Kew ROYAL BOTANIC GARDENS

Lost and Found Fungi Factsheet
Dencoeliopsis johnstonii

bms British Lichen Society ef Esmée Fairbairn FOUNDATION

WHAT TO LOOK FOR?

Yellowish to (mainly) brown, narrowly attached to short-stalked cup-fungi, up to 4 mm in diameter, fruiting on extensive black crusts of a pyrenomycete fungus (*Xenotypa aterrima*) on branches of living or dead *Betula (*birch) trees, from which the bark is visibly being peeled off. *X. aterrima* appears especially to infect lower branches of younger trees, in some cases extensively.

Reports of *X. aterrima* from new sites are of great interest as potential habitats for *D. johnstonii*, and as records in their own right, since it is a rarely reported species considered vulnerable in the current but unofficial "Red Data List of Threatened British Fungi" (Evans *et al.*, 2006).

WHEN TO LOOK?

Dencoeoliopsis johnstonii has been reported in June (Thursley Common, Surrey, England), and October (overmature apothecia at Ballynahone Bog, Northern Ireland). In Denmark this species has been primarily found between February and May (Danish Mycological Society records), and so may represent a spring-fruiting species.

WHERE TO LOOK?

Young or mature birch trees in wet boggy areas, around raised bogs or in lowland heath. Distribution is limited by the associated fungus (*Xenotypa aterrima*) which is apparently also rare but probably under-recorded. The most efficient method of rediscovery may be to identify new sites for *X. aterrima* in similar habitats, and then to periodically reinspect known infected trees.

Dencoeliopsis johnstonii

© A.M. Ainsworth

Xenotypa aterrima

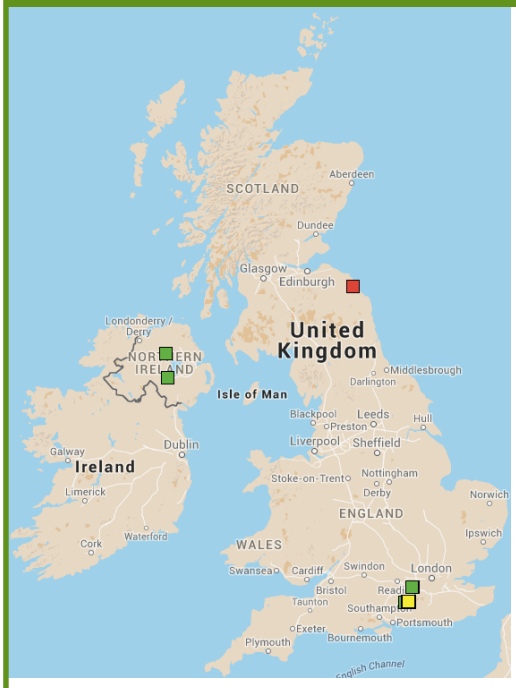
Left © A.M. Ainsworth, right and bottom © B. Douglas

***Dencoeliopsis johnstonii* – known distribution**

Map data ©20015 GeoBasis-DE/BKG (© 2009), Google, basado en BCN ING España

record before 1965 record after 1965 2015-

***Xenotypa aterrima* – known distribution**



Map data ©20015 GeoBasis-DE/BKG (© 2009), Google, basado en BCN ING España

record before 1965 record after 1965 2015-

Dencoeliopsis johnstonii

General description

Apothecia superficial, substipitate, developing from a lumpy black crust of *Xenotypa aterrima*. Apothecia 1-4 mm in diameter, cup-shaped, outside yellow-brown when very young, becoming brown with age, with a paler irregular fringe-like margin. **Asci** 110-150 x 10-13 µm, clavate, 8-spored, with croziers, ascus pore broad and reacting blue in Lugol's solution. **Ascospores** 25-33 x 6-8 µm, hyaline, aseptate to infrequently 2-4-septate, often with several large lipid globules when living. **Paraphyses** cylindrical, 2 µm diam., pale yellowish brown.

Notes: Description adapted from Ahti *et al.* (2000).

Habitat:

One of the two known recent sites for *D. johnstonii* in GB&I is adjacent to a raised peat bog, and the other in wet boggy areas in lowland heath.

Conservation status

Classed as Vulnerable / D2 in the current and unofficial "Red Data List of Threatened British Fungi" (Evans *et al.*, 2006). A Northern Ireland Priority Species. Only 3 sites known, and recorded in 2 sites in the past 50 years.

Associations

Found exclusively as a parasite of the fungus *Xenotypa aterrima* in the UK and the vast majority of countries in which it has been found. *X. aterrima* is apparently specific to *Betula*, and has been found on the branches of both living and dead trees.

D. johnstonii has also been anecdotally reported in France from stromata on *Betula* leaves caused by *Atopospora betulina*. This may be a misidentification or mistake regarding *Dencoeliopsis* or the host, and requires further corroboration. If true then *A. betulina* could potentially represent a more common host.

Look-alikes

None are likely in association with *Xenotypa aterrima*. Other brownish members of the *Rutstroemiaceae*/ *Sclerotiniaceae* have been reported for *Betula*, including *Rutstroemia firma* (approximately 10x larger than *D. johnstonii*), and *Ciboria* spp. (present only on seeds and catkins). *Encoelia furfuracea* has recorded once in GB&I on *Betula*, but if present should be clearly distinguishable by its furfuraceous appearance ("covered in bran-like scales"). *Godronia radulicola* (= *Cenangella radulicola*) is known to also colonise *X. aterrima*, but the species concept is indistinguishable from *D. johnstonii* and is almost certainly a later heterotypic synonym (Nannfeldt, 1936). The only other known member of *Dencoeliopsis* (*D. betulicola*), also occurs on *Betula*, but has only been reported once (from New Hampshire, USA); it can be distinguished by its much smaller apothecia, asci and ascospores. (Zhuang, 1988).

Known sites in GB&I

Recent:

- Thursley NNR, Surrey VC:17, England. 2002 (Thursley Common, along boardwalk), coll.: B.M. Spooner, Grid ref: SU9041; 2006 (Ockley Common) coll. A.M. Ainsworth, Grid ref: SU91594169. Notes: *X. aterrima* present throughout site March 2015.
- Woods surrounding Ballynahone Bog, Londonderry VC:H40, Northern Ireland. 1997, coll.: R. Anderson, Grid ref: H856981 (approx. centre of bog, Irish Grid).

Historic:

- Somewhere near Berwick-on-Tweed, Northumberland VC:68, Northumberland, England, or Berwickshire VC:81, Scotland. Prior to 1844, coll.: Dr. Johnston. Grid ref: NT95, NT94. NU04 or NU05 (most likely sites).

Additional known sites for *Xenotypa aterrima*

- Chobham Common (Long Arm), Surrey VC:17, England. 2011, coll.: A.M. Ainsworth. Grid ref: SU97256600.
- Frensham Common, Surrey VC:17, England. 2007, coll.: A.M. Ainsworth. Grid ref: SU850398.
- Frensham Great Pond, Surrey VC:17, England, 2007., coll.: A.M. Ainsworth. Grid ref: SU84394056.
- Whitley Common, Surrey VC:17, England. 2006, coll.: A.M. Ainsworth. Grid ref: SU92514040.
- Derryadd Lough, Peatlands Country Park, Armagh VC:H37, Northern Ireland. 2003, coll.: R. Anderson. Grid ref: H91136056 (approx. location, Irish Grid).

Literature

- Ahti, T. *et al.* (2000). Nordic Macromycetes, Vol. 1. Ascomycetes. Nordsvamp. Kopenhagen. Denmark.
- Evans, S., Henrici, A. and Ing. B. (2006). "The Red Data List of Threatened British Fungi: Preliminary Assessment." *Unpublished report. British Mycological Society*. Manchester. Available at: http://www.britmycolsoc.org.uk/mycology/conservation/red-data-list/
- Nannfeldt, J.A. (1936). Notes on type specimens of British inoperculate discomycetes (Second part, notes 51–100). *Transactions of the British Mycological Society* 20: 191-206.
- Zhuang, W.Y. (1988). A new species of *Dencoeliopsis* and a synoptic key to the genera of the Encoelioideae (Leotiaceae). *Mycotaxon*. 32: 97-104.