

South American polypores: first annotated checklist from Argentinean Yungas

GERARDO L. ROBLEDO¹ & MARIO RAJCHENBERG²

¹*gerardorobledo@ecosistemasarg.org.ar*

Instituto Multidisciplinario de Biología Vegetal – CONICET

Universidad Nacional de Córdoba, C.C. 495, 5000 Córdoba, Córdoba, Argentina

²*mrajchenberg@ciefap.org.ar*

Centro Forestal CIEFAP

C.C. 14, 9200 Esquel, Chubut, Argentina

Abstract — A preliminary checklist of the polypore mycota of “Yungas”, subtropical mountain forests of northwestern Argentina, is presented. An intensive search of records in literature was done, and polypore exsiccatae from that phytogeographic province kept at the main Argentinean herbaria were studied. A total of 850 specimens were revised and 111 species were determined. *Phellinus laevigatus* and *Skeletocutis stellae* are recorded for the first time in South America; 8 species are new records for Argentina and 31 new records for the region. The new combination *Dichomitus hexagonoides* is proposed. The complete checklist is available on:

<http://www.mycotaxon.com/resources/weblists.html>.

Key words — fungal diversity, wood decay fungi, neotropic montane forests

Introduction

Yungas ecosystem

A system of tropical and subtropical cloud montane forests is developed on the oriental slope along the Andes in South America. This system, called Andean Yungas Forests, is mainly defined by its occurrence on the slopes in an altitudinal range where the weather is characterized by a persistent or seasonal fog and cloud cover (Brown et al. 2005).

Andean Yungas Forests have their southern limit in NW Argentina where they are called Yungas and also known as “Selva Tucumano-Boliviana” or “Selva Tucumano-Oranense”. Biogeographically, Argentinean Yungas are in the Andean corridor and constitute practically the southeast expression of the Amazonic Domain (Cabrera 1994). About 50% of Argentina’s biodiversity can be found in this ecosystem (Brown et al. 2005). Tree diversity is high and preliminary estimations include more than 230 tree species with particular

elements of Holarctic (*Alnus*, *Berberis*, *Juglans*, *Sambucus*), Gondwanic (*Podocarpus*, *Escallonia*, *Weinmannia*), Pantropical (*Eugenia*, *Ocotea*) and Neotropical (*Myrcianthes*) origins (Grau & Brown 2000, Brown et al. 2005).

Argentinean Yungas are characterized by a high altitudinal gradient characterized by different environmental conditions such as periods of drought, high temperatures, high humidity levels, frosts and snow in winter, a fact that reflects a particular floristic composition. As result of the environmental gradient, three main forest types can be distinguished (Brown et al. 2005), namely: premontane lowland forests (400-700 m asl); lower montane forests (700-1500 m asl); and upper, temperate montane forests (1500-2500 m asl).

Argentinean Yungas have been under strong anthropogenic pressure for many decades (Grau & Brown 2000). In the meantime, the biodiversity of Argentinean Yungas is threatened by global climate changes and human activity such as agricultural frontier expansion, intense logging, and oil and gas prospecting (Grau & Brown 2000). These activities cause a variation in occurrence and abundance of woody substrates, thus possibly producing direct effects on the populations and communities of wood decomposers, as has been shown in forests of the Northern Hemisphere (Sippola & Renvall 1999). Despite the high endemic value of plants of Argentinean Yungas (Zuloaga et al. 1999), important ecological groups as wood-rotting fungi have not yet been surveyed.

Mycological knowledge state of Yungas

The heterogeneity and diversity of woody substrates of Argentinean Yungas forests suggest a rich wood-decaying fungal diversity and a complex community structure, with taxonomic novelties, including taxa awaiting to be described (Robledo et al. 2003). In the case of polypores, the study of their diversity in Argentina has been concentrated in: the subtropical rainforests and gallery forests of E and NE in the so-called (Argentinean) Mesopotamia and the capital city surrounding areas, Buenos Aires (Popoff 2000 and references therein), the humid and subxerophytic Chaco forests of north central Argentina and southern Paraguay (Popoff 2000), and the *Nothofagus*-dominated forests of Southern Argentina (Rajchenberg 2006). Several endemic and cosmopolitan taxa have been described recently from the particular *Polylepis* (*Rosaceae*) forests of central Argentina reviewed in Robledo et al. (2006). But the research undertaken in NW Argentina has been more sporadic. Spegazzini (1919) made the first studies and deposited collections in LPS, and during the following 80 years polypore studies in this region have been restricted to field trips headed by the mycologists Rolf Singer and Jorge E. Wright. Their collections are kept mainly at BAFC, LIL and LPS. Several works published in the last 25 years have dealt with specific polypore taxa and genera, or with particular substrates

(Bazzalo & Wright 1982, Gottlieb et al. 1998, 2002; Rajchenberg & Bianchinotti 1991, Rajchenberg 1982, 1985; Robledo et al. 2003, Ryvardeen et al. 1982, Silveira & Wright 2005, Urcelay & Robledo 2004, Wright 1966, 1976) but, as yet, there is no comprehensive study on the polypores of that area.

The aim of this study was to establish a baseline of knowledge of polypore diversity in Argentinean Yungas, through the construction of an annotated checklist.

Material and methods

An intensive search of fungal records in literature was done. When possible we updated and/or corroborated the records (mainly those of Spegazzini) through the study of original specimens. Also, we revised all collections deposited in the herbaria CORD, LPS, LIL, CTES, and BAFC. Type and reference materials deposited in international herbaria were also checked. Herbarium acronyms are from Holmgren et al. (1990). Morphological features of basidiocarps were observed. Microscopic examinations and measurements were made from freehand sections mounted in 3-5% KOH plus 1% phloxine and in Melzer's reagent.

Results

We checked, studied, and/or revised a total of 850 collections. Together with the literature search we established the presence of 111 species. The current annotated checklist for the polypore species from Argentinean Yungas can be downloaded from <http://www.mycotaxon.com/resources/weblists.html>.

Masuka & Ryvardeen (1999) have shown that the tropical genus *Megasporoporia* Ryvardeen & J.E. Wright does not differ from the temperate *Dichomitus* D.A. Reid sufficiently enough to merit separate status. Therefore, we propose here the following new combination:

***Dichomitus hexagonoides* (Speg.) Robledo & Rajchenb. comb. nov.**

Mycobank # MB10615

Bas.: Poria hexagonoides Speg., An. Mus. Nac. Buenos Aires 6: 170, 1899 (LPS!).

= *Megasporoporia hexagonoides* (Speg.) J.E. Wright & Rajchenb., Mycotaxon 16: 176, 1982.

A 37 % (41 out of 111) of the species constitute novelties in distribution. The most interesting ones are the new records for South America of *Phellinus laevigatus* (Fr.) Bourdot & Galzin and *Skeletocutis stellae* (Pilát) Jean Keller. These species are well known in the North Hemisphere, viz., North America (Gilbertson & Ryvardeen 1987), Europe (Ryvardeen & Gilbertson 1994) and Asia (Núñez & Ryvardeen 2000, 2001). No differences were observed with reference materials.

Eight rare species constitute new records for Argentina: *Amauroderma macrosporum* J.S. Furtado, *Amylosporus campbellii* (Berk.) Ryvardeen,

Fomitopsis meliae (Underw.) Gilb., *Phellinus johnsonianus* (Murrill) Ryvar den, *Phellinus shaferi* (Murrill) Ryvar den, *Phylloporia capucina* (Mont.) Ryvar den, *Polyporus biskeletalis* Corner and *Skeletocutis nivea* (Jungh.) Jean Keller. All these taxa are known from other neotropical areas of South America.

Finally, 31 species are new records for the region, and a *Nomina incerta* of 25 names published by Spegazzini that require re-evaluation was established. Some combinations were not traced, representative materials were not found at the herbaria and there is no mention regarding their placement. In other cases the herbarium materials could not be identified because they were sterile or deteriorated.

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