

THE FUNGI OF NORTH HOY, ORKNEY – II

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Seven new species and one new genus of Leotiales are described from North Hoy, Orkney.

The first part of this paper (Dennis & Spooner, 1992) provided an introduction to the area under consideration. It included a brief history of the collecting and recording of fungi on Orkney, and a list of 396 species of fungi collected during seven visits to North Hoy made between 1987 and 1990. In addition to the species listed there, the collections from Hoy yielded seven species of Leotiales which prove to be undescribed, and one which requires a new genus to accommodate it. Descriptions of these species and the new genus are provided in the present account.

Albotricha ammophilae Dennis & Spooner, *spec. nov.* — Fig. 1e–g

Apothecia 0.4–0.6 mm diam., brevistipitata, superficialia. Discus luteolus. Receptaculum cupulatum, pallide bubalinum, pilis albidis ornatum. Pili 80–120 × 3–4 µm, hyalini, angustati, granula superficialia ferentes. Asci 52–62 × 6.5–7 µm, octospori, ad apicem conici, poro in mixtura Melzeri caerulescenti. Ascosporae 10–16 × 2–2.5 µm, hyalinae, cylindrico-fusoideae, non-septatae, guttulate. Paraphyses lanceolatae, 3–4 µm diam., quam asci 15–20 µm longiores. Excipulum ectale e cellulis prismaticis compositum.

Holotypus: Scotland, Orkney, Hoy, Rackwick, 17 Sept. 1990, on *Ammophila arenaria*, R. W. G. Dennis (K).

Apothecia 0.4–0.6 mm diam., short-stipitate, superficial, commonly on inner surface of culms, scattered, solitary or in small groups. Disc plano-concave, smooth, yellowish or pale straw, obscured by hairs when dry. Receptacle cupulate, pale buff or straw-coloured, densely covered with whitish hairs, incurved at the margin when dry. Hairs hyaline, narrow, tapered, obtuse at the apex, 80–120 µm long, 3–4 µm wide at the base narrowed to 1.5–2 µm at the apex, 4–6-septate, wall appearing thickened, bearing irregular granules which are mostly soluble in Melzer's Reagent. Asci 8-spored, 52–62 × 6.5–7 µm, cylindrical-clavate, short-stalked, conical at the apex, pore small, outlined blue in Melzer's Reagent. Ascospores (10–)11–15(–16) × 2–2.5 µm, hyaline, cylindrical or cylindrical-fusoid, straight, sometimes slightly inequilateral, non-septate, guttulate, biseriatae within the ascus. Paraphyses lanceolate, 3–4 µm diam., exceeding the asci by 15–20 µm, thin-walled, 1–2-septate. Ectal excipulum composed of hyaline, irregular prismatic cells 8–15 × 4–6 µm arranged in rows at a low angle to the surface, walls slightly thickened.

The narrow, tapered hairs which bear loosely attached granules are characteristic of *Albotricha*, as are the large, lanceolate paraphyses. Several species are described from grasses, but all differ most notably in spore and hair characters.

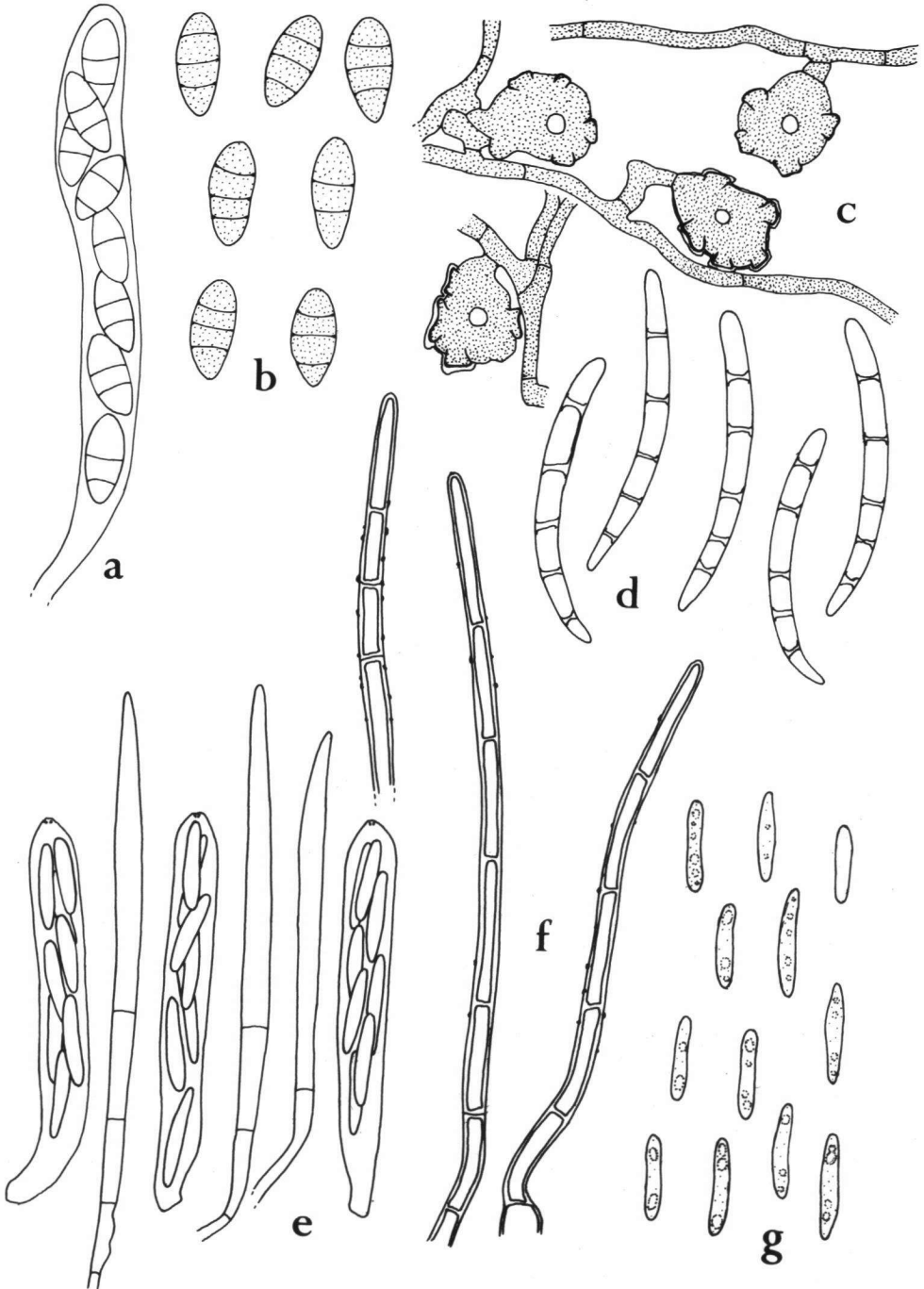


Fig. 1a, b. *Lepteutypa* cf. *hippophaes*. a. Ascus; b. ascospores. — Fig. 1c, d. *Gaeumannomyces* sp. c. Hyphopodia; d. ascospores. — Fig. 1e–g. *Albotricha ammophilae*. e. Asci and paraphyses; f. hairs; g. ascospores. — All $\times 1000$.

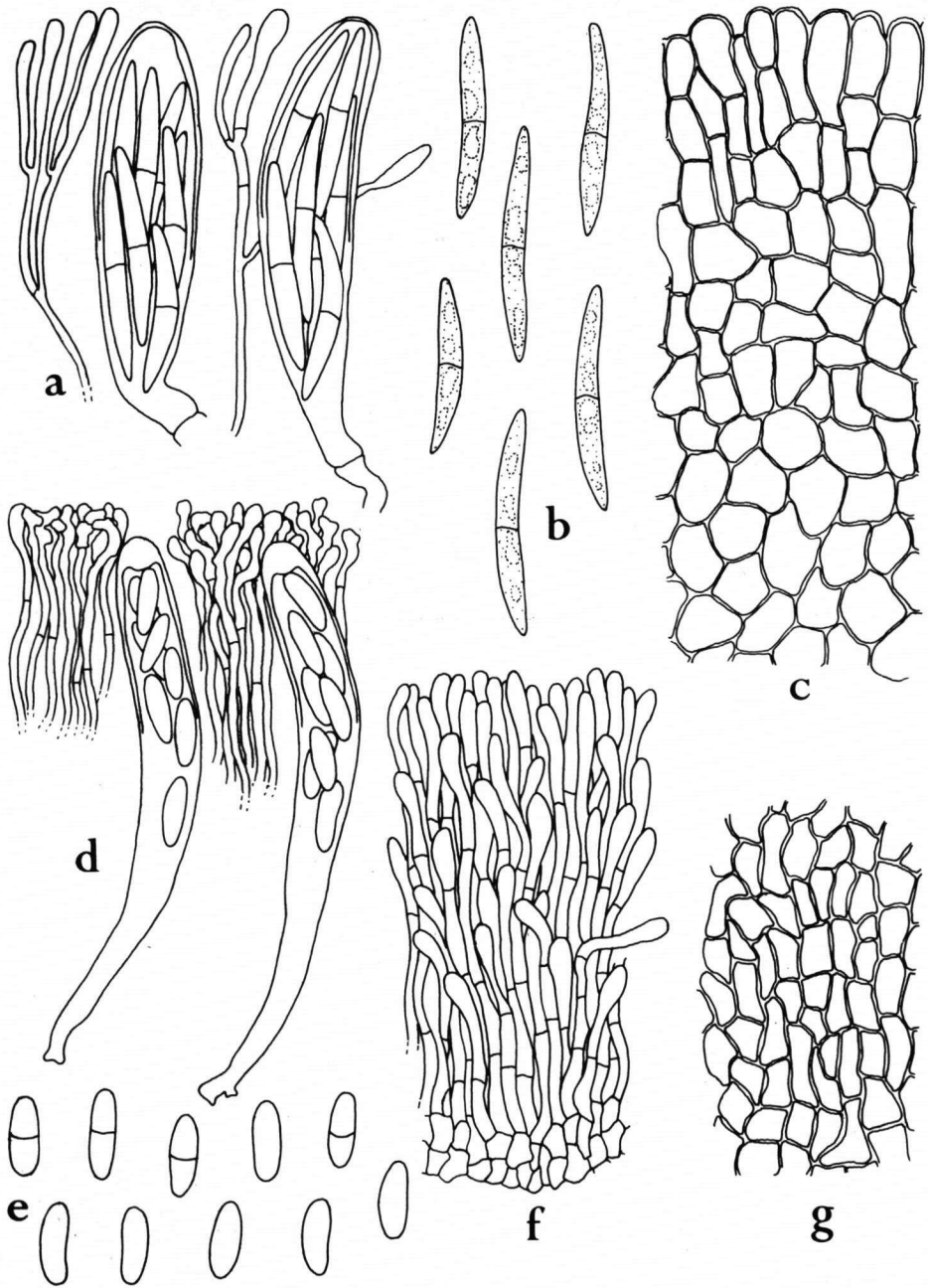


Fig. 2a-c. *Niptera ambigua*. a. Asci and paraphyses; b. ascospores; c. ectal excipulum. — Fig. 2d-g. *Calycellina calycelloides*. d. Asci and paraphyses; e. ascospores; f. marginal excipulum; g. ectal excipulum. — All $\times 1000$.

Calycellina calycelloides Dennis & Spooner, *spec. nov.* — Fig. 2d–g

Apothecia 0.2–0.3 µm diam., sessilia, laevia, luteola. Asci 70–76 × 7.5–8 µm, octospori, cylindrico-clavati, ad apicem rotundati, poro in mixtura Melzeri non colorato. Ascospores hyalinae, anguste ellipsoideae vel aliquantum clavatae, saepe 1-septatae. Paraphyses 1–1.5 µm diam., flexuosae, agglutinatae. Excipulum ectale e cellulis parvis et ad muros aliquantum incrassatis compositam.

Holotypus: Scotland, Orkney, Hoy, Berriedale, on rotten wood of *Salix*, 4 Oct. 1989, R. W. G. Dennis (K).

Apothecia 0.2–0.3 mm diam., gregarious, sessile, narrowed at the base, with a few anchoring hyphae, pale yellow throughout. Disc plane, smooth, without a raised margin. Receptacle shallow cupulate, appearing smooth or virtually so. Asci 8-spored, 70–76 × 7.5–8 µm, cylindric-clavate, tapered to the base, arising from croziers, apex broadly rounded, pore not blue in Melzer's Reagent. Ascospores 9.5–11(–12) × 3.2–3.8 µm, hyaline, narrowly ellipsoid, commonly slightly clavate or inequilateral, often 1-septate, biseriate within the ascus. Paraphyses hyaline, narrow, 1–1.5 µm diam., flexuous, sometimes lobed and agglutinated at the apex, apical wall firm, slightly refractive. Ectal excipulum composed in the lower receptacle of hyaline, subglobose cells 4.5–7 × 3–5 µm with slightly thickened walls, at the margin of narrow, parallel septate hyphae 1.5–2 µm diam., with free, slightly clavate tips.

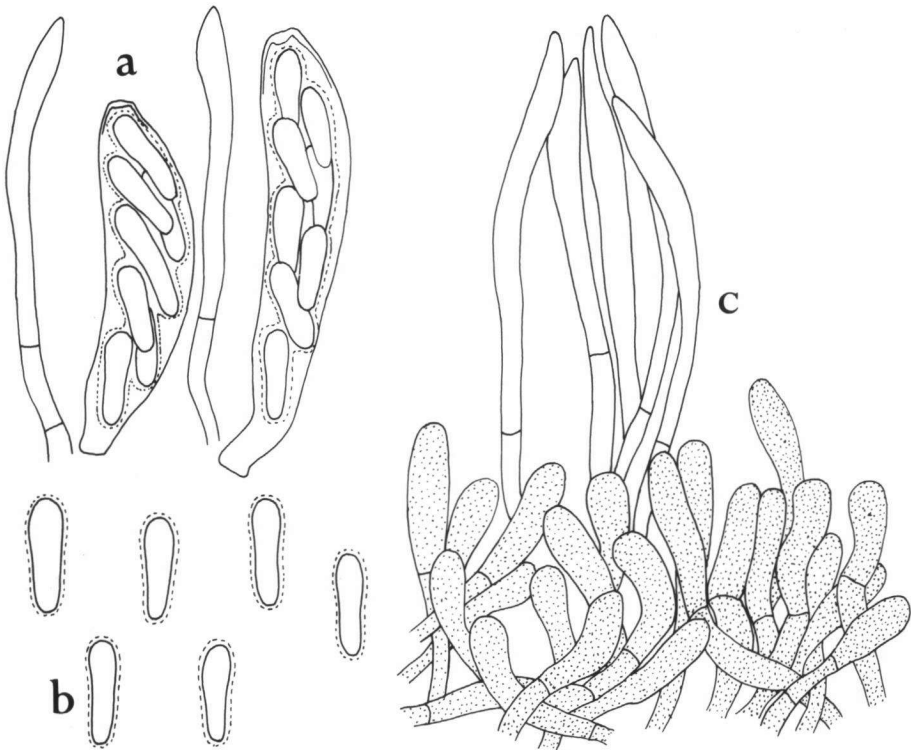


Fig. 3. *Hysteronaevia fimbriata*. a. Asci and paraphyses; b. ascospores; c. marginal structure. — All × 1000.

Differs from typical species of *Calycellina* in lacking a basal ring of brown cells and in the ascus pore remaining unstained in Melzer's Reagent. However, it agrees structurally with this genus. The slightly thickened excipular cell walls and agglutinated paraphyses are characteristic and create a superficial resemblance to species of *Calycella*, for which the species is named.

Hysteronaevia fimbriata Dennis & Spooner, *spec. nov.* — Fig. 3

Apothecia 250–300 µm diam., erumpentia. Discus albidus vel pallide aurantiacus, margine albida fimbriata. Receptaculum infra marginem atro-brunneum. Asci 47–59 × 10–14 µm, octospori, late clavati, poro in mixtura Melzeri non colorato. Ascosporae 12.5–15 µm, hyalinae, non-septatae, cylindrico-clavatae, aliquantum constrictae, vagina gelatinosa circumcinctae. Paraphyses anguste lanceolata, quam asci 5–8 µm longiores. Excipulum ectali e cellulis brunneo-muratis compositum sed ad marginem zonum hypharum hyalinarum lanceolarumque 3.5–4.5 µm diam. ferens.

Holotypus: Scotland, Orkney, Hoy, on dead leaf tip of *Carex panicea*, 21 June 1987, R. W. G. Dennis (K).

Apothecia 250–300 µm diam., at first immersed, becoming erumpent, solitary, gregarious. Disc plane, whitish or pale orange, with distinct white fimbriate margin. Receptacle blackish below, becoming whitish at the margin. Asci 8-spored, 47–59 × 10–12 (–14) µm, broadly clavate, short-stalked, apex truncate-conical, pore not stained in Melzer's Reagent. Ascospores 12.5–15 × 3.5–4.5 µm, hyaline, cylindric-clavate, often slightly constricted near the centre, non-septate, surrounded by a gel sheath. Paraphyses hyaline, narrowly lanceolate, 0–1-septate, 3–3.5 µm diam., exceeding the asci by 5–8 µm. Ectal excipulum composed basally of brown, thin-walled cells, towards the margin becoming hyphal, at the surface developing irregularly arranged septate hyphae, with obtuse free ends 4–5 µm diam., terminating at different levels and overlying at the margin a zone of lanceolate, hyaline, 0–1-septate structures 3.5–4.5 µm diam. which form a distinct fringe to the disc.

The lanceolate marginal hyphae form a distinctive white fringe to the disc. Several other species have similar, though less obvious, marginal hyphae and differ otherwise most notably on spore characters.

Mollisia orcadensis Dennis & Spooner, *spec. nov.* — Fig. 4a–c

Apothecia 200–400 µm diam., superficialia, discoidia, sessilia, late affixa. Discus plano-convexus, albidus, in sicco atro-cinereus. Receptaculum laeve, cinereo-brunneum, ad marginem albidum. Asci 50–60 × 6–7.5 µm, octospori, brevistipitati, ad apicem conici, poro in mixtura Melzeri caerulescenti. Ascosporae 7.5–9.5 × 2.5–3 µm, hyalinae, non-septatae. Paraphyses obtusae, 2.5–3.5 µm diam. Excipulum ectali e cellulis subglobosis tenui-muratis compositum.

Holotypus: Scotland, Orkney, Hoy, Berriedale, on wet, rotten wood of ? *Betula* or *Sorbus*, 13 May 1990, R. W. G. Dennis (K).

Apothecia 200–400 µm diam., superficial on rotten, decorticated wood, gregarious, sessile, discoid, broadly attached, sometimes with pale anchoring hyphae, drying dark grey with slightly paler raised margin. Disc whitish or pale grey when fresh, plano-convex, without a raised margin. Receptacle smooth, whitish at the margin, grey-brown below. Asci 8-spored, 50–60 × 6–7.5 µm, narrowly clavate, short-stalked, conical at the

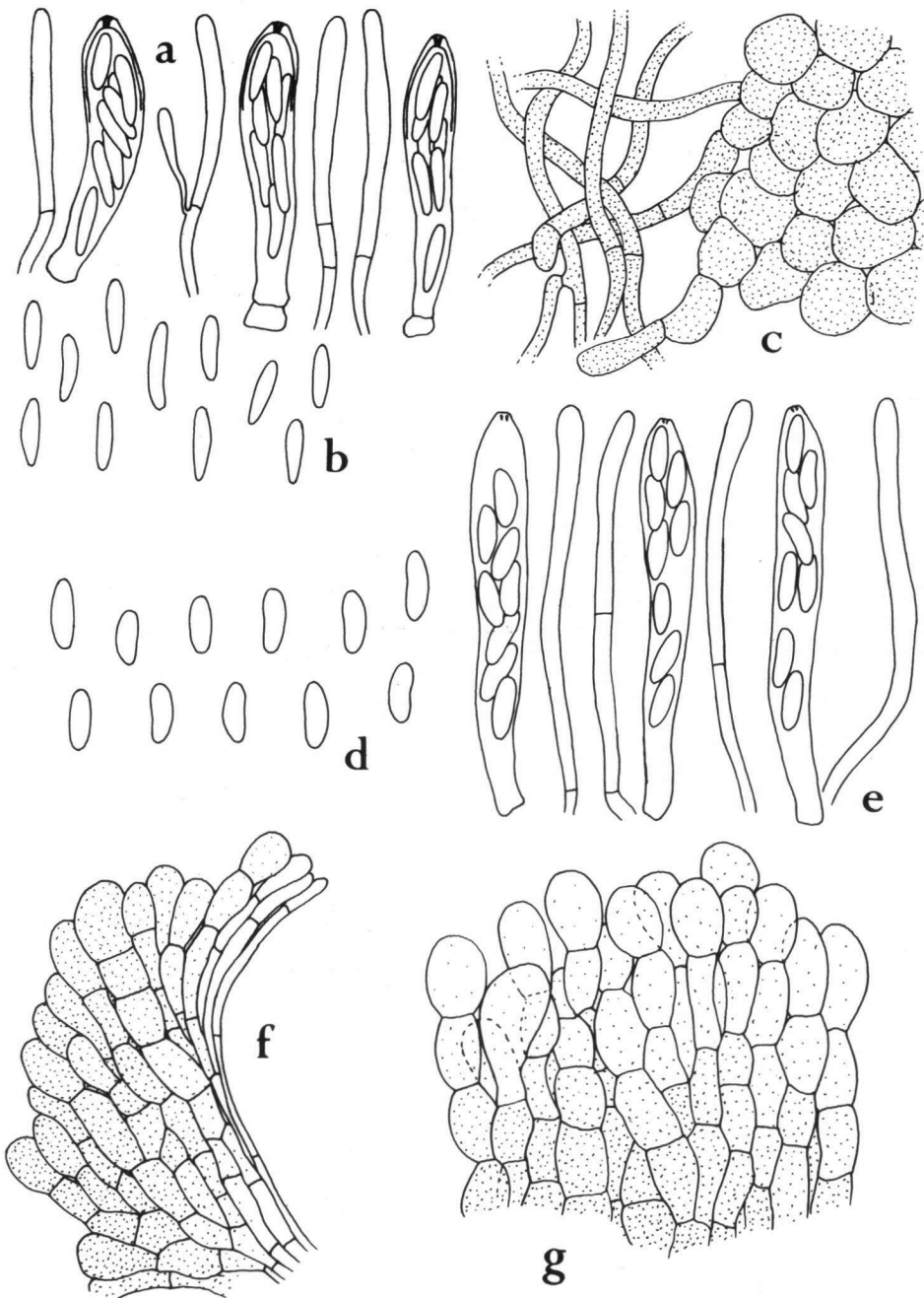


Fig. 4a–c. *Mollisia orchadensis*. a. Asci and paraphyses; b. ascospores; c. ectal cells and anchoring hyphae. — Fig. 4d–g. *Mollisia stromaticola*. d. Ascospores; e. asci and paraphyses; f. vertical section of margin; g. marginal excipulum, surface view. — All $\times 1000$.

apex, pore outlined blue in Melzer's Reagent. Ascospores $7.5-9(-9.5) \times 2.5-3 \mu\text{m}$, ellipsoid, often inequilateral or slightly curved, hyaline, non-septate, biseriate in the upper part of the ascus. Paraphyses hyaline, obtuse, cylindric, not or slightly enlarged at the apex, sparsely septate, $2.5-3(-3.5) \mu\text{m}$ diam. Ectal excipulum composed of radial rows of subglobose or subangular thin-walled cells, more elongated and prismatic towards the margin, brown-walled below, paler upwards and almost hyaline at the margin.

Distinguished by its small, discoid apothecia which have a flat or slightly convex disc, and by the comparatively broad spores.

***Mollisia stromaticola* Dennis & Spooner, *spec. nov.* — Fig. 4d–g**

Apothecia $300-500 \mu\text{m}$ diam., gregaria. Discus concavus, cremeus sed cinereo-brunneo-tinctus. Receptaculum laeve, ad marginem albidum, ad basin cinereo-brunneum. Asci $36-47 \times 6.5-7.5 \mu\text{m}$, octospori, clavati, brevistipitati, ad apicem conici, poro in mixtura Melzeri caerulescenti. Ascosporae $8.5-11 \times 1.8-2.2 \mu\text{m}$, hyalinae, non-septatae. Paraphyses cylindricae, obtusae, $2.5-3 \mu\text{m}$ diam. Excipulum ectali e cellulis subglobosis tenui-muratis compositum, ad basin pallide brunneum et ad marginem hyalinum.

Holotypus: Scotland, Orkney, Hoy, Berriedale, on pyrenomycete stromata on *Betula*, 13 May 1990, R. W. G. Dennis (K).

Apothecia gregarious, sessile, $0.3-0.5 \text{ mm}$ diam., circular or commonly lobed or irregular in outline, seated on or adjacent to old pyrenomycete stromata. Disc concave, smooth, cream, with greyish brown tinge, especially at the centre. Receptacle smooth, pale, whitish or cream at the margin, pale greyish brown below, with narrowed attachment and anchoring hyphae. Asci 8-spored, $36-40(-47) \times 6.5-7.5 \mu\text{m}$, clavate, with short, broad base, apex conical, somewhat thickened, pore $1.2-1.8 \mu\text{m}$ deep, outlined strongly blue in Melzer's Reagent. Ascospores hyaline, $8.5-10(-11) \times 1.8-2.2 \mu\text{m}$, non-septate, cylindric-clavate or cylindric-fusoid, straight, often slightly inequilateral, biseriate within the ascus. Paraphyses hyaline, cylindric, obtuse, $2.5-3 \mu\text{m}$ diam., 1(-2)-septate in lower part, and sometimes branched near the base. Ectal excipulum composed of subglobose or subangular thin-walled cells arranged in radial rows, hyaline or virtually so at the margin, pale brown on the lower receptacle, $9-13 \times 7-11 \mu\text{m}$. Basal hyphae $2-3 \mu\text{m}$ diam., with thin, brown walls, septate, branched.

Distinguished by the pale apothecia, broad paraphyses, deep apical pore to the ascus and habitat on old pyrenomycete stromata.

***Niptera ambigua* Dennis & Spooner, *spec. nov.* — Fig. 2a–c**

Apothecia $150-200 \mu\text{m}$ diam., superficialia, sessilia. Discus pallide aurantiacus. Receptaculum laeve, brunneum. Asci $55-65 \times 13-14 \mu\text{m}$, octospori, late cylindrico-clavati, poro in mixtura Melzeri non colorato. Ascosporae $23-31 \times 3-3.2 \mu\text{m}$, hyalinae, fusoideae, 1-septatae, guttulate. Paraphyses hyalinae, multi-ramosae, obtusae, ad apicem $2.5-3.5 \mu\text{m}$ diam. Excipulum ectali e cellulis subglobosis muris brunneis aliquantum incrassatis compositum, cellulis ad marginem magis elongatis et pallidioribus.

Holotypus: Scotland, Orkney, Hoy, on *Eriophorum*, 21 June 1987, R. W. G. Dennis (K).

Apothecia $150-200 \mu\text{m}$ diam., superficial, gregarious, sessile. Disc plane, smooth, pale orange. Receptacle shallow cupulate, smooth, brownish to the margin. Asci 8-spored, $55-65 \times 13-14 \mu\text{m}$, broadly cylindric-clavate, thick-walled when young, short-stalked, pore not stained in Melzer's reagent. Ascospores ($23-$) $26-31 \times 3-3.2 \mu\text{m}$, hyaline, fu-

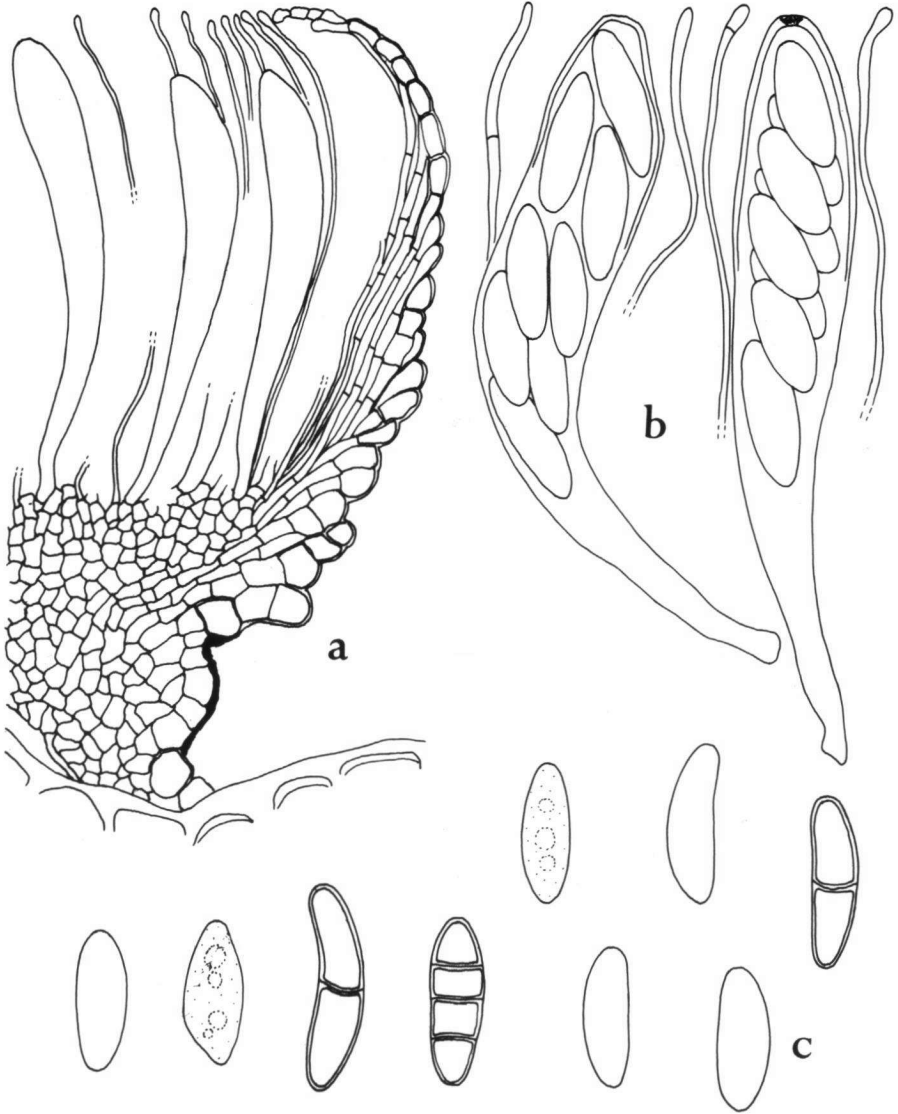


Fig. 5. *Pseudonaevia caricina*. a. Vertical section, $\times 650$; b. asci and paraphyses, $\times 1000$; c. ascospores, $\times 1000$.

soid, slightly curved, guttulate, 1-septate, arranged in 3–4 rows within the ascus. Paraphyses hyaline, sparsely septate, 1–1.5 μm , much-branched, apex obtuse, enlarged to 2.5–3.5 μm diam. Ectal excipulum composed basally of subglobose or subangular cells 6–8 μm diam., with brown, slightly thickened walls, near the margin the cells becoming more elongated and pale brown to almost hyaline.

Asci, spores and paraphyses are similar to those of *Nimbomollisia eriophori* (Kirchn.) Nannf., but we have been unable to demonstrate a gel sheath to the spores.

PSEUDONAEVIA Dennis & Spooner, *gen. nov.*

Apothecia superficialia, sessilia, laete colorata, laevia. Asci clavati, poro in mixtura Melzeri caerulescento. Ascosporae hyalinae, ellipsoideae, 0–3-septati. Paraphyses filiformes, obtusae. Excipulum e cellulis parvis hyalinis muris aliquantum incrassatis compositum.

Holotypus: *Pseudonaevia caricina* Dennis & Spooner.

Apothecia superficial, sessile, light coloured, smooth. Asci clavate, pore blue in Melzer's Reagent. Ascospores hyaline, ellipsoid, 0–3-septate. Paraphyses filiform, obtuse. Excipulum of small, hyaline cells, ectal layer thin, of radial rows of cells with slightly thickened walls.

Pseudonaevia caricina Dennis & Spooner, *spec. nov.* — Fig. 5

Apothecia 400–500 µm diam., luteola, cupulata. Asci 80–110 × 16–19 µm, octospori, clavati, ad apicem angustati. Ascosporae 17–28 × 5.5–8 µm, 0–1(–3)-septatae, biseriatae. Paraphyses obtusae, ad apicem 1.2–1.8 µm diam.

Holotypus: Scotland, Orkney, Hoy, Berriedale, on dead leaf of *Carex ?binervis*, 4 Oct. 1989, R. W. G. Dennis (K).

Apothecia 400–500 µm diam., superficial, sessile, pale yellow throughout, drying amber, scattered or gregarious. Disc flat, smooth, without a raised margin. Receptacle smooth, cupulate, with narrowed attachment. Asci 8-spored, 80–110 × 16–19 µm, clavate, tapered below, apex narrowed, pore, at least in young asci, outlined blue in Melzer's Reagent. Ascospores (17–)18–23(–28) × 5.5–7(–8) µm, hyaline, ellipsoid or slightly clavate, often inequilateral or curved, 0–1(–3)-septate, biseriate within the ascus. Paraphyses filiform, obtuse, 1 µm diam., slightly enlarged at the apex to 1.2–1.8 µm diam. Medullary excipulum composed of small, thin-walled cells 4–6 µm diam. Ectal excipulum c. 20 µm thick below, narrowed to the margin, composed of radial rows of hyaline, slightly thick-walled cells 7–10 × 5–8 µm, smaller towards the margin.

The genus differs from *Laetinaevia* and related genera accepted in Naevioideae by Hein (1976) most notably in having superficial apothecia.

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