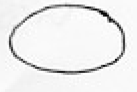
Deer? Glen Dochart, Perthshire. 17.6.06
W4.41, N56.44. Coll. RW, incubated 18.8.06. NN514289

18.8 Podospora intestinacea? ✓ (cf 20/06)

Sp 42-45 × 22.5-24

22.8 Hypocopra spore?  10 × 7 ellipsoid

No 'germ slits' artifact? -11.5 - not constant.

Setae on neck – Coniochaeta ✓

Germ slits are present, but not easily seen.

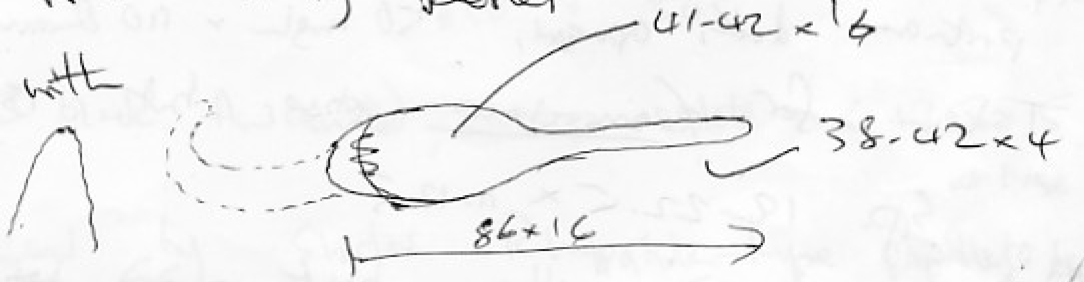
~~Co~~ 8-sp Schizothecium. uniseriate sp.

Scales small, poorly formed.

Schizothecium. Large semi-immersed perithecia 825 high × 580 diam.
with no inflated-cell scales, but v. small

Rhizoidal-type hyphae and single hyphal, hyaline to lightly pigmented, septate setae on neck < 110 long. Asci 8 sp, fusoid-clavate ca 320 × 32. long stalked. Immature spores clavate with v. long pedicel

Ascus tip with small pore



See 3.10 ✓

probably different given pedicellate asci

P. intestinacea

27.8 *P. decipiens* ✓ 8-sp 38.5 × 17.5–18
–20

Coprinus miser ✓

1.9 Numerous globose asci 8-sp, hyaline 10 diam
not associated with a particular structure picked off?

Po. decipiens ✓

26.9 Thecium setae < 160 long, black, acute,
non-septate. Asci very polyspored. 195 × 50–60
Spores 9–10 × 6 × 5 — saccate

Coniochaeta ✓ spores too large for *lemseni*
+ too many, + not enough for *polysperma*

Podospora intestinacea ✓ very large + obvious pore
to ascus

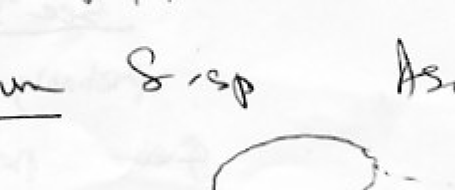
Spores > 28 ?

25.9 perithecium – small – 620 high × 330 diam. Neck
portion dark, opaque, 150 high × 110 diam.
Taken for *Coniochaeta* above, but is *Arnium*. ✓
Leporinum

Sp. 19–22.5 × 11–12.5

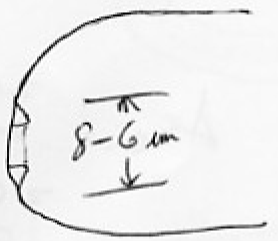
Asci polyspored with blunt rounded top, 190–210 × 45.

Arnium 8-sp Ascus with apical ring. Appendages 50–65
± solid. imo.
uncoloured spores 32–38 × 17.5–19.5
(+ some coloured present).



perithecial neck flexuous hairy – lightly – + some Podospora-like-type hairs
EPTN

and some short, almost hyaline perpendicular hairs on neck near ostiole ca 30 long — extending to flexuous hyphal hairs below



appendages apparently without structure, or with a single faint central 'canal'

✓

Camarochaeta Asci 210 × 74
195 × 80
195 × 61
apical pores 8 diam

Pore plug not blue in KI, but faint blue around pore

Spore count from 1 ascus photographed = 437

2 others 266 + a few others and 410

Spores sub-discoid 11–13 × 9–10 × 5, with surrounding gel in H_2O

28.9. Cop. cortspores ✓ — Check spores later OK.

Camarochaeta perithecia 420 × 225 diam
740 × 360 "
750 × 345 "

Setae ± black, thick-walled, acute, aseptate, < 175 × 5 at base

subtended below by shorter Rhynchostoma-type papillate hairs, < 16 × 5
and some thinner longer hairs towards base < 80 × 3

Asci 210 × 55
225 × 64
234 × 70
225 × 74
210 × 65

225 × 67

4 ascus counts by photo:-
504 498
486 500

Paraphyses not seen

Spores stripped - discard

3.10 Con- pattern 900 825 × 400 diam

Spores discoid to sub discoid

11.2	× 7	"surface" view
12.5	× 10	
11.2	× 9	
14.4	× 10	
14.4	× 12.8	ethickness
9.5	× 6.5	5-6-6.5
12.8	× 10	
9	× 9	
11.2	× 9	
10.3	× 8.5	

Asci 215 × 80
205 × 55
250 × 58
215 × 58
225 × 64
240 × 51
248 × 70
225 × 80
225 × 74
195 × 70

Asci typ

pore 7-9

Spore fold photographed 117.8 wide as marked on plate

Cop. miser ✓ Podospora S-sp, uniseriate, sp 30-32-37 × 16-18.5-19

No scales, small dark papilla in lines of wedc, some sheaves hairs

convolutes

6.10. Arthrin leporinum ✓

9.10 Cop. miser ✓ Sch- ~~con~~ convolutes ✓ brown hairy & large spores etc

19.11 Con. 'hairy' ✓

Arthrin schizothecial pattern, large 1200 µm high × 550 diam →

8-sp. 38.5-45 × 14.5-16, fusoid,
appendages "hollow", truncated at ca 20 µm

Sordariaceous thecial wall
Ascus without apical ring.
Mertax?

Another, with smaller spores, thinner, not always "hollow" appendages, not truncated? 32 × 17.5
+ asymmetrically inserted :-

Sordariaceous type thecial wall.
+ brown hairy - spores See 25.9

✓

17.12 Armin pyriform peritheca Sordariaceous wall
sp variable 8? fusoid 35-45 (-48) × 14.5-19.5 (-22)
irregular no of spores maturing in ascus
no apical ring

Mertax? ✓

Dried 17.12 with Armin
no more Cercophora seen

A New Species of *Coniochaeta* from Perthshire

M.J. RICHARDSON

165 Braid Road, Edinburgh EH10 6JE

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

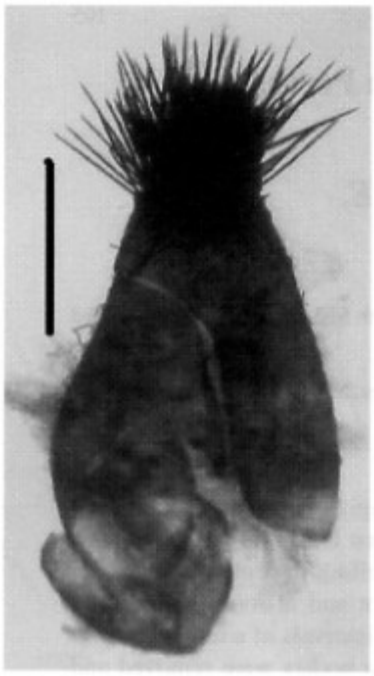
As part of an ongoing study of coprophilous fungi, a sample of deer dung collected by R. Watling on 17 June 2006 from Glen Dochart, Perthshire, was incubated on 18 August 2006 on moist paper towelling in a plastic box, with a lightly fitting transparent lid, under ambient light and at room temperature (*c.* 15-18 °C). Samples were examined frequently at intervals of a few days, with a × 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. multispora* Cain (>1000-spored) (Cain, 1934; Furuya & Udagawa, 1976; Mahoney & LeFavre, 1981; Richardson, 1998)), and it is here described as C. *burtii* sp. nov.

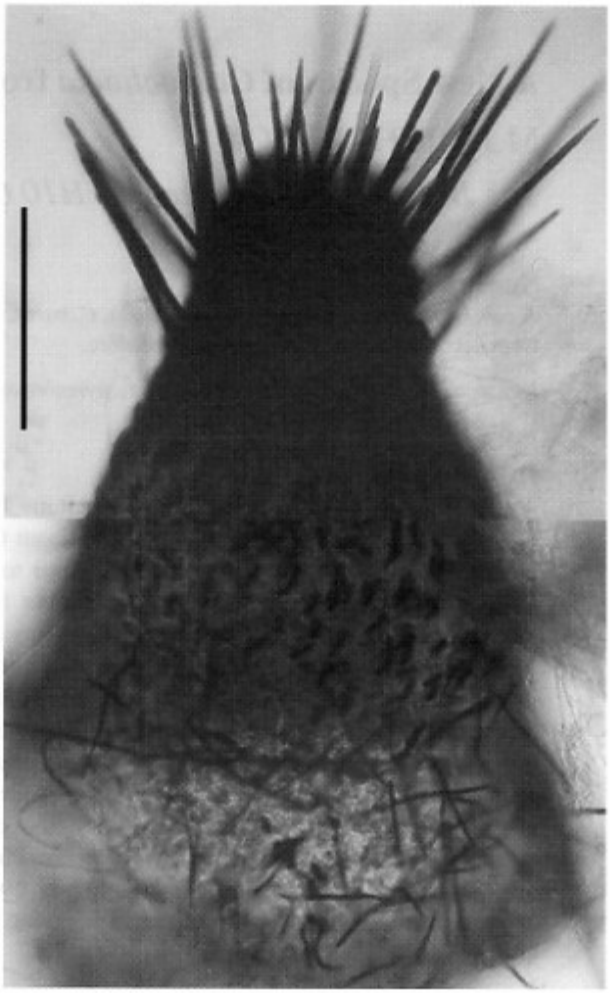
Coniochaeta burtii M.J. Richardson, sp. nov. (Figs 1-5)

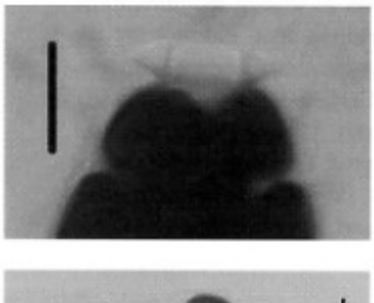
Etym.: named for Colin and Cazz Burt, keen conservationists, on whose property the collection was made, and in memory of Colin, sadly killed in a road accident in 2004.

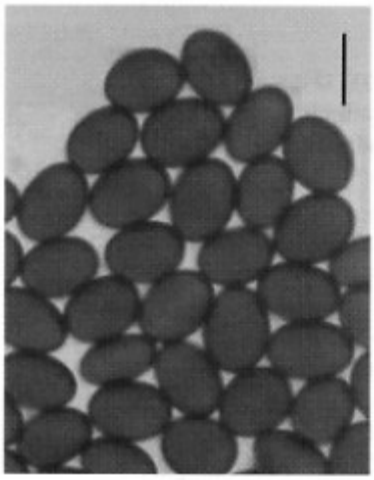
Perithecia solitaria, semiimmersa, pyriformia, 420-900 × 225-400 μm, deorsum semipellucida, collo nigro opaco, *c.* 150 x 110 μm, cum setae. Setis aseptatae, nigrum, acutis, <175 × 5 μm. *Asci* 512-spori, clavati, 195-250 × 50-80 μm, annulo apicali incrassato, 6-8 μm diam, KI -ve. *Paraphyses* non visae.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

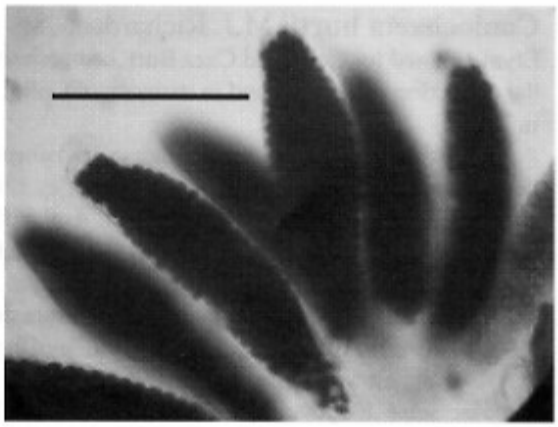
Perithecia solitary, semi-immersed, pyriform, 420-900 × 225-400 μm, translucent below, with a darker opaque neck *c.* 150 × 110 μm, with setae. Ostiolar setae aseptate, almost black, acute, <175 × 5 μm, and below the neck short obtuse, papillate hairs <15 × 5 μm and, towards the base of the perithecium, narrower hairs <80 × 3 μm. *Asci*, 512-spored, clavate, 195-250 × 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) ×











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) × 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.

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