

## ARCTO-ALPINE LEOTIALES AND OSTROPALES FROM THE MOUNTAINS OF SOUTH NORWAY

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**Abstract.** Sixty-eight species of Leotiales and two species of Ostropales are listed. Eight new species are described: *Podophacidium pulvinatum* Raitv. & H. Järv, *Cistella rubi* Raitv. & H. Järv, *Dasyscyphella epilobii* Raitv. & H. Järv, *Dasyscyphella graminicola* Raitv. & H. Järv, *Hamatocanthoscypha polytrichi* Raitv. & H. Järv, *Lachnum incrupilum* Raitv. & H. Järv, *Lambertella norvegica* Raitv. & H. Järv, and *Moellerodiscus caricis* Raitv. & H. Järv. Two new combinations, *Cistella aconiti* (Rehm) Raitv. & H. Järv and *Brunnipila cannabina* (Rehm) Raitv. & H. Järv, are proposed.

**Key words:** Leotiales, Ostropales, new species, arcto-alpine distribution, Norway.

The present study is based on the collections made by the authors during a field trip to the mountains of South Norway from 24 to 30 August 1995.

The study area lies in the Hemsil valley between Ulsåk and Tuv in the province of Buskerud. The valley is surrounded by low mountains (1200–1400 m).

The vegetation of this area is mostly boreal. The banks of the Hemsil River and the slopes of the surrounding mountains up to 900 m are covered with spruce (*Picea abies*) forests. From 900 to 1000 m a well-differentiated zone of *Betula pubescens* forest is located. The opened batches in forest are rich in *Aconitum septentrionale*, a characteristic species of subalpine tall-herb communities. Above the treeline from about 1000 m, the alpine vegetation zone is located. It is treeless with *Arctostaphylos alpina*, *Calluna vulgaris*, *Empetrum nigrum*, *Betula nana*, and *Salix* spp. Around lakes Feten and Nørde Hølleskarstjedne and close to the rim of Ulsåknuten small bogs occur with *Sphagnum* spp., *Carex* spp., *Eriophorum* spp., and small grasses (*Poa* spp.).

The material was collected during one week at the end of August 1995. The weather conditions of that year were quite extreme. At the end of May and in

early June the Hemsil valley was flooded. July and August were dry and unfavourable for fungal growth and fruiting. However, in spite of general dryness, there was enough moisture for the growth and fruiting of small Discomycetes at higher altitudes. We registered 70 inoperculate discomycetes and 8 of them are described as new.

## MATERIAL AND METHODS

The air-dried apothecia were mounted in 3% aquatic solution of KOH and examined in a Nikon Labophot-2 microscope using a 100x phase-contrast objective. All measurements and drawings were made in KOH. Melzer's reagent (MLZ) was used to check the amyloid and dextrinoid reactions of asci, hairs, and excipulum. The presence of oil drops in spores was checked in KOH, the number of septa was estimated in MLZ. Generally, 30 spores and asci were measured for their length and 10 ones for width following Raitviir (1972, 1983).

### LEOTIALES

#### Dermateaceae

*Mollisia arundinacea* (Fr.) Phill.

On dead culms of *Calamagrostis* sp., Ulsåk, 24.07.95, TAA 137359.

*M. caricina* Fautr.

On dead grass, Lake Feten, ca 1000 m, 28.08.95, TAA 137442; on *Carex nigra*?, Ulsåknuten, 1056 m, 27.08.95, TAA 137416.

*M. ramealis* (P. Karst.) P. Karst.

On fallen twigs of *Betula*, Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137458.

*Nimbomollisia macrospora* (P. Karst.) Nannf.

On *Carex* sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137415a; on *Carex* sp., Lake Feten, ca 1000 m, 28.08.95, TAA 137443a.

*Podophacidium pulvinatum* Raitv. & H. Järv sp. nov. (Fig. 1)

*Podophacidii xanthomelanae* similis, apotheciis pulvinatis, paraphysibus non ramosis, sporis fusoideis  $17-20 \times 2-3 \mu\text{m}$  differt.

Holotypus: in folia putrida, Trøimsbøtt, ca 900-1100 m, 30.08.95, A. Raitviir & H. Järv, TAA 137472.



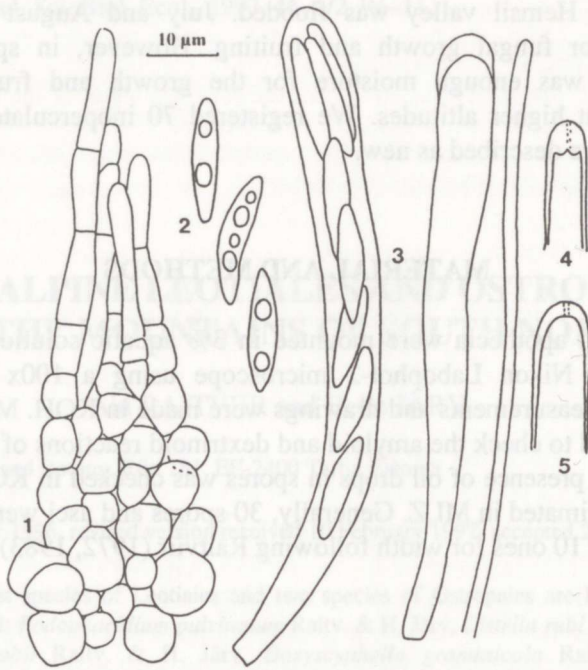


Fig. 1. *Podophacidium pulvinatum*: 1, ectal excipulum; 2, spores; 3, two asci and a paraphysis; 4, apex of a young ascus in MLZ; 5, apex of a mature ascus in MLZ.

Apothecia in small groups, sessile on a narrow base. Disc dingy ochraceous, 0.5–3 mm diam. Receptaculum shallow cupulate with distinct margin when young, later pulvinate and slightly undulate, outside paler than hymenium. Ectal excipulum composed of textura globulosa running out at the margin into cylindrical hyphal processes forming a dense palisade. Cells thin-walled, pale ochraceous. Subhymenium of textura intricata, containing a yellow pigment. Asci arising from simple septa, cylindrical to cylindric-clavate, with a thick apex, apical pore faintly blue in MLZ, visible as two small dots, 8-spored,  $75\text{--}95 \times 7\text{--}9 \mu\text{m}$ ,  $\bar{x} = 91.8 \times 8.35 \mu\text{m}$ . Spores cylindrical-fusoid to fusoid, often slightly curved, hyaline, aseptate, with two large and several smaller oil drops,  $17\text{--}20 \times 2\text{--}3 \mu\text{m}$ ,  $\bar{x} = 15.08 \times 5.32 \mu\text{m}$ . Paraphyses cylindrical with rounded to subclavate tips,  $1.5 \mu\text{m}$ .

On fallen decaying leaves, Trøimsbøtt, ca 900–1100 m, 30.08.95, A. Raitviir & H. Järv, TAA 137472 (holotype).

Although this species has a non-denticulate margin and its paraphyses are simple and not branched as in *P. xanthomelaena*, it should be assigned to *Podophacidium*, because of the exactly same structure and pigmentation of ectal excipulum, similarly pigmented subhymenium, and apically thick-walled asci.

*Pyrenopeziza rubi* (Fr.) Rehm

On dead stems of *Rubus idaeus*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137388.

*Scutomollisia karstenii* Nannf. (= *Actinoscypha graminis* P. Karst.)

On dead grass, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137429.

*S. punctum* (Rehm) Nannf.

On dead stems of small grass, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137490.

*Tapesia occulta* Rehm

On dead stems of *Calamagrostis* sp., Ulsåk, 24.08.95, TAA 137360.

## Hyaloscyphaceae

*Albotricha acutipila* (P. Karst.) Raitv.

On dead grass, Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137456.

*A. albotestacea* (Desm.) Raitv.

On dead grass, Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137451, 137455.

*A. alpina* (Rehm) Raitv. & Sacconi

On dead grass, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137407.

This species, which is related to *A. albotestacea*, was redescribed by Raitviir & Sacconi (1987) from the Italian Alps after having been forgotten for a long time. It has probably a wide arcto-alpine distribution. The senior author examined two specimens collected from the Heinassaari Island located close to the coast of the Kola Peninsula.

*A. caduca* (Rehm) Raitv. & Sacconi

On dead leaves of a grass, Ulsåknuten, 1056 m, 27.08.95, TAA 137413.

It is the first specimen found of this species outside Alps. It is the only species of *Albotricha* having asci arising from croziers, a feature not mentioned in the description by Raitviir & Sacconi (1987).

*Brunnipila calyculaeformis* (Schumach.: Fr.) Baral

On dead twigs of *Betula* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137373;  
on dead twigs of *Salix* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137369.



*Brunnipila cannabina* (Rehm) Raitv. & H. Järv comb. nov.

Basionymum: *Lachnum cannabinum* Rehm, Rabenh. Krypt.-Fl. 1(3): 903, 1896.

On dead stems of *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137356, Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, TAA 137463; on dead stems of *Hypericum* sp., Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137392.

*Capitotricha bicolor* (Bull.: Fr.) Baral

On fallen twigs of *Salix* sp., Tuv-Rjukandefossen, 29.08.95, TAA 137457; on dead twigs of *Betula* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137372.

*Cistella aconiti* (Rehm) Raitv. & H. Järv comb. nov. (Fig. 2, 1–3)

Basionymum: *Pezizella aconiti* Rehm, Ber. naturh. Ver. Augsburg 26: 43, 1881.

= *Dasyscyphus aconiti* (Rehm) Dennis, Persoonia 3: 31, 1964.

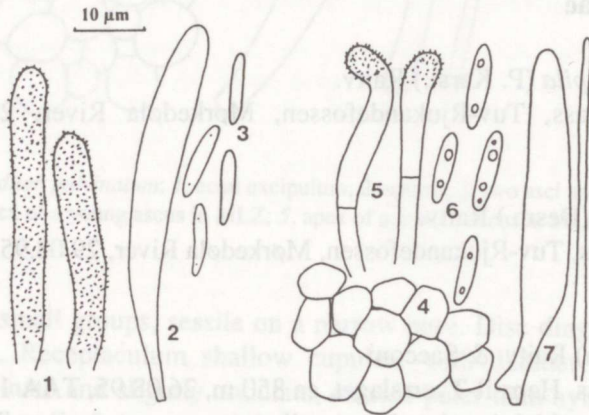


Fig. 2. *Cistella aconiti*: 1, two hairs; 2, ascus; 3, spores. *Cistella rubi*: 4, ectal excipulum; 5, two hairs; 6, spores; 7, ascus and a paraphysis.

Apothecia superficial, scattered, sessile on a narrow basis. Disc 0.2–0.5 mm diam., pale yellowish to pale ochraceous, sometimes with a pinkish tint when fresh and dry. Receptacle deeply cupulate to cupulate, concolorous, covered at the flanks and margin with short whitish hairs. Ectal excipulum composed of textura prismatica to textura angularis, individual cells thin-walled, hyaline, 5–12 × 5–8 µm. Hairs cylindrical to subclavate, 0–1-septate, 20–40 × 4–6 µm, hyaline, thin-walled, finely spiny, smooth only in a very short basal part. Asci arising from simple septa, cylindrical to cylindrical-clavate, 8-spored, apical pore blue in MLZ, 45–60 × 4–6 µm,  $\bar{x}$  = 51.7 × 4.2 µm. Spores biseriolate, cylindrical-fusoid to

elliptic-fusoid, straight, hyaline, aseptate,  $9\text{--}13 \times 1.6\text{--}2.5 \mu\text{m}$ ,  $\bar{x} = 10.3 \times 2.0 \mu\text{m}$ . Paraphyses cylindrical, subobtuse to pointed, slightly exceeding the asci,  $2\text{--}2.5 \mu\text{m}$  diam.

On dead stems of *Aconitum septentrionale*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137410.

It is a rare or, at least, very rarely collected alpine species differing from *C. grevillei* in darker colour and longer asci and spores. Another long-spored alpine species *C. sacconii* Raitv. differs in much longer hairs, dark gray hymenium, and wider 1-septate spores (Raitviir, 1990).

*C. flavorubens* Raitv.

On dead stems of *Aconitum septentrionale*, Skyrvedalen, 1300 m, 25.08.95, TAA 137377.

*C. fugiens* (Buckn.) Baral

On dead leaves of *Carex nigra*, Ulsåknuten, 1056 m, 27.08.95, TAA 137412; on dead leaves of *Carex* sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137415b; on dead stems of *Eriophorum* sp., Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, TAA 137459.

*C. grevillei* (Berk.) Raschle

On dead stems of *Aconitum septentrionale*, Skyrvedalen, 1300 m, 25.08.95, TAA 137380a; on dead stems of *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137367.

*C. hungarica* (Rehm) Raitv.

On dead stems of *Aconitum septentrionale*, Skyrvedalen, 1300 m, 25.08.95, TAA 137375.

*Cistella rubi* Raitv. & H. Järv sp. nov. (Fig. 2, 4–7)

Apothecia sessilia, cupulata, 0.2–0.5 mm diametro, pallide luteola vel ochracea, in solutione KOH flavescentia. Excipulum ectale et pili generi typici. Asci uncinati, cylindricei vel cylindriceo-clavati, octospori, poro iodo caerulescentia,  $43\text{--}54 \times 4\text{--}6 \mu\text{m}$ . Sporae ellipsoideo-fusoideae, aseptatae, biguttulatae,  $9.5\text{--}12 \times 2\text{--}3 \mu\text{m}$ . Paraphyses cylindriceae, subacutae,  $2\text{--}2.5 \mu\text{m}$  diametro.

Holotypus: ad caulem siccum Rubi idaei, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137390.

Apothecia superficial, scattered, sessile on a narrow basis. Disc 0.2–0.5 mm diam., pale yellowish to pale ochraceous when fresh and dry, turning bright yellow when mounted in KOH. Receptacle deeply cupulate to cupulate,



concolorous, covered at the flanks and margin with short whitish hairs. Ectal excipulum composed of *textura prismatica* to *textura angularis*, individual cells thin-walled, hyaline,  $6\text{--}10 \times 5\text{--}9 \mu\text{m}$ . Hairs cylindrical to subclavate, 0–1-septate,  $20\text{--}50 \times 3\text{--}5 \mu\text{m}$ , hyaline, thin-walled, smooth with finely spiny apical part. Asci arising from croziers, cylindrical to cylindrical-clavate, 8-spored, apical pore blue in MLZ,  $43\text{--}54 \times 4\text{--}6 \mu\text{m}$ ,  $\bar{x} = 47.4 \times 5.9 \mu\text{m}$ . Spores biseriate, elliptic-fusoid, straight, hyaline, aseptate, containing two large polar oil drops,  $9.5\text{--}12 \times 2\text{--}3 \mu\text{m}$ ,  $\bar{x} = 10.6 \times 2.4 \mu\text{m}$ . Paraphyses cylindrical, subobtuse to pointed, slightly exceeding the asci,  $2\text{--}2.5 \mu\text{m}$  diam.

On dead stems of *Rubus idaeus*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137390.

This species belongs also to *C. grevillei* (Berk.) Raschle group and is distinct in its colour in alkaline reaction and large guttulate spores.

*Dasyscyphella epilobii* Raitv. & H. Järv sp. nov. (Fig. 3, 1–4)

Apothecia breviter stipitata, 0.2–0.5 mm diametro, albida. Ectal excipulum ex *textura prismatica* compositur. Pili cylindranei, hyalini, tenuiter tunicati, granulati, apicibus laevibus, crystalliferis,  $50\text{--}80 \times 2.5\text{--}3.5 \mu\text{m}$ . Asci non uncinati, cylindraneo-clavati, octospori, poro iodo caerulescentia,  $38\text{--}43 \times 4\text{--}5 \mu\text{m}$ . Sporae cylindraneo-fusoideae vel ellipsoideo-fusoideae, aseptatae, biguttulatae,  $7.2\text{--}9.6 \times 1.3\text{--}1.6 \mu\text{m}$ . Paraphyses anguste lanceolatae, ascos  $10 \mu\text{m}$  superantes,  $2\text{--}2.5 \mu\text{m}$  diametro.

*D. crystallinae* (Fuckel) Raitv. similis, sporis brevis et substratis differt.

Holotypus: ad caulem siccum *Epilobii angustifolii*, lacum Nørde Hølleskarstjedne, 1025 m, 29.08.95, A. Raitviir & H. Järv, TAA 137460.

Apothecia scattered or in small groups, stipitate. Disc 0.2–0.5 mm diam., pure white when fresh and dry. Receptacle deeply cupulate to cupulate, white, covered at the flanks and margin with white hairs. Stipe cylindrical, shorter in the length than the diameter of disc, pure white when fresh, whitish when dry, sparsely covered with short hairs,  $0.2\text{--}0.3 \times 0.15\text{--}0.2 \text{ mm}$ . Ectal excipulum well developed, composed of *textura prismatica*, individual cells thin-walled, hyaline,  $8\text{--}15 \times 4\text{--}7 \mu\text{m}$ . Hairs cylindrical, 4–5-septate,  $50\text{--}80 \times 2.5\text{--}3.5 \mu\text{m}$ , hyaline, thin-walled, finely granulate but with a smooth apical cell, bearing large crystals. Asci arising from simple septa, cylindrical to cylindrical-clavate, 8-spored, apical pore blue in MLZ,  $38\text{--}43 \times 4\text{--}5 \mu\text{m}$ ,  $\bar{x} = 40.7 \times 4.4 \mu\text{m}$ . Spores biseriate, cylindrical-fusoid to elliptic-fusoid, straight, hyaline, aseptate, containing two minute polar guttules,  $7.2\text{--}9.6 \times 1.3\text{--}1.6 \mu\text{m}$ ,  $\bar{x} = 8.7 \times 1.5 \mu\text{m}$ . Paraphyses narrowly lanceolate, aseptate, exceeding the asci up to  $10 \mu\text{m}$ ,  $2\text{--}2.5 \mu\text{m}$  diam.

On dead stems of *Epilobium angustifolium*, Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, A. Raitviir & H. Järv, TAA 137460 (holotype).

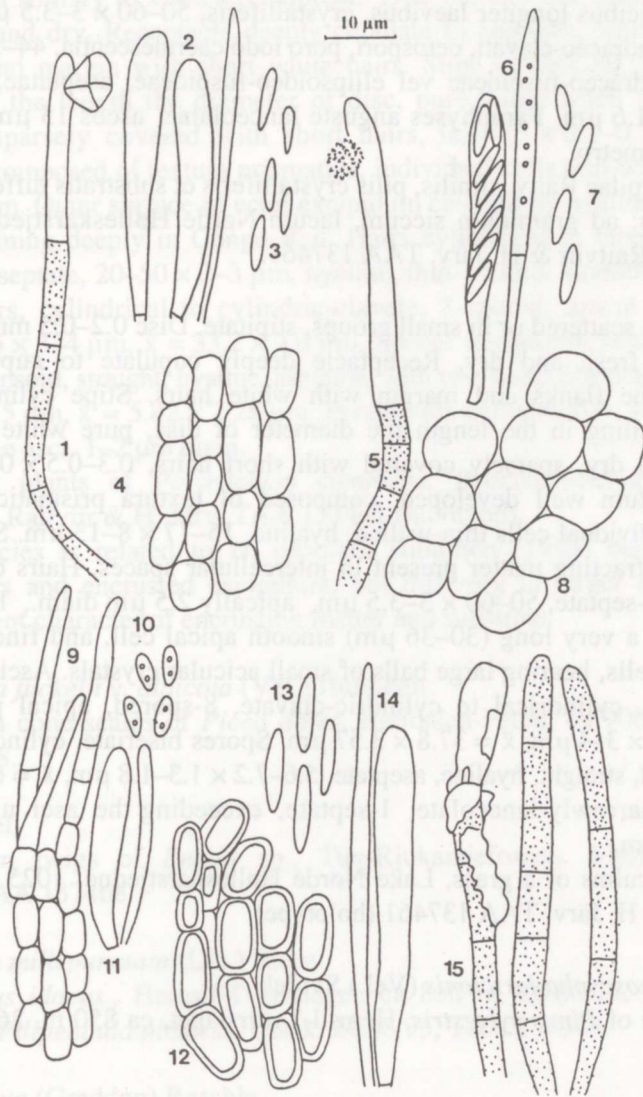


Fig. 3. *Dasyscyphella epilobii*: 1, hair; 2, ascus and a paraphysis; 3, spores; 4, ectal excipulum. *Dasyscyphella graminicola*: 5, hair; 6, ascus and a paraphysis; 7, spores; 8, ectal excipulum. *Hamato-canthoscypha polytrichi*: 9, ectal excipulum with hairs; 10, spores; 11, ascus and a paraphysis. *Lachnum incurpilum*: 12, ectal excipulum; 13, spores; 14, ascus and a paraphysis; 15, hairs.

***Dasyscyphella graminicola* Raitv. & H. Järv sp. nov. (Fig. 3, 5–9)**

Apothecia longe stipitata, 0.2–0.5 mm diametro, albida. Ectal excipulum ex textura prismatica compositur. Pili cylindracei, angustati, hyalini, tenuiter tunicati,



granulosi, apicibus longiter laevibus, crystalliferis,  $50\text{--}60 \times 3\text{--}3.5 \mu\text{m}$ . Asci non uncinati, cylindraceo-clavati, octospori, poro iodo caerulescentia,  $44\text{--}53 \times 4\text{--}5 \mu\text{m}$ . Sporae cylindraceo-fusoideae vel ellipsoideo-fusoideae, aseptatae, aguttulatae,  $7.5\text{--}9 \times 1.3\text{--}1.6 \mu\text{m}$ . Paraphyses anguste lanceolatae, ascos  $15 \mu\text{m}$  superantes,  $2\text{--}2.5 \mu\text{m}$  diametro.

*D. angustipilae* Raitv. similis, pilis crystalliferis et substratis differt.

Holotypus: ad graminum siccum, lacum Nørde Hølleskarstjedne, 1025 m, 29.08.95, A. Raitviir & H. Järv, TAA 137461.

Apothecia scattered or in small groups, stipitate. Disc  $0.2\text{--}0.5 \text{ mm}$  diam., pure white when fresh and dry. Receptacle deeply cupulate to cupulate, white, covered at the flanks and margin with white hairs. Stipe cylindrical, long, slender, equalling in the length the diameter of disc, pure white when fresh, whitish when dry, sparsely covered with short hairs,  $0.3\text{--}0.5 \times 0.15\text{--}0.2 \text{ mm}$ . Ectal excipulum well developed, composed of textura prismatica to textura angularis, individual cells thin-walled, hyaline,  $15\text{--}17 \times 8\text{--}13 \mu\text{m}$ . Some amount of hyaline refracting matter present in intercellular spaces. Hairs cylindrical to tapering, 4–5-septate,  $50\text{--}60 \times 3\text{--}3.5 \mu\text{m}$ , apically  $2.5 \mu\text{m}$  diam., hyaline, thin-walled, with a very long ( $30\text{--}36 \mu\text{m}$ ) smooth apical cell, and finely granulate short basal cells, bearing large balls of small acicular crystals. Asci arising from simple septa, cylindrical to cylindric-clavate, 8-spored, apical pore blue in MLZ,  $37\text{--}43 \times 3\text{--}4 \mu\text{m}$ ,  $\bar{x} = 37.8 \times 3.57 \mu\text{m}$ . Spores biseriate, cylindric-fusoid to elliptic-fusoid, straight, hyaline, aseptate,  $5.6\text{--}7.2 \times 1.3\text{--}1.8 \mu\text{m}$ ,  $\bar{x} = 6.4 \times 1.5 \mu\text{m}$ . Paraphyses narrowly lanceolate, 1-septate, exceeding the asci up to  $15 \mu\text{m}$ ,  $2\text{--}2.5 \mu\text{m}$  diam.

On dead culms of a grass, Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, A. Raitviir & H. Järv, TAA 137461 (holotype).

*Hamatocanthoscypha laricionis* (Vel.) Svrček

On a cone of *Pinus sylvestris*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137385.

*Hamatocanthoscypha polytrichi* Raitv. & H. Järv sp. nov. (Fig. 3, 9–11)

Apothecia stipitata, cupulata, alba, breviter pilosa,  $0.2\text{--}0.5 \text{ mm}$  in diam. Excipulum ectale ex textura prismatica compositur. Pili cylindracei, angustati, hyalini, tenuiter tunicati, recti,  $20\text{--}50 \times 2\text{--}3 \mu\text{m}$ . Asci uncinati, cylindracei, octospori, poro iodo caerulescentia,  $30\text{--}35 \times 3\text{--}4 \mu\text{m}$ . Spores late cylindraceo-ellipsoideae, biguttulatae,  $5\text{--}6 \times 2\text{--}2.5 \mu\text{m}$ .

Species ab aliis generis pilis rectis et substratis differt.

Holotypus: in folia sicca Polytrichi commune, Breidalen-Feten, ca 900 m, 28.08.95, A. Raitviir & H. Järv, TAA 137441.

Apothecia solitary to scattered, stipitate. Disc 0.2–0.5 mm diam., pure white when fresh and dry. Receptacle deeply cupulate to cupulate, white, covered at the flanks and margin with short white hairs. Stipe cylindrical, long, slender, equalling in the length the diameter of disc, pure white when fresh, whitish when dry, sparsely covered with short hairs, 0.3–0.5 × 0.1–0.15 mm. Ectal excipulum, composed of textura prismatica, individual cells thin-walled, hyaline, 6–8 × 3–6 µm. Outer surface of ectal excipulum covered by hyaline to yellowish exudate, staining deeply in Congo Red. Hairs cylindrical to tapering, straight, obtuse, 0–2-septate, 20–50 × 2–3 µm, hyaline, thin-walled, smooth. Asci arising from croziers, cylindrical to cylindric-clavate, 8-spored, apical pore blue in MLZ, 30–35 × 3–4 µm,  $\bar{x}$  = 33.2 × 3.6 µm. Spores irregularly biseriate, broadly cylindric-ellipsoid, straight, hyaline, aseptate, with two small distinct polar guttules 5–6.5 × 2–2.5 µm,  $\bar{x}$  = 5.82 × 2.28 µm. Paraphyses cylindrical to subclavate, not exceeding the asci, 1–2 µm diam.

On dead plants of *Polytrichum commune*, Breidalen-Feten, ca 900 m, 28.08.95, A. Raitviir & H. Järv, TAA 137441 (holotype).

This species is related to *H. obsoleta* Huhtinen (1989) being similar in straight hairs and encrusted excipulum, but differing in larger spores, longer hairs, different character of encrusting matter and substrate.

*Hyaloscypha fuckelii* v. *alnicola* (Vel.) Huhtinen

On fallen cone scales of *Picea abies*, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137428.

*H. priapi* Vel.

On fallen twigs of *Betula* sp., Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137468.

*Hyalopeziza millepunctata* (Lib.) Raitv.

On *Rubus idaeus*., Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137389, 137401; on *Filipendula ulmaria*, Ulsåk, 24.08.95, TAA 137364.

*H. niveocincta* (Graddon) Raschle

On dead twigs of *Salix* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137371.

*Lachnum altaicum* (Raitv.) Huhtinen

On dead stems of *Aconitum septentrionale*, Ulsåknuten, 1056 m, 27.08.95, TAA 137425.

*L. clavigerum* (Svrček) Raitv.

On dead stems of *Hypericum* sp., Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137396; on dead stems of *Aconitum septentrionale*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137403; on dead stems of *Aconitum septentrionale*, Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137443.



*L. controversum* (Cooke) Rehm

On dead culms of a grass, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137439; on dead culms of a grass, Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137464.

*L. imbecille* P. Karst.

On dead leaves of *Carex* sp., Lake Feten, ca 1000 m, 28.08.95, TAA 137444.

This species, growing typically on *Eriophorum* spp., can sometimes be found on *Carex* spp. in the same sites (Raitviir, 1991).

*L. impudicum* Baral

On fallen twigs of *Betula* sp., Tuv-Rjukandefossen, Mørkedøla River, 29.08.95, TAA 137466.

This specimen agrees in all characters to the description given by Baral (Baral & Kriegelsteiner, 1985).

*Lachnum incrupilum* Raitv. & H. Järv sp. nov. (Fig. 3, 12–15)

*L. radovii* Svrček similis, ascis majoribus, 50–65 × 5.5–6.5 µm, et sporis longis, 10–14 × 1.5–2 µm, differt.

Holotypus: in folia sicca *Poae alpinae*, Skyrvedalen, 1300 m, 25.08.95, A. Raitviir & H. Järv, TAA 137384.

Apothecia solitary or scattered, shortly stipitate. Disc 0.3–0.8 mm diam., pure white when fresh, darkening in drying. Receptacle deeply cupulate to cupulate, white when fresh and cinnamon brown when dry, covered at the flanks and margin with white hairs. Stipe cylindrical, stout, shorter in the length than the diameter of disc, whitish when fresh, dark brown when dry, 0.1–0.3 × 0.15–0.2 mm. Ectal excipulum well developed, composed of textura prismatica, individual cells with irregularly thickened hyaline walls, but brownish amorphous matter is present in intercellular spaces, 8–12 × 4–8 µm. Hairs cylindrical, 2–5-septate, 60–100 × 3–5 µm, hyaline, thin-walled, finely granulate, bearing thick coating of irregular crystals. Asci arising from simple septa, cylindrical to cylindric-clavate, 8-spored, apical pore blue in MLZ, 50–65 × 5.5–6.5 µm,  $\bar{x}$  = 53.6 × 6.1 µm. Spores obliquely or irregularly biseriate, cylindric-fusoid, straight, hyaline, aseptate, eguttulate, 10–14 × 1.5–2 µm,  $\bar{x}$  = 11.4 × 1.81 µm. Paraphyses lanceolate, aseptate, containing yellowish oil drops, exceeding the asci up to 10 µm, 2.5–4 µm diam.

On dead leaves of *Poa alpina*, Skyrvedalen, 1300 m, 25.08.95, A. Raitviir & H. Järv, TAA 137384 (holotype).

This species is very closely related to *Lachnum radovii* Svrček, resembling it in gross morphology, turning brown in drying, having similar excipulum of thick-walled cells, but it has considerably larger asci and spores. The excipulum

is somewhat similar to that present in species of *Belonidium* Mont. & Dur. (= *Incrucipulum* Baral) but the walls of outer cells are completely smooth. Also the hairs of both species are thin-walled.

Svrček (1984) stressed the long cells of hairs in his species, but the hairs of *L. incrupilum* are very variable in septation and cell length.

*L. pudicelloides* (Raitv.) Raitv.

On dead culms of a grass, Tuv-Rjukandefossen, Mørkedøla River, 26.08.95, TAA 137452.

*L. saccardoi* Raitv. & Sacconi

On dead stems of a grass, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137404a.

*L. sesleriae* (Svrček) Baral

On a dead grass, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137406.

*L. tenuissimum* (Quél.) Raitv.

On dead culms of *Calamagrostis* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137358; on a dead grass, Lake Feten, ca 1000 m, 28.08.95, TAA 137447.

*Psilachnum chrysostigmum* (Fr.) Raitv.

On dead stems of *Athyrium filix-femina*, Ulsåknuten, 1056 m, 27.08.95, TAA 137423.

*P. crinellum* (Ell. & Ev.) Dennis

On dead small grass, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137490.

*P. micaceum* (Rehm) Dennis

On dead stems of an Apiaceae, Lake Feten, ca 1000 m, 28.08.95, TAA 137436.

*Solenopezia leucostoma* (Rehm) Raitv.

On dead stems of *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137352; on dead stems of *Aconitum* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137378a, TAA 137379; on dead stems of *Aconitum* sp., Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137477.

*Trichopeziza elegantula* (P. Karst.) Sacc.

On dead stems of *Aconitum* sp., Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137398, TAA 137409; on dead stems of *Aconitum* sp., Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, TAA 137462.



*T. sulphurea* (Fr.) Raitv.

On dead stems of *Urtica dioica*, Ulsåk, 24.08.95, TAA 137365.

*T. violascens* (Raitv.) Raitv.

On dead decaying stems of *Aconitum septentrionale*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137391.

*T. badiella* (P. Karst.) Raitv. (= *Trichopezizella nidulus* (Fr.) Raitv. var. *hystricula* (P. Karst.) Haines)

On *Carex* sp., Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137405.

A rare species which probably has been overlooked for its small size. It has a wide arcto-alpine distribution, having been found from Svalbard by Huhtinen (1987), Austrian Alps by Scheuer (1988), and Northern Finland by the senior author in 1996 (unpublished data).

*Trichopezizella nidulus* (Fr.) Raitv.

On dead stems of *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137355; on *Aconitum septentrionale*, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137473, 137481, 137487.

*T. relicina* (Fr.) Raitv.

On *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137357; on *Aconitum* sp., Ulsåk, 24.08.95, TAA 137376; on *Aconitum* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137378; on dead stems of *Angelica sylvestris*, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137437; on dead stems of *Epilobium angustifolium*, Tuv-Rjukandefossen, 29.08.95, TAA 137453.

*Urceolella carestiana* (Rab.) Dennis

On dead stems of *Athyrium* sp., Skyrvedalen, 1300 m, 25.08.95, TAA 137381.

*U. crispula* (P. Karst.) Boud.

On dead stems of *Aconitum septentrionale*, Ulsåk, 25.08.95, TAA 137354; on dead stems of *A. septentrionale*, Hemsil-Tverrslaget, ca 850 m, 26.08.95, TAA 137402.

## Leotiaceae

*Ascocoryne cylichnium* (Tul.) Korf

On the rotten wood of *Betula* sp.?, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137478.

*Bisporella citrina* (Batsch: Fr.) Casp.

On decorticated hardwood, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137486.

*Bryoglossum gracile* (P. Karst.) Redhead

On mosses, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137496.

*Crocicreas dolosellum* (P. Karst.) S. E. Carp. v. *dolosellum*

On dead stems of *C. nigra*, Ulsåknuten, 1056 m, 27.08.95, TAA 137414, 137419.

*C. megalosporum* (Rea) S. E. Carp.

On dead stems of *Carex* sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137417, 137420, 137422.

*C. nivale* (Rehm) S. E. Carp.

On dead leaves of an unidentified grass, Lake Feten, ca 1000 m, 28.08.95, TAA 137443.

A rare species known from the Alps and from one locality in Sweden.

*C. nivellum* (P. Karst.) S. E. Carp.

On dead leaves of *Carex* sp., Lake Feten, ca 1000 m, 28.08.95, TAA 137446.

This species has been known with certainty only from Karsten's two original collections (Carpenter, 1981). Now its range is extended also to Norway.

*C. staerbeckii* (Rehm) S. E. Carp.

On dead stems of *Aconitum septentrionale*, Skyrvedalen, 1300 m, 25.08.95, TAA 137380b.

*C. stramineum* (Berk. & Broome) S. E. Carp.

On dead culms of a grass, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137445.

Raitviir & Kutorga (1992) demonstrated the difference between *C. stramineum* and *C. epicalamia* (Fuckel) Raitv. & Kutorga. The Norwegian collection is a typical *C. stramineum* having apothecia with a well developed stipe and short spores 6–10 × 1.5–2 µm.

*Cudoniella aciculare* (Bull.: Fr.) H. E. Schroet.

On a rotten deciduous tree, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137484.

"*Cyathicula*" *strobilina* (Fr.) Korf & Dixon

On a fallen cone of *Picea abies*, Breidalen-Feten, ca 900 m, 28.08.95, TAA 137433; on fallen cones of *Picea abies*, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137471.



Carpenter (1981) excluded this species from *Crocicreas* and it has at the moment an uncertain generic position.

*Hymenoscyphus epiphyllus* (Pers.: Fr.) Rehm

On fallen leaves of *Betula* sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137418.

*H. scutula* (Pers.: Fr.) Phillips v. *menthae* Phillips

On dead stems of *Epilobium angustifolium*, Ulsåk, 24.08.95, TAA 137366.

*Ombrophila janthina* P. Karst.

On wet fallen cones of *Picea abies*, Lake Feten, ca 1000 m, 28.08.95, TAA 137430.

*O. violacea* Fr.

On twigs of a deciduous tree and scales of *Picea abies* cones, Hemsiltverrslaget, ca 850 m, 26.08.95, TAA 137393.

## Orbiliaceae

*Orbilina sarraziniana* Boud.

On a wet deciduous tree, Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137485.

## Sclerotiniaceae

*Lambertella norvegica* Raitv. & H. Järv sp. nov. (Fig. 4, 1, 2)

Apothecia gregaria, stipitata, cupulata, ochracea vel olivacea, sicca brunnea, 1–5 mm diametro. Asci non uncinati, cylindranei, octospori, poro iodo caerulescentia,  $80\text{--}100 \times 7.5\text{--}9 \mu\text{m}$ . Sporae ellipsoideae, crassiter brunneo-tunicatae, laeves, uniseptatae, 4-guttulatae,  $14\text{--}18 \times 4.5\text{--}6 \mu\text{m}$ . Paraphyses cylindraneae, apicibus fuscoguttulatis,  $1.5\text{--}2 \mu\text{m}$  diametro.

Lambertellae *langei* T. Schum. & A. Holøs similis, ascis e sporis minoribus et substratis differt.

Holotypus: ad ramum putridum *Betulae nanae*, lacum Nørde Hølleskarstjedne, 1025 m, 29.08.95, TAA 137467.

Apothecia in small groups, stipitatae. Disc 1–5 mm in diam., ochraceous to olivaceous when fresh, brownish when dry. Receptaculum cupulate to pulvinate, olivaceous to brown when fresh, smooth. Stipe cylindrical,  $2\text{--}5 \times 0.2\text{--}0.3 \text{ mm}$ , concolorous with receptaculum, semitranslucent brownish-ochraceous when dry.

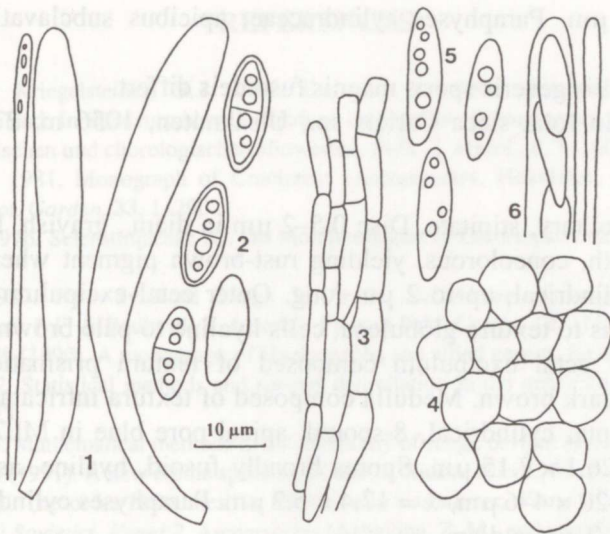


Fig. 4. *Lambertella norvegica*: 1, a paraphysis and two asci; 2, spores. *Moellerodiscus caricis*: 3, inner ectal excipulum; 4, outer ectal excipulum; 5, spores; 6, upper part of an ascus and a paraphysis.

Outer ectal excipulum composed of textura prismatica, outermost layer brownish, protruding cells with minutely roughened walls. Inner ectal excipulum composed of textura porrecta. Medulla composed of textura intricata. Asci arising from simple septa, cylindrical, 8-spored, ascus pore blue in IKI and MLZ,  $80\text{--}100 \times 7.5\text{--}9 \mu\text{m}$ ,  $\bar{x} = 91.8 \times 8.35 \mu\text{m}$ . Spores uniseriate, ellipsoid, uniseptate with 4 prominent oil drops, two in each cell, brown with thick, completely smooth walls,  $14\text{--}18 \times 4.5\text{--}6 \mu\text{m}$ ,  $\bar{x} = 15.08 \times 5.32 \mu\text{m}$ . Paraphyses cylindrical, containing brownish oil drops,  $1.5\text{--}2 \mu\text{m}$  in diam., not exceeding the asci.

On a dead branch of *Betula nana*, Lake Nørde Hølleskarstjedne, 1025 m, 29.08.95, TAA 137467 (Holotype).

It is the second species of the mostly tropical genus *Lambertella* Höhn. from Nordic countries. *Lambertella langei* was recently described by Schumacher and Holøs (1989) on the leaves of *Andromeda polifolia*. Our species differs from it in several features, being lignicolous and not foliicolous, having smaller, mostly 4-guttulate uniseptate spores and shorter asci.

***Moellerodiscus caricis* Raitv. & H. Järv sp. nov. (Fig. 4, 3–6)**

Apothecia solitaria, stipitata, cupulata, grisea, 0.5–2 mm diametro. Excipulum ectale exterius ex textura globulosa compositum, cellulis pallide brunneis. Excipulum ectale interius ex textura prismatica-porrecta compositum, cellulis fuscis. Asci non uncinati, cylindricei, octospori, poro iodo caerulescentia,  $120\text{--}130 \times 6\text{--}8 \mu\text{m}$ . Sporae late fusoideae, hyalinae, aseptatae, multiguttulatae,



14.5–20 × 4–6 µm. Paraphyses cylindraceae, apicibus subclavatis, 1.5–2 µm diametro.

Species ab aliis generis sporis magnis fusoides differt.

Holotypus: in folia sicca Caricis sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137418.

Apothecia solitary, stipitate. Disc 0.5–2 µm in diam., grayish. Receptaculum cupulate, smooth, concolorous, yielding rust-brown pigment when mounted in KOH. Stipe cylindrical, up to 2 µm long. Outer ectal excipulum composed of textura angularis to textura globulosa, cells hyaline to pale brownish, 6–12 µm in diam. Inner ectal excipulum composed of textura prismatica to textura porrecta, cells dark brown. Medulla composed of textura intricata. Asci arising from simple septa, cylindrical, 8-spored, apical pore blue in MLZ, 120–130 × 6–8 µm,  $\bar{x}$  = 126.1 × 7.15 µm. Spores broadly fusoid, hyaline, aseptate, multi-guttulate, 14.5–20 × 4–6 µm,  $\bar{x}$  = 17.4 × 5.2 µm. Paraphyses cylindrical, apically subclavate, 1.5–2 µm in diam.

On dead leaves of *Carex* sp., Ulsåknuten, 1056 m, 27.08.95, TAA 137418 (holotype).

This species belongs without doubt to the genus *Moellerodiscus* P. Hennings as this was redescribed to include *Ciboriopsis* Dennis by Dumont (1976). It has characteristic ectal excipulum composed of outer and inner layer, and ionomidotic reaction can also be found in this genus. *M. caricis* differs from all known species of *Moellerodiscus* in large spores.

## OSTROPALES

*Vibrissea decolorans* (Saut.) Sanchez & Korf (= *Apostemidium leptosporum* (Berk. & Br.) Boud.

On a fallen wet stick of *Salix* sp., Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137494.

*V. truncorum* Fr.

On a wet twig of *Salix* sp., Trøimsbøtt, ca 900–1100 m, 30.08.95, TAA 137493.

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## ARKTOALPIINSED LIUDSEENED SELTSIDEST LEOTIALES JA OSTROPALES LÕUNA-NORRA MÄGEDEST

Ain RAITVIIR ja Helle JÄRV

1995. aasta augustis toimunud ekspeditsiooni materjalide põhjal on esitatud arктоalpiinsete liudseente nimestik, milles on 68 liiki seltsist Leotiales ja kaks liiki seltsist Ostropales. On kirjeldatud kaheksat teadusele uut liiki: *Podophacidium pulvinatum* Raitv. & H. Järv, *Cistella rubi* Raitv. & H. Järv, *Dasyscyphella epilobii* Raitv. & H. Järv, *Dasyscyphella graminicola* Raitv. & H. Järv, *Hamatocanthoscypha polytrichi* Raitv. & H. Järv, *Lachnum incrupilum* Raitv. & H. Järv, *Lambertella norvegica* Raitv. & H. Järv ja *Moellerodiscus caricis* Raitv. & H. Järv. On tehtud kaks uut kombinatsiooni *Cistella aconiti* (Rehm) Raitv. & H. Järv ja *Brunnipila cannabina* (Rehm) Raitv. & H. Järv.