

**THE PAUPER PUG *EUPITHECIA EGENARIA* H.-S.
(LEP.: GEOMETRIDAE) DISCOVERED IN LINCOLNSHIRE,
AND OTHER INTERESTING MOTH RECORDS FROM A SURVEY
OF THE BARDNEY LIMWOODS SITE OF SPECIAL SCIENTIFIC
INTEREST IN 1995**

PAUL WARING

1366 Lincoln Road, Werrington, Peterborough PE4 6LS.

UNTIL 1995, the Pauper Pug *Eupithecia egenaria* was only known to occur in the Wye Valley woodlands on the borders of Monmouthshire and Gloucestershire where it was discovered in 1962 (Mere, 1962), the Thetford area of south-west Norfolk/north Suffolk (Haggett, 1981) and recently in Hockering Wood to the north-east of the latter, where the moth was recorded by Rafe Eley (*pers. comm.*) on 2 June 1984 and by G. Haggett, M. Hall and S. Ward (*pers. comm.*) on three separate visits in 1989 (29 May, 9 June and 7 July). In 1993 four adults were captured in King's Forest, Suffolk, in the 10km square to the south of the Thetford Forest complex, on 23 and 24 May, and on 15 June 1993 larvae were beaten from limes *Tilia* sp. in the same area, followed by more adults on 1 June 1994 and 27 May 1995 (C. Smith, *pers. comm.*). There is also a record of a single adult captured at a garden light trap at Walberton, West Sussex on 1 June 1987 (by J. Radford, det. A. Riley). There is a post-1980 record from SN8780 which requires confirmation. A pre-1879 record from Loughton, Essex (Carrington, 1879) is now considered not to refer to this species (Plant, 1993) but to have arisen due to the early confusion over nomenclature described by Wakely (1957). It is therefore of interest to report that during an English Nature (EN) research project on the moths of the Bardney Limewoods in Lincolnshire from June to September 1995 (Waring, 1996), the Pauper Pug was found in three of the four woods studied. The identities of these fairly distinctive moths were confirmed by dissection of the genitalia by Barry Dickerson. The genitalia are diagnostic and quite unlike any other British *Eupithecia* species, due to a pronounced spine mid-way along the ventral edge of the valves or claspers of the male (shown in Agassiz *et al.*, 1981). Fig. 1 summarises the known national distribution of this moth to date.

The larvae of the Pauper Pug feed on the flowers of the Small-leaved Lime *Tilia cordata* and, in Norfolk, breeding also occurs on Large-leaved Lime *T. platyphyllos* and the hybrid *T. x europea* (Haggett, 1981). The Bardney Limewoods are one of the major concentrations of Small-leaved Lime-dominated woodlands in England and the largest concentration of ancient woodlands in Lincolnshire so the occurrence of this moth was not unexpected. Indeed, it had been something of a puzzle that the moth had not already been recorded from this stronghold of Small-leaved Lime, which was formerly a much more widespread species in the native woodlands of

Britain. The puzzle was all the more so because some of these woods were surveyed extensively for moths by the late Rick Pilcher in the 1960s and early 1970s.

The Pauper Pug was first recognised as British from the Wye Valley woodlands, in 1962 (Mere, 1962; 1963). The first Norfolk specimen was actually captured in 1953 but not identified for nearly twenty years (Agassiz *et al.*, 1981). Whether the species is a previously overlooked relic survivor of the ancient wildwood or a recent arrival has been debated by Emmet (1981) and Haggett (1981). The fact that the moth is present in the Bardney Limewoods might be seen as strengthening the case for the former view. The occurrence of the moth on more recently planted limes at Thetford, as described by Haggett (1981), is not a problem for this view, bearing in mind the reserves of Small-leaved lime in Hockering Wood and other ancient woods in Norfolk, from which the moths may have colonised more recent plantations. Interestingly, Wakely (1957) predicted that the moth might be found in the west of Britain where he knew the foodplants to be indigenous and Mere (1962) proved him right.

The discovery of the Pauper Pug in Lincolnshire was just one of the results which confirmed the national and local importance of the Bardney Limewoods for invertebrate conservation. Single specimens were caught (and retained) in Stainfield Wood and Ivy Wood and two specimens were collected in Great West Wood, all by the author and all on the night of 25/26 June 1995. Other nationally scarce moths recorded during the study in 1995 included the Mere Wainscot *Photedes fluxa* Hb. and the micro-moths *Oecophora bractella* L., *Epinotia demarniana* F.v.R. and *Spatalistis bifasciana* Hb. Three of the micro-moth species recorded are first records for the vice-county (VC54), these being *Batia unitella* Hb., *Pammene fasciana* L. and *S. bifasciana* (A.M. Emmet, *pers. comm.*).

The study involved simultaneous sampling of four sites, each in a different wood, using standard Robinson patterned mercury-vapour light traps (fitted with 125W MB/U bulbs), which were operated throughout the night from before dusk till after dawn on the nights of 25/26 June, 8/9 July, 21/22 July and 1/2 September 1995. Trap-sites in rides were chosen at Stainfield Wood (S) (TF 118721) and Hatton Wood (H) (TF 162748) to include sampling of the fauna present in rides, whereas at Ivy Wood (I) (TF 145737) and Great West Wood (G) (TF 107763) trap-sites were on minor tracks some 30 metres into the woodland stands, where the trees met overhead and where there were only small gaps open to the night sky. The trapping programme was supplemented by some baiting for adults, using wine-ropes, and by beating and searching for larvae. Waring (1995) describes and illustrates the technique of wine-roping. Full details of the results at the Bardney Limewoods are given in Waring (1996), including photographs and descriptions of the trap-sites and details of the numbers of individuals of each species per trap per night.

Tables 1 and 2 summarise the results of greatest interest. Table 1 shows the occurrence at the traps of the Red Data Book and Nationally Scarce moths (as recognised in Waring, 1994 and, for the micros, Ball, 1986). Table 2 shows the occurrence of species which are considered Local on a national basis (following Waring, 1994) or which are more widespread but of interest in the context of Lincolnshire.

Table 1:

Red Data Book & Nationally Scarce species recorded during the fieldwork in 1995.

Species	National Status	Sites			
		S	I	H	G
Pauper Pug <i>Eupithecia egenaria</i>	RDB3	1 (25.vi)	1 (25.vi)	—	2 (25.vi)
<i>Oecophora bractella</i>	pRDB3	—	1 (8.vii)	1 (8.vii)	1 (8.vii) 1 (21.vii)
Mere Wainscot <i>Photedes fluxa</i>	Notable B	5 (8.vii) 1 (21.vii)	—	—	—
<i>Epinotia demarniana</i>	Notable B	—	1 (25.vi)	—	—
<i>Spatalistis bifasciana</i>	Notable B	—	—	—	1 (8.vii)

Note that a “—” in the Tables only means that the species was not found in the relevant trap session(s). The species may well be present at the site, but missed detection on that particular sampling occasion. The counts in the Tables show the number of individuals on each date. Counts in square brackets refer to individuals seen at additional lights or bait where the species was not recorded in the main trap.

Notable B is a subdivision of the Nationally Scarce category and for macro-moths is applied to species recorded from 31-100 10km squares in Great Britain since 1980. For the less well recorded micro-moths this grade is applied to species known from between eight and 20 vice-counties. Local macro-moths are defined in Waring (1994) as species which are localised in Britain, having been recorded from between 101 and 300 10km squares since 1980, or 1960 where more recent national distribution maps are not available. Note that the Local category covers both species which are patchily distributed throughout Britain and species which are confined to particular areas but may be generally distributed within these. Species known from more than 300 of the 10km squares in Britain are considered Common in terms of distribution. Some of the Common species are often also numerically abundant but others might be seen only in small numbers at individual localities. This grade does not mean that the species occurs everywhere or is found in all habitats.

Note that the Broad-bordered Bee Hawkmoth *Hemaris fuciformis* L. (Notable B) was seen by day on 25 June 1995 by Chambers Plantation, *en route* to Ivy Wood by Keith Shaw and the live specimen passed to me for confirmation. Several others had visited flowers in Keith's garden on the edge of this wood during the month.

The distinctive black and yellow *Oecophora bractella* L. had not been recorded in Lincolnshire before 1995 (A.M. Emmet & R. Johnson, *pers. comm.*). During the study single specimens were collected on 8/9 July at Ivy Wood (Waring), Hatton Wood (Lorand), and Great West Wood (Chainey and Spence) and the moth was still about on the session on 21/22 July when Rex Johnson took one in Great West Wood. The larva feeds on debris under the bark of various trees and in rotten stumps (Emmet, 1988).

A number of the species recorded during the project are of considerable interest at the county level, some of which are not particularly localised on a national basis. Some comments on the status of these in Lincolnshire are given below. These comments are based upon information given by Duddington and Johnson (1983), updated according to more recent largely unpublished information from Rex Johnson, the county moth recorder. There are now over 30 moth recorders in Lincolnshire contributing records to Rex (*pers. comm.*) and a more detailed impression of the moth fauna of the county is developing year by year.

Orange moth *Angerona prunaria* L: We found this large attractive moth in considerable numbers at Stainfield Wood, on both the trapping sessions in July (about 50 individuals were seen in and around two lights on 8 July 1995) but in none of the other three woods. Furthermore, it is such a readily detectable species that it is unlikely to have been overlooked in these and is most probably absent. Stainfield Wood is one of only two sites currently known in the county, the other being Callans Lane Wood near Boston. There are old records for a number of other woods in Lincolnshire and these are listed in Duddington and Johnson (1983).

Pinion-streaked Snout *Schrankia costaestrigalis* Steph.: Hardy recorded inland in the county, but likely to be overlooked, owing to its micro-moth-like appearance. Well established at Donna Nook on the east coast (Dick Lorand). Singletons were recorded at Ivy Wood on the night of 8/9 July (PW) and Hatton Wood on 21/22 July (D. Lorand).

Mere Wainscot *Photedes fluxa*: Recorded from two or three sites in 1995, bringing the total current in Lincolnshire to about half a dozen. Associated with woodland rides in mid-Lincs. Five were recorded at Stainfield Wood on 8/9 July and one more there on 21/22 July (J. Janes).

Table 2:

Macro-moths recorded during the project which are local on a national basis or are more widespread but of interest in Lincolnshire.

* = confirmed by genitalia dissection by Barry Dickerson.

** = a singleton presumed vagrant because no appropriate habitat or foodplant in this locality. Resident on heathland in the north of the county.

*** = confirmed by genitalia dissection by John Chainey.

Species	National Status	Sites			
		S	I	H	G
Poplar Lutestring <i>Tethea or</i>	Local	1 (8.vii)	—	—	—
Blotched Emerald <i>Comibaena bajularia</i>	Local	To sheet (8.vii)	—	1 (25.vi) 3 (8.vii)	—
Small Emerald <i>Hemistola chrysoprasaria</i>	Local	—	—	1 (8.vii)	—
Birch Mocha <i>Cyclophora albipunctata</i>	Local	—	1 (8.vii)	—	1 (25.vi)
Maiden's Blush <i>Cyclophora punctaria</i>	Local	2 (25.vi)	2 (25.vi) 1 (8.vii) 1 (1.ix)	2 (25.vi) 1 (1.ix)	1 (8.vii) 1 (1.ix)
Satin Wave <i>Idaea subsericeata</i>	Common	—	—	1 (25.vi)	[1] (25.vi)
Large Twin-spot Carpet <i>Xanthorhoe quadrifasciata</i>	Local	To sheet [2] (8.vii)	—	—	2 (21.vii)
Wood Carpet* <i>Epirrhoe rivata</i>	Local	—	1 (1.ix)	1 (25.vi)	—
Beautiful Carpet <i>Mesoleuca albicillata</i>	Common	10 (8.vii)	1 (25.vi)	1 (8.vii)	1 (8.vii)
Scallop Shell <i>Rheumaptera undulata</i>	Local	5 (8.vii)	—	1 (8.vii)	—
Brown Scallop <i>Philereme vetulata</i>	Local	—	—	1 (25.vi)	—
Dark Umber <i>Philereme transversata</i>	Local	[1] to sheet (8.vii)	—	—	—
Currant Pug* <i>Eupithecia assimilata</i>	Common	—	—	—	1 (21.vii)
Clouded Magpie <i>Abraxas sylvata</i>	Local	[1] to sheet (8.vii)	—	—	—
V Moth <i>Semiothisa wauaria</i>	Local	—	—	—	[1] (8.vii)
Scorched Wing <i>Plagodis dolabraria</i>	Local	4 (25.vi)	2 (25.vi)	1 (25.vi)	1 (25.vi)

Species	National Status	Sites			
		S	I	H	G
Lilac Beauty <i>Apeira syringaria</i>	Local	1 (25.vi) 3 (8.vii) 1 (21.vii)	5 (8.vii)	2 (8.vii)	1 (8.vii)
Orange Moth <i>Angerona prunaria</i>	Local	c50 (8.vii) 10 (21.vii)	—	—	—
Lime Hawk-moth <i>Mimas tiliae</i>	Common	1 (8.vii)	—	—	—
Marbled Brown <i>Drymonia dodonaea</i>	Common	1 (8.vii)	1 (8.vii)	3 (25.vi)	—
White Satin <i>Leucoma salicis</i>	Local	[1] to sheet (8.vii) 1 (21.vii)	—	—	—
Rosy Footman <i>Miltochrista miniata</i>	Local	5 (8.vii) 1 (21.vii)	1 (8.vii)	—	13 (8.vii) 17 (21.vii)
Four-dotted Footman <i>Cybosia mesomella</i>	Local	—	4 (8.vii) 2 (21.vii)	1 (8.vii)	—
Scarce Footman <i>Eilema complana</i>	Local	1 (21.vii)	—	—	—
Buff Footman <i>Eilema deplana</i>	Local	[1] to sheet (8.vii)	—	[1] (21.vii)	2 (21.vii)
Least Black Arches <i>Nola confusalis</i>	Local	—	1 (25.vi)	—	—
Purple Clay <i>Diarsia brunnea</i>	Common	[1] to sheet (8.vii)	1 (25.vi)	—	3 (8.vii)
Dotted Clay <i>Xestia baja</i>	Common	3 (21.vii)	1 (21.vii)	[1] (21.7)	—
Heath Rustic** <i>Xestia agathina</i>	Local	1 (1.ix)	—	—	—
Gothic <i>Naenia typica</i>	Local	1 (21.vii)	—	—	1 (8.vii)
Green Arches <i>Anaplectoides prasina</i>	Common	10 (25.vi) 2 (8.vii)	1 (8.vii)	—	[1] (8.vii)
Orange Sallow <i>Xanthia citrigo</i>	Common	2 (1.ix)	—	1 (1.ix)	—
Sycamore <i>Acronicta aceris</i>	Local	1 (21.vii)	—	—	—
Svensson's Copper Underwing <i>Amphipyra berbera</i>	Local	—	—	—	2 (1.ix)
Small Clouded Brindle <i>Apamea unanimitis</i>	Common	1 (25.vi)	—	2 (25.vi)	1 (8.vii)
Slender Brindle <i>Apamea scolopacina</i>	Local	1 (21.vii)	—	[1] (21.vii)	—

Species	National Status	Sites			
		S	I	H	G
Rufous Minor*** <i>Oligia versicolor</i>	Local	—	—	—	[1] (8.vii)
Scarce Silver-lines <i>Bena prasinana</i>	Local	[1] to sheet (8.vii)	—	—	—
Beautiful Hook-tip <i>Laspeyria flexula</i>	Local	3 (8.vii)	2 (8.vii)	—	3 (8.vii)
Pinion-streaked Snout <i>Schrankia costaestrigalis</i>	Local	—	1 (8.vii)	1 (21.vii)	—

Wood Carpet *Epirrhoe rivata* Hb.: Only two Lincolnshire sites are given in Duddington and Johnson (1983), both pre-1970, but it is acknowledged that the species is easily confused with the much more widespread Common Carpet *E. alternata* Müll. The Bardney specimens were confirmed by genitalia dissection (B. Dickerson). One was recorded in Hatton Wood on 25/26 June (PW) and one in Ivy Wood on 1/2 September (PW).

Beautiful Carpet *Mesoleuca albicillata* Hb.: Until 1995, recorded from few sites in Lincolnshire but recorded widely in 1995 and seems to have had a good year. Probably persists at low density in other years but examination of the new records may reveal evidence of dispersal. One was recorded in Ivy Wood on 25/26 June (PW) followed by ten in Stainfield Wood (Janes) and singletons on Hatton Wood (Lorand) and Great West Wood (J. Chainey), all on 8/9 July.

Currant Pug *Eupithecia assimolata* Doubl.: A singleton came to light in Great West Wood on 21/22 July (R. Johnson) and was confirmed by genitalia dissection (B. Dickerson). There are few confirmed records for Lincolnshire. The species is likely to be under-recorded because it is difficult to distinguish from several other *Eupithecia* species without dissection.

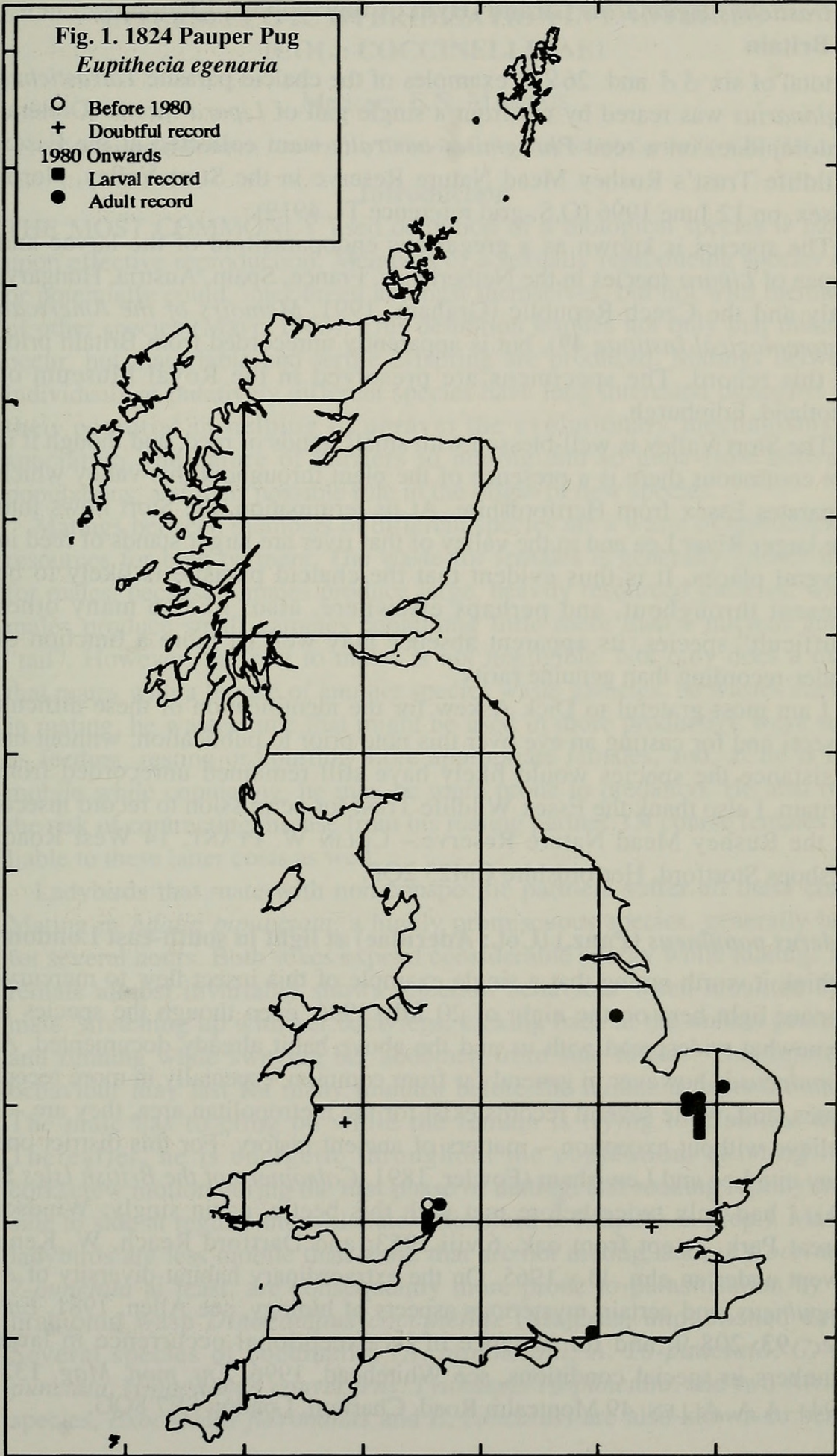
Acknowledgements

I would like to thank all the following for their valued contributions to this project: Graham Weaver of English Nature, for conceiving the project and for spending time with me in the field selecting the trapping sites; the following volunteers who so kindly assisted me by manning light traps: John Janes, Rex Johnson, Dick Lorand, Mick Speight, Geoff Wright, John Chainey and Jenny Spence; Keith and Doreen Shaw for their company as hosts living by Chambers Plantation; Barry Dickerson for identifying the microlepidoptera we collected during the project and for undertaking the

genitalia dissections which confirmed the Pauper Pug and other species as noted; and Rex Johnson again, for valuable discussion on the status of certain species in Lincolnshire. Copies of the full report, which comprises light trap catches in sites with different woodland management regimes, have been lodged at the offices of English Nature at Grantham and the Forest Enterprise Sherwood and North Lincolnshire District office, and with Rex Johnson, County Moth Recorder, and the above-named trap operators.

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