

***Cryptophagus lycoperdi* (Scopoli, 1763) (Col., Cryptophagidae) in Worcestershire with notes on the genus**

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Introduction

The beetle *Cryptophagus lycoperdi* (Scopoli, 1763) is recorded for what is evidently the first time in Worcestershire. Three specimens (confirmed by PFW) were collected from the decaying remains of a common earth-ball fungus *Scleroderma citrinum* Pers. at Hartlebury Common LNR SO 823576 on 04.11.2022 by KM. Other regional findings and identification issues are discussed.

Discussion

During unseasonably warm sunny weather on 04.11.2022 the opportunity was taken to visit Hartlebury Common. A small group of fungi *Boletus* spp. was found in an area of sparsely vegetated sandy ground on a steep west-facing slope (01). Amongst them was a decayed common earth-ball fungus *S. citrinum*. When broken open three small beetles were revealed; the remaining intact parts of the fungus were left *in situ* (02).



01. A view looking north along a west facing slope at Hartlebury Common where *Cryptophagus lycoperdi* was found on 04.11.2022. © K. McGee.

Microscopic examination established that the beetles represented *Cryptophagus* sp. in the family Cryptophagidae which are generally difficult to identify. Using Mike’s Insect Keys (on-line) each of the beetles conformed to *Cryptophagus lycoperdi* (Scopoli, 1763) (04) based on the presence of a distinct tooth at the tip of the protibiae and the known association of this beetle with fungi of the genus *Scleroderma* (Mike’s Insect Keys, 2022).



02. Part of the group of decaying fungi where *Cryptophagus lycoperdi* was collected on 04.11.2023. The earth-ball is in the bottom right-hand corner. © K. McGee.

On 26.12.2022 KM visited the Shakenhurst Estate (SO6772). One of several veteran open-grown Pedunculate Oak (*Quercus robur* L.) trees scattered over the site had a large decaying sporophore of *Laetiporus sulphureus* (Bull.) Murrill close to its base (03). It contained specimens of *Eledona agricola* (Herbst 1783) (Tenebrionidae) and a smaller beetle collected for closer examination. This proved to be a *Cryptophagus* sp. with similar features to those collected from Hartlebury Common noting also that it was not from a *Scleroderma* fungus. The specimen was seen by PFW who confirmed it as an example of *C. lycoperdi* from a second very different site.



03. Decaying *Laetiporus sulphureus* on Pedunculate Oak at Shakenhurst where *Cryptophagus lycoperdi* was collected on 26.12.2022. © K. McGee.

Cryptophagus lycoperdi is generally regarded as a mycophilous beetle, adults and larvae feeding on spores and hyphae. It has a widespread distribution in the Palaearctic and Nearctic Regions (Otero, 2013) especially in north-western Europe and southern Scandinavia. There are 150 records for the UK on the NBN Atlas scattered throughout much of central and eastern England and with a few records from Wales and northern England. Three of the records close to north Worcestershire are of interest. One was collected at Kinver, Staffordshire (VC39) in September 2001 during a Staffordshire Ecological Records survey and another was collected at Sutton Park near Birmingham (VC38) in September 1978 by Professor F. W. Shotton FRS. Both sites support lowland heath similar to that at Hartlebury Common where *Scleroderma* fungi can be expected to occur.

There is a further intriguing record of four examples of *C. lycoperdi* collected by Mr M. Bloxham on 01.09.2005 from *Lycoperdon* sp. by the Grand Union Canal at Digbeth (SP080869) close to Birmingham city centre (NBN Atlas). Mr Bloxham kindly substantiated this record and submitted details of an additional *C. lycoperdi* from the Sandwell District of Birmingham (SP017927) observed during September 2018. Taken together these findings indicate that *C. lycoperdi* may be an adaptable under-recorded species occurring in a range of fungi, locations and situations including bee’s nests (Leschen, 1999).

Identification

A key problem with identifying any of the 35 British *Cryptophagus* spp. on sight is that of considerable infraspecific variation, which for species of the *dentatus* group for example (06), can prove daunting.

Cryptophagus lycoperdi has some distinctive features including the dorsal investiture of long hairs and protibiae that bear apical teeth (04). On sight it is readily confounded with *Cryptophagus punctipennis* Brisout de Barneville, 1863 (formerly the *C. pilosus* of British authors) from which it may be separated by the characters mentioned and the generally darker colour. It should be noted however that the Shakenhurst specimen was parti-coloured with much of the central dorsal surface diffusing to red. The example of *C. lycoperdi* shown here (04) has the pronotal punctures strongly contiguous.



04. *Cryptophagus lycoperdi*, Hartlebury Common, Worcestershire, 04.11.2022, K. McGee leg. The apically dentate protibiae can be observed. © P. F. Whitehead.

The illustrated example of *Cryptophagus punctipennis* (05) was found by PFW amongst hedge clippings at Little Comberton, Worcestershire (SO94) on 13.09.1986. The overall similarity between the two species is apparent, and when in 1986 this example was submitted for third party scrutiny it was returned as probably *C. lycoperdi*!

Due to the difficulty of identifying *Cryptophagus* spp. it is recommended that specimens are retained for microscopic examination or internal dissection. Otero (2013) and Duff (2020) offer considerable assistance with this genus of beetles.



05. *Cryptophagus punctipennis*, Little Comberton, Worcestershire, 13.09.1986, P. F. Whitehead leg. The protibiae are not dentate apically. © P. F. Whitehead.



06. *Cryptophagus dentatus* (Herbst, 1793), female from the arboreal fungus *Piptoporus betulinus* (Bull. ex Fr.) P. Karst., Wissett's Wood, SO6772, Bayton CP, Worcestershire, 05.07.2020. K. McGee leg. © P. F. Whitehead.

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Images

- 01.** A view looking north along a west facing slope at Hartlebury Common where *Cryptophagus lycoperdi* was found on 04.11.2022. © K. McGee.
- 02.** Part of the group of decaying fungi where *Cryptophagus lycoperdi* was collected on 04.11.2023. The earth-ball is in the bottom right-hand corner. © K. McGee.
- 03.** Decaying *Laetiporus sulphureus* on Pedunculate Oak at Shakenhurst where *Cryptophagus lycoperdi* was collected on 26.12.2022. © K. McGee.
- 04.** *Cryptophagus lycoperdi*, Hartlebury Common, Worcestershire, 04.11.2022, K. McGee leg. The apically dentate protibiae can be observed. © P. F. Whitehead.
- 05.** *Cryptophagus punctipennis*, Little Comberton, Worcestershire, 13.09.1986, P. F. Whitehead leg. The protibiae are not dentate apically. © P. F. Whitehead.
- 06.** *Cryptophagus dentatus* (Herbst, 1793), female from the arboreal fungus *Piptoporus betulinus* (Bull. ex Fr.) P. Karst., Wissett's Wood, SO6772, Bayton CP, Worcestershire, 05.07.2020. K. McGee leg. © P. F. Whitehead.