

STUDIES IN THE GENUS *GALERINA* FROM THE SHEFFERVILLE AREA  
ON THE QUÉBEC-LABRADOR PENINSULA, CANADA

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Eleven taxa of the genus *Galerina* are recorded from subarctic and arctic habitats in the vicinity of Shefferville, Labrador, Canada. They represent common, circumpolar species, such as *G. sphagnorum*, *G. pumila* var. *subalpina*, *G. vittaeformis*, *G. atkinsoniana*, *G. paludosa*, *G. unicolor*, and *G. pseudomycesopsis*, as well as rare species, recorded from arctic Canada for the first time, like *G. cephalotricha*, *G. pseudomniophila*, and *G. subbadipes*. Descriptions and illustrations are given of all taxa, as well as short comments on taxonomy, ecology, and geographic distribution.

Until recently the mycoflora of northern Québec has been poorly known. Only in the past decade some contributions have been made (Kallio, 1980; Huhtinen, 1982, 1984, 1985; Niemelä, 1985).

During the past ten years, mycologists from the University of Toronto have undertaken taxonomic investigations on various groups of *Agaricales* in the region of Shefferville, located on the boundary of northern Québec and Labrador (Newfoundland). In this area fungi have been collected in a wide variety of biotopes, including subarctic coniferous forest, marshes and arctic tundra. An annotated list of the *Agaricales* known from the area has also been published (Hutchinson & al., 1988). The vascular flora and biogeography of this region have been described by Mäkinen & Kallio (1980).

In August/September 1984 the first author has been in the fortunate position to join the group of Prof. Dr. D. Malloch, Toronto, on their collecting trip to Shefferville. The first results of this trip are given in the present paper, that deals with the genus *Galerina*. Hutchinson & al. (l.c.) report only three species of *Galerina*, viz. *G. dicranorum* Smith & Sing., *G. marginata*, and *G. unicolor*. Only the last mentioned species has also been studied by the present authors, who altogether report eleven taxa of *Galerina* from the area.

GALERINA Earle

1. *Galerina atkinsoniana* A.H. Smith

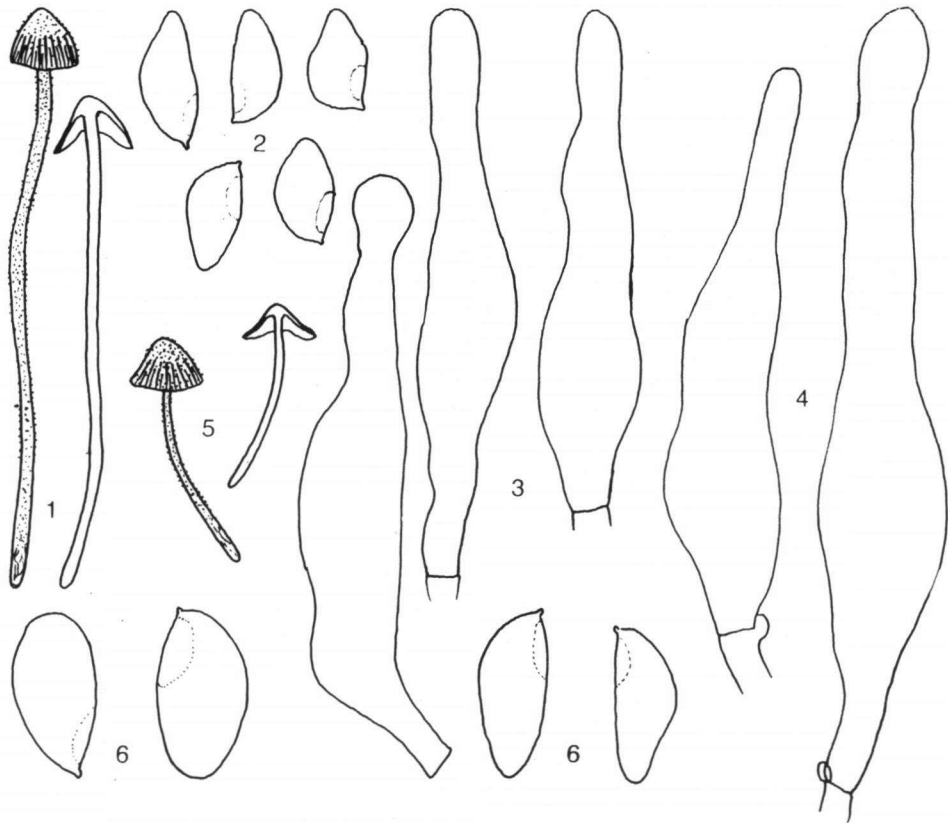
*Galerina atkinsoniana* A.H. Smith in *Mycologia* 45: 894. 1953.

1a. Two-spored form (var. *atkinsoniana* forma *atkinsoniana*).—Figs. 5, 6

Pileus 5–13 mm broad, campanulate to conical, hygrophanous, deeply translucently striate, dark reddish brown (Munsell 7.5 YR 4/6), paler at margin (towards 10 YR 6/8), palles-

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Figs. 1–4. *Galerina atkinsoniana*, four-spored form. — 1. Habit ( $\times 1$ ). — 2. Spores ( $\times 2000$ ). — 3. Cheilocystidia ( $\times 1250$ ). — 4. Pleurocystidia ( $\times 1500$ ). (All figs. from Noordeloos 84178.)

Figs. 5–6. *Galerina atkinsoniana*, two-spored form. — 5. Habit ( $\times 1$ ). — 6. Spores ( $\times 2000$ ). (All figs. from Noordeloos 84246.)

cent on drying, pruinose. Lamellae,  $L = 20$ ,  $l = 1-3$ , adnate, brown-yellow (10 YR 6/8) with fimbriate, slightly darker edges. Stipe  $15-25 \times 1$  mm, moderately to dark reddish brown (apex 10 YR 5/8, downwards 7.5 YR 3/4), entirely pruinose. Context concolorous. Smell and taste not distinctive. Spores  $12.5-15.0 \times 6.5-8.7$   $\mu\text{m}$ , ellipsoid to amygdaliform, often somewhat papillate, finely roughened, with distinct plage and apical callus. Basidia  $34-50 \times 9-11$   $\mu\text{m}$ , 2-spored. Cheilocystidia  $35-90 \times 10-18 \times 3-7$   $\mu\text{m}$ , lageniform to ventricose-fusoid, often with broadened, subcapitate apex. Pleuro-, caulo-, and pileocystidia similar. Pileipellis a cutis of cylindrical,  $3-10$   $\mu\text{m}$  wide hyphae with finely encrusted walls. Clamp-connections abundant.

*Habitat*.—On rotten wood in rather open lichen-rich *Picea mariana* forest.

*Collection examined*.—Québec, Shefferville, 5.5 km N. of town, 5 Sept. 1984, M.E. Noordeloos 84246.

1b. Four-spored form (var. *atkinsoniana*, forma *tetraspora* Kühner, nom. nud.).—Figs. 1–4

Pileus 3–7 mm broad, conical, hygrophanous, red-brown (centre and striae 7.5 YR 4/6, margin 7.5 YR 5/6), translucently striate up to centre, finely pruinose under lens, pallescent on drying to yellow (10 YR 7/6). Lamellae, L = 12–16, l = 3, distant, adnexed, segmentiform, brown (7.5 YR 5/6) with concolorous, fimbriate edges. Stipe 45–60 × 1 mm, cylindrical, reddish-yellow (7.5 YR 5/6–8), pruinose at apex, shining and almost smooth below, with some very scattered silvery fibrils. Context concolorous with surface. Smell and taste mild. Spores 9.0–11.5 × 5.0–6.5 μm, distinctly roughened with plage. Basidia 4-spored, with clamp. Cheilocystidia and pleurocystidia lageniform. Pileocystidia and caulocystidia present, similar to cheilocystidia. Pileipellis a cutis of narrow, cylindrical hyphae, 3–11 μm wide with encrusted walls. Clamp-connections abundant.

Habitat.—In *Sphagnum*-bog with *Larix laricina* in rather open, subarctic tundra.

Collections examined.—Québec: Shefferville, S. of airstrip, 1 Sept. 1984, M.E. Noordeloos 84178.

The two-spored form of *Galerina atkinsoniana* (forma *atkinsoniana*) is widely distributed in North America and Europa, and is very common indeed in boreal and alpine regions (Gulden, 1980, 1987; Kühner, 1972a). It grows on various mosses, including *Polytrichum*, and in oligotrophic vegetation-types. The four-spored form seems to be much less common. Kühner (l.c.) records material from Swedish Lapland growing on mosses in a calcareous site, and Gulden (1980) recorded it from a rich tall herb meadow, both from the alpine zone.

2. *Galerina vittaeformis* var. *pachyspora* A.H. Smith—Figs. 7–12

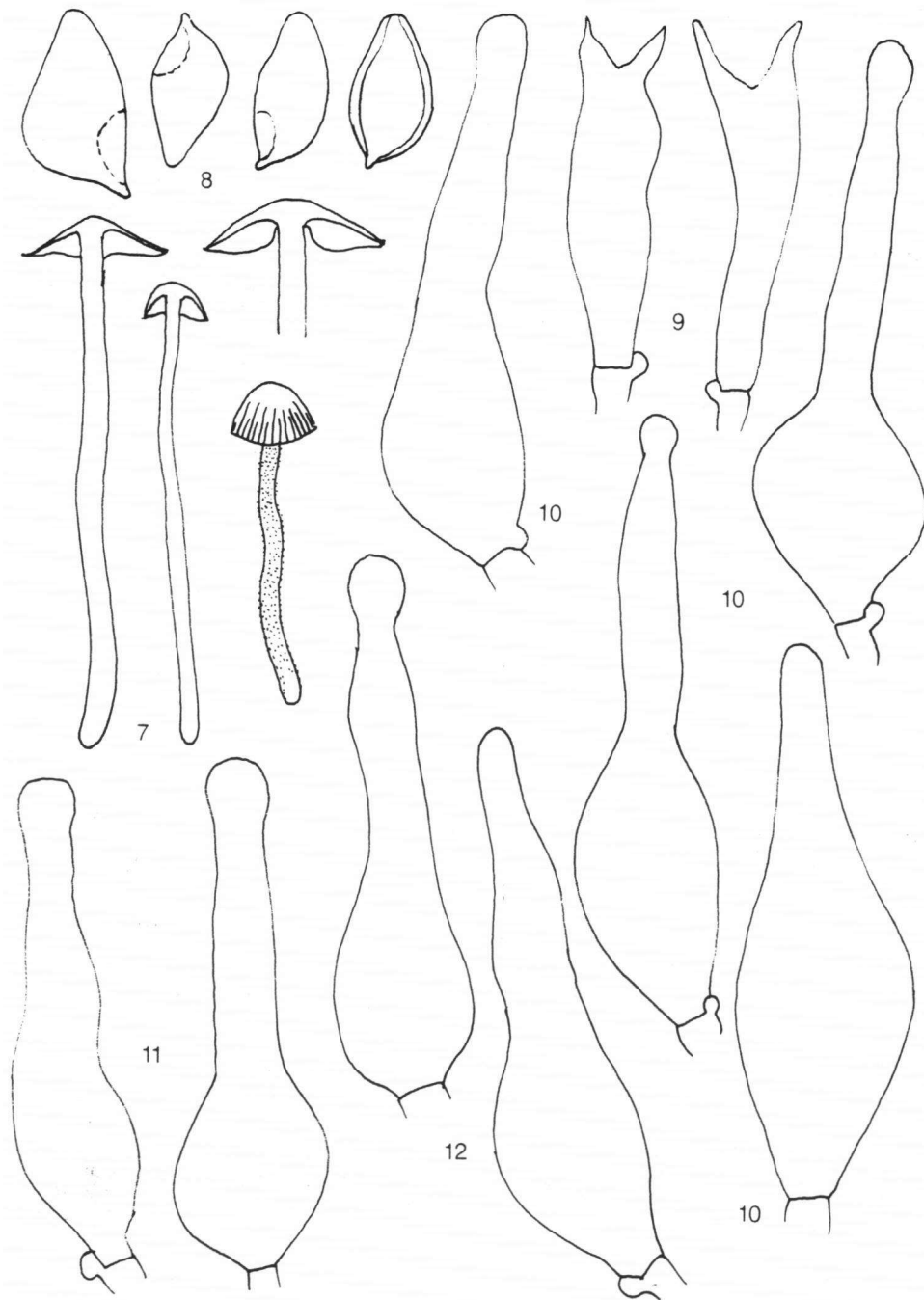
*Galerina vittaeformis* var. *pachyspora* A.H. Smith in *Mycologia* 50: 488. 1958.

Pileus 3–22 mm broad, campanulate to conical, with straight margin, hygrophanous, when moist deeply translucently striate, reddish brown (centre and striae 7.5 YR 4–5/6–8, margin 10 YR 7/6), strongly pallescent on drying to yellow (10 YR 6/8 to 8/6–4) smooth. Lamellae, L = 15–20, l = 1–3, adnexed, brown (7.5 YR 5/6) with slightly paler, fimbriate edges. Stipe 20–40 × 1 mm, cylindrical, reddish brown (7.5 YR 5/8–6) slightly paler at apex (7.5 YR 6/8), entirely minutely pruinose. Context concolorous with surface. Smell and taste farinaceous. Spores 12.5–15.0 × 7.0–8.0 μm, roughened, with distinct plage. Basidia 2-spored, clamped. Cheilocystidia lageniform, usually distinctly broadened at base, sometimes with subcapitate apex. Pleurocystidia similar, rare to abundant. Pileocystidia absent. Caulocystidia numerous, similar to cheilocystidia. Pileipellis a cutis of narrow, 8–12 μm wide hyphae with minutely encrusted walls. Clamps abundant in all tissues.

Habitat.—In arctic tundra on a rather dry spot with *Salix herbacea*; among mosses under *Picea mariana* and *Larix laricina*, and in thick moss in mixed forest of *Picea* and *Salix vestita*.

Collections examined.—Newfoundland: Irony Mountain, 25 km N. of Shefferville, 3 Sept. 1984, M.E. Noordeloos 84203; ski-slope near Bean Lake, 6 km S. of Shefferville, 29 Aug. 1984, M.E. Noordeloos 84142; Québec, Shefferville, near airstrip, 26 Aug. 1984, M.E. Noordeloos 8490.

*Galerina vittaeformis* is a widely distributed species. The two-spored variety with large spores is recorded from North America, Europa, and Asia, and according to Smith & Singer



(1964) occurring in both the arctic and subantarctic zone. It has not been found on Svalbard, however (Gulden, 1987). It is mainly a muscicolous species growing in moist and wet sites. In the alpine zone of Norway it is mostly found in mesotrophic to eutrophic habitats.

### 3. *Galerina sphagnorum* (Fr.) Kühner—Figs. 13–15

*Galerina sphagnorum* (Fr.) Kühner in *Encycl. mycol.* 7: 179. 1935.

Pileus 5–25 mm broad, conical then conico-convex only slightly expanding with age, with straight or deflexed margin, hygrophanous, when moist rather vivid yellow, yellow-red, or yellow-brown (7.5 YR 5–6/8 at centre, middle 7.5–10 YR 6–7/8, margin 10 YR 8/8), pallescent on drying to yellow (10–2.5 YR 8/8), deeply translucently striate, smooth, glabrous. Lamellae, L = 18–24, l = 3–7, moderately distant, adnate, often with decurrent tooth, yellow then reddish brown (10 YR 7/6 to 7.5 YR 7/6) with entire to fimbriate, concolorous or paler edge. Stipe 50–90 × 2–4 mm, cylindrical, somewhat flexuose, sometimes slightly broadened at base, yellow (10 YR 7–8/6, 7/8 to 7.5 YR 7/6), apex white pruinose, downwards finely silky striate. Context concolorous with surface. Smell slightly acidulous, subfarinaceous, or somewhat raphanoid, but in general weak. Taste slightly acidulous to farinaceous. Spores 10–11.5 × 5.5–6.5 μm, ellipsoid to ovoid with blunt apex, sometimes yellow-brown in KOH, without visible ornamentation under oil-immersion, no germ-pore observed, faint suprahilar depression, but plage very indistinct. Basidia 25–35 × 8–9 μm, 4-spored, clamped. Cheilocystidia 35–65 × 7–9(–10) (base) × 3.5–7 (apex) μm, irregular clavate, subcylindrical to slenderly lageniform, with rounded, often subcapitate apex. Pleurocystidia none. Pileipellis a thin cutis of cylindrical, 3–10 μm wide hyphae with minutely encrusted walls. Pileitrama more or less regular, made up of coarsely encrusted hyphae. Clamp-connections numerous in all tissues studied.

**Habitat.**—In deep moss (mostly *Sphagnum*) in boggy areas with *Salix* in subarctic tree-tundra.

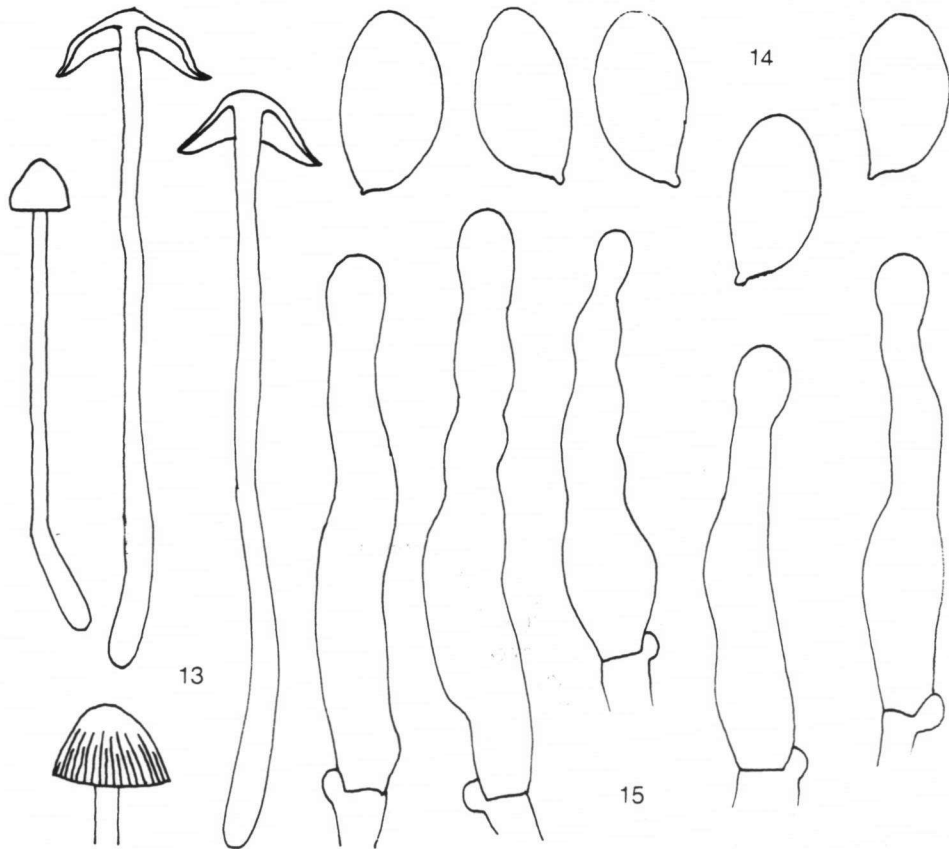
**Collections examined.**—Newfoundland: Bean-Lake, 6 km S. of Shefferville, at ski-slope, 23 Aug. 1984, *M.E. Noordeloos* 8439; 8442, ditto, 29 Aug. 1984, *M.E. Noordeloos* 84145.

The material fits *Galerina sphagnorum* very well, except that the farinaceous smell and taste usually were not recorded or weak. The cheilocystidia are well in accordance with the descriptions of Kühner (1935) and Smith & Singer (1964), but the line-drawings in the latter are a bit too stout.

*Galerina gibbosa* Favre is similar in having yellowish colours of the fruit-body, adnate-subdecurrent lamellae, almost smooth spores, and relatively slender cheilocystidia but in that species the pileus is usually thick-fleshed and umbonate and uniformly coloured. Microscopically it differs by having cheilocystidia that typically are wider in the capitate head than in the ventral portion.

*Galerina sphagnorum* has a rather wide geographical distribution in North America and Europe, and is also known from South America and Japan. It grows gregariously among

Figs. 7–12. *Galerina vittaeformis*. — 7. Habit (× 1). — 8. Spores (× 2000). — 9. Basidia (× 1250). — 10. Cheilocystidia (× 1250). — 11. Pleurocystidia (× 1500). — 12. Caulocystidia (× 1250). (All figs. from *Noordeloos* 84142.)



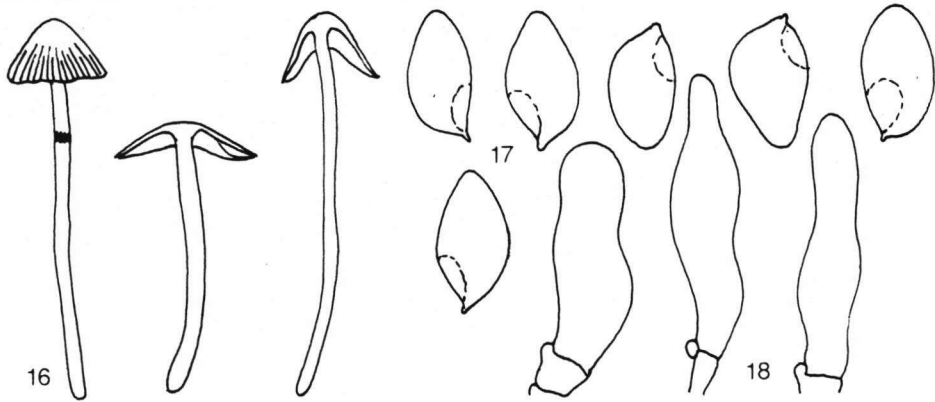
Figs. 13–15. *Galerina sphagnum*. — 13. Habit ( $\times 1$ ). — 14. Spores ( $\times 2000$ ). — 15. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 8439.)

various species of *Sphagnum*. Gulden (1980) reports two finds from an oligotrophic fen in the alpine zone of southern Norway, but apparently the species is not common above the timber-line.

#### 4. *Galerina paludosa* (Fr.) Kühner—Figs. 16–18

*Galerina paludosa* (Fr.) Kühner in *Encycl. mycol.* 7: 184. 1935.

Pileus up to 20 mm broad, campanulate, conical or conico-convex, sometimes with distinct papilla, hygrophanous, when moist rather dark brown to red-brown, (7.5 YR 4/4), deeply translucently striate, pallescent on drying, smooth, glabrous. Lamellae, L = 18–25, l = 1–3, moderately distant, adnate, brown with paler, fimbriate edge. Stipe 30–50  $\times$  1–3 mm, concolorous with pileus, finely pruinose at apex, below with fibrillose veil patches forming a nar-



Figs. 16–18. *Galerina paludosa*. — 16. Habit ( $\times 1$ ). — 17. Spores ( $\times 2000$ ). — 18. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84247/9.)

row, annular zone, below annular zone finely striate. Smell and taste farinaceous. Spores  $10.0\text{--}12.5 \times 6.5\text{--}7.5 \mu\text{m}$ , broadly amygdaliform, often somewhat papillate at apex, finely rugulose, with distinct plage, without germ-pore. Basidia 4-spored, clamped. Cheilocystidia ventricose-capitate,  $22\text{--}45 \times 5\text{--}12 \times 4\text{--}9 \mu\text{m}$ . Pleurocystidia absent. Pileipellis a cutis of narrow, cylindrical hyphae,  $2.5\text{--}10 \mu\text{m}$  wide with finely encrusted walls.

Habitat.—In deep *Sphagnum* in peat-bog with scattered *Larix laricina*.

Collections examined.—Québec: Labrador, Shefferville, 5 km N. of town, 5 Sept. 1984, M.E. Noordeloos 84247/9.

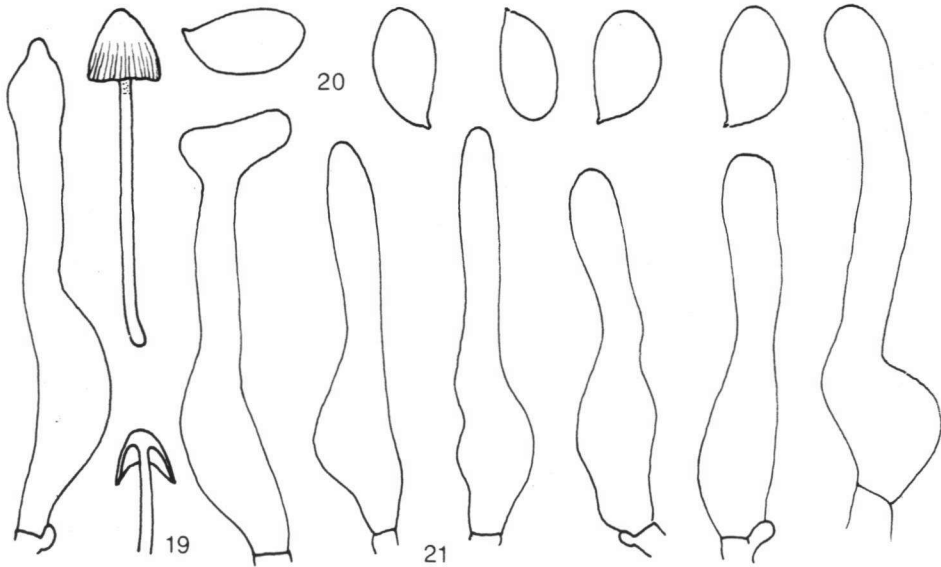
The relatively dark brown colour of the fruit-bodies, the annuliform velar patches on the stipe, the mealy smell and taste and the habitat in *Sphagnum*-peat bogs are distinctive for *Galerina paludosa*.

*Galerina paludosa* is the most common *Galerina* species in *Sphagnum* bogs throughout Europe and North America, and probably has a circumboreal distribution (Smith & Singer, 1964). It seems to be less common in the alpine and arctic habitats (Gulden, 1980, 1987).

##### 5. *Galerina pumila* var. *subalpina* A.H. Smith in Sm. & Sing.—Figs. 19–21

*Galerina pumila* var. *subalpina* A.H. Smith in Sm. & Sing., A Monograph of the genus *Galerina*: 189. 1964.

Pileus 3–11 mm broad, conical not very much expanding with age, with straight margin, hygrophanous, deeply translucently striate when moist, dull yellowish brown to reddish brown (10 YR 4/6 at centre to 10 YR 7/6–7/4 at margin), strongly pallescent on drying to almost white (10 YR 6–8/2–4), smooth, glabrous. Lamellae, L = about 20, l = 1–3, adnexed, arcuate-subsegmentiform, yellow-brown to brown (10 YR 5–6/4 to 7.5 YR 6/6) with pallid, fringed edges. Stipe 15–35  $\times$  1 mm, straight or slightly curved towards base, yellow to yellow-brown (10 YR 7–6/4–6), pruinose at apex, downwards smooth or with very scattered silvery fibrils, satiny. Context concolorous with surface, pallid, hygrophanous



Figs. 19–21. *Galerina pumila* var. *subalpina*. — 19. Habit ( $\times 1$ ). — 20. Spores ( $\times 2000$ ). — 21. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84202.)

in inner parts. Smell none. Taste not tried. Spores  $9.5\text{--}12.0 \times 6.0\text{--}7.5 \mu\text{m}$ , amygdaliform, faintly rugulose, almost smooth, with plage, with pore or callus, episore not loosening. Basidia 4-spored, clamped. Cheilocystidia  $30\text{--}50 \times 5\text{--}9 \mu\text{m}$ , lageniform, rather slender with long attenuated or cylindrical to subcapitate neck. Pleurocystidia absent. Pileipellis a cutis of narrow, faintly encrusted hyphae,  $2\text{--}9 \mu\text{m}$  wide. Clamp-connections abundant.

**H a b i t .**—In rather dry *Salix herbacea* snow-bed and on naked ground on path in open forest of *Picea mariana*, close to the timber-line.

**C o l l e c t i o n s e x a m i n e d .**—Newfoundland: Labrador, Irony Mountain, 25 km N. of Shefferville, 3 Sept. 1984, *M.E. Noordeloos 84202*; Québec, Shefferville, at bottom of airstrip, 6 Sept. 1984, *M.E. Noordeloos 84261*.

The thick-fleshed apical portion of the pileus in exsiccates and very pale and fragile fruit-body are typical for *Galerina pumila* var. *subalpina*, combined with the distinctive narrowly lageniform cheilocystidia with irregularly and variably shaped beak and the almost smooth spores.

*Galerina pumila* var. *subalpina* is known from North America, Europe, and Asia. In America it occurs at elevations supporting the alpine fir (Alaska, the Hudsonian area). It usually grows gregariously among mosses, especially *Dicranum*.

## 6. *Galerina pseudomniophila* Kühner—Figs. 22–25

*Galerina pseudomniophila* Kühner in Bull. trimest. Soc. mycol. Fr. 88: 152. 1972.

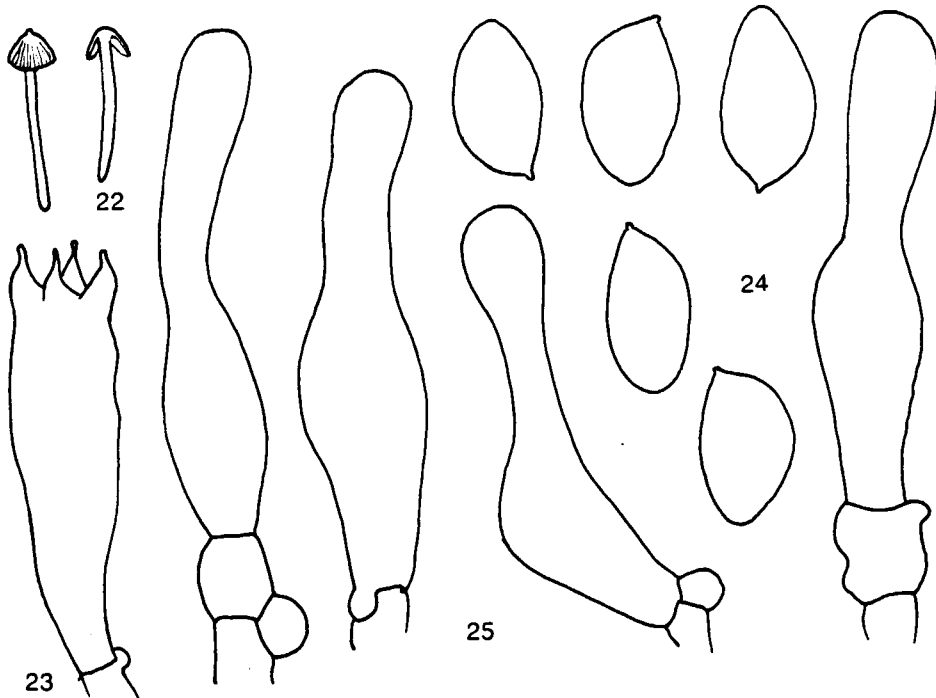


Pileus 5–7 mm, conical sometimes with small papilla, hygrophanous, when moist reddish brown (7.5 YR 4–5/6, margin 10 YR 6/6), deeply translucently striate, pallescent on drying, smooth. Lamellae, L = 15, l = 1, distant, adnexed, brown (7.5 YR 5–6/6) with fringed, concolorous edges. Stipe 15–30 × 0.5–1 mm, cylindrical, yellow (10 YR 7/6–6/6), pruinose at apex, downwards smooth. Context concolorous with surface. Smell not distinct. Taste sourish. Spores 10–12 × 5–7  $\mu$ m, amygdaliform, minutely roughened with plage, no germ pore or callus, pale tawny in KOH, without loosening epispore. Basidia 4-spored, clamped. Cheilocystidia 30–40 × 6–9 × 5–8  $\mu$ m, lageniform with cylindrical to subcapitate neck. Pleurocystidia absent. Pileipellis a cutis of narrow, cylindrical 2–9  $\mu$ m wide, almost pigmentless hyphae. Pileitrama encrusted.

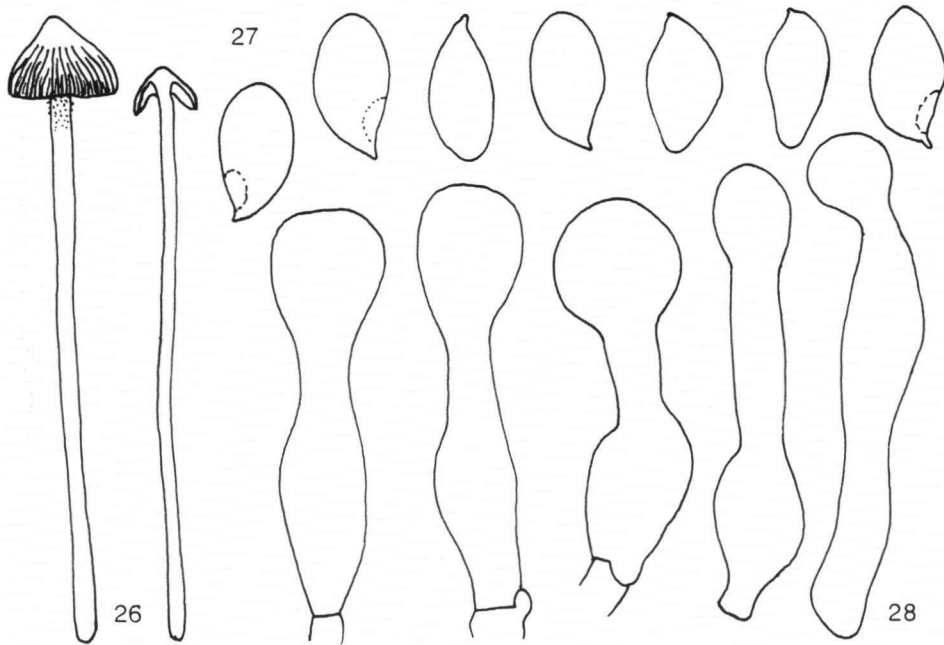
**Habitat.**—In rather dry *Salix herbacea* snow-bed.

**Collection examined.**—Newfoundland: Labrador, Irony Mountain, 25 km N.W. of Shefferville, 3 Sept. 1984, M.E. Noordeloos 84211.

This collection fits rather well with the concept of *Galerina pseudomniophila* on account of the rather pale stipe, and the shortish, rather regular cheilocystidia. In many respects, however, it comes also very close to *G. pumila* var. *subalpina*. Further research must prove whether both taxa are conspecific or not. *Galerina pseudomniophila* is previously known from the



Figs. 22–25. *Galerina pseudomniophila*. — 22. Habit ( $\times 1$ ). — 23. Spores ( $\times 2000$ ). — 24. Basidium ( $\times 1250$ ). — 25. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84211.)



Figs. 26–28. *Galerina cephalotricha*. — 26. Habit ( $\times 1$ ). — 27. Spores ( $\times 2000$ ). — 28. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84253.)

Swiss alps and from various places above the timberline in Scandinavia and from Svalbard (Kühner, 1972b; Gulden, 1980, 1987). It usually grows on and among mosses on acid soils, often together with *Polytrichum* and *Salix herbacea*.

#### 7. *Galerina cephalotricha* Kühner—Figs. 26–28

*Galerina cephalotricha* Kühner in Bull. trimest. Soc. mycol. Fr. 72: 152. 1972.

Pileus 6–15 mm broad, conical only slightly expanding when old, with straight margin, hygrophanous, yellow-brown (centre 10 YR 4–5/4, margin 10 YR 6/6), deeply translucently striate, pallescent on drying to yellow (10 YR 7–8/6), smooth, glabrous. Lamellae, L = about 20, l = 3, moderately distant, adnate or adnexed, brown (10 YR 5–4/6) with paler, fimbriate edge. Stipe 60–80  $\times$  2–3 mm, cylindrical or slightly broadened at base, yellow (10 YR 6/6–8), pruinose at apex only, downwards shining, but with a few fibrillose patches from veil. Context concolorous, distinctly hygrophanous. Smell and taste indistinct. Spores 8.5–1.5(–12.0)  $\times$  5.5–7.0  $\mu$ m, ellipsoid to subamygdoloid, very faintly ornamented almost smooth, with plage, without a pore or callus, yellow to yellow-brown in KOH. Basidia 4-spored, clamped. Cheilocystidia 25–40  $\times$  4–8  $\times$  6–10  $\mu$ m, ventricose-capitate, almost tibbiocystidiate. Pleurocystidia none. Pileipellis a cutis of narrow, cylindrical hyphae, 4–9  $\mu$ m wide with hyaline, smooth walls. Pileitrama heavily encrusted.

**Habitat.**—In deep moss (*Sphagnum* and other mosses) in mixed, rather open forest of *Picea glabra* and *Salix* spp.

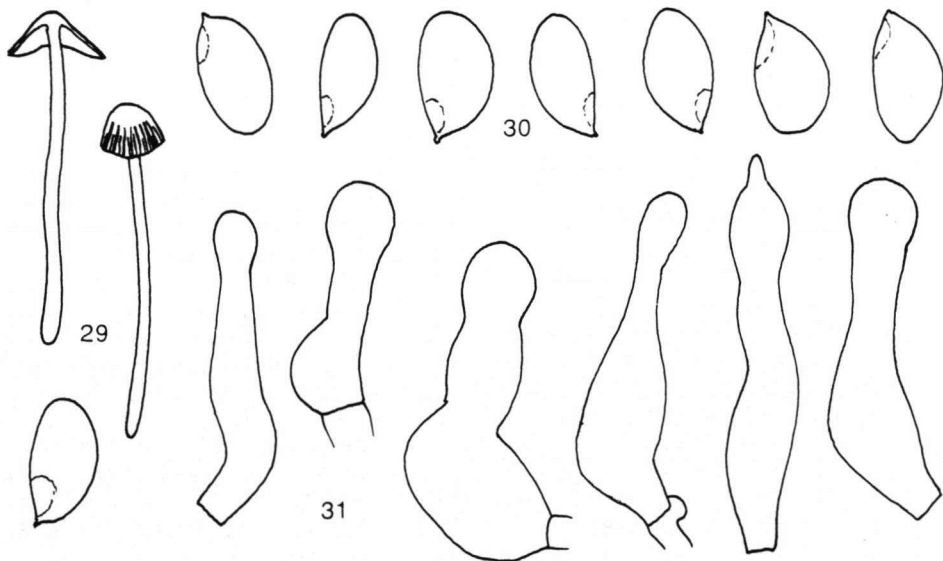
**Collection examined.**—Québec: Shefferville, 5.5 km N. of town, 5 Sept. 1984, M.E. Noordeloos 84253.

*Galerina cephalotricha* is characterized by the rather short, distinctly capitate, almost tibia-form cheilocystidia, and practically smooth spores. It is somewhat intermediate between the typical sphagnicolous taxa and the other muscicolous species of the genus. Both the original description of Kühner (1972b) and the observations of the second author refer to habitats with *Sphagnum* mixed with other mosses, as is also the case with the collection from Labrador. *Galerina cephalotricha* comes close to *G. cainii* A.H. Smith, described from Québec, where it apparently is common in similar habitats. This species has, however, a distinct plage on the spores, and is of a duller brown colour.

So far *Galerina cephalotricha* was only known from the French alps (Préalps and Vanoise) from subalpine habitats. It was considered as a common species in the *Piceetum vacciniosum* among the mosses *Ptilium crista-castrensis* and *Sphagnum* species, and also under *Alnus viridis* among mosses above the coniferous forest-line.

#### 8. *Galerina subbadipes* Huijsman—Figs. 29–31

*Galerina subbadipes* Huijsman in *Fungus* 25: 21. 1955.



Figs. 29–31. *Galerina subbadipes*. — 29. Habit ( $\times 1$ ). — 30. Spores ( $\times 2000$ ). — 31. Cheilocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84236.)

Pileus 6–11 mm broad, conical, only slightly expanding with age, with thin, membranaceous, slightly exceeding margin with distinct veil remnants, strongly hygrophanous when moist, dull reddish brown (7.5 YR 4–5/6, margin 6/6), strongly translucently striate, strongly pallescent on drying, smooth. Lamellae, L = about 20, l = 1–3, distant, adnate-adnexed, brown (7.5 YR 5/6) with slightly paler, fimbriate edges. Stipe 30–40 × 0.5–1.5 mm, cylindrical, yellow-brown (10 YR 5–6/6), pruinose at apex, with fibrillose velar patches below, shining. Context concolorous in cortex, strongly hygrophanous, pallescent to pale yellow at centre of pileus and in upper part of stipe. Smell and taste mild, slightly sweetish. Spores 10.0–13.5 × (5.5–)6.0–7.5 μm, amygdaloid, minutely ornamented, with plage; plage-line distinctly tawny in KOH, outline rugulose, epispore not loosening, without pore or callus. Basidia 4-spored, clamped. Cheilocystidia 25–40 × 6–8 μm, lageniform with cylindrical-clavate, subcapitate neck. Pleurocystidia absent. Pileipellis a thin cutis of narrow, 2–7 μm wide hyphae with hyaline to pale yellow, non-encrusted walls. Deeper layers of pileitrama brown, encrusted.

Habitat.—In alpine *Betula pumila*/ *Salix herbacea* vegetation.

Collection examined.—Newfoundland: Labrador, near Joan Brook, 42 km N.W. of Shefferville, 4 Sept. 1984, M.E. Noordeloos 84236.

Characteristic for *Galerina subbadipes* are the relatively dark brown colour of pileus and stipe, and the distinct veil remnants on pileus margin and stipe. On account of the darker and more ornamented spores this species belongs to stirps *Hypnorum*.

*Galerina subbadipes* is known from scattered locations in Europe and North America, usually from lowland habitats, growing among mosses and plant debris.

#### 9. *Galerina pseudomycenopsis* Pilat in Pilat & Nannf.—Figs. 32–35

*Galerina pseudomycenopsis* Pilat in Pilat & Nannf. in *Friesia* 5: 19. 1954.

*Galerina moelleri* Bas in *Persoonia* 1: 310. 1960.

*Galerina pseudopumila* Orton in *Trans. Br. mycol. Soc.* 43: 68. 1960.

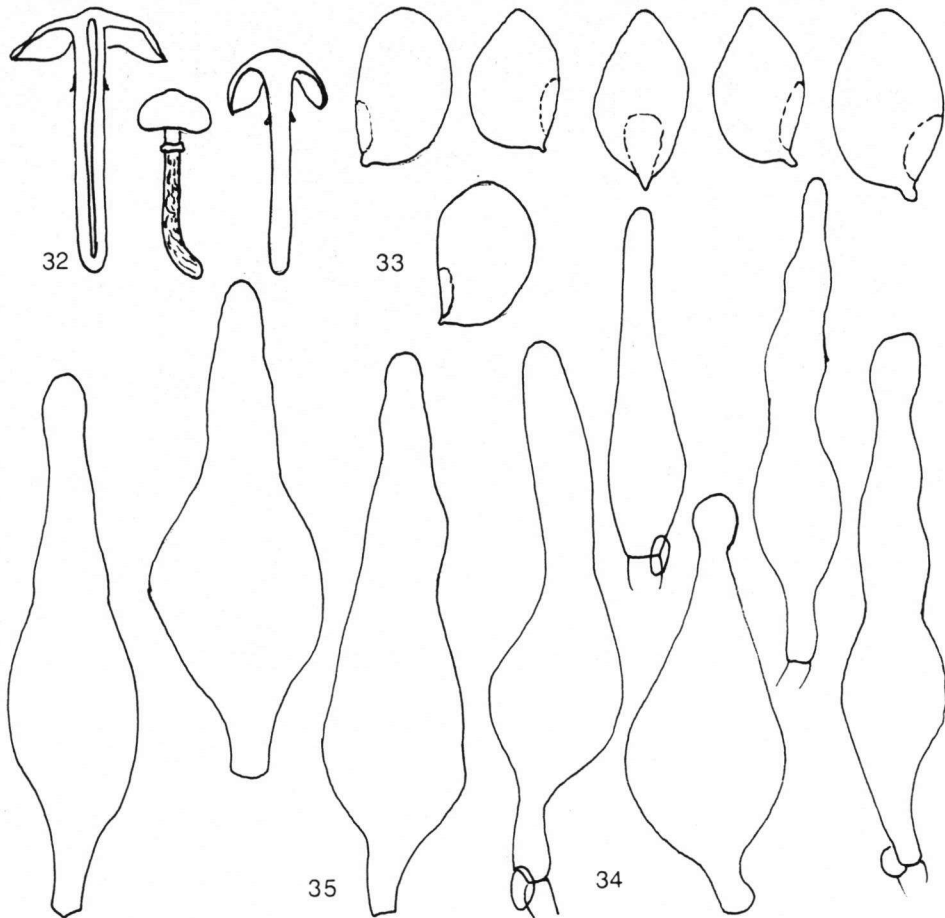
*Galerina pumila* f. *oreiana* Favre in *Ergeb. wiss. Unters. Schweiz. NatParks* 5 (NF) 33: 204. 1955.

Misapplied names.—*Pholiota pumila* (Pers.: Fr.) Gill. sensu Möller, *Fungi Faeroes* 1: 229. 1945. — *Galerina pumila* (Pers.: Fr.) Sing. sensu M. Lange, in *Medd. Grönl.* 148(2): 37. 1957.

Pileus 8–20 mm broad, conico-convex or hemispherical, then convex with involute margin at first, hygrophanous, when moist uniformly coloured dark reddish brown (7.5 YR 4/4–6), not translucently striate, smooth, pallescent on drying to yellowish red (7.5 YR 5/6; 10 YR 7/6–8). Lamellae, L = 25–30, l = 1–3, moderately distant, adnate to adnexed or deeply emarginate, brown (7.5 YR 5/6), slightly paler towards fimbriate edge. Stipe 25–35 × 1.5–3 mm, cylindrical, flexuose, brown (7.5 YR 5/4–6) with distinct, whitish, membranaceous annulus, with white fibrillose velar patches below. Context red-brown in pileus and stipe cortex, as well as above the lamellae, inner parts pale, hygrophanous. Smell not distinct. Taste not tried. Spores 9.0–11.5 × 6.5–7.5(–8.0) μm, Q = 1.4–1.5–1.6, amygdaliform to almost ellipsoid, roughened with distinct plage and small callus, epispore not visibly loosening, brown in KOH. Basidia 32–40 × 8–13 μm, 4-spored, clamped. Cheilocystidia (40–) 48–62 × (8.8–)10–16 × 3–5 μm, lageniform with rounded apex. Pleurocystidia 45–66 × 12–21 × 4–7, lageniform, scattered. Caulocystidia 52–74 × 12–15 × 4–7 μm, lageniform. Pileipellis an ixocutis of cylindrical hyphae, 2–12 μm wide with hyaline, smooth walls. Pileitrama with heavily encrusted hyphae. Clamp-connections abundant.

Habitat.—Among grass and moss in lawn.

Collection examined.—Newfoundland: Labrador, Shefferville, churchyard, 2 Sept. 1984, M.E. Noordeloos 84191.



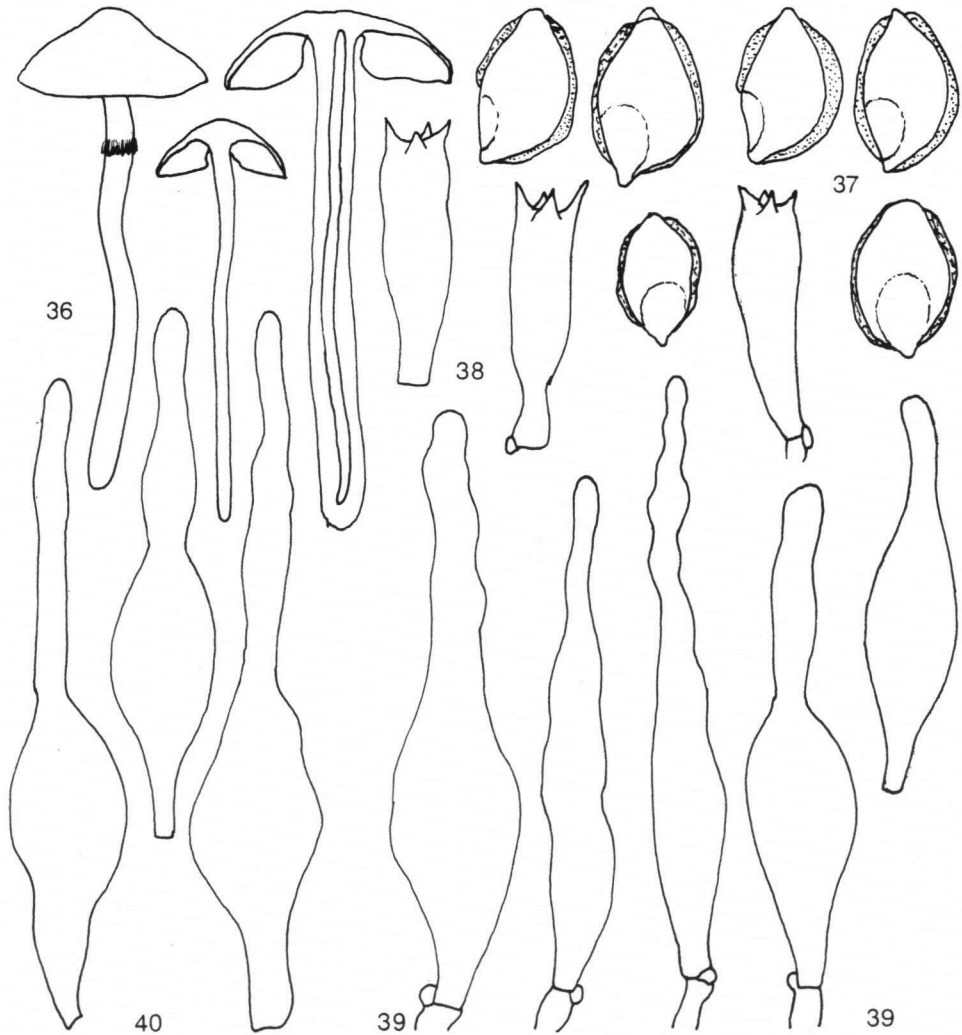
Figs. 32–35. *Galerina pseudomycenopsis*. — 32. Habit ( $\times 1$ ). — 33. Spores ( $\times 2000$ ). — 34. Cheilocystidia ( $\times 1250$ ). — 35. Pleurocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84191.)

*Galerina pseudomycenopsis* has an ecological optimum under arctic-alpine conditions (Gulden, 1987). It has a circumpolar distribution, and extends down to the mountain ranges in Europe and North America, and even occurs in the subantarctic and antarctic regions (Gulden & al., 1985). Typical habitats are cold littoral marshes, damp meadows, fens, and wet tundra, preferably in eutrophic sites.

#### 10. *Galerina unicolor* (Fr.) Sing.— Figs. 36–40

*Galerina unicolor* (Fr.) Sing. in Trud. bot. Inst. Akad. Nauk, S.S.S.R. 6: 468.1950.

Pileus 10–30 mm broad, conico-convex to convex with straight margin, not translucent, hygrophorous, when moist dark red-brown to yellow-brown (5 YR 3–4/4, 4/6 to 7.5 YR



Figs. 36–40. *Galerina unicolor*. — 36. Habit ( $\times 1$ ). — 37. Spores ( $\times 2000$ ). — 38. Basidia ( $\times 1250$ ). — 39. Cheilocystidia ( $\times 1250$ ). — 40. Pleurocystidia ( $\times 1250$ ). (All figs. from Noordeloos 84195.)

4–6/6–8 or 10 YR 4–5/4), becoming slightly translucently striate at margin when old, subviscid when moist, smooth, glabrous. Lamellae, L = 20–30, l = 3–7, deeply emarginate or adnate, sometimes with slight decurrent tooth, brown (7.5 YR 5/6) with fimbriate, concolorous or slightly paler edges. Stipe 40–70  $\times$  2–7 mm, rather stout, cylindrical, flexuose, dark reddish brown to almost black (7.5 YR 5/6 to 7.5 YR 3–4/2/4; 10 YR 2–3/2) with fibrillose annular zone, silvery white-fibrillose with veil remnants in lower part. Context dark red-

brown to black, concolorous with surface. Smell somewhat sweetish. Taste not tried. Spores  $8.5-11.5 \times 5.5-7(-8) \mu\text{m}$ ,  $Q = 1.4-1.8$ , average  $Q = 1.4-1.6$ , ellipsoid to amygdaliform, roughened with loosening epispore, with distinct plage and a small callus. Basidia  $25-35 \times 6-9 \mu\text{m}$ , 4-spored, clamped. Cheilocystidia  $44-70 \times 7-15 \times 2.5-5 \mu\text{m}$ , lageniform. Pleurocystidia  $60-85 \times 10-18 \times 2.5-5 \mu\text{m}$ , lageniform, scattered. Caulocystidia similar. Pileipellis a thin cutis of narrow,  $2-8 \mu\text{m}$  wide, cylindrical hyphae. Clamp-connections abundant.

**Habitat.**—Among mosses under *Picea*, *Betula*, and *Salix* in subarctic forest.

**Collections examined.**—Québec: Shefferville, along forest track S. of airstrip, 1 Sept. 1984, *M.E. Noordeloos 84177*; Newfoundland: Labrador, S. of Bean Lake, 6 km S. of Shefferville, 2 Sept. 1984, *M.E. Noordeloos 84195*.

*Galerina unicolor* is one of the commonest species of *Galerina* subgen. *Naucoriopsis* in alpine and (sub)arctic habitats (Kühner, 1972a; Gulden, 1980). It can be distinguished from *Galerina pseudomycenopsis* which has spores that are differently shaped and smoother, without a loosening epispore.

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