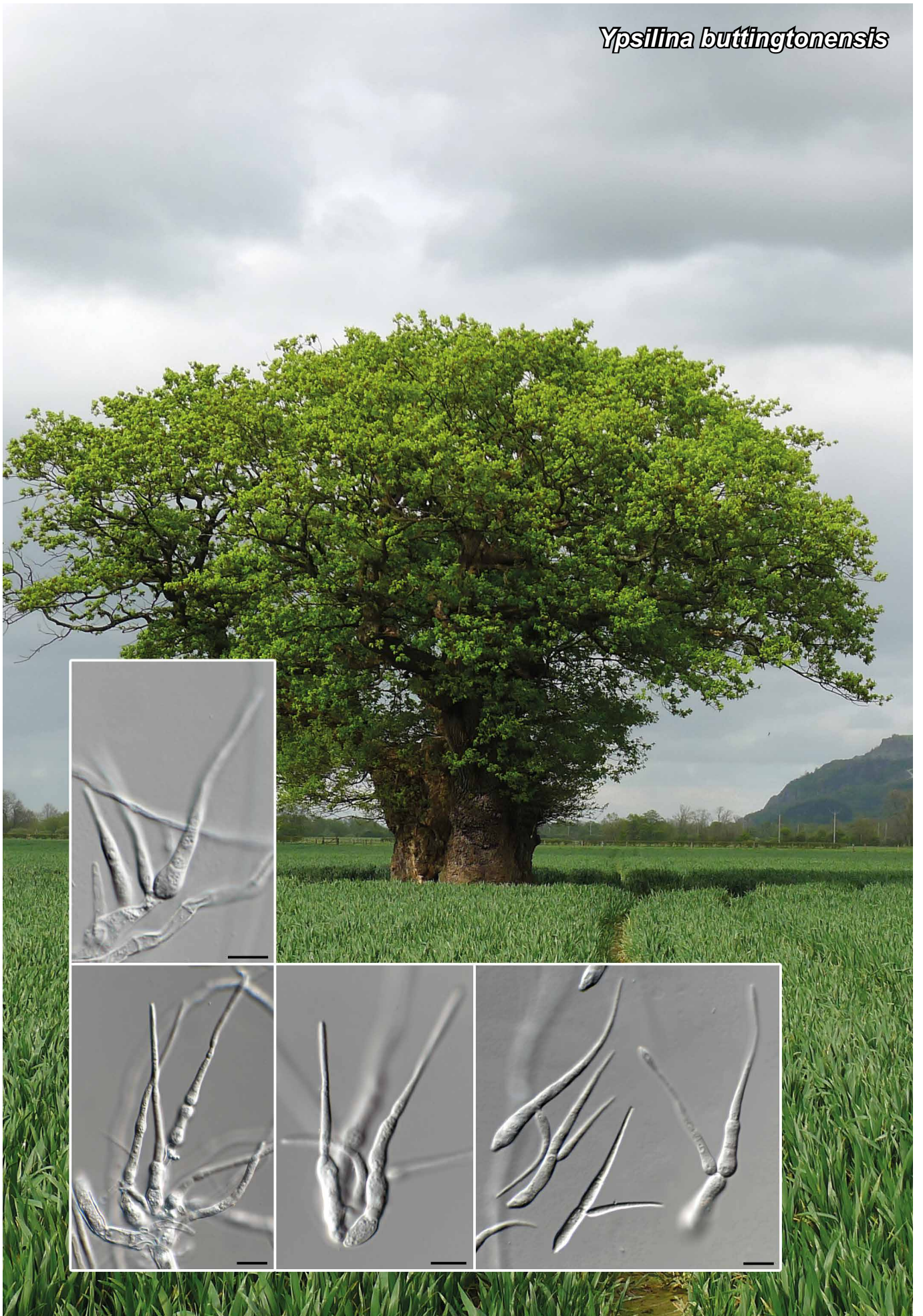


*Ypsilina buttingtonensis*



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## *Ypsilina buttingtonensis* Crous, Wainhouse & Brian Douglas, *sp. nov.*

*Etymology.* Name refers to the collection site, Buttington, Wales, UK, where it was collected.

*Classification* — *Ploettnerulaceae*, *Helotiales*, *Leotiomyces*.

*Mycelium* consisting of hyaline, smooth, branched, septate, 2–3 µm diam hyphae. *Conidiophores* integrated, subcylindrical, hyaline, smooth, septate, sparingly branched, mostly terminal on hyphal ends, 30–100 × 4–6 µm. *Conidiogenous cells* integrated, terminal and intercalary, subcylindrical, smooth, 12–25 × 4–6 µm; proliferating sympodially. *Conidia* solitary but aggregating in mucoid mass, Y-shaped, smooth, hyaline; central cell obclavate, base with truncate hilum, 2 µm diam, apex subobtuse, 2–4-septate, (35–)40–50(–60) × (3–)4–5(–6) µm, with 1–2 lateral branches inserted below the median, pointing upwards, aseptate, obclavate, apex subobtuse, (8–)15–20(–25) × 2(–2.5) µm.

*Culture characteristics* — Colonies erumpent, spreading, with moderate aerial mycelium and folded surface (on MEA), with smooth, lobate margin, reaching 12 mm diam after 2 wk at 25 °C. On MEA, PDA and OA surface dirty white, reverse ochreous.

*Typus.* UK, Wales, Buttington, from heartwood of 1000-yr-old *Quercus* sp. (*Fabaceae*), 14 Mar. 2018, *M. Wainhouse* (holotype CBS H-24356, culture ex-type B0.01.30 = CPC 39109 = CBS 146635; ITS and LSU sequences GenBank MT373372.1 and MT373355.1, MB835408).

*Notes* — Although the ecology of *Ypsilina* remains unknown, *Y. graminea* has been isolated from freshwater foam, roots and leaves of various plants (Descals et al. 1998). *Ypsilina buttingtonensis* was isolated from an ancient pedunculate oak *Quercus robur* in Buttington, Wales (longitude and latitude: 52.678236, -3.1108743). The tree, known as the Buttington Oak, was an open-grown lapsed pollard. At the time when the tree fell in February 2018, it had a trunk girth of 11.03 m at breast height and was believed to be the second oldest oak tree in Wales. The tree had a 1.5 m diam hollow through centre where brown cubical rot could be seen, attributed to *Fistulina hepatica*. The significance of the tree was realised in 2009 when it was 'discovered'.

Cores of wood were extracted from the tree with a 5.5 mm increment bore. Wood chips were taken from the 30 cm cores at 1 cm intervals and placed on low pH 2 % malt agar Petri dishes and incubated at 20 °C in the dark. *Ypsilina buttingtonensis* was cultured from a chip 30 cm into the heartwood.

In addition to *Ypsilina buttingtonensis*, *Fistulina hepatica*, and eight species of ascomycete were also cultured from the wood chips including *Cryphonectria radicalis*, a close relative of the aggressive canker pathogen *Cryphonectria parasitica*, responsible for chestnut blight.

Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the **ITS** sequence had highest similarity to *Helgardia anguioides* (strain CBS 496.80, GenBank NR\_158522.1; Identities = 522/533 (98 %), no gaps), *Oculimacula acuformis* (strain CBS 495.80, GenBank MH861289.1; Identities = 516/535 (96 %), 2 gaps (0 %)), and *Oculimacula aestiva* (strain CBS 114730, GenBank MG934454.1; Identities = 516/535 (96 %), 2 gaps (0 %)). Closest hits using the **LSU** sequence are *Ypsilina graminea* (strain CBS 114630, GenBank MH874529.1; Identities = 877/880 (99 %), 1 gap (0 %)), *Helgardia anguioides* (strain CBS 496.80, GenBank MH873055.1; Identities = 876/880 (99 %), no gaps), and *Rhynchosporium orthosporum* (strain 04CH-Bar-A.1.1.3, GenBank KU844335.1; Identities = 870/874 (99 %), no gaps).

*Colour illustrations.* The Buttington Oak (background photo credit: @thetreehunter Rob McBride). Conidiophores with conidiogenous cells; conidia. Scale bars = 10 µm.

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