Microplitis ocellatae (Bouché, 1834) (Hymenoptera: Braconidae) in the Vale of Evesham, Worcestershire.

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Introduction

On 17 July 2015 I unknowingly transported a neonatal larva of an Eyed Hawk Moth *Smerinthus ocellata* (L., 1758) from an apple tree at Bengeworth, Evesham (SP04) to the adjacent hectad at Little Comberton, Worcestershire (SO94) in my car. On discovering the larva I placed it on an apple tree *Malus domestica* 'Flanders Pippin' and monitored its development.

Discussion

Initially the larva fed rather slowly but eventually began to consume more foliage. By late September it had seemed not to attain quite the size expected of this species. Otherwise its behaviour and appearance seemed normal (Fig. 3) as from time to time it moved around the tree to take advantage of fresh foliage. The larva demonstrated the well-known manifestations of crypsis in relation to its immediate background including those of patterning, cuticular surface structures and pigmentation (01 & 02).

01. Larva of Eyed Hawk Moth *Smerinthus ocellata* on *Malus domestica* cv 'Flanders Pippin' parasitised by larvae of the braconid wasp *Microplitis ocellatae*, Little Comberton, Worcestershire, 29 August 2015. Paul Whitehead

02. Larva of Eyed Hawk Moth *Smerinthus ocellata* on *Malus domestica* cv 'Flanders Pippin' parasitised by larvae of the braconid wasp *Microplitis ocellatae*, Little Comberton, Worcestershire, 29 August 2015. Paul Whitehead

By late September no evidence of the pre-pupal stage of the larva was observed. Then, more or less synchronously during the morning of 24 September 2015, 66 larvae of a braconid wasp *Microplitis ocellatae* (Bouché, 1834) emerged directly through the larval cuticle (Fig. 4) when they immediately began the process of cocoon-weaving by rapid rotational movements of the head. These cocoons rapidly hardened and fell to the ground during which time the remnants of the hawk moth larva finally expired, its role as an endoparasitoid support system completed.

03. Mature larvae of Eyed Hawk Moth *Smerinthus ocellata* containing 66 fully-grown larvae of the braconid wasp *Microplitis ocellatae*, Little Comberton, Worcestershire, 20 September 2015. Paul Whitehead.

04. Mature cocoon-spinning larvae of the braconid wasp *Microplitis ocellatae* emerging from larva of Eyed Hawk Moth *Smerinthus ocellata*, Little Comberton, Worcestershire, 24 September 2015. Paul Whitehead

The human response to parasitism is not infrequently skewed by a long-entrenched 'sympathetic' perceptions of 'pests', hygiene and breeding success which is probably why I viewed the appearance of 66 larvae exiting through the larval cuticle with some reserve. Such a view is entirely subjective. The distribution of *M. ocellatae* in Britain is probably wider than published records suggest, partly because of the at least occasional acceptance by it of larvae of the Poplar Hawk Moth *Laothoe populi* (L., 1758). *M. ocellatae* is evidently widely distributed in England with Northumberland being one of the more northern locations (Dr Mark Shaw *in litt*., 28 September 2015).

Harper & Simpson (2001) believed that *S. ocellata* was a localised resident in Worcestershire so that its presence in a 60 year old suburban garden within the Evesham conurbation has some biological conservation significance. During the 1990s *S. ocellata* was found to be locally widespread by man-made wetlands around the southern fringes of Bredon Hill, Worcestershire (SO93), favouring various willow species and hybrids.

Acknowledgements
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References

Harper, M.W. & Simpson, A.N.B., 2001. *The larger moths and butterflies of Herefordshire & Worcestershire*. pp. i-xvi, 1-195. Butterfly Conservation West Midlands branch.

Images
01. Larva of Eyed Hawk Moth *Smerinthus ocellata* parasitised by larvae of braconid wasp *Microplitis ocellatae*. Paul Whitehead
02. Larva of Eyed Hawk Moth *Smerinthus ocellata* parasitised by larvae of braconid wasp *Microplitis ocellatae*. Paul Whitehead
03. Mature larvae of Eyed Hawk Moth *Smerinthus ocellata* containing 66 fully-grown larvae of the braconid wasp *Microplitis ocellatae*. Paul Whitehead.
04. Mature cocoon-spinning larvae of the braconid wasp *Microplitis ocellatae* emerging from larva of Eyed Hawk Moth. Paul Whitehead