

INOCYBE MYTILIODORA

new to Britain

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During the BMS upland foray in Scotland in 2010 based at Kindrogan, Perthshire, one of us (CH) collected two fruitbodies of a fibrillose scaly-capped *Inocybe* under birches on calcareous soil. It was notable for the distinctive and unusual shellfish smell and under the microscope for unusually short and broad metuloid cystidia. The species failed to key out in the recent key to British *Inocybe* species by Outen and Cullington (2009), very rightly and properly as it turns out, this not being a species they had included. However in *Funga Nordica* (FN) it keyed easily to *I. mytiliodora* Stangl & Vauras (1988). The name means ‘smelling of mytilidae’ (i.e. of mussels). It is listed in FN only from two places near the south coast of Finland, despite its distinctive features and the 20 years that have elapsed since it was first published. Further study of this material and comparison with the type description supported our initial view that, even if very little known, this was a good and distinctive species now also found in Scotland.

Several exchanges of emails with Jukka Vauras reinforced its identity. He now knew of two other sites, one in Estonia—not too far away across the Gulf of Finland, and more recently (2010) in Virkkala, Finland in a park under *Tilia*. This species has very different cystidia from the strongly smelling *Lactiferae* group (such as *I. haemacta*) among which it is keyed in FN. This had given us false confidence in its distinctiveness, but, as Vauras stressed, it is much more closely related to *I. appendiculata*, scarcely known in Britain though known to CH who had Swedish material in her herbarium to compare with. This differs in normally displaying an appendiculate veil as its name suggests (i.e. hanging in fragments from the margin of the expanded cap and looking like a pinwheel, see Breitenbach & Kränzlin, 2001, p.45), and in having a smell somewhat like rotten meat but spermatic when cut or bruised.

Synonymy with *I. pedemontana*

A literature search for other possible similar species soon focused on *I. pedemontana* Alessio, described by its author as possessing caulocystidia (which doesn’t fit the Scottish material) but also as developing a ‘fishy stink’. Stangl & Vauras (1988) were unable to access original material and rejected this as a possible name for their species from the description, because of the presence of caulocystidia and the smell of fish rather than mussels(!). Also it was invalidly published. It has now become very clear that this is indeed the same species, though only validly published the year after *I. mytiliodora*. The illustration in Ferrari (2006) of *I. pedemontana* from Northern Italy could almost be of the same collection as that illustrated in Stangl & Vauras as *I. mytiliodora* from Finland.

I. pedemontana has had an unfortunate history. Alessio described it in 1980 in his major study of *Inocybe*, though expressing slight doubts over its distinction from *I. ochroalba*, a species with a different smell and habitat (and in fact more significantly possessing caulocystidia throughout the stipe). He cited three collections all from the neighbourhood of Pamperato, near Cuneo, at the foot of the Italian side of the Alpes Maritimes that define the French-Italian border, though failed to state which of these three was the type collection as required under ICBN Art. 37.1. On realising that his species had thus been rejected as invalid, he duly specified the type in Alessio (1985). In the following year Kuyper (1986) published his *Inocybe* monograph, dismissing *I. pedemontana* as an invalid later synonym of *I. appendiculata*, without examining material. In 1987 Alessio published a review of Kuyper (1986), expressing surprise that two such clearly distinct species had been synonymised and pointing out that he had now specified the type. Alas he had later to confess in a further note (Alessio, 1989) that in 1985 he had fallen foul of another legal nicety: when specifying the

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Fig.1. *Inocybe mytiliodora* on day after collection. It was originally slightly paler. Photo © Michael Pilkington.



Fig. 2. Young fruitbody with veil. Photo © Michael Pilkington.

Fig. 3. Fruitbody photographed on day of collection. Photo © Caroline Hobart.



Fig.4. Pleurocystidia. Photo © Caroline Hobart.

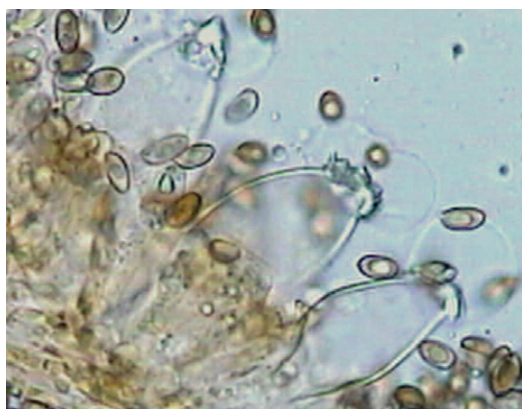


Fig. 5. Cheilocystidia. Photo © Caroline Hobart.

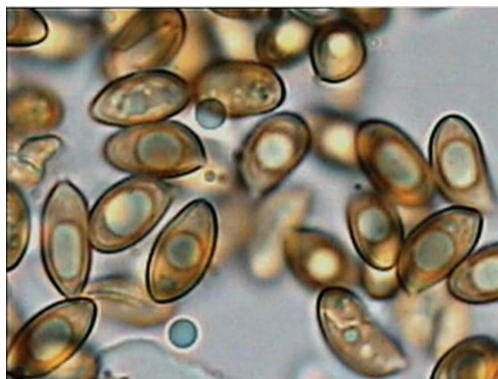


Fig. 6. Spores. Photo © Caroline Hobart.

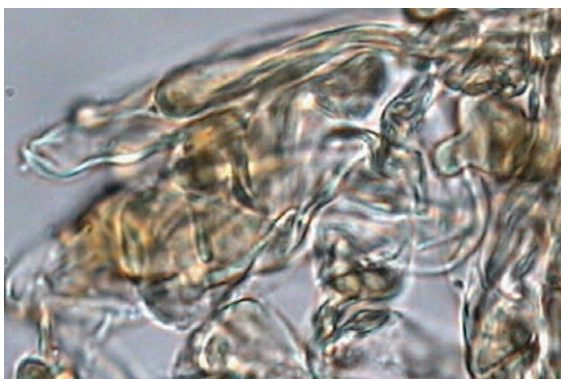


Fig. 7. Entangled hyphae from stipe apex. Photo © Caroline Hobart

type collection he had failed to simultaneously state where the original type description had been published, thus his species had remained invalid (ICBN Art. 45.1). He now carefully restated all the necessary details, thus finally achieving valid publication, though by this time *I. mytiliodora* had already been published. Indeed in this note Alessio commented on *I. mytiliodora* and wondered why it had been considered distinct.

The discrepancy over caulocystidia can be explained by reference to the description of *I. pedemontana* in Ferrari (2006), who describes hairs of various shapes and sizes at the stipe apex, some 'vaguely cystidiform' with isolated minute apical crystals. Alessio had referred to these as caulocystidia, Ferrari doesn't, and neither did Stangl & Vauras when describing *I. mytiliodora*. As the difference in smells is minimal and subjective, there are effectively no differences left. We therefore propose the following synonymy:

I. mytiliodora Stangl & Vauras, *Karstenia* 27: 16

(1988)[1987]

Syn. *I. pedemontana* Alessio, *Iconogr. Mycol.* 29 suppl. 3: 197 (1980). (nom. inval.)

Syn. *I. pedemontana* Alessio, *Micologia Italiana* 18 (2): 17 (1989)

Description of the Scottish collection

This consisted of two fruitbodies (Figs 1 & 2) found by C. Hobart under *Betula* and *Myrica* on Dalradian (Precambrian) limestone, below the Schiehallion Road alongside Lochan an Daim, Mid Perthshire, grid NN 7157, 10 Aug. 2010, deposited at Kew 26 Nov. 2010. K(M)167925.

Pileus 40 mm across x 11 mm deep, when young hemispherical with a strongly in-rolled margin. Veil appearing whitish silky when collected but concolorous with cap in photo taken the next day (Fig. 2). Cap indistinctly umbonate when mature, centre crazing into small blocks, otherwise radially fibrillose forming concolorous scales, yellowish, café au lait with darker umbo. **Fruitbody** (and possibly veil) distinctly darkening overnight after collection (Figs 1 & 3).

Lamellae sand-coloured, darkening where damaged, intermediate gills present.

Stipe 40 mm high x 7 mm wide at the apex and 8mm at the base, concolorous with cap apart from the apex which had a marked lighter zone. Sand-coloured overall due to sand-coloured fibrils over paler surface beneath (veil remnants?).

Odour initially mild, of shellfish, becoming strong to unpleasant, distinctly mussel-like.

Pleurocystidia numerous, with crystals, variable in shape from clavate-pyriform to utriform (Fig. 4) dependent on position on the gill, (37–)40–65 x (16–)17–20 µm.

Cheilocystidia (Fig. 5) sparse but similar to pleurocystidia, also with crystals (many and large on gill edges close to stipe, fewer and finer on gill edges close to cap margin).

Spores (Fig. 6) measured in water averaged 9 x 5.2 µm (Q = 1.75) (10 measured).

Caulocystidia not seen, merely some projecting, entangled hyphae at stipe apex (Fig. 7).

Further notes on ecology and distribution

As far as we are aware all reported collections under either name have been with deciduous trees on calcareous soil. Alessio (1980) described *I. pedemontana* as mostly with *Corylus* and *Betula*. The collection illustrated in Ferrari (2006) was under *Corylus* from the same region of Italy. An Italian website (see Internet Reference) discusses further collections from this area. The most recent collection made by Vauras in Finland, Lohja, Virkkala, was in a park under *Tilia* (no other tree species nearby). The widely scattered currently known distribution suggests that this species probably awaits discovery in several other European countries in areas of upland limestone.

The Scottish site, at an altitude of 362 m, extended onto a small patch of limestone pavement supporting an unusual mix of lowland and alpine vegetation, ranging from Frog Orchid (*Coeloglossum viride*) to two species of club moss (*Lycopodiaceae*). Rockrose (*Helianthemum nummularium*) was also present acting as mycorrhizal host to the uncommon and distinctive *Cortinarius cyanites* and also to *Russula nana*, more usually found on mountain tops with *Salix herbacea* but, as we later discovered, already known from this site.

References

- Alessio, C.L. (1985). Complemento allo studio del genere *Inocybe*: 6° contributo *Boll. Gruppo Micol. G. Bresadola*, 28 (5–6): 251–262.
- Alessio, C.L. (1987). Complemento allo studio del genere *Inocybe*: 9° contributo. *Mic. Ital.* 16 (3): 85–110.
- Alessio, C.L. (1989). Complemento allo studio del genere *Inocybe*: 10° contributo. *Mic. Ital.* 18(2): 3–20.
- Alessio, C.L. & Rebaudengo, E., (1980). *Inocybe*. *Iconographia Mycologica*. Vol. 29, Suppl. 3: 1–367. Trento: Museo Tridentino di Scienze Naturali.
- Breitenbach, J. & Kränzlin, F. (2001). *Fungi of Switzerland*: Vol. 5. Agarics. Mykologia, Luzern.
- Ferrari, E. (2006). *Inocybe* alpine and subalpine. *Fungi non delineati* parts 34–36: 1–457. Edizioni Candusso. I-Alessio (SV).
- Knudsen, H. & Vesterholt, J. (Eds). (2008). *Funga Nordica: Inocybe* by Jacobsson, S. pp. 868–906. Nordsvamp.
- Kuyper, T.W. (1986). A revision of the Genus *Inocybe* in Europe: Subgenus *Inosperma* and smooth-spored species of Subgenus *Inocybe*. *Persoonia* Suppl. vol 3: 1–247.
- Outen, A. & Cullington, P., (2009). Keys to British species of *Inocybe*. Privately published.
- Stangl, J. & Vauras, J. (1988). [1987]. Über das genus *Inocybe* in Finnland. Die neuen Arten *I. mytiliodora* und *I. urceolicystis*. *Karstenia* 27:15-21.

Internet reference

<http://www.actafungorum.org/actaforum/viewtopic.php?t=1201> accessed 9 Feb. 2011

Discussion with excellent photographs of Italian collections (as *I. pedemontana*).

Acknowledgments

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