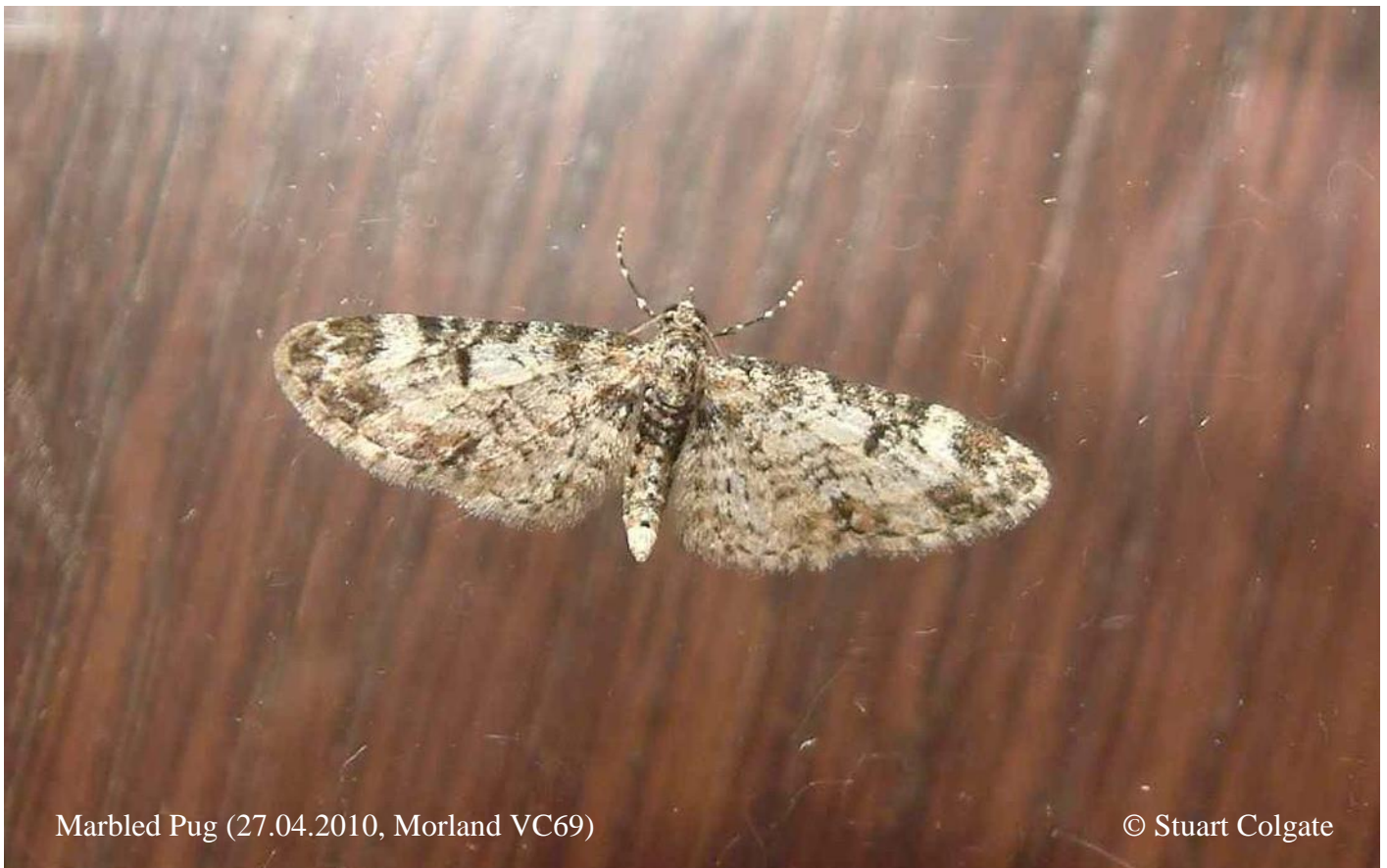


PUG MOTHS OF LANCASHIRE AND CUMBRIA

No.2 Issue 1



Marbled Pug (27.04.2010, Morland VC69)

© Stuart Colgate

PUG MOTHS OF LANCASHIRE AND CUMBRIA

BRIAN HANCOCK

INTRODUCTION

Anyone developing an interest in moths will soon learn to recognise the distinctive appearance of the group of Geometrid moths called "the Pugs". They are often first spotted by their distinctive outline resting on a lighted window, but on closer inspection they can look rather similar.

Lancashire has been extensively covered by a very active moth group led Pete Marsh and previous county recorders Stephen Palmer and Graham Jones. Stephen has also researched the historic records for Lancashire. I am most grateful to them for lots of help, and to many others in the Lancashire group. Accurate records for Lancashire are shown on the new provisional atlas of the UK's larger moths. In contrast, the atlas has large blank areas in Cumbria. Recorders are relatively few and scattered but there is now an active group communicate through a Cumbria moth Facebook group. Tullie House museum in Carlisle has a full-time records officer, Gary Hedges and until recently Teresa Frost and Steve Hewitt. All the moth records are being verified and updated for the national moth recording scheme with the help of Liz Still, and I have been assisting with the pug records.

I have researched the Cumbria records by examining the collection of George Routledge who was active near Castle Carrock in the early years of the last century and of Neville Birkett who was active in the mid-20th century around Kendal and throughout the lakes. I have access to all the records on the Tullie House data base up to and including 2014. Some of these are difficult to verify, but it is clear that there were many active and reliable recorders in the 50's-80's, including the Rev. J. Vine Hall from Hutton Roof, Bill Kydd from Ulverston and Jerry Briggs from Beetham. More recently, Rob Petley-Jones has provided many valuable records, while Sarah Bradley, Martin Chadwick and Martin Tordoff continue to be active in the south of the county. Liz Still at Bowness-on-Solway is a fund of knowledge and enthusiasm in overseeing the Cumbria moth group and checking the records sent to Tullie House. I am most grateful for all the help she has given me and to many other Cumbria recorders who have corresponded so willingly. There are many unexplored places, and I hope this article will encourage both residents and visitors to send their records to Tullie House for Gary Hedges, "recordingofficer@cbdc.org.uk".

Since I first wrote this guide five years ago there have been some significant discoveries; Maple Pug has been added to both county lists and Pimpinel Pug is new for Lancashire and rediscovered in four sites in Cumbria. Bleached Pug is new for South Lancs.(VC59). Bilberry Pug has been found resident in VC 60. There are now four records of Triple-spotted Pug in VC60 and one for VC59. A voucher specimen has been identified for Cumbria. Thyme Pug has been recorded in VC69 and 70 (Cumbria), after long intervals, and in North Lancashire at a second site near Carnforth.

Forty-three out of the fifty-one British pug species have been recorded in Lancashire. Cumbria has all the Lancashire species, with the possible exception of Plain Pug and has, in addition Marbled Pug and Lead-coloured Pug. The latter is known from one recent record, and almost certainly awaits discovery in new sites.

Identification of pugs can seem daunting but is not too difficult, based on their flight time and habitat. Some are closely associated with their larval food plant. Many are really attractive when fresh and distinctive. It is hoped this introduction, based on photographs and records on MapMate (Lancashire only), will help those looking at the pugs to overcome their initial dismay, and come to love this delightful group of moths.



A "pug" on a window pane

Many come to gardens. I identified 14 species when living in South Manchester and now, living in Yealand Conyers just south of the Cumbria border, I have had 25 species to date. This may seem alarming to the beginner, but there are only four or five are regular, and several of mine have only occurred once or twice in fifteen years. Once you become familiar with the regular ones it's not difficult to recognise something new.

Some pugs are difficult to identify, especially when worn, but more than half the battle is in knowing what to expect in your area at a particular time of year. A major tip - don't struggle with the faded and worn specimens, and accept that about even if not worn 10% are going to be difficult for enthusiasts. Leave the

problem ones to an expert who may need to resort to a genitalia dissection. This can be time consuming and also requires some experience and skill. There is no need to identify every pug to get enjoyment or contribute to our knowledge of their status in the county.

The pugs that occur in Lancashire and Cumbria are described approximately in order of their appearance in the year; a page index is included to help find a particular species (see page 7). **A Field Guide to the Moths of Great Britain and Ireland by Waring, Townsend and Lewington**, has an excellent section on pugs, and the new edition of the **Colour Identification Guide to Moths of the British Isles by Bernard Skinner** is good. The enthusiast should have Adrian Riley and Gaston Prior's book on **British and Irish Pug Moths**. The information cannot be faulted, but I do find the illustrations and photographs disappointingly small in scale. **Chris Manley's British Moths 2nd Ed.** has some excellent photographs and Ian Kimber's UK Moths website (www.ukmoths.org.uk) is a very valuable resource with many brilliant photos. Many of the county moth websites have good photos and records, and of our neighbouring counties the Northumberland and Yorkshire moth group websites are excellent.

One of the delights of pursuing pugs is that they are quite easy to net as they start to fly at dusk, with the best results on warm still evenings. They are relatively slow flying, and have the very convenient habit of resting on the inside of the net unlike most other moth. This allows time for inspection and potting with the net open without having to waste valuable time chasing moths inside the net that are not pugs. A good head torch and a black net are best. A walk round your garden or local patch will often produce one or two from May till August. Some pugs have very specific food plants, and I have had considerable success netting at dusk for the local species, for example, Netted, Shaded, Thyme, Haworth's, Bleached, Pimpinel, Sloe, Valerian Triple-spotted. Maple and Bilberry Pug have all been caught without any light-traps. Netted specimens are usually in much fresher condition than those attracted to light traps.

Pugs are attracted to actinic lights rather more than MV lamps, and the former are easier to set up away from home. Always look outside the trap last thing at

night if possible. Several rest outside, and will be gone in the morning. Rearing pugs from larvae found in the wild is very rewarding and, of course, produces pristine examples. Riley's book gives information for each species if you want to try this.

Eleven can be considered widespread and fairly common, and in rough order of appearance through the year, are:

Double-striped	Mottled	Lime-speck
Brindled	Grey	Currant
V-Pug	Foxglove	Wormwood
Common	Green Pug	

Another eleven are widespread but less common:

Oak-tree	White-spotted	Toadflax
Golden-rod	Narrow-winged	Juniper
Ochreous	Slender	Tawny Speckled
Freyer's	Bordered	

There are five more which are recorded occasionally in widely separated areas:

Larch	Netted	Plain
Dwarf	Angel-barred (Ash)	

Finally there are 15 which appear confined to very restricted areas. These may well be found to be more widespread by more searches in suitable habitat:

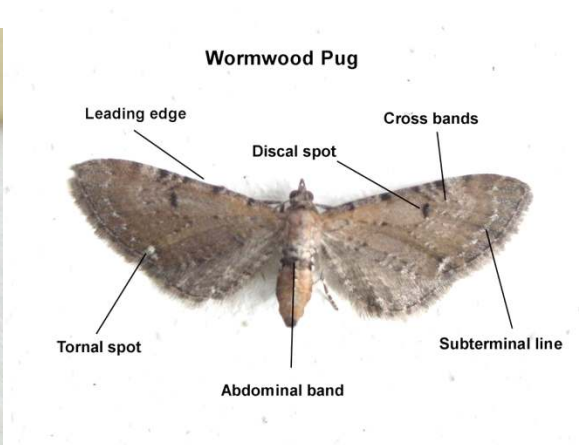
Marbled	Haworth's	Valerian
Marsh	Shaded	Thyme
Sloe	Satyr	Cloaked
Triple-spotted	Lead-coloured	Bleached
Bilberry	Pimpinel	Maple

AIDS TO IDENTIFICATION

Recording of size (wingspan in mm) is very helpful for identification. Although there is individual variation in size within species, the Common Pug can act as a yardstick, being medium in size (20-22mm). In comparison, some are distinctively smaller (16-19mm), and others obviously larger (23-26mm). It is helpful if photographs of pugs for identification purposes could include a note of the wingspan in mm. The terminology used in the text is illustrated on the following diagrams. The presence and shape of the discal spot and the tornal spot are important features to notice.



Recording size is very important



Descriptive terminology used in the text

Size Guide

Distinctly small:

- Double-striped (but variable)
- Haworth's
- Slender
- Valerian
- Marsh

Distinctly large:

- Angle-barred (Ash)
- Bleached

Bordered
Freyer's
Mottled
Tawny Speckled
Wormwood

Broods:

In Lancashire and Cumbria there are only five pugs that regularly have a two broods – a spring and a later summer brood

Double-striped
V-Pug, Golden-rod
Currant, White-spotted.

Melanics:

Four of our pugs can appear as melanic (dark) forms making identification difficult. The season of appearance helps.

As a very approximate guide, a melanic pug in:

April should be a **Brindled**

May or June could be **Common, Grey** or **Golden-rod**

August will probably be second brood **Golden-rod**.

To assist identification, the pugs are described in the months in which they most often occur. However, this means they are neither in systematic or alphabetical order, so to help find a particular pug the following page guide is given.

Angle-barred (Ash)	31	Marsh	20
Bilberry	52	Marbled	14
Bleached	70	Mottled	17
Bordered	73	Narrow-winged	55
Brindled	9	Netted	50
Cloaked	57	Oak-tree	11
Common	15	Ochreous	19
Currant	28	Pimpinel	60
Double-striped	8	Plain	67
Dwarf	25	Satyr	29
Foxglove	35	Shaded	46
Freyer's	47	Slender	62
Golden-rod	22	Sloe	40
Green	39	Tawny Speckled	80
Grey	36	Thyme	53
Haworth's	58	Toadflax	76
Juniper	74	Triple-spotted	68
Larch	33	V-Pug	13
Lead-coloured	38	Valerian	43
Lime-speck	65	White-spotted	26
Maple	78	Wormwood	63

PUGS - A MONTH BY MONTH GUIDE

Late March /April

Double-striped Pug *Gymnoscelis rufifasciata* (Haworth)

The **Double-striped Pug** is usually the first to appear in the year. It is one of the smaller pugs and quite distinctive with white and dark reddish-brown cross lines. The outline and resting position is distinctive. The leading edges are often held in a straight line, the wing-tips are pointed.



Double-striped Pug. A strongly-marked specimen. Yealand Conyers, Lancs.
April 2007



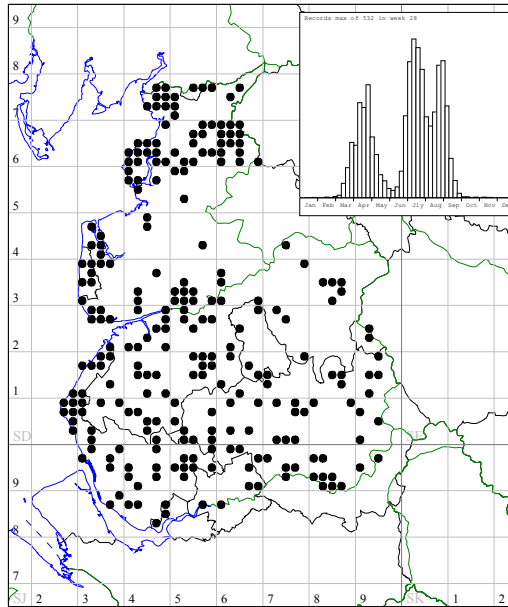
A worn Double-striped Pug

Even this worn pug can be identified as Double-striped, based on its small size, rather pointed wing-tips and straight leading edge. The head seems to project more in this species.

Distribution and flight season

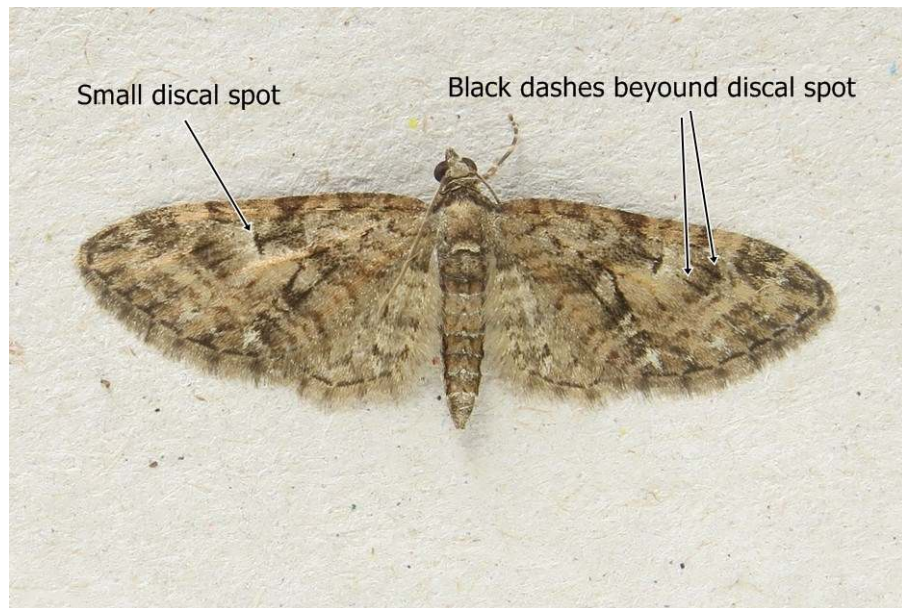
Common and widespread. Second only to Common Pug from the number of records in the Mapmate database for Lancashire. There are widely scattered records for Cumbria. It can found from March to September, with the first generation peak in April and a second double peak suggesting a possible third brood. Larvae feed on very wide variety of plants.

1862 Double-striped Pug (*Gymnoscelis rufifasciata*)



Brindled Pug *Eupithecia abbreviata* Stephens

The **Brindled Pug** is medium in size with longish wings. Black dart-like markings beyond the small discal spot, and early appearance aid identification. A dark form is quite common. The flight season overlaps with the rather similar Oak-tree Pug.



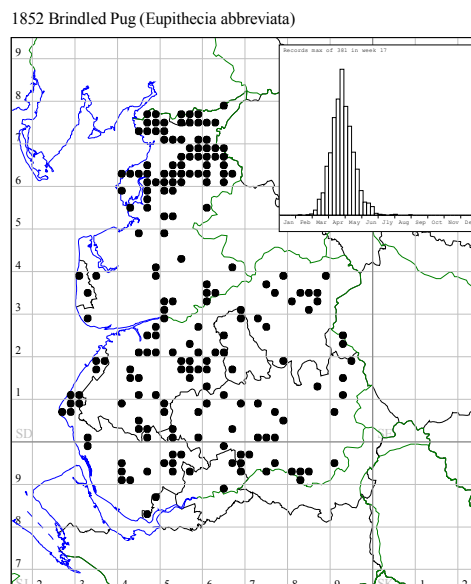
Brindled Pug 23 mm Yealand Conyers 21.3.16



A dark example from Roudsea, Cumbria. 28.3.2007

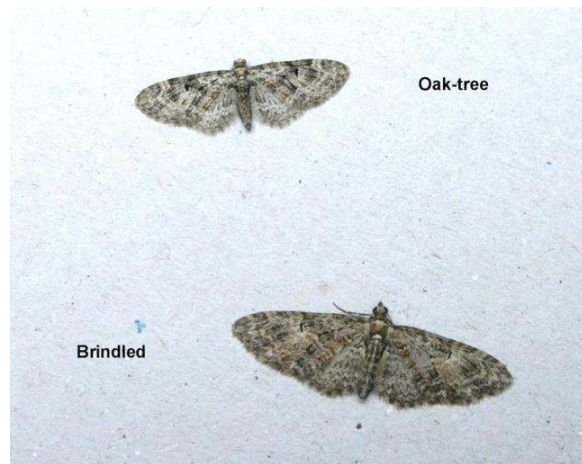
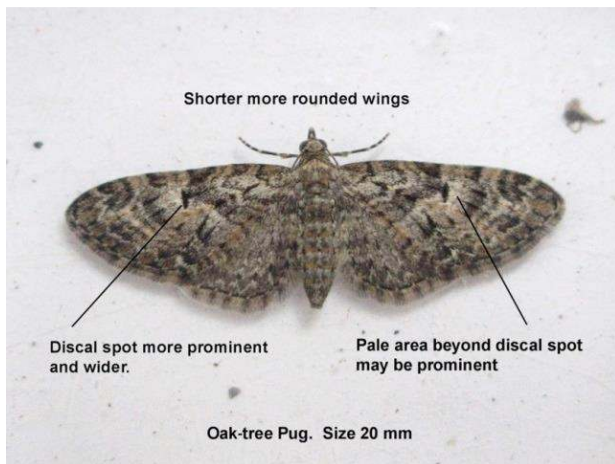
Distribution and flight season

It appears from mid-March to mid-May but is most frequent in April. It is particularly associated with Oak woodland, though the larvae also feed on Hawthorn. It's usually the first pug to appear, and can turn up anywhere in Lancashire and Cumbria. In some years it can be very abundant, as in spring 2011 when I recorded over 80 in one night at Silverdale, and Linda Reinecke trapped over 100 in Grange, Borrowdale.



Oak-tree Pug *Eupithecia dodoneata* Guenée

The **Oak-tree Pug** is medium in size, and also an Oak and Hawthorn feeder, though is not as frequently encountered as the similar Brindled Pug. It emerges a little later in April. It resembles a small, more round-winged, bright and well-marked Brindled Pug. The main differences are shown on the next photograph, though it must be said that there is considerable overlap. Worn specimens can be particularly difficult, and identification may only be resolved by dissection.



When seen together with the Brindled Pug, the Oak-tree Pug has shorter, rounded wings and a more contrasted appearance, but there is considerable variation in the markings of both species.

Although wing shape is the best feature to separate the two, the Oak-tree Pug usually has a more oval and prominent discal spot. There may be a prominent pale area just outside the discal spot, though this can sometimes be seen in the Brindled Pug as well.

To illustrate the variability, two more Oak-tree Pugs are shown below.



Silverdale.28.4.10



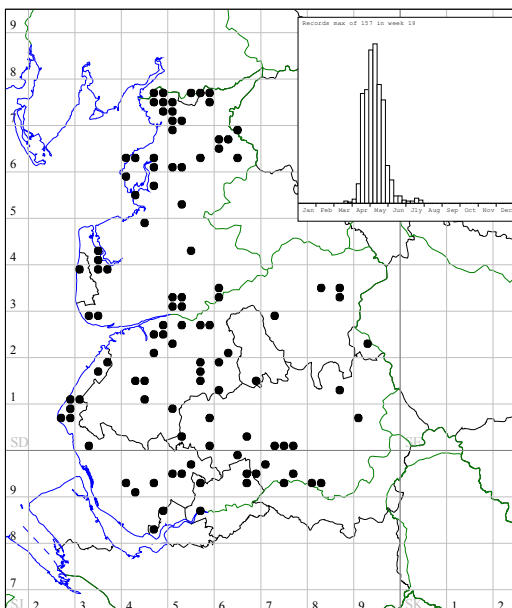
Ex larva. (Ben Smart)

Distribution and flight season

As with the Brindled Pug, there is a concentration in the northern oak woodland, but is otherwise widely scattered throughout Lancashire. The peak occurrence is in the second week of May. In Cumbria, there are only a few old records, but in the last few years has been increasingly recognised, with records for VC 70 from Cocker mouth, Bowness-on-Solway Morland, south of Penrith and Kirkoswald. In VC69, recent records are from Long Marton, Kendal, Windermere, Grange-over-Sands and Storth.

Although it this is not a very common pug, it has undoubtedly been overlooked due to its similarity to the Brindled Pug.

1853 Oak-tree Pug (*Eupithecia dodoneata*)



V-Pug *Chloroclystis v-ata* (Haworth)

The first brood of the distinctive **V-Pug** is seen in April. It is medium in size. In fresh specimens are green and with the dark V-shaped mark on the forewing, make this one easy to identify. The larvae feed on a wide variety of plants.

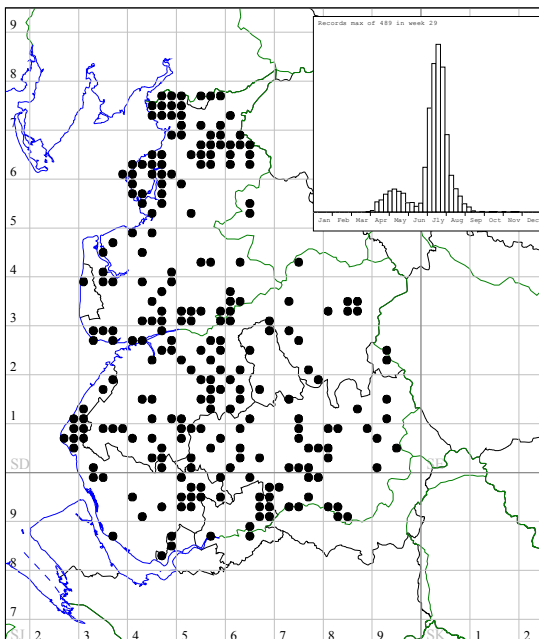


V-Pug. Yealand Conyers, Lancs. 27.7.15

Distribution and flight season

The first emergence peaks in mid-April followed by a larger emergence in July extending into September. It is quite common and widely distributed in both counties.

1858 V-Pug (*Chloroclystis v-ata*)



May

Marbled Pug. *Eupithecia irriguata* (Hubner)

The **Marbled Pug** is a rather scarce species occurring in southern England, with a stronghold in the Oak woodland of the New Forest. It is medium sized with quite distinctive white and dark brown markings, unlikely to be confused with any other species.

It was a complete surprise when one was found on the outside of a Skinner trap in an estate nr. Morland, south of Penrith on 27.4.10 (S. Colgate). I was shown a photograph and agreed with the identification.

In 2011, a further trapping session was planned at the same site. The first good night in the flight season was 6.5.11. (B. Hancock, S. Colgate and M. Tordoff). Three sheets were run in the vicinity of the previous catch, close to a long avenue of Pedunculate Oaks, (*Q. robur*, the larval food plant). It was a good night for pugs, 12 Brindled, four Oak-tree, three Dwarf and one Marbled Pug where attracted. The specimen was retained for photography and genital determination.

This is therefore a new resident record for Cumbria, and is by far the most northerly record in England. Two dots for Durham and Stirlingshire show in NBN gateway maps are thought to be erroneous by the county recorders. The avenue of Pedunculate Oaks may have been planted many centuries ago, (the Sessile Oak or hybrids are the predominant species in Cumbria). Such sites on private estates must be rarely trapped, so there may well be other unrecorded colonies outside its known range.



Marbled Pug. Morland nr. Penrith. 27.4.10. S. Colgate. First for Cumbria



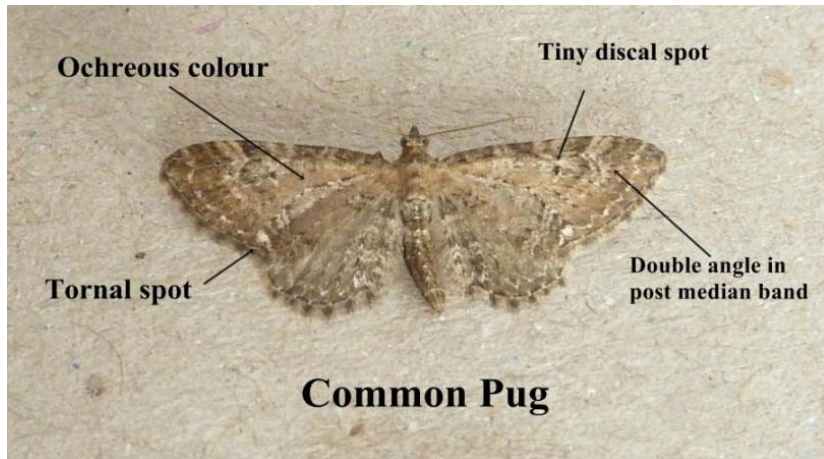
Marbled Pug. Morland. 6.5.11.
Second record for Cumbria



Site of capture

Common Pug *Eupithecia vulgata* (Haworth)

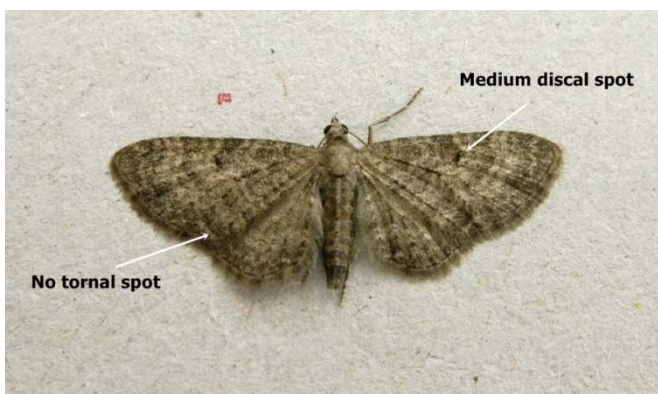
The **Common Pug** is by far the most widespread pug in both counties. It is medium-sized and quite variable in markings, so it is as well to become familiar with the extent of variation. The discal spot is tiny or absent, and there is a pale wavy line parallel to the outer edge of the forewing ending in a distinct white spot (the **tornal spot**). The most consistent feature is usually a background of reddish-brown coloration with variable cross bands.



Common Pug. 21mm.

The picture above is a little more difficult. The ochreous colour is present but not prominent, and the cross bands are faint. As in many darker specimens there is a sub-terminal white line ending in a white tornal spot, and the discal spot is minute.

For the less ochreous specimens, confusion with the Grey Pug is possible. On fresh specimens, look for the labelled differences on the following two examples.



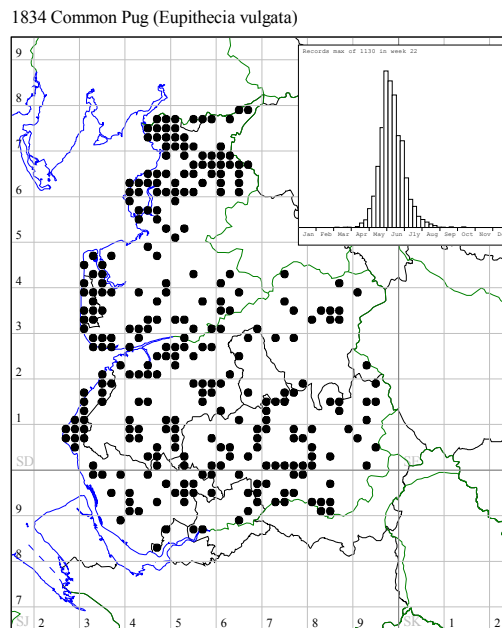
Grey Pug



Common Pug

Distribution and flight period

It is common in Lancashire and Cumbria. It has a flight period from the end of April to July, with a strong peak at the end of May. Records in August and September could relate to a partial second brood, but misidentifications cannot be ruled out. The larvae feed on a wide variety of leaves and flowers of trees and low-growing plants.



Mottled Pug *Eupithecia exiguata* (Hübner)

This is a reasonably common large pug. The distinctive features in fresh specimens are the three dark dashes beyond the small discal spot, and two pale streaks extending to the outer wing edge. These are well seen in the photographs, but care should be taken as the Brindled Pug has rather similar dashes, and may just overlap in flight season.

The larvae feed on Hawthorn, Blackthorn and, in upland areas, on Rowan.

Mottled pug. 25mm



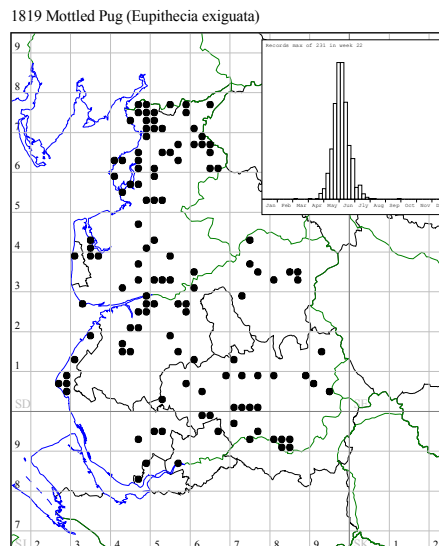
Mottled Pug, 24mm. Leighton Moss 26.5.2006



Mottled Pug on one of its food plants (Hawthorn), Yealand Conyers 6.6.2006

Distribution and flight period

Widely distributed in both counties, with the main emergence at the end of May.



Ochreous Pug *Eupithecia indigata* (Hübner)

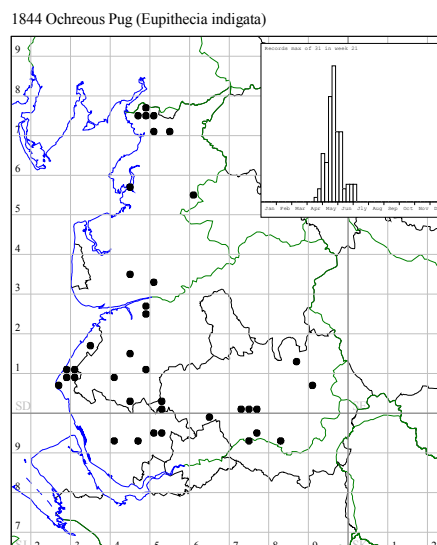
Although its larval food plant is Scots Pine, this rather small, undistinguished pug is not that often recorded. Its uniform pale colouring and rather pointed wings held in a swept back position are distinctive. The discal spot is obvious and elongated.



Ochreous Pug 19mm Silverdale 19.5.10

Distribution and flight period

It occurs in small numbers scattered throughout Lancashire and Cumbria. It is on the wing between late April and early July, with a strong peak at the end of May.



Marsh Pug *Eupithecia pygmaeata* (Hübner)

This is the only regular day-flying pug in the county. Its larval food plant is listed as Field Mouse-ear, though it seems unlikely to be the case in Lancashire as it is a rare plant here. The *Cerastium* species present at many of the Marsh Pug sites is *C. fontanum* (Common Mouse-ear), and this seems to be a more likely the food plant.

Nationally the Marsh Pug is an elusive and local species. It is a distinctly small moth with a brownish colouration and few markings unless very fresh with the exception of a small pale tornal spot.



Marsh Pug. 19mm. First record for Cumbria since 1993. Bowness-on-Solway.
10.6.11. (Liz Still.)



Marsh Pug from Flixton



From Fleetwood. (Barry Dyson).

Distribution and flight period

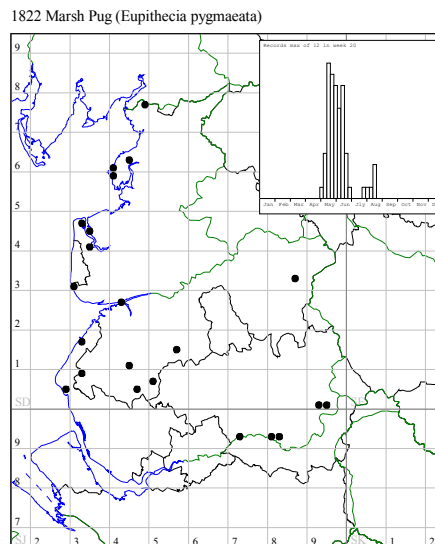
In Lancashire it is found very locally in low density, where it prefers rough grassy places, especially capped off tips and brownfield sites. In spite of being day-flying, it is easily overlooked.

There are a few widely scattered locations for this moth. I have netted it at Heysham Nature Reserve from where it was first recorded by Steve Palmer. It is regularly found at Flixton by Kevin McCabe on Ash Hill, and Chris Darbyshire has found it on sunny days at White Moss tip, Skelmersdale. Gait Barrows is a location for the moth - at the south end of the reserve in the meadow near Little Hawes Water (David Brown 2003 and Steve Hind 2009), though I have never found it, in spite of long searches. Increasing awareness has led to several more discoveries recently on meadows and waste places containing *Cerastium* plants. Lower Burgh Meadows near Chorley in 08 and 09 (Eddie Langrish), Altcar Ranges (Graham Jones), Fleetwood Nature Park (Barry Dyson), where it has been recorded regularly in late May /June, but also in August on three occasions. In 2010, a presumed second brood was at Chorlton meadows on 25.7.10 (B. Smart), and the first record for East Lancashire came from Burnley on 24.6.13 (G. Turner). New sites for 2014 are Birkdale (R. Moyes) Ormskirk (R.Moyes and C.Fletcher) and a further August record in 2015 from Lancaster (Steve Garland) Flight dates in Lancashire range from 7th May to 20th June, with a peak in late May.

Six recent records for Lancashire and two for Cumbria in August suggest a second brood, though this is not mentioned in the literature.

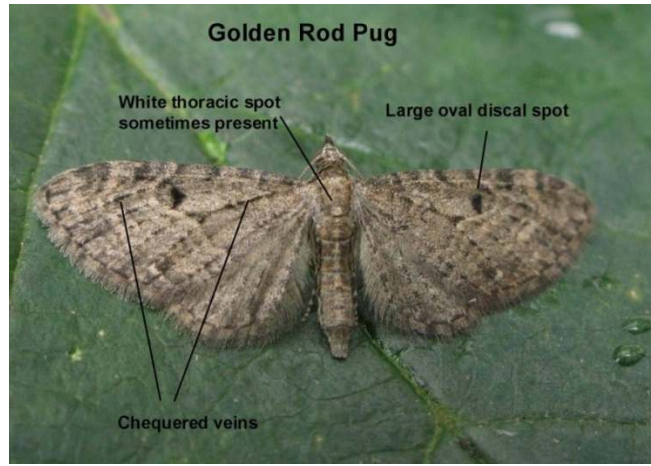
In Cumbria there are very few older records; Hayton Bridge and Castle Carrock area 1912-15 (specimens in the Routledge Collection, Tullie House), Rusland Valley Mosses, 1968, and an unusual record of one trapped at light at South Ulverston disused railway, (SD30760) around 1970 (B. Kydd), Ennerdale 1973 (J.Briggs) and Langwathby 1993 (M.Clementson)

The only recent records are from Liz Still in her garden near Bowness-on-Solway on 10.6.11 and 13.8.14 (see photo above), and at Watchtree Nature Reserve west of Carlisle (NY310542) on 28.08.12 and 4.6.13. It is almost certainly an overlooked moth. It flies low and fast is and well worth searching for in waste ground and wildflower-rich places in both counties.



Golden-rod Pug *Eupithecia virgaureata* (Doubleday)

The **Golden-rod Pug** occurs in two generations. The moth is quite tricky to identify, especially dark specimens that are so similar to the melanic form of the Grey Pug. Both are medium sized. Fortunately, genital dissection features are quite characteristic for each species. In well-marked specimens, the two can be distinguished as indicated on the photographs.



Golden-rod Pug, Roudsea Wood, Cumbria. Aug 2006

Four more examples are shown to illustrate the range of markings. All ex larvae



Golden Rod Pug Ex Larvae.



Grey Pug for comparison. The discal spot is not so large, and there is no hint of a thoracic spot. Note the lack of chequered veins.



A melanic Grey Pug



A dark Golden-rod Pug

(Both confirmed by dissection)



First generation larva on Hawthorn



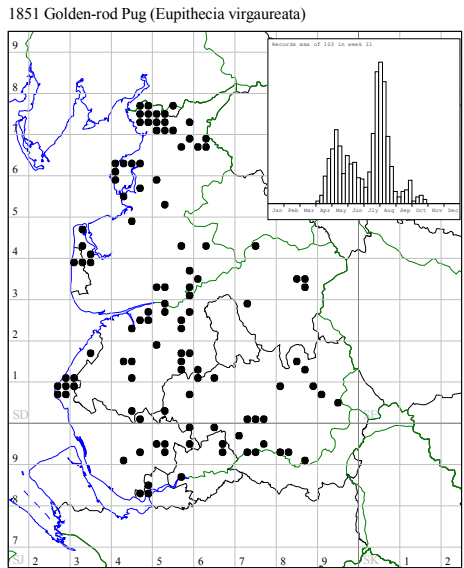
Second generation on Ragwort

Distribution and flight period

It is widely distributed and reasonably common but until recently under recorded in both counties. The increase in recent records is more likely due better identification rather than an extension of its range. The food preference of the first generation is not certain, though it can be reared on Hawthorn. The second

generation can often be netted around Ragwort, one of its favoured larval food plants after dusk in August.

The peaks of the two broods are clearly shown below. The spring brood peaking in early May is less often encountered than the second brood with a peak in early August.



Dwarf Pug *Eupithecia tantillaria* (Boisduval)

This is quite a distinctive medium-sized pug, with strong cross lines, a prominent, elongated discal spot and a gently curved leading edge. The line beyond the discal spot is distinctly wavy and curved. Its resting position is distinctive, with its forewings held a little below horizontal. The larvae feed on Spruce and other conifers.

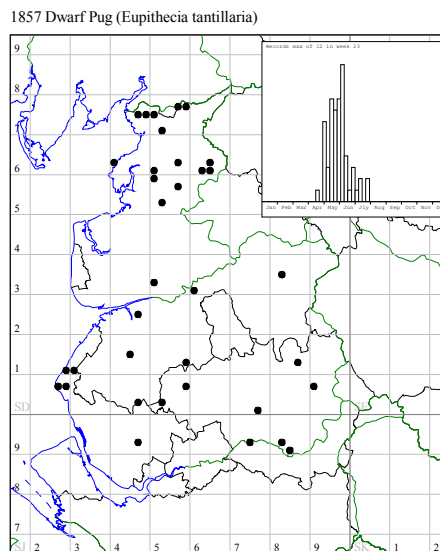


Dwarf Pug, 20mm. Roudsea NNR, Cumb.26.5.06 Yealand Conyers 6.5.11

Distribution and flight period

It occurs widely nationally, and it's found where Spruce trees are abundant in Lancashire for example Docker Moor and Lowgill plantations in the north. It does occasionally turn up in garden traps and there are recent records throughout the county.

In Cumbria I have netted several at Roudsea NNR though through there are few records up to 2000 on the Cumbria database, but in the last few years several new sites have come to light in widely scattered locations. The moth first appears in early May and continues to early July.



White-spotted Pug *Eupithecia tripunctaria* (Herrich-Schäffer)

This medium-sized pug, when well-marked, is distinctive. It has a dull greyish background, absent cross lines, and two prominent white spots close to the wing margin, the largest being a prominent tornal spot. A characteristic white thoracic spot is usually present. These spots can almost disappear in well-worn specimens, making identification difficult without dissection.



Ex larva from Angelica. Lords Lot Wood.



Ex Larva. from Hogweed. Yealand Conyers. Note the white thoracic spot is not as prominent as usual.

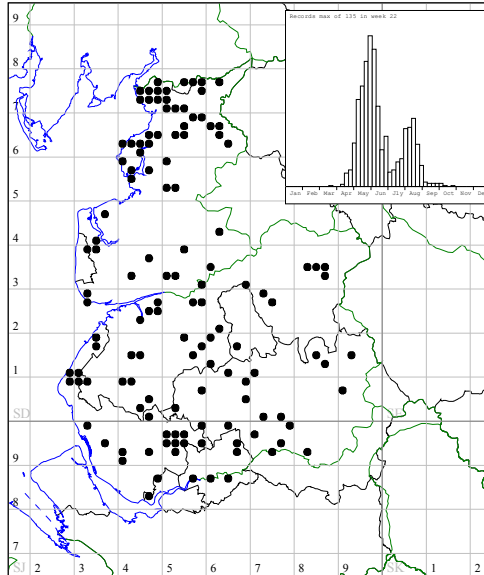
Distribution and flight period

It is a reasonably common pug encountered all over Lancashire and Cumbria, with no particular habitat preference. Rather surprisingly, there are no historic records for Cumbria (pre-1960), but in the last decade has been increasingly recorded from wide variety of sites in both vice counties. There are two generations; the first, most abundant in late May/early June, while a small second emergence occurs in August. The first generation's larval food plants are the flowers of Elder and possibly Cow Parsley, while the second generation feeds on the flowers of various *Umbelliferae*, Ragwort and Goldenrod.



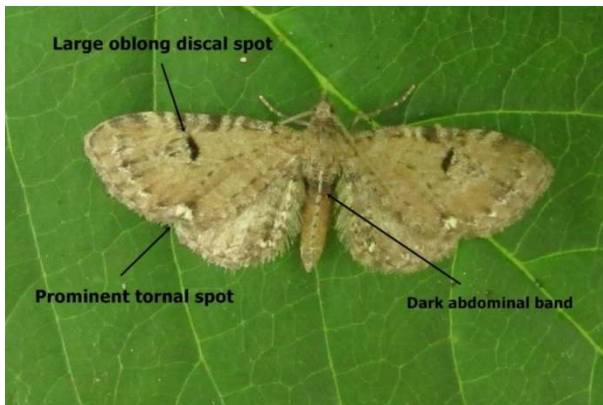
Larva on Hogweed 11.9.13. Yealand Conyers

1835 White-spotted Pug (*Eupithecia tripunctaria*)



Currant Pug *Eupithecia assimilata* (Doubleday)

It is quite easy to recognise this medium sized Pug with its plain, warm brown colour, elongated discal spot, prominent white tornal spot and, in comparison to the similar Wormwood Pug, less wide, more rounded wings. The moths appearing later in the summer may have less prominent markings.



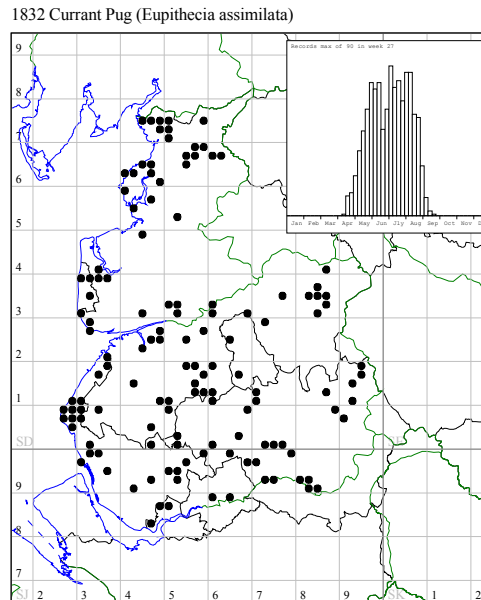
Currant Pug.21 mm. 14.6.14

Currant Pug, second gen.21.7.15

Note the reduced markings in the second generation specimen.

Distribution and flight period

This is a common pug in Lancashire and Cumbria, associated with currant bushes, and therefore often found in gardens. It is double-brooded, and can be encountered throughout the summer from early May to early September.



JUNE

Satyr Pug *Eupithecia satyrata* (Hübner)

The moth is rather undistinguished, greyish in colour with a straight leading edge and a small, distinct discal spot. In fresh specimens the veins are alternately spotted light and dark - well shown in the photos below. When worn it is quite pale and nondescript so could easily be overlooked. The form *f.callunaria* is associated with heather, and is common in Scotland. It is more distinctive, with several dark cross bands. The Cumbrian specimens in Tullie House from Hayton Moss in early last century are not well marked, suggesting the typical form.



Satyr Pug. Northumberland. (Tom Tams)



Satyr Pug. Kershope Forest. Cumbria. 10.6.14. (Robert Pickett)

Distribution and flight period.

This species is local and uncommon in Southern England on downland and in open damp woods, and there are scattered records elsewhere in lowland England. In northern Britain it is widespread and often very common on moorland in Scotland where it flies freely in the sunshine. It has a wide variety of food plants including heather, meadowsweet, ragwort and knapweeds.

In Lancashire there are some historic records from Ainsdale and Silverdale, but in the last 100 years it has only been recorded once Lancashire, on June 4th 2004 at Freshfield (SD2909) on the lowland heath area by Graham Jones and Kevin McCabe. The ID was confirmed by dissection. The moorland areas have been well trapped by Pete Marsh with others and, perhaps surprisingly, it has not yet been recorded, though it should be noted in Scotland it rarely comes to light being a regular day flyer.

In Cumbria there are some of historic records from the north of the county: Hayton Moss, Castle Carrock, Watendlath and Buttermere (all pre-1930), and in lowland VC69 from Beetham, Hutton Roof and Roudsea mosses (50's and 60's). The only recent records are a series caught in Rothamsted traps set high on the moors between Cow Green and Great Dun Fell (NY7532). A maximum of 8 were

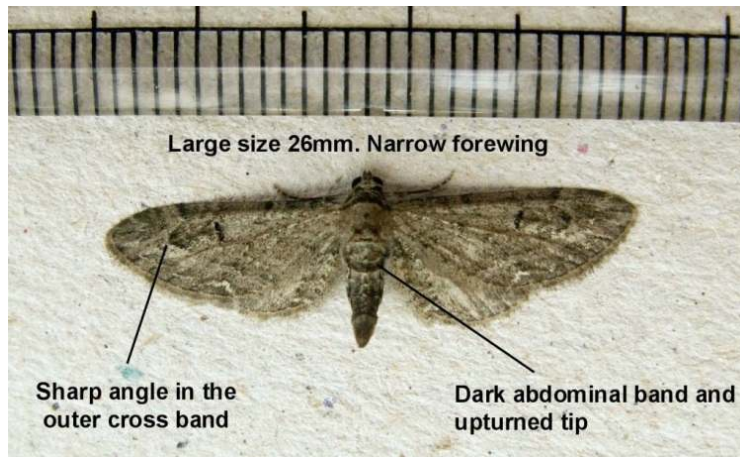
caught between 2-8.6.04. Another record was from the Long Marton area near Appleby (NY6625) 22.7.08 (D. Kipling) and Castle Head field study centre, Grange-over-Sands. (SD4279) 30.5.01 (D. Brown). Apart from very old museum specimens in Tullie house not all of these recent records can be verified though the Great Dunn Fell are likely to be correct. 2014 however produced two confirmed records. First from the Kershope forest at the extreme north of Cumbria. A specimen was attracted to a heath trap on 10.6.14, photo above. (R. Pickett and G. Hedges). Another was recorded from Buttermere on 22.6.14 and confirmed by dissection. (C.Lewis)

.
This species is surely waiting to be rediscovered on heather-clad fells of Cumbria, and perhaps the uplands of Lancashire, but whether it occurs only on the higher fells or the lowland mosses as well, remains to be discovered. In Scotland it can be easily disturbed or seen flying by day over moorland in calm sunny conditions.

Angle-barred Pug (Ash Pug) *Eupithecia innotata* (Hufnagel)

Recent continental thinking on the status of this species, (The Geometrid Moths of Europe Vol. 4 by V. Mironov), is that *E. innotata* and *E.innotata form fraxinata* (Ash Pug) are the same species, and that the correct name is *E. innotata*. (Angle-barred Pug)

It is a large, dull grey-brown pug with few markings, and could be easily overlooked. The large size and narrow, pointed forewing prove useful in identifying this species. Other features are shown on the photograph.



Angle-barred Pug, Yealand Redmayne. Lancs 1.6.2009



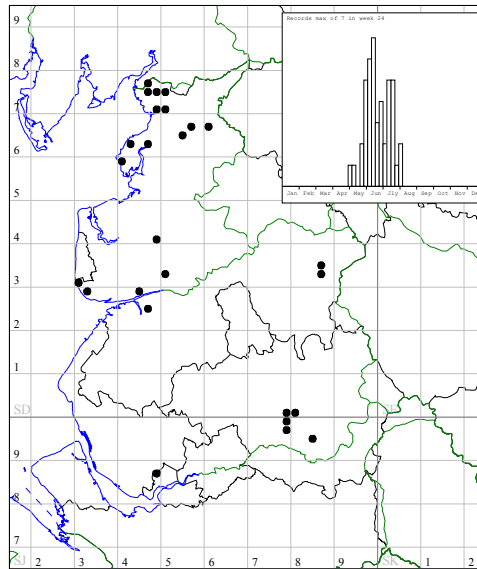
Angle-barred Pug, 25mm. Yealand Conyers, Lancs 12.6.06.

Distribution and flight period

There are a few scattered records throughout Lancashire, although not all of these have been critically examined. Most recent confirmed records come from the Silverdale area though in the last three year the only records from outside this area are from Morecambe in 2015. (J.Patten). It is probably thinly distributed and often overlooked. The same probably applies to Cumbria where, since 2000, it has been recorded from nine widely scattered locations, ranging from Grange over Sands, Boot, Wigton and Bowness-on-Solway, though not from the central lakes.

Larval food plants are Sea Buckthorn and Ash. Larvae were recorded on Sea Buckthorn at Lytham St. Annes LNR in 1979, though it has never been recorded from Heysham either at light or by dusking around the Sea Blackthorn. Its emergence begins in mid-May with a peak in early June. Records extending into July and August suggest a second brood.

1849 Ash Pug (*Eupithecia fraxinata*)



Angle-barred (Ash) Pug

The distribution map contains dots from a few historic, unverified records

Larch Pug *Eupithecia lariciata* (Freyer)

This medium-sized pug, with strong cross lines when fresh, should be easily recognised by a single diagnostic feature; the white thoracic spot. Only the White-spotted Pug has a substantially similar spot. The post discal band is strongly angled.



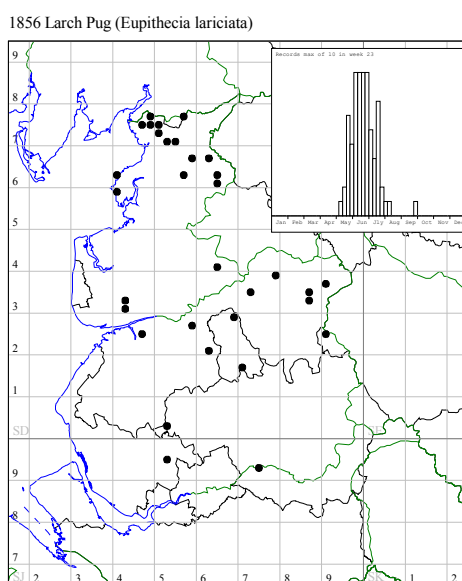
Larch Pug. Maidenhead.15.6.13.(Les Finch)



A very late and worn Larch Pug, 20mm, identified by its white thoracic spot and confirmed by dissection. Yealand Conyers, Lancs. 30.9.09

Distribution and flight period

Although records are scattered through Lancashire, it is more often recorded in Cumbria. It may be more widespread than current records indicate, and should be found in numbers in any substantial Larch plantation - for example, the twenty attracted to light at Thrushgill near the top of Hindburndale in late May 2004 (P.Marsh) and many at Docker Moor plantations in 2015 (P.Marsh). Worn specimens could easily be overlooked and do occasionally turn up in garden traps. It first appears in late May, and continues until early July, but an unexpected specimen on 30th September at Yealand Conyers suggests an occasional second brood.



Foxglove Pug *Eupithecia pulchellata* (Stephens)

This attractive, medium-sized moth is common in most gardens, and is quite distinctive. It is quite similar to the Toadflax Pug which is much less common, and the differences are discussed under that species which is more usually seen in August.

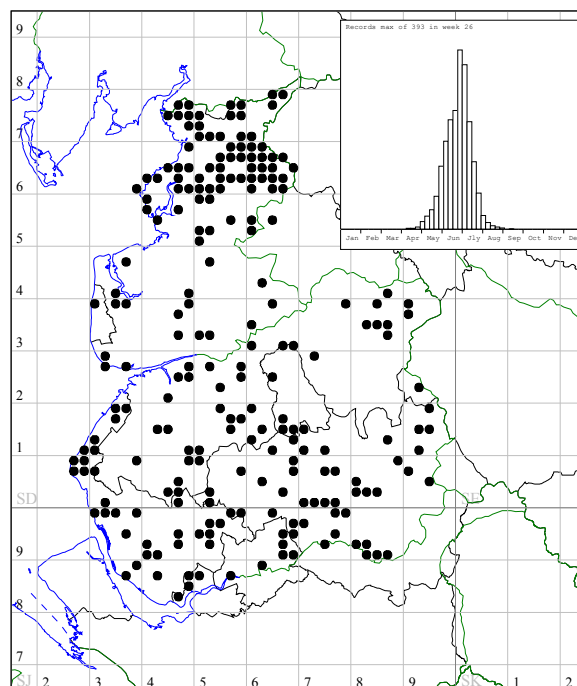


Foxglove Pug 22mm.

Distribution and flight period

The moth is out from late May to early August, peaking at the end of June. It is found almost everywhere in Lancashire and Cumbria where its food plant is established.

1817 Foxglove Pug (*Eupithecia pulchellata*)



Grey Pug *Eupithecia subfuscata* (Haworth)

One of the more common pugs, the Grey Pug occurs regularly in a melanic form, especially in urban areas. The moth is rather nondescript with a grey-brown background and fine cross lines. A minute tornal spot can sometimes be present, but it does have a discal spot of variable prominence. Three specimens are illustrated to show the range of appearance that can occur - the melanic form is all over dark grey.



Grey Pug, 21mm. A typical specimen from North Lancashire



A very fresh specimen. Yealand Conyers 2.6.14



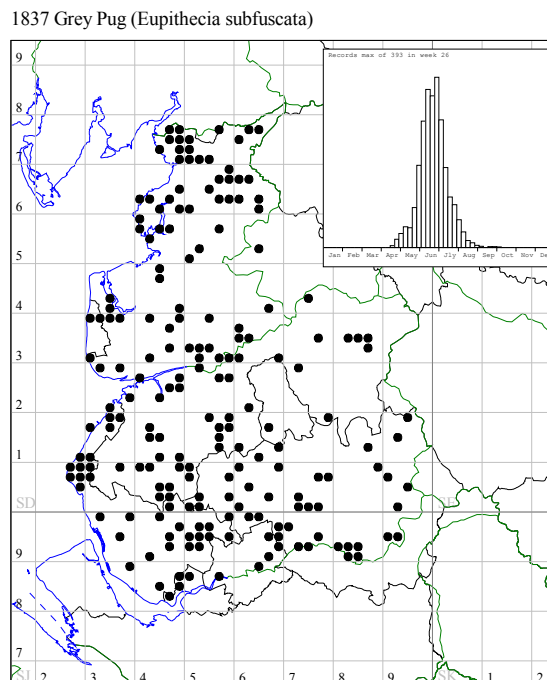
Melanic form of Grey Pug



Grey Pug larva on Angelica. 4.9.12. Hale Moss, Cumbria.

Distribution and flight period

The Grey Pug is common and widely distributed in both counties, and appears over quite a long period from early May to July, with a peak throughout June. It is quite possible that some of the August, and many of the September records shown on the flight graph below, will relate to mis-identifications of second brood Golden-rod Pug.



Lead-coloured Pug *E.plumbeolata* (Haw)

This small and very local pug is weakly marked. It is very similar to the Haworth's Pug but without the pinkish abdominal band, and has a quite different habitat, being confined to the vicinity of its larval food plant Cow-wheat (*Melampyrum pratense*) growing in woodland.



A worn Lead-coloured Pug from France, 18mm. Confirmed by gen. det.



Common Cow-wheat.

Distribution and flight season.

There are only historical references to this species in Lancashire; from Bury, Mereclough, Prestwich and Pilling Moss, but all prior to 1887.

In Cumbria the only recently confirmed record is from Roudsea Wood (VC69) on 28.6.00 (R. Petley-Jones), and confirmed by gen. det. by S. Palmer.

Disappointingly, a recent search of Roudsea failed to locate any Cow-wheat.

There are historic records from Witherslack (1922), Castle Carrock (1912) (G.Routledge), and Buttermere 6.6.30 (C. Hervey). The specimens from Buttermere have been confirmed in the Tullie House collection where, surprisingly, a contemporary record states it was common in the water meadows.

The moth is almost certainly to be found again in Cumbria by targeted searching. Cow-wheat is common in mixed woodland in the central lakes, and can be found, for example, at Aira Force, Ullswater, Friar's Crag, Keswick, Brandlehow Park, Derwentwater and Seathwaite. The moth is said to fly readily at dusk over its food plant, and come to light, though densities can be low. It should be searched for from late May to mid-June.

Green Pug *Pasiphila rectangulata* (Linnaeus)

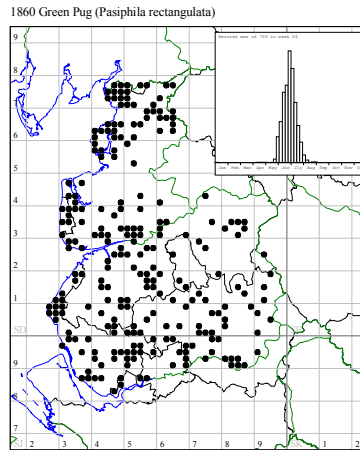
The Green Pug is one of the four most widespread and common pugs, (along with Common, Double-striped and Foxglove), to be found in gardens throughout Lancashire and Cumbria. It is medium-sized and, when freshly emerged, is a distinctive fresh green colour. It can lose the majority of its green colouration over time but usually retains some on parts of the body (eg thorax) even when the rest has gone. The rather similar Sloe Pug is much more local. The characteristics of the two species are illustrated in the photographs. Both species feed on the flowers of various *Prunus* species; the Sloe Pug probably exclusively on *Prunus spinosa* – Blackthorn.



Two freshly emerged Green Pugs. 20mm.

Distribution and flight period

Widely distributed and common, often in gardens, throughout June and into July.



Sloe Pug *Pasiphila chloerata* (Mabille)

It is perhaps surprising that this species was not recognised in Britain until 1971. It is certainly very close to the Green Pug, but there are sufficient differences in fresh specimens to allow a positive visual identification, as illustrated in the following photographs. It must be appreciated that worn Green and Sloe Pugs can be indistinguishable without dissection.



Sloe Pug netted Warton Crag. Lancs. 8.6.14



Sloe Pug bred ex larva. 2010, Mike Clementson, Lazonby, Cumbria

The main distinguishing features between Green and Sloe are illustrated below.



Green Pug at Light Yealand Conyers. Lancs. 8.6.14



Sloe Pug. Ex Larva Killington. S. Cumbria May 2015

The white grub-like larvae can be beaten from Blackthorn blossom in April, and the Green Pug larvae may be found at the same time, though they also feed on other *Prunus* species.



Sloe Pug larva on Blackthorn blossom



Green Pug larva on Blackthorn blossom



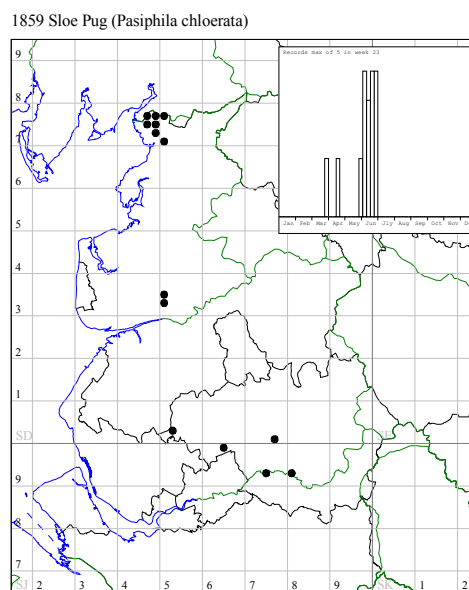
Sloe Pug site. Warton Crag, Lancs.

Distribution and flight period

I had beaten Blackthorn at blossom time, and placed a Heath trap under the best blackthorn bushes I could find in Gait Barrows and Warton Crag without success. It was only when I did some targeted netting at dusk in the same locations on June 7th and 17th 2007 that I caught Green and Sloe Pugs flying together at both sites. Both species were flying close to the bushes quite high up and did not appear until it was getting dark. In 2008 I did find both Sloe and Green Pug larvae at Warton Crag but only after several beating sessions in late April and early May. The moth was first recorded in Lancashire by Alan Creaser in 1977 at White Moss, Yealand Redmayne. Recent searches in the Silverdale area by netting around blackthorn at dusk have proved it to be present on a regular basis. It will no doubt be found widely in Lancashire judging from the recent

scattered records including Billinge, Broughton, Chorlton, and recently at Leigh Flixton and Leighton Moss. There are now records from most Vice Counties in Britain. Our few Lancashire records fall between 6th and 30th June.

In Cumbria there are references to larvae being found at Witherslack, Bouth and Torver between 1970-80. The only recent confirmed record for Cumbria is of several specimen bred from larvae beaten from Blackthorn in spring 2010 near Lazonby (NY 5539) by Mike Clementson, This represents the first record for VC70 and a voucher for VC69 was bred from a larva beaten from Blackthorn near Killington in May 2015. It will undoubtedly be found more widely with appropriate searches.



Valerian Pug *Eupithecia valerianata* (Hübner)

In size it is just a little smaller than the Common Pug. The moth is rather weakly marked without a discal spot but has a wavy subterminal line ending in an elongated tornal spot. The background colour is a soft pearly grey in fresh specimens.



Valerian Pug (1st for VC60) confirmed by dissection. 19mm. Yealand Conyers. 6.6.07



Valerian Pug 19mm. Lancaster canal. 24.6.12

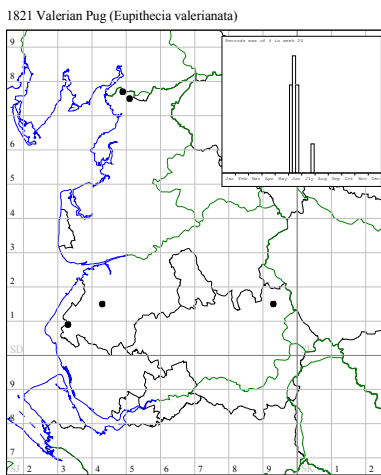
Distribution and flight period

This is a widespread but very local pug in Britain. In Lancashire there are old records from Formby, Pilling and the Warrington area, but has only been recorded recently from Rochdale (Ian Kimber), three sites in the Yealand area, and Martin Mere. (A. Bunting) At the latter site, they have come to light, and been bred from larvae. The few Lancashire records are from early June with just one in July.

It is infrequently recorded in Cumbria. The only pre 2000 verifiable records are for Salta Moss, Allonby Bay (NY0845), 1955 (N, Birkett and J. Vine Hall) both VC70, and since 2000 for VC 70 at Naddle Bank, Bampton 12.6.14 (J.Morgan) and for VC69 at Castle Head field centre, Grange-over-Sands (SD4279) June 02 and 03 (D. Brown), Witherslack (SD4383) 7.6.00 (P. Costen) and 2.6.07 (S. Bradley). My first for Cumbria was at Hale Moss, Beetham where I had noted Valerian in a damp meadow. This area had been light-trapped in June without success, but netting at dusk produced a worn specimen on 2nd July 08 and more have been found in subsequent years. I also found it easy to net at dusk in a

Valerian-filled ditch along the old A590 at the south end of Whitbarrow on 1.7.13. The most recent record is from Burns Beck Moss reserve on 23.6.15 (S.Garland) and Larvae found at Roudsea on 8.8.15

Common Valerian (*Valeriana officianalis*) is a local but widespread plant of damp places in both counties. Targeted searches at dusk June or for larvae in August should turn up more records.



Common Valerian (*Valeriana officianalis*), Lancaster Canal, Cinderbarrow.



Valerian Pug larva. Roudsea NNR Cumb.8.8.15

Shaded Pug *Eupithecia subumbrata* (Denis & Schiffermüller)

This is a medium sized pug. It has a straight leading edge, rather pointed tips to the forewings and a greyish, chalky-white background, crossed with several bands. The contrast between the darker outer and inner paler areas is a helpful identification feature, as it is well seen in most specimens.



Shaded Pug, 21mm. Heysham. 6.6.2006. The contrast between the dark outer margins and paler inner area is well shown in this photo. Note the very straight leading edge of forewing and tiny discal spot



Another from Heysham 21mm. 15.6.15

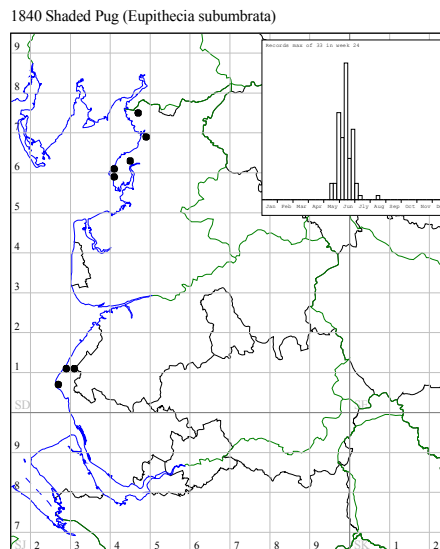
Distribution and flight period

Nationally, this pug is found regularly in the south-east of England, associated with chalk downland, but there is a small, relatively isolated population now found on the north Lancs and south Cumbrian coast. For Lancashire, there are single records in the 1960's and 70's from Formby, Ainsdale and Southport, as well as one from Leighton Moss and Bolton-le-Sands. It has been re-discovered at Ainsdale on 27.6.15 (R.Moyes, C.Daly). The only regular records come from Heysham Nature Reserve, where it is well-established. Food plants include

Common Ragwort, Goldenrod and Field Scabious. At Heysham the flight period is quite short, extending from late May to mid-June, with occasional later records.

In Cumbria it is also very local, with the only reliable recent records in 2005, 09 and 10 from South Walney Island observatory where it flies in mid-June. There are older records from Sandscale Haws (SD1974), and a little further up the coast at Little White Moss (SD2285) near Foxfield, (B. Kydd in 1970's).

It is quite possible it will be found further up the Cumbrian coast in areas that have never been searched, as it is currently found in the Isle of Man and Northern Ireland.



Freyer's Pug *Eupithecia intricata* (Zetterstedt)

When fresh, this large pug (22-26mm) is quite distinctive, with a grey brown background and usually well-defined cross bands, plus a prominent discal spot.



Freyer's Pug, 25mm. Silverdale 10.6.2006 (25mm)



Freyer's Pug, Pennington, Lancs. (Dave Wilson)



Freyer's Pug. Burnley 23.6.13. (G.Turner)

Distribution and flight period

There have traditionally been two subspecies of this pug in Britain. *E.intricata arcutheta* (Freyer's Pug) has been spreading northwards, and is now common in Lancashire, and the northern subspecies *E.intricata millieraria* (Edinburgh Pug) which is common in extensive pine forest of Scotland, and just reaches parts of northern England.

The larva of Freyer's Pug feeds on various Cypress trees (such as Lawson's and Monterey) and, not surprisingly, it has become quite common and widespread in Lancashire. In keeping with this spread, it has only relatively recently been recorded into South Cumbria, New Hutton 01, (R. Petley-Jones) Grange-over-Sands 03, (D. Brown), and Kendal regular since 05 (M. Tordoff).

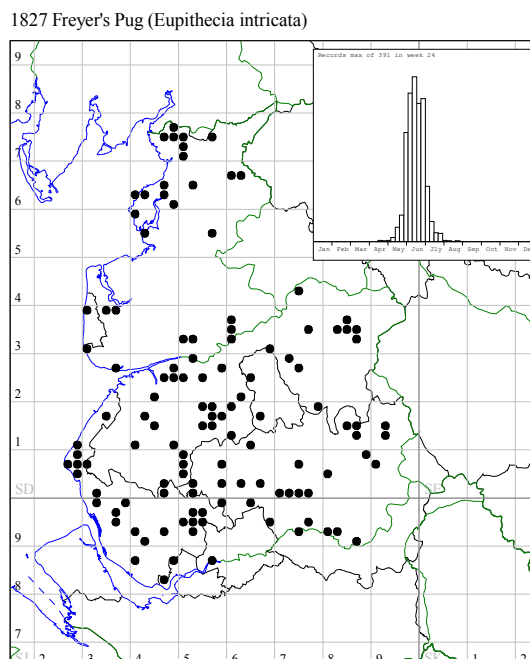


E.intricata millieraria (Edinburgh Pug) bred from larva on Juniper.
Carrock Fell, Cumbria. 1991. M. Clementson.

Until recently, there are very few records for the north of the county. It has been bred from larva on Juniper at Caudale 1981 and Blea Tarn 1986 (NY2904) (B. Kydd), and three were trapped at light from Mardale (NY4812), on 27.7.97 (C. Toop). These may represent the Edinburgh subspecies as supported by the beautiful specimen bred from larvae found on Juniper at Carrock Fell (NY337326), on 25.8.91 (M. Clementson). Typically the Edinburgh subspecies it is smaller and more strongly marked. In June 2015 several records came from North Cumbria at Topping Castle (G. Hedges) Carlisle (S. Colgate) and Brampton (R.Pickett) suggesting continuing spread northwards.

It is possible the two subspecies are overlapping with production of intermediate forms in northern Cumbria.

The moth is out from mid-May to mid-July, with a strong peak in mid-June.



Netted Pug *Eupithecia venosata* (Fabricius)

This must be everyone's favourite pug - it is so pretty and distinctive that there is no need for a description. It is, unfortunately, infrequently recorded in Lancashire and Cumbria.



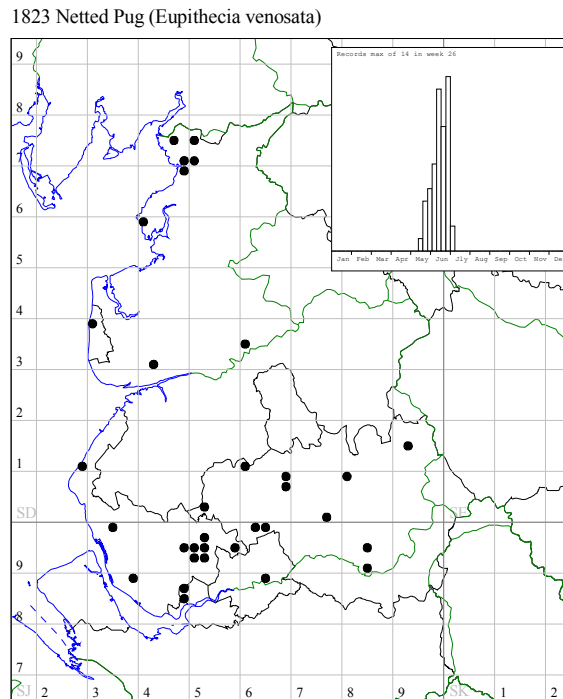
Netted Pug, 25mm. Carnforth 21.6.12

Distribution and flight period

It is all the more special because it will turn up occasionally in widely separated areas in garden traps. Its food plant, Bladder Campion (*Silene vulgaris*), found on rough ground and waste places, is quite local. In Lancashire, for the last 20 years, it has been recorded only 2 or 3 times a year without any geographical preference. Of my four catches at home, 3 were basking on the outside of a trap late at night, and one was attracted to a house light. In the last five years it has only been recorded from two Lancashire sites, both near Carnforth plus a single record at Silverdale in June 15 (D.Talbot). At the Carnforth sites it did not come to sheet and light but was easily netted after dusk around the food plant.

In Cumbria, I can only trace four sites in the last 30 years; one from Witherslack on 16.6.03 (S. Bradley), and more recently, in June 2012 and again in 2013 at Alithwaite (M. Chadwick) and June 15 at Arnside (J.Rae). Prior to this there are a few scattered records, predominantly coastal; Arnside, Grange-over-Sands. Ulverston, Baycliffe, and South Walney. In VC70 there are only old records from

Castle Carrock and Keswick (G. Routledge 1910's), Kirkoswald (NY5541) 10.7.66 and Glasson Moss (NY2360) 18.5.73 (both M. Clementson). Sea Campion (*Silene uiflora*) is given as a food plant, and occurs on the Cumbria coast. Netted at dusk around this plant my well produce up some more records. The first two weeks of June is the peak period, with records extending from 24th May to 29th June.



Bladder Campion at Warton. N Lancs.



Larva on Bladder Campion 15.7.15

Late June /July

Bilberry Pug *Pasiphila debiliata* (Hübner)

When fresh, this medium sized pug has a distinctive lime-green colour with cross lines dotted with black.



Bilberry Pug, 20mm, from Roudsea Moss, NNR. Cumbria. 26.6.11



Bilberry Pug habitat. Roudsea NNR.
Cumbria



Larva. Lords Lot Wood. Lancs May 15

Distribution and flight period. Locally common in parts of southern and western England and Wales, this moth is said to be "*sporadically recorded elsewhere with no breeding colonies*" (Riley and Prior, 2003). In Lancashire it

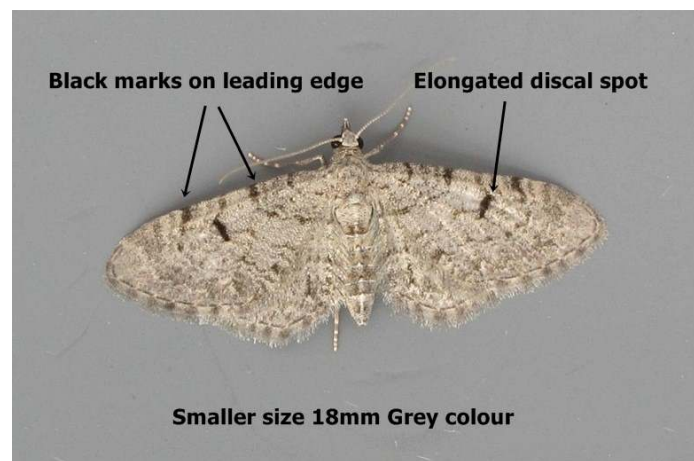
was reported as being present on Chat Moss prior to 1862 (Mansbridge, 1940). It was thought to be extinct in Lancashire, until I searched promising patch of Bilberry in light woodland at Lords Lot Wood at dusk on 23.6.14. Over a dozen were netted. It had only been added to the Cumbria list in 2008, from Whinfell Forest on 22nd July during a moth survey conducted at Centre Parcs near Penrith (VC70) in 2008 by Graham and Anona Finch. Next the first for VC69 was a single moth found at rest on a tree trunk at Nichols Moss on 5.7.09 (SD4382), and confirmed with a photograph (M. Tordoff). In spite of much trapping at Roudsea Moss over the years, the first one came to light on 7.7.09 (D. Green).

On 26.6.11, I netted six flying at dusk on a warm, still evening over Bilberry under cover of pines, well away from the usual trapping site at Roudsea, but failed to find them at similar site on Meathop on a cooler night a week later. Two more sites have been found in N Cumbria. Solway Mosses (NY3569) on 25.6.14 (R.Pickett) and Braithwaite moss (NY2324) on 24.6.14 (P.Mcqueen). It appears to favour Bilberry growing under cover of light woodland esp conifers, and is best found by netting just after dusk.

Cumbria dates range from the 26th June to 7th of July.

Thyme Pug *Eupithecia distinctaria* (Herrich-Schäffer)

One of the smaller pugs (18mm), the distinguishing feature is an overall grey background, quite strong cross bands which are particularly prominent along the leading edge, and an elongated discal spot.



Thyme Pug. Carnforth. Lancs 12.6.14



Thyme Pug. First VC70 record for 60 years. Borrowdale. 17.6.13 . (L. Reinecke)

Distribution and flight period

This is an extremely local pug throughout Great Britain and, as its name suggests, occurs where Wild Thyme grows.

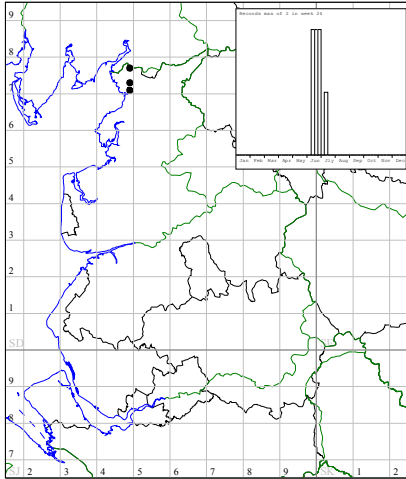
Gait Barrows is the only known regular site for Lancashire, and it must be present in very small numbers. It has been recorded by light-trapping close to the Barn on just a few occasions, but not at all in the last six years up to 2015, in spite of several trapping sessions, and netting at dusk. The few records have been from mid-June to mid-July. The only other recent record is a worn specimen that came to my sheet light near Carnforth railway sidings on 26.7.12, confirmed by gen.det. This led to a search of the area and plentiful Thyme was found at Cote Stones, growing on Victorian iron smelting slag. Netting at dusk on 12.6.14 produced half a dozen specimens. One also came to a heath trap on Warton Crag on 13.6.14 (J.Patten)

For Cumbria, there are a few scattered records, mostly in the south on limestone outcrops.

For VC69, there are acceptable records from Scout Scar (SD49) (N. Birkett 1950) Hutton Roof Crag (SD5677) (Rev J. Vine Hall 1955), Slack Head, Beetham (SD47) (J .Briggs 1970), and Kirkby Stephen (NY7909) (I.Wallace 1970). In the 1980's it was reported in Rothamstead insect survey traps at Arnside (SD47) and Merlewood, Grange-over-Sands (SD 4079) A new site is Great Asby Scar NNR with captures on 7 and 25.7.12 (D. Green). I netted three at dusk around the abundant thyme on Helsington Barrow on 3.7.13. and one on the lower slopes of White scar, Whitbarrow on 30.6.15

For VC70 There is an unverified record from the south-east shore of Buttermere on 22.7.55, and, unexpectedly, one in a garden trap at Grange, Borrowdale, confirmed by a good photograph on 17.6.13 (L. Reinecke). It is likely to occur where Thyme is plentiful and netting at dusk is recommended.

1843 Thyme Pug (*Eupithecia distinctaria*)



Wild Thyme Nr Carnforth

Narrow-winged Pug *Eupithecia nanata* (Hübner)

Medium in size, the narrow, pointed and strongly-marked wings make the Narrow-winged Pug easy to recognise.



Narrow-winged Pug, 21mm, Yealand Conyers, Lancs.

It often rests with its wings swept back.



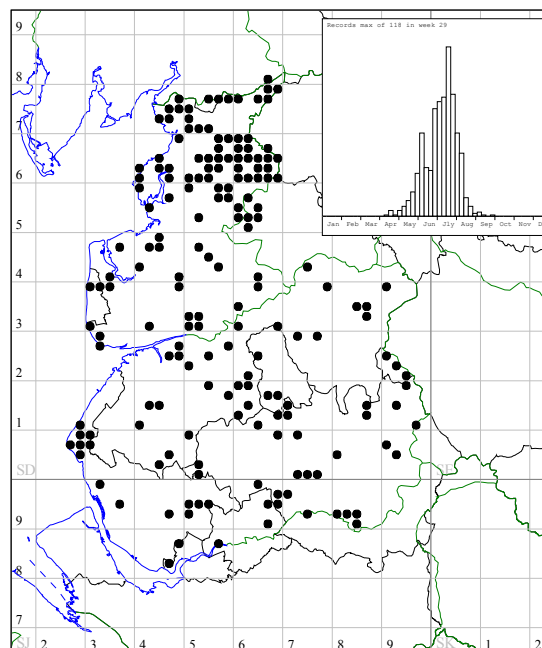
Larva on Heather

Distribution and flight period

The larvae feed on Heather, and the moth is common on moorland in both counties, but can sometimes turn up in gardens as well, and is regular on South Walney Island

It has a quite a prolonged flight period from May into August, peaking throughout July

1846 Narrow-winged Pug (*Eupithecia nanata*)



Cloaked Pug *Eupithecia abietaria* (Goeze)

The species is large, round-winged, with a very large oval discal spot. With its contrasting grey and brown markings, it cannot be confused with any other pug



Cloaked Pug, 24mm, Silverdale, Lancs. 13.7.2008. Tony Riden

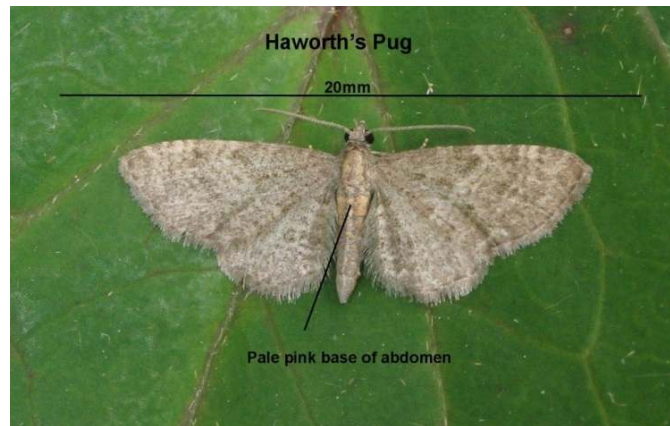
Distribution and flight period

The larvae of Cloaked Pug feed mainly on Norway Spruce. Until 2008, it was assumed that the three previous records of this moth from East Didsbury (1982), Pennington (1998) and Briercliffe (2001) related to migrant moths, particularly as the Briercliffe moth came at a time that Cloaked Pug had turned up elsewhere at a few scattered locations in the UK. However, in 2008, two different moths were in a Silverdale trap during mid-July, (A. Riden) indicating its possible resident status in that area. Two traps run in the same area during July 2009 failed to attract any more. The four Lancashire records are in July, and one in August.

In Cumbria, there is one historical record from Gelt Woods in 1880, and more recently Witherslack (SD48) on 2.8.78 (J. Briggs), and three specimens in the Rothamsted Insect Survey trap run at Arnside from 27.5–4.6.80, and a recent record from Whinfell Forest, (NY582274,) south-east of Penrith, on 10.6.10. (G Finch). It is a generally rare pug in Britain, but strong colonies have recently been discovered in Durham and Northumberland (Riley and Prior), so it is possible this species would be found with further trapping in coniferous areas.

Haworth's Pug *Eupithecia haworthiata* (Doubleday)

This pug is the smallest (16mm) occurring in our two counties, and is strongly associated with its food plant Traveller's Joy. Its rather broad wing is weakly marked with cross lines over a background of greyish-brown. The best feature is the pale pinkish colouration of the base of the abdomen.



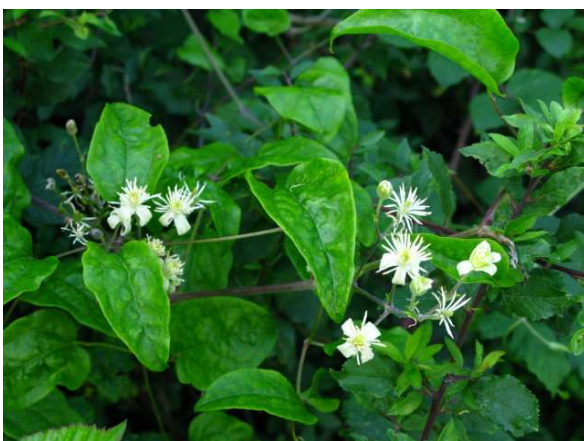
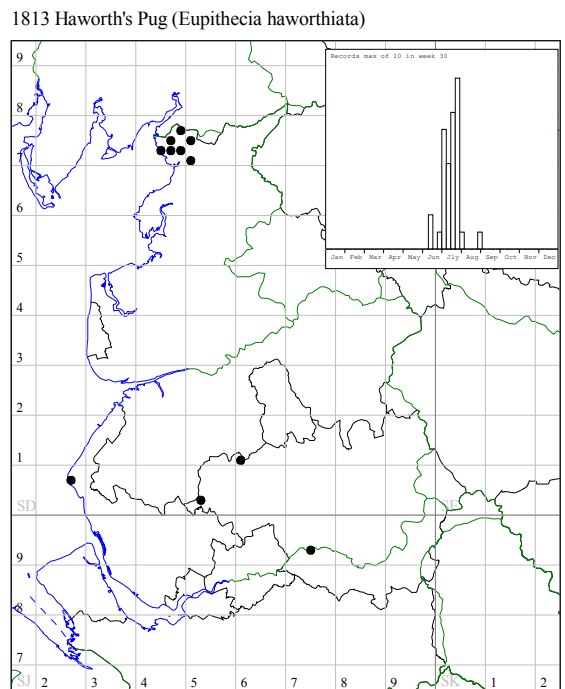
Haworth's Pug, 16mm, Jenny Brown's Point, Silverdale. 5.7.2005

Distribution and flight period

Its food plant, Traveler's Joy (*Clematis vitalba*) is a very local plant in Lancashire, but is abundant at Jenny Brown's Point near Silverdale. The first VC60 record was of one attracted to a Heath trap in my garden at Yealand Conyers 27.7.04. There is no native clematis nearby, but this stimulated a successful search at Jenny Brown's Point in 2005. Interestingly, although light-traps had been run in this area, it had not been recorded. The moth can be netted in numbers here, flying close to the bushes, often quite high, and only when it is getting quite dark. Its main appearance is in the second and third week of July, just before the Traveller's Joy buds open. It has since been recorded in Silverdale, Gait Barrows and Carnforth. There are only four records for VC59, from Billinge, 18.7.93 (C. Derbyshire) near Blackrod 11.7.08, (P. Pugh), Formby Nat. Trust 10.7.13 (R. Walker) and Flixton 26.7.15 (K.McCabe) These isolated records suggest that it may occasionally feed on cultivated clematis.

In Cumbria it probably occurs wherever native clematis is found on limestone in the south. There are records in the 70's from Witherslack, Whitbarrow, Grange-over-Sands, Meathop Quarry, and Plumpton Quarry, Ulverston. Further north there are single records for Windermere 28.7.80 (RIS Trap) and Ambleside

(NY3804) 25.7.07 (D. Money). Other recent records are from Witherslack 25.7.05 (S. Bradley), and my own of two netted just after dusk around their food plant at the south end of Whitbarrow. (SD458851) on 4.7.11 and every subsequent time I have been there in July. The best way to spot Traveller's Joy is to look for the seed-heads or "Old Man's Beard" in the winter months. It stands out a long way off. All the records are between July 4th and 27th, with a single late record on Aug 27th.



Traveller's Joy (*Clematis vitalba*) Seed-heads of Traveller's Joy (Old Man's Beard) in November, Whitbarrow

Pimpinel Pug *Eupithecia pimpinellata* (Hübner)

This very local pug is quite distinctive when fresh, with a light ochreous-brown and soft grey colouring. The discal spot is very black and prominent.



Pimpinel Pug, 23 mm. female from Whitbarrow, Cumbria. 4.7.11



Pimpinel Pug. Whitbarrow. 4.7.11. A worn male. Confirmed by gen. det



Pimpinel Pug. Plumgarths. Cumbria. 10.8.12. M Tordoff.



Pimpinel Pug 24mm Whitbarrow 22.7.13

Distribution and Flight season.

This is a moth primarily of south-eastern England, and the authenticity of the old record from the Manchester district (Mansbridge 1940), as well as the VC59 and VC60 dots in Riley and Prior (2003), are open to debate. No further details are known about the references to this species. However, it is an easily overlooked moth whose larvae feed on Burnet Saxifrage, a plant associated with calcareous grassland.

The only confirmed record for Lancashire was on 25.7.13, when a worn specimen came to light at Heysham Nature Reserve (P. Marsh), confirmed by gen. det. (J. Girdley). A subsequent search at dusk was negative and no Burnet saxifrage was found. It seems possible that this was dispersal from the known colony in South Cumbria.

In Cumbria, it appears very local and increasingly recorded, but only from VC69. There are records for Hutton Roof, 22.5.1953 (but the date is very early), Slack Head, Beetham 1983 (J. Briggs) confirmed by inspection of his collection in the Castle Museum Keighley, Smardale 14.7.95 (R. Petley-Jones), and specimens were bred though from Meathop in 1982, that are in the Bill Kydd collection at Tullie House.

I encountered two specimens (both illustrated above) while netting at dusk on 4.7.11 under White Scar at the south end of Whitbarrow. A subsequent search only revealed very few small plants of Burnet Saxifrage at the site, but specimens were netted again in July for the next three years. A site visit in August revealed a little more Burnet saxifrage at low level but many plants on the inaccessible cliffs of White Scar. A new site came from a light-trapping session at Plumgarths (CWT headquarters) on 10.8.12 (M. Tordoff), confirmed by a photograph and dissection and again by the same recorder not far away on Scar Quarry (SD488924) 10.8.15. Another new site was at light in Holme Village

(SD 5279) on 23.7.14 (S. Sharp) a possible wanderer from suitable habitat on Holme Park Fell.

It is still just possible it occurs on the limestone grassland in the Arnside and Silverdale area. A promising site at Storth has been searched at dusk and for larvae without success. It is much more likely to be found by dusking than at light.

Apart from the suspicious early date referred to above, records are from July 4th and August 10th.



Burnet saxifrage at South Whitbarrow.

Slender Pug *Eupithecia tenuiata* (Hübner)

The Slender Pug is distinctly small-sized (16-18mm). It has rounded wings, weak markings, a small but fairly prominent discal spot, and a pale greyish brown background. Worn specimens look rather nondescript, although the wing shape, small size and small discal spot all point to this species

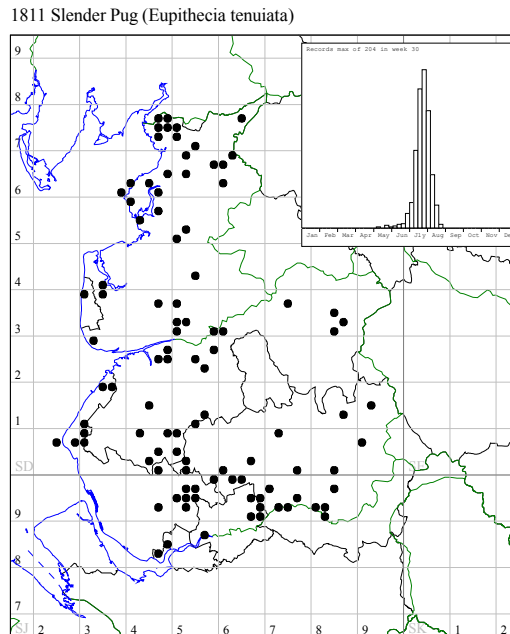


A very fresh Slender Pug, 18mm, Heysham. 27.7.11. John Girdley

Distribution and flight season

This little pug is widely distributed, and can be locally common in Lancashire and probably in Cumbria too. For Cumbria, there are only a couple of recent records for the south, in addition to those from the regular recorders in the 70's. In the north there is only one recent, and two historic, records. The moth is strongly associated with its larval food plant Sallow, and can be netted at dusk flying around the bushes. It is otherwise easy to overlook as an occasional, nondescript visitor to garden light-traps.

It begins to appear at the end of June and has gone by mid-August. The peak emergence is the middle of July.



Wormwood Pug *Eupithecia absinthiata* (Clerck)

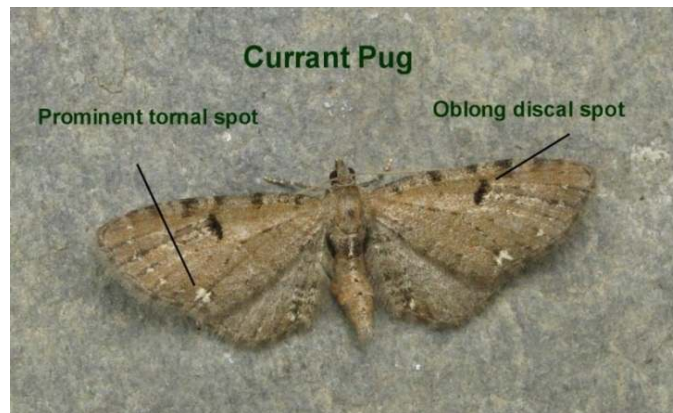
This pug resembles a large Currant Pug, but has a less obvious tornal spot and wider forewings. An upland form, known as the Ling Pug, is smaller and paler, and feeds on heather. The Bleached Pug is closely related, but is larger with a paler brown colour, and is very local on our limestone pavements.



Wormwood Pug 25mm Yealand Conyers 22.7.06



Wormwood Pug, 25mm Storth 23.7.15

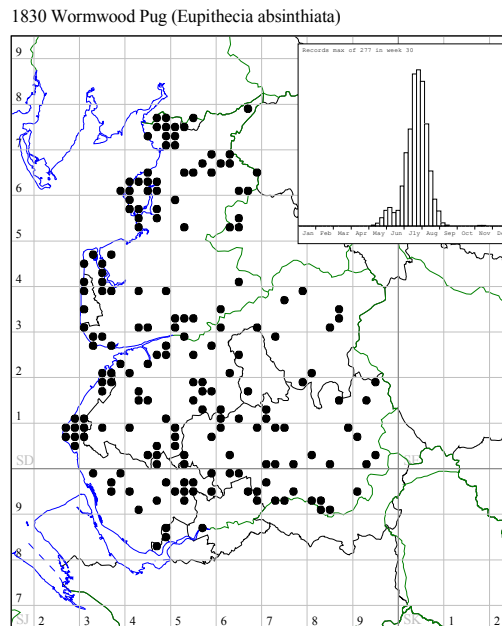


Curren Pug 21mm, for comparison, smaller size, and shorter forewing.

Distribution and flight period

This is quite a common pug in Lancashire and Cumbria. The larvae feed on the flowers of many wayside and woodland *Compositae*. The adult can often be found by searching at dusk around ragwort. In upland areas a smaller and paler form of this species can be found, and is known as the Ling Pug – the larvae

being associated with heather. Although it can be found in June, its peak occurrence is in the second half of July, extending into August.



It is probable that some early records shown on the flight graph above relate to misidentifications of Currant Pug.

Lime-speck Pug *Eupithecia centaureata* (Denis & Schiffermüller)

This highly distinctive, medium-sized pug should give no difficulty in identification. At rest it has a close resemblance to a bird dropping. The only other black and chalky-white pug is the Bordered Pug which has a different wing shape and wing markings. The Lime-speck Pug may vary in the amount of dark marking, as shown on the two photographs below.



Lime-speck Pug, 21mm, Yealand Conyers, Lancs.23.6.13



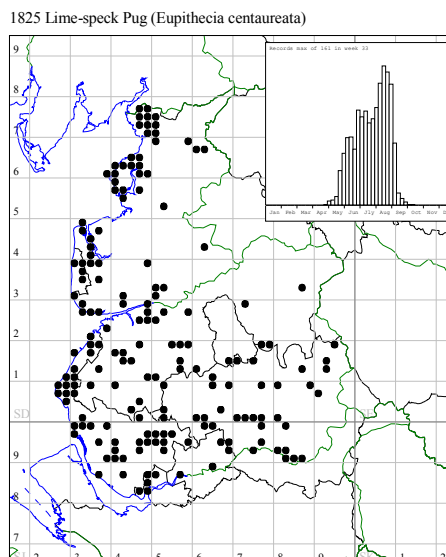
Lime-speck Pug, Yealand Conyers, 27.7.04



Lime-speck Pug larva on Ragwort 15.9.10. Fleetwood, Lancs. (B. Dyson)

Distribution and flight period

Although there are scattered records from all over Lancashire and Cumbria, it is encountered most commonly in coastal areas where it can be quite frequent, for example at Heysham and Walney Island. It feeds on a wide variety of wild flowers, and occurs over a wide period from late May into September, so is probably double-brooded.



**Late July and
August**

Plain Pug *Eupithecia simpliciata* (Haworth)

This is a distinctly large pug (22-24mm) with a pale brown colour and tiny discal spot. There is often a prominent, wavy, pale line inside the outer margin, well shown on the photo.

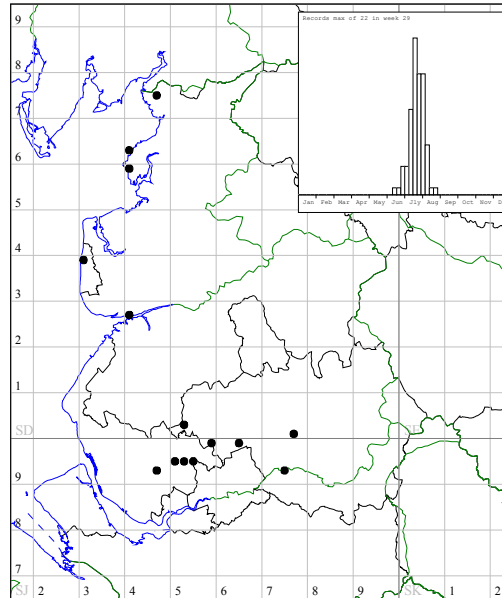


Plain Pug. 23mm, Silverdale, Lancs. 30.7.09. Tony Riden

Distribution and flight period

This is a local, southern species that just extends into Lancashire, but there are no confirmed records for Cumbria. A record from central Walney Island on 5.7.92 which has not been verified. In North Lancashire all the records are from coastal sites, so Walney Island is a very likely location. Its food plants are the Goosefoot family, especially Fat Hen (*Chenopodium album*) and Orache (*Atriplex patula*) which may be found commonly in waste places, field edges esp in coastal locations. There is a small but diminishing number of scattered records from sites in south Lancashire especially Flixton (K.Mccabe) where it can be occasionally be frequent, but in most recent years absent. The only five records for VC60, are from Bispham, Heysham, Middleton Industrial Estate and Warton Bank, near Preston, and lastly, a specimen from Silverdale in 2009, (see photo above). A search on the Silverdale shore where there is plenty of *Chenopodium* sp. has so far been negative. It is to be found from July into August.

1842 Plain Pug (*Eupithecia simplicata*)



Triple-spotted Pug *Eupithecia trisignaria* Herrich-Schäffer

The moth is similar in size and shape to Currant Pug, with slightly less rounded wings. It lacks the prominent white tornal spot of that species, and is more grey-brown in colour. On the live and set specimen the triangle of two spots on the leading edge and the discal spot can be clearly seen.



Voucher specimen for Cumbria



Triple-spotted Pug. Lords Lot Wood. 16.7.14 Larva on Angelica. Lords Lot Wood. 4.9.14



Ex Larva from Lords Lot Wood 21.7.15

Distribution and flight period

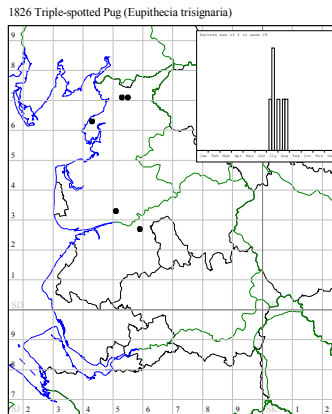
Triple-spotted Pug had been relegated to the unconfirmed or extinct category of Pugs for Lancashire, until the 30th July 2008, when a single female (confirmed by dissection) was found in a light-trap in Preston (S. Palmer). The previous records for this moth are from the Preston district in the 19th century (Mansbridge, 1940) and Gait Barrows in 1984 (E. Emmett). The specimen from Gait Barrows is present in the Liverpool Museum's main Lepidoptera collection and, on checking, was found to relate to Juniper Pug (gen. det. S. Palmer). More Lancashire records have been added for VC60; Morecambe 13.7.12 and Lords Lot Wood 16.8.12 (both J. Girdley). These were worn specimens attracted to light, and confirmed by dissection. Following up this last find, an area of Angelica the larval food plant was found in a damp woodland edge, and two sessions of dusking on 16 and 21st July 2014 produced one moth on each occasion. Subsequently larvae were found on the plants in early September. The first record for VC59 was from Houghton, a worn specimen at light confirmed by dissection. (G.Dixon)

In Cumbria there are a few references to its occurrence, but the only voucher record is from a set specimen bred from larvae collected on 11.9.96, (R.

McCormick) at Dodgson Wood, Coniston. The moth has been recorded at light by the same recorder on 22.7.04 at the same site.

The moth is however rarely seen at light, easily overlooked if worn, and can be difficult to identify without a dissection.

It is very likely to occur at other sites in the county as it is found well into Scotland. Larval searches on its favoured food plant, Angelica seed heads, in early to mid-September would be well worthwhile in ditches and damp woodland where it is common.



Bleached Pug *Eupithecia expallidata* Doubleday

Its larval food plant, Goldenrod (the wild variety, *Soldago virgaureata*), occurs in the limestone pavement grassland of north-west Lancashire. This is a large pug (24-26mm) which looks like a pale brownish grey Wormwood Pug. This gives rise to some difficulties in identification of worn specimens, and even genital determination is not easy. A fresh Bleached Pug however is a beauty, and so distinctive that there should be no doubt about its identity.



Bleached Pug 25mm bred ex. larvae, Gait Barrows NNR.



Wormwood Pug for comparison. Wing span 25m



Goldenrod (*Solidago virgaurea*) and Larva. Gait Barrows.

Distribution and Flight period

This is a very local and scarce pug, with all records for north Lancashire except one at Silverdale coming from Gait Barrows. The MapMate record at the end of May from Widnes is erroneous.

A voucher specimen for VC59 was taken from Formby Point (SD275084) on 13.8.13 (G.Jones)

The Gait Barrows records range from 15th July to the 20th August and larvae have been found from mid September to early October. It could well be found in other parts of the Morecambe Bay limestone area where its food plant occurs, although several searches on Warton Crag have not been successful for larvae or adults. It is easier to find by netting at dusk around Goldenrod than by light-trapping.

Its status in South Cumbria is uncertain. A voucher specimen has been found in the Kendal museum from Grange-over-Sands area, 5.8.55 (A. Wright). There is plenty of suitable habitat on Whitbarrow where Goldenrod is common, and the plant is also well-distributed through Cumbria, especially in the central lakes. A

record from Walney Island on 3.9.99, the end of its flight period, needs confirmation, and two old records of 24.5.52 and 27.6.53 from Hutton Roof Crag (SD5677), a likely site, are well before the usual flight season of late July to early August. A further record from Baycliffe on the south Furness coast on 21.6.60 is perhaps too early.

One was recorded from Roudsea Wood on 28.7.06 by R. Petley-Jones, who is familiar with the species on Gait Barrows.

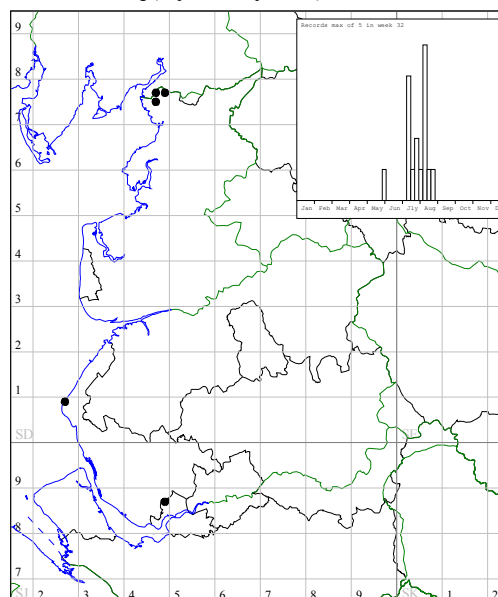
A serious search at Latterbarrow (SD4487), an ideal-looking site, in late July 2011 for adults, and in September for larvae, was negative.

For north Cumbria (VC70), there is just one record, from Borrowdale (NY255164) by C. Fletcher (Lancs.) on 30.7.09, supported by a photograph.



Bleached Pug. First record for VC70. (C. Fletcher)

1833 Bleached Pug (*Eupithecia expallidata*)



The record Nr Widnes has not been confirmed.

Bordered Pug *Eupithecia succenturiata* (Linnaeus)

The Bordered Pug is one of the larger pugs, with a very distinctive grey and white appearance.



Bordered Pug, Formby. 22mm. 26.7.2009. Trevor Davenport



Larva on Mugwort. Flixton 27.9.15

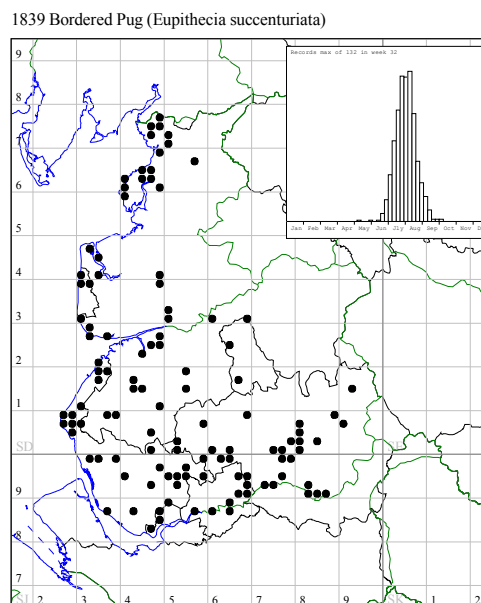
Distribution and flight season

The moth has occurred quite widely in small numbers in lowland parts of Lancashire. Records have diminished recently, and the moth is now most often found on the South Lancashire coast. Its appearance can be sporadic as its larval food plant, Mugwort (*Artemisia vulgaris*), occurs on newly-cleared or waste ground. Several occurred in my Manchester garden in 1976, but never again in the following 15 years. It has been regular at Flixton (K.Mccabe). A search for larvae on abundant Mugwort on 27.9.15 produced many larvae but all six retained for breeding were parasitized. Perhaps this is why the species is so uncommon now.

There are very few records for Cumbria; South Walney Island (2.7.06) and Roudsea NNR (8.8.15) being the only recent sites. There are older records from Little White Moss, nr. Foxfield, Hutton Roof Crags in the 50's, and Beetham in the 70's.

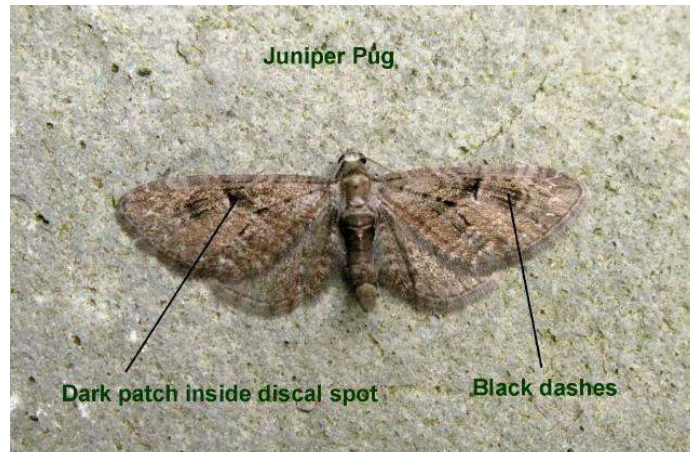
In the north, the only records are for Nr. Penrith, (RIS trap) 18.7.93, and Carlisle (NY3957) 18.7.93 (D. Iverson).

It may be found from the beginning of July to the end of August, with a peak in the last week of July.



Juniper Pug *Eupithecia pusillata* ([Denis & Schiffermüller])

The Juniper Pug is medium in size with slightly pointed wings. The dark bands passing across the forewings, the dark patch inside the discal spot, and the area of black dashes beyond that, all help to identify this species. Sometimes there is a pale area just outside of the small discal spot.



Juniper Pug, 21mm, Yealand Conyers, Lancs. 15.7.2008



Juniper Pug on Juniper, its larval food plant. Yealand Conyers, Lancs.



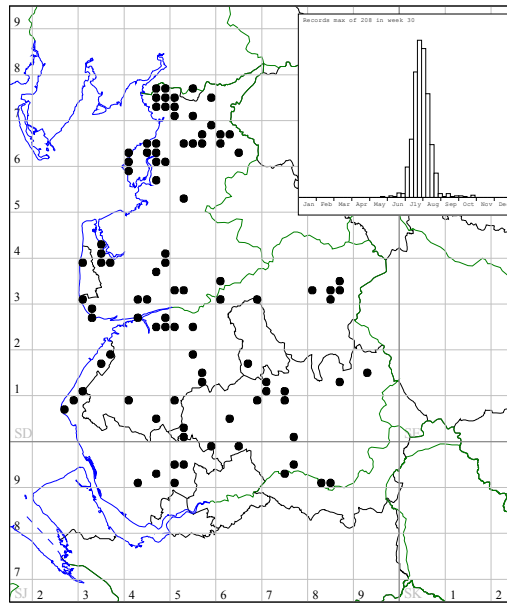
Two more Juniper Pugs from Yealand Conyers 27.7 and 1.8.15

Distribution and flight season

This pug occurs widely throughout Lancashire, its larvae happily utilising both wild and garden varieties of Juniper. It is out from early July well into August, and recently, specimens have been trapped at Gait Barrows NNR into early October.

In Cumbria it has been recorded quite frequently from both vice counties.

1854 Juniper Pug (*Eupithecia pusillata*)



Toadflax Pug *Eupithecia linariata* ([Denis & Schiffermüller])

The Toadflax Pug is quite similar to the Foxglove Pug, but is a little smaller with a plainer, neater and brighter pattern, as shown in the following photographs. It has a gently curved outer edge to the central cross band in the top half which, in the Foxglove Pug, is more sharply angled inwards.



Toadflax Pug, Yealand Conyers. 28.8.2005



Foxglove Pug



Toadflax and Larva. North Walney Island, Cumbria

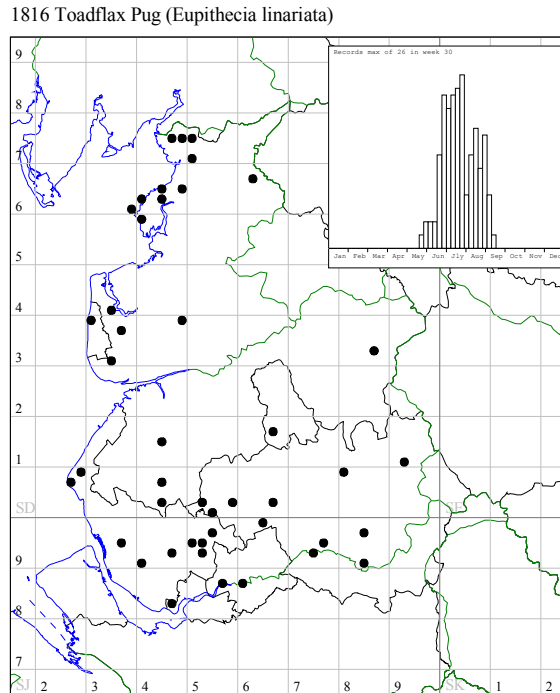


Toadflax 20mm and Foxglove Pug 22mm.

Distribution and Flight season

The moth is out in July but extends well into August. It is quite widespread in Lancashire, but not seen nearly as often as the Foxglove Pug. It can be expected wherever Toadflax is established, though it is not a common plant in Lancashire or Cumbria. The only regular site is Heysham Nature Reserve, although numbers have diminished, as has the Toadflax plant. The moth has only been recorded once or twice in each of the last five years compared with over a dozen records in 2005 and 06. Four larvae were located inside Toadflax flower heads on 1.9.14. There are only a few records for Cumbria, a regular site being Walney Island, in keeping with the distribution of its food plant. In the last 20 years there are records from VC70 at Geltside (NY5957) 13.7.10 (E. Munro), Milton near Brampton (NY5560) July 1994, 2000 and June 2003 (G. Naylor), Cumwhitton (NY4552) in the 90's (R. Little), and Cockerthorpe (NY0930) 28.7.01 (R. Wimpess). In VC69, older records from Ulverston, Hutton Roof and Beetham, and more recent records for Whitbarrow (SD4688) in 1990 (A. Marshall), the

Row. Lyth Valley 14.7.13 (L.Cross) and for Storth (SD4780) 23.6.11, 6.8.12 and 25.8.13 (I. Mower)



Some of the records in May and early June could relate to Foxglove Pug

Maple Pug *Eupithecia inturbata* (Hübner)

This rather local southern species is associated with mature Field Maple trees, (*Acer campestre*). It is similar in size and general appearance to the Slender Pug, but usually has a yellowish-brown colouration, especially in the central portion of the forewing which is rather elongated.



Male Pug. Beetham Cumbria 3.8.15

August 2012 produced the first records for Lancashire. First from Andrew Barker at Spring Wood Nr. Whalley, 11.8.12, a worn specimen at light, and then Kevin McCabe at Flixton on 20.8.12 also at light. Both have been confirmed by dissection. It was recently recorded for the first time in South Cheshire (Shane Farrell, Cheshire Moth Report 2006).

In Cumbria there is a record on the Tullie House data base from Beetham in the 1970s (J. Briggs) No specimen can be found in his extensive collection now housed in the Castle Museum Keighley. I was told of a very large Field Maple (*Acer campestris*) near Beetham, a uncommon tree in the North West. On my second session of dusking under the canopy on 3.8.15 I netted a single Maple Pug. This is the most northerly record in the North West of England it's possible others may be found if Maples can be located. The unconfirmed record over 40 year ago from the same location suggests that it is a very local resident rather than from a northerly spread.



A solitary Field Maple near Beetham Cumbria

August

Tawny Speckled Pug *Eupithecia icterata* (Villers)

The Tawny Speckled Pug is the last of the singled-brooded pugs to emerge. This is an attractive and large pug, easily recognised by the orange central area of the forewing.



Tawny Speckled Pug, 24mm, Yealand Conyers and Larva.

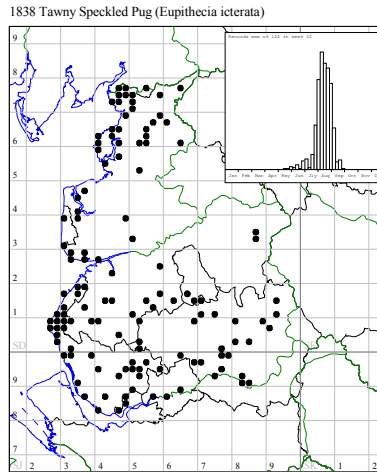
Distribution and flight period

I used to consider this a common pug, and often netted it in my garden, both in Didsbury and Yealand Conyers, but judging by the current Lancashire MapMate records, it is much less often seen in recent years, and is now most records come the South Lancashire coastal areas. After a five years absence from the Silverdale area, two appeared in my garden in August 2011 but no more up to 2015.

In Cumbria it is widely recorded in small numbers, but it is not possible to say if there has been any change in status. It appears well established at Walney Observatory and the Solway coast (L. Still)

The moth is out from late July, with a strong peak in the first two weeks of August.

The larva feeds on Yarrow (*Achillea millefolium*) which is a common plant all over Lancashire and Cumbria



SEPTEMBER

During September the only pugs to be regularly encountered are:

Juniper Pug (page 74)

V-Pug , second brood (page 13)

Double-striped Pug (page 8)

Pugs in Lancashire – possible new arrivals

Yarrow Pug (*Eupithecia millefoliata*) (Rossler)

This pug has been spreading in coastal regions west and north from its first site in the south-east over the last decades. A snapshot of a pug in a pot caught at Hale, north of the Mersey Estuary, on 23.7.13 (C. Cockbain), is considered by some to possibly be a Yarrow Pug. It is of note that the first record for Cheshire came from Cheadle Hulme on 12.7.2013, and confirmed by dissection (Steve Hind, personal communication).



Pug from Hale. S Lancs 23.7.13



Yarrow Pug ex larva from Cambridge.

References

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I am most grateful to Ian Kimber for help with the digital images.

All photos are by Brian Hancock unless otherwise stated.

Request

Brian is always on the lookout for pristine pugs to photograph to supplement the range of photos in this paper. If you breed, (preferably), or encounter any of the less common species in absolute tip-top condition, then do please let Brian know. His email is hancockb410@gmail.com

Dissections for help with identification can be done in selected cases by

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