

## Host evidence for *Hypsicera femoralis* (Geoffroy, 1785) (Hymenoptera, Ichneumonidae) in the English Midlands

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### Introduction

A single slightly teneral *Hypsicera femoralis* (Geoffroy, 1785) was trapped on the surface of a compost heap in the conurbation of Evesham, Worcestershire (VC37, SP04, 50 m O.D.), during 2017. There is good evidence to suggest that the host is a pyralid moth consuming desiccated plant material inside the compost heap.

### Discussion

A compost heap at Evesham, Worcestershire has a capacity of about 2.5 m<sup>3</sup>. It is contained by wire chicken mesh which slows the composting process and allows leaves and herbage to form dry mummified beds which sometimes occur as distinct seams within beds of compost.

As part of an extended study of synanthropic Coleoptera the compost heap is covered with a one metre square sheet of rigid black plastic turned down at the edges and sealed in. On 12 September 2017 a somewhat teneral male ichneumonid wasp (01, 02), determined as *Hypsicera femoralis* on the advice of Dr Mark Shaw, was found resting underneath the plastic sheet. Tolkanitz (2011) illustrates the propodea of 17 Palearctic species of *Hypsicera* and taking into account the exact position of the pro-podeal spiracles, the absence of a transverse costula defining the boundary of the superoexternal area of the propodeum and the morphological relationships of all the propodeal areas illustrated by Tolkanitz I am confident that this individual can be assigned to *Hypsicera femoralis*.

The wasp must have emerged from within the compost heap. According to Broad (2016), *Hypsicera* Latreille, 1829, is represented by five British species, all of which are koinobiont parasitoids of Lepidoptera. Despite the vast geographic range of *H. femoralis* (Borges *et al.*, 2005; Choi & Lee, 2017; <http://www.taxapad.com/local.php?taxonidLC=90181335>) I could find little precise data relating to its larval host preferences.

Aeschliman (1989) suggests that the Holarctic tortricid moth *Choristoneura murinana* (Hübner, 1799), a species widely associated with coniferous trees, is a host. According to Gauld (1984), hosts in New Zealand could include oecophorid moths inside buildings. Only two species of moth have been recorded by me inside this particular compost heap, namely the pyralids *Hypsopygia costalis* (Fabricius, 1775) and *Pyralis farinalis* (Linnaeus, 1758), an association cited by Tolkanitz (2011). Both of these species occur fairly widely in south Worcestershire and *P. farinalis* can sometimes occur in numbers in closed compost bins. During 2017 only *H. costalis* was encountered at the site; an imago 24 cms deep in dry herbage on 9 September 2017, possibly an emergent, and a larva under the rigid plastic sheet (*vide supra*) on 6 October 2017. This combination of circumstances inevitably suggests that in Britain and probably elsewhere *H. femoralis* is likely to use synanthropic pyralid moths as its key host group but given the behaviour of their larvae this will doubtless be hard to prove



01. *Hypsicera femoralis*, Evesham, Worcestershire, 12 September 2017. Habitus dorsal aspect. P. F. Whitehead.



02. *Hypsicera femoralis*, Evesham, Worcestershire, 12 September 2017. Habitus ventral aspect. P. F. Whitehead.



03. *Hysicera femoralis*, Evesham, Worcestershire, 12 September 2017. Lateral view of head and mesosoma. The convex face and steeply sloping vertex are distinguishing features of the genus and the glabrous metapleuron is evident. P. F.Whitehead.

#### Conclusion

It seems that in Britain at least, *H. femoralis* is linked to pyralid moths especially, or perhaps principally, synanthropic species such as *H. costalis*. The very distinctive conditions that favour pyralid moths in man-made herbage piles in the more oceanic parts of Europe occur much more widely in drier warm-temperate and sub-tropical climates and no doubt partially explain the vast geographic range of *H. femoralis*. Given a relationship with pyralid moths the British range of *H. femoralis* is likely to be determined by the high dry-matter preference of its hosts (Goater, 1986). British specimens in collections, including those in the Natural History Museum, London (BMNH), are mostly old, thus hindering assessments of the present status and distribution of *H. femoralis* in Britain.

#### Acknowledgements

I wish to thank Dr Gavin Broad (BMNH, London) for providing helpful observations on a draft of this paper and Dr Mark Shaw (Edinburgh) for observations on the genus *Hysicera*.

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#### Images

01. *Hysicera femoralis*, Evesham, Worcestershire, 12 September 2017. Habitus dorsal aspect. P. F.Whitehead..
02. *Hysicera femoralis*, Evesham, Worcestershire, 12 September 2017. Habitus ventral aspect. P. F.Whitehead.
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