



Two new species of *Rigidoporus* (*Agaricomycetes*) from Brazil and new records from the Brazilian Amazonia

ALLYNE CHRISTINA GOMES-SILVA^{1,2}, PRISCILA SANJUAN DE MEDEIROS³, ADRIENE MAYRA DA SILVA SOARES³, HELEN MARIA PONTES SOTÃO³, LEIF RYVARDEN⁴ & TATIANA BAPTISTA GIBERTONI¹

¹Departamento de Micologia, Programa de Pós-Graduação em Biologia de Fungos, Universidade Federal de Pernambuco, Av. Nelson Chaves s/n, CEP 50760-420, Recife, PE, Brazil. Email: allynefungi@hotmail.com; tbgibertoni@hotmail.com

²Current address: Faculdade São Lucas, Coordenação de Ciências Biológicas, Av. Alexandre Guimarães, 1927, CEP 78916-450, Porto Velho, RO, Brazil.

³Museu Paraense Emílio Goeldi, Coordenação de Botânica, Caixa postal 399, CEP 66040170, Belém, PA, Brazil.

Email: priscilasanjuanbio@yahoo.com.br; adriene_soares@yahoo.com.br; hele@museo-goeldi.br

⁴Department of Botany, University of Oslo, P. O. Box 1045, Blindern, N-0316, Oslo, Norway. Email: leif.ryvarden@bio.uio.no

Abstract

Two new polypores, *Rigidoporus grandisporus* and *R. mariae* are described from the Brazilian Amazonia based on specimens deposited in herbarium INPA between 27 and 39 years ago, and material recently collected in the State of Pará. Besides the description of the new species, *R. crocatus* and *R. undatus* are reported as new records from the Brazilian Amazonia. *Rigidoporus amazonicus*, *R. lineatus*, *R. ulmarius* and *R. vinctus* are new records to different states of the Brazilian Amazonia. A key to the *Rigidoporus* species known for the Neotropics is provided.

Key words: Basidiomycota, Diversity, taxonomy, Brazilian Amazonia

Introduction

Rigidoporus is a cosmopolitan genus described by Murrill in 1905 and currently comprises about 40 species (Kirk *et al.* 2008). Species of *Rigidoporus* produce white rot in hardwoods, rarely in coniferous wood or are parasitic on deciduous trees (Ryvarden & Johansen 1980, Ryvarden 1991). The genus includes species with resupinate to pileate, annual to perennial basidiomata, varying from reddish orange to pinkish, isabelline or ochraceous. The hyphal system is monomitic to pseudodimitic with or without cystidia and mammillate cystidioles. The presence of forked cystidia is reported in *R. furcatus* Nuñez & Ryvarden (Nuñez & Ryvarden 2001). The basidiospores are in general, ellipsoid to globose and negative in Melzer's reagent (Silveira & Guerrero 1989, Ryvarden 1991, Cui *et al.* 2009).

Rigidoporus has been widely accepted by several authors based on the characters outlined above (Ryvarden & Johansen 1980, Gilbertson & Ryvarden 1987, Silveira & Guerrero 1989, Ryvarden & Gilbertson 1994, Ryvarden 1991, Dai 1998, Nuñez & Ryvarden 2001, Cui *et al.* 2009, Westphalen & Silveira 2012). Recently, Vampola & Vlasák (2012) studied morphologically related species which were redefined based on DNA sequencing. Currently nine species are reported from Brazil, of which six are reported from the Brazilian Amazonia (Gugliotta *et al.* 2013, Westphalen & Silveira 2012).

The aim of the present study is to contribute to the knowledge about the diversity and distribution of *Rigidoporus* in Brazil, with new records from the Brazilian Amazonia. Two new species are described along with documentation of range extensions for several species.

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References

- Cui, B.K., Dai, Y.C. & Li, B.D. (2009) Notes on the genus *Rigidoporus* (*Basidiomycota, Polyporaceae*) in China. *Nova Hedwigia* 88: 189–197.
<http://dx.doi.org/10.1127/0029-5035/2009/0088-0189>
- Dai, Y.C. (1998) Changbai wood-rotting fungi 9. Three new species and other species in *Rigidoporus*, *Skeletocutis* and *Wolfiporia* (*Basidiomycota, Aphyllophorales*). *Ann. Bot. Fennici* 35: 134–154.
- Gilbertson, R.L. & Ryvarden, L. (1987) North American Polypores. Vol. 2. *Fungiflora*, Oslo.
- Góes-Neto, A. (1999) Polypore diversity in the state of Bahia, Brazil: a historical review. *Mycotaxon* 72: 43–56.
- Gomes-Silva, A.C. & Gibertoni, T.B. (2009). Checklist of the aphyllophoraceous fungi (*Agaricomycetes*) of the Brazilian Amazonia. *Mycotaxon* 108: 319–322.
<http://dx.doi.org/10.5248/108.319>
- Gugliotta, A.M., Abrahão, M.C. & Gibertoni, T.B. (2013) *Polyporales* in Lista de Espécies da Flora do Brasil. Jardim Botânico do Rio de Janeiro. <<http://floradobrasil.jbrj.gov.br/jabot/floradobrasil/FB92447>>
- Leal, G.R. & Gugliotta, A.M. (2008) Criptógamos do Parque Estadual das Fontes do Ipiranga, São Paulo, SP. Fungos, 9: *Meripilaceae*. *Hoehnea* 35(1): 99–110.
<http://dx.doi.org/10.1590/S2236-89062008000100007>
- Núñez, M. & Ryvarden, L. (2001) East Asian Polypores, Vol. 2. *Syn. Fungorum* 14: 167–522.
- Kirk, P.M., Cannon, P.F., Minter, D.W. & Stalpers (2008) Dictionary of the Fungi. 10 ed. CABI Publishing, Surrey. 771 pp.
- Rajchenberg, M. (2006) Los Políporos (*Basidiomycota*) de los Bosques Andinos Patagónicos da Argentina. *Biblioteca Mycologica* 201: 1–300.
- Ryvarden, L. (1987) New and noteworthy polypores from tropical America. *Mycotaxon* 28 (2): 525–542.
- Ryvarden, L. (1991) Genera of polypores, nomenclature and taxonomy. *Syn Fungorum* 5: 1–363.
- Ryvarden, L. (2007) Studies in Neotropical Polypores 23. New and interesting wood-inhabiting fungi from Belize. *Syn Fungorum* 23: 32–50.
- Ryvarden, L. & Gilbertson, R. L. (1994) European Polypores. Vol. 2. *Synopsis Fungorum* 6, Fungiflora, Oslo, 355p.
- Ryvarden, L. & Iturriaga, T. (2003) Studies in neotropical polypores 10. New polypores from Venezuela. *Mycologia* 95: 1066–1077.
<http://dx.doi.org/10.2307/3761913>
- Ryvarden, L. & Johansen, I. (1980) A preliminary polypore flora of East Africa. Oslo, Norway: Fungiflora. 636 p.
- Silveira, R.M.B. & Guerrero, R.T. (1989) Os gêneros *Rigidoporus* Murr. e *Flaviporus* Murr. (*Basidiomycetes*) do Parque Nacional de Aparados da Serra, RS. *Acta Botanica Brasilica* 3: 29–45.
<http://dx.doi.org/10.1590/S0102-33061989000300004>
- Sotão, H.M.P., Gibertoni, T.B., Maziero, R., Baseia, I., Medeiros, P.S., Martins-Júnior, A. & Capelari, M. (2008) Fungos macroscópios da Floresta Nacional de Caxiuanã, Pará, Brasil: *Basidiomycota* (*Agaricomycetes*). In: Lisboa P.L.B. (org.). Caxiuanã: Desafios para conservação de uma Floresta Nacional na Amazônia. Belém: Museu Paraense Emílio Goeldi.

- Thiers, B. [continuously updated]. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/ih/>. Accessed 2 May 2012.
- Vampola, P. & Vlasák, J. (2012) *Rigidoporus pouzarii*, a new polypore species related to *Rigidoporus crocatus*. *Czech Mycology* 64(1): 3–11.
- Watling, R. (1969) Colour Identification Chart. Edinburgh, Scotland: Her Majesty's Stationery Office.
- Westphalen, M.C. & Silveira, R.M.B. (2012) Interesting resupinate species of *Rigidoporus* from Brazil. *Nova Hedwigia* 94(3–4): 397–404.