



Insect Fauna in Detail

The following list represents the best available current knowledge, but is likely to be incomplete.

Many species of insect may be found on Ragwort (*Senecio* spp.) but some may have only a casual relationship. Of those insects that eat Ragwort, it is necessary to separate those species that will eat many types of plant from those that are specific to Ragwort or which have relatively few other food plants. The Ragwort fauna described in the literature thus needs to be treated with caution. The listing here only includes the most significant Ragwort feeders.

Table 1: Numbers of invertebrates using Ragwort as a food plant in the UK (pollinators and nectar feeders not included)

	Red Data Book (1-3)	Nationally Scarce (1-3)	Ragwort Specific	Ragwort Major	Ragwort significant	<i>Senecio</i> sp reported*
Beetles		3	7	1	1	5
Flies	1	1	12	1	5	7
Macromoths	1		1	4		25
Micromoths	1	3	7	4	4	2
Bugs			1			16
Thrips			1		2	3
Mites			1			
Others						3
Total	3	7	30	10	12	61

* Species in this category are not listed in detail here or included in the first two columns.

The lists below are categorised as follows:

Bold - Ragwort specific (29 insects plus one mite).

Underlined - Ragwort major; only one other main food plant or Ragwort the main plant locally.

Plain – Ragwort is a significant food plant at least in some areas but may eat a number of other plants.

BEETLES

Six species of *Longitarsus* are specific to *Senecio* (a further species is polyphagous). These are flea beetles, so called because they jump if disturbed, are mostly 1.8 - 2.5mm long, but a few are as large as 3.5mm. There is also a Ragwort specific species of *Phyllotreta* (also a flea beetle) and a phalacrid that may be specific.

Olibrus corticalis (Phalacridae).

Ragwort only confirmed plant in Britain but potentially on a few others (RES key).

***Phyllotreta nodicornis* (Leaf beetle)**

Adult bronze coloured, body length 2-2.8mm.
Larvae found in the roots of *Senecio jacobaea* and *Reseda lutea*.



Leaf beetle (*Phyllotreta nodicornis*)
feeding on Weld (*Reseda luteola*)
© Malcolm Storey

***Longitarsus dorsalis* (Leaf beetle) Nationally Scarce B**

The beetle is distinctive in the genus, being black with a partly or entirely yellow thorax and broad yellow sides to the elytra. The adults nibble small round holes in leaves from the lower side, usually leaving the upper epidermis intact. In spring (March - June), adults are found in rosettes, actively hopping if disturbed in warm weather or hiding under leaves in cold weather. Adults are also found in the autumn (September – December), presumably hibernating. Thrives best on rosettes, on bare ground as part of pioneer vegetation, particularly in limestone quarries and on coastal cliffs.



Leaf beetle (*Longitarsus dorsalis*)
on Ragwort © Roger Key

Also occurs in grassland and in woodland rides.

Southern distribution but also Peterborough and East Anglia.

***Longitarsus gracilis* (Leaf beetle)**

The adults are entirely yellow species except for the antennae which are dark towards the apex. Sometimes the thorax and elytral suture line are slightly darker.

***Longitarsus ganglbaueri* (Leaf beetle) Nationally Scarce A**

Difficult to separate from related species so may be under-recorded. Head black, thorax non-metallic reddish, elytra lighter with darker suture between them, underside black.

Adults found from April to December.

On coastal shingle and disturbed ground including disused quarries.

Widespread in England and Scotland (not Wales).

***Longitarsus jacobaeae* - Ragwort flea beetle**

Adults unusually broad with strong elytral shoulders. Reddish yellow with darker apex to antennae and sometimes with some darkening on the hind femora.

Eats 'shot holes' in rosette leaves. Lays eggs in soil near plants.

The larvae feed on leaf petioles and root crowns, causing root crown to turn brown and die. Pupates in the soil in late spring.

This beetle can severely damage populations of Ragwort, though in a less conspicuous fashion than the cinnabar moth.

Adults from June-December.

Widespread on stands of *Senecio jacobaea*.

***Longitarsus ochroleucus* (Leaf beetle) Nationally Scarce B**

A pale yellow-brown species with hind femora black or pitchy red. They have a long tibial spur. Adults have yellow elytra, yellow hind femora and yellow antennae or slightly darker at apex. Nibble small round holes in leaves from lower side, usually leaving the upper epidermis intact.

Adults on *Senecio squalidus* and probably some other species.

Habitats include a chalk pit and assumed to require disturbed ground and grassland.

Widespread up to south east Scotland, locally common.

***Longitarsus succineus* (Chrysanthemum flea beetle)**

On various composites including Ragwort. Eats rosette leaves, producing a lacy appearance.

***Longitarsus suturellus* (Leaf beetle)**

Adults darker mid-line where the elytra meet. The head is black and the thorax metallic black to pitchy red. The underside is black.

Field key to *Longitarsus* - indicative rather than definitive.

(Need to ensure true host plant: see Kevan (1967) for a key to this large genus)

- | | |
|--|---|
| 1. Elytra (wing cases) black with broad yellow lateral margins.
- Elytra without this pattern. | dorsalis
2 |
| 2. Predominantly yellow or reddish body, even beneath.
- At least black underneath or on head. | 3
6 |
| 3. Hind femora (fat thigh segment) yellow or reddish.
- Hind femora black or pitchy red. | 4
ochroleucus |
| 4. Body entirely reddish yellow (apex of antennae and sometimes hind femora darker). A relatively broad species, with the tibial (shin segment) spur short.
- Body yellow or yellowish brown. | jacobaeae
5 |
| 5. Antennae markedly dark in apical (end) part.
- Antennae at most only faintly darker in apical part. | gracilis
succineus |
| 6. Thorax (body segment between the head and elytra) metallic.
- Thorax not metallic. | suturellus
ganglbaueri |

FLIES

Twelve species are specific to Ragwort and five are polyphagous. The most noteworthy ones are the four picture-winged flies, since one is Red Data Book and another Nationally Scarce. They are attractive insects, especially the largest, *Ictericia westermanni*. It should be noted that most breed in flower / seed heads or stems, so control by uprooting of flailing can destroy the required conditions for these insects.

Whilst the hoverfly and the picture-winged flies are fairly easy to identify, the rest require rather more demanding keys and a microscope. Galls are easier to identify.

***Campiglossa malaris* (Picture-winged fly, Tephritidae) RDBK**

A small species with brown and white mottled wings. A number of other species look similar and may casually sit on Ragwort. Mainly found on *Senecio erucifolius*, but also *Senecio jacobaea*. Believed to breed in the flower heads. Adults, July-August.

On chalk grassland, coastal shingle and other dry sites.

Very local in Kent.

***Cheilosia bergenstammi* (Hoverfly)**

Adults at flowers of host plants, sometimes other flowers. Adults are about 1cm, black with pale brown hairs. Antennae orange, hind tibia yellow with black median ring. Larva with characteristic fused twin-tube hind spiracles.

Larvae in the roots of *Senecio jacobaea* (and possibly *S. erucifolius*) and probably pupate in the surrounding soil.

***Contarinia aequalis* (Gall midge)**

Cause swollen unopened young flower head with one or several yellow to pink larvae. Local.

***Contarinia jacobaeae* (Gall midge)**

Larvae cream-white to orange, found between achenes and in receptacle beneath. Can 'jump' when extracted. Cause a swollen pear-shaped older flower head which may have some florets.

Widespread.

***Liriomyza erucifolii* (Fly, Agromyzidae)**

Leaf mines on *Senecio erucifolius* and *S. jacobaeae*, forming an irregular linear mine normally adjacent to leaf edge.

Recorded from Scratch Wood, Middlesex.



Liriomyza erucifolii feeding in a
Ragwort leaf
© Willem Ellis

***Melanagromyza aeneoventris* (Fly, Agromyzidae)**

Stem mines in *Senecio jacobaeae* and *Cirsium* spp.,

Varied habitat, widespread at least in south, extending to Scotland and Wales.

***Melanagromyza dettmeri* (Fly, Agromyzidae)**

Stem mines, polyphagous in composites, including *Senecio erucifolius* and *S. jacobaeae*.

Larvae and pupae in stems.

Varied habitat, England and Scotland.

***Melanagromyza eupatorii* (Fly, Agromyzidae)**

Stem mines, polyphagous in composites, including *Senecio jacobaeae*. Its fenland sites suggest *Eupatorium cannabinum* could also be a host in Britain (but *Inula conyza* and *Chrysanthemum leucanthemum* of continental literature may not be relevant).

On fens: Chippenham Fen and Woodwalton Fen.

***Icteric westermanni* (Picture-winged fly, Tephritidae) Nationally Scarce B**

A large rather spectacular orange-brown species with heavily mottled wings.

Larvae and pupae in flower / seed heads of *Senecio erucifolius* and *S. jacobaeae*.

Adults found late July-mid August by sweeping Ragwort, the adults being well camouflaged on the plant.

On open grassland, usually dry.

Local in the South, South Midlands and East Anglia.



Picture-winged fly
(*Icteric westermanni*)
© Roger Taylor

Napomyza lateralis (Fly, Agromyzidae)

Stem mines, polyphagous in composites, including *Senecio vulgaris*. Other plants mainly chamomiles (*Anthemis* and *Matricaria*), marigold (*Calendula*), Bidens and also garden *Dimorphotheca*.

Widespread and common.

***Ophiomyia senecionina* (Fly, Agromyzidae)**

Stem mines in *Senecio erucifolius* and *S. jacobaea*, forming external mine and pupating in mine.

Box Hill, Surrey, presumed Red Data Book status.

***Phytomyza alpina* (Fly, Agromyzidae)**

Leaf mines in *Senecio jacobaea* (long, irregular linear).

Boreoalpine species, common in Scotland. Also in northern England and the Burren in Ireland.

***Pegohylemyia jacobaeae* Ragwort seed fly (Anthomyiidae)**

Larvae predatory on other fly larvae in flower heads of *Senecio erucifolius* and *S. jacobaea* (genus may be cited as *Botanophila*).

***Pegohylemyia seneciella* (Fly, Anthomyiidae)**

Larvae in flower heads of *Senecio jacobaea*, producing a cone of froth, which dries, in the middle of the flower. Found where Ragwort plants are few. In large stands there is greater probability of predation by *Pegohylemyia jacobaea*.

***Sphenella marginata* (Picture-winged fly, Tephritidae)**

A moderately small species with a very characteristic bar across the wing before the apex. Larvae and pupae in flower / seed heads of *Senecio aquaticus*, *S. erucifolius*, *S. jacobaea*, *S. viscosus* and *S. vulgaris*. Flowerheads become broadened at base.

Though widespread inland, it is generally commonest on the coast. It can be abundant where *S. viscosus* is plentiful on coastal landslips.

England as far north as Liverpool / Hull and Wales.

***Trupanea stellata* (Picture-winged fly, Tephritidae)**

One of the few species with a star-like dark patch on the wing towards the apex. *Trupanea* is an especially small delicate species (another species is exceedingly rare, host plant unknown). *Tephritis cometa* has a similar wing mark but this is larger and more robust.

Larvae and pupae in flower / seed heads of *Senecio*.

Widespread in England as far north as Sheffield. Also coastal Wales and Solway. Very scarce inland, with best records in London and to the west, Warwickshire and the Breck. Strongest on the coast, especially Kent, may be Nationally Scarce.

***Trypeta artemisiae* (Tephritidae)**

Leaf miner in *Senecio*, *Achillia ptarmica*, *Artemisia*, *Eupatorium*, *Tanacetum* and perhaps some other composites.

***Trypeta zoe* (Tephritidae)**

Leaf miner in *Senecio erucifolius*, *S. jacobaea*, *S. squalidus*, *S. vulgaris*, plus *Artemisia*, *Eupatorium*, *Tussilago*, *Petasites*. Also garden *Aster* and some other composites.

MACRO MOTHS

There are many moths for which Ragwort is listed or implied as a food plant, including a number of pug moths. Five species below are especially relevant.

Eupithecia virgaureata Golden-rod pug (Geometrid moth)

Larvae on flowers of *Solidago virgaurea* and *Senecio jacobaea*.

Two broods in July and September - October (only larvae of the second brood have been found in the wild).

Adult found May - August.

Widespread but local.

Heliopsis peltigera Bordered straw (Noctuid moth).

An immigrant that only comes to Britain some years. Many succeed in having two generations.

Polyphagous but *Senecio viscosus* is apparently the most frequently reported food plant.

Phragmatobia fuliginosa Ruby tiger (Arctiid moth).

Larvae are polyphagous but in some districts *Senecio jacobaea* is a significant food plant (West, 1986) and the caterpillars can cause as intense defoliation as the cinnabar moth (Ellis, 1960). Found May - March.

Adult found May-June, but a small second generation emergence can appear in September.

Pupae found in a cocoon on ground debris or in thick vegetation.

Thalera fimbrialis Sussex emerald (Geometrid moth) RDB1

Larvae usually on wild carrot (*Daucus carota*) but feeds on Ragwort as a secondary food plant.

Adults out July - Early August.

Occurs only at Dungeness in Kent.

***Tyria jacobaeae* Cinnabar moth (Arctiid moth)**

Easily recognised yellow and black-ringed caterpillars. The adult moth has bold red and grey markings, but the wings are much broader than those of burnet moths. Larvae are gregarious and often strip plants of leaves and flowers, dispersing to find alternative fresh plants. Mainly on *Senecio jacobaea* but also *S. erucifolius*, *S. vulgaris* and *S. squalidus*. Also plants such as *Tussilago farfara* (presumably when starving). Females appear to oviposit more on denser stands of Ragwort (Meijden, 1979). Pupates in the soil.

Emerge July - August.

Populations are notoriously variable from year to year and parasites can be involved in these fluctuations.

Adult from late May to early July. Easily disturbed by day.



Cinnabar moth (*Tyria jacobaeae*)
© Ian Kimber

MICRO MOTHS

Four tortricids, two pyralids and a plume moth are Ragwort specific. Note that the latter appears to be specific to *Senecio aquaticus*, Marsh Ragwort. The two pyralid moths have *Solidago* (Golden-rod) as the main alternative food plant, but this plant is rare or absent from most districts so Ragwort must generally be the key food plant.

Cnephasia conspersana Coast shade (Tortricid moth)
Polyphagous in composite flowers, including *Senecio*.

***Commophila aeneana* Orange conch (Tortricid moth) Nationally Scarce B**
In root stock of *Senecio jacobaea*.

Cochylis dubitana Little conch (Tortricid moth)
On flower / seed heads of various composites, including *Senecio jacobaea*.

***Cochylis atricapitana* Ragwort crown boring moth (Tortricid moth)**
First generation in flowers and in flower stalks, second generation in lower stems and roots of *Senecio jacobaea*.

***Epiblema costipunctana* Ragwort bell (Tortricid moth)**

Larval summer brood in stem, autumn brood in rootstock of *Senecio jacobaea*.
Pupae in a cocoon in summer, sometimes in the stem.
Adult out May - July and July - August, but in Scotland only a single brood at end May - early July.
Rests by day on food plant, flies in late afternoon sunshine.



Ragwort bell (*Epiblema costipunctana*)
© Ian Kimber

***Eucosma campoliliana* Marbled bell (Tortricid moth)**

Larvae in seed heads and sometimes burrowing into stem. Pupa in a cocoon in the soil. Adults in June - early August, flying in late evening and night.



Marbled bell (*Eucosma campoliliana*)
© David Painter

Hellinsia osteodactylus Small goldenrod plume moth
Larvae in flower / seed heads of *Solidago* or *Senecio*.

Hibernates among leaf litter.
Pupates on or near food plant
Adult out July, easily disturbed by day though normally flies at dusk and night.

Hellinsia chrysocomae Scarse goldenrod plume moth Nationally Scarce B
Larvae in flower / seed heads of *Solidago*, *Senecio* or *Aster*.
Hibernates among leaf litter.
Pupates on or near food plant
Adults in July, easily disturbed by day though normally flies at dusk and night.

Homoeosoma nebulella Large clouded knot-horn (Pyralid moth) Nationally Scarce B
Larvae feed in flower-heads eating the flowers and seed heads of Ragwort and Spear Thistle (Tansy and Ox-eye Daisy given in some references).
Pupae in a loose blackish cocoon in soil or among debris on ground.
Adults in July (rarely also September).
Flies at dusk and during the night, visiting Ragwort and thistle flowers.

Homoeosoma nimbella Scarse clouded knot-horn (Pyralid moth) RDBK
Larvae feed in flower heads eating the flowers and seed heads of Ragwort and some other composites.
Pupae overwinter in a tough cocoon (main catalogue does not state where).
Adults from late May - August.
Flies at night.

Perinephela lancealis Long winged pearl (Pyralid moth)
On leaves, flowers and seed heads of various plants, including *Senecio*.

***Phycitodes saxicola* Small clouded knot-horn (Pyralid moth)**
A coastal species whose biology is poorly defined but Ragwort is the main confirmed food plant in the UK. The larvae occur in the flower heads.
Adult June - August.

Phycitodes maritima Chalk knot-horn (Pyralid moth)
Larvae on *Senecio jacobaea* and Yarrow (sometimes Tansy). Initially in the stem and leaf axils, later feeding on the flowers in a web. Sometimes gregarious.
Pupate in a cocoon on the ground.
Adults from May - August, apparently as two broods.
Fly at night, visiting Ragwort flowers.
Mainly coastal but also occurs in Scottish Highlands

***Platyptilia isodactyla* Ragwort plume moth**
One of several medium sized plume moths with brown wings bearing dark and white markings near forewing apex.
Eggs on the underside of leaf of *Senecio aquaticus*. Larvae in the stem exude frass at the axils of a leaf. Also in the flower head and on the leaves. Autumn larvae hibernate in the stems.
Pupate in the stem or under a web on the upper side of a leaf of the food plant or adjacent herbage.
Adults in two broods, June and August - September. Flies at dusk and later sometimes comes to light.

***Scoparia pyralella* Meadow grey (Pyralid moth)**
Larvae on roots of *Senecio jacobaea* and dead plant material.
Adults from June – July. Rests on rocks and tree trunks during day.

PLANT BUGS

***Aphis jacobaeae* (Ragwort aphid)**

Dark tibiae. On *Senecio jacobaea*. Live in colonies, usually attended by ants. Colonies of aphids may occur girdling the stem, leaf axils of inflorescence. When at the base of the stem, ants may enclose them within an earth tent.

Assumed to be widespread on sandy or gravelly soils.

THRIPS (Thunder bugs)

The list of 23 species found on Ragwort (Harper & Ward, 1957) includes many spurious attributions to Ragwort. A more recent reference (Mound et. al. 1976) reveals that one species is Ragwort specific and two others get a particular mention for Ragwort. Yellow composites more generally are utilised by *Thrips validus*, *Aeliothrips intermedium* and *A. tenuicornis*. The later two species are also on yellow legumes and yellow crucifers. Beyond that, there are only a few wider generalists that might use Ragwort. Thus, rather than the 23 species claimed to be Ragwort associated, a more meaningful figure is three for which Ragwort is a significant food plant, especially where the alternatives are not available in sufficient quantity.

Haplothrips senecionis

Associated with *Senecio jacobaea* and *S. aquaticus*. Adults in May - August. Widespread in northern Britain but recorded south to Berkshire.

Haplothrips setiger

Associated with *Senecio*, *Crepis*, *Matricaria* and *Achillea*.

Thrips pillichii

Associated with flowers of composites such as *Senecio* and *Achillea*.

MITES

***Aceria leioproctus* (Ragwort gall mite)**

Causes shortening of shoots and deformation of leaves, about ends of shoots, covered in whitish hairs.

On *Senecio jacobaea* in South-east England.

BEES (as flower visitors)

About 30 species of solitary bees make use of Ragwort flowers where available. Many bees use a selection of plants so cannot be regarded as Ragwort dependent however, if good alternatives are not available, the presence of Ragwort can be vital to local survival. In this respect Ragwort is an important plant in the countryside mosaic. Three species of bee stand out as having an unusually high dependence on Ragwort flowers.

Heriades truncorum (Daisy carpenter bee)
RDBK

A solitary bee which shows around 85% allegiance to Ragwort flowers.



Daisy carpenter bee (*Heriades truncorum*)
© Bernhard Jacobi

Stelis breviscula RDBK

An even rarer bee, which is parasitic on *Heriades truncorum*. It also has a strong affinity with Ragwort (using the same patches of flowers as the host).

Colletes daviesanus (Davies's colletes)

A common bee, usually found on Ragwort or closely related composite flowers.

PARASITES (of Ragwort eating insects)

Knowledge of the insect parasites of the primary Ragwort fauna is very incomplete. Some of these parasites in turn have their own parasites, so the web becomes very complicated. Most of these species are parasitic wasps but some parasitic flies are also involved.

Old literature names for these insects are difficult to interpret into correct current names so no detailed analysis is offered. In any case, knowledge about host specificity is uneven at best and often very uncertain.

About 30 species of insect parasites are recorded via a few studies in a few districts and the true figure must be much higher. Fifty would be a minimum estimate of the numbers of species involved.