

**POLYXENUS LAGURUS (LINNÉ) IN TRADITIONAL ORCHARDS**

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A previous paper (Alexander, 2006) reviewed personal data on the habitat associations of the bristly millipede *Polyxenus lagurus*. Recent work on the invertebrate fauna of traditional orchards across southern Britain has produced new records and raised further questions about its habitat preferences.

During 2004 the author was involved in a large research project commissioned by English Nature to investigate the biodiversity of a suite of traditional orchards (Lush *et al*, 2009). The study sites were in Devon (3 sites), Cambridgeshire and Kent (one site each). Interestingly, *Polyxenus lagurus* was found to be present (in abundance) in just one of these five orchards: Colston Farm (SX750648), S. Devon. Its apparent absence from Luscombe Farm Orchards (SX748637) was particularly striking as these two sites are within 1km of each other and therefore experience similar climatic conditions. As the project brought together a broad set of data on the orchards, it might be instructive to compare and contrast the findings for the two sites.

Some key features of the two orchards are shown in Table 1.

**TABLE 1:** Comparative data

	<b>Colston</b>	<b>Luscombe</b>
<b>Physical environment</b>		
Altitude	30-40m	80-110
Gradient	10%	5-30%
Surface soil	Sandy loam; freely draining, slightly acid, low fertility	Sandy loam, freely draining, slightly acid, low fertility
Aspect	NE to N	E to SE
<b>Biological environment</b>		
Tree age structure (years)	80+, 20-30, & recent plantings	80+ (a few only), 18 (most trees)
Epiphytic lichens	<i>Usnea articulata</i> absent, so presumably a less humid environment	The high humidity requiring <i>Usnea articulata</i> present on about 10 trees

Both are currently under organic fruit production (apple juice and cider), and both have been orchards for in excess of 100 years. Unfortunately estimates of canopy cover are not available – the Colston Farm orchard had a more open aspect and was notably well-lit, in contrast to the Luscombe Farm orchard which was more enclosed within a well-wooded stream valley. This may well explain the presence/absence of the lichen *Usnea articulata*, which requires high humidity levels, and perhaps also provides clues about *Polyxenus lagurus*. None of the other features appear to provide a better explanation. Does *P. lagurus* favour relatively sun-exposed sites with moderate humidity levels?

The author has also found *P. lagurus* in other traditional orchards in Devon and more widely in Forest of Dean District, West Gloucestershire, but the millipede is by no means a regular or predictable feature (Table 2). Unfortunately most of these visits have been relatively brief and the level of site survey very restricted in comparison to the 2004 study.

These records suggest that *P. lagurus* is widespread in traditional orchards in the west of England (Devon and especially West Gloucestershire) but has not been found in any further east – Cambridgeshire and Kent sites were included in the 2004 study, and the author has also been working in a large number of Kent

orchards, as well as in East Gloucestershire, Herefordshire and Worcestershire, in recent years. Examination of the distribution map (Lee, 2006) shows that the species is actually present in these areas and it may be that the local orchards do not meet its exacting requirements under the different climatic conditions.

**TABLE 2:** Records from other traditional orchards

Location	Date of record (s)	Tree species	Situation where found
<b>South Devon</b>			
Castle Orchard, Compton, Marlton (SX8664)	11/ix/2007	Apple	Knocked from branches
<b>West Gloucestershire</b>			
Broadway Farm Orchards, Westbury-on-Severn (SO7514)	25/v, 26/vi, 15/vii/2003	Apple	Knocked from branches & also found in dry brown-rotten heartwood in the trunks
Denny Hill Orchard, Minsterworth (SO7516)	13/iv/2002	Apple	
Pear Tree Farm Orchards, Pope's Hill, Blaisdon (SO684152)	28/ix/2006	Plum	Abundant (>100 individuals) on trunk of a standing dead tree
Placket Pool Orchard, Minsterworth (SO7616)	13/iv/2002	Pear	Tree stump
Tibbs Cross, Green Bottom, Blaisdon (SO6715)	23/vi/2002	Plum	Brown rot in old standing trunk
Woodend Farm orchards, Twynning (SO8935)	24/x/2007	Plum	Colony on trunk

Humidity patterns are clearly an important factor determining the presence of *P. lagurus* but the relationship appears very complex. Lee (2006) mentions that the millipede is best sought on stone walls at night, especially in humid conditions, but the permanently humid conditions required by the lichen *Usnea articulata* (see above) appear inimical. Perhaps wide fluctuations in humidity is the key? - relatively drying conditions most of the time, discouraging luxuriant plant growth on the bare surfaces, but with intermittent periods of high humidity to permit exploration and feeding?

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#### REFERENCES

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