

A new species of *Karstenia* on *Deschampsia caespitosa* from North Argyll, Scotland

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Karstenia inconspicua sp. nov. is described from damp, dead leaves of *Deschampsia caespitosa* from Sutherland's Grove, Barcaldine, Argyll. The species is characterised by its minute size, very small spores for the genus, and scanty excipulum. A brief comparison with the other known species is given.

Karstenia inconspicua Wilberforce sp.nov.
(Fig 1) [New British Record 163]

Apothecia solitaria vel sparsa, ad 300 μm lata, immersa tum emergentia. Discus pallide brunneus, margine pallidior. Excipulum exile, e textura angulare, cellulis ad 5 μm latis. Asci cylindracoeloclavati, ad 40-60 x 6-8 μm , iodo adjuvante non caerulescentes, octospori. Ascospores hyalinae, late fusiformes, 10-12 x 2-3 (-4) μm , 3-septatae. Paraphyses filiformes, ca. 1 μm latae. In foliis moribundis *Deschampsia caespitosa*, Scotland, Argyll, Sutherland's Grove, Barcaldine, 5 August 1997. Holotypus in herb. Wilberforce 1224; Isotypus K(M) 53602.

Apothecia solitaria or a few scattered along short lengths of dead leaves, much more frequent on the non-slatted, abaxial side, variable in size, often minute and less than 50 μm diam., occasionally up to 300 μm , broad, pale brown, developing in the leaf palisade layer and breaking through the epidermis (Fig 1, A). The opening is at first round, later the epidermis splits into irregular teeth to expose the sunken hymenium. The excipulum is rather scanty, but variable, sometimes reduced at the sides to only 2-3 layers of angular hyaline cells which later become compressed. The covering layer of cells arranged in columns, typical of the genus, is

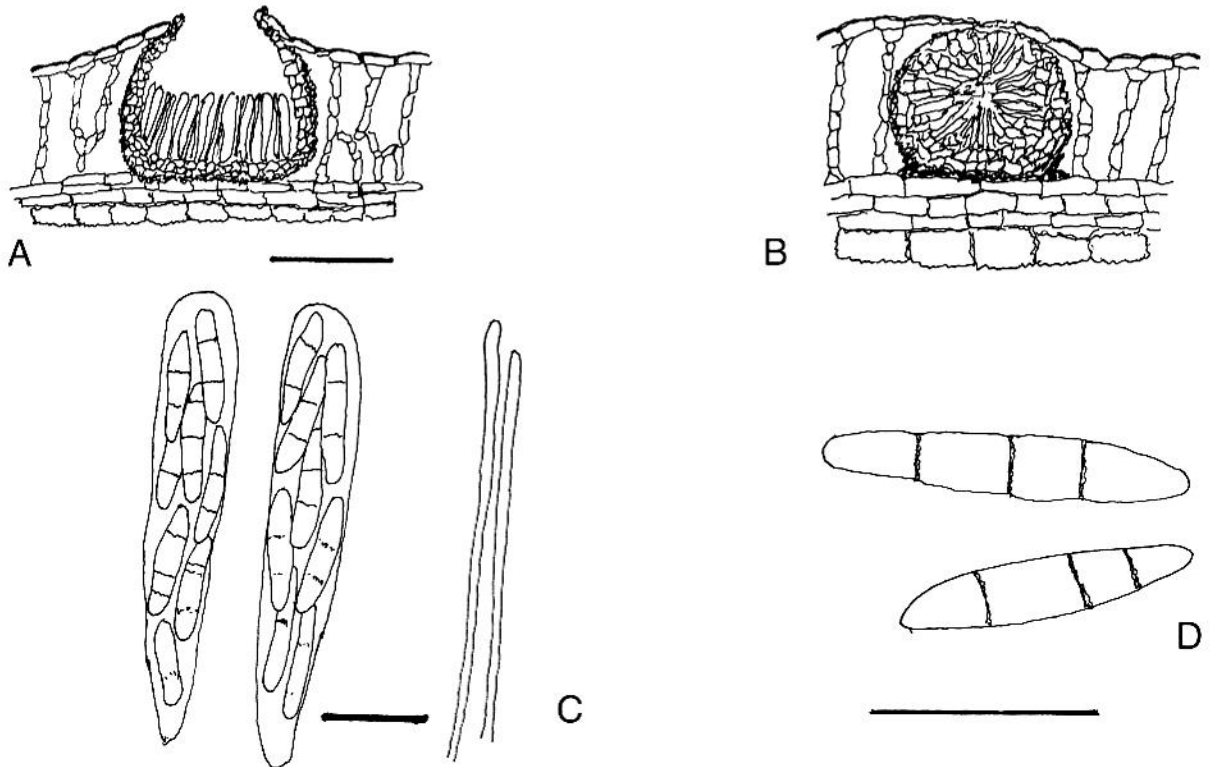


Fig 1. *Karstenia inconspicua*, holotype. A, Section through mature apothecium. B, Section through unerupted apothecium (Scale bar = 250 μm). C, Asci and paraphyses (Scale bar = 10 μm). D, Spores (Scale bar = 10 μm).

Table 1. Host / substrate and microscopic details of various *Karstenia* spp.

	Host	Ascus(µm)	Spore size(µm)	Spore septation
<i>K. inconspicua</i> (#)	<i>Deschampsia</i>	40-60 x 6-8	10-12 x 2-4	3-septate
<i>K. gregaria</i> (#)	Decayed wood	80 x 15	60-80 x 3	multi-septate
<i>K. clematidis</i> (#)	<i>Clematis</i>	55 x 10	35 x 4	4-5 septate
<i>K. lonicerae</i>	<i>Lonicera</i>	65-75 x 14	35 x 3-4	3-10 septate
<i>K. idaei</i> (#)	<i>Rubus</i>	80-100 x 10-14	40-60 x 3-4	multi-septate
<i>K. maydis</i> (*)	<i>Zea</i>	60-80 x 10	30-50 x 1.5	mostly 5-septate
<i>K. macer</i>	Umbellifer	65-80 x 8-10	60 x 2-3	7-septate
<i>K. sorbina</i>	<i>Sorbus</i>	80-100 x 10-13	38-62 x 3-4	multi-septate
<i>K. corticioides</i>	Wood/bark	125-150 x 10	115-125 x 2-3	multi-septate
<i>K. rubicolor</i>	<i>Rubus</i>	50-60 x 7	40-60 x 2-3	5-septate

(#) species known to occur in the UK

(*) As *Stictis maydis* in Sherwood (1977). Transferred to *Karstenia* by Sherwood (1980).

apparent in the early stages (Fig 1, B). The hymenium can be removed as a single unit with the asci and paraphyses tending to remain adherent. The hymenium is only slightly darker than the excipulum which is often exposed at the edges. Asci (Fig 1, C) cylindrical or slightly clavate, iodine negative, 40-60 x 6-8 µm, regularly 8-spored. Ascospores (Fig 1, D) hyaline, 2-3 seriate, 10-12 x 2-3 (-4) µm, broadly fusiform with the lower end slightly tapering, constantly 3-septate, even in the ascus, but this feature is rather difficult to observe. Paraphyses very slender, cylindrical, ca. 1 µm wide, about equalling the asci.

In dead leaves of *Deschampsia caespitosa*, Scotland, Argyll (VC98) Sutherland's Grove, Barcaldine, near Oban, 5 August 1997. Holotype in Herb. Wilberforce 1224; K(M) 53602.;

All but one of the known species of *Karstenia* are on woody substrates. The present species has been found in several locations within the Sutherland's Grove forest area, always from wet leaves found deep under established clumps of *Deschampsia*. Since the apothecial tissue is concolorous with the host leaf, and the opening often very small, it is a remarkably difficult species to find. Further collections from the same area have been made on several occasions since the type collection.

The genus *Karstenia* was erected by Fries in 1885 to accommodate ascomycetes that develop immersed in their substrata and finally erupt through the covering tissue, exposing the hymenium which remains sunken in the host

tissue. There is a characteristic layer of covering cells that is apparent before the hymenium is exposed. These cells are short and terminate in variable hair-like projections. The taxonomic relationship of the genus is not clear, but according to Sherwood (1977) the affinities are with both the Ostroporales and Phacidiales.

The spores of *Karstenia inconspicua* are unusual in being much shorter than those of other species in the genus. This feature, with the reduced excipulum and the host, characterise the species.

Sherwood (1977, 1980) gives detailed descriptions of the then-known species. Graddon (1986) added a further species, *K. gregaria*. These are compared to *K. inconspicua* in Table 1.

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