

## NOTES ON THE GENUS PSATHYRELLA—VII

### **Psathyrella longicauda versus Psathyrella atrolaminata (= *P. melanophylla* pr. p. maj., excl. type)**

E. KITS VAN WAVEREN

*Rijksherbarium, Leiden*

The name *Psathyrella melanophylla* proposed in our previous paper (1976: 370) to replace the misapplied name *P. caudata*, is in its turn replaced by the name *atrolaminata* as a result of the discovery that in our previous paper a collection belonging to *P. longicauda* had erroneously been selected as the type of *P. melanophyllum*, which renders the latter name a synonym of *P. longicauda*. It is argued that Ricken's plate 68 fig. 1 (1913) does not represent *P. atrolaminata* as erroneously stated by Kühner & Romagnesi (1953: 359) and us (1976: 370) but *P. longicauda*. A redescription of both species is given.

In our previous paper (1976: 370) we argued that *Psathyrella caudata* sensu Lange, Kühner & Romagnesi, Moser was a misapplied name for a well known, be it rare species, reason why we proposed the name *P. melanophylla* for that species. Unfortunately there was among the material on which we based our description of *P. melanophylla* one collection of which we now realise that it represents *P. longicauda*. We even designated that collection the type specimens of *P. melanophylla*. The explanation of our mistake is that we were misled by the fact that of that collection (16 Oct. 1963) the gills were very black — as they occasionally can be in *P. longicauda* — and had a white edge (both characters constant in *P. atrolaminata*) while overlooking the conspicuously long pseudorrhizae of the carpophores (see Kits v. Waveren, 1976: 349, fig. 3). The error necessitates proposing a new name for this species, which we have now come to call *P. atrolaminata*. We designate the specimens of our collection from 'Het Naaldenveld', 28 Oct. 1980 as type specimens of *P. atrolaminata*. We discovered that both Kühn. and Romagn. (1953: 359) and we (Kits v. Waveren, 1976: 370) wrongly quoted Ricken's plate 68 fig. 1 (1913) as representing *P. atrolaminata*, whereas obviously it depicts *P. longicauda*.

For our methods of examining the basidiocarps both macro- and microscopically the reader is referred to our previous papers (Kits van Waveren, 1971: 249, 1972: 24, 1976: 346). Spore sizes are given as a range with mean values (of each collection always 20 spores were measured) added between brackets together with the number of collections examined. For the description of the colours of the macro- and microscopic structures 'Munsell Soil Color Charts', editions 1954 and 1971, and their code designating the colours, were used (abbreviation: Mu.). In the lists of collections examined the author's, name is abbreviated to E. K. v. W.

In the present study an attempt is made to unravel the confusing interpretations of *P. longicauda* and *P. atrolaminata*. The latter name we now give to the species known in the literature as *P. caudata* (Fr.) Quél. A brief recapitulation of the reasons for this renaming needs to be given. Kühner & Romagnesi rightly stated in a note (1953: 371, note 4) that Fries' *Agaricus caudatus* differs from their *Drosophila caudata* in that the cap of Fries' plant turns pink on drying, is very fragile, splits in rainy weather and is deliquescent, to which might have been added that according to Fries the growth is not caespitose and — most important of all — the gill edge is red. Fries (1821: 299) regarded his *A. caudatus* as a large variety of *A. gracilis* (described by him as having a red gill edge) and for a full description he referred to his description of *A. caudatus* in his *Observationes* (1818: 187), in which the gills are said to have a 'marginē roseae'. Also, in Fries' *Epicrisis* (1838: 239) *A. prona* is said to have a red gill edge as the preceding species, which is *A. caudatus*. The colour of the gill edge is not mentioned in his later publications in all of which, however, Fries referred to his 1818 description.

We have three reasons for coming back to our earlier (1976: 366–370) descriptions of *P. longicauda* and *P. atrolaminata* (= *P. melanophylla* pr. p. maj., excl. type).

(i) A. H. Smith (1972: 334), claiming having seen only two collections of what he called *P. caudata*, believes that *P. longicauda* is possibly the same as *P. caudata*, whereas Kühner & Romagnesi (1953: 359) distinguish these two species; this controversy needs a solution.

(ii) Misled by the rather dark greyish black colour of the gills (this colour printed bold face by Kühner & Romagnesi as the essential character of their *Drosophila caudata*) of the ten specimens of our 1963 (Oldenzaal) collection, we wrongly (as we now realise) named them *Psathyrella caudata* in 1963 and *P. melanophylla* instead of *P. longicauda* in our 1976 paper. We overlooked the trace of brown in the colour of the gills and above all ignored the excessive length of the pseudorrhizae. This grave error urgently required rectification.

(iii) In 1980 we had the good fortune of finding excellent collections of both species, casting new light on both.

Karsten (1891: 298) gave an excellent description of his *longicauda* in which the main points are: cap 15 mm broad, veil present, stem 30 mm long and strongly rooting ('eximie radicans'), the pseudorrhiza twice as long as the stem (which comes to 60 mm!), gills at first whitish grey, then 'purpurascē atrae', gill edge white, spores bay ('badius'), opaque or semi-opaque, 13–16 × 7–9 μm, pleurocystidia fusoid, 55–60 × 15 μm. According to Karsten the species differed from *P. gracilis* by its white gill edge, pseudorrhiza and darker and slightly larger spores. No mention is made of any brown colour in the gills and of a germ pore, neither of two characters which are typical of *P. atrolaminata*, viz. caespitose growth and revolute marginal area of the cap.

Karsten's species has received very little acknowledgement in the literature. It is only mentioned by Masee (1902: 218) who copied the main points from Karsten, calling the stem 'remarkably rooting'; by Konrad & Maublanc (1928: 77), whose verdict was that the species is little known, doubtful and to be excluded; by von Schulmann (1960: 70), who gave a very brief description; by Moser (1978: 268), whose brief description, adopted from Kühner & Romagnesi, is in small print, meaning that the species is rare or only known from a limited area; finally by Kühner & Romagnesi (1953: 359) and by Malençon & Bertault (1970: 186). With the latter authors the pseudorrhiza is very short, only 10–20 mm, the marginal area of

the cap distinctly revolute, the gill edge neither white nor red but yellowish cinnamon, the germ pore very distinct and even truncate and the cheilocystidia utriform (their figure shows three lageniform cells with a fairly thick short neck without a subcapital constriction), so that their description reminds more of *P. caudata* sensu auct: *P. atrolaminata*.

Ricken and Lange never mentioned the species and Ricken's (1913: 265) description of what he called *P. caudata* and above all his plate 67 fig. 1 beautifully agrees with *P. longicauda*. Kühner & Romagnesi (1953: 359) and we (1976: 370) wrongly quoted this plate for *P. atrolaminata* instead of for *P. longicauda*.

Kühner & Romagnesi (1953: 359) and we (1976: 370) unfortunately contributed to the confusion around *P. longicauda* and *P. atrolaminata*. Thanks to a recent (1980) collection, typical of *P. longicauda*, and two recent (also 1980) collections typical of *P. atrolaminata* in addition to our previous collections of both species, we now have a clear insight in these two closely related and rare species. As a result our Oldenzaal collection (16 Oct. 1963) at that time named *P. caudata* and in our previous paper (1976: 370) *P. melanophylla* had to be reidentified as *P. longicauda*. From all our material we learned that there are no real microscopical differences between the two species. *Psathyrella longicauda* is characterised by its excessively long pseudorrhiza (30–70 mm and in the young specimens from our 11 Nov. 1969 collection just as long as the stems), its non-revolute margin of the cap and (slightly) pigmented gill trama (to be studied on the 'washed' gill and under the microscope). *Psathyrella atrolaminata* is characterised by its black gills, very short pseudorrhiza (c. 10 mm) practically colourless hymenophoral trama and above all by its revolute marginal area of the cap. It should be realised, however, that only at maturity the cap reaches its characteristic shape. The spores for both species are exactly the same, very dark and thus masking the slight pigmentation of the gill trama in *P. longicauda* so that the colour of the gills in both species is black with only a trace of brown or purple in *P. longicauda*, easily escaping attention (as it did in our 16 Oct. 1963 collection).

Kühner & Romagnesi (1953: 359) to a certain extent gave a misrepresentation of the two species. Their description suggests too much that *P. atrolaminata* (= *Drosophila caudata* with them) has grey-black gills as opposed to *P. longicauda*, which in their key is ranked under the heading 'gills tinged brown (tobacco) or purple'. Karsten himself did not mention brown in his description of the colour of the gills in *P. longicauda*, which he called 'purpurascens atrae'. Kühner & Romagnesi mentioned the occurrence of concentric zones of slightly different colour in the drying cap only for *P. atrolaminata*, whereas we clearly saw these zones also in our 1963 collection of *P. longicauda*. Next Kühner & Romagnesi only mentioned for *P. atrolaminata* that the spores are very dark and have a 'tout petit pore'. Romagnesi (in litt.) explained, that this description did not refer to the width of the pore but to the pore being 'bas et peu tronquant', in other words low and indistinct (because the spore wall is very thin and very dark). We found both the spores and their pore to be exactly the same for both species. Romagnesi (in litt.) expressed his doubts about the importance of the indistinctness of the wide germ pore. Although it is a striking character in the two species we are inclined to share his view, as in one of our collections of *P. longicauda* (21 Oct. 1980) and in two of *P. atrolaminata* (21 and 28 Oct. 1980) the pore was distinct. But in all three collections almost all spores were not dark reddish brown but merely brown and thus very likely immature. For the size of the pleurocystidia Kühner & Romagnesi gave practically the

same figures for both species, so that it is confusing that only for *P. atrolaminata* these cells were called 'sveltes'. We found both size and shape of these cells to vary considerably in both species; they usually are provided with a more or less long and narrow (4–5 µm) neck and usually indeed are slender.

Before giving below renewed descriptions of both species, we must draw attention of the reader to the fact that in our 1976 description fig. 6 (p. 353) and the coloured plate 62 indeed depict *P. longicauda*, but that regrettably the basidiocarps depicted in fig. 3 (p. 349) and the marginal cells and pleurocystidia depicted in figs. 29 and 30 (p. 371) also pertain to *P. longicauda* and not to *P. melanophylla* (= *P. atrolaminata*) as stated on these pages.

***Psathyrella atrolaminata* Kits van Wav., spec. nov.—Figs. 1–11**

Pileus primo 10–20 mm latus, ellipsoideus vel conico-paraboloideus, castaneus, mox fuscescens; deinde 20–40 mm latus, obtuso-conicus sive conico-campanulatus, ambitu revolutus, brunneus, at centro badio-brunneus, 2/3 striatus, hygrophanus, pallide brunneus, centro ochraeo-fulvus, haud vel raro paululum roseus, micaceus, rugulosus. Velum album, primo pilei marginem obtegens sed fugax. Lamellae 2–5 mm latae, ventricosae, late adnatae, cinerae, demum atrae; acie alba. Stipes 50–60(–75) × 1–1.59–2 mm, rectus, albus, deorsum isabellinus, radicans (pseudorrhiza brevis, c. 10 mm). Caro fusca in pileo, albidus in stipite. Sporae in cumulo atrae.

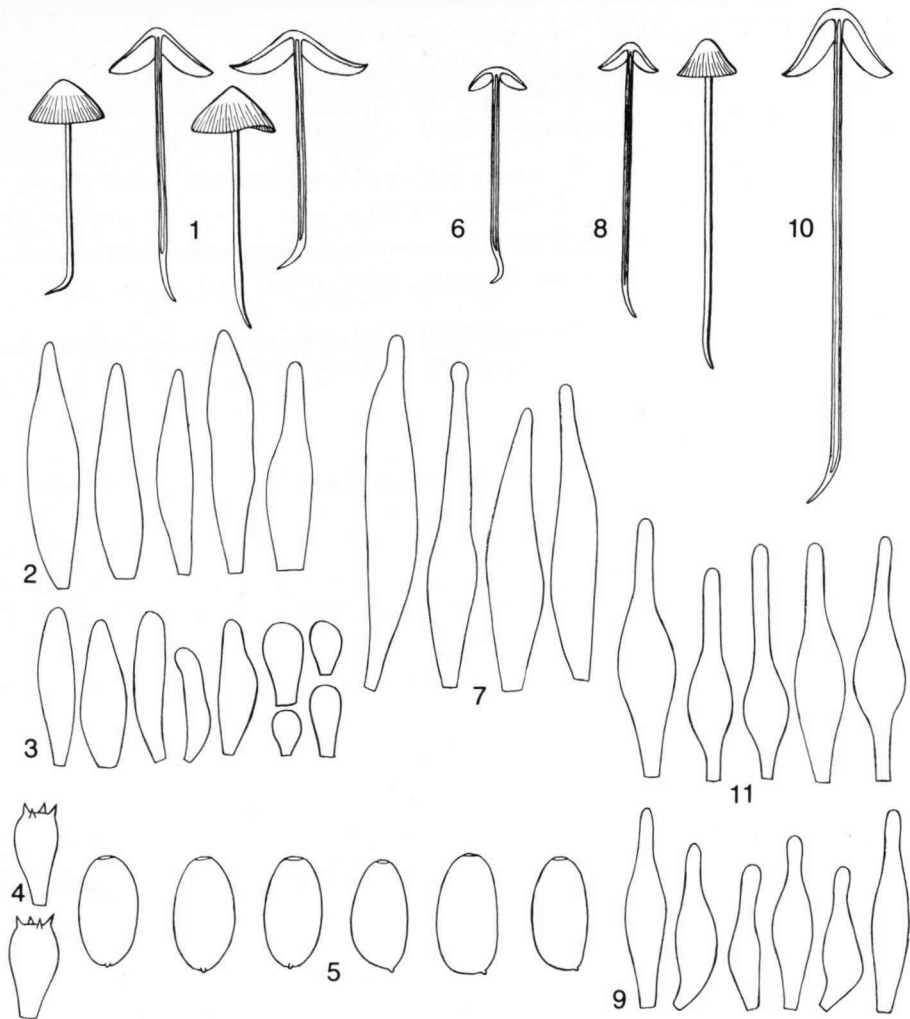
Sporae 10.8–14.4 × 6.3–7.7 µm, ellipsoideo-amygdaliformes, in aqua observata castaneae, opacae, poro germinativo tenui sed lato (1.8–2 µm). Basidia 22.5–32.2 × 10–12.8 µm, 4-sporigera. Pleurocystidia 35–82.5 × 9–15(–17.5) µm, pauca, lageniformia-pedicellata, collo cylindraco vel subcylindraco vel subfusoido, interdum gracili, apice acute vel subacuto, tenui-tunicata. Cellulae marginatae: cheilocystidia pleurocystidioidea haud numerose, 22.5–55 × 6–15 µm, cellulae spheropedunculatae et clavatae 10–27.5 × 7.5–12.5 µm. Trama lamellarum incolor vel fere incolor. Cuticula pilei cellularis. Cespitosa vel subcespitosa vel interdum isolata, terrestris ad lignum. Typus: 'The Netherlands, prov. North Holland, Aerdenhout, estate 'Het Naaldenveld', 28 Oct. 1980, E. K. v. W.' (L).

MISAPPLICATIONS.—*Psathyra caudata* (Fr. ex Fr.) J. E. Lange sensu Lange, Fl. agar. dan. 4: 99, pl. 155A. 1939. — *Drosophila caudata* (Fr. ex Fr.) Kühn. & Romagn. sensu Kühn. & Romagnesi, Fl. anal. 359. 1953. — *Psathyrella caudata* (Fr. ex Fr.) Quél. sensu Hennig in Michael/Hennig, Handb. 268 Pilzfr. 4: 280, fig. 278. 1967; sensu Moser in Gams, Kl. KryptogFl. 2(b2): 268. 1978 (spore size excluded); non *Agaricus caudatus* (Fr. ex Fr., Epicr. 239. 1838 (= form of *P. gracilis*). — *Psathyrella melanophylla* Kits van wav. in Persoonia 8: 370. 1976 (pr. p., excl. type).

SELECTED DESCRIPTIONS AND ILLUSTRATIONS.—J. E. Lange, Fl. agar. dan. 4: 99, pl. 155 A, 1939 (as *Psathyra caudata*); Kühn. & Romagn. Fl. anal. 359. 1953 (as *Drosophila caudata*); Cooke, Ill. Brit. Fungi 4: pl. 622/596, 1884–1886 (as *Agaricus microrrhizus*) and 5: pl. 639/637. 1886–1888 (as *Agaricus caudatus*).

CHIEF CHARACTERISTICS.—Caespitose, subcaespitose or sometimes solitary; cap 10–40 mm, conico-campulate, margin at maturity revolute; veil rudimentary; gills broadly adnate conspicuously dark grey to black, with white edge; stem rooting (pseudorrhiza short, c. 10 mm); spores 10.8–14.4 × 6.3–7.7 µm (mean values 11.6–13.5 × 6.1–7.3 µm), with indistinct but wide (1.8–2 µm) germ pore, very dark reddish brown; pleurocystidia 35–82.5 × 9–15(–17.5) µm, lageniform-pedicellate with subcylindric to cylindric narrow neck or subfusoid to subcylindric; pleurocystoid cheilocystidia scattered among abundant spheropedunculate cells; hymenophoral trama practically colourless.

MACROSCOPICAL CHARACTERS.—Cap at first ellipsoid conical or conical-paraboloid, 10–20 mm broad, dark reddish brown (Mu. 5YR 3/3, 3/4) later 20–40 mm broad and obtusely



Figs. 1–11. *Psathyrella atrolaminata*. — 1–5. 28 Oct. 1980. — 1. Habit sketch ( $\times 1$ ). — 2. Pleurocystidiogram ( $\times 575$ ). — 3. Cheilocystidiogram ( $\times 575$ ). — 4. Basidia ( $\times 575$ ). — 5. Spores ( $\times 1212$ ). — 6–7. 21 Oct. 1980. — 6. Habit sketch ( $\times 1$ ). — 7. Pleurocystidiogram ( $\times 575$ ). — 8–9. 19 Sept. 1964. — 8. Habit sketch ( $\times 1$ ). — 9. Pleurocystidiogram ( $\times 575$ ). — 10–11. 18 Oct. 1974. — 10. Habit sketch ( $\times 1$ ). — 11. Pleurocystidiogram ( $\times 575$ ).

conical, spreading to conical-campanulate, finally with distinctly revolute margin; in central half reddish brown (Mu. 5 YR 4/3, 4/4), the periphery brown or greyish brown (Mu. 10 YR 5/3), extreme margin sordid white; striate up to 2/3 from margin, hygrophanous, drying to pale ochreous brown (Mu. 7.5 YR 7/6) at centre, pale brown (Mu. 10 YR 7/3) in the middle, very pale brown (Mu. 10 YR 8/2) near margin, sometimes pale greyish brown all over, rarely a trace of pink and occasionally with two or three concentric zones of slightly different

shades of pale greyish brown (Mu. 10 YR 4/3, 4/2) or slightly purplish brown (Mu. 7.5 YR 5/2) appearing during the process of drying.

Veil leaving a few fugacious small white fibrils or wickerworks of fibrils on surface of cap near margin and on stem.

Gills 2–5 mm broad, at first only slightly ventricose, later — when margin of cap turns up — to strongly ventricose, broadly adnate with or without tooth, at first conspicuously grey (Mu. 10 YR 5/1), later via dark grey to finally black (Mu. 5 YR 4/1, 3/1) sometimes with a trace of purple; edge white and minutely fimbriate.

Stem 50–60(–75) × 1–1.5(–2) mm, straight, cylindric, white in upper part, isabelline lower down, hollow, rooting (pseudorrhiza short, up to 10 mm); apex pruinose; base strigose.

Flesh of cap at centre 1–1.5(–2) mm thick, dark brown (Mu. 10 YR 4/3), of stem in upper part white, lower down very pale brown but superficial layer whitish. Smell none.

Trama of 'washed' gill in NH<sub>4</sub>OH 10% under binocular lens practically colourless (Mu. 10 YR 7/1, 7/2) from base to edge, rarely very pale brown all over (Mu. 10 YR 7/3, 7/4) or only in a narrow strip at the base.

Spore print black.

**MICROSCOPICAL CHARACTERS.**—Spores 10.8–14.4 × 6.3–7.7 μm (mean values of 4 collections 11.6–13.5 × 6.1–7.3 μm), in face view elliptic, in profile amygdaliform, in water very dark red-brown (Mu. 2.5 YR 3/2–3/4), opaque to subopaque, thin-walled; germ pore as a result usually inconspicuous but wide (1.8–2 μm); small hilar appendix.

Basidia 22.5–35.2 × 10–12.8 μm, 4-spored.

Pleurocystidia 35–82.5 × 9–15(–17.5) μm, few to very few in number, sometimes fairly numerous; shape variable, lageniform-pedicellate with cylindric to subcylindric narrow (4–5 μm) neck, or subfusoid to subcylindric, sometimes slender, with acute to subacute apex, thin-walled, colourless, without mucus or crystals.

Marginal cells: pleurocystoid cheilocystidia 22.5–55 × 6–15 μm, few in number to fairly numerous; spheropedunculate and clavate cells 10–27.5 × 7.5–12.5 μm, numerous; all cells thin-walled, colourless, without mucus or crystals.

Gill trama in NH<sub>4</sub>OH 10% sub micr. practically colourless.

Pileipellis cellular; cells globose to subglobose, 20–40 μm in diam., colourless.

**HABITAT & DISTRIBUTION.**—Terrestrial and often caespitose in small groups or subcaespitose, but also isolated, against pieces of wood in deciduous woods, in ruderal places, humus, also in grass (parks). September–October. Rare. Known from The Netherlands, France, and British Isles.

**COLLECTIONS EXAMINED.**—THE NETHERLANDS: Overijssel, Delden, estate 'Twickel', 19 Sept. 1964, *E. K. v. W.* (L); Denekamp, estate 'Singraven', 18 Oct. 1974, *E. K. v. W.* (L); Noord-Holland, Aerdenhout, estate 'Naaldenveld', 28 Oct. 1980, *E. K. v. W.* (type L); Bloemendaal, estate 'Leyduin', 21 Oct. 1980, *E. K. v. W.* (L).

*Psathyrella atrolaminata* can easily be confused with *P. gracilis*. But for those who are familiar with the species of the genus *Psathyrella* and particularly *P. gracilis*, *P. atrolaminata* is conspicuous in the field by its very black gills and white gill edge, microscopically by its very dark spores and indistinct, though wide, germ pore. Ancillary characteristics are the habit (revolute margin of the cap, but this phenomenon is only present in mature stages), absence of pink in the drying cap (rarely a trace of pink mixes with the other colours), presence of velar remnants (very fugacious), presence (but only sometimes) of concentric colour zones in the drying cap, a usually caespitose or subcaespitose growth. *Psathyrella longicauda* differs from *P. atrolaminata* above all by its very long pseudorrhiza and non-re-

volute cap, furthermore by its – particularly towards the base – slightly browner gills (which, however, in the field at first sight look back), the accordingly slightly pigmented gill trama. This species also may show concentric colour zones in the drying cap.

Of the species, described by Smith (1972: 334) under the name *P. caudata*, the colour of the gills is called 'pallid cinnamon-buff, soon dark greyish to purplish brown', the germ pore is said to be broad and even somewhat truncate and the species is not called caespitose and a veil is said to be lacking. Therefore *P. caudata* sensu Smith is not identical with *P. caudata* sensu Lange, Kühn. & Romagn., and Moser and consequently not with *P. atrolaminata*.

#### PSATHYRELLA LONGICAUDA P. Karst.—Figs. 12–20

*Psathyrella longicauda* P. Karst. in *Hedwigia* 30: 298. 1891.—*Drosophila longicauda* (P. Karst.) Kühn. & Romagn., *Fl. anal.*: 359. 1953 (incomplete reference to basionym).

*Psathyrella melanophyllum* Kits van Wav. in *Persoonia* 8: 370. 1976 (Pr. P., incl. type).

MISAPPLIED NAME.—*Psathyrella caudata* (Fr. ex Fr.) Quél. sensu Ricken, *Blätterp.*: 265, pl. 68 fig. 1. 1913.

SELECTED DESCRIPTIONS AND ILLUSTRATIONS.—Ricken, *Blätterp.* 265, pl. 68 fig. 1. 1913; Kühn. & Romagn., *Fl. anal.* 359. 1953; Kits van Wav. in *Persoonia* 8: pl. 62. 1976 (description excluded).

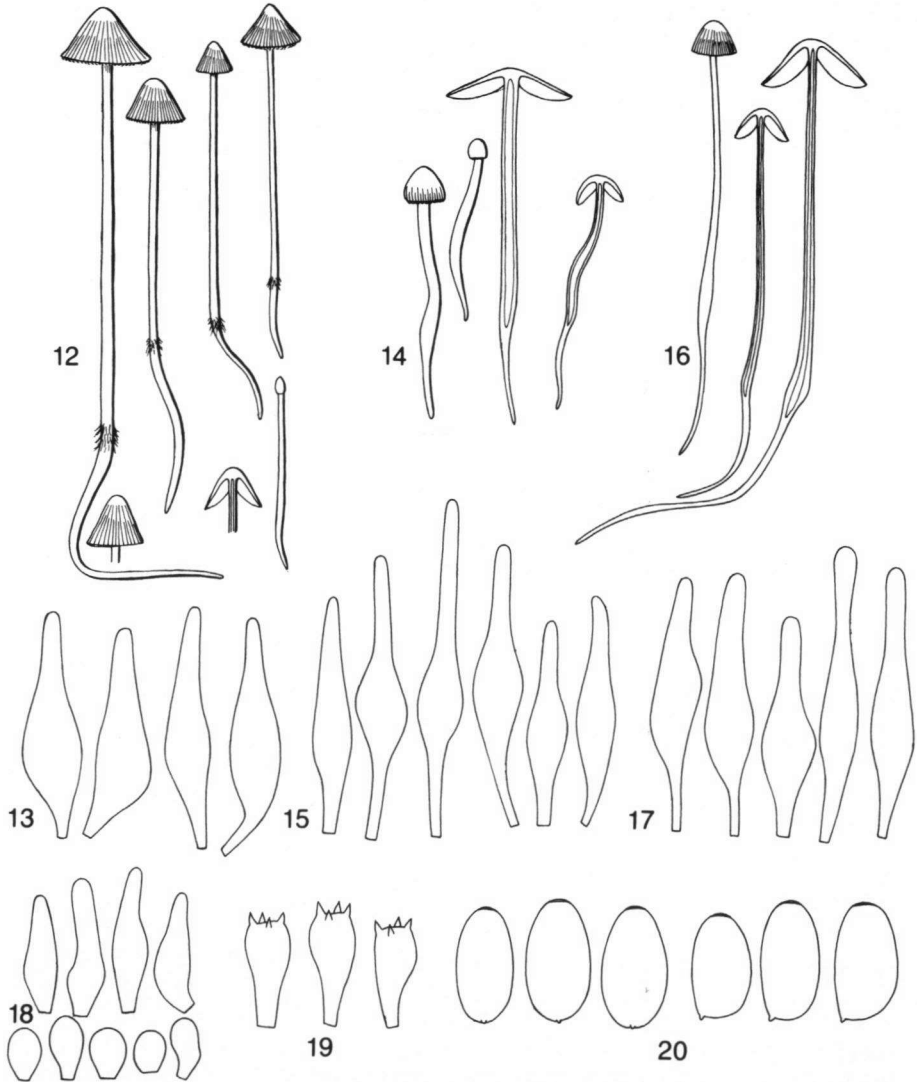
CHIEF CHARACTERISTICS.—Cap 15–30 mm broad, at first paraboloid, soon conical-paraboloid to conical, without revolute margin, dark reddish brown, later brown; veil distinct in primordia and very early stages, fugacious; gills broadly adnate, greyish black with a trace of brown, with white edge; stem strongly rooting (pseudorrhiza 30–70 mm long); spores 10.8–14.4 × 6.3–8.1 μm (mean values 12.1–13.5 × 6.3–7.6 μm), with indistinct but wide (1.8–2 μm) germ pore, very dark reddish brown; pleurocystidia 42.5–80 × 7.5–15(–17.5) μm, fusoid-pedicellate with fairly long subcylindrical neck; pleurocystoid cheilocystidia scattered among numerous spheropedunculate cells; hymenophoral trama moderately pigmented.

MACROSCOPIC CHARACTERS.—Cap in early stages (7–11 mm broad, 5–9 mm high) paraboloid, dark reddish brown (Mu. 5 YR 3/2, 3/3; 7.5 YR 3/2; colour of *Agrocybe erebia*), paler towards margin and at margin still paler (Mu. 10 YR 6/4), scarcely striate, smooth, later 15–30 mm broad, spreading to conspicuously conical or conical-paraboloid, the reddish brown colour making way for dark brown (Mu. 10 YR 3/2, 3/3) at centre, brown (Mu. 10 YR 4/3) towards the margin and near margin greyish brown (Mu. 10 YR 5/2) or both at centre and in marginal area brown (Mu. 10 YR 3/3, 3/4) with between these areas still reddish brown (Mu. 5 YR 3/3), with margin itself whitish, striate up to 1/2–2/3 from margin; hygrophanous, when drying remaining for a long time ochreous brown (Mu. 7.5 YR 5/6, 5/8), finally pale brown (Mu. 10 YR 7/2, 7/3, 7/4) with ochreous brown (Mu. 7.5 YR 6/6) centre, without pink, sometimes with vague concentric zones of different colourshades, sometimes micaceous, usually rugulose or even rugose.

Veil in primordia and early stages distinct, forming a conspicuous uninterrupted white collar connecting stem with cap with on surface of cap a zone of radially arranged fibrils reaching 1 mm from margin, very fugacious, absent at maturity.

Gills 2–3 mm broad, slightly ventricose or only ventricose near margin of cap and then straight, ascending, broadly adnate, usually protruding below margin of cap, at first near edge grey (Mu. 5 YR 5/1; 10 YR 5/1) with a trace of purple, the rest brownish grey (Mu. 10 YR 6/2, 5/2) with a trace of purple and at base slightly browner (Mu. 10 YR 6/3), finally dark purplish grey to black with a trace of brown; edge white and minutely fimbriate.

Stem in early stages 20–35 × 3 mm, strongly rooting (pseudorrhiza 15–30 mm), at matu-



Figs. 12-20. *Psathyrella longicauda*. 12-13. 16 Oct. 1963. — 12. Habit sketch ( $\times 1$ ). — 13. Pleurocystidiogram ( $\times 575$ ). — 14-15. 11 Nov. 1969. — 14. Habit sketch ( $\times 1$ ). — 15. Pleurocystidiogram ( $\times 575$ ). — 16-20. 21 Oct. 1980. — 16. Habit sketch ( $\times 1$ ). — 17. Pleurocystidiogram ( $\times 575$ ). — 18. Cheilocystidiogram ( $\times 575$ ). — 19. Basidia ( $\times 575$ ). — 20. Spores ( $\times 1212$ ).



rity 70–90 × 2–3 mm (pseudorrhizae 30–70 mm), tapering towards their ends; straight or slightly flexuous, remarkably firm, cylindrical but base thickened (up to 4 mm), glossy, white, lower down sometimes isabelline, pruinose at apex.

Flesh of cap in centre 1–2 mm thick, dark brown (Mu. 10 YR 3/3, 4/3, 4/4), in stem also brown (Mu. 7.5 YR 5/4; 10 YR 5/3), but with white superficial layer.

Trama of 'washed' gill in NH<sub>4</sub>OH 10% under binocular lens distinctly brown (Mu. 10 YR 6/6, 6/4, 6/3) in a narrow zone along base, for the rest pale brown (Mu. 10 YR 7/2).

Spore print purplish black to black.

**MICROSCOPICAL CHARACTERS.**—Spores 10.8–14.4 × 6.3–8.1 μm (mean values of 5 collections 12.1–13.5 × 6.3–7.6 μm), in face view elliptic, in profile amygdaliform, in water very dark reddish brown (Mu. 2.5 YR 3/2, 3/4), opaque to subopaque, thin-walled; germ pore wide (1.8–2 μm) but indistinct; hilar appendix small.

Basidia 25–30 × 9–15(–17.5) μm, 4-spored.

Pleurocystidia 42.5–80 × 7.5–15(–17.5) μm, few in number, pedicellate-fusoid with fairly long cylindrical to subcylindrical neck (4–5 μm broad) and acute to subacute apex, sometimes very slender, without mucus or crystals.

Marginal cells: pleurocystoid cheilocystidia 22.5–40 × 7.5–10(–12.5) μm, scattered to fairly numerous; spheropedunculate and clavate cells 10–30 × 5–15(–17.5) μm, numerous to densely packed; all cells thin-walled, colourless, without mucus or crystals.

Gill trama in NH<sub>4</sub>OH 10% sub micr. distinctly yellowish brown to brown from membranal pigment at and near base, with yellowish hyphal septa and a few encrustations, for the rest very pale brown.

Pileipellis cellular; globose to subglobose cells 10–40 μm in diam., colourless.

**HABITAT AND DISTRIBUTION.**—Terrestrial; isolated or subcaespitose; in humus, decaying leaves, rotting hay, manured grass. Rare. October–November. Known from Finland, The Netherlands, France, and British Isles.

**COLLECTIONS EXAMINED.**—THE NETHERLANDS: Overijssel, Oldenzaal, estate 'Egheria', 16 Oct. 1963, *E. K. v. W.* (L); Noord-Holland, Bloemendaal, estate 'Leyduin', 21 Oct. 1980, *E. K. v. W.* (L); Zuid-Holland, Goedereede, 'Middelduinen', 11 Nov. 1969, *E. K. v. W.* (L).

FINLAND: Tammela, Mustiala, Oct. 1891, *P. A. Karsten* (Type, H); Tammisaario, 17 June 1960, *O. v. Schulmann* (H).

The above description is based on our rich collections from Oldenzaal [in our previous paper (1976: 374) selected as type of *P. melanophylla*], Bloemendaal, and Goedereede. We also examined Karsten's type material, which turned out fully to agree with our finds. For the difference between *P. longicauda* and *P. atrolaminata* see the discussion under the latter species.

#### REFERENCES

- FRIES, E. (1818). *Observationes mycologicae* 2. Havniae.  
 — (1821). *Systema mycologicum* 1. Lundae.  
 — (1838). *Epicrisis Systematis mycologici*. Upsaliae.  
 — (1857). *Monographia Hymenomycetum Sueciae* 1. Upsaliae.  
 KARSTEN, P. A. (1891). *Fragmenta mycologica* 33. In *Hedwigia* 30: 298–300.  
 KITS VAN WAVEREN, E. (1971). Notes on the genus *Psathyrella*—I. *Psathyrella gracilis* and *P. micro-rhiza*. In *Persoonia* 6: 249–280.

- KITS VAN WAVEREN, E. (1972). Notes on the genus *Psathyrella*—III. Unorthodox approach and key to section *Atomatae*. In *Persoonia* 7: 23–54.
- (1976). Notes on the genus *Psathyrella*—IV. Description of and key to the European species of section *Psathyrella*. In *Persoonia* 8: 345–405.
- KONRAD, P. & MAUBLANC, A. (1928). *Icones selectae Fungorum* 6 (fasc. 4).
- KÜHNER, R. & ROMAGNESI, H. (1953). *Flore analytique des champignons supérieurs*. Paris.
- LANGE, J. E. (1939). *Flora agaricina danica* 4. Copenhagen.
- MALENÇON, G. & BERTAULT, R. (1970). *Flore des champignons supérieurs du Maroc* 1. Rabat.
- MASSEY, G. (1902). *European Fungus Flora Agaricaceae*. London.
- MOSEY, M. (1978). Die Röhrlinge und Blätterpilze (Agaricales). In *Gams kl. KryptogFl.* 2 b/2 (4. Aufl.). Stuttgart.
- RICKEN, A. (1913). *Die Blätterpilze (Agaricaceae) Deutschlands*. Leipzig.
- SCHULMANN, O. VON (1960). Zur Kenntnis der Basidiomyceten Finnlands. In *Karstenia* 5: 5–99.