Rhodocybe tillii, a conchate new species found in Austria

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Abstract: A pinkish redbrown and conchate species of the genus *Rhodocybe* was collected in East Austria. It appeared to be a new taxon of sect. *Rhodophana* and is described and illustrated as *Rhodocybe tillii*. Its preferred habitat is rotting wood of *Pinus nigra* in a warm pannonic valley.

Zusammenfassung: Eine rosabraune und conchate Art der Gattung *Rhodocybe* wurde in Ostösterreich gesammelt. Sie erwies sich als neues Taxon der sect. *Rhodophana* und wird als *Rhodocybe tillii* beschrieben und abgebildet. Ihr bevorzugtes Habitat ist morsches Holz von *Pinus nigra* in einem warmen pannonischen Tal.

Already in autumn 1992 the herbarium curator of WU, Dr WALTER TILL, collected a small conchate fungus which reminded at first sight of *Panellus violaceofulvus* (BATSCH: FR.) SINGER, but it had a pink spore print and different microscopic characters and did not fit into *Panellus* or *Phyllotopsis*. In the following years it fruited again every autumn up to now (except of 1995) and was regularly harvested. Finally, in scanning electron microscopy the spores were undulate-pustulate as characteristic for *Rhodocybe* species. But still the collections could neither be identified with the classical monograph of the genus (BARONI 1981) nor with additional recent literature (e.g., PACIONI & LALLI 1984a, b; NOORDELOOS 1979, 1988; SINGER 1989; CONTU & BON 1991; BARONI & HALLING 1992; NOORDELOOS & KOSONEN 1994). We further studied literature about *Rhodocybe* species with eccentric or lateral stipes (PEGLER 1977; HORAK 1979a, b; OVREBO & BARONI 1988; BARONI & HORAK 1994; COURTECUISSE & SIQUIER 1997). As the character combination of the East Austrian collections did not fit to one of the worldwide known species we describe it as new.

Light microscopic squash preparations and hand-sections were investigated in water, L_4, KOH, Melzer's reagent, cottonblue and kongored. Light microscopic drawings were made with the help of a drawing apparatus or directly from Sony video prints. For scanning electron microscopy small air-dried pieces of lamellae were mounted on Cambridge stubs, sputter coated in a Balzers sputter coater and viewed in a JEOL-JSM T 300 at 15 kV.

***Rhodocybe tillii* KRISAI-GREILHUBER & NOORDELOOS, spec. nova** (Colour fig. V, see p. 129; figs. 1, 2)

Descriptio latina:
Basidiomata crepidotoidea. Pileus 5-15 mm latus, 1-3 mm altus, primum hemisphaericus, conchatus, convexus, margine involutus, demum planus, hygrophanus, in statu humido versus marginem paulisper striatus, juvenilis roseus, vetustus roseo-brunneus, superficies velutinula. Lamellae sparsae, moderate distantae, latae, ventricosae, sordide roseae, carneae. Stipes lateralis vel nullus, 2-3 mm longus, 3-5 mm crassus, pileo concolor, fibrillosus. Caro fragilis, roseus, sapor mitis, odor dulcis. Sporae 7,3-8,2-10 x 4,6-5,6-6 µm, subglobosae vel breves ellipsoideae, undulato-pustulatae, inamyloideae, paries cyanophilus. Sporae in cumulo roseae. Basidia tetrasporigera, rare bisporigera, 27-30 x 7-8 µm, fibulata. Cheilo-, pleuro- et pseudocystidia nulla. Pileipellis cutis hyphis filamentosis, 4,5-8 µm diam., laxe intricatis, plus minusve incrustatis. Fibulae presentes. Ad lignum putridum in silvis.

Typus: Austria, Austria inferior, Berndorf, Geyergraben (mapping grid 8062/3), leg. W. TILL, 22. 11. 1992, on rotting trunk of *Pinus nigra* ARNOLD, directly on the wood covered with mosses, on dolomitic underground, (WU 18120, holotype; isotype in L).

Characters:
Pileus: 5-15 mm broad, 1-3 mm high, semiglobose, flabelliform, conchate, wet short striate, soon drying and not striate, young pastel pink to pink (KORNERUP & WANSCHER 1981: 11A3-4), pale violet, older reddish brown (9EF6) when moist, quickly drying and then pale to dull reddish (9C3, 9A3, 10A3), whole surface white to pink villose, especially near point of attachment cottony-hairy, margin first enrolled, soon sharp.

Lamellae: distant, thick, slightly undulating, dull pink to redbrown, bois-de-rose (9D5, 9E5, 9E6), only few reaching the attachment point or the short stipe, with 1-5 lamellulae, lamellar edge entire.

Stipe: lateral, short, 2-3 mm long, 3-5 mm thick, sometimes rudimentary or absent, only visible from underside, concolorous with pileus, distinctly white to pink hairy, thin rhizomorphs at the base.

Context: thin, soft and brittle, pink; smell and taste mild.

Spore deposit: distinctly pink.

Spores: 7.3-8.2-10 x 4.6-5.6-6 µm, mean: 8.2 ± 0.8 x 5.6± 0.4 (n = 10), Q = 1.4-1.6, Q_{mean} = 1.5 ± 0.1, subglobose, obovoid or broad ellipsoid, with large apiculus, almost smooth under light microscope, undulate-pustulate in side view and slightly angular-undulate in polar view under SEM, wall cyanophilic, inamyloid, hyaline to pale yellowish in L_4.

Basidia: 27-30 x 7-8 µm, 4-spored, rarely 2-spored, clavate.

Cheilo-, pleuro- and hymenial pseudocystidia: absent.

Context: monomitic, inamyloid, not dextrinoid, consisting of rather short, cylindric, interwoven hyphae with clamp connections.

Epicutis: consisting of lying, slightly incrusted and somewhat interwoven, cylindric hyphae, 4.5-8 µm diam., some ending erect and hairlike, with clamp connections.

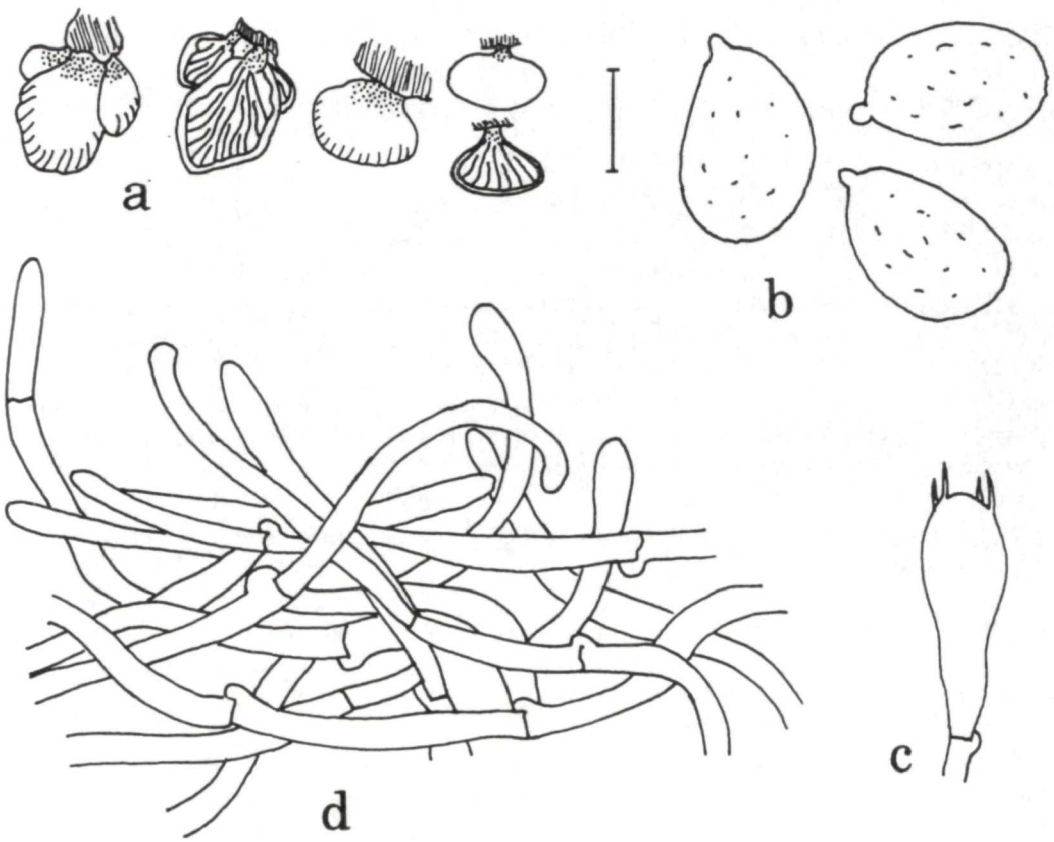

Fig. 1. *Rhodocybe tillii*. a habitus, WU 18115, 18120; b spores; c basidium; d epicutis; b-d WU 18120. - Bar: a 12 mm, b 5 µm, c 10 µm, d 20 µm.

Habitat and distribution: single or in small groups on rotten wood of *Pinus nigra*, either on trunks covered by mosses or on buried wood, alltogether on eight different sites within the valley Geyergraben, in mixed *Picea abies* (L.) KARSTEN- *Pinus nigra* forest, pannonic climate, dolomitic underground. The species is hitherto only known from the type locality.

Etymology: *Rhodocybe tillii* is named in honour of Dr WALTER TILL, herbarium curator of WU, who brought this new species to our attention.

Collections examined (besides type): **Austria:** Lower Austria, Berndorf, Geyergraben (mapping grid 8062/3), on rotten trunks or on buried wood of *Pinus nigra*, directly on the wood covered with mosses, 360-440 m s. m., leg. W. TILL, 1. 11. 1992 (WU 18115); - - leg. I. KRISAI-GREILHUBER, 23. 9. 1993 (WU 18116); - - leg. W. TILL, 11. 12. 1994 (WU 18117); - - leg. W. TILL, 1. 9. 1995 (WU 18118); - - leg. I. KRISAI-GREILHUBER & H. VOGLMAYR, 1. 10. 1996 (WU 18119).

Discussion

Many genera in *Agaricales* with normally centrally stipitate fruitbodies have reduced series in form of pleurotoid or conchate basidiocarps (e.g., *Entoloma*, *Marasmius*, *Psilocybe*). These eccentrically or laterally stipitate or even sessile forms within the genus are not necessarily related in phylogenetic terms. Probably the reduction of the stipe may easily occur in evolution. Within the genus *Rhodocybe* also several eccentrically

or laterally stipitate and even sessile taxa have been described so far in three different sections: (1) sect. *Crepidotoides* SINGER with *R. balearica* COURTECUISSE & SIQUIER, *R. conchata* HORAK, *R. crepidotoides* SINGER, *R. fuliginea* HORAK and *R. stipitata* (SMITH & HESLER) BARONI & HORAK; (2) sect. *Claudopodes* SINGER ex BARONI with *R. claudopus* SINGER ex BARONI, *R. crystallina* BARONI, *R. densifolia* BARONI & OVREBO, *R. lateralipes* HORAK, *R. pleurogena* PEGLER, *R. rhizogena* BARONI & HORAK, and *R. tergipes* CORNER & HORAK; and (3) sect. *Rhodophana* (KÜHNER) SINGER with *R. albovelutina* (STEVENSON) HORAK and *R. eccentrica* BARONI & OVREBO.

According to BARONI (1981) sect. *Crepidotoides* is characterized by basidiocarps with eccentric, lateral or absent stipe, presence of hymenial pseudocystidia with brightly colored content, and absence of clamp connections; sect. *Claudopodes* includes species with basidiocarps with strongly eccentric, lateral or absent stipe, no hymenial pseudocystidia, and no clamp connections; sect. *Rhodophana* comprises species with basidiocarps centrally or eccentrically to laterally stipitate and lamellae variously attached but not truly decurrent, pileus glabrous or velvetly fibrillose and ± hygrophanous, typically thin fleshed, hymenial pseudocystidia absent, and clamp connections present.

Thus, *R. tillii* belongs to sect. *Rhodophana* due to the absence of pseudocystidia and the presence of clamp connections. In sect. *Rhodophana* mainly collybioid and mycenoid species are known, e.g., the European taxa *R. nitellina* (FR.) SINGER, *R. hispanica* ESTEVE-RAV. & G. MORENO (ESTEVE-RAVENTÓS & MORENO 1987) or *R. fuscofarinacea* KOSONEN & NOORDEL. (NOORDELOOS & KOSONEN 1994). Nevertheless, with the extralimital taxa *R. albovelutina* and *R. eccentrica* this section already contains two species which have an eccentric or even lateral stipe. *Rhodocybe tillii* differs both from *R. albovelutina* and *R. eccentrica* by smaller basidiocarps, distinct reddish brown colour, much larger spores, the completely lateral or even absent stipe and the non-gelatinized lamellar trama. The main discriminating characters are compared in Table 1. Macroscopically *R. tillii* is much more similar to members of the other two sections, sect. *Crepidotoides* and *Claudopodes*, due to its conchate habit.

Table 1. Main discriminating characters of the eccentrically stipitate species of sect. *Rhodophana*

Character	*R. albovelutina*	*R. eccentrica*	*R. tillii*
Pileus	4-8 cm, pinkish, fibrillose	1.2-6.5 cm, light buff, soon pinkish tones, minutely fibrillose	0.5-1.5 cm, pink, reddish brown, villose
Lamellae	white to pinkish, serrulate	light yellow, then pink	pink, reddish brown
Lamellar trama	somewhat gelatinized	gelatinized	not gelatinized
Stipe	1.5 cm long, eccentric, tough, whitish	1-2.4 cm long, eccentric, yellowish	0.2-0.3 cm long, lateral or absent, pink
Context	pinkish	light yellow	pink
Taste, smell	not recorded	slightly farinaceous	sweetish
Spores	5.5-8.5 x 4-5.5 µm	5.5-7.0 x 3.5-5.5 µm	7.3-10 x 4.6-6 µm
Cheilocystidia	absent	present	absent
Pleurocystidia	absent	absent	absent
Pilocystidia	absent	present	absent
Distribution	New Zealand	Costa Rica	Austria

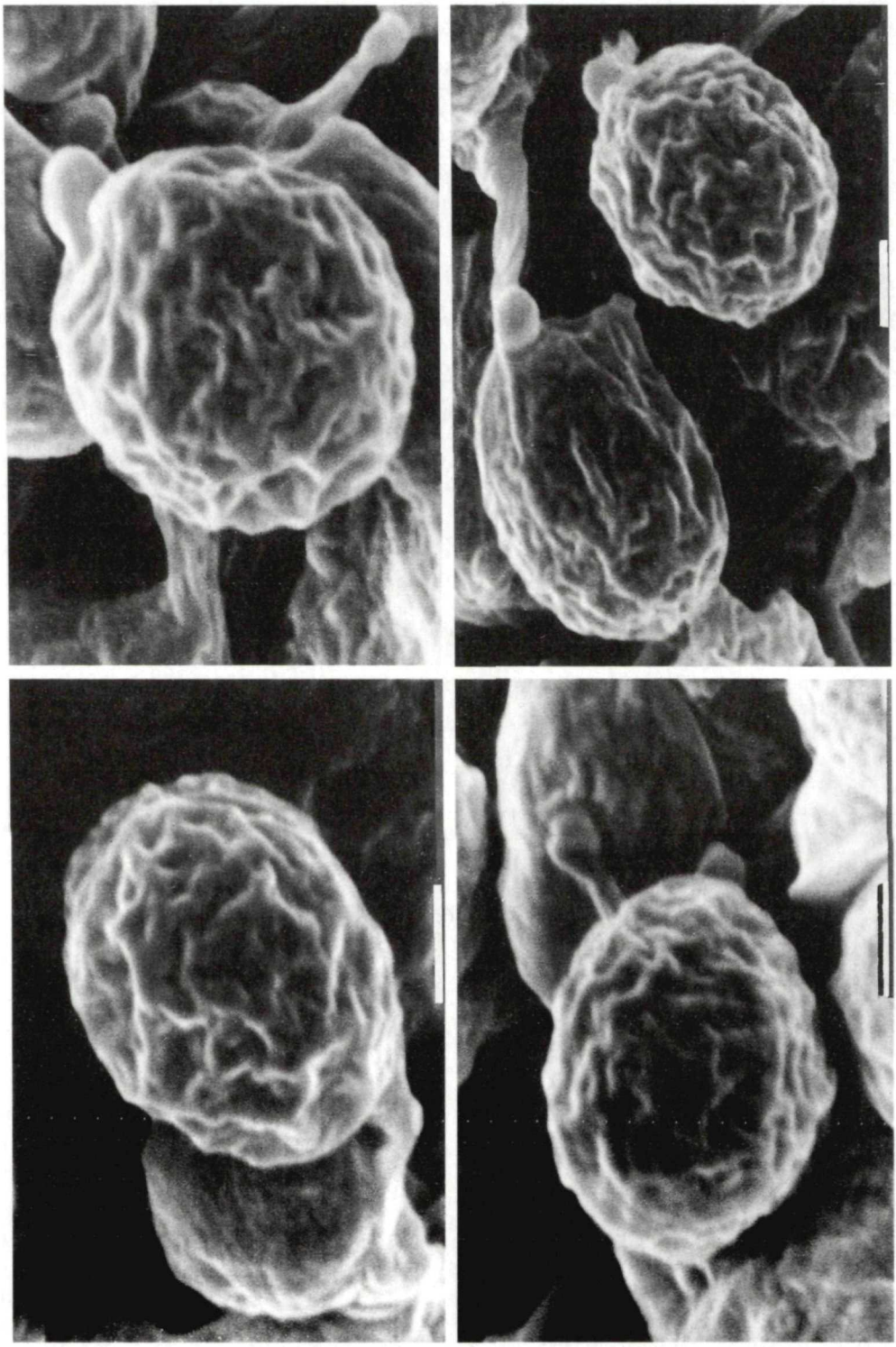

Fig 2. *Rhodocybe tillii*, basidiospores under REM (WU 18120, holotype).

Ecologically, the three eccentrically stipitate species of sect. *Rhodophanes* are lignicolous. The substrata of *R. albovelutina* and *R. eccentrica* are not identified. *Rhodocybe tillii* prefers rotten stumps of *Pinus nigra* covered with mosses, but was also found on buried wood and once on small woodsticks. In Austria, *Pinus nigra* grows only in the Southeast of the country in the warm pannonic climate. Apparently *Rhodocybe tillii* prefers warm and humid environmental conditions. The Geyergraben, where it was observed, is narrower and more humid than all the neighbouring valleys. Further, *R. tillii* may probably follow the distribution area of *Pinus nigra*. This preference for humid conditions in combination with the distribution of *Pinus nigra* might explain why *R. tillii* has hitherto only been found in one valley.

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