombylius*. 5-9, mainly in dry habitats. Larvae parasitise solitary bees.

▲ *Villa modesta*. Like a clear-winged *Bombylius*, but proboscis is short and head more rounded. Male has no pale abdominal bands. 5-9 in sandy places, mainly coastal. Larvae parasitise caterpillars. There are several similar species.

Fallenia fasciata Nemestrinidae. Very agile, fast-flying and often hovering. Distinguished from bee-flies by very different venation and down-pointing proboscis. 5-8 in rather damp places, commonly feeding on thistles. Larvae feed on other insect grubs. S.

HORSE-FLIES and BEE-FLIES

