

A New Species of *Coniochaeta* from Perthshire

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Summary

A new coprophilous species of *Coniochaeta*, *C. burtii*, with 512-spored asci, is described from deer dung from Glen Dochart, Perthshire.

Key words: ascomycetes, fimicolous, fungi, pyrenomycetes, Sordariales.

Introduction

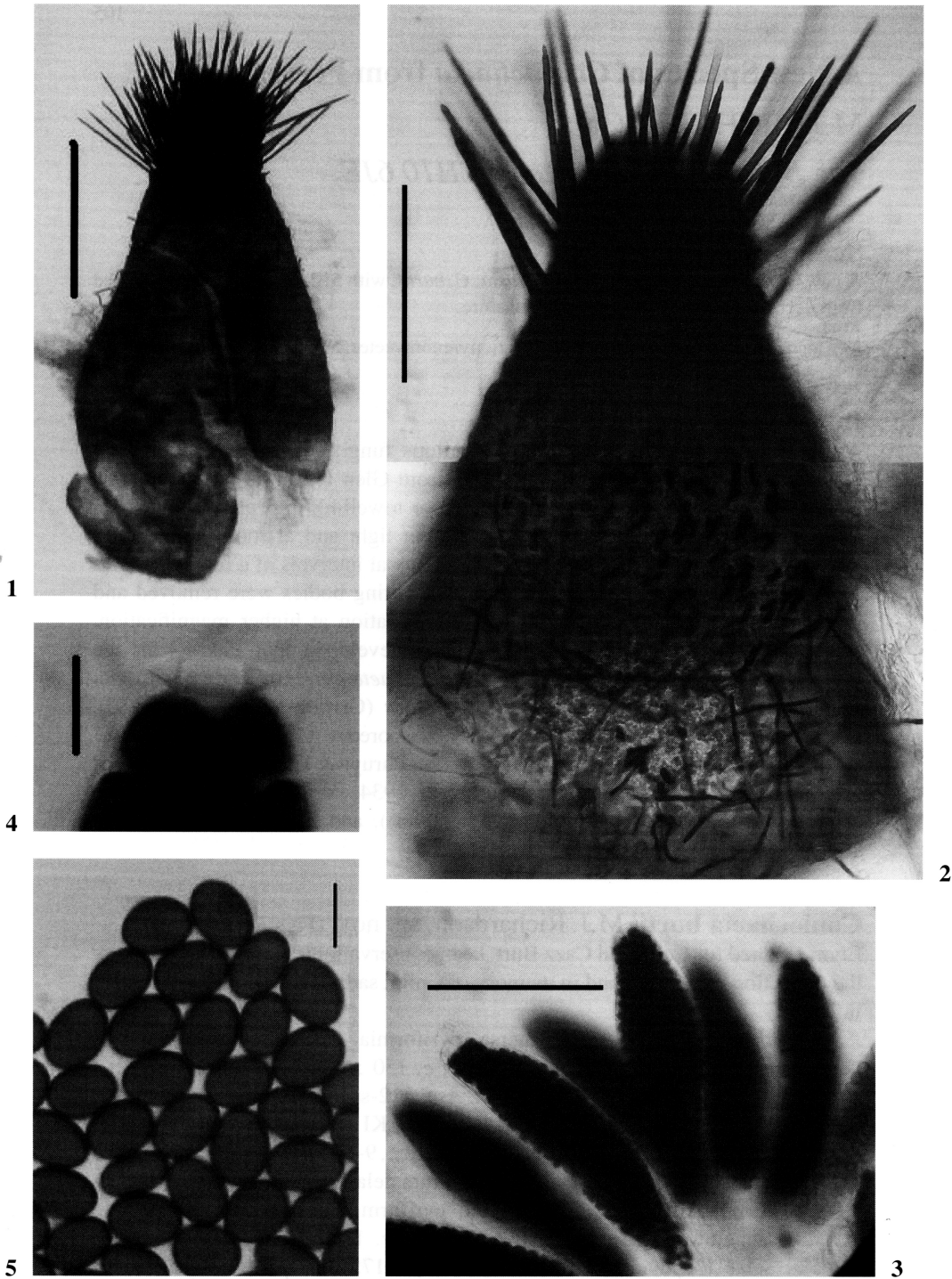
As part of an ongoing study of coprophilous fungi, a sample of deer dung collected by R. Watling on 17 June 2006 from Glen Dochart, Perthshire, was incubated on 18 August 2006 on moist paper towelling in a plastic box, with a lightly fitting transparent lid, under ambient light and at room temperature (c. 15-18°C). Samples were examined frequently at intervals of a few days, with a $\times 7$ –45 magnification stereomicroscope. Fruiting bodies were removed and mounted in water for examination and identification at higher magnification. After five weeks a species of *Coniochaeta* developed that did not fit the description of any of the five species of *Coniochaeta* currently known with asci with more than eight spores (*C. philocoproides* (Griffiths) Cain (32-spored), *C. polymegasperma* M.J. Richardson (64-spored), *Coniochaeta hansenii* (Oudem.) Cain (64-128-spored), *C. polysperma* Furuya & Udagawa (512-spored) and *C. multisporea* Cain (>1000-spored) (Cain, 1934; Furuya & Udagawa, 1976; Mahoney & LeFavre, 1981; Richardson, 1998)), and it is here described as *C. burtii* sp. nov.

Coniochaeta burtii M.J. Richardson, sp. nov. (Figs 1-5)

Etym.: named for Colin and Cazz Burt, keen conservationists, on whose property the collection was made, and in memory of Colin, sadly killed in a road accident in 2004.

Perithecia solitaria, semiimmersa, pyriformia, 420-900 \times 225-400 μm , deorsum semipellucida, collo nigro opaco, c. 150 \times 110 μm , cum setae. Setis aseptatae, nigrum, acutis, <175 \times 5 μm . Asci 512-sporei, clavati, 195-250 \times 50-80 μm , annulo apicali incrassato, 6-8 μm diam, KI -ve. Paraphyses non visae. Ascospores atrobrunnae, aseptatae, subdiscoideae, 9-14.5 \times 6.5-12.8 \times 5-6.5 μm , fissura germinali circumnexusissima, cum stratum gelatinosum. Fimicola.

Perithecia solitary, semi-immersed, pyriform, 420-900 \times 225-400 μm , translucent below, with a darker opaque neck c. 150 \times 110 μm , with setae. Ostiolar setae aseptate, almost black, acute, <175 \times 5 μm , and below the neck short obtuse, papillate hairs <15 \times 5 μm and, towards the base of the perithecium, narrower hairs <80 \times 3 μm . Asci, 512-spored, clavate, 195-250 \times 50-80 μm , apical pore distinct, 6-8 μm diam, non-amyloid. Paraphyses not seen. Ascospores dark brown, aseptate, sub-discoid, 9-14.5 (mean 11.5 μm , $n = 100$) \times



Figs 1-5. *Coniochaeta burtii*. **Fig. 1.** Perithecium – habit. **Fig. 2.** Perithecium with detail of ostiolar seta, sub-ostiolar papillae and lower part of perithecium with flexuous hairs. **Fig. 3.** Fascicle of asci. **Fig. 4.** Ascus tip, showing broad pore. **Fig. 5.** Spores, in flat face view, and after drying and rehydration, so that gel is not apparent. Scale bars: figs 1-3, 100 μm ; figs 4-5, 10 μm .

6.5-12.8 (mean 8.5 μm , $n = 100$) \times 5-6.5 μm , with germ slit around the perimeter, and a surrounding gel. Fimicolous

Holotype: on deer dung (roe?), the Colin Burt Reserve for Wildlife Conservation, Old Mill, Glen Dochart, Perthshire, UK (NN514289, 56.44°N, 4.41°W), coll. R. Watling, 17 June 2006, rehydrated and incubated in a moist chamber by M.J. Richardson, 18 August 2006 (MJR 19/06, E).

Of the five currently described species of coprophilous *Coniochaeta* that have asci with more than eight spores per ascus, four have much smaller spores, less than 10 μm in their largest dimension, while *C. polymegasperma* has larger spores, 13-16.5 μm in their largest dimension, 64-spored asci, and a different perithecial structure which lacks the papillae and flexuous hairs on the mid and lower part of the perithecial wall. The setae of *C. polymegasperma* are also different, shorter and stouter (*cf.* Richardson, 2005, fig. 8). The description of *C. burtii* as 512-spored is based on the counts of spores in seven asci, which were isolated, squashed under a cover slip into a single layer of spores and then photographed with a digital camera. The images were downloaded to a computer and spore counts made from prints of the images. The actual counts were 266+, 410, 437, 486, 498, 500, and 504, so it is assumed that the maximum number of spores would be 512, reduced from the hypothetical 512 by some failed mitotic divisions.

References

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