

***Rinodina poeltiana* spec. nova (lichenized Ascomycetes, Physciaceae),
a new corticolous blastidiate species from Austria**

by

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Abstract: *Rinodina poeltiana*, a corticolous blastidiate species with *Pachysporaria*-type ascospores, hitherto only known from one locality of Austria, is described as new. The characters of the new species are compared with those of closely related taxa. Furthermore a key to all the blastidiate and sorediate corticolous *Rinodina* species occurring in Austria is given.

Zusammenfassung: *Rinodina poeltiana*, eine rindenbewohnende Flechte mit blastidiatem Thallus und Sporen vom *Pachysporaria*-Typ, wird aus Österreich neu beschrieben. Die Merkmale der Art, die bisher nur von ihrer Typuslokalität bekannt ist, werden mit denen nahverwandter Arten verglichen. Für alle in Österreich vorkommenden, corticolen *Rinodina*-Sippen mit blastidiatem oder sorediösem Thallus wurde ein Bestimmungsschlüssel erstellt.

Introduction

In connection with a revision of the corticolous and lignicolous sorediate, blastidiate and isidiate species of the genus *Rinodina* in Southern Europe (GIRALT & al. in prep.a) we have examined an interesting blastidiate species from Austria previously reported as *Rinodina* sp. #2 by OBERMAYER (1990: 81) which is new to science.

***Rinodina poeltiana* GIRALT & W. OBERMAYER spec. nova**

Thallus crustaceus, areolis contiguus. Areolae griseae vel brunnei-griseae fuscae, planae vel subtiliter subconvexae, 0,1-0,3 (- 0,5) mm latae. Blastidia numerosa, contigua, 20 - 30 (- 40) μ m in diametro. Apothecia lecanorina, pauca, dispersa, adnata ad sessilia, 0,2 - 0,5 mm in diametro, marginibus thallinis primum continuis, leviter blastidiatis, areolis concoloribus. Disci plani, brunnei. Hymenium 70 - 90 μ m altum. Epihymenium

rufobrunneum. Paraphyses 1,5 - 1,8 µm crassae, apicibus 2,5 - 5 µm crassis. Asci clavati, 50 - 70 x 12 - 20 µm, typo *Lecanora*. Ascospores octonae, vel saepe pauciores, 1-septatae, fuscae, ad typum *Pachysporaria* pertinentes, toro non vel vix evoluta, 14 - 18 (- 21) x 8 - 10 (- 12) µm. Spermatia bacilliformia, 3,5 - 4,5 x 1 µm.

TYPE: Austria: Steiermark, Seetaler Alpen-N-Abhang, 6 km E von Unzmarkt, Murknie zwischen Wöll und Edling, 720 m (MTB 8753/3), on *Salix alba*, 1993-03-07, W. OBERMAYER (GZU-holotype; M, UPS-isotypes).

Thallus crustaceous, composed of contiguous areolae, rarely scattered, without perceptible prothallus. Areolae grey to brown-grey, flat or slightly convex, 0,1 - 0,3 (- 0,5) mm diam. Blastidia (POELT 1980) confluent, forming a continuous granulose crust, budding from the surface and margins of the areolae, 20 - 30 (- 40) µm diam, dark brown. Apothecia lecanorine, rare, adnate becoming sessile, 0,2 - 0,5 mm diam. Thalline margin prominent, entire, smooth, becoming blastidiate, persistent, colorous with thallus. Disc plane, brown. Thalline exciple 50 - 80 (- 100) µm wide. Cortex 10 - 20 µm laterally, expanding to 30 - 40 µm below, cellular, cells thin-walled, 5 - 7 (- 10) µm diam. Proper exciple 5 - 10 µm laterally, expanding to 40 - 60 µm above. Epiphytenium reddish-brown. Hymenium 70 - 90 µm tall. Hypothecium colourless, ± 100 µm deep. Paraphyses 1,5 - 2 µm wide, apices capitate, (2,5 -) 3,5 - 5 µm wide, brown. Asci claviform, usually including less than 8 spores (Fig. 1d), 50 - 70 x 12 - 20 µm, of *Lecanora*-type (HONEGGER 1978). Ascospores broadly ellipsoid, *Pachysporaria*-type (MALME 1902; POELT 1965), smooth, without or with a poorly developed torus, 14 - 18 (21) x 8 - 10 (12) µm (Fig. 1e). Spermogonia immersed in the thallus. Spermatia of type VI (VOBIS 1980: 43, Fig. 9), bacilliform, 3,5 - 4,5 x 1 µm (Fig. 1g).

Chemistry: Thallus K-, C-, KC-, P- and I-. Exciple I-. No substances detected by TLC.

Observations: *Rinodina poeltiana* is characterized by its dark, entirely blastidiate thallus which forms a continuous, granulose crust; its lack of chemical substances and its small *Pachysporaria*-type ascospores (Figs. 1a-e,h), which are broadly ellipsoid, smooth and without or with a poorly developed torus (Fig. 1e).

Other corticolous European species with similar thalli and *Pachysporaria*-type ascospores but not present in Austria include *R. colobinoides*, *R. dalmatica* and *R. isidioides* (GIRALT & al. in prep.a). These taxa can easily be separated from *R. poeltiana* by the following characters: *R. colobinoides* contains an orange-yellow K+ purple-violet pigment in the epiphytenium, hymenium and hypothecium; *R. dalmatica* contains pannarin (PD+ orange) and its young ascospores have polygonal lumina; and *R. isidioides* contains atranorin (K+ yellow) and has true isidia.

The main differences between *R. poeltiana* and the other corticolous blastidiate and sorediate species of the genus which also occur in Austria are given in the key. This group of species includes *R. colobina* s. lat., *R. efflorescens*, *R. excrescens*, *R. griseosoralifera*, *R. inflata*, *R. malangica* and *R. orculata*. Detailed descriptions of *R. colobina* s. lat. are provided in MAGNUSSON (1947) and SHEARD (1967); of *R. efflorescens* in COPPINS & JAMES (1979) and TØNSBERG (1992); of *R. excrescens* (= *R. thujae*) in MAGNUSSON (1947 & 1953) and GIRALT & al. (in prep.b); of *R. inflata* in KALB (1976); of *R. griseosoralifera* in COPPINS (1989) and TØNSBERG (op. cit.); of *R. malangica* in HINTEREGGER & al. (1989) and ROPIN & MAYRHOFER (1993); and of *R. orculata* in POELT (1970).

Ecology and distribution: *Rinodina poeltiana* is known only from the type locality. It occurs on old bark at the base of *Salix alba*, growing next to sloping river banks. The local site along the river Mur is part of a relatively dry area in Styria (see BRAUN-BLANQUET (1961: 3, Abb.1). Nevertheless at least the occurrence of *Normandina pulchella*

shows rather humid microclimatic conditions. Associated lichens include *Candelariella reflexa*, *Catillaria nigroclavata*, *Cetraria pinastri*, *Cladonia fimbriata*, *Hypogymnia phytodes*, *Melanelia exasperatula*, *M. glabra*, *Normandina pulchella*, *Parmelia sulcata*, *Pachyphiale fagicola*, *Parmelina tiliacea*, *Phaeophyscia orbicularis*, *Physcia adscendens*, *Ph. stellaris*, *Ph. tenella*, *Physconia enteroxantha*, *Punctelia subrudecta*, *Scoliciosporum umbrinum* and *Xanthoria parietina*.

Apart from *R. malangica*, *R. poeltiana* and all the other blastidiate-sorediate species of *Rinodina* occurring in Austria, show a very restricted distribution, being hitherto reported either only from the type locality (*R. inflata* and *R. orculata*) or from very few others. Thus *R. colobina* s. lat. has been collected in Burgenland, Lower and Upper Austria, Vienna and Vorarlberg; *R. efflorescens* is known from one locality in Upper Austria (WITTMANN & TÜRK 1987) and another one in Styria (GIRALT & al. in prep.a & b); *R. excrescens* (= *R. thujae*) from two localities in Styria (GIRALT & al. in prep.b); and *R. griseosoralifera* from Upper Austria (TÜRK & al. 1987), Styria and Tyrol (SCHREINER & HAFELLNER 1992). The distribution and a survey of the records of *R. malangica* are given by HINTEREGGER & al. (1989) and ROPIN & MAYRHOFER (1993).

Key to the blastidiate and sorediate corticolous *Rinodina* species occurring in Austria

- 1a. Epiphytenium blue-black, K+, N+ and C+ violet. *R. colobina* s. lat.
- 1b. Epiphytenium never blue-black, K-, N- and C-. 2
- 2a. Ascospores of the *Physconia*-type*, 12 - 15 x 6,5 - 8 µm, smooth. Torus well developed. *R. orculata* POELT & M. STEINER
- 2b. Ascospores never of the *Physconia*-type. 3
- 3a. Ascospores of the *Physcia*-type 4
- 3b. Ascospores of the *Pachysporaria*-type 6
- 4a. Thallus PD-, K- (lichen substances absent), blastidiate. Blastidia up to 60 µm diam., coralloid, confluent, forming a continuous subsidiiose crust. Ascospores 13 - 18 x 6 - 9 µm. *R. malangica* (NORM.) ARNOLD
- 4b. Thallus PD+ orange and K+ yellow (pannarin and atranorin). 5
- 5a. Thallus sorediate. Soralia discrete, never forming a ± continuous leprose crust. Ascospores 15 - 20 x 7 - 10 µm. *R. efflorescens* MALME
- 5b. Thallus blastidiate. Blastidia confluent, forming a continuous subsquamulose crust. Ascospores (15-) 17 - 21 x 7,5 - 11 µm. *R. excrescens* VAINIO
- 6a. Ascospores 14 - 18 (-21) x 8 - 10 (-12) µm. Thallus blastidiate, K-, PD- (lichen substances absent). Blastidia dark brown, confluent, forming a continuous granulose crust. *R. poeltiana* GIRALT & W. OBERMAYER
- 6b. Ascospores 20 - 30 x 12 - 18 µm. Thallus sorediate, K+ faint yellow (atranorin). Soralia whitish to blue grey, discrete, rarely confluent and forming a continuous leprose crust. 7

*Note: The ascospores of *Rinodina orculata* do not belong to the *Orcularia*-type, as mentioned by POELT (1970), but to the *Physconia*-type in the sense of SCHEIDEGGER (1993).

- 7a. Areolae very small, up to 0,2 mm diam., convex to hemispheric, sometimes becoming confluent. Soralia erupting from the upper surface of the areolae. Ascospores not constricted at the septum. *R. griseosoralifera* COPPINS
- 7b. Areolae large, subsquamulose, up to 1 mm diam., flat, remaining discrete. Soralia erupting from the margins and upper surface of the areolae. Ascospores constricted at the septum. *R. inflata* KALB

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Legend to figures: *Rinodina poeltiana* - a - c: asci with ascospores at different stages of development; d: ascus with only four well-developed ascospores; e: mature pachysporaria-type ascospores with torus (arrow); f: ascospores with two additional septa at both ends before germination; g: spermatia; h: ascospore-ontogeny; - scales: 10 µm.

