

Times are certainly-a-changing among moth populations in Worcestershire.

Tony Simpson.

During the latter part of the last century and over the first 22 years of this 21st century there have been huge changes in moth species in VC37 Worcestershire.

Although the total numbers of insects, including most of our Lepidoptera, has fallen significantly over this time, (e.g. Rothamsted Insect Survey and Butterfly Conservation's Moth Recording Scheme), there has been a large increase in the number of new moth species found in the county. In part this is because of the recent increase in numbers of people running moth traps and making records particularly of the larger moths, and of serious interest and investigation of the micromoths, being carried out by a larger number of recorders. However there have been large numbers of species previously unrecorded here moving in and spreading, and now becoming resident.

Losses and declines (see Table 01 at the end of this report)

We lost 72 species of moth from VC37 before 1998 of which 31 (15 micros and 16 macros) were lost before 1914, 17 (five micros and 12 macros) were last recorded between 1914 and 1960, and 24 (15 micros and nine macros) were last recorded between 1960 and 1998. In addition, two micros and two macros were last seen in 2001-2002. *Coleophora genistae* was last recorded in Worcestershire in 2015 and has now probably also gone after the inappropriate management of the remaining two sites for its foodplant Petty Whin *Genista anglica* (01 & 02). Some of the more recently unrecorded moths, especially micros, probably still occur but will need further targeted searching for their rediscovery.



01. *Coleophora genistae* pupal case on Petty Whin *Genista anglica*, showing bleaching of leaves due to caterpillar feeding activity. Monkwood Green 25.05.12. Oliver Wadsworth.



02. Typical *Coleophora genistae* pupal case on Petty whin *Genista anglica*. 25.05.12. Monkwood Green. Oliver Wadsworth.

A large number of species have shown significant declines in numbers often for uncertain reasons. There is a suggestion of a few species retreating northwards and/or westwards in our area (e.g. Garden Dart *Euxoa nigricans*, Grey Chi *Antitype chi*, Gold Spangle *Autographa bractea*, Lunar Thorn *Selenia lunularia* (03), and Autumn Green Carpet *Chloroclysta miata*). The other declines probably reflect changes in land management such as the loss of habitat from intensification of agriculture, increased "tidying up" of our landscapes including hedge strimming, and drying out of wet areas (e.g. Lackey *Malacosoma Neustria*, Garden Tiger *Arctia caja*, Pimpinel Pug *Eupithecia pimpinellata*, Double Dart *Graphiphora augur*), and possibly increasing urbanisation and light pollution. Others have declined due to the loss of elms (White-spotted Pinion *Cosmia diffinis*, Dusky Lemon Sallow *Cirrhia gilvago*), and species such as Common Fan-foot *Pechipogo strigilata* have become very localised, and are now only found in Wyre Forest, following cessation of coppicing and closing over of many other woodlands.



03. Lunar Thorn *Selenia lunularia* one of several species retreating northwards and/or westwards from our area. Oliver Wadsworth.

Increasing populations and new species

Conversely a group of species have become much more abundant in numbers over the past 25 years; The algae and lichen feeding “Footman” moths have really boomed in quantity, especially for example Buff Footman *Eilema depressa*, their increase, presumably due to the cleaner air with less atmospheric pollution and consequent effects on their foodplants.



04. Buff Footman *Eilema depressa* is one of the lichen-feeding footman moths to have “boomed” in the county in the past 25 years. Gary Farmer.

320 species (297 micros and 23 macros) were recorded for the first time between 1960 and 1997. There were far fewer moth recorders at this time but several of us, partly because of the publication of more accessible material (e.g. Heath ed. 1983) were able to find and for the first time record many species of the microlepidoptera. Most of these small moths were undoubtedly long-standing residents which had never been recorded previously: indeed the Firethorn Leaf-miner *Phyllonorycter leucographella* (05 & 06) was clearly the only new invasive species over those years. J.E. Fletcher had found a large number of the smaller microlepidoptera in the mid to late 19th century, but there were obviously many more to be found. I can remember that we few had a wonderful time finding so many new insects to the county over those years! Most of these were not discovered by light trapping but by looking for their early larval stages and breeding out most of them. There was some light trapping done but this method of recording has greatly increased nowadays.

The availability of online resources in recent years has been a great help and we now have an increasing number of expert lepidopterists studying the full range of moth species including using microscopy and dissection. Also the use of digital cameras has revolutionised the ability to record particularly the larger moths which can now be photographed and confirmed, often without the need to take specimens. There are obviously still some species that do need collection and detailed examination to be sure of their identity.

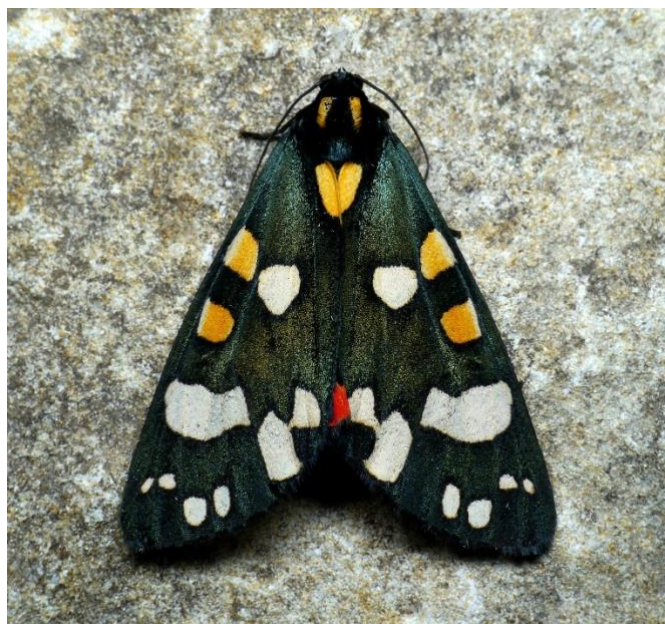


05. Firethorn Leaf-miner *Phyllonorycter leucographella* typical leaf-mine. A new invasive species. Oliver Wadsworth.



06. Firethorn Leaf-miner *Phyllonorycter leucographella*. A new invasive species. Oliver Wadsworth.

With the big increase in recorders since 1998 it is no surprise that many more species have been found, especially the larger species and migrant and vagrants drawn to moth traps. There have been 70 (53 micros and 17 macros) first recorded between 1998 and 2009, and 86 (60 micros and 26 macros) first recorded between 2010 and 2022, a total of 156 new species in the county. Some of the micros were probably previously unrecorded resident species (e.g. *Acleris hyemana*, *Eudemis porphyrana*, *Dichrorampha sylvicolana*). Many of these new species were singletons or small numbers of unusual migrants or vagrants reflecting the increase in light trap recording but at least 30 micro and 12 macro species have definitely spread and increased to varying degrees and are now clearly resident and breeding in VC37 Worcestershire. In fact there are others of the new species probably, but less certainly, now resident, but in smaller numbers. There are also a number of increasing and spreading species which were recorded as probable migrants in the preceding 10 years or so, or recorded in the distant past, before becoming commoner and resident. (e.g. *Endotricha flammealis*, Pine Hawk-moth *Sphinx pinastri*, Scarlet Tiger *Callimorpha dominula* (07), Vine’s Rustic *Hoplodrina ambigua*, Small Eggar *Eriogaster lanestrisis*, Dotted Chestnut *Conistra rubiginea*, Buttoned Snout *Hypena rostralis*). No doubt a few of the more recently recorded species will become resident in a similar way (e.g. perhaps Tree-lichen Beauty *Cryphia algae*).



07. Scarlet Tiger *Callimorpha dominula* has become a common and widespread species in the county in recent years. Oliver Wadsworth.

Thus it is clear that, even allowing for the recent increased recording effort, there has been a marked movement of new species becoming resident over the last 24 years, despite the overall decline in insect numbers and loss of natural habitat generally. Why? A small group of these have been introduced and have spread in association with the importing, growing and increased planting of alien food plants such as various garden conifers (e.g. *Argyresthia trifasciata* and *A. cupressella*) and some synanthropic species introduced with plants and other material such as bird food. The use of pheromones has enabled some species such as the Clearwings and some Tortrices to be much more easily found. However for most of these species climate change bringing warmer winters must surely be the cause of their arrival and spread. Very few of these are new U.K. insects but most are species previously resident in southern and eastern England and now moving north and west with the changes in climate. A typical example, the Least Carpet *Idaea rusticata* formerly had a very restricted range in the south-east of England but has now spread through Worcestershire, reaching Staffordshire as recently as 2019 (West Midlands Moths). This trend is likely to continue as our climate continues to change.

Species recorded since 1998, and species recorded in the past or previously as migrants, which have now spread and become resident.

i. Species introduced via the horticultural trade or which have spread by feeding on planted alien conifers.

Argyresthia trifasciata Staud. first recorded in 2003 and *Argyresthia cupressella* Wals in 2004. Both are now widespread on introduced garden conifers, including Juniper and Leyland and other Cypresses and therefore commoner in urban and suburban areas.

Freyer's Pug *Eupithecia intricata ssp. arceuthata* (Zett.) has spread widely on garden cypresses since the 1970s, as has Juniper Carpet *Thera juniperata* (Linn.), and Juniper Pug *Eupithecia pusillata* ([D&S]) has been found on cultivated Junipers.

Duponchelia fovealis Zell is an invasive species which has spread probably in association with the use of horticultural polytunnels and is turning up at light outdoors: Martley 2001, Bewdley 2007, Crossway Green 2013 and Dodford 2021.

Tuta absoluta Meyr. This moth with an amazingly Italianate name rather aptly feeds on Tomato *Solanum lycopersicum*. Maybe originally an adventive on fruit and/or possibly a migrant but now becoming a resident and pest species in commercial greenhouses and increasingly seen at light outdoors.

ii. Species recently arrived in the U.K. not present previously and which have spread rapidly.

Ectoedemia heringella (Mariani) A leaf-miner on Holm Oak *Quercus ilex* first found in U.K. in 2010. The first county record is from Longdon in 2013, having been present in the Cheltenham area for several years, and since then has spread north and is now occurring sparingly throughout the Worcestershire.

Phyllonorycter platani (Staud.) A leaf-miner on Plane *Platanus* species that arrived in London in 1991. Recorded from Worcester and Evesham in 2010 and now widespread. In fact, it seems impossible to find a Plane tree anywhere without its mines!

Phyllonorycter leucographella (Zell.) A leaf-miner of Firethorn *Pyracantha coccinea* which arrived in the U.K. in 1989 and reached Worcester in 1996. It has now spread throughout and is universally common wherever the foodplant occurs.

The notorious Horse Chestnut Leaf-miner *Cameraria ohridella* Deschka & Dimic (06). Named because it was first described from the city of Ohrid in North Macedonia. It then spread inexorably across Europe from the east and reached the West Midlands in 2006, and was widespread throughout the county by 2010. Possibly its profusion will be checked in future by parasitic wasps adapting to it? It is unknown where this species came from originally and why it became so invasive, but the foodplant *Aesculus hippocastanum* is originally from the Balkans. It also feeds on the hybrid *A. x carnea* but it prefers the former white flowered species.



08. The "notorious" Horse Chestnut Leaf -miner *Cameraria ohridella*. Gary Farmer.

The Leek Moth *Acrolepiopsis assectella* (Zell.) This was an uncommon migrant to southern Britain which became resident and was first found in this area in Bransford in 2000 and then Droitwich in 2003, gradually spreading and become common. Now a pest species feeding on Alliums especially cultivated ones such as Leeks, it has become an increasing problem for organic amateur gardeners and is probably now even more common than our records suggest. *Metalimna italica* Baldizzone This species was first found in the U.K. in south Devon in 2013. It first occurred here in 2018 and has been spreading rapidly especially in suburban areas where its larva feeds under the bark of dead wood

Anarsia innoxia Gregarson & Karsholt This species has recently been separated from closely related species and was found to be present in the U.K. in 2017. There are confirmed records here in 2020 and 2021. Its larva feeds on Field Maple.

The Box-tree Moth *Cydalima perspectalis* (Walk.). This quite large, attractive invasive species spread rapidly across western Europe probably originating in China, arriving in Worcestershire in 2017. After a slow start it is now rapidly increasing and spreading across the county. A potential to be a major pest defoliating Box in gardens and parks and therefore chiefly an urban and suburban insect.

Blair's Shoulder-knot *Lithophane leautieri* (Boisd.) (07) arrived in southern Britain in 1951 and began to spread using Monterey Cypress *Cupressus macrocarpa* as the principle foodplant. First recorded in Evesham in 1974 its spread stalled after a few cold winters, but then it spread rapidly and has become a common resident, with larva now feeding mainly on the more hardy Leyland and Lawson's Cypresses *Cupressus x leylandii* and *Cupressus lawsoniana* and garden Junipers.

Similarly, the Varied Coronet *Hadena compta* ([D&S]) was found breeding in Kent on garden Sweet Williams from 1948, and slowly spread. Since first being recorded in Redditch in 1985 it has become a fairly common resident in Worcestershire, chiefly in urban and suburban areas.



09. Blair's Shoulder-knot *Lithophane leautieri* has become a common resident in Worcestershire. Gary Farmer

iii. Species present in U.K. which were either resident elsewhere, chiefly in the south and south-east of England, or occurring as sporadic migrants, and which have now spread into the county and become resident.

Stigmella aceris (Frey). This small leaf-miner of Maples *Acer campestre* and *platanoides* was extremely localised in the U.K. but had a long-standing population in Herefordshire near Ledbury. It suddenly began to be invasive and it spread into south Worcestershire in 2006. Since then it has steadily spread northwards and now occurs throughout the county except for the extreme north-west.

Ectoedemia sericopeza (Zell.). Another previously very localised species which began to be found around Worcester and Pershore in 2011, then Bewdley, Kidderminster and elsewhere. Larva mines in the wings of samaras (fruits of maples etc.), under bark and in buds of Norway Maple *Acer platanoides*.

Morophaga choragella (ID&S). This Tineid was present in neighboring counties and has spread into Worcestershire from the north and east since 2004, with the first record from Blakeshall Common. Larva feeds in fungi on dead wood and tree stumps. Still not recorded from the south of county.

Psychoides filicivora (Meyr.). Found originally in Ireland and then the west of Britain, it has been slowly spreading north and east. Larva feeds under the fronds of many species of Ferns on the sori.

Found in Malvern area in 2005 and has spread widely since 2010. *Caloptilia cuculipennella* (Hubn.). Quite widespread in southern England but first found here in Worcester in 2008 and Bransford in 2011. It now occurs widely feeding on Privet *Ligustrum* species and on Ash *Fraxinus*.

Caloptilia falconipennella (Hubn.). Another very local moth with two long-standing sites in west Herefordshire. Then since 2010 it suddenly began to occur in the north and west of the county, and since has spread widely, feeding on Alder *Alnus incana*.

Phyllonorycter comparella (Dup.). Recorded from Worcester in 1873 and a few mines found there in 1976. It was originally thought to be confined to feeding on Grey Poplar *Populus x canescens* and was very local in the U.K. Then not found here until 2010, since when it began to occur widely on most Poplar species, including Black, hybrid Black, White and Grey Poplars. Now found locally throughout Worcestershire.

Phyllocnistis saligna (Zell.). This tiny moth's larva mines under the epidermis of leaves and stems of long-leaved Willows *Salix* species. There are specimens in Worcester Museum dating from the 19th century but there was no sign of it here in the 1900s. Then found in the south of county in 2004, it rapidly spread and now occurs throughout. Originally said to be almost confined to Purple Willow *S. purpurea* but now feeds on many different long-leaved species, including Crack Willow *S. fragilis* and White Willow *S. alba* but not Osier *S. viminalis*. Its ability to adapt to utilise commoner species will have aided its sudden change in status.

Willow Ermine *Yponomeuta rorrella* (Hubn.) (10). This small ermine moth occurred as a migrant, with numbers varying and not found every year, until larval webs began to be found along the rivers Severn and Teme between 2009 to 2011 and since then it has become increasingly common and widespread. Its larva feeds on White and sometimes Crack Willow.



10. Willow Ermine *Yponomeuta rorrella* caterpillars in web. Lower Moor 26.06.22. Gary Farmer.

Ypsolopha horridella (Treits.). No records of this Blackthorn *Prunus spinosa* and Apple *Malus* feeding species before 2014 but we had 23 records in total by 2021.

The Ruddy Streak *Tachystola acroxantha* (Meyr.) (11). This moth was known originally from Australia and is surmised to have been accidentally introduced to the UK. It was found locally in south Devon for many years from 1908 and then it spread slowly along the south coast of England in 1970-80s. Then it began to be found widely in U.K. in urban areas and was first found in VC37 in Birmingham at Sparkbrook and Hall Green from 2004, Worcester 2010, Bewdley and Kidderminster 2011, Redditch 2014, Malvern area 2015 and Evesham not until 2021. Now a common and widespread species particularly in urban and suburban areas where the larva feeds on dead leaves. It has still not penetrated fully into the wider countryside.



11. The Ruddy Streak *Tachystola acroxantha* originally known from Australia, now common in urban Worcestershire. Gary Farmer.

Ethmia dodeceea (Haw.). This attractive moth was first seen at light at Pendock in 2009, then Abberton regularly from 2009-2021, and a record from Tiddesley Wood in 2018. The beautiful larva feeds on Gromwell *Lithospermum officinale* and was found near Ab Lench by Oliver Wadsworth in 2020 confirming that it is now resident in the county.

Proaerema anthyllidella (Hubn.). Apart from a record from 1870 there were no records of this species until suddenly there were widespread records from 2011. A common species especially of coastal areas and downland with the larva feeding on Kidney Vetch *Anthyllis vulneraria*, and sometimes on other leguminous plants which must be the case in Worcestershire as the former is very local. *Isophrictis striatella* (ID&S). This larva of this small moth with amazing labial palps feeds in seed-heads of Tansy *Tanacetum vulgare*. First found at Stoke Prior in 2004 it slowly spread between 2011 – 2018.

Metzneria lappella (Linn.). First recorded in Tiddesley Wood in 2008 this species has slowly spread right through to the north of the county by 2022. Its larva feeds and overwinters in seed-heads of Burdock species.

Coleophora alcyonipennella (Kollar). This narrow metallic green moth was confused with its close congener *C. frischella* (Linn.) which seems to be a long-standing resident here associated with Red Clover *Trifolium pratense*. Whereas this species has a larva that feeds in a silken case in the seed-heads of White Clover *Trifolium repens*. First recorded at Stoke Prior in 2003 it then spread rapidly westwards and had become widespread by 2015.

Elachista apicipunctella Staint. Known to be present in counties to the north and east, it was first recorded in VC37 at Feckenham Wylde Moor and around Chaddesley Wood in 2013. There have been further records in the north and north-west since then in 2017-2021 but it seems still localised and not found in the south of the county.

Blastobasis adustella Wals and *Blastobasis lacticolella* Reb. It will perhaps be a surprise to many recent recorders that these common species only moved into the county in 1993 and 1997 respectively. Larvae of both species are polyphagous on both living

and dead plant material and it is thought they may have originated in Madeira. They have been resident in the U.K. for many years but only reached us in the 1990s.

Stathmopoda pedella (Linn.). This strange little moth was first recorded from beside the Teme near Bransford in 2004, and since then it has been found widely, usually being beaten from riverside Alders where its larva feeds in the cones. There are 18 records from the county to date.



12. *Stathmopoda pedella* has been found in riverside Alders since 2004. Grimley 27.07.12. Oliver Wadsworth.

The Light Brown Apple Moth *Epiphyas postvittana* (Walker). This now widespread and very common moth is originally an Australian insect which first occurred in Cornwall in 1936. It slowly spread along southern coastal counties until in the late 1990s it began to rapidly spread northwards. It is continuously brooded and its spread may have been aided by warmer winters and/or possibly a genetic mutation has enabled it to cope with colder climates? First recorded in VC37 in 1997 it has spread chiefly in urban and suburban areas, no doubt partly being spread by the movement of plants by garden centres. Its larva is extremely polyphagous on herbaceous plants, shrubs and trees and it has now begun to be found in all areas even rural ones, although still commonest in conurbations.

Acleris logiana (Clerck). This birch feeding Tortrix was well known from Scotland but then began to occur in the south of England, and has steadily spread northwards. First occurred at Monk Wood in 2011, Trench Wood 2013 and around Kidderminster heathlands by 2019 -2021. Now clearly a resident species and this population is probably unrelated to the Scottish one, and may represent an invasive population from abroad.

Cochylis molliculana Zell. Known originally from south coastal areas of England from 1996, feeding in the flower-heads of Bristly Ox-tongue *Helminthotheca echioides*. It was first recorded in the county in 2003 at Hawford and has spread rapidly, especially along roadsides and on open ground where the foodplant has become common in recent years.

Gypsonoma minutana (Hubn.). Long confined to south and south-east England with larva feeding on leaves of Poplar species. Now with four known sites, from Worcester in 2014, Broadway in 2015, Martley 2018 and Welland by 2022, so clearly invading and spreading.

Grapholita lobarzewskii (Nowick). Known only from Kent since 1951, and then south Devon in 1992, it has rapidly spread and reached us in 2006. There are now 21 records from across the county. Its larva feeds in the fruit of Plums and Apples and therefore has been found chiefly in orchards and gardens.

Oncocera semirubella (Scop.). This beautiful little moth was confined to southern calcareous grassland and coastal sites but it began to move north and was occurring in Gloucestershire by 2018.

Patrick Clements then found it on calcareous grassland at Pennyhill Landfill Site in 2020 and 2021 suggesting a resident population.

Assara terebrella (Zinck). Known from Herefordshire for some years, it was first found in VC37 at Eymore Wood in 2007 and since then there have been a number of records from across the county by 2021. The larva feeds in Norway Spruce *Picea abies* cones.

Endotricha flammealis (D&S). This pretty insect has been very abundant in southern England for many years but absent from Worcestershire, apart from a very old record from Malvern in 1901. However, since 2006 it has been occurring initially in the south of the county and gradually spreading northwards. Its larva feeds on dead leaves and vegetation on the ground.

Anania perlucidalis (Hubn.). This moth first occurred in the eastern counties of England and has slowly spread westwards. It is fond of marshy damp habitats with its larva feeding on Thistle species, mainly *Cirsium palustre* and *arvense*. First found at Feckenham Wyld Moor in 1994 it now occurs across the county.

Calamotropha paludella (Hubn.). This now quite common and widespread moth, whose larva feeds in Reedmace *Typha* species, was not known here until 2007, since when it has become widespread and often recorded at light well away from wet habitats.

Small Eggar *Eriogastris lanestris* (Linn.). There were records in 1834 and 1939 and then none until 2008. There had been a few records in south Herefordshire, increasingly in recent years, and then larval webs began to be found on Blackthorn and Hawthorn in the south of Worcestershire. There was then a rapid increase between 2011 -2019 but none further north than Stoulton. Hopefully it will continue to spread further.

Scarlet Tiger Moth *Callimorpha dominula* (Linn.) (07). This striking moth was resident in south-west England and south-west Wales for many years. There was a single record in Malvern in 1973 and then none until 2000 in Malvern Wells. From then on it spread at first slowly on the Malverns, and then along rivers, until numbers and range began to rapidly increase between 2006 and 2010. The larva prefers comfrey *Symphytum spp.* and Green Alkanet *Pentaglottis sempervirens* but it will feed on other plants including nettle. Now found very commonly throughout the county including urban and suburban areas.

Privet Hawk-moth *Sphinx ligustri* Linn (13). This magnificent insect was recorded in the past from 1901 to 1961 but then absent until a few started to turn up the late 20th century, chiefly in the south of the county. It has become commoner in the south and is certainly now resident in small numbers around Evesham and Pershore. In the last few years there have been a few more northerly records.



13. Privet Hawk-moth *Sphinx ligustri* now resident around Evesham and Pershore. Littleton Meadows, North Littleton 08.07.14. Gary Farmer.

Pine Hawk-moth *Sphinx pinastri* Linn. Originally found in the south and east of England it has been slowly spreading westwards feeding on planted Scots Pine and less often other conifers. Our first record was from Malvern Wells in 1995 and then gradually increasing in numbers from 2004 onwards. In the past four years it has been

turning up right across the county, and there have been several larval records.

Least Carpet *Idaea rusticata* (D&S). This moth was very localised in the south-east of England for many years. Then it began to spread north and west and reached us in Abberton and Bransford in 2014. It has spread slowly since, but by 2017-2021 was occurring in small numbers in all areas. One of the best examples of expansion in range surely due to the changing climate.

Mullein Wave *Scopula marginepunctata* (Goeze). This usually coastal moth has begun to appear in urban and brownfield sites in and around the Birmingham conurbation. First recorded in Sparkbrook 2006 it had reached Redditch by 2019.

Cypress Carpet *Thera cypressata* (Geyer). This is one of our fastest spreading new moths. The first record was in Stoke Prior in 2008 and since then occurring with increasing frequency, particularly from 2016 onwards, chiefly in suburban sites. The larva feeds on garden conifer species.

Devon Carpet *Lampropteryx otregiata* (Metc.). Historically this moth was found in south-west England and Wales favoring wet habitats with its foodplant Marsh Bedstraw *Galium palustre*. It began an eastwards spread and reached Wyre Forest in 2004, and is now found widely in many woodlands in the county.

Cypress Pug *Eupithecia phoeniciata* (Ramb.). Known as a resident in southern coastal areas feeding on Monterey Cypress since 1959. It has spread slowly north and inland, and now feeds on several cultivated cypress species including LeylandCypress and Lawson's Cypresses. First recorded in West Malvern in 2004 and now occurring throughout the county particularly in suburban areas.

Buttoned Snout *Hypena rostralis* (Linn.). Known from Wyre Forest in 1899 and Knightwick in 1961, it was then not seen for many years although as a Hop-feeder it might be expected to like our area, with its long history of Hop *Humulus lupulus* cultivation. It began to spread back into Herefordshire from the south, and then recurred here first in the extreme west at Darkham Wood in 2015. Since then particularly from 2019 it has been found widely in the south and west and seems to be spreading rapidly. Although not now grown as widely there is plenty of wildling Hop in the hedges across the county.

Clifden Nonpareil/Blue Underwing *Catocala fraxini* (Linn.). This huge and beautiful moth was a local resident in Britain at times between 1935 and 1964. Otherwise known as a sporadic migrant but it began to recolonise Britain from 2007 onwards. There was a sudden invasion into the county from 2017 onwards with evidence of breeding and now presently widespread.

Dewick's Plusia *Macdunnoughia confusa* (Steph.). Formerly an uncommon migrant it has become resident in U.K. in the south-east in recent years. We have begun to get records from 2019 in small but increasing numbers and Mike Southall had numbers to light and at a

pheromone lure at Crossway Green in 2022, suggesting it is now a resident.

Toadflax Brocade *Calophasia lunula* Hufn. This species has been known as a resident in southern coastal areas of England from 1950s, and in a familiar pattern began to spread in the London area. The beautiful larva feeds on Common and Purple Toadflax *Linaria vulgaris* and *L. purpurea* in open habitats and brownfield sites. First recorded in Hall Green in 2018 and 2021, it seems likely to be breeding there with further nearby records. It may well spread, along railway lines?

Vine's Rustic *Hoplodrina ambigua* (D&S). Another species formerly confined to southern England since the 1940s which spread north and was first recorded here from 2006 to 2007. It has spread and increased rapidly since then and has become a common insect throughout county.

Dotted Chestnut *Conistra rubiginea* (D&D). This attractive Noctuid was very local in southern England with just a single unconfirmed record in Worcestershire in 1834. Then recorded in Upper Welland in 2000 and West Malvern and Malvern Wells in 2005-2006. Following this it rapidly began to occur further north and east and is now found throughout the county in small numbers. Small Ranunculus *Hecatera dysodea* (D&S). A resident species in England in the 19th and early 20th centuries it died out completely for unknown reasons. Then it was found again in Kent in 1997 and spread rapidly. It was found in South Wales and Herefordshire, and then it began occurring in Birmingham and Stourbridge, often on Brownfield sites, from 2008. It moved south as far as Worcester and has continued to spread into all urban and suburban areas, although still less common in the wider countryside. Larva can be found feeding openly in the day on Prickly Lettuce *Lactuca serriola* growing on open disturbed habitats, including around new-build housing developments, roadsides, industrial and brownfield sites and even in pavements.

White Point *Mythimna albipuncta* (D&S). Formerly a migrant species which has become resident in south-east England and now occurring here more commonly and regularly since 2006, particularly since 2017, and probably now resident in the county. Cream-bordered Green Pea *Earias clorana* (Linn.). This pretty moth's larva feeds in spun leaves of willows *Salix* species. Our first records came in 1984 and 1985. Since 2003 it has become widespread and increasingly common.

Kent Black Arches *Meganola albula* (D&S). A long-standing resident along coastal southern and eastern England and south Wales. Our first records came from Welland in 2003 where it has been present on and off since then and in 2021 it began to become more widespread, for example at Pennyhill Landfill Site and at Abberton and Norchard in 2021. The Larva feeds on Bramble *Rubus* species and it is almost certainly now resident in the county.

The lost species

Lists of moth species and the years they were last recorded in VC37 Worcestershire.

Last recorded pre-1914	Last recorded 1914 to 1959	Last recorded 1960 to 1997
<i>Monopis imella</i> (Hubn.) 1852	<i>Trichophaga tapetzella</i> (Linn.) 1946	<i>Stigmella aeneofasciella</i> (H-S) 1982
<i>Phyllonorycter kuhlweinella</i> (Zell.) 1877	<i>Parornix loganella</i> (Staint.) 1929	<i>Exaeretia allisella</i> Staint. 1981
<i>Glyphipterix equitella</i> (Scop.) 1888	<i>Clepsis senecionana</i> (Hubn.) 1929	<i>Depressaria pimpinellae</i> Zell. 1993
<i>Borkhausenia minutella</i> (Linn.) 1876	<i>Olethreutes arcuella</i> (Clerck) 1929	<i>Depressaria douglasella</i> (Staint.) 1982
<i>Aplota palpellus</i> (Haw.) 1880	<i>Aphelia viburnana</i> (D&S) 1957	<i>Agonopterix nanatella</i> (staint.) 1991
<i>Syncopacma cinctella</i> (Clerck) 1863	Forester <i>Adscita statices</i> (Linn.) 1956	<i>Sitotroga cereallega</i> (Ol.) 1988
<i>Dichomeris derasella</i> (D&S) 1857	Five-spot Burnet <i>Zygaena trifolii</i> (Esper) <i>palustrella</i> ver.	<i>Monochroa suffusella</i> (Dougl.) 1982
<i>Coleophora vibicella</i> (Hubn.) 1894	Narrow-bordered Bee Hawk-moth <i>Hemaris tityus</i> (Linn.) 1936	<i>Chionodes fumatella</i> (Dougl.) 1997
<i>Aethes hartmanniana</i> (Clerck) 1913	Broad-bordered Bee Hawk-moth <i>Hemaris fuciformis</i> 1946	<i>Gelechia sabinellus</i> (Zell.) 1978
<i>Celypha rivulana</i> (Scop.) 1879	Scarce Vapourer <i>Orgyia recens</i> (Hubn.) 1929	<i>Scrobipalpa obsoletella</i> (F. v. R.) 1979

<i>Ancylis geminana</i> (Don.) 1852	Double Kidney <i>Ipimorpha retusa</i> (Linn.)1956	<i>Scrobipalpa atriplicella</i> (F. v. R.) 1995
<i>Sciota hostilis</i> (Steph.) 1861	Large Ranunculus <i>Polymixis flavicincta</i> ([D&S]) 1955	<i>Coleophora fuscocuprella</i> (H-S) 1996
<i>Cadra calidella</i> Guen. 1876	Bordered Gothic <i>Sideritis reticulata</i> (Goeze) 1932	<i>Elachista alpinella</i> Staint. 1982
<i>Anania funebris</i> (Strom.) 1899	Portland Moth <i>Acetebia praecox</i> (Linn.) 1933	<i>Elachista subnigrella</i> Dougl. 1992
<i>Paratalanta hyalinalis</i> (Hubn.) 1906	Dark Brocade <i>Mniotype adusta</i> (Esp.) 1939	<i>Elachista utonella</i> Frey 1988
<i>Crambus pratella</i> (Linn.) 1873	Butterbur <i>Hydraecia petasites</i> Doubl. 1961	<i>Aethes dilucidana</i> (Steph.) 1992
Cistus Forester <i>Adscita geryon</i> (Hubn.) 1898		<i>Cochylis flaviciliana</i> (Westw.) 1991
Silver-striped Hawk-moth <i>Hippotion celerio</i> (Linn.) 1853		<i>Phaulernis fulviguttella</i> (Zell.) 1997
Lace Border <i>Scopula ornata</i> (Scop.) 1896		<i>Hypochalcia ahenella</i> ([D&S]) 1979
Chalk Carpet <i>Scotopteryx bipunctaria</i> ([D&S]) 1903		<i>Crambus uliginosellus</i> Zell. 1986
Small Argent & Sable <i>Epirrhoe tristata</i> (Linn.) 1902		<i>Donacaula mucronella</i> ([D&S]) 1982
Bleached Pug <i>Eupithecia expallidata</i> Doubl. 1911		Goat Moth <i>Cossus cossus</i> (Linn.) 1978
Brussels Lace <i>Cleorodes lichenaria</i> (Hufn.) 1895		Kentish Glory <i>Endromis versicolora</i> (Linn.) 1970
Yellow Belle <i>Aspitates ochrearia</i> (Rossl.) 1901		False Mocha <i>Cyclophora porata</i> (Linn.) 1974
Small Grass Emerald <i>Chlorissa viridata</i> (Linn.) 1872		V-Moth <i>Macraria wauaria</i> (Linn.) 1996
Clouded Buff <i>Diacrisia sammio</i> (Linn.) 1900		Barred Tooth-striped <i>Trichopteryx polycommata</i> ([D&S]) 1979
Wood Tiger <i>Parasemia plantaginis</i> (Linn.) 1897		Rosy Marbled <i>Elaphria venustulata</i> (Hubn.) 1987
		Orange Upperwing <i>Jodia croceago</i> ([D&S]) 1968
		Northern Drab <i>Orthosia opima</i> (Hubn.) 1985
		Pale Shining Brown <i>Polia bombycina</i> (Hufn.) 1984
		Silvery Arches <i>Polia hepatica</i> (Clerck) 1988
		Stout Dart <i>Spaelotis ravida</i> ([D&S]) 1974
↑ Last recorded pre-1914 ↑	↑ Last recorded 1914 to 1959 ↑	↑ Last recorded 1960 to 1997 ↑

Table 01. Species of moths not recorded in Worcestershire in recent times.

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Images

01. *Coleophora genistae* pupal case on Petty Whin *Genista anglica*, showing bleaching of leaves due to caterpillar feeding activity. Monkwood Green_25.05.12. Oliver Wadsworth.
 02. Typical *Coleophora genistae* pupal case on Petty whin *Genista anglica*. 25.05.12. Monkwood Green. Oliver Wadsworth.
 03. Lunar Thorn *Selenia lunularia* one of several species retreating northwards and/or westwards from our area. Oliver Wadsworth.
 04. Buff Footman *Eilema depressa* is one of the lichen-feeding footman moths to have “boomed” in the county in the past 25 years. Gary Farmer.

05. Firethorn Leaf-miner *Phyllonorycter leucographella* typical leaf-mine. A new invasive species. Oliver Wadsworth.
 06. Firethorn Leaf-miner *Phyllonorycter leucographella*. A new invasive species. Oliver Wadsworth.
 07. Scarlet Tiger *Callimorpha dominula* has become a common and widespread species in the county in recent years. Oliver Wadsworth.
 08. The “notorious” Horse Chestnut Leaf Miner *Cameraria ohridella*. Gary Farmer.
 09. Blair’s Shoulder-knot *Lithophane leautieri* has become a common resident in Worcestershire. Gary Farmer
 10. Willow Ermine *Yponomeuta rorrella* caterpillars in web. Lower Moor 26.06.22. Gary Farmer.
 11. The Ruddy Streak *Tachystola acroxantha* originally known from Australia, now common in urban Worcestershire. Gary Farmer.
 12. *Stathmopoda pedella* has been found in riverside Alders since 2004. Grimley 27.07.12. Oliver Wadsworth.
 13. Privet Hawk-moth *Sphinx ligustri* now resident around Evesham and Pershore. Littleton Meadows, North Littleton 08.07.14. Gary Farmer.