

Typification of *Rhodocollybia fodiens* (Tricholomataceae)

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Adamčík S., Lizoň P., Ripková S., Antonín V. & Kučera V. (2007) Typification of *Rhodocollybia fodiens* (Tricholomataceae). – *Sydowia* 59 (1): 1–6.

Kalchbrenner's illustration of *Agaricus fodiens* is the only part of the original material available for a taxon currently accepted in *Rhodocollybia*. The incorrectly designated neotype is replaced here with a lectotype (illustration). A specimen collected in the area of the type locality is proposed as epitype and *R. fodiens* is re-described.

Keywords: Slovakia, *Agaricus*, *Collybia*, epitype, Kalchbrenner

Agaricus fodiens is one of few taxa described by Kalchbrenner from Slovakia that is accepted by current authors. It was treated in *Collybia* as *C. fodiens* (Kalchbr.) P. Karst. for a long time and recently it was transferred to *Rhodocollybia* (Antonín *et al.* 1997). A specimen from Sweden was designated as a neotype by Antonín & Noordeloos (1997). The aim of this study was to confirm if the concept of current authors agrees with the original concept of Kalchbrenner (1877).

Materials and Methods

Macroscopic characters were observed in fresh material. Colours of basidiomata (codes in parentheses) are noted according to Kernerup & Wanscher (1978). Microscopic characters were observed in dried material using a light microscope with oil immersion lens. Fragments of lamellae, stipe and pileipellis were examined in 5 %

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KOH, Melzer's reagent, and a solution of Congo Red in ammonia (1 mL of 25 % ammonia dissolved in filtrated solution of 1.5 g of Congo Red and 50 mL of distilled water). Values of micromorphological characters are averages \pm standard deviation of 30 measurements. Extreme values are given in parentheses. Abbreviations of herbaria are cited in accordance with Index Herbariorum (Holmgren *et al.* 1990). The position of the collecting site is presented by geographical coordinates and quadrant (Q) of the Central European grid mapping system (UTM).

Typification of *Agaricus fodiens* Kalchbr.

Most of Kalchbrenner's herbarium specimens were lost or destroyed during the 19th century and only a small part of his herbarium has survived in BP and BRA (Adamčík *et al.* 2005; Lizoň 1992, 1994, 1997). We have searched both herbaria but no original specimen collected or determined by Kalchbrenner as *Agaricus fodiens* was found. Kalchbrenner (1877) referred in the protologue to the plate 36 fig. 2. This is the only part of the original material available for designation of the type (ICBN, Art. 9.2, note 2; Greuter *et al.* 2000). The designation of the neotype by Antonín & Noordeloos (1997: 128) should be superseded because the illustration mentioned above represents a part of the original material (ICBN, Art. 9.17).

Rhodocollybia fodiens (Kalchbr.) Antonín & Noordel., Mycotaxon 63: 365, 1997.

≡ *Agaricus fodiens* Kalchbr., Icon. Select. Hymenom. Hung. 4: 62, 1877.

≡ *Collybia fodiens* (Kalchbr.) P. Karst., Meddel. Soc. Fauna Fl. Finn. 9: 41, 1882.

Original collecting site: – “Locis apricis silvarum, Olasziensium, ad basim truncorum Pini.” [Slovakia, in open parts of forest, near the village of Spišské Vlachy, at the base of trunks of *Pinus*]

Lectotype. – Kalchbrenner, Icon. Select. Hymenom. Hung. 4: pl. 36, fig. 2, 1877 (copy in the library of the Institute of Botany, SAS, Bratislava, Slovakia); designated here.

Epitype. – Slovakia, Hnilecké vrchy, valley Kondrátko near Spišské Vlachy, alt. 460 m, 48°55'22" 20°49'16", Q 7090d, gregarious on submerged rotten roots and branches of *Picea abies*, flysch, acid soil, 26 Sep 2004, S. Adamčík *et al.* (SAV); designated here.

Description of the epitype

Pileus 38–120 mm, obtusely conical to conico-convex when young, expanding to plano-convex and almost plane when adult, often during maturing with a low, wide umbo; margin almost until maturity involuted, later deflexed, not translucently striate; surface not hygrophanous, smooth, slightly sticky when moist, matt, margin

pale orange (5A3), towards centre light orange to greyish orange (5A4, 5B5), centre caramel to cinnamon brown (6D6, 6C6, not so red as 6C5), young, fresh basidiomata with darker watery spots towards margin. Stipe 43–90 + 7–25 mm (including rooting base), usually with long rooting base (15–50 mm), attenuated or fusiform towards base, velvety, distinctly longitudinally striate, white, later turning reddish-brown on base, hollow (Fig. 1). Lamellae 4–8 mm wide when adult, crowded, $L = 70\text{--}100$, $l = 3\text{--}7$, edge irregularly serrulate, adnate-emarginate, yellowish (3A3), edge concolorous. Context elastic, firm, with indistinct pleasant smell; taste mild and after a while becoming slightly bitter, yellowish white to orange white (4A2

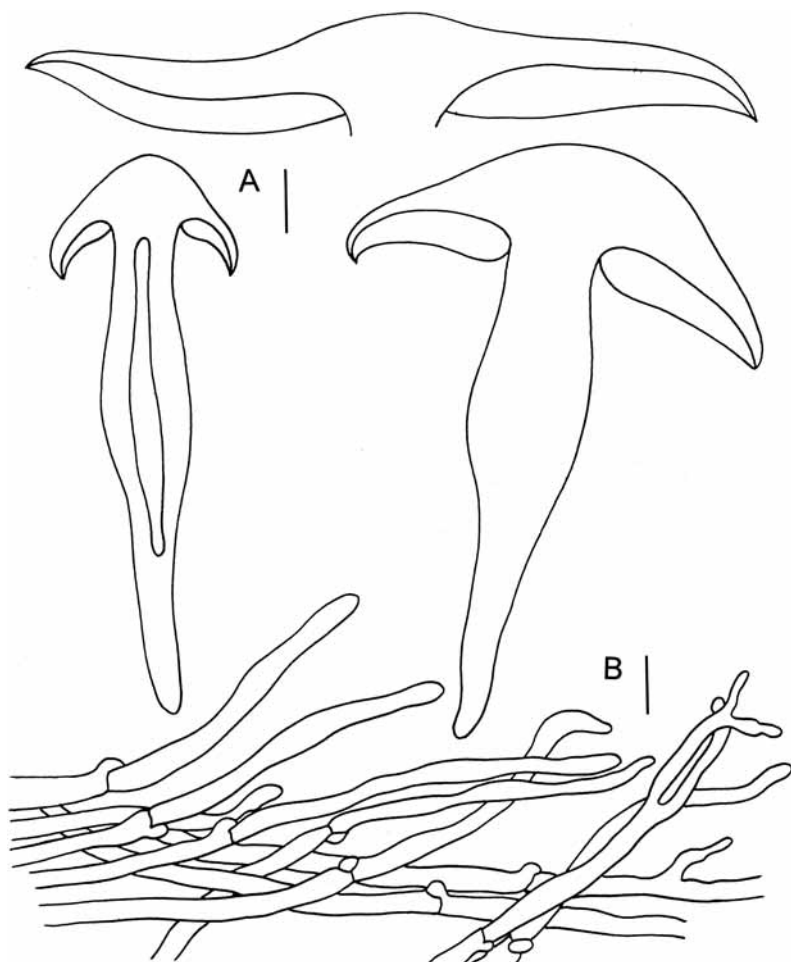


Fig. 1. – Epitype of *Rhodocollybia fodiens*. **A.** Basidiomata (bar = 10 mm), **B.** Pileipellis (bar = 10 μm).

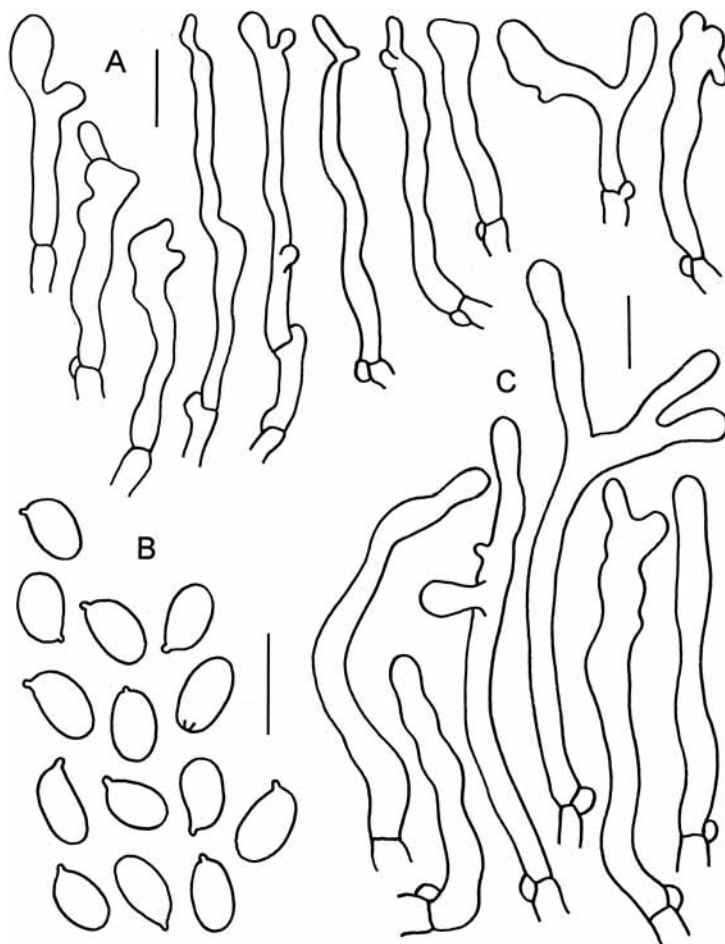


Fig. 2. – Epitype of *Rhodocollybia fodiens*. **A.** Cheilocystidia, **B.** Spores, **C.** Caulocystidia (bar = 10 µm).

to 5A2) in pileus, cream (4A3) or more pinkish in stipe, becoming more pink when bruised and on parts damaged by animals. Colour of spore print not observed.

Spores (6.2) 6.5–7.3 (7.6) × (3.3) 3.6–4.1 (4.2) µm, av. 6.9 × 3.8 µm, $Q = 1.6$ –2, av. $Q = 1.8$, ellipsoid to oblong, sometimes almost lacrimoid, non dextrinoid and thin-walled, or dextrinoid and with weakly thickened wall, smooth. Basidia 4-spored. Cheilocystidia (16) 18–37.5 (55) × (2.5) 3.5–6 (7.5) µm, av. 28 × 4.5 µm, irregularly shaped: cylindrical, clavate, subcapitate, attenuated, often with irregular apical projections, rarely also distinctly branched. Pileipellis an ixocutis to ixotrichoderm towards centre, terminal cells

45–68 × 3–4 µm, slender, thin-walled, not incrustated, cylindrical, attenuated or rarely clavate, simple or rarely with short projection or branched. Hyphae of pileitrama 5–8 (10) µm thick, slightly but distinctly incrustated. Caulocystidia 46–68 × 4–6 µm, thin-walled, irregularly flexuous, cylindrical, sometimes narrowly lageniform or narrowly clavate, often with apical projections, rarely also branched (Fig. 2). Clamp connections present in all tissues.

Discussion

Locating the original collecting site of *Agaricus fodiens*: “locis apricis silvarum, Olasziensium, ad basim truncorum Pini” [in open parts of forest, near the village of Spišské Vlachy, at the base of trunks of *Pinus*] we found out that the immediate vicinity of the village has been kept as an agricultural land at least for the last two centuries. Thus, it had to be situated in the forested area south of the village that was often visited by Kalchbrenner, such as “Werpusch” (Verpuš hill), “Szucha” (Suchá valley), “Kundratka” (Kondrátko valley) and “Malucska” (Malučká forest in the western part of Verpuš). That is why our search for specimens focused on the Hnilecké vrchy Mts (Slovenské rudohorie Mts). After more than 130 years *Agaricus fodiens* was recollected by us on submerged rotten roots of *Picea* and *Pinus* in Kondrátko valley (“Kundratka” by Kalchbrenner). This collection was selected as epitype to the pl. 36 fig. 2 (Kalchbrenner 1877).

There are insignificant differences between our description and that of Antonín & Noordeloos (1997): spores smaller and slightly narrower (Antonín & Noordeloos 1997: 6.5–9.5 × 4–5 µm), pileipellis with much thinner and longer terminal cells (Antonín & Noordeloos 1997: up to 9 µm thick), lamellae more crowded (Antonín & Noordeloos 1997: L = 50–60, on the photo in their monograph maximal 70). All other microscopic characters (structure of pileipellis, shape and size of cheilo- and caulocystidia) agree well with our description.

Acknowledgments

This project was supported by grants APVT-51-51-023902 and VEGA 2/5087/25 and VEGA 2/7071/72. Dr. M. Nižnanská (Museum of Spiš, Spišská Nová Ves, Slovakia) assisted in field research.

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(Manuscript accepted 2 Dec 2006; Corresponding Editor: R. Pöder)

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