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Over 2000 insects illustrated in colour



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**This book** is the most extensively illustrated guide to European insect life yet published. It covers all orders and major families west of a line from Finland to the northern shores of the Adriatic. The species illustrated are drawn from those *most likely to be noticed*, from their frequency, size, colours, habits, or association with man.

**The introduction** outlines insect anatomy, life-cycles, collection and conservation. A glossary explains all technical terms.

**The text** complements the illustrations, stressing points important for identification, aspects of behaviour, food or habitat, time of appearance and general European distribution. **British** frequency is indicated by triangular symbols explained on page 4.

**The paintings** were done over a period of three years by a team of specialized artists, and rigorously controlled for accuracy and detail.

**Identification** is helped by a simple Key on pages 12-15, and introductions to the most important groups within the main text.

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THE BRITAIN AND WESTERN EUROPE

Michael Chinery

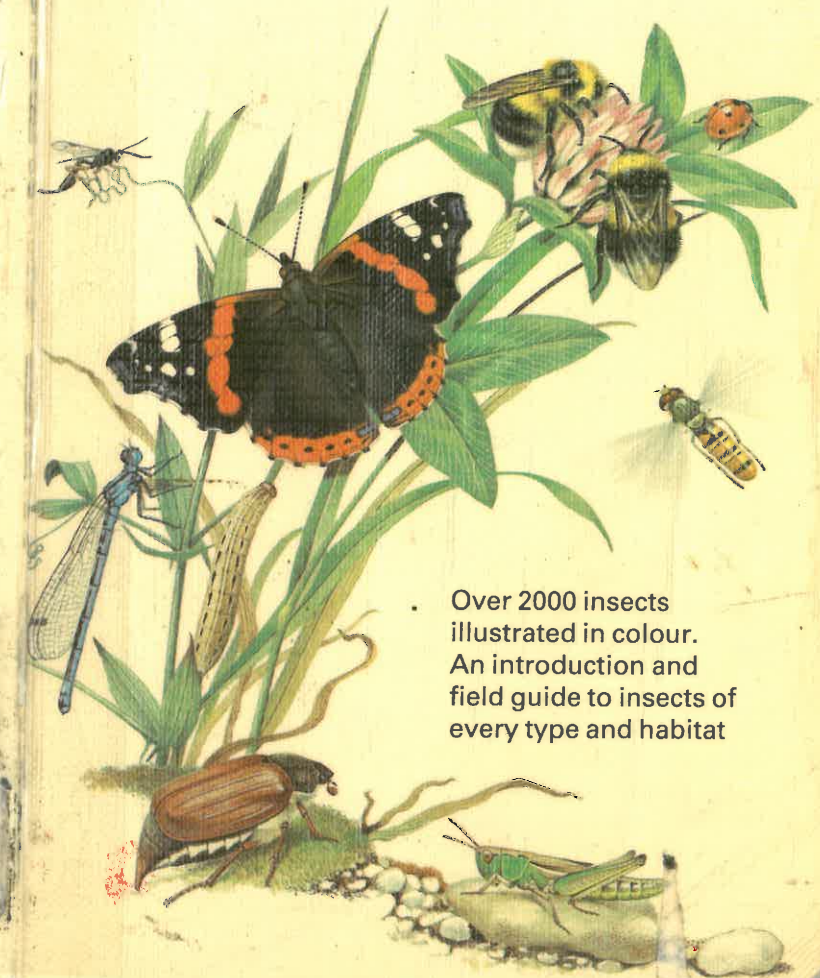


COLLINS GUIDE TO THE

# INSECTS

OF BRITAIN AND WESTERN EUROPE

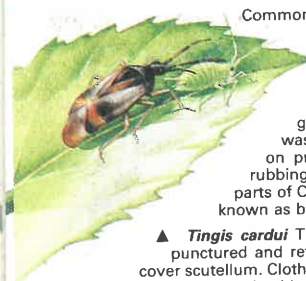
Michael Chinery



Over 2000 insects illustrated in colour. An introduction and field guide to insects of every type and habitat

Collins





Common Flower Bug feeding on aphid

▲ *Piesma maculatum* Piesmatidae. Superficially like lacebugs, with strongly punctured forewings and pronotum, but latter does not cover scutellum. Pronotum has 2 keels at front. On sea purslane, orache, goosefoot, and other chenopods on coastal saltmarshes and waste ground. Occasionally on beet. ▲ *P. quadratum* has 3 keels on pronotum and may be green or brown. Male stridulates by rubbing wings on abdomen. Most of European coastline: inland in parts of C, where it carries virus disease of sugar beet. Both species are known as beet bugs.

▲ *Tingis cardui* Tingidae. One of the lacebugs, so called because of densely punctured and reticulate pronotum and forewings. Pronotum extends back to cover scutellum. Clothed with powdery wax. On spear thistle, nymphs living in dense clusters on underside of flower heads. There are many similar species.

**BEDBUGS and FLOWER BUGS Cimicidae** Bedbugs are wingless bloodsuckers attacking birds and mammals. Flower bugs and their relatives are generally fully winged, capturing small insects on flowers or amongst debris. They resemble mirids but have a clear embolium in anterior part of forewing.

▲ **Bedbug** *Cimex lectularius*. Orange to deep brown. In and around houses, hiding in crevices by day and emerging to suck blood from man or other animals at night. Common in zoos.

▲ *Oeciacus hirundinis*. Smaller and hairier than bedbug. Feeds on house martins and swallows (occasionally other birds) and over-winters in and around their nests. May enter houses when birds leave in autumn.

▲ **Common Flower Bug** *Anthracoris nemorum*. Forewings shiny throughout - distinguishing this from several similar species. Abundant everywhere on a wide range of trees, shrubs, and herbaceous plants - on leaves as well as flowers. A useful predator of aphids and red spider mites. Will pierce human skin and suck blood if handled.

▲ *Orius niger*. One of several similar very small species. Colour varies, but can be identified by black hind tibiae. Male has swollen antennae. On a wide range of plants, especially gorse, heather, and mugwort.

▲ **Hot-bed Bug** *Xylocoris galactinus*. Antennae distinctly hairy (lens!). Named for its liking for compost heaps and similar places. Also in stables, birds' nests, etc., feeding on other insects and also sucking birds' blood.

**MIRID or CAPSID BUGS Miridae** The largest family in the Heteroptera, with some 6,000 known species. Body and forewings are relatively soft. Forewings, when present, have a well developed cuneus (p. 70), which distinguishes the family from most other bugs. The embolium is not distinct and the membrane generally contains one or two distinct cells at the base. Most are herbivorous, feeding largely on developing fruits and seeds. Most pass the winter as eggs.

▲s *Deraeocoris olivaceus*. 6-8 on hawthorn, feeding on young fruits as well as on various small insects. S & C.

▲ *D. ruber* is smaller and shinier: generally brick coloured but ranges from yellow to black: cuneus always red. Tibiae not ringed. On a wide range of plants. 6-9. S & C.

▲ *Systellonotus triguttatus*. 5-9, mainly on heathland, feeding on shoots and fruits of many plants and also on aphids. Often associated with ants, which nymphs and females resemble closely, although not in movements.

▲ *Phylus melanocephalus*. Yellow or brick coloured and distinguished from related species by black head. On oak and hazel, feeding partly on the plants and partly on aphids and other small insects. 5-8.

▲ *Psallus varians*. Reddish, yellow, or greyish brown. 5-9 on various deciduous trees, especially oaks. Partly predatory. There are many similar, closely related species.

▲ *Amblytulus nasutus*. One of many rather similar mirids. Green at first, often becoming brown with age. 5-8 in dry grassy places. S & C.

▲ *Dicyphus errans*. 5-10 in rough herbage, including stinging nettles. Partly predatory. Most members of genus are entirely herbivorous, with just one food plant.

▲ *Macrotylus paykulli*. Tibiae clothed with minute black spines. 6-9 on restharrow in dry grassland and waysides. Usually gregarious.

▲ **Fern Bug** *Bryocoris pteridis*. Forewing membrane commonly absent, the shortened wings leaving tip of abdomen exposed: in this form forewings get wider towards the tip, giving a pear-shaped outline. 6-9 in damp woods, on bracken and other ferns. N & C.



Fern Bug (short-winged) x5



*Piesma maculatum* x4



Bedbug x3



*Piesma quadratum* x4



*Oeciacus hirundinis* x3



*Tingis cardui* x5



Common Flower Bug x3



*Orius niger* x6



Hot-bed Bug x6



*Deraeocoris olivaceus* x2



*D. ruber* x2



*Systellonotus triguttatus* x3



*Phylus melanocephalus* x3



*Psallus varians* x3



*Amblytulus nasutus* x3



*Dicyphus errans* x3



*Macrotylus paykulli* x4



Fern Bug x5

**FROGHOPPERS Aphrophoridae** Jumping homopterans, mostly brown, in which the hind tibiae are rounded and bear just a few spines. This distinguishes them from the cicadellids (p. 92), which have many spines. Antennae arise from between the eyes. Forewings horny and pitted. Hind wings have a peripheral vein, at least in hind region. Nymphs of most species live in masses of froth, giving rise to their other common names of spittle bugs and cuckoo-spit insects.

▲ **Neophilaenus lineatus**. Forewings light or dark brown, generally with a pale stripe along the costa. Basal half of costa more or less straight, 6-9 on grasses: dark form generally in cooler and damper areas. There are several similar species.

**Lepyromia coleoptrata**. Yellow to dark brown. Costal margin of forewing very convex. 5-9 on grasses in marshes and damp grassland. N & C.

▲ **Aphrophora alni**. Pronotum has central keel. Forewings may lack one or both pale patches on costal margin: whole wing may be darker. 5-10 on many kinds of trees and shrubs. There are several similar species.

▲ **Common Froghopper** *Philaenus spumarius*. Ground colour basically buff, with a very variable dark pattern: occasionally dark all over. Abundant 6-9 on a wide range of woody and herbaceous plants.

▲ **Cercopis vulnerata** Cercopidae. Anterior margin of pronotum straight, not arching forward between eyes as in Aphrophoridae. Nymphs live communally on roots, surrounded by solidified froth. 4-8 on various plants, mainly in wooded areas. S & C. There are several similar species on the continent.

▲ **Cixius nervosus** Cixiidae. Forewings membranous with well-defined veins. Hind wing without peripheral vein. Pronotum yellowish brown with prominent lateral keels. Scutellum dark brown or black with 3 keels. 5-10 on various trees. There are several similar species.

▲ **Issus coleoptratus** Issidae. Forewings rather horny with a network of cross-veins. Hind wings smoky brown without a peripheral vein. Pronotum bulges strongly forward between eyes: hind margin almost straight. 5-10 on various trees and in moss. Several similar species live on the continent, mainly in S.

△s **Tettigometra impressopunctata** Tettigometridae. Forewings horny and distinctly pitted: veins weak. Hind wings with no peripheral vein. Hind tibia with an apical circlet of spines. On dry grassland, hibernating as adult. S & C: mainly on sand dunes and chalk in B. Many similar species live on continent, mainly in S.

**Epiptera europaea** Dictyopharidae. Becomes yellowish after death, but easily identified by conical head and network of veins towards tip of forewing. 6-10 on a wide range of herbaceous plants, especially umbellifers. Leaps strongly. S & C.

**Bursinia genei**. 6-9 on a wide range of herbaceous and shrubby plants. S.

**Family Delphacidae** A family of small hoppers distinguished from similar groups by a large movable spur at apex of hind tibia. Forewings rather tough: hind wing with no peripheral vein. Antenna arises from a notch in lower margin of eye. Sexes are often very different. Most species have brachypterous and fully-winged individuals.

▲ **Delphax pulchellus**. Female usually brachypterous, with few dark marks on forewing. Latter reaches about half way along abdomen. 6-9 on reeds in marshy places and on river banks.

▲ **Megamelus notula**. Forewings may be almost entirely brown: sometimes fully winged. 4-10 in marshy habitats. Absent from most of S.

▲ **Delphacodes pellucida**. Forewings always reach at least to tip of abdomen in male: long or short in female. Pronotum and scutellum black in male: brown to black in female. 5-9 in grassland nearly everywhere. There are many similar species.

▲ **Asiraca clavicornis**. Front and middle legs broad and flat. 1st antennal segment long and broad. Scutellum with 4 keels. 4-10 in damp grassy places. S & C.

▲ **Stenocranus minutus**. Always fully winged. Forewings transparent and iridescent, with prominent nerves. Dark patch often indistinct but may cover inner half of wing. On grasses in many habitats.

▲ **Delphacinus mesomelas**. Lateral keels of pronotum arched round eyes. Long-winged form equally common. 6-8 in wooded and scrubby areas, especially on broom.

▲ **Tropidocephala elegans**. 1st two antennal segments very short. Head, pronotum, and scutellum green or yellow. Scutellum with 3 keels. 5-10 in well vegetated habitats. S.



*Neophilaenus lineatus* ×3



*Lepyromia coleoptrata* ×3



*Cercopis vulnerata* ×2



*Aphrophora alni* ×2



Common Froghopper ×3



Cuckoo-spit and nymph



*Cixius nervosus* ×3



*Issus coleoptratus* ×3



*Tettigometra impressopunctata* ×3



*Delphax pulchellus* ×3



*Megamelus notula* ×3



*Delphacodes pellucida* ×3



*Epiptera europaea* ×2

*Bursinia genei* ×3



*Asiraca clavicornis* ×3



*Stenocranus minutus* ×3



*Delphacinus mesomelas* ×5

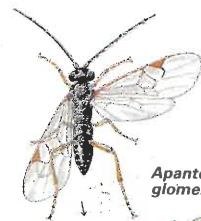


*Tropidocephala elegans* ×5



**ICHNEUMON FLIES Ichneumonidae** An immense group of parasitic insects whose larvae live in or on the young stages of other insects. Adults are rather slender, with long antennae of at least 16 segments. The front edge of the forewing appears rather thick due to obliteration of the costal cell, and there is a prominent stigma. A few species are wingless. Ichneumons are abundant in hedgerows and other dense vegetation, scuttling around and vibrating their antennae as they search for the scents of their hosts. Butterfly and moth caterpillars are the main hosts, and generally just one egg is laid on or in each one. Endoparasitic species generally emerge after pupation of the host, much to the dismay of many people who collect caterpillars to breed out the adult butterflies or moths. Many other insects are used as hosts, and some ichneumons even use spiders. Female ichneumons often have a very long ovipositor to reach hosts deep inside plants or other animals. The family Braconidae is very similar in habits, but readily distinguished by its venation: there is a long open cell towards the rear of the wing (see below). Braconids tend to be smaller than ichneumons and often lay many eggs in each host.

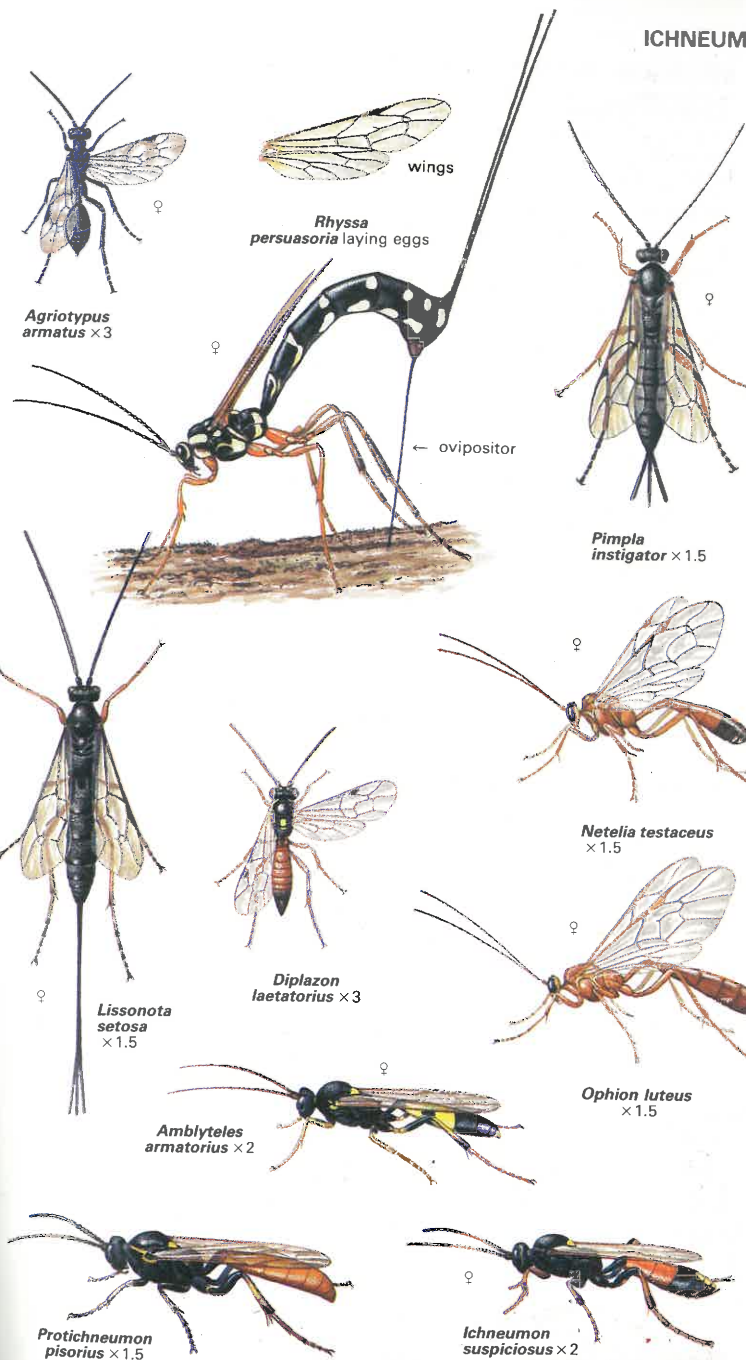
- ▲ **Agriotypus armatus**. Thorax has long, curved spine. Wings distinctly clouded. An ectoparasite of various case-bearing caddis flies. Female crawls into water and lays an egg in a case containing a fully grown larva or a pupa. The grub consumes the pupa and then pupates in the case: adult remains in case for the winter and emerges in spring or early summer. Cases containing pupae or resting adult *Agriotypus* can be recognised by a silken ribbon attached to one end and used for respiration.
- ▲ **Rhyssa persuasoria**. One of the largest ichneumons. Ectoparasitic on horntail larvae (p. 222): slender ovipositor drills deep into pine trunks to reach the host. Not uncommon in pine woods in summer. The brown and yellow *Megarhyssa superba* is even larger.
- ▲ **Pimpla instigator**. A very common ectoparasite of various moth larvae, notably those of the Snout moth (p. 168). All summer. There are several similar species, mostly a little smaller: one is an endoparasite of Large White butterfly pupae.
- ▲ **Lissonota setosa**. Resembles *Pimpla*, but larger and female has a very long ovipositor. Endoparasitic in goat moth larvae, the ovipositor being used to drill into tree trunks. The smaller, but otherwise similar ▲ **L. fundator** attacks clearwing larvae in stems. There are many similar species.
- ▲ **Diplazon laetatorius**. An abundant endoparasite of various hover-fly larvae. The egg may be laid in the host egg, and adult emerges from host pupa. There are several similar species.
- ▲ **Netelia testaceus**. A very common ectoparasite of moth larvae. Abdomen flattened from side to side and arched upwards. Short ovipositor capable of piercing human skin if molested. Flies all summer: markedly nocturnal and abundant in light traps. There are several similar species, but only *testaceus* has dark tip to abdomen.
- ▲ **Ophion luteus**. Very like *Netelia*, but venation differs. Scutellum distinctly triangular. Late summer and autumn: very common. Endoparasitic in various caterpillars. One of many similar species, with or without dark hind ends.
- ▲ **Protichneumon pisorius**. An endoparasite of hawkmoth larvae. Adult 5-9: not uncommon on umbels and other flowers.
- ▲ **Amblyteles armatorius**. Scutellum cream or yellow. Hind trochanter yellow. Very common on umbels in summer: hibernates as adult, often in caves. An endoparasite of many caterpillars, especially noctuids. One of several very similar species.
- ▲ **Ichneumon suspiciosus**. One of many very similar species, difficult to separate with certainty. Very common on umbels in summer: hibernates as adult. An endoparasite of swift moth larvae and various noctuid caterpillars.



*Apanteles glomeratus* × 5



cocoons surrounding dead host larva



*Agriotypus armatus* × 3

*Rhyssa persuasoria* laying eggs

ovipositor

*Pimpla instigator* × 1.5

*Lissonota setosa* × 1.5

*Diplazon laetatorius* × 3

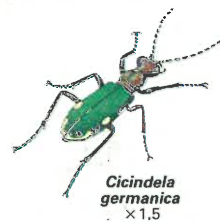
*Netelia testaceus* × 1.5

*Ophion luteus* × 1.5

*Amblyteles armatorius* × 2

*Protichneumon pisorius* × 1.5

*Ichneumon suspiciosus* × 2



*Cicindela germanica*  
x1.5

**TIGER BEETLES and GROUND BEETLES**  
**Carabidae** Long-legged, fast-running, predatory beetles with powerful jaws and very fine sensory bristles scattered over the body. The antennae are filamentous and usually 11-segmented. Tarsi are 5-segmented. Many species exhibit beautiful metallic or iridescent colours.

**Tiger Beetles** (*Cicindela* spp) are sun-loving insects with huge eyes and jaws. The antennae are attached above the jaws and their bodies are somewhat flattened. Most fly well, with a loud buzzing sound. They hunt ants and other prey on the ground and usually live in open habitats. They are among the fastest runners in the insect world. The larvae (p. 295) construct burrows from which to ambush prey. About a dozen species live in Europe.

▲ **Green Tiger Beetle** *Cicindela campestris*. Legs and sides of thorax are coppery or purplish bronze and very shiny. Underside of abdomen is metallic green. Elytral pattern varies and ground colour may be very dark. 5-7. Mainly on heathland, sand dunes, and other sandy places.

△ ***Cicindela hybrida***. Elytra may have a greenish tinge, but margins always reddish, as are the edges of the thorax. Each elytron has 3 or 4 yellow marks. Underside of body is metallic green. 8-9 and again 4-6 after hibernation. Heathland and dunes. Absent from far north.

△s **Wood Tiger Beetle** *Cicindela sylvatica*. Similar to *hybrida*, but darker and with a distinct purplish tinge: yellow markings less heavy. Metallic blue below. Heathland and pine woods. 5-9. N & C.

△s ***Cicindela germanica***. Smaller and more cylindrical than the other tiger beetles. Thorax distinctly bronze, and elytra usually very dark green, often almost black. Elytral pattern usually confined to three small spots on outer margin on each side. Rarely flies. 5-9. Dry grassy places in lowlands. S & C: south coast only in B.

**Ground Beetles** are generally less flattened and largely nocturnal, although some of the more metallic species are active by day. The antennae are attached between the eyes and the jaws. Many are flightless, with vestigial hind wings and often with the elytra fused together. Front tarsi are strongly dilated in males. They eat a wide variety of invertebrates and also take carrion: many eat plant matter as well. The larvae (p. 295) are active hunters like the adults. Most species are long-lived and adult throughout the year, although they hibernate in the coldest months. Several hundred species live in Europe.

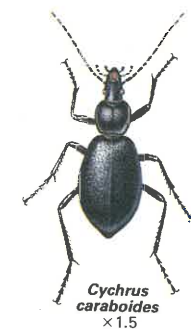
△s ***Calosoma sycophanta***. Elytra are golden green to brassy red and strongly striated. Flies well. Diurnal. Mainly in woodlands. Adults and larvae live in trees, where they feed on moth larvae. They are important predators of gypsy and processionary moth caterpillars. Most of Europe, but only a sporadic visitor to B.

***C. auropunctatum***. Recognised by the three rows of golden green dots on each elytron. Adults and larvae prey on moth larvae on the ground, although adult flies well. Diurnal. Most frequent in moist fields and on roadsides. C.

▲ ***Carabus auratus***. Elytra and thorax green with a golden or brassy iridescence. Three broad ridges on each elytron. Flightless, with vestigial hind wings like most *Carabus* spp. Common in gardens and on other cultivated land, mainly in spring. Eats slugs and snails and cockchafer grubs. S & C.

▲ **Violet Ground Beetle** *C. violaceus*. Elytra almost smooth, with a bright violet sheen around their edges and around the edges of the thorax. Common in many habitats, including gardens and hedgerows, hiding under stones and litter by day and emerging to hunt slugs and other prey at night. ▲ ***C. nemoralis*** Elytra very convex, especially in male, and marked with fine ridges and rows of conspicuous pits. Bronzy to bright brassy green, becoming violet on the sides. The thorax is also purplish or bronze on the sides. Females are less shiny. Found in many habitats: especially common in gardens on the continent. Its habits are much like those of *C. violaceus* and most other *Carabus* spp.

***C. coriaceus***. Resembles a large violet ground beetle in shape, but thorax and elytra are dull black. Elytra patterned with coarse dots and wrinkles. Mainly in damp deciduous woodland.



*Cychrus caraboides*  
x1.5



*Notiophilus biguttatus*  
x2.5



*Elaphrus riparius*  
x2.5



*Omophron limbatum*  
x2.5



*Broscus cephalotes*  
x1.5



*Callistus lunatus*  
x2.5



*Badister unipustulatus*  
x2.5



*Dyschirius globosus*  
x2.5



*Dromius 4-maculatus*  
x2.5



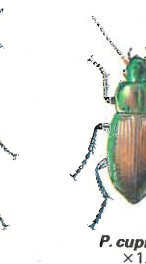
*Harpalus affinis*  
x1.5



*Pterostichus madidus*  
x1.5



*P. nigrita*  
x1.5



*P. cupreus*  
x1.5



*Agonum 6-punctatum*  
x2.5



*Panagaeus bipustulatus*  
x2.5



*Lebia cruxminor*  
x2.5



*Amara aenea*  
x2.5



- ▲ *Sphaeridium scarabaeoides* Hydrophilidae. A terrestrial member of a largely aquatic family (p. 292), with slender palps almost as long as antennae. Usually found tunnelling in fresh cow dung.
- ▲ *Hister 4-maculatus* Histeridae. Red spots may join up on each elytron. Feeds on fly maggots and other scavenging insects in horse and cow dung. There are several similar species, all somewhat flattened with shiny, truncated elytra, elbowed antennae, and strongly toothed front tibiae (tooth pattern may help to separate species). Some live in carcasses instead of in dung.

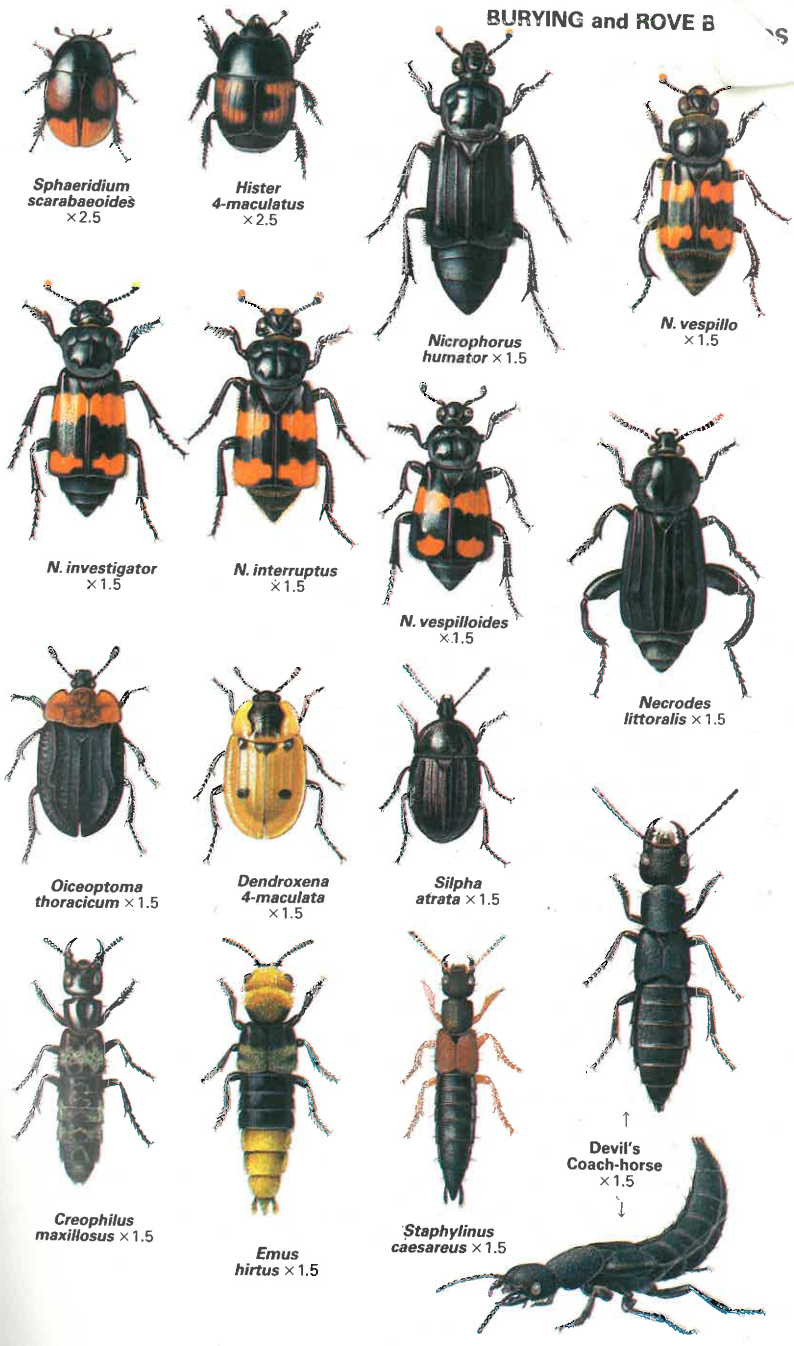
**BURYING BEETLES Silphidae** Scavenging and carnivorous beetles with clubbed antennae and a very good sense of smell. The elytra are often strongly truncated, but most species fly well.

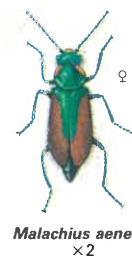
*Nicrophorus* spp are the true burying beetles, burying small carcasses (mice, birds, etc) by digging a shaft underneath them and hauling them down. They usually work in pairs and the female lays eggs close to the buried corpse. Adults and larvae feed on the carrion and also on the other scavenging insects. They are also known as sexton beetles. Adults are seen mainly in spring and summer and are often attracted to lights at night. The antennae are very abruptly clubbed in this genus.

- ▲ *Nicrophorus humator* is one of few species with all-black elytra, but it can be recognised by the orange clubs to its antennae.
- ▲ *N. vespillo* is one of several species with orange bands on the elytra. Both bands are virtually complete in this species and the hind tibiae are strongly curved.
- ▲ *N. investigator* has the posterior orange band narrowly broken in the mid-line, where the elytra join.
- ▲ *N. interruptus* has both orange bands broadly interrupted.
- ▲ *N. vespilloides* has a broadly interrupted posterior orange band – often reduced to a small spot on each elytron – and entirely black antennae. ▲ *N. vestigator* is similar but has orange antennal clubs.
- ▲ *Necrodes littoralis*. Resembles *Nicrophorus humator* but the antennae are gradually thickened towards the tip and not abruptly clubbed. Each elytron has three strong ridges and a large 'pimple' towards the back. Size is very variable. Usually on large carrion, which is not buried. Sometimes among stranded seaweeds on the shore. Summer.
- ▲ *Oiceoptoma thoracicum*. Elytra silky, each with three longitudinal ridges. A non-burying species found mainly in woodland – under dung and carcasses and also in rotting fungi. Feeds on other insect larvae. Summer.
- ▲ *Dendroxena 4-maculata*. Lives mainly in oakwoods, feeding on moth larvae in the trees and on the ground. Most numerous in autumn and spring.
- ▲ *Silpha atrata*. A predator of snails, reaching deep into the shells to devour them. In woods and other damp, shady places. Very glossy.

**ROVE BEETLES Staphylinidae** A very large group, with well over 1,000 species in Europe, in which the elytra are very short and leave most of the abdomen exposed. Very variable in size, with many very tiny species. Despite the short elytra, the hind wings are usually well developed and most species fly well. Many of the smaller ones fly by day, but the larger ones are mainly nocturnal. They are predators and omnivorous scavengers.

- ▲ *Creophilus maxillosus*. Elytral and abdominal pattern formed by grey and black hairs. Head and pronotum hairless. 5–10. Preys on other insects on dung and carrion and in rotting vegetation.
- △s *Emus hirtus*. Very large and very hairy. 4–8. Feeds on other insects around fresh horse and cow dung. S & C.
- ▲ *Staphylinus caesareus*. Patches of golden hair on abdomen. 4–9. Usually on dung and carrion, where it feeds on other insects.
- ▲ *Devil's Coach-horse* *S. olens* is clothed with fine black hairs. Hides under stones and debris by day and hunts slugs and other invertebrates at night. Also called the cock-tail because, when disturbed, it raises its hind end and opens the jaws wide in a threatening attitude. Common in woods, gardens, and hedgerows.





*Malachius aeneus*  
x2



*M. bipustulatus*  
x2



*Anthocomus fasciatus* x5



*Endomychus coccineus* x3

- ▲ *Malachius aeneus* Melyridae. A predatory beetle frequenting flowers in spring, esp. in woods. Elytra rather soft. Male has outgrowths near base of antennae, used for holding female. S & C. ▲ *M. bipustulatus* also with antennal swellings in male, hunts other insects among flowers and grasses. 5-8.
- ▲ *Anthocomus fasciatus* Elytra soft, ground colour black or greenish black. Knees of front legs brownish. Predatory in grass and on various trees. Summer. S & C.
- ▲ *Endomychus coccineus* Endomychidae. Often mistaken for a ladybird, but much flatter and with longer antennae. A fungus-eater living under bark of dead or dying trees, esp. beech. 4-6.

**LADYBIRDS Coccinellidae** Small, domed, usually ± hemispherical, though some are oblong. Head sunk into pronotum. Legs short and retractable: tarsi 4-segmented but 3rd segment very small and concealed in bilobed 2nd. Usually brightly coloured and distasteful but colour-pattern notoriously variable. Mostly carnivorous. Often hibernate in large masses. Larva (p. 295) also carnivorous: pupates openly on plants.

- ▲ *Epilachna chrysolina*. 6 black spots on each elytron, varying and often merging to form heavy black network. Vegetarian on gourd family; sometimes a pest of melons. All year. Mediterranean. ▲ *Subcoccinella 24-punctata* eats all kinds of plants: a carnation pest in France. Very variable. Summer.
- ▲ *Coccidula scutellata* hunts aphids on various plants in marshy places. 7-8. ▲ *Scymnus frontalis*. Red marks may be absent. Front of pronotum often reddish in male, always black in female. Dense vegetation in dry places. 5-7. S & C.
- ▲ *Hippodamia 13-punctata* 4-9 in low marshy areas. More oval than many species.
- ▲ 7-spot Ladybird *Coccinella 7-punctata*. The ladybird, abundant everywhere 3-10. ▲ *Eyed ladybird Anatis ocellata*. Usually on or near conifers. 6-7. ▲ *Thea 22-punctata* 4-8 in low vegetation of all kinds. Feeds largely on mildews.
- ▲ 2-spot Ladybird *Adalia bipunctata*. Abundant everywhere 3-10. Very variable: black ground colour, especially common in north, helps heat absorption in smoky and cloudy regions. ▲ 10-spot Ladybird *A. 10-punctata* is similarly variable but has yellowish legs. 3-10.
- ▲ *Propylea 14-punctata* Elytra range from almost all yellow to almost all black, with black spots merging together. Common on shrubs 4-9. ▲ *Calvia 14-guttata*. Usually on shrubs and small trees. 4-9.

**LARDER BEETLES Dermestidae** Mostly sombre-coloured scavengers, clothed with scales or hairs. Antennae clubbed and can be hidden under body. Many are cosmopolitan pests of stored foods and fabrics. Larvae are bristly and known as 'woolly bears.'

- ▲ Larder or Bacon Beetle *Dermestes lardarius*. Larvae and adults eat carrion in the wild and dried meats in store. All year, but hibernate in the wild. ▲ Hide Beetle *D. maculatus* has similar habits but damages hides and furs as well as stored foods.
- ▲ *Attagenus pello*. Visits flowers 3-9; also common in houses. Larvae in birds' nests, furs, carpets, stored grain etc. Sometimes called the fur beetle.
- ▲ Varied Carpet Beetle *Anthrenus verbasci*. Pattern varies. Adults eat pollen and nectar 3-9. Larvae (p. 295) eat dried materials in birds' nests and buildings; damage woollens and insect collections.
- ▲ Khapra Beetle *Trogoderma granarium*. Adult does not feed but larva is serious pest of stored grain and cereal products everywhere. All year in heated buildings. *T. angustum*, much narrower than other *Trogoderma* spp., is native of Chile but established in Germany and Sweden. A pest in insect collections.



*Epilachna chrysolina* x2



*Subcoccinella 24-punctata* x5



*Coccidula scutellata* x5



*Scymnus frontalis* x5

LADYBIR CARPET BE



*Hippodamia 13-punctata* x3



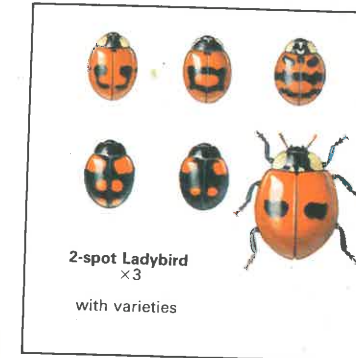
7-spot Ladybird x3



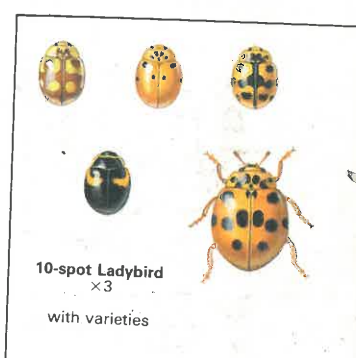
Eyed Ladybird x2



*Thea 22-punctata* x3



2-spot Ladybird x3 with varieties



10-spot Ladybird x3 with varieties



*Propylea 14-punctata* x3



*Calvia 14-guttata* x3



Larder Beetle x2



Hide Beetle x2



*Attagenus pello* x3



Varied Carpet Beetle x5

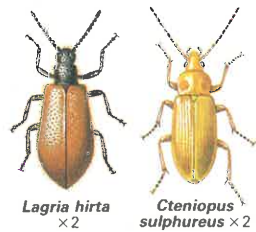


Khapra Beetle x4



*T. angustum* x4



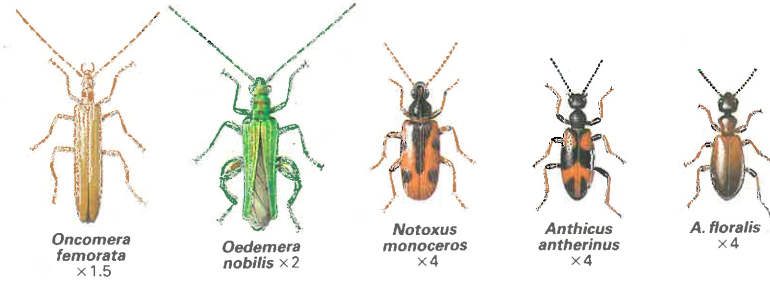


*Lagria hirta*  
x2

*Cteniopus sulphureus* x2

▲ *Lagria hirta* Tenebrionidae. Soft-bodied and rather sluggish. Head and thorax black or brown. 5-7, on flowers, usually in dry habitats. Larvae eat decaying matter in leaf litter and turf.

▲ *Cteniopus sulphureus*. Soft-bodied. Head and thorax often almost black. 5-7, on flowers, usually on sand dunes and other dry, sunny places. Larvae live at base of plants.



*Oncomera femorata*  
x1.5

*Oedemera nobilis* x2

*Notoxus monoceros*  
x4

*Anthicus antherinus*  
x4

*A. floralis*  
x4

▲ *Oncomera femorata* Oedemeridae. Elytra and body soft. Pollen-feeding on various shrubs, including ivy, 4-10. Larvae in decaying wood. S & C.

▲ *Oedemera nobilis*. Female is thinner and lacks swollen hind femora. Elytra pointed and gaping. Pollen-feeding; common on flowers 4-8.



*Notoxus*

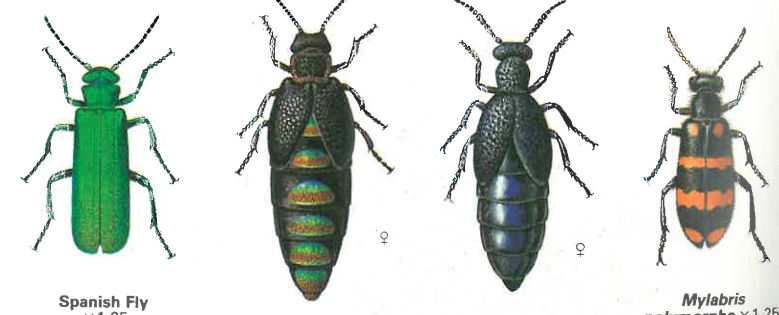
▲ *Notoxus monoceros* Anthicidae. An agile, ant-like beetle with thoracic horn projecting over head. Elytra often black with just a pale triangle at tip. Among debris and turf on sandy ground; often on flowers.

▲ *Anthicus antherinus*. Very agile. Usually on compost heaps and other vegetable debris or manure heaps. 5-10. ▲ *A. floralis* is very ant-like. Whole body often dark. In manure and vegetable refuse. 5-10.

♣s Spanish Fly *Lytta vesicatoria* Meloididae. One of the blister beetles, so called because they emit a blistering fluid when alarmed. Mousy smell. 5-8, chewing leaves of various trees. Larvae live in solitary bee nests. S & C.

▲ *Meloe variegatus*. One of the oil beetles, releasing a smelly, oily fluid when alarmed. Flightless, with short elytra overlapping at front. 4-7, in grassy places, chewing leaves of various plants. Larva in nests of solitary bees. S & C. ▲ *M. proscarabaeus* is bluish-black and, like all oil beetles, very variable in size. Male has kinked antennae. 4-7. ▲ *M. violaceus* is similar but more finely punctured on head and thorax. Habits are like those of *M. variegatus*.

*Mylabris polymorpha*. Pale markings vary in shape and may be orange or yellow. On flowers in sunny places, feeding on pollen. 6-9. Larvae parasitise grasshopper eggs. S.



Spanish Fly  
x1.25

*Meloe variegatus* x1.25

*M. proscarabaeus*  
x1.25

*Mylabris polymorpha* x1.25

**LONGHORN BEETLES Cerambycidae** A family of more than 20,000 beetles, mostly with very long antennae arising from prominent tubercles. Antennae usually longer in male than female. Body usually distinctly elongate and often rather flattened. Elytra may be much broader than thorax. Tarsi appear to have only 4 segments, with 3rd segment bilobed and almost completely enclosing the small 4th segment. Tarsal segments much broader in male than in female. Many species are very colourful, often with marked differences between the sexes, but there are also many sombre species. Most species are fully winged and fly, by night or by day, with a ghostly rising and falling motion. A few are fast and noisy. They feed on flowers - particularly the pollen - and leaves, although some species take little food in the adult state. Many can stridulate loudly by rubbing the thoracic plates together. They do this mainly when they are alarmed.

The larvae are almost all wood-feeders, attacking both living and dead timber. Several species cause severe damage to forest areas. They are usually pale-coloured, elongate, and slightly flattened - especially those species that live just under the bark. The jaws are powerful, but legs are very short or absent. Wood is not a very nutritious food, and larval life is consequently rather long - usually two or three years, and sometimes much longer in dry, seasoned timber. Pupation takes place in an enlarged feeding tunnel or in a chamber hollowed out just under the bark. The larvae often go on growing after their trees have been felled and used for building, and with today's world-wide trade in timber the adults often emerge far from their native homes.

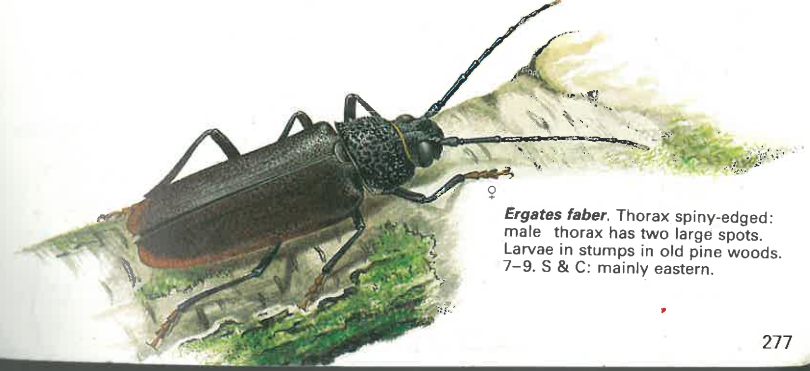
Several hundred species of longhorns live in Europe, with about 70 species native to Britain. Most live in the woodlands. Their habits are all rather similar and only minimal descriptions of the species are given in the following pages. The habitats given are essentially those of the larvae.



A typical longhorn larva showing the tapering body and very short legs.

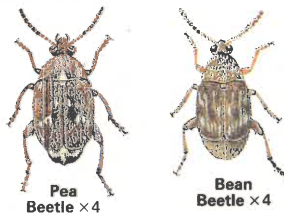


▲ *Prionus coriarius*. One of Europe's stoutest longhorns. Larvae in tree roots. 6-9.



♀ *Ergates faber*. Thorax spiny-edged; male thorax has two large spots. Larvae in stumps in old pine woods. 7-9. S & C: mainly eastern.





Pea Beetle x4

Bean Beetle x4

▲ **Pea Beetle** *Bruchus pisorum* Bruchidae. One of several similar beetles. A serious pest of peas. Legless grubs develop in growing pods. Adults emerge in spring and commonly sunbathe on walls.

▲ **Bean Beetle** *Acanthoscelides obtectus*. Like *Bruchus* but pronotum distinctly triangular. Hind femur has 3 teeth. A pest of beans, breeding in stored seeds and in growing crops.

**LEAF BEETLES Chrysomelidae** A family of over 25,000 species, almost all leaf-eaters. Often brightly coloured and mostly with smooth, rounded outlines. Tarsi appear 4-segmented, but actually have 5 segments: 4th is minute and concealed in expanded 3rd segment. Some species might be confused with ladybirds (p. 270) but latter have only three visible tarsal segments. Larvae soft and slug-like.

▲ **Donacia vulgaris**. Elytra green or coppery with red or blue central area. On bur-reed 5-8. Larvae live in stems. One of several similar species on water plants.

▲ **Oulema melanopus**. Head and elytra blue or black. Abundant in grass and sometimes a minor cereal pest. 4-7, often sunning itself on walls.

▲ **Asparagus Beetle** *Crioceris asparagi*. A pest of asparagus, adults and larvae chewing feathery leaves. 5-8, hibernating as adult. S & C.

△ **Lilioceris lili**. 4-8, on various members of lily family, including garden varieties. A pest in the south. S & C.

△ **Clytra 4-punctata**. 5-8, on vegetation near wood ant nests. Scatters eggs on nest; larvae, protected by soil and excrement, eat scraps in the chambers and galleries.

▲ **Cryptocephalus hypochaeridis**. One of a large genus of very metallic beetles, commonly seen on flowers, especially hawkweeds and other yellow composites, in summer.

*C. sericeus* is golden green to bluish or purplish green. 4-7, in grassland, especially on yellow umbellifers. S & C.

*C. bipunctatus* occurs mainly on hazel, birch, and oak. 4-7.

▲ **Bloody-nosed Beetle** *Timarcha tenebricosa*. Strongly domed and flightless, with elytra fused together. One of the largest leaf beetles. Named for habit of exuding a drop of red blood from mouth when alarmed - this frightens birds. 4-8, in grassy places, walking slowly over turf or bare ground. Feeds on bedstraw. S & C.

▲ **Chrysolina polita**. Common on herbage of river banks and other damp places all summer. Especially on mints. *C. grossa* of Mediterranean area is larger, with metallic blue thorax.

△s *C. menthastri* is one of our most brilliant leaf beetles, found on mints and other labiates in damp places. 5-9. S & C.

△s *C. cerealis* is usually metallic green with blue and red bands, but colour varies. Dry, sandy places, usually on wild thyme, throughout summer. S & C.

*C. geminata* is bronzy green or blue, sometimes all black. On St John's-wort (*Hypericum* spp) throughout summer. N & C.

▲ **Gastrophysa viridula**. Usually golden green; sometimes bluish. 5-8, on docks and related plants, normally on edges of ponds and streams.

△ **Colorado Beetle** *Leptinotarsa decemlineata*. A notorious potato pest, originally from N. America. Larva (p. 295) and adult both destroy leaves, and also feed on tomato, nightshades, and related plants. 4-9. Widely distributed in S & C: notify police if seen in B.

▲ **Chrysomela populi**. Pronotum dark green or bronze or almost black. Elytra orange to bright red, often with dark spots. On willows and poplars, 4-9.

*C. 20-punctata* has 10 irregular black marks on each elytron. 4-8, usually near water and normally on willows. C.

▲ **Phytodecta viminalis**. Shiny rusty brown: black marks variable and sometimes absent, but usually a black band or heart-shaped mark at rear of pronotum. 5-8, mainly on willows. N & C.

▲ **Lochmaea caprea**. Locally abundant on willows in fens and other damp places: also on birch. 4-9. ▲ *L. crataegi* is redder and occurs on hawthorn.



Leaf beetle tarsus showing the very small 4th segment almost enclosed in 3rd segment.



*Donacia vulgaris* x2



*Oulema melanopus* x3



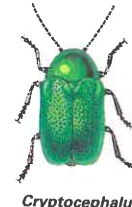
Asparagus Beetle x3



*Lilioceris lili* x3



*Clytra 4-punctata* x2



*Cryptocephalus hypochaeridis* x3



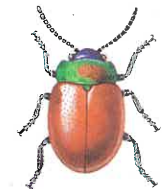
*C. sericeus* x3



*C. bipunctatus* x3



Bloody-nosed Beetle x1.5



*Chrysolina polita* x2



*C. menthastri* x2



*C. cerealis* x2



*C. geminata* x2



*Gastrophysa viridula* x2



Colorado Beetle x2



*Chrysomela populi* x2



*C. 20-punctata* x2



*Phytodecta viminalis* x2



*Lochmaea caprea* x2



*Dytiscus* renewing air supply

**Family Dytiscidae** A large family, related to the ground beetles (p. 256) although much modified for life in water. The head is sunk partly back into the thorax and the whole outline is smoothly rounded, while the hind legs are usually broad and flat and fringed with hairs for efficient swimming. Males of many species have swollen front tarsi, with which they grip females during mating. The beetles renew their air-supplies by coming to the surface tail-first. They nearly all fly well. Most can be found throughout the year, although they may hibernate in the coldest months. Adults and larvae are all fiercely carnivorous.

▲ **Great Diving Beetle** *Dytiscus marginalis*. Reddish brown with a deep green sheen, although latter disappears after death. Male elytra very smooth: those of female usually dull and ribbed. Pronotum has yellow border all round. Weedy ponds and other still waters: often very common. Larva (p. 297) and adult both attack frogs and newts as well as fishes, tadpoles, and various invertebrates. *D. latissimus* is larger and blacker, with elytra expanded sideways. Prefers large lakes. N & C.

*Cybister laterimarginalis*. Resembles *D. marginalis* but pronotum has yellow only at the sides. 3-7, in still and running water in lowlands. Not in far north.

▲ ***Acilius sulcatus***. Elytra shiny in male: ribbed in female, with dense hair between ridges. Black pattern on elytra often indistinct. Ponds and other still or slow-moving water.

▲ ***Platambus maculatus***. Readily identified by its pattern, although this does vary slightly. 5-10. Occurs in some well-aerated lakes, but mainly in running water - from fast-flowing mountain streams to weedy rivers and even brackish stretches: prefers stony or sandy bottoms. Absent from far south.

△ ***Noterus clavicornis***. Yellowish brown to brick-coloured. Very convex and, unlike most dytiscids, narrower at the back than the front. Antennae dilated, especially in male. 3-10, in densely vegetated ponds and lakes. Widely distributed, but local. Often placed in a separate family - the Noteridae.

▲ ***Potamonectes depressus***. Clothed with short hair. Yellow deepens with age. Relative amounts of black and yellow on elytra vary, some beetles being largely black and others largely yellow. Elytra toothed near apex. Essentially a bottom-dwelling species, with legs less modified for swimming than in most other dytiscids. Lakes and rivers with gravelly beds.

▲ ***Laccophilus minutus***. Rather flat, with distinctly lobed hind tarsi. Elytra sometimes quite green and frequently decorated with pale spots. Ponds and ditches.

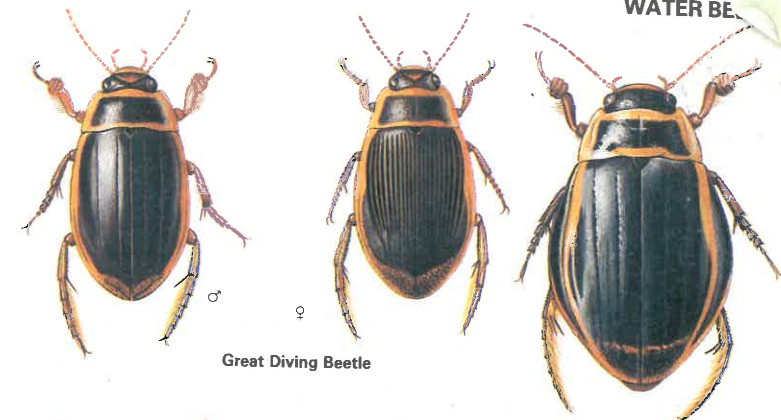
▲ ***Hygrotus versicolor***. Relatively large eyes, together with the characteristic elytral pattern, distinguish this from several closely related species. Very common in lakes, canals, and slow-flowing rivers.

▲ ***Hydroporus palustris***. One of several closely related species, but usually distinguished quite easily by the yellow or orange borders of elytra. The rest of the elytral pattern varies and may be absent. Very common in all kinds of still water, including mountain tarns.

▲ ***Ilybius fenestratus***. One of several very similar species with unequal claws on hind feet. Most are black or bronze, but *fenestratus* has a distinctly reddish tinge above and a red underside. 4-10, in ponds and lakes: less often in slow-moving streams. Larva (p. 297) is typical of many dytiscids in shape. N & C.

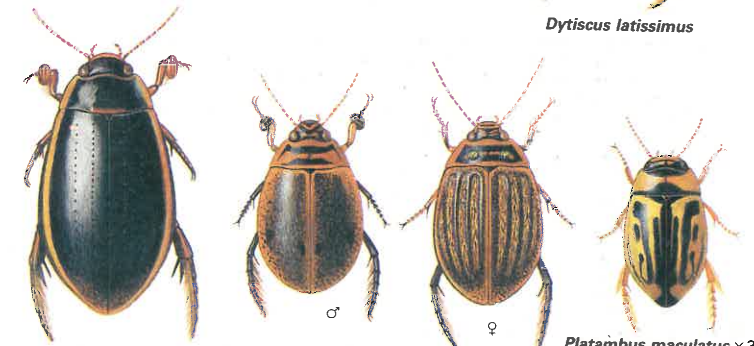
▲ ***Colymbetes fuscus***. Distinguished by its narrow shape (relative to *Dytiscus*) and by the yellow margins to elytra and thorax. Often with a green iridescence. Abundant in weedy and muddy ponds and ditches.

▲ ***Agabus bipustulatus***. Antennae and front legs reddish brown: rest of body black, with a faint shine in male but dull in female. Claws on hind feet equal. In standing water of all kinds and often abundant. Flies very readily and not uncommon at lights at night. There are several similar species, but most are smaller.



Great Diving Beetle

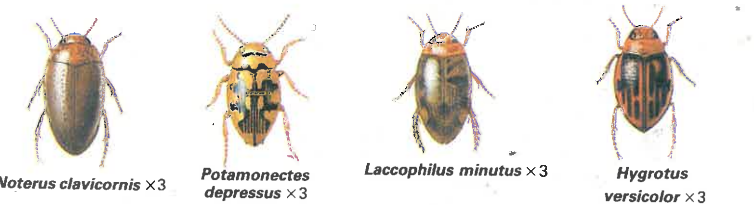
*Dytiscus latissimus*



*Cybister laterimarginalis*

*Acilius sulcatus*  
× 1.25

*Platambus maculatus* × 3

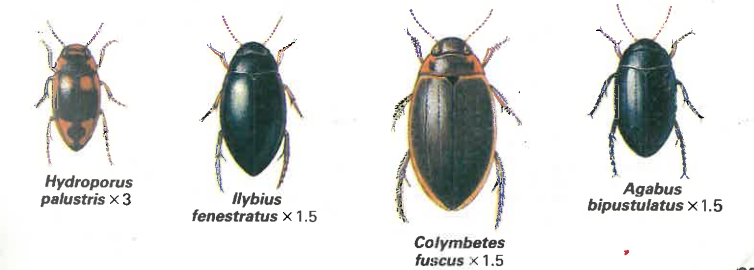


*Noterus clavicornis* × 3

*Potamonectes depressus* × 3

*Laccophilus minutus* × 3

*Hygrotus versicolor* × 3



*Hydroporus palustris* × 3

*Ilybius fenestratus* × 1.5

*Colymbetes fuscus* × 1.5

*Agabus bipustulatus* × 1.5