

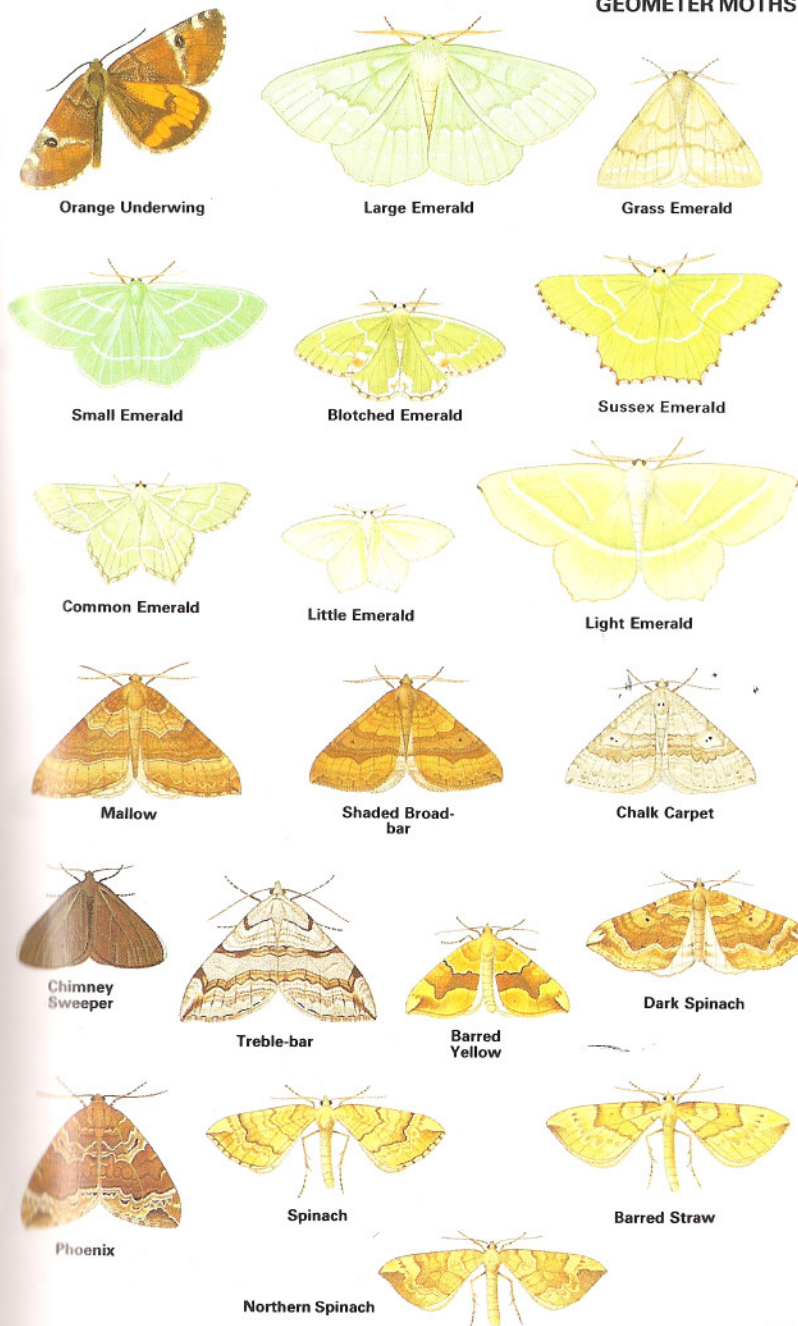
- ▲ **Orange Underwing** *Archiearis parthenias*. 3-5 on heaths and in open woodland. Male flies around birches in sunshine; female flies little. Larva, green with white stripes and a black line along the back, feeds on leaves and catkins of birch. ▲ **Light Orange Underwing** *A. notha* is similar, but smaller and with plainer forewings.
- ▲ **Large Emerald** *Geometra papilionaria*. Bright green at first but, as in all emeralds, it fades after a few days: green may disappear altogether after death. 6-8 in woods, heaths and hedgerows. Twig-like larva is brown at first and then green. It feeds on birch, hazel, and beech.
- ▲ **Grass Emerald** *Pseudoterpna pruinata*. Bluish green at first, soon becoming grey. 6-8 on moors, heaths, and damp scrubby grassland. Larva is green with a dark line on the back and a pink line on each side. It feeds on broom and gorse. S & C.
- ▲ **Small Emerald** *Hemistola chrysoprasaria*. 5-8 in hedgerows and woodland margins, mainly on chalk and limestone. Larva is pale green with white dots and a brown head. It feeds on traveller's joy.
- ▲ **Blotched Emerald** *Comibaena bajularia*. 6-7 in and around oakwoods. Larva is reddish brown but camouflages itself with debris. It feeds on oak. C.
- △s **Sussex Emerald** *Thalera fimbrialis*. Fringes chequered with red. Hindwing with 2 distinct points, separated by a crescent-shaped notch. 7-8 in scrubby and grassy places. Larva is yellowish green with red at front and rear and a red dorsal stripe. It feeds on a wide range of herbaceous plants. Absent from far north.



Euchrotes indigenata. 5-10 in rough and cultivated areas. Larva, bright green with red at each end, feeds on spurges. S.

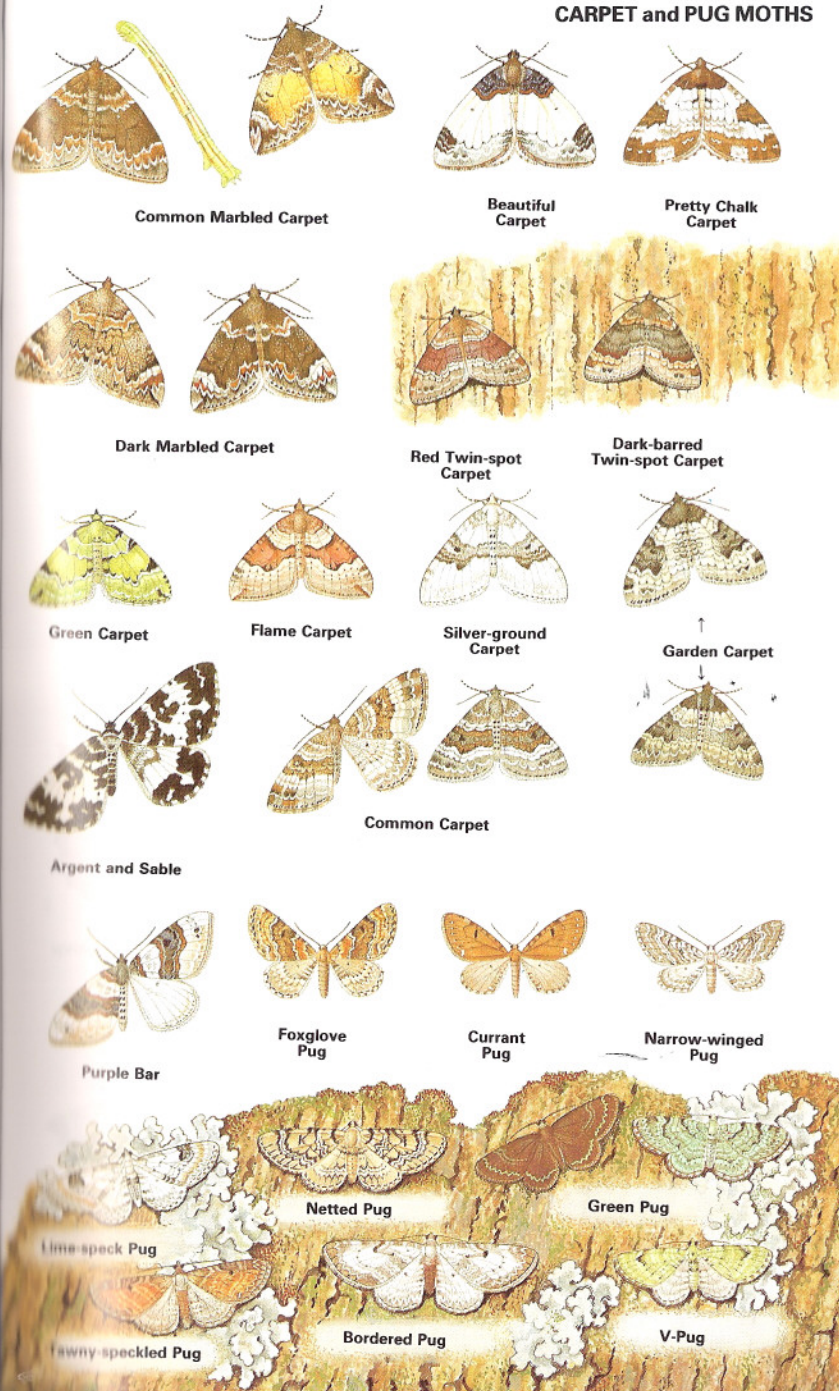
- ▲ **Common Emerald** *Hemithea aestivaria*. Hindwing has a single point. 6-8 in hedgerows and wooded areas. Larva is green with reddish brown marks and black V-shaped marks on the back. It feeds on low-growing plants when young, and then on deciduous trees. S & C.
- ▲ **Little Emerald** *Jodis lactearia*. Pale green at first, soon fading to shiny white. 5-7 in hedges and woodland. Larva, thin and green with red spots, feeds on various deciduous trees and shrubs. S & C.
- ▲ **Light Emerald** *Campaea margaritata* 5-7, mainly in woodland. Larva is dark green to purplish brown and feeds on various deciduous trees 8-5, often chewing buds and young bark in winter. Not closely related to the other emeralds.
- ▲ **Mallow** *Larentia clavaria*. Forewings pale to deep brown: cross bands often indistinct. Chequered margins give wings a scalloped appearance. 9-11 in rough habitats. Larva is slender and green and feeds on mallows.
- ▲ **Shaded Broad-bar** *Scotopteryx chenopodiata*. Resembles Mallow but lacks chequered margins. 6-8 in grassy places. Larva, pinkish grey with black spots, eats grasses and assorted legumes.
- △s **Chalk Carpet** *S. bipunctaria* flies 6-8 on chalk and limestone grassland. Larva, pale pinkish brown, feeds on clovers and trefoils. S & C.
- ▲ **Chimney Sweeper** *Odezia atrata*. Jet black at first, becoming brown with age, but always with white streak at apex. Day-flying 5-7 in grassy places. Larva, green with dark lines on back, feeds on flowers of earthnut and other small umbellifers. N & C and southern mountains.
- ▲ **Treble Bar** *Aplocera plagiata*. 5-9 in rough grassy places: 2nd brood insects smaller and often with faint bars. Larva, dark green to reddish brown with darker and paler lines, feeds on St John's-worts.
- ▲ **Barred Yellow** *Cidaria fulvata*. 5-7 in gardens, hedges, and other scrubby places. Rests with abdomen raised. Larva, wrinkled green with yellow rings, feeds on roses.
- ▲ **Dark Spinach** *Pelurga comitata*. Central band varies in intensity. 6-8 in scrubby and grassy places, especially on coasts. Larva is brownish with V-shaped marks on back and feeds on seeds of goosefoot and related plants. N & C.
- ▲ **Phoenix** *Eulithis prunata*. 7-8 in gardens, hedges, and woodland margins. Larva, green to brown with pale triangular markings, feeds on currants and gooseberries.
- ▲ **Spinach** *E. mellinata*. Forewing ground colour pale yellow to brick; hindwing cream; chequered fringes on all wings. Rests with forewings at right angles to body and hindwings more or less hidden beneath them. 6-8, mainly in gardens. Larva, green with white lines, feeds on currant bushes. ▲ **Northern Spinach** *E. populata* is much darker and has no chequered fringes: forewing sometimes entirely brown. 6-8 in woods and on moors. Grey or brown larva feeds on bilberry and other shrubs. N & C; mainly northern in B. ▲ **Barred Straw** *E. pyraliata* resembles a pale Spinach but lacks chequered fringes and central cross-lines are closer together. 6-8 in hedges and woodland margins. Larva feeds on cleavers and bedstraws.

GEOMETER MOTHS



- ▲ **Common Marbled Carpet** *Chloroclysta truncata*. Extremely variable. 5-6 and 8-10 in woods and hedgerows. Green larva is very slender, usually with reddish stripes on sides, and feeds on many trees and shrubs and also on wild strawberry. N & C.
- ▲ **Dark Marbled Carpet** *C. citrata* is equally variable and difficult to separate from the last species, but dark basal area of forewing generally has a sharper outline and hindwing is dirty white instead of mid-grey. 7-8 (more or less between the two broods of *truncata*) in woods and on heaths and moors. N & C.
- ▲ **Beautiful Carpet** *Mesoleuca albicillata*. 5-8, mainly in open woodland. Larva is green with reddish brown blotches on the back. It feeds mainly on bramble.
- ▲ **Pretty Chalk Carpet** *Melanthia procellata*. 5-8 in old hedges and woodland edges, mainly on chalk and limestone. Larva, pale brown with darker lines, feeds on traveller's joy. S & C.
- ▲ **Red Twin-spot Carpet** *Xanthorhoe spadicearia*. Ground colour pale to dark grey: central band may be brick-coloured: twin spots may be obscure. Hindwing dirty white with grey clouding. 5-9. Larva is brownish grey with pale diamonds and black spots. It feeds on many low-growing plants. ▲ **Dark-barred Twin-spot Carpet** *X. ferrugata* has a darker central band, sometimes purplish, outlined in rich brown. Hindwing dark grey. 5-9. N & C. ▲ **Flame Carpet** *X. designata* flies 5-9 in damp woods and hedges. Larva, yellowish grey with black spots and assorted other markings, feeds on crucifers. N & C. ▲ **Silver-ground Carpet** *X. montanata* may have greyer ground colour and paler cross band. 5-8 in woods and hedges. Larva is purplish brown on the back and greyish on the sides. It feeds on bedstraws and other low-growing plants. N & C. ▲ **Garden Carpet** *X. fluctuata* has ground colour from white to dark grey: black marks also vary in extent. 4-10 almost everywhere. Larva, green to grey with pale diamonds on he back, feeds on brassicas and other crucifers.
- ▲ **Green Carpet** *Colostygia pectinataria*. Green usually fades to yellowish after a few days. 5-8 in hedges and other scrubby places, including heathland. Larva is greenish brown with red V-shaped marks and feeds mainly on bedstraws.
- ▲ **Common Carpet** *Epirrhoe alternata*. Dark markings black to greyish brown. Outer white band always contains a thin grey line (absent in the similar ▲ **Wood Carpet** *E. rivata*). 5-9 in woods and hedges. Larva, brown or green with various markings, feeds on bedstraws.
- ▲ **Argent and Sable** *Rheumaptera hastata*. Northern specimens smaller and darker. Day-flying 5-7 on heaths and in open woods. Larva is shiny olive green with reddish marks on the sides and feeds on birch and bilberry. N & C.
- ▲ **Purple Bar** *Cosmorhoe ocellata*. 5-9 in most rough habitats. Larva is pale brown with a darker network and feeds on bedstraws.
- ▲ **Foxglove Pug** *Eupithecia pulchellata*. Flies 5-7. Larva, normally yellowish green and often marked with purple, feeds in foxglove flowers. ▲ **Currant Pug** *E. assimilata* is one of several similar species but can normally be distinguished by the prominent white mark at rear angle of forewing. 5-9 in gardens and hedges. Larva, yellowish green with darker green lines, feeds on currant and hop. N & C.
- ▲ **Narrow-winged Pug** *E. nanata*. Pattern varies, but relatively long and pointed forewings distinguish this from most other pugs. 5-9 on heaths and commons. Larva, very pale green with red spots, feeds on heather. N & C. ▲ **Lime-speck Pug** *E. centaureata* flies 5-10 in gardens and rough habitats. Like most pugs, it rests with its wings outstretched and front edge of forewing more or less at right angles to body. Larva is green or yellow, often with red spots, and feeds on flowers of yarrow, ragwort, and other composites.
- ▲ **Netted Pug** *E. venosata* may have darker forewings with less distinct network. 5-7 in hedges and other rough places. Larva, greyish brown with a greenish underside and 3 dark lines on the back, feeds in the seed capsules of campions.
- ▲ **Tawny Speckled Pug** *E. ictarata* may lack brick-coloured patch on forewing. 5-8. Larva, reddish brown with a white line on each side, feeds on flowers of yarrow and other composites. ▲ **Bordered Pug** *E. succenturiata* may have dark clouding over much of forewing. 6-8 in rough grassy places. Larva is reddish brown with black marks on the back and feeds on leaves of mugwort, yarrow, and related composites. N & C.
- ▲ **Green Pug** *Pasiphila rectangularata*. Grey to black, often with little green. 5-8. Larva is relatively stout, pale green with a reddish stripe on the back, and feeds in buds and flowers of apple, hawthorn, and related trees. ▲ **V-Pug** *Chlorochystis v-ata* flies 4-9. Larva is green, normally with 3 reddish lines on the back. It feeds on the flowers of many plants, including hemp agrimony, traveller's joy, and bramble. S & C.

CARPET and PUG MOTHS





Magpie larva



Large Thorn larva

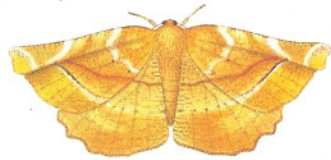


Early Thorn larva



Lilac Beauty larva

- ▲ **Magpie** *Abraxas grossulariata*. Pattern rather variable, but usually easily recognised. 6-8 in gardens, hedgerows, and other scrubby habitats. Larva (left) feeds on blackthorn, gooseberry, currants, and many others shrubs.
- ▲ **Clouded Magpie** *A. sylvata* flies 5-7 in woodland, commonly resting on dog's mercury leaves and resembling bird droppings. Larva, cream with black and yellow lines, feeds mainly on wych elm.
- ▲ **Clouded Border** *Lomaspilis marginata*. Amount of dark spotting varies, females normally lacking black band across centre of each wing. 5-8, especially in damp woods and hedgerows. Larva is pale green with darker lines and feeds on sallows.
- ▲ **Scorched Carpet** *Ligdia adustata*. 4-9 in woods and hedgerows. At rest on bark, the dark patches break up the outline and render the moth very hard to detect. Larva is bright green with rust-coloured spots and is very like the stalks of the spindle leaves on which it feeds.
- ▲ **Large Thorn** *Ennomos autumnaria*. Pale yellow to almost brick-coloured, always with brown wing-tips. 8-10 in woods and hedgerows. Like most thorn moths, it often rests with wings raised at an angle. A regular visitor to light. Larva (left) feeds on hawthorn and other trees.
- ▲ **August Thorn** *E. quercinaria* ranges from pale yellow to almost brick-coloured: female usually paler than male. Cross-lines almost parallel, but inner line bends sharply inwards near front margin. 8-9 in wooded areas and also tree-lined suburban avenues. Larva is greyish brown and stick-like, with several 'warts' on the back. It feeds on oak and other trees.
- ▲ **Canary-shouldered Thorn** *E. alniaria* is named for its bright yellow thoracic hair. Wings range from pale to deep yellow, always tinged with brown. 8-10 in wooded areas, especially where damp. Twig-like larva feeds on alder, birch, and other trees.
- ▲ **Dusky Thorn** *E. fuscantaria* is like August Thorn, but cross-lines converge strongly towards rear edge of forewing. 8-9 in wooded areas. Larva is green and feeds on ash.
- ▲ **Early Thorn** *Selenia dentaria*. Ground colour yellowish grey to brown. Insects of spring brood (3-5) much larger than those of summer brood (7-9): females usually paler than males, especially on underside. Summer insects often more boldly marked. Rests with wings partly raised or else closed vertically above the body: underside resembles dead leaf. Woodland and hedgerows. Twig-like larva feeds on hawthorn and many other shrubs.
- ▲ **Purple Thorn** *S. tetralunaria* flies in woodland, with spring brood (4-5) darker and larger than summer insects (7-9). Basal part of wing ranges from chestnut to purplish black. Rests like Early Thorn: underside similar to upperside. Larva feeds on a wide variety of trees and shrubs. ▲ **Lunar Thorn** *S. lunularia* is distinguished by very ragged wing margins. 5-7 in woods and hedgerows. Brown, twig-like larva feeds on many trees and shrubs.
- ▲ **Lilac Beauty** *Apeira syringaria*. 6-9 in woods, gardens, and hedgerows. Rests with forewings strangely creased to resemble a dead leaf. Larva (below) has 2 hooked outgrowths on the back and is very hard to spot among the twigs. It feeds on lilac, privet, and honeysuckle.
- ▲ **Small Waved Umber** *Horisme vitalbata*. Dark stripe across wings and body breaks up outline and makes the moth very hard to spot at rest on tree trunks and fences. 5-9 in hedgerows and woodland margins. Larva is greyish brown with darker lines and feeds on traveller's joy.

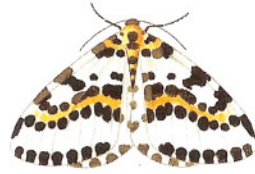


Lilac Beauty

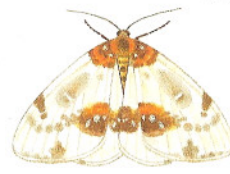


Small Waved Umber

MAGPIE and THORN MOTHS



Magpie



Clouded Magpie



Clouded Border



Large Thorn



Scorched Carpet



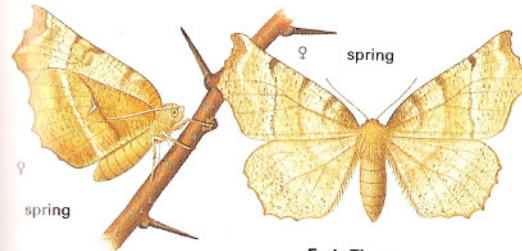
August Thorn



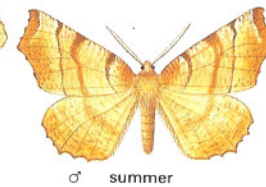
Canary-shouldered Thorn



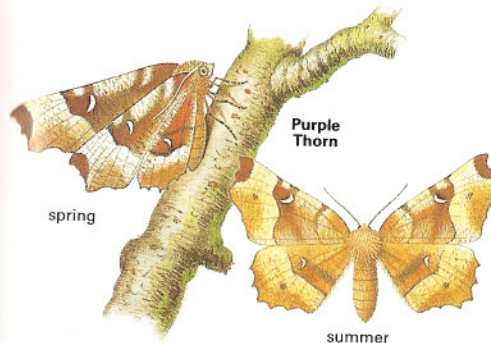
Dusky Thorn



Early Thorn

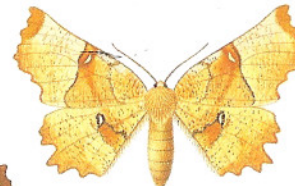


♂ summer

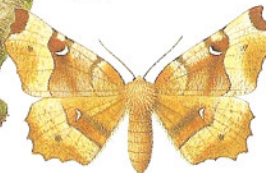


spring

Purple Thorn



Lunar Thorn

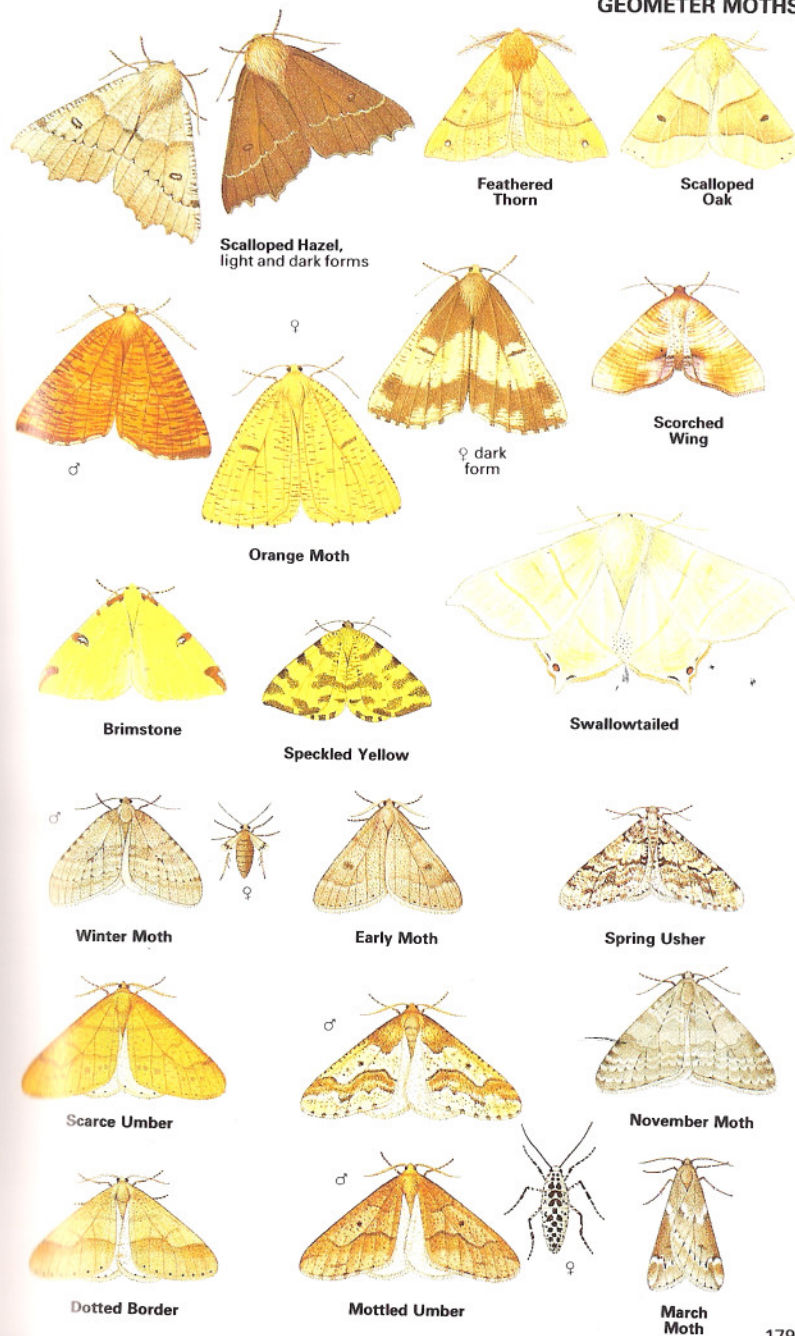


summer

- ▲ **Scalloped Hazel** *Odontopera bidentata*. Ranges from dirty white to black, the latter mainly in the north. 4-7 in woods and hedgerows. Brown or green twig-like larva feeds on almost any deciduous tree or shrub.
- ▲ **Feathered Thorn** *Colotois pennaria*. Pale to dark brick-coloured. Male antennae strongly feathered. 8-11 in woods and hedgerows. Twig-like brown larva feeds on a wide range of deciduous trees and shrubs.
- ▲ **Scalloped Oak** *Crocallis elinguaris*. Ground colour ranges from pale cream to brick. 6-8 in woods and hedges. Twig-like greyish larva feeds on most deciduous trees.
- ▲ **Orange Moth** *Angerona prunaria*. Sexes differ markedly in colour: sometimes brown with orange (male) or yellow (female) band on each wing. 5-7 in woodland. Twig-like larva feeds on most deciduous trees and shrubs.
- ▲ **Scorched Wing** *Plagodis dolabraria*. 4-9 in woodlands. Twig-like larva, brown with darker markings and a large 'wart' at the rear, feeds on various trees.
- ▲ **Brimstone** *Opisthoptera luteolata*. 4-10 in hedgerows and other scrubby places, including gardens. Brown or green larva (below) feeds on hawthorn and other shrubs.
- ▲ **Speckled Yellow** *Pseudopanthera macularia*. Brown markings vary. Day-flying 5-6 in scrubby habitats. Bright green larva feeds on wood sage and other labiates.
- ▲ **Swallowtailed Moth** *Ourapteryx sambucaria*. 6-8 in gardens, hedges, and other scrubby places. Larva (below) feeds on ivy, hawthorn, and many other shrubs.

- ▲ **Winter Moth** *Operophtera brumata*. 10-2 in gardens, hedges, and wherever else there are trees. Male often comes to lighted windows: female virtually wingless. Larva, green with pale lines and a darker one on the back, feeds on almost any deciduous tree: a serious pest of apples.
- ▲ **Early Moth** *Theria primaria*. 1-3 in hedges and other scrubby places. Female wingless. Larva, generally pale green with darker blotches and pale lines, feeds on hawthorn, blackthorn, and other shrubs.
- ▲ **Spring Usher** *Agriopsis leucophaea*. Often much paler than shown, but forewings may be entirely black. Female wingless. 1-4 in wooded areas. Larva, green with yellowish lines, feeds on oak.
- ▲ **Scarce Umber** *A. aurantiaria* flies 10-12 in wooded areas. Female is wingless. Larva is brownish yellow with purplish marks on sides and feeds on many trees and shrubs.
- ▲ **Dotted Border** *A. marginaria* may have forewings darker than shown, but small dots usually visible on outer margins of all wings. Female wingless. 2-4 in hedges and other scrubby places. Larva, greenish brown with dark crosses on back, feeds on many trees and shrubs.
- ▲ **Mottled Umber** *Erannis defoliaria*. Very variable: forewings sometimes uniformly straw-coloured or dark brown. Female wingless. 10-3 in gardens, woods, and hedges. Larva ranges from straw-coloured to deep brown, usually with yellow patches along the sides. It feeds on almost any deciduous tree or shrub: often an orchard pest.
- ▲ **November Moth** *Epirrita dilutata*. 9-12 in wooded areas. Larva is green with deep red spots or lines and feeds on many trees and shrubs.
- ▲ **March Moth** *Alsophila aescularia*. 2-4 in gardens, hedges, and most wooded areas. Wings wrapped partly round body at rest. Female wingless. Larva, pale green with white lines, feeds on most deciduous trees and shrubs.
- ▲ **Small Yellow Wave** *Hydrelia flammeolaria*. 5-7 in woods and hedges: rests with wings widely spread. Larva, green with pale rings, feeds on maple and alder.
- ▲ **Rivulet** *Perizoma affinitata*. 5-7 in rough, grassy places. Larva is pinkish brown and feeds in seed capsules of campions.
- ▲ **Yellow Shell** *Camptogramma bilineata*. Ground colour yellow or brown: central band sometimes very dark. 6-8 in gardens and hedges. Larva is brown or green, paler below, and feeds on many low-growing plants. It bends into a ?-shape when resting.
- ▲ **Shoulder Stripe** *Anticlea badiata*. 3-5 in hedges and other scrubby places. Larva, generally green with paler rings, feeds on roses.

GEOMETER MOTHS



Brimstone larva

Swallowtailed larva



Small Yellow Wave



Rivulet



Yellow Shell



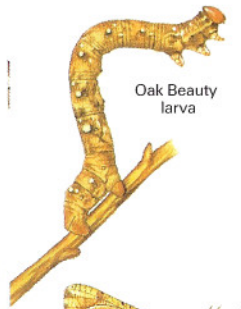
Shoulder Stripe



Peppered Moth larva



Waved Umber



Oak Beauty larva



Bordered White at rest

▲ **Peppered Moth** *Biston betularia*. Exists in two main forms – the speckled (normal) and the black (melanic). The latter was first noticed in the middle of the 19th century in industrial areas, where it clearly has an advantage on smoke-blackened trees and buildings, but it is now widespread in many other habitats and sometimes more common than the normal form. This industrial melanism has since been discovered in many other moths. The Peppered Moth flies 5-8 in woods and gardens. The larva (left) is greyish brown or bright green, with a deeply notched head. It feeds on many trees and shrubs.

▲ **Oak Beauty** *B. strataria*. Flies 2-5, mainly in woodland. Larva (below left) feeds on oak and many other trees. S & C.

▲ **Pale Brindled Beauty** *Phigalia pilosaria*. 11-4 in hedgerows and woodland. Female is wingless and found mainly on tree trunks. Stick-like larva is greyish brown with darker bud-like 'warts' and feeds on most deciduous trees and shrubs. N & C.

▲ **Brindled Beauty** *Lycia hirtaria*. Ground colour grey or brown, usually heavily speckled with yellow. Female wings somewhat longer and narrower. 2-4, wherever there are trees, including town streets and parks. Larva is reddish brown or grey with yellow and red markings. It feeds on most kinds of deciduous trees and shrubs.

▲ **Waved Umber** *Menophra abruptaria*. Ground colour often much darker, especially in male. 3-6 in woods, hedgerows, and gardens. Remarkably well camouflaged at rest on trees and fences, where it always sits with its body horizontal and the wing pattern running vertically to match the furrows – which on tree trunks are almost always vertical. Larva is greyish, often marked with pink, and very twig-like. It feeds on privet, lilac, and other shrubs. Cocoon, spun on twigs and covered with fragments of bark and algae, is almost invisible. S & C.

▲ **Willow Beauty** *Peribatodes rhomboidaria*. Ground colour smoky grey or yellowish. One of several rather similar species, but distinguished from most of them by central cross-line on forewing having only one bulge (in front of middle). Male antennae strongly feathered. 6-9 in woods and gardens. Larva is reddish brown and feeds on ivy, hawthorn, and many other shrubs. S & C.

▲ **Great Oak Beauty** *Hypomecis roboraria*. Black cross-lines vary in intensity and sometimes almost absent. 6-7 in oakwoods. The larva feeds on oak and closely resembles the twigs. S & C.

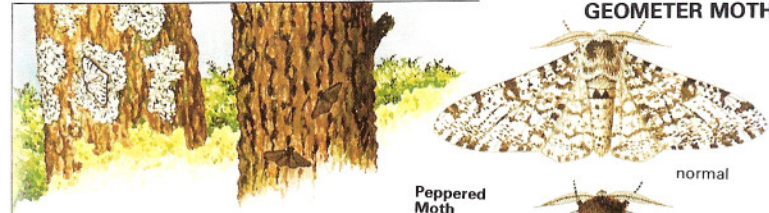
▲ **Engrailed** *Ectropis bistortata*. Markings vary in intensity, and ground colour often greyer. Male antennae not feathery. 3-9 in wooded areas. Larva is greyish and feeds on many deciduous trees and shrubs. N & C.

▲ **Square Spot** *Paradarisa consonaria* has a clear square mark near outer margin of forewing. Male antennae not feathered. 4-6 in woodland. Larva feeds on numerous trees and shrubs, including pine. S & C.

▲ **Bordered White** *Bupalus piniaria*. Also called the Pine Looper. Male ground colour is white in northern Europe, including northern B, and yellowish in the south. Female is orange brown in north and yellowish elsewhere. All forms have brown wing-tips. 5-8 in coniferous woodland. Larva is green with pale stripes and feeds on the needles of many conifers, often causing severe damage in plantations.

▲ **Common Heath** *Ematurga atomaria*. Ground colour yellowish in male and white in female. Dark speckling often so dense as to make wings brown all over, but female usually less heavily speckled than male. Day-flying, 5-9 on heathland. Larva is grey to dark green, often with rows of white dashes on back. It feeds on heather, heaths, and various legumes.

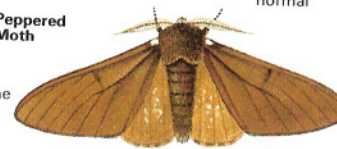
GEOMETER MOTHS



normal

Peppered Moth

The normal peppered moth is hard to spot on clean, lichen-covered trees, but in smoke-blackened areas the melanic form has the advantage. Birds remove the most conspicuous forms from any given habitat, leaving the best-camouflaged ones to breed.



melanic



Pale Brindled Beauty



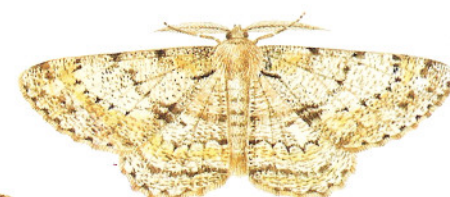
Oak Beauty



Brindled Beauty



Willow Beauty



Great Oak Beauty



Engrailed



Bordered White

southern



Square Spot



northern



Common Heath