

The genus *Ceriporia* Donk (Polyporaceae, Basidiomycota) in the Patagonian Andes forests of Argentina

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The species of the polypore genus *Ceriporia* found in the *Nothofagus* dominated forests of southern Argentina are recorded. *Ceriporia retamoana* Rajchenb. is described as new; it is characterised by light duckling yellow basidiomes, and cylindric and narrow basidiospores. Other species are *C. purpurea*, *C. reticulata* and *C. viridans*. Specimens of *C. reticulata* are cream when fresh, but display a variety of hymenial colours upon drying that vary from light pink to dark orange, and turn pink to vinaceous with 5% KOH solution.

Key words: *Ceriporia*, *Nothofagus*, polypores, taxonomy

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Introduction

The genus *Ceriporia* Donk is well circumscribed among the polypores (Polyporaceae, Aphyllophorales) by the following set of characters: resupinate, soft to ceraceous basidiomes that are built up, though not always, by the aggregation and coalescence of cupules, monomitic hyphal system with simple-septate hyphae or with rare clamps, and thin-walled, cylindric, ellipsoid or alantoid basidiospores. Most of the species are associated with well-decayed wood and with a white rot in the substrate. Many species are cosmopolitan, but new species have recently been added from different countries, even from those that have a very well known fungal flora (Vampola & Pouzar 1996; Pieri & Rivoire 1997; Bernicchia & Niemelä 1998). In a molecular taxonomic study, Kim & Jung (1999) showed the monophily of the genus, its relationship with *Oxyporus* Donk and its position among other aphyllophoraceous genera with which it had been related.

During the preparation of a polypore flora for the Patagonian Andes forests of Argentina it

became evident that several species were present in the area, although only *Ceriporia reticulata* (Hoffm. : Fr.) Domański had been recorded (Hjortstam & Ryvarden 1985). The aim of this study is to describe and/or record all these taxa.

Methods

Microscopic examination of basidiocarps was made from freehand sections mounted in 5% KOH aqueous phloxine, Melzer's reagent and cotton blue. Color names are in accordance with Munsell (1990). All the materials are kept at the author's address unless otherwise stated (see Holmgren & Keuken 1974).

Results

***Ceriporia retamoana* Rajchenb. sp. nova.** – Figs. 1–2

Basidiocarpo annuo, resupinato, gossypino, cremeo vel stramineo; pori 1–2.5–4 per mm. Systema hyphale monomiticum, hyphae generatoriae afulatis, 2–4(–5) µm latae. Basidiis claviformibus, 18–22 × 4–5 µm, sporis cylindricis, 4.5–5 × 1.2–1.5 µm, tenuitunicatis, hyalinae. Putrefactione ligno alba.

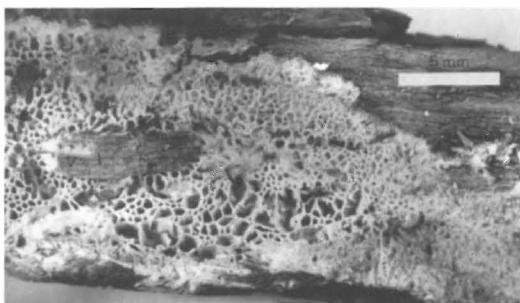


Fig. 1. *Ceriporia retamoana* Rajchenb., basidiocarp (BAFC 33342). Bar = 5 mm.

Type: Argentina. Chubut, Los Alerces National Park, Lake Rivadavia, near the campsite close to Rivadavia river, on fallen trunk of *Diostea juncea* (v.n. 'retamo', Verbenaceae), 28.II.1994 M. Rajchenberg 10814 (BAFC 33341, holotype).

Additional specimens examined: Argentina. Chubut, Los Alerces National Park, Lake Rivadavia, near the campsite, 12–14.I.1994 M. Rajchenberg 10804 (BAFC 33342); near the mouth of Río Rivadavia, on fallen trunk of *D. juncea*, 6.V.1995 M. Rajchenberg 10988.

Basidiocarp annual, resupinate, gossypine, not readily separable from the substrate, up to 8 × 3 × 0.4 cm. Margin narrow, distinct, cobbwebby or gossypine, thinning out. Pores round to angular, variable in size, 1–2.5–4 per mm, the larger intermingled or not with smaller ones (Fig. 1). Hydiscal surface white or light to dark duckling yellow when fresh, darkening upon drying. Context thin, less than 1 mm thick, white or duckling yellow. Tubes up to 3 mm long.

Hyphal system monomitic; generative hyphae simple-septate, branched, 2–4(–5) µm diam., with hyaline, thin to slightly thickened walls (Fig. 2a). A few generative hyphae that grow against the substrate are 4–5 µm diam. and have walls up to 1 µm thick (Fig. 2b); all hyphae are IKI-, CrB- and acyanophilous.

Basidia clavate, tetrasporic, 18–22 × 4–5 µm, with numerous oil-like inclusions and/or guttulae (Fig. 2c). *Basidiospores* cylindric, some slightly bent, 4.5–5 × 1.2–1.5 µm, with numerous oil-like contents (Fig. 2d). *Cystidia* absent.

Associated wood-rot white, developing superficially, mainly in the sapwood.

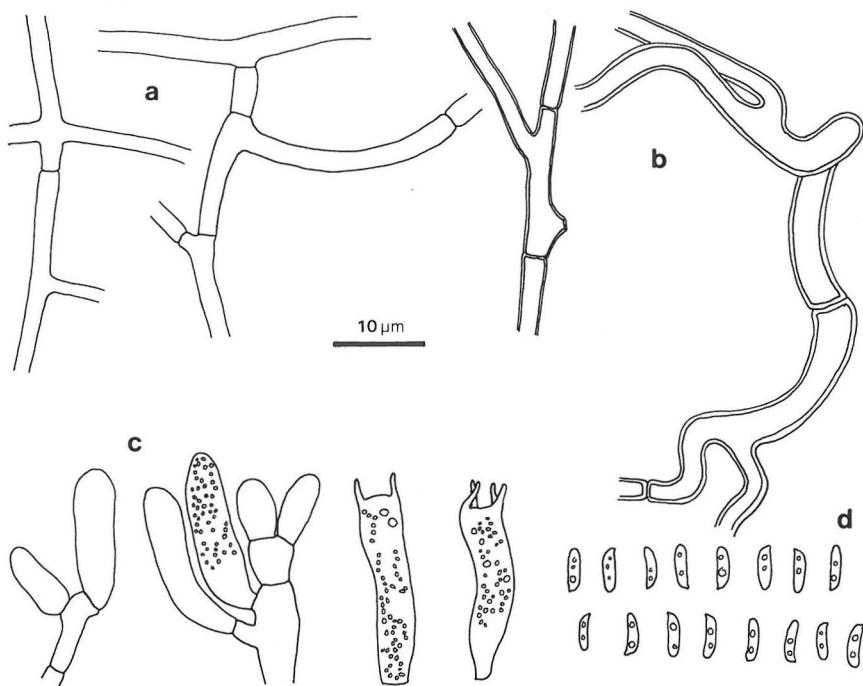


Fig 2. Microscopical features of *Ceriporia retamoana* Rajchenb., from the holotype: a. thin-walled generative hyphae. b. thick-walled generative hyphae. c. basidia and basidioles. d. basidiospores.

Etymology: ‘retamo’ is the vulgar name for *Diosteia juncea*, the host species.

Remarks: The combination of a monomitic hyphal system with simple-septate generative hyphae, cylindric, hyaline spores and an associated white wood-rot warrants the inclusion of this species in *Ceriporia* Donk. It comes close to *C. viridans* (Berk. & Broome) Donk, but the latter species is distinguished by a greenish white to pale cinnamon hymenial surface, smaller pores 3–5 per mm, smaller ellipsoid spores 4.5–5 × 1.8–2 µm (material described below from *Nothofagus* forest; Fig. 3c) and wide generative hyphae in the subiculum and the margin, up to 10 µm diam. (Ryvarden & Gilbertson 1993). *Ceriporia excelsa* (S. Lundell) Parmasto differs in its hymenial surface color of white to pinkish tan or purplish, generative hyphae 5–15 µm wide, that may have multiple clamps at septa, and ellipsoid spores 3.5–5 × 2–2.5 µm (Gilbertson & Ryvarden 1986). *Ceriporia microspora* I. Lindblad & Ryvarden, recently described from Costa Rica, differs in smaller pores 6–8/mm, and smaller spores 3–3.5 × 1.5–2 µm (Lindblad & Ryvarden 1999). The new species seems restricted to *D. juncea*, an arborescent shrub that is widespread in the central and north Patagonian Andes forests.

Ceriporia purpurea (Fr.) Donk, Konn. Nederl. Akad. Wetensch. Amst. Proc. Ser. C74 1: 28, 1971. – Fig. 3a

=*Polyporus purpureus* Fr., Syst. Mycol. 1: 379, 1821.

Specimens examined: Argentina. Chubut, Parque Nacional Los Alerces, Lago Rivadavia, on fallen log of *Nothofagus dombeyi*, 9.V.1998 M. Rajchenberg 11639.

Remarks: The species was recorded previously from central Argentina by Rajchenberg (1984).

***Ceriporia reticulata* (Hoffm.: Fr.) Domański, Acta Soc. Bot. Pol. 32: 732, 1963. – Fig. 3b**
=*Polyporus reticulatus* Hoffm. : Fr., Syst. Mycol. 1: 385, 1821.

Specimens examined: Argentina. Chubut, Parque Nacional Lago Puelo, W arm between Gendarmería and hito 7, oriental slope of Valle de las Lágrimas, 18.III.1993 M. Rajchenberg 10755. Chubut, Lanquín, Lago Engaño, on fallen branch of *Nothofagus pumilio*, 17.IV.1996 M. Rajchenberg 11096; Lago Guacho, 21.IV.1997 A. Greslebin s.n. Futaleufú, Lago Baggilt, on fallen trunk of *N. pumilio*, 2.IV.1991 M. Rajchenberg 10420 & P. Cwielong; 24.III.1992 M. Rajchenberg 1056; Futaleufú, Huemules, 20.XI.1995 A. Greslebin 485. Neuquén, Parque Nacional Lanín, Lago Lácar, ca. cascade, in mixed forests of *N. obliqua*, *N. alpina* and *N. dombeyi*, 27.IV.1994 M. Rajchenberg 10838, 10842. Parque Nacional Nahuel Huapi, Cerro Bayo, on fallen branch of *N. pumilio*, 29.X.1997 A. Greslebin s.n. Neuquén, Maipú, Laguna Rosales, lote 43, *N. pumilio* forest, 3.XI.1997 A. Greslebin s.n. 2. Río Negro, Bariloche, El Bolsón, Cerro Perito Moreno, 3.V.1997 A. Greslebin s.n. Tierra del Fuego, Ushuaia, Valdez River, IX.1996 A. Greslebin 119, 443; Lago Escondido, *N. pumilio* forest, 2.XII.1995 A. Greslebin s.n. Río Grande, Estancia Indiana, on *N. antarctica*, 24.V.1998 M. Rajchenberg 11488.

Remarks: The species is very common, usually growing on very rotten wood, and has been recorded previously from the area by Hjortstam and Ryvarden (1985). Pore size in most specimens is 2–3–3.5/mm and spores are cylindric, slightly bent to allantoid, (7.5–)8–10(–11) × (3–)3.5–4 µm. The specimens examined differed from material from the Northern Hemisphere in the reaction displayed by the hymenial surface to 5%

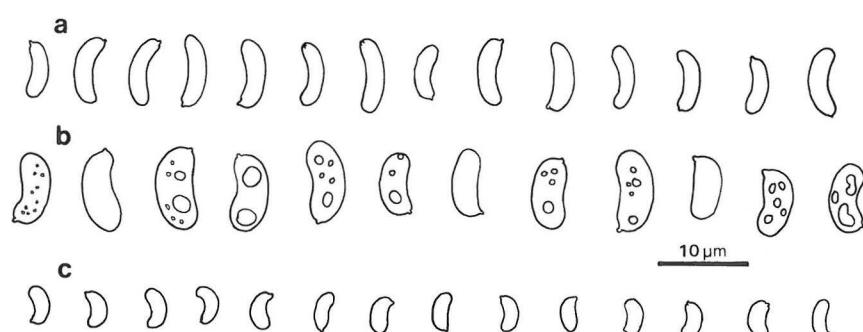


Fig. 3. Basidiospores of *Ceriporia* species: a. *C. purpurea* (Fr.) Donk (MR 11639). b. *C. reticulata* (Hoffm. : Fr.) Domański (MR 11096). c. *C. viridans* (Berk. & Broome) Donk (MR 11622).

KOH. It varied from light pink to cherry, cherry red or light vinaceous in different specimens, being recorded as unchanged in the Northern Hemisphere (Pieri & Rivoire 1997). The color seems to be related to the hymenial coloration of the hymenial surface upon drying, which varies from light pink or pink (5YR 8/4), yellow or light orange (10YR 8/6), or orange to reddish yellow (5YR 6/8-7/8). One specimen, i.e. MR 10842, developed a strong cherry-red reaction with KOH, and had allantoid spores $7.8-8.8 \times 2.6-3.2 \mu\text{m}$, and smaller pores 3.5-3.8 /mm; nevertheless it seems to represent a variation within the species in this area.

Ceriporia viridans (Berk. & Broome) Donk, Med. Bot. Mus. Utrecht 9: 171, 1933. – Fig. 3c
= *Polyporus viridans* Berk. & Broome, Ann. Mag. Nat. Hist. 3, 7: 379, 1861.

Specimens examined: Argentina. Chubut, Parque Nacional Los Alerces, Lago Rivadavia, beginning of Río Rivadavia, 6.V.1995 M. Rajchenberg 10987; Río Arroyanes, entrance to the ranger's house, in *N. dombeyi* forest, 7.V.1998 M. Rajchenberg 11622. Río Negro, Bariloche, Mallín Ahogado, Cajón del Río Azul, on fallen branch of *N. dombeyi*, 15.V.1998 M. Rajchenberg 11644.

Extralimital material examined: Finland. Uusimaa, Tammisaari, Storholmen, on dead, thin trunk of *Populus tremula*, 2.VII.1995 J. Kaaro 38, det. T. Niemelä (H). Etelä-Häme, Nastola, Arrajoen kartano, *Populus tremula*, 14.VIII.1984 V. Haikonen 4773, det. H. Kotiranta (H); Kangasala, Vihtinen, 21.VIII.1994 U. Söderholm 2207, det. P. Renvall (H).

Remarks: The species is very variable with regards to hymenial coloration and spore shape. Specimens from southern Argentina have allantoid to cylindric-ellipsoid spores $4.5-5 \times 1.8-2 \mu\text{m}$ (Fig. 3c). Rajchenberg (1984) recorded it previously from subtropical Argentina.

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