

The commoner Pug Moths of the Upper Thames area: A guide with annotated photographs

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Foreword

It is well known that Pug moths are often difficult to identify because of their small size and morphological similarities, and identification from photographs is not considered ideal because a static image does not convey some diagnostic features well. However, this may be all the beginner in particular has to attempt an identification, if like me you do not always have time to look closely at the moth from an overnight catch, simply taking a photo and then releasing the moth (but see below). The relative abundance of verified images of live specimens of Pugs in recent times, often available on-line, helps with identifying specific visual features, where the images can often be enlarged and scrutinized at will. The information given here represents my understanding of the features of each of the commoner species gleaned from my own photos or those kindly provided by others from the Upper Thames area - but also by comparing images shown on various moth web sites, and influenced by accounts in published specialist books and guides (see below),

What the guide illustrates:

1. The commoner Pug species found in the Upper Thames Area, broadly the counties of Berkshire, Buckinghamshire and Oxfordshire (i.e. species that occur in 20 or more of the 78 x 10 km national grid squares covering these 3 counties; see upperthamesmoths.co.uk).
2. A relatively large image of a representative moth of the the species, and these images can be enlarged further within the PDF format. Each primary image is extensively annotated with notes on the features important for identification (and the most consistent are underlined). Additional images are included where there are further aspects of the species that are commonly seen (e.g. colour variation).
3. No account of the melanic or aberrant forms that may be encountered for some Pug species, but those species with melanic forms are listed on page 3 without illustrations.

Before using the guide:

1. It is important to master the names of moth parts (see diagram and explanations on next page), since the form of these is often crucial for identification.
2. Use of automatic digital cameras/phones should ensure that a good quality image is obtained, but it is worth making an extra effort with this group of moths to get a clear photo of your specimen. A close-up on a plain background in natural light taken from directly above should allow all the wing features to be seen clearly. If possible include a millimetre scale such as a ruler in the photo so that size can be judged. Remember that patience (sometimes considerable) is required to get the moth to adopt a resting position before photographing. Holding the moth overnight in the fridge to allow time for photographing successfully should not do any harm.

Worn specimens

Specimens collected using light traps will commonly be worn and therefore more difficult to identify, even using image analysis applications; ultimately these may require dissection or DNA analysis. In the following accounts images of some worn specimens are shown where they illustrate the persistence of specific features that may help with identification, but often these highlight the need for caution.

Further reading

British and Irish Pug Moths by Adrian M. Riley & Gaston Prior (Harley Books 2003) A comprehensive account describing all Pug species and their variations, with (relatively small) illustrations, drawings of genitalia, distribution maps, etc., etc.

Field Guide to the Moths of Great Britain and Ireland (3rd edition, Bloomsbury Wildlife 2017) by Paul Waring and Martin Townsend, with 1.25 x life-size illustrations by Richard Lewington. While covering all macro-moth species, there is a very helpful introductory section on Pug moths as well as descriptions and distribution maps of all British species.

Web sites (all have search functions; for the last two sites the specific Pug moth family pages are given):

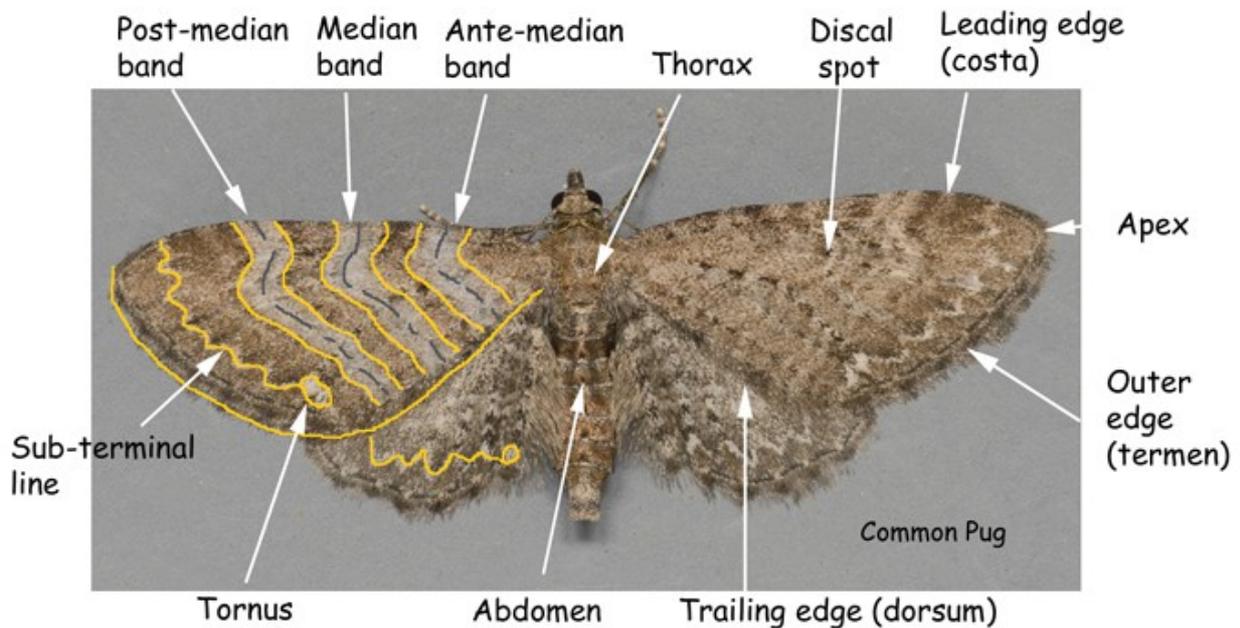
<https://upperthamesmoths.co.uk/index.php>

<https://www.ukmoths.org.uk/>

<https://britishlepidoptera.weebly.com/eupitheciini.html>

<https://lepiforum.org/wiki/taxonomy/Geometroidea/Geometridae/Larentiinae/Eupitheciini?view=1®ions=eu>

EXTERNAL FEATURES OF A PUG MOTH



Note that the term 'band' (also called 'fascia') is used here to indicate three defined pale regions (ante-median, median and post-median, outlined in yellow on left wing) crossing the whole forewing (and sometimes the hindwing), at the positions indicated above. Each band has a dark (often broken) line running through the middle (shown in grey). The shape of the bands, especially the degree of curvature, can be useful in identifying a species, as illustrated below for the post-median band (white arrows with stylized yellow line alongside the band). Similarly, the presence of a dark discal spot close to the median band (as well as the size and sometimes the shape of the spot) can be an important feature (black arrows below). Note also that it is a combination of specific features that leads to an identification: usually no one feature is sufficient.



Post-median band bi-angulate and well-defined discal spot (Mottled Pug)



Post-median band almost straight and no discal spot (Double-striped Pug)

On the next page a full list of the Pug species included in this guide is shown in order of their occurrence in the Upper Thames region, with page numbers and some additional useful information. The following pages depict a few 'easy' and 'difficult' species (pages 4-6), then a set of 'at-a-glance' images of each of the Pug species (pages 7-9). If you have no prior indication of the identity of your specimens, I suggest that you look through these 'at-a-glance' images (they can easily be enlarged within the PDF format) to gain ideas - and then check further each possibility by comparison of the photo of your specimen(s) with those in the detailed accounts of individual species in the following pages (again listed in order of occurrence in our region on pages 10-36).

Note: I am most grateful to those moth recorders who have allowed their images of Pug species to be used in this guide. Copyright for these images remains with the photographer as indicated by a label adjacent to each image; where there is no such label (as above) then ©John Thacker

| CHECK LIST NUMBER | PUG SPECIES | PRESENCE (percent see footnote 1) | FLIGHT PERIOD (see footnote 2) | SIZE (forewing length mm) | MELANIC FORM | PAGE |
|-------------------|----------------|-----------------------------------|--------------------------------|---------------------------|----------------|--------|
| 70.183 | Common | 90 | Apr-Aug | 10-12 | f.atropicta | 10 |
| 70.144 | Green | 88 | May-Aug | 8-11 | f.anthrax | 11 |
| 70.156 | Brindled | 88 | March-June | 10-12 | f.nigra | 12 (6) |
| 70.141 | Double-striped | 87 | March-Oct (2-3) | 8-10 | - | 13 |
| 70.142 | V-Pug | 87 | April-Sept (2) | 8-11 | - | 14 |
| 70.184 | Mottled | 87 | Apr-July | 12-11 | - | 15 |
| 70.173 | Lime-speck | 85 | late Apr-Oct (2) | 9.5-11 | - | 4 |
| 70.187 | Tawny-speckled | 83 | late May-Sept | 11-13 | - | 4 |
| 70.190 | Grey | 81 | May-Aug | 10-12 | f.obscurissima | 16 |
| 70.157 | Oak-tree | 81 | Apr-early July | 8-11 | - | 17 (6) |
| 70.179 | Wormwood | 81 | May-Aug | 11-13 | - | 18 (6) |
| 70.160 | White-spotted | 79 | late Apr-Sept (2) | 10-12 | f.angelicata | 19 |
| 70.151 | Foxglove | 76 | late Apr-Aug | 10-12 | - | 20 (6) |
| 70.188 | Bordered | 73 | June-early Sept | 12-13 | - | 5 |
| 70.148 | Maple | 73 | late June-Aug | 8-10 | - | 21 |
| 70.182 | Currant | 73 | late Apr- early Sept (2) | 9-12 | - | 22 (6) |
| 70.147 | Slender | 72 | late May-Aug | 8-10 | - | 23 |
| 70.176 | Freyer's | 68 | May-July | 12-13 | - | 24 |
| 70.162 | Dwarf | 65 | late Apr-July | 9-11 | - | 25 |
| 70.146 | Haworth's | 64 | June-early Aug | 8-9 | - | 26 |
| 70.150 | Toadflax | 62 | late May-Sept (2?) | 9-10 | - | 27 (6) |
| 70.166 | Plain | 59 | June-Aug | 11-13 | - | 28 |
| 70.171 | Ochreous | 59 | late April-June | 8-10 | - | 29 |
| 70.168 | Narrow-winged | 55 | April-Sept (2) | 9-12 | - | 30 |
| 70.159 | Cypress | 55 | late July-Oct | 10-12 | - | 4 |
| 70.163 | Larch | 53 | May-Aug (2?) | 10-12 | f.nigra | 31 |
| 70.155 | Netted | 51 | late May-early July | 10-14 | - | 5 |
| 70.189 | Shaded | 51 | late May-early Aug | 10-12 | - | 32 |
| 70.143 | Sloe | 49 | late May-July | 8-10 | - | 33 |
| 70.177 | Satyr | 42 | May-July | 9-13 | - | 34 |
| 70.158 | Juniper | 36 | June-Sept | 9-11 | - | 35 |
| 70.174 | Pinion-spotted | 35 | late Apr-early June | 10-12 | - | 5 |
| 70.186 | Yarrow | 35 | June-Aug | 12-13 | - | 36 |

1. Given as percent of 10 km squares in which this species has been recorded in the Upper Thames area up until 2022 (for details and distribution maps of each species, see <https://upperthamesmoths.co.uk/>)

2. Shown from earliest to latest times recorded: numbers will peak in about the middle of this period, unless more than one peak occurs when this is indicated by a number (usually 2).

THE EASY ONES (1)

Pugs with very distinct wing features

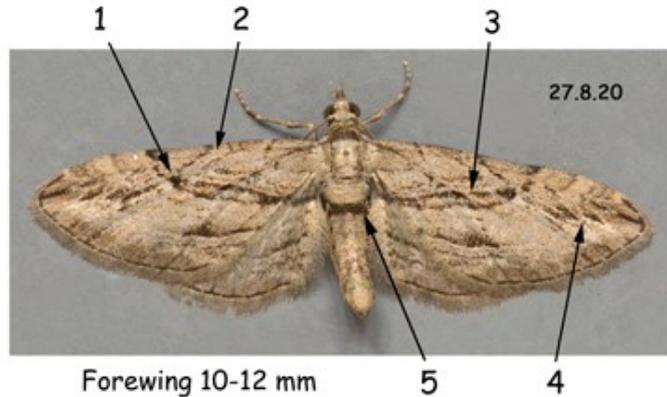
70.159 CYPRESS PUG

(*Eupithecia phoeniceata*)

Recent colonist, now widespread in south and east of region, spreading northwards, August-October (peak mid September). Larval foodplant: cypress species.

Pale brown ground colour with distinctive black crosslines.

1. Small rounded discal spot
2. Pale sharply-angled ante-median band
3. Paired almost parallel dark lines edging ante-median and median bands
4. Black streaks from median band to wing apex (then pale patch by apex)
5. Black band on abdomen



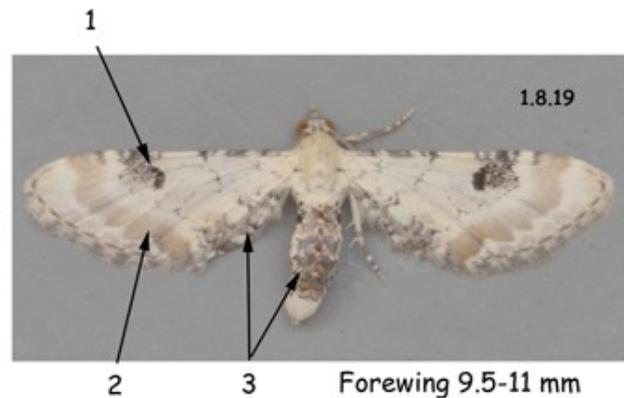
70.173 LIME-SPECK PUG

(*Eupithecia centaureata*)

Common across whole region, May-early Oct (peaks: late May and mid Aug). Larval foodplants: many herbaceous species.

White ground colour with large blackish sub-costal mark.

1. Large often lunar-shaped discal spot touching dark sub-costal mark
2. Pale brown band edging sub-terminal line
3. Greyish banded wing-edges and abdomen



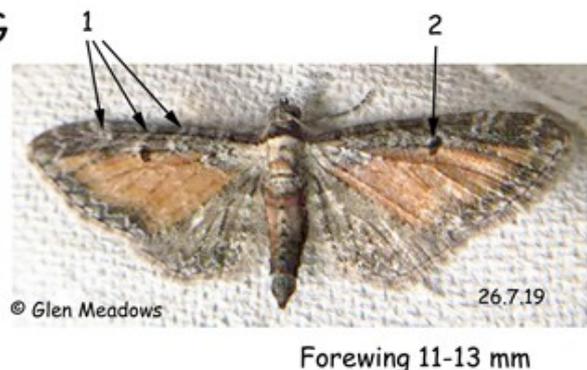
70.187 TAWNY-SPECKLED PUG

(*Eupithecia icterata*)

Widespread across region, June-September (peak: mid August). Larval foodplants: yarrow, sneezewort.

Relatively large size with a large orange patch mid-wing.

1. Crossbands sharply angled but seen clearly only near costa
 2. Prominent discal spot
- (note: less colourful forms occur in the north and west of the country)

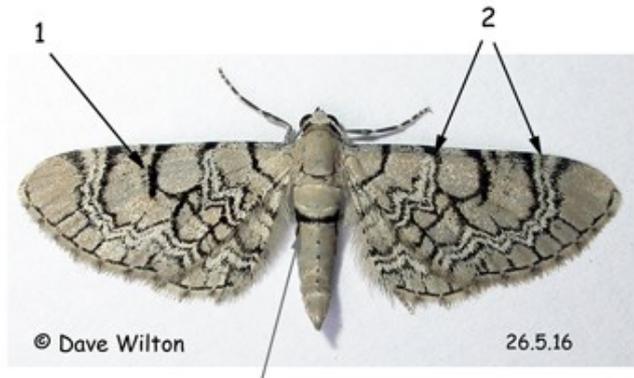


THE EASY ONES (2)

70.155 NETTED PUG (*Eupithecia venosata*)

Mostly seen in east of region but scattered records throughout, May-mid July (peak: early July). Larval foodplant: bladder campion
Pale grey-brown with distinctive dark-outlined white crossbands.

1. Narrow elongated discal spot
2. Dark-outlined pale zig-zagging ante- and post-median crossbands (median crossband represented as black crossline only except at costa)



Forewing 10-14 mm

70.174 PINION-SPOTTED PUG (*Eupithecia insigniata*)

Very local and relatively uncommon, April-early June (peak: mid May). Larval foodplant: hawthorn, apple.

Pale greyish-brown base colour and crossbands, with conspicuous dark patches on the costa.

1. Large elongated discal spot
2. Dark brown costal patches between crossbands (pale median crossband usually visible)



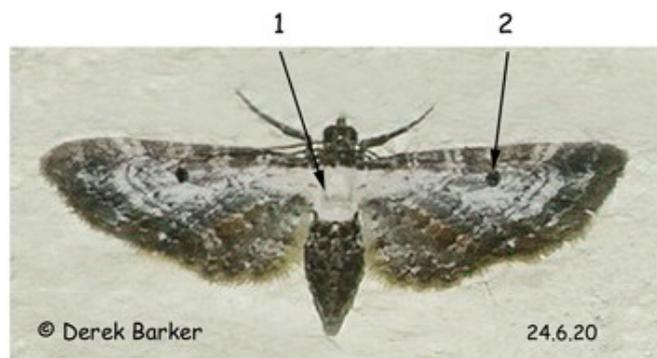
Forewing 10-12 mm

70.188 BORDERED PUG (*Eupithecia succenturiata*)

Widespread across region, mid June-early Sept (peak: late July). Larval foodplants: mugworts, yarrow.

Large grey-brown Pug with striking central white suffusion.

1. Thorax and base of abdomen with broad white patch, extending into centre of wing
2. Discal spot round and well-defined



Forewing 12-13 mm

DIFFICULT PAIRS OF MOTH SPECIES

Several pairs of moth species have overlapping external morphologies and flight times; in effect, one of the pair is a smaller, somewhat later-flying version of the other. Some experience is needed to separate these from photos, and sometimes dissection has to be used. Accounts of these moth species are given separately in the following pages, but external features that sometimes can be used for identification are also highlighted below.

BRINDLED PUG

Forewing 10-12 mm Flight March-June
 Discal spot either tiny or very narrow linear Forewing elongate and more pointed



© Liam Crowley

OAK-TREE PUG

Forewing 8-11 mm Flight April-early July
 Discal spot larger and rounded Forewing shorter and more rounded



FOXGLOVE PUG

Forewing 10-12 mm Flight late April-August
 Basal area completely grey Post-median band bi-angled near costa



TOADFLAX PUG

Forewing 9-10 mm Flight late May-Sept
 Basal area grey along costa only Post-median band gently curved near costa



WORMWOOD PUG

Forewing 11-13 mm Flight May-August
 Medium-sized discal spot Forewing elongate and more pointed apex



Weak tornal spots

CURRANT PUG

Forewing 9-12 mm Flight late April-early Sept
 Large elongated discal spot Forewing shorter and more rounded



© Derek Barker

Brighter tornal spots

AT A GLANCE: SPECIES IMAGES (1)



COMMON (p.10)



GREEN (p.11)



BRINDLED (p.12)



DOUBLE-STRIPED (p.13)



V (p.14)



MOTTLED (p.15)



GREY (p.16)



OAK-TREE (p.17)



WORMWOOD (p.18)



WHITE-SPOTTED (p.19)

AT A GLANCE: SPECIES IMAGES (2)



FOXGLOVE (p.20)



© Nigel Partridge

MAPLE (p.21)



© Derek Brown

CURRANT (p.22)



© Derek Barker

SLENDER (p.23)



FREYER'S (p.24)



DWARF (p.25)



© Derek Barker

HAWORTH'S (p.26)



© Nigel Partridge

TOADFLAX (p.27)



© Dave Wilton

PLAIN (p.28)



© Ian Esland

OCHREOUS (p.29)

AT A GLANCE: SPECIES IMAGES (3)



NARROW-WINGED (p.30)



LARCH (p.31)



SHADED (p.32)



SLOE (p.33)



SATYR (p.34)



JUNIPER (p.35)

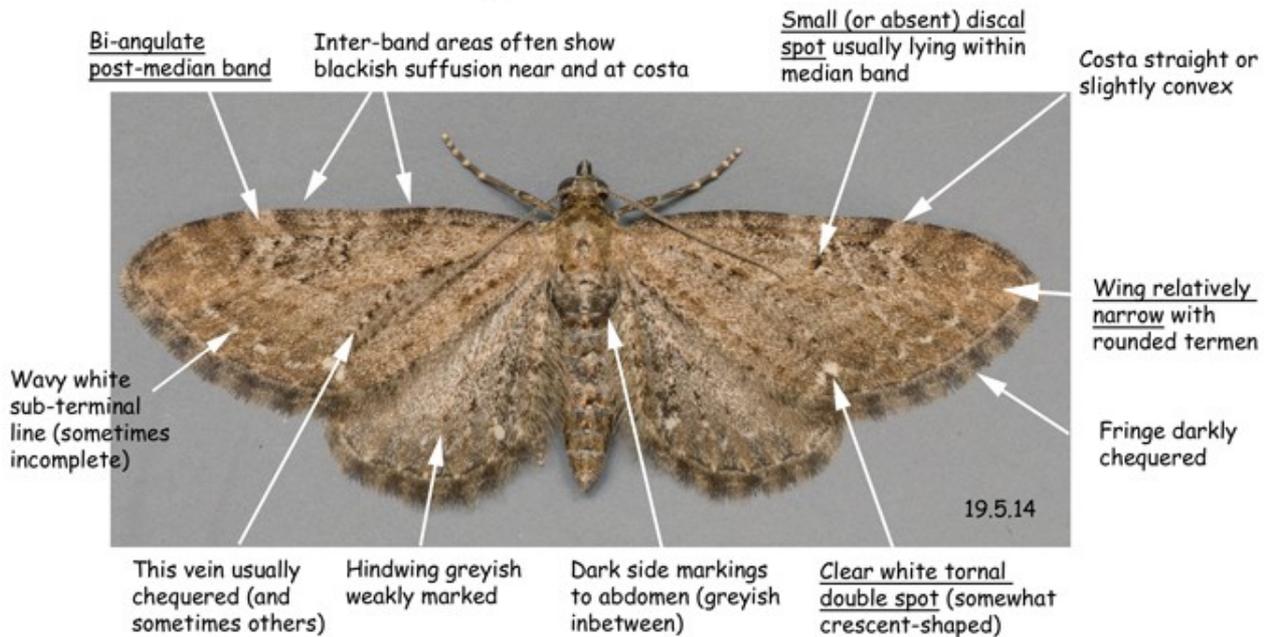


YARROW (p.36)

70.183 COMMON PUG (*Eupithecia vulgata*)

Very common across whole region, April-August (peak: early June). Forewing 10-12 mm.
Larval foodplants: various deciduous trees and shrubs as well as a variety of herbaceous plants.

Ground colour variable, but commonly ochreous-brown with sharply angled crossbands.



Ground colour relatively dark



Worn individual with a larger-than-usual discal spot but wing colour and shape of crossbands consistent so potentially acceptable as correctly identified

SIMILAR SPECIES

GREY PUG (p.16) : Common. Forewing brownish-grey (not ochreous), not so narrow, larger discal spot lying outside median band, post-median band not so angular, sub-terminal line and tornal spot fainter.

SATYR PUG (p.34): Local. Softer brown, weakly-marked, costa straight, post-median band less angular and all veins usually chequered, discal spot present but variable.

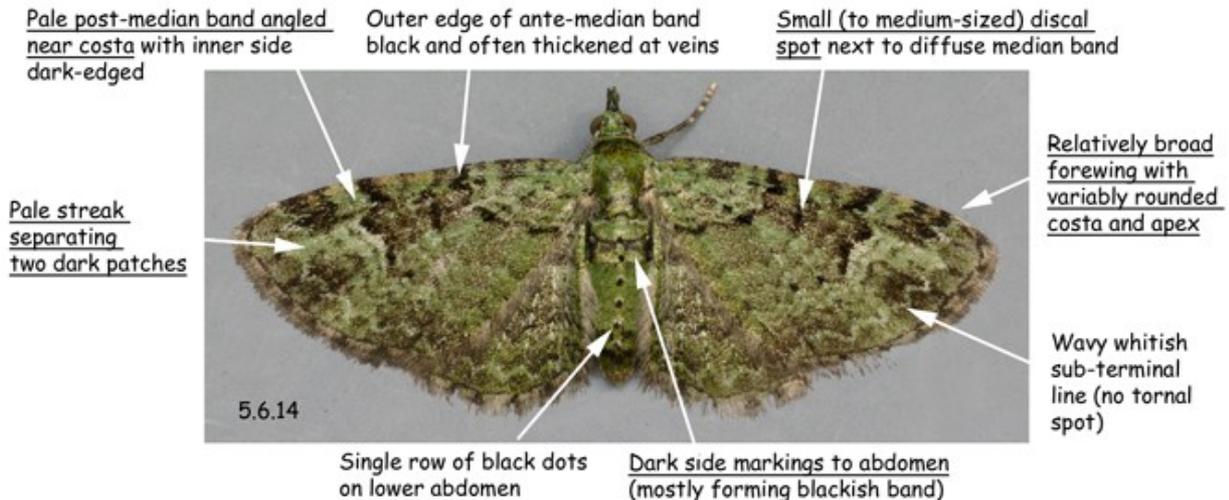
Similar-sized Pugs such as **WHITE-SPOTTED PUG** (p.19) and **SHADED PUG** (p.32) should be readily distinguished when fresh. The rare **CAMPANULA PUG** (not illustrated) has a larger discal spot and white sub-terminal line conspicuously wavy.



70.144 GREEN PUG (*Pasiphila rectangularata*)

Very common across whole region, May-August (peak: late June) Forewing 8-11 mm.
Larval foodplant: flowers of apple, pear, blackthorn, cherries.

Wing rather broad, variable in colour and markings, green base colour when fresh but often brownish-green, with distinctive black lines and sub-terminal patches.



Area between post-median band and ante-median band may stand out as wide dark area (cf. Sloe Pug)



Specimen mostly brownish-green colour

SIMILAR SPECIES

V-PUG (p.14) Common. Two generations: can be found both earlier (April) and later (late August/Sept) than Green Pug. Post-median band shows deep V-shape with no pale streak/black markings on outer wing edge. Double row of black spots on lower abdomen.

SLOE PUG (p.33) Local. Similar flight time but less strongly green and soon fades to brown. Pink band on abdomen; post-median band straighter than Green Pug and not strongly edged in black.

BILBERRY PUG Rare: southern heathlands (not illustrated). Similar flight time, pale green when fresh but soon fading to whitish-brown. Well-defined rounded discal spot; post-median band wavy and black internal edging reduced to series of dots.



Green



V

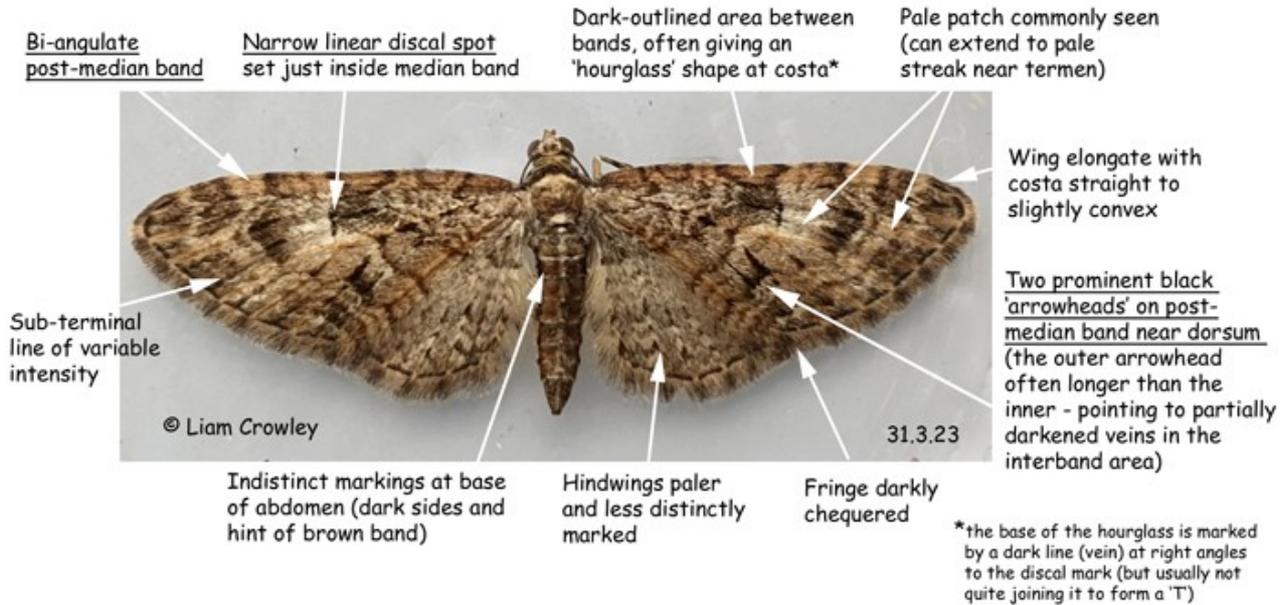


Sloe

70.156 BRINDLED PUG (*Eupithecia abbreviata*)

Widespread and common across much of region, March-May (peak: late April).
Forewing 10-12 mm. Larval foodplants: oaks, hawthorn.

Rather variable grey-brown base colour, sometimes tinged reddish-brown, with sharply-angled crossbands and some veins partly outlined in black to appear as 'arrowheads'.



Greyish ground colour with ochreous-brown tints and well-defined marks, crossbands and sub-terminal line



The black arrowheads near the dorsum can be seen on this worn individual - along with the narrow discal spots this may make an acceptable record.

SIMILAR SPECIES (see also p.6)

Note: the examples of this Pug shown above all have some evidence of a white patch on the thorax, but this is not consistently seen (unlike, for example, the Larch Pug (p.31) which flies later).

OAK-TREE PUG (p.17) Common. Very similar but smaller with less elongated wing shape; flies later but overlapping (April-early July); ground colour paler; discal spot larger and more rounded.

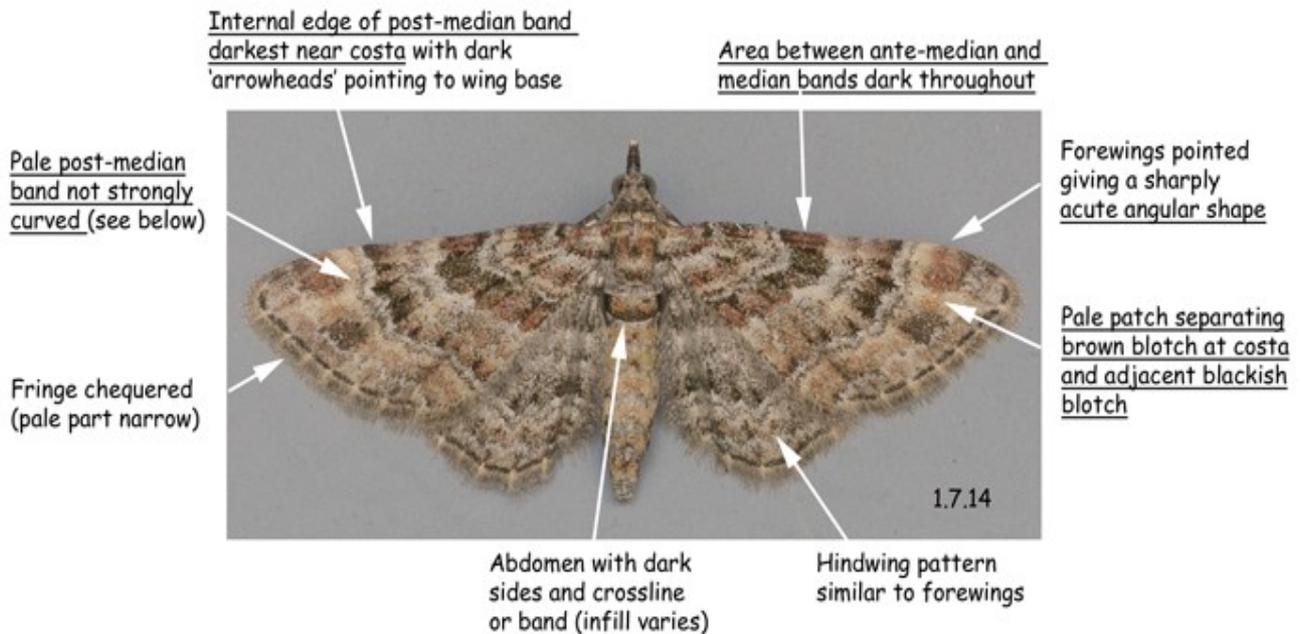
JUNIPER PUG (p.35) Local. Similar wing markings, but more variable in colouring and flies later in year (June-September)

70.141 DOUBLE-STRIPED PUG (*Gymnoscelis rufifasciata*)

Common to very common in all sorts of habitats.

March-October (peaks: mid April, early July and late August). Forewing 8-10 mm.
Larval foodplants: in flowers of a wide range of herbaceous plants and shrubs.

Forewings brown, often suffused red, strongly banded with no discal spot; better described as 'one-and-a-half striped'.



Individual with reddish suffusion throughout



Individual with blackish suffusion in basal part of wing



Commonly-seen worn individuals (often late in the season) showing characteristic sharply angular wing shape



Rarely the shape of the post-median band can show slightly more curvature

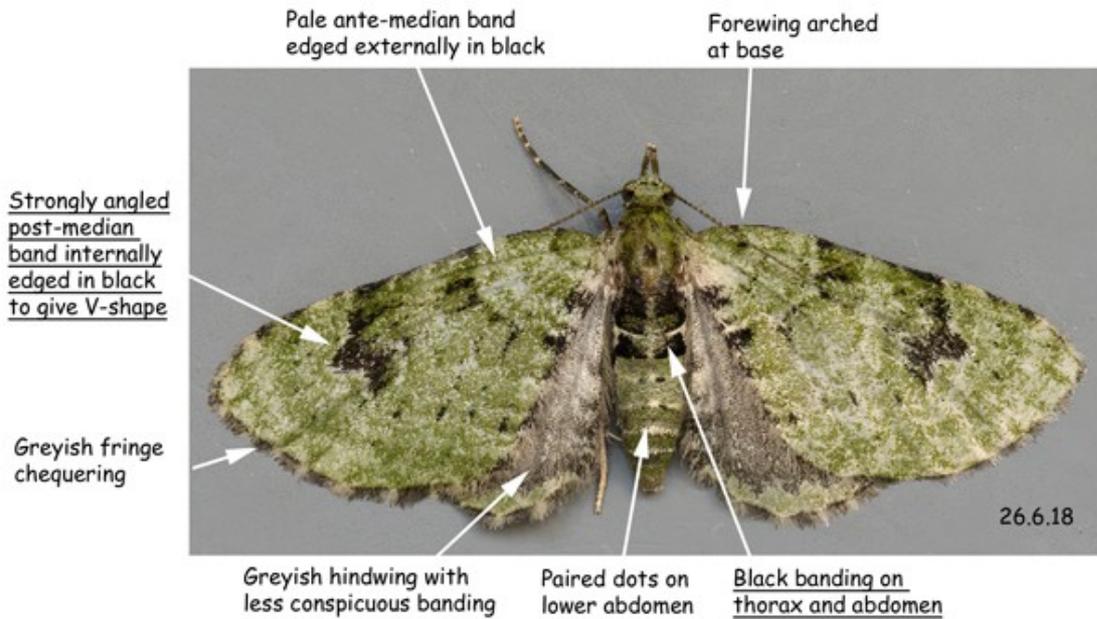
SIMILAR SPECIES

The combination of features listed above should make this species readily identifiable compared to other Pugs. In some Pug species the region between the ante-median and median bands may be darkened (e.g. Juniper Pug) which may superficially look similar to that region in Double-striped Pug, but the other wing features described above should make distinctions relatively easy.

70.142 V-PUG (*Chloroclystis v-ata*)

Common and widely distributed, April-September (peaks: early May and mid July).
Forewing 8-11 mm. Larval foodplants: Flowers of various wayside plants.

Forewing green fading to yellowish-green with characteristic black V-shape and no discal spot.



Common resting position



Worn specimen

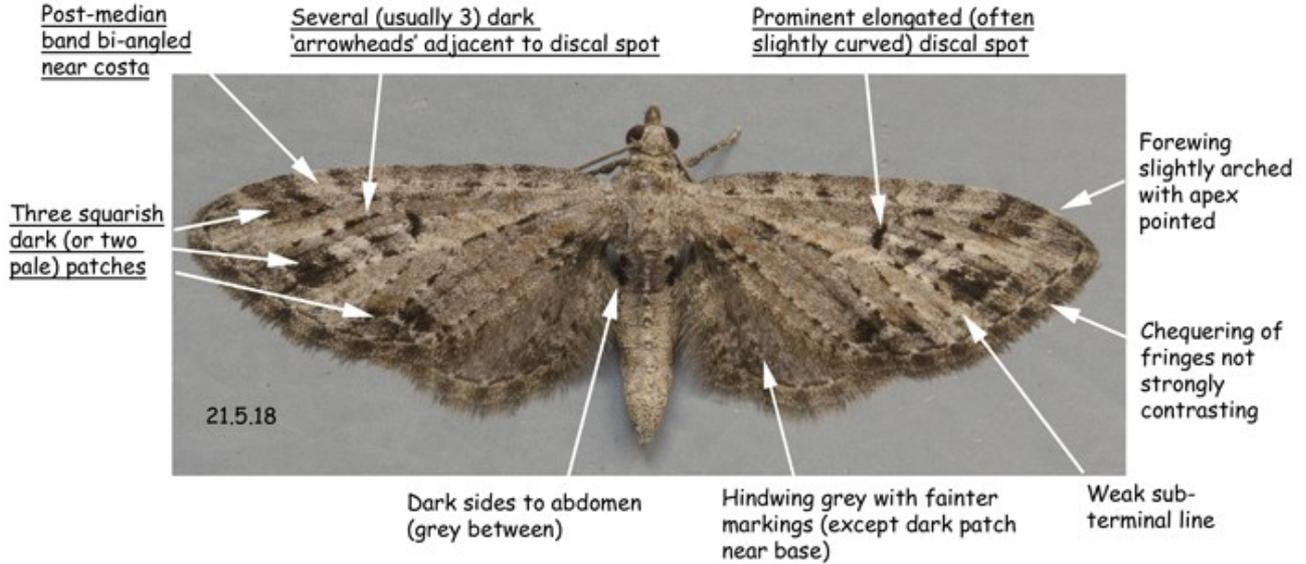
SIMILAR SPECIES

GREEN PUG (p.11) Common. Green to brownish-green base colour, with kinked post-median line (does not form a deep 'V' shape; see illustration on p.11) and with sub-terminal dark patches separated by a pale streak near the wing apex. The lower abdomen has a single row of dark spots.

70.184 MOTTLED PUG (*Eupithecia exiguata*)

Common and widespread across the region, April-July (peak: late May/early June).
Forewing 11-12 mm. Larval foodplants: hawthorn, blackthorn, dogwood, barberry.

Grey-brown with conspicuous discal spot and characteristic dark sub-terminal patches.



Individual with relatively short arrowheads on the post-medial band but other features well marked



Pale individual (some wear) but with all identifying features visible

SIMILAR SPECIES

Quite a few other Pug species have short dark arrowheads on the inside edge of the post-medial band, but all have other features that can be used to help distinguish them. Where the arrowheads are longer the position of the strongest of these is different - for example: BRINDLED (p.12), OAK-TREE (p.17) and JUNIPER (p.35) PUGS these are closer to the dorsum (see below)



Mottled Pug
Long arrowheads adjacent to discal spot

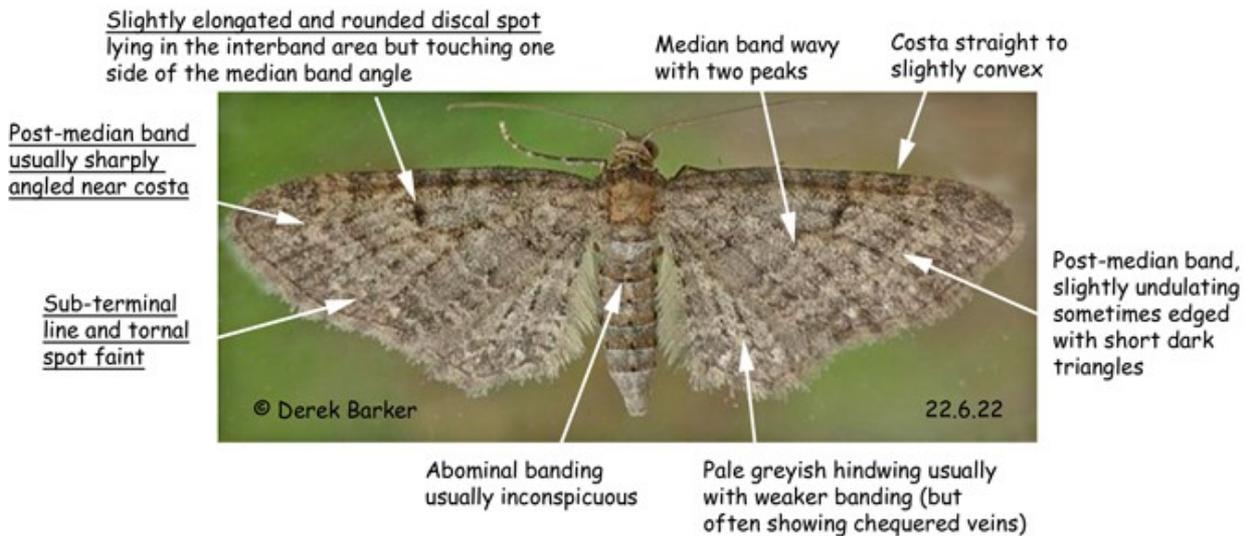


Brindled Pug
Long pair of arrowheads near to dorsum

70.190 GREY PUG (*Eupithecia subfuscata*)

Common and widespread across region, May-Aug (peak: mid June). Forewing 10-12 mm.
Larval foodplants: many trees, shrubs and herbs.

Brownish-grey with distinct discal spot and angled crossbands.



Further examples showing consistent features

SIMILAR SPECIES

See p.10 for comparison to Common Pug, but there are several other greyish Pugs:

LARCH PUG (p.31) Widespread but declining. White spot on thorax, wings often swept-back with more arched look, well-defined discal spot in similar position and sometimes a slightly yellowish patch adjacent to it, crossbands more conspicuous appearing to alternate light/dark.



Grey



Larch

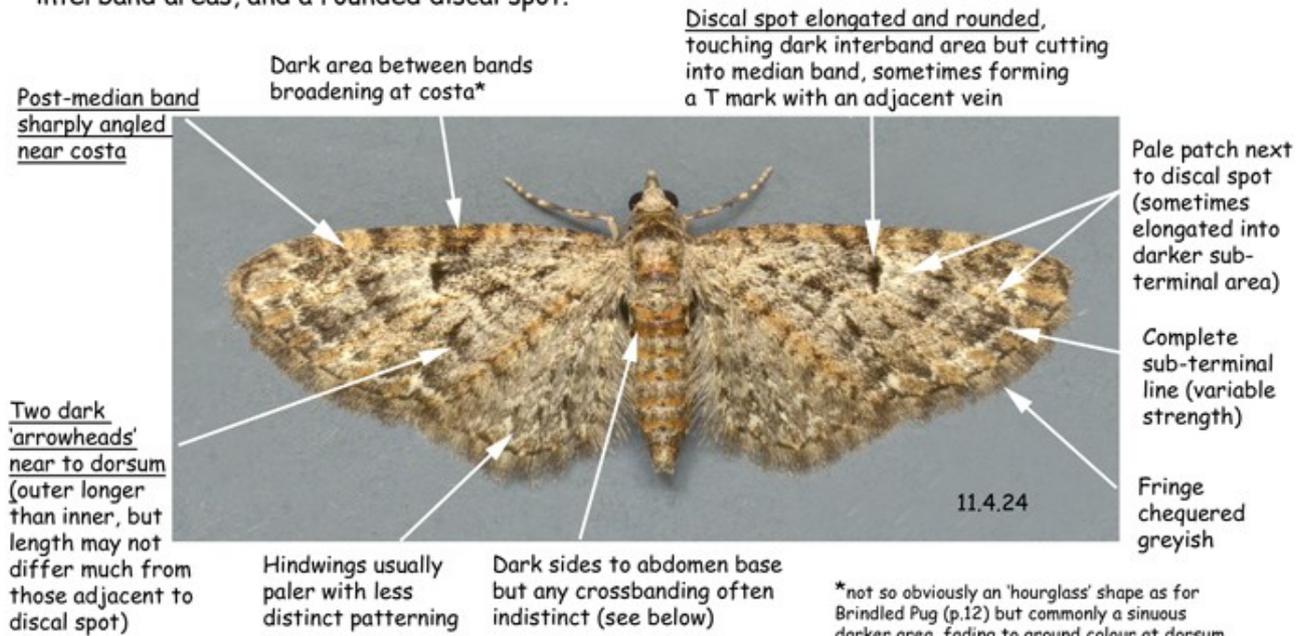
PAUPER/FLETCHER'S PUG Uncommon in region (not illustrated); usually larger (forewing 11-13 mm), crossbands smoothly curved with their inner edges often showing as double lines; discal spot narrow and elongate and set within relatively weak median crossband. Fore- and hind-wings have broad pale post-median crossband.

GOLDEN-ROD PUG Rare in region (not illustrated). Very similar but sometimes with white spot on thorax and rounder forewing. Often with veins marked black and white (if suspected will require keeping a specimen for further analysis).

70.157 OAK-TREE PUG (*Eupithecia dodoneata*)

Common and found widely across region, April-early July (peak: early May).
Forewing 8-11 mm. Larval foodplants: hawthorn, pedunculate and holm oaks.

Small with slightly arched wings, often with pale ground colour contrasting with darker interband areas, and a rounded discal spot.



Dark arrowheads on post-median line close to dorsum and other features relatively distinct.



Broad forewing (length 9 mm) but with only slightly rounded discal spot

SIMILAR SPECIES (see also p.6)

BRINDLED PUG (p.12) Common. Very similar, flies earlier but overlaps (March-June) with more elongate wing shape, ground colour usually darker and discal spot small and linear; dark arrowheads on post-median band near to dorsum are relatively more distinct.

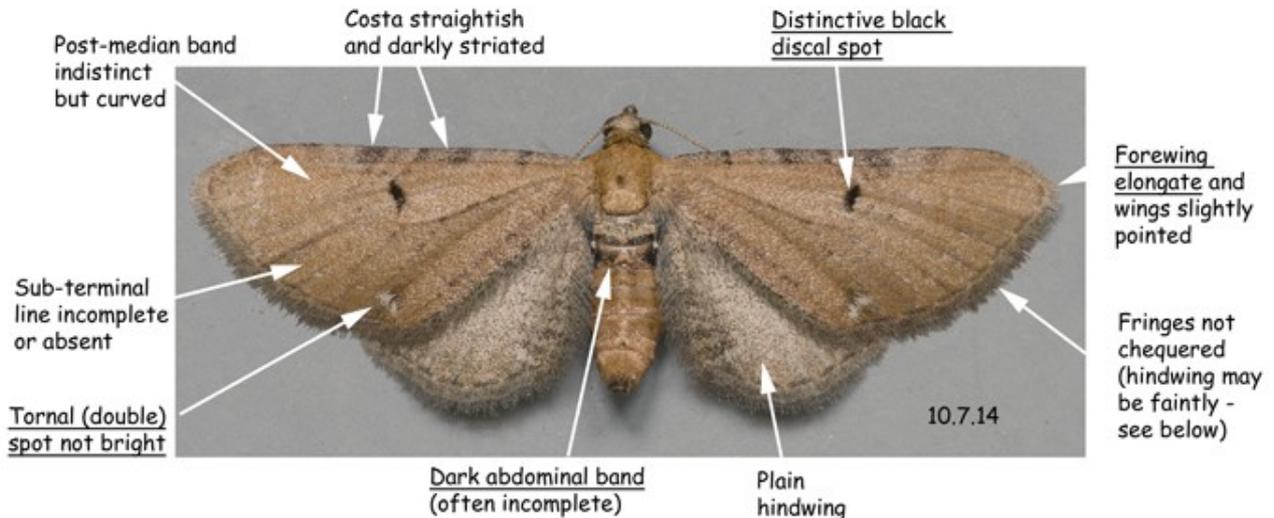
JUNIPER PUG (p.35) Local. Similar wing markings, but more variable in colouring and flies later in year (end of June to September).

70.179 WORMWOOD PUG (*Eupithecia absinthiata*)

Quite common across region, May-Aug (peak: late July). Forewing 11-13 mm.

Larval foodplants: flowers of many Asteraceae (mugwort, yarrow, michaelmas daisy, etc.).

Orange-brown colour often with markings restricted to the costa and a prominent discal spot.



Individual with stronger markings: discal spot and the two strong costal markings forming a triangle



Darker ground colour

SIMILAR SPECIES (see also p.6)

CURRENT PUG (p.22) Relatively common. Very similar to Wormwood Pug, but smaller with more rounded wings and brighter markings (e.g. tornal spot); has two generations, so can be seen both earlier and later than Wormwood Pug.

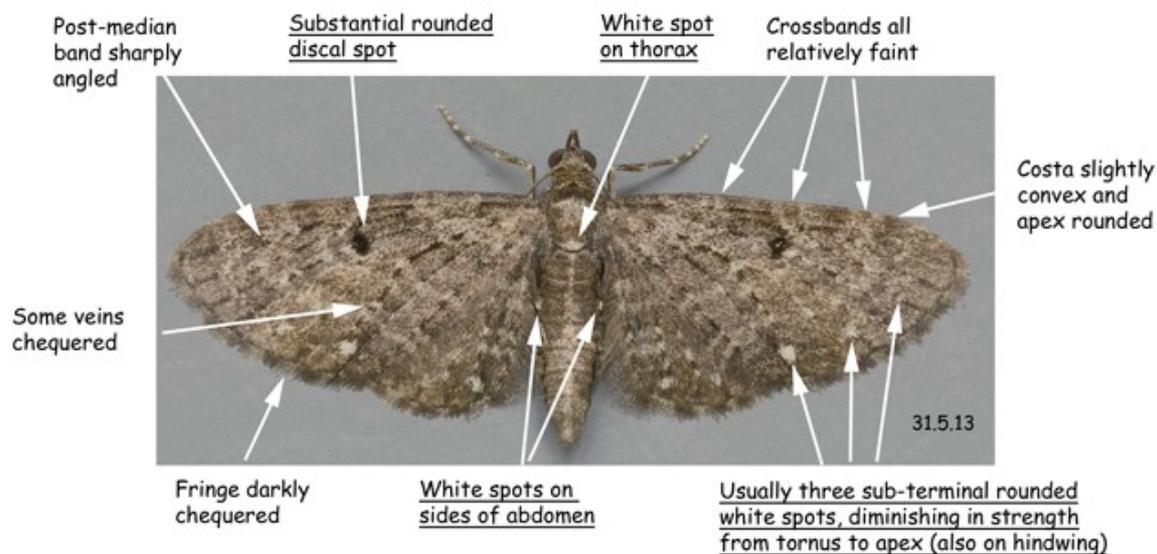
BLEACHED PUG Very local (not illustrated). Usually larger with pale ground colour (hence 'bleached') tending to show up discal and costal markings; pre- and post-median bands appear as black dots.

CAMPANULA PUG. Rare (not illustrated). Forewing lighter than Wormwood Pug, including costal markings, and crossbands more visible. A smaller rounded discal spot and no dark abdominal band.

70.160 WHITE-SPOTTED PUG (*Eupithecia tripunctaria*)

Quite common, late April-September (peaks: mid May and early August). Forewing 10-12 mm.
Larval foodplants: first generation, elder flowers; second generation various Apiaceae.

Greyish-brown wings with white spots on the thorax, abdomen and outer edge of wings.



Strongly-spotted individual (including some veins)



Probably not acceptable as a correct record because of absence of white spots on thorax and abdomen, but retains some other features (e.g. rounded white sub-terminal spots; but see e.g. Satyr Pug p.34)

SIMILAR SPECIES

Beware worn Pugs of similar size if lacking white thoracic spot (see above example).

LARCH PUG (p.31) Widespread. Also has white spot on thorax, but not at tornus. Crossbands contrasting with darker ground colour, tending to form 'striped' pattern on wings.

FREYER'S PUG (p.24) Widespread. Similar wing shape and grey-brown colouring, but no thoracic spot, faint sub-terminal line and larger discal spot.

CURRENT PUG (p.22) Widespread. Strong white spots on tornus, but ground colour much warmer brown and large elongated discal spot.

70.151 FOXGLOVE PUG (*Eupithecia pulchellata*)

Common especially in the south-east part of the region, late April-August (peak: late June).
Forewing 10-12 mm. Larval food: flowers of foxglove.

Strikingly-marked with alternating pale brown and dark grey bands.

Post-median band angled near costa (giving a bulge in the grey central area towards the apex)

Well-defined discal spot

Grey basal area extends over whole forewing

Median band often obscured in grey area

Sub-terminal dark patches separated by pale streaks



Sometimes pale streak extends into and divides grey central area

Outer part of hindwing pattern similar to forewing

Grey-brown belt on abdomen



Individual showing typical features with a smaller discal spot



Even when somewhat faded, this Pug can be recognized fairly easily

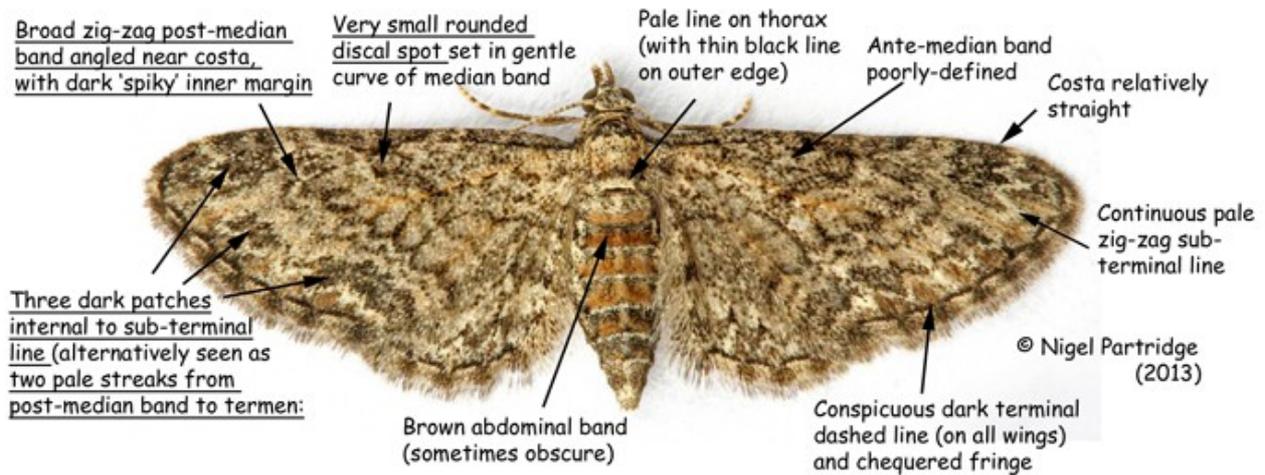
SIMILAR SPECIES (see also p.6)

TOADFLAX PUG (p.27) Not as common. Very similar wing patterning but smaller and may fly until early September. The post-median band is straighter near to the costa (so that the outer edge of the central black area does not bulge as much towards the apex), and the basal area tends to be grey/black along the costal edge only rather than over the whole area.

70.148 MAPLE PUG (*Eupithecia inturbata*)

Widely distributed across region, late June-August (peak: late July).
Forewing 8-10 mm. Larval foodplant: field maple.

Small greyish-brown with rather narrow wings and dark patches near wing margins.



Pale ground colour, so that area between median and post-median bands stands out as pale interband, and clear division of sub-terminal dark patches by pale streaks

'Spikes' internal to post-median band are relatively short and the extent to which pale streaks from post-median band divide sub-terminal dark patches is reduced.

SIMILAR SPECIES

A few other Pug species have three dark sub-terminal patches, separated by pale streaks from the post-median band. The most prominent of these is MOTTLED PUG (p.15), but also DWARF PUG (p.25) and FOXGLOVE/TOADFLAX PUGS (p.20, p.27) - but all are readily distinguishable by other features.

SLENDER PUG (p.23) Widespread. Broader more rounded forewing with some similar (but less well-defined) markings, with larger discal spot fitting into U-shaped inner edge of median band.



Maple

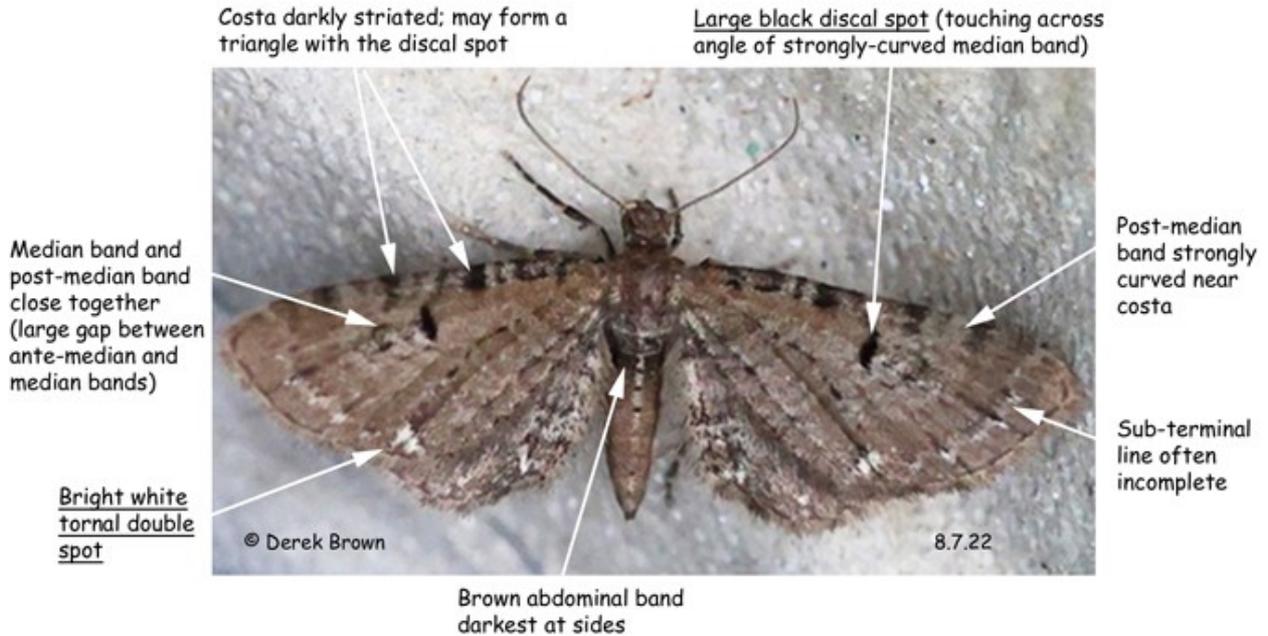


Slender

70.182 CURRANT PUG (*Eupithecia assimilata*)

Widely distributed across region, late April-early Sept (peaks: late May and mid August).
Forewing 9-12 mm. Foodplants: wild hop, black and red currant.

Orange-brown colour with prominent discal and tornal spots.



Examples showing variability in base colour

SIMILAR SPECIES (see also p.6)

WORMWOOD PUG (p.18) Common. Very similar but larger with more elongated wings and less distinct wing markings (e.g. tornal spot), and smaller discal spot.

BLEACHED PUG Very local (not illustrated). Usually larger (forewing 12-13 mm) with pale ground colour (hence 'bleached') tending to show up discal and costal markings; pre- and post-median bands appear as black dots.

70.147 SLENDER PUG (*Eupithecia tenuiata*)

Widespread across the region, late May-August (peak: mid July).

Forewing 8-10 mm. Larval foodplant: catkins of willows.

Small, grey-brown with rounded wing shape and well-defined small discal spot.

Median band* curved into 'U' shape, with rounded discal spot at or near centre

Interband area broadens out (ante-median band often obscure)

Dark patches along costa clearly separating bands

strongly angled post-median band

Darker apex and terminal region traversed by weak sub-terminal line (little evidence of tornal spot)



Relatively broad rounded wing shape

Crossbands form series of parallel wavy lines (with internal short dark points at veins)

© Derek Barker

8.7.21

*thick innermost line of median band often stands out as paler than other lines

Hindwings greyish, any banding less well defined than forewings



7.7.23



© Jane Cockman

24.6.24

Examples of grey-brown colour variation

SIMILAR SPECIES

MAPLE PUG (see side-by-side comparison on p.21). Widespread. Narrower winged with similar but more exaggerated (zig-zag) band structure, tiny discal spot, dark sub-terminal patches.

HAWORTH'S PUG (p.26) Widespread. Relatively broad forewings and orange patch on abdomen, no discal spot, crossbands more conspicuous (interband regions generally darker) with post-median band gently curving,

70.176 FREYER'S PUG (*Eupithecia intricata*)

Widespread across region, May-July (peak: mid June).

Forewing 12-13 mm. Larval foodplants: junipers, cypresses.

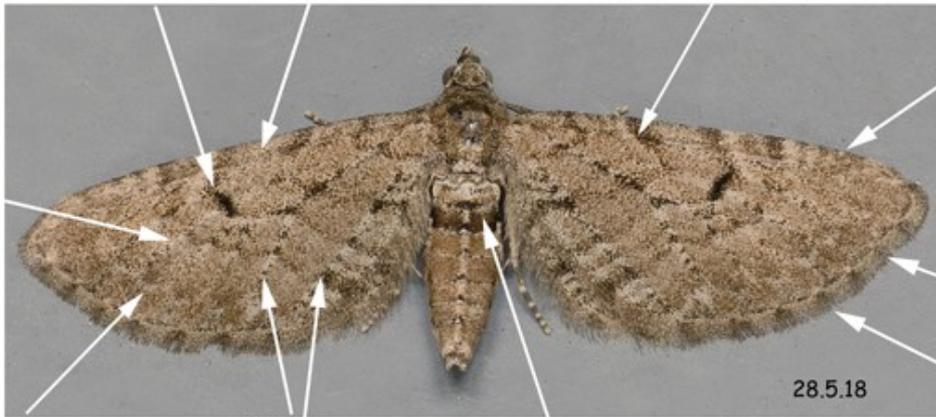
Large grey-brown Pug with conspicuous discal spot and dark abdominal band.

Elongate medium-sized discal spot
usually sits in 'elbow' of strongly-
angled median band (but see below)

Wide space usually seen between
ante-median and median bands
(but see also below)

Ante-median band
usually sharply angled

Post-median band
curved near costa
then in wavy lines
across wing; inner
edge with very
short dark 'spikes'
at veins



Relatively
straight
costa

Fringe
darkly
chequered

Curved
termin

Sub-terminal line often rather
weak (tornal spot may be brighter)

Veins
chequered

Dark band on abdomen (or two
lateral lines with grey-brown filling)



© Nigel Partridge

9.6.10

The sub-central broad interband area stands out
on this well-marked example

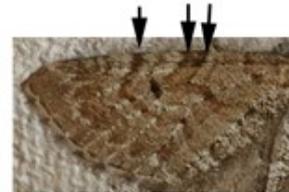
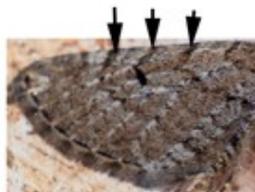


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21.5.22

Individual with rather pale grey-brown colouring

The extent of separation of the ante-median and
median bands and the position of the discal spot are
variable - seen most easily by the relative positions
of the dark costal bands in these examples (compare
positioning of the black arrows in the specimens to
the right).



There are also two other recognized forms of this Pug, sometimes considered as sub-species, but these are not found
in our area: the Edinburgh Pug (NW England and Scotland) and Mere's Pug (Ireland).

SIMILAR SPECIES

SATYR PUG (p.34) Local: pale grey-brown with straight costa; shapes of crossbands similar, but
often more obscure; chequered veins; no dark abdominal band and smaller discal spot.

PAUPER/FLETCHER'S PUG Uncommon (not illustrated): pale grey with elongate discal spot set within
relatively weak median crossband. Fore- and hind-wings have broad pale post-median crossband.

Some other smaller Pugs are superficially similar, having similar-shaped crossbands

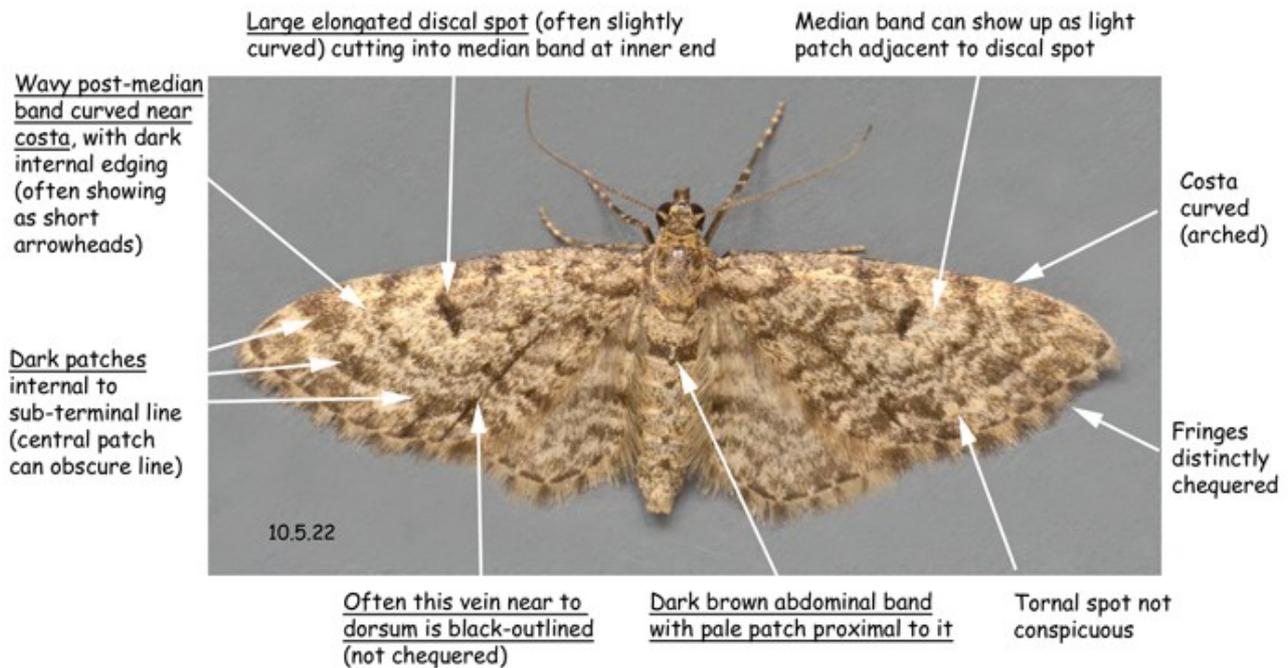
e.g., **DWARF PUG** (p.25) Widespread: more contrasty banding with large elongate discal spot, without
chequered veins (but one or more outlined darkly).

OCHREOUS PUG (p.29) Widespread: softer grey-brown with narrower less-rounded forewing,
usually larger discal spot and weaker markings.

70.162 DWARF PUG (*Eupithecia tantillaria*)

Widespread, especially in south-east of region, late April-July (peak: late May).
Forewing 9-11 mm. Larval foodplant: needles of various conifers.

Commonly with curved-back wings, distinct dark-edged crossbands and prominent discal spot.



Darker individual highlighting pale patch adjacent to discal spot; sub-terminal line broken by dark internal patches



Some wear but several features still well demarcated

SIMILAR SPECIES

FREYER'S PUG (p.24) Widespread: can also rest with swept-back wings and has dark abdominal band, but more uniform grey-brown colour, with straighter costa, usually smaller discal spot, veins chequered, outer part of wing not showing dark patches and sub-terminal pale line weak.

OCHREOUS PUG (p.29) Widespread. Similar wing shape and large discal spot but soft grey-brown ground colour with much less distinctive patterning and without dark abdominal band.

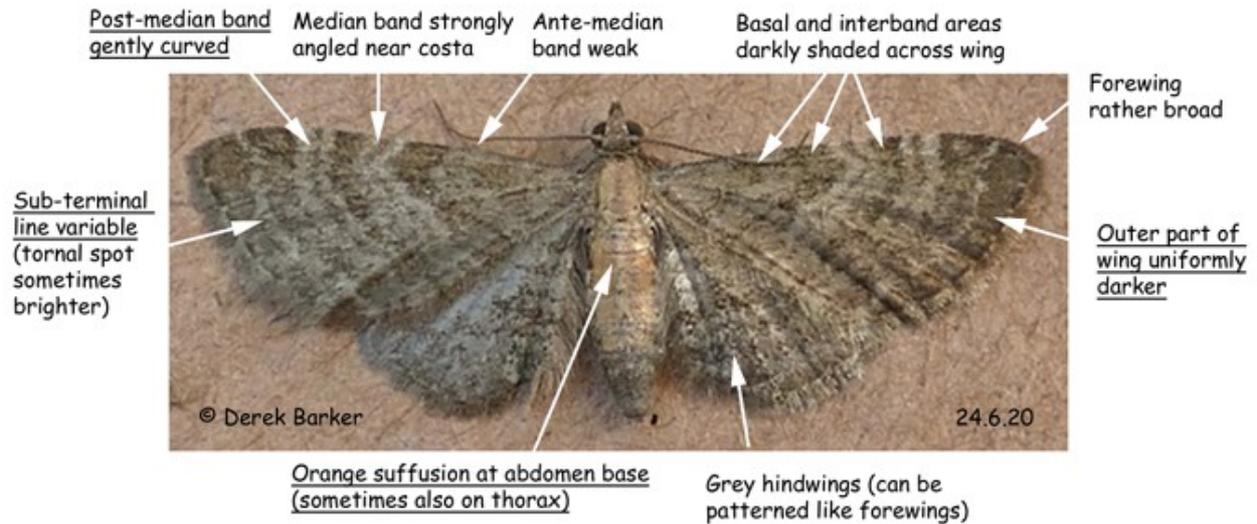
MARbled PUG Rare (not illustrated): whitish ground colour contrasting with dark costal markings and especially dark sub-basal band (striking when worn), but similar large discal spot and dark sub-terminal patches.

CLOAKED PUG Very rare (not illustrated): the largest Pug (forewing up to 15 mm) with very large discal spot, post-median band usually less curved, zig-zag pale sub-terminal line with the area between this and post-median band showing as a continuous brown band.

70.146 HAWORTH'S PUG (*Eupithecia haworthiana*)

Widespread especially in chalky areas, June-early August (peak; early July).
Forewing 8-9 mm. Larval foodplant: buds of *Clematis* species.

Grey-brown, main crossbands distinct against darker ground colour, without discal spot, orange patch on abdomen.



Well-marked specimen



Worn specimen; darker basal area shows up especially (perhaps not so easy to identify if not for orange band)

SIMILAR SPECIES

The only other Pug with an abdominal band of an orangey colour is the SLOE PUG (p.33) - when fresh its wings are green (although fading to brownish) with a small discal spot on an obscure median band.

MAPLE (p.21) and SLENDER (p.23) PUGS, both widespread and a similar size, but both lack the orange abdominal colour and have discal spots (very small in Maple Pug, larger in Slender Pug). Also both species have a strongly angled post-median line near to the costa (gently curved in Haworth's Pug)

70.150 TOADFLAX PUG (*Eupithecia linariata*)

Widespread especially in chalky areas, late May-September (peaks: early July and mid-August).
Forewing 9-10 mm. Larval foodplant: common toadflax.

Markings similar to Foxglove Pug, but appears later and differs in detail of crossbands.

Post-median band gently curved
(little or no 'bulge' in outer edge
of black central area towards apex)

Basal patch grey/black
along costa only

Discal spot and median band
(often obscured by densely
black central area)

Sub-terminal
dark patches
separated by
lighter streaks

Well-defined
sub-terminal
white line

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20.7.11

Dark brown/black
abdominal band



© Suzanne Parrott

8.8.22

Base colour white and area between post-median band and sub-terminal line almost continuously dark



15.8.19

Although timing, size, narrow basal band, etc., suggest Toadflax Pug, shows slightly bulged black central area

SIMILAR SPECIES (see also p.6)

FOXGLOVE PUG (p.20) Common. Flies earlier but timing overlaps; larger size and with post-median band angled near costa (giving a definite bulge in outer edge of dark central area); basal patch not confined to costa.

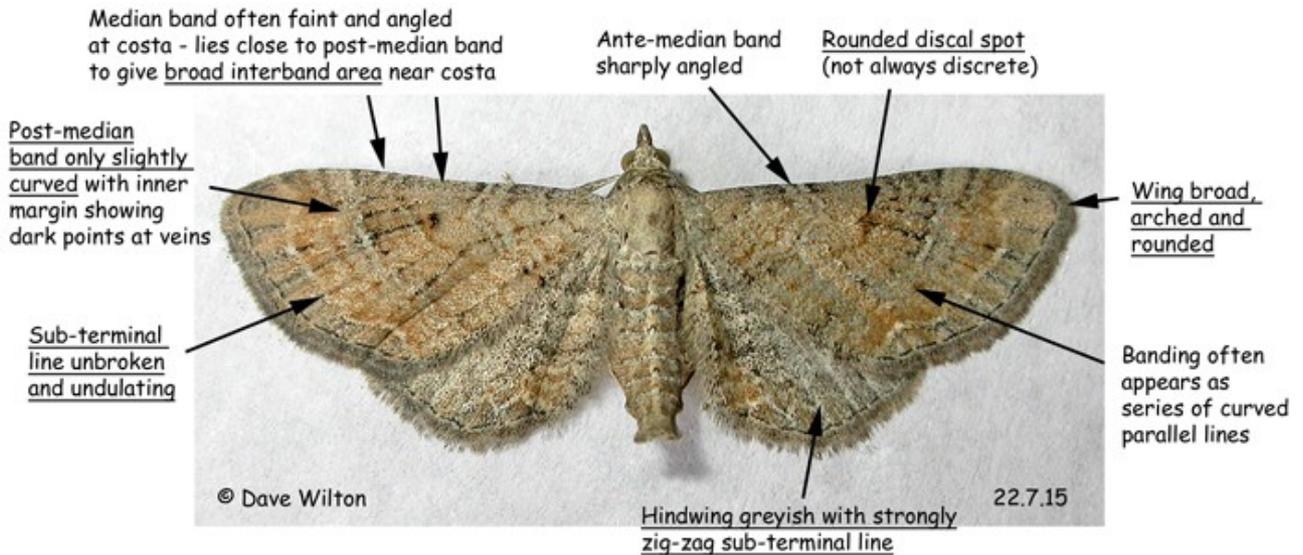
Note on the significance of an angled post-median band (or bulge in the dark central area)

While this is considered an important feature distinguishing Toadflax from Foxglove Pug, small later-flying specimens often do not have a completely smooth curve in the post-median band (see above right). In some other species of Pug moths where abundant specimens are available, e.g. the Double-striped Pug, this band can show some variation in curvature as illustrated on page 13.

70.166 PLAIN PUG (*Eupithecia simpliciata*)

Local across whole region, June-August (peak: late July). Forewing 11-13 mm.
Larval foodplants: seedheads of goosefoots and oraches.

Large with broad pale ochreous-brown wings, relatively faint markings and small discal spot.



Showing shape of bands well



Yellowish-brown ground colour

SIMILAR SPECIES

Other large Pugs unlikely to be confused:

YARROW PUG (p.36) Local. Greyish, with post-median band angled and discal spot diffuse.

SATYR PUG (p.34) Local. Grey-brown also weakly marked but with median and post-median bands more angled, small discal spot and chequered veins.

FREYER'S PUG (p.24) Common. Darker grey-brown with post-median band angled, median band strongly angled, large discal spot and dark abdominal belt.

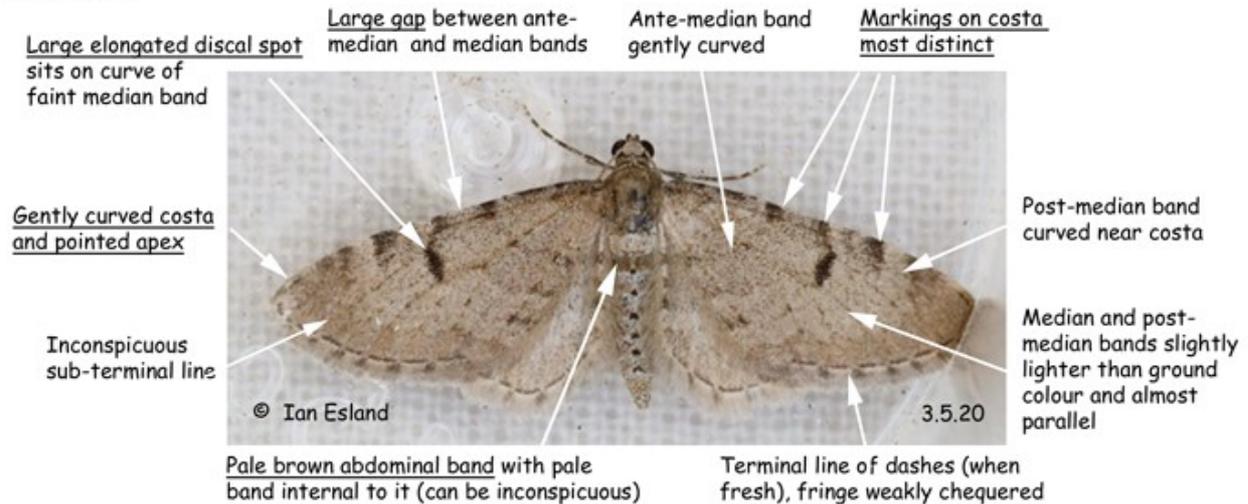
WORMWOOD PUG (p.18) Common. Orangy-brown colour with markings mostly restricted to costa; larger discal spots and some dark abdominal banding.

PIMPINEL PUG Very local (not illustrated). Narrower wing shape, with post-median band more curved, large discal spot and dark brown abdominal belt.

70.171 OCHREOUS PUG (*Eupithecia indigata*)

Widespread and locally common, April-June (peak: mid May). Forewing 8-10 mm.
Larval foodplant: coniferous trees (pines, larch).

Soft grey-brown with swept-back wings (at rest), weakly-marked crossbands and a prominent discal spot.



Typical shape with faint crossbands and conspicuous discal spot



Worn individual, but retains general shape, discal spot prominent, and consistent outline of crossbands



Specimens shown above have a large discal spot that sits on the inner edge of the median band and almost joined to its dark costal edge - but as shown in the specimen to the left, some individuals show a less prominent discal spot that is set within the median band and 'points' to a place further along the costa (the fainter central line of the median band; see arrow)

SIMILAR SPECIES

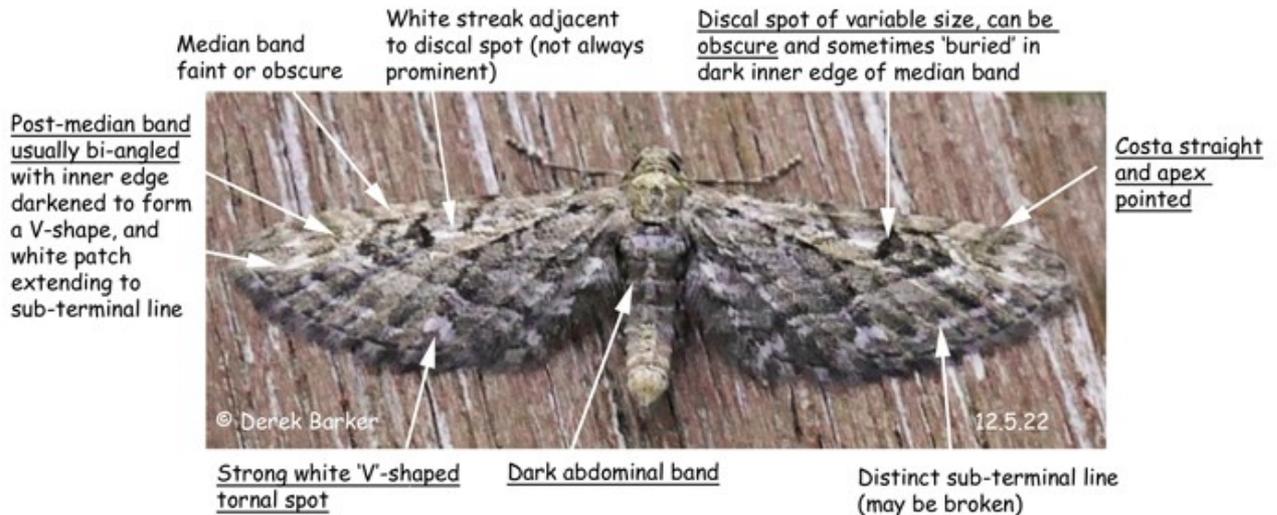
This Pug can be difficult to identify with certainty because a main feature is the rather 'washed out' look with weakly-marked crossbands - so that worn specimens of other widespread Pug species such as DWARF PUG (p.25) and FREYER'S PUG (p.24) can look similar (e.g. each of these species can have a swept-back wing profile and has relatively large discal spots and dark abdominal bands). In particular image recognition apps can struggle with getting the identity correct from worn specimens.

Rarer species such as PIMPINEL PUG and THYME PUG (not illustrated) similarly have more distinct wing markings when fresh, including large discal spots, but fly later in the year (June-July).

70.168 NARROW-WINGED PUG (*Eupithecia nanata*)

Mostly found in the southern part of the region, April-Sept (peaks: mid May and early August).
Forewing 9-12 mm. Larval foodplant: heather.

Narrow elongated wings, variable but with contrasting light/dark angular crossbands.



Discal spot obscure; white patch proximal to it is prominent (arrow)



Whole central area of wing dark grey-brown (arrow), obscuring discal spot and median band

SIMILAR SPECIES

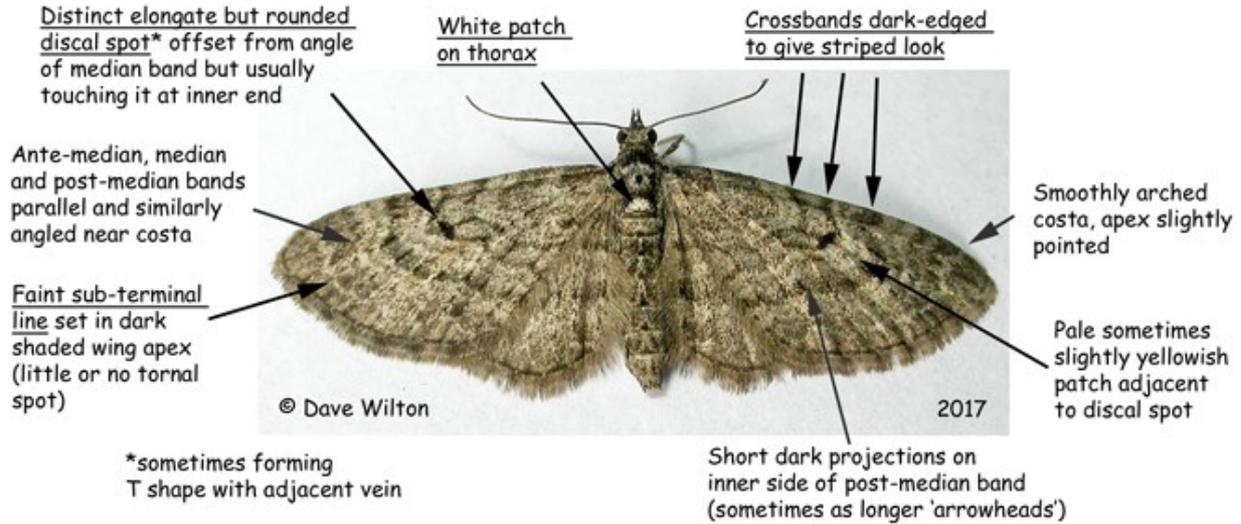
Note that this Pug has rather variable features: e.g., the post-median band may be much less angular near to the costa than the specimens shown above (where it is almost bi-angular) and the white patch adjacent to the discal spot may be less prominent (sometimes with the white patch in the angle of the post-median band more prominent, see above).

Some other Pugs of a similar size may also have rather swept-back wings at rest: e.g.
ANGLE-BARRED PUG (not illustrated) Very local. Narrow wings but plainer brown with an elongated linear discal spot
DWARF PUG (p.25) Widespread. Contrasting light/dark crossbands, but broader wings with distinct discal spot.

70.163 LARCH PUG (*Eupithecia lariciata*)

Widespread but most commonly recorded in south Bucks, May-August (peak: early July).
Forewing 10-12 mm. Larval foodplant: larches.

Greyish-brown with swept-back wings at rest, contrasty crossbands and white-spotted thorax.



*sometimes forming T shape with adjacent vein



Additional specimen clearly showing all features



Rather worn but white spot on thorax, small rounded discal spot and band shapes consistent.

SIMILAR SPECIES

Some similar-sized greyish Pugs without white patch on thorax: so beware worn specimens where this patch may not be visible:

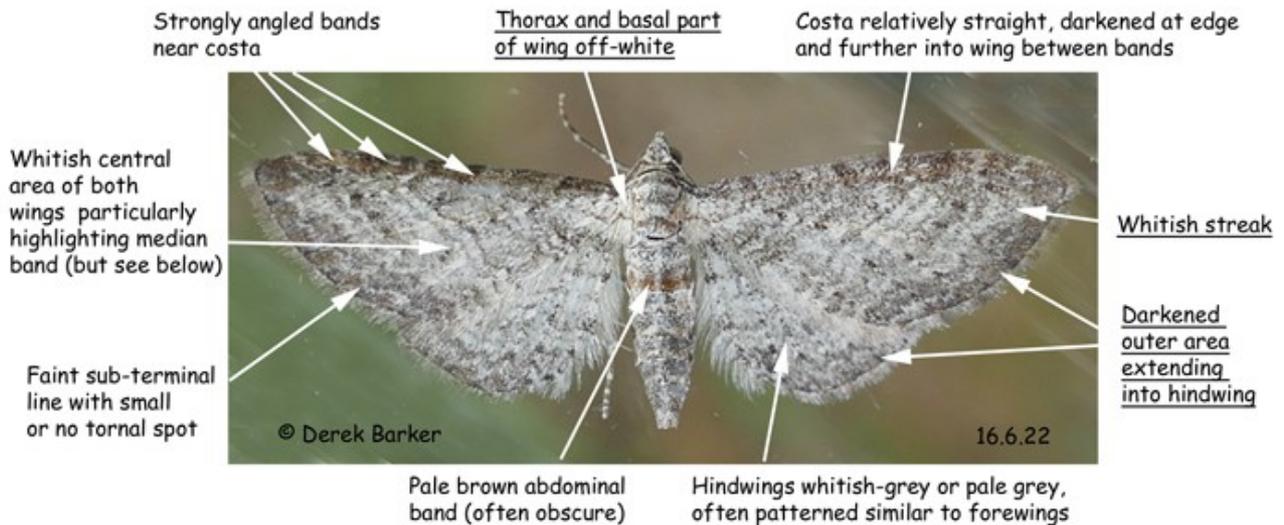
GREY PUG (see p.16 for comparison) Common. No white patch on thorax, with similar but less contrasting pale angled crossbands, darkened costa and less smooth wing shape.

PAUPER/FLETCHER'S PUG Uncommon in region (not illustrated). Larger with no white patch on thorax; discal spot larger and elongate and set within relatively weak median crossband. Fore- and hind-wings have broad pale post-median crossband

70.189 SHADED PUG (*Eupithecia subumbrata*)

Local but most commonly recorded in south Bucks, late May-early August (peak: late June).
Forewing 10-12 mm. Larval foodplant: flowers of many herbaceous plants.

Wings relatively narrow; variable in extent to which whitish suffusion of thorax and base of wing extends into the rest of wing, in contrast to darker outer wing edges; small or absent discal spot.



Whitish ground colour less prominent, showing crossbands more distinctly and tiny discal spot



Weakly marked individual with a small discal spot (touching inner edge of median band and offset from its angle; see arrow) but some wear makes this a rather uncertain record.

SIMILAR SPECIES

Where the whitish ground colour is less prominent then:
GREY PUG (p.16) Common. Similar size, but with a broader wing, larger discal spot and no pale sub-terminal streak.

YARROW PUG (p.36). Local. Larger (forewing 12-13 mm) with very wavy crossbands and diffuse discal spot, but has similar pale sub-terminal streak.

Additionally:

BORDERED PUG (p.5) Common. Larger and flies later (mid June-early Sept) with strongly contrasting central white patch on dark brown wing, and prominent rounded discal spot.

MARBLED PUG Rare (not illustrated). Flies earlier (April-May) with dark sub-basal band and dark sub-terminal patches, as well as large elongate discal spot.

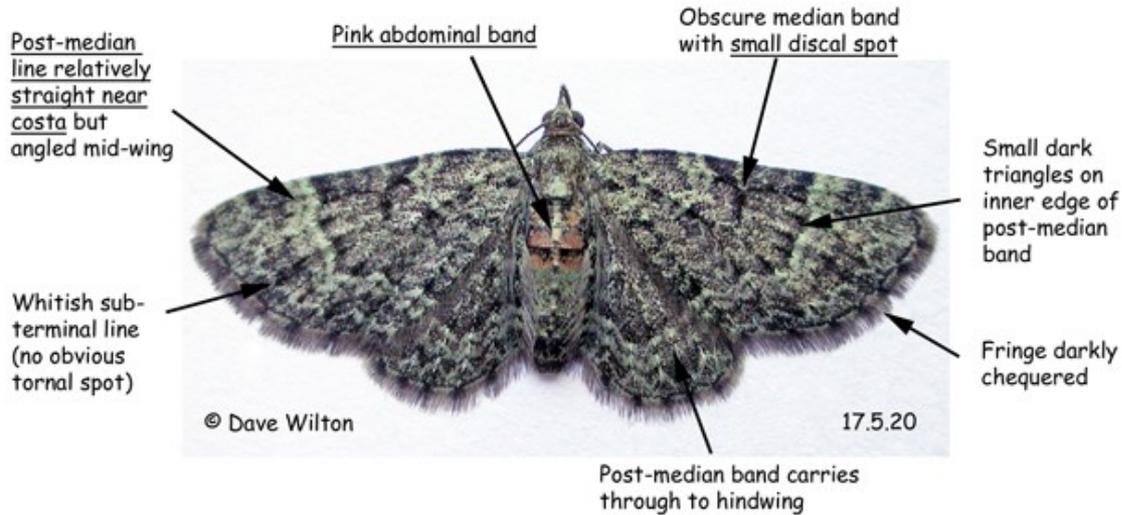


70.143 SLOE PUG (*Pasiphila chloerata*)

Locally recorded across region, late May - July (peak: late June).

Forewing 9-10 mm. Larval foodplant: blackthorn flowers.

Small with broad wings tinged green on dark grey-brown background but soon fading to brown, and pink abdominal band.



The two examples above represent part of the range of colouring of this Pug, but some specimens can be completely brown, placing more emphasis on the combination of features given above to achieve a correct identification

SIMILAR SPECIES

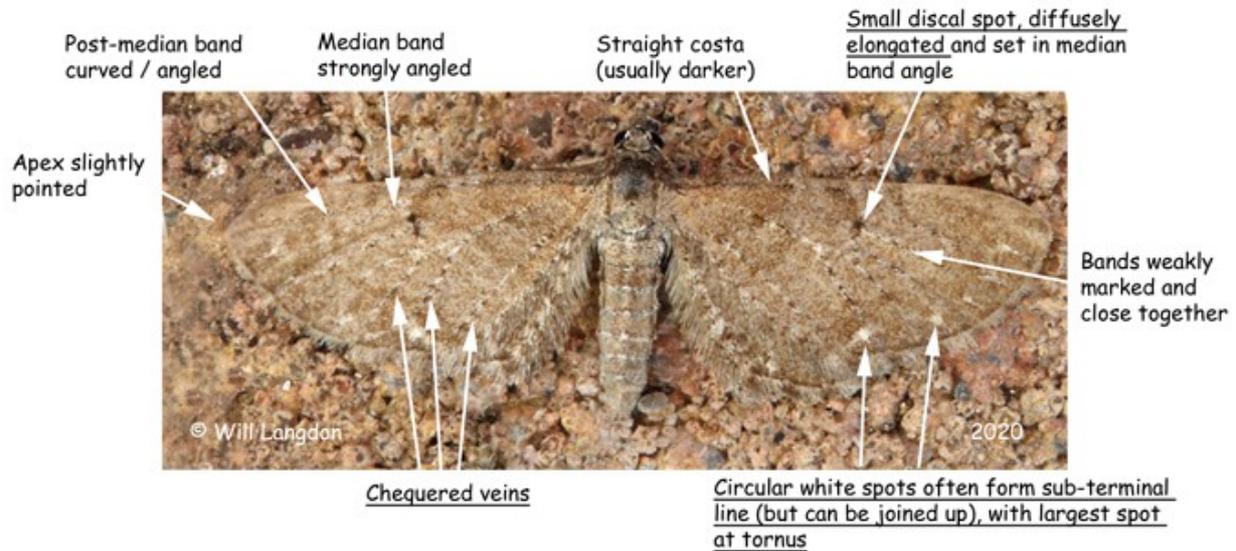
GREEN PUG (see p.11 for comparison) Common. Bright green but can also fade to brownish, with blackish abdominal band and post-medial line angled near costa.

BILBERRY PUG Rare (not illustrated). Pale greenish ground colour with black abdominal band; pale post-medial line angled near costa with inner edge mostly seen as row of black dots/triangles.

70.177 SATYR PUG (*Eupithecia satyrata*)

Locally distributed across region, May - July (peak: late June).
Forewing 9-13 mm. Larval foodplants: flowers of many plants.

Pale grey-brown, weakly-marked and veins chequered.



Slightly darker individual, showing crossbands more clearly

SIMILAR SPECIES

COMMON PUG (see p.10 for comparison) Very common. Wings usually darker brown-ochreous but variable; post-median band bi-angulate, blackish marks on sides of abdomen, white sub-terminal line usually more conspicuous.

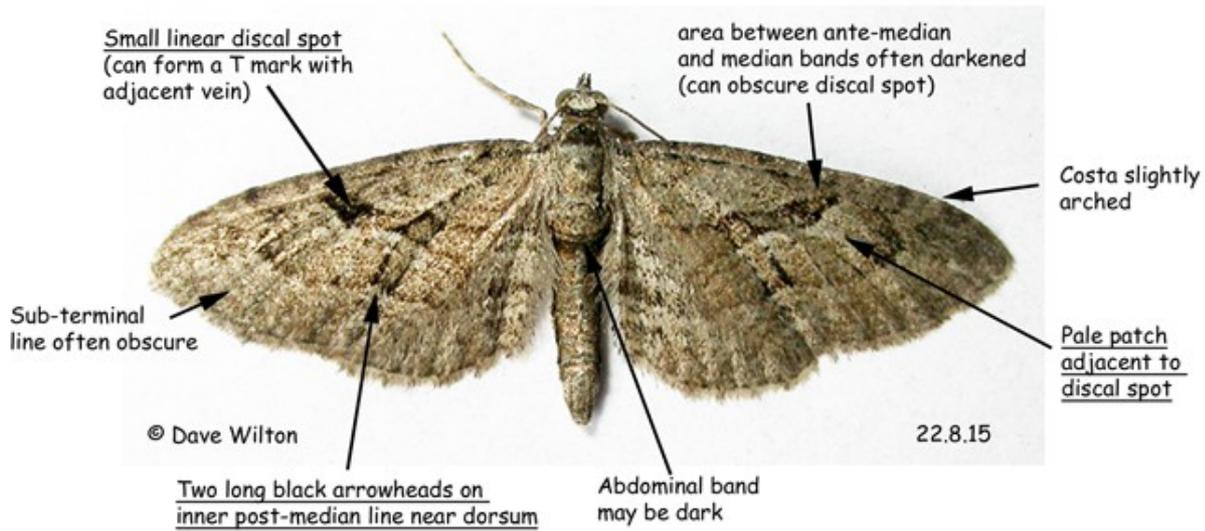
FREYER'S PUG (p.24) Widespread. Wings darker greyish-brown with more strongly marked crossbands; discal spot larger and well-defined. Dark brown abdominal band; very weak sub-terminal line.

70.158 JUNIPER PUG (*Eupithecia pusillata*)

Locally distributed in region, June- September (peak: late July).

Forewing 9-11 mm. Larval foodplants: juniper and some cultivated cypress species.

Ground colour rather variable, with strongly angled ante- and post-median bands



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31.7.20



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Examples differing in the extent of dark suffusion in the ante-median/median interband area

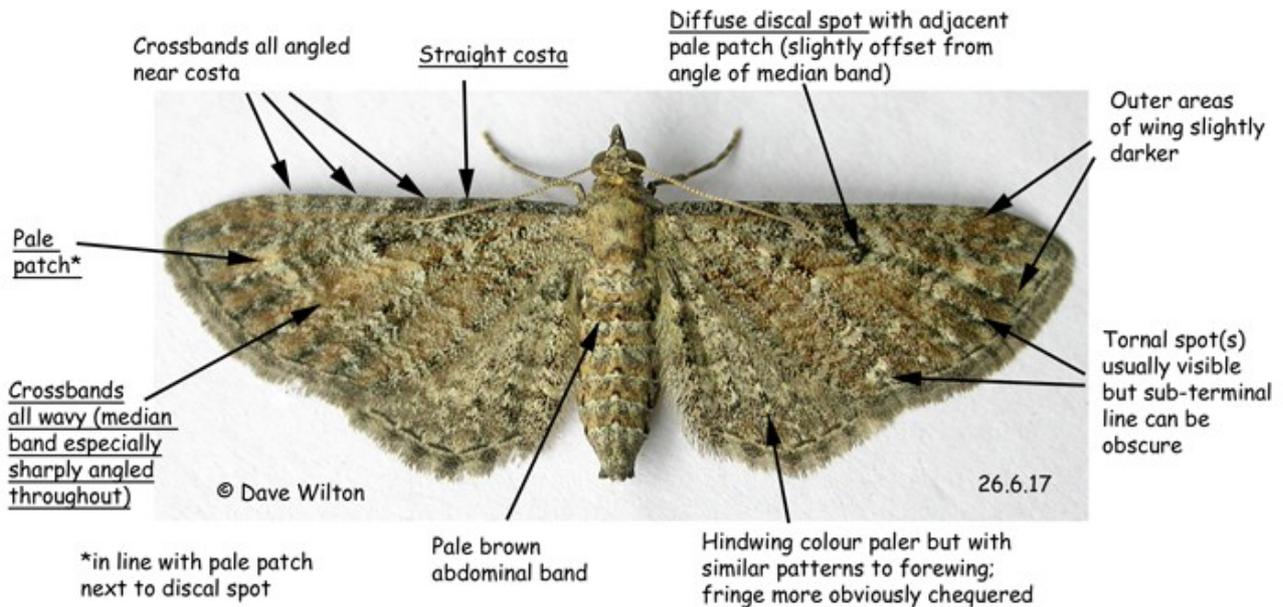
SIMILAR SPECIES

OAK-TREE PUG (p.17). Common. Similar wing markings; flies earlier but may overlap (peaks early May but may continue until early July) and has broader wing with rounded discal spot.

70.186 YARROW PUG (*Eupithecia millefoliata*)

Locally distributed across region, June-August (peak: late July)
Forewing 12-13 mm. Larval foodplant: yarrow flowers and seedheads.

Large grey-brown Pug with wavy crossbands and a diffuse discal spot.



Examples of colour variation

SIMILAR SPECIES

Should be distinguishable from smaller greyish Pugs, such as GREY PUG (p.16), but size overlap possible with some specimens. For example, SHADED PUG (p.32) has narrower wings and usually a whitish ground colour - but where this is not strong then it has similar wing features although with contrastingly dark outer area of wing and small or absent discal spot.

FREYER'S PUG (p.24) Widespread. Darker grey-brown with similarly-angled crossbands and wavy lines, with discal spot larger and discrete, dark abdominal band, without pale patch near apex.

SATYR PUG (p.34) Local. Usually smaller and softer brown colour; weakly-marked, costa straight, post-median band less angular and all veins usually chequered, discal spot present but variable in size.