New taxa and new records for Argentina of fungi from Iguazú National Park, Misiones

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Galerina mycenaeformis, *Lulesia lignicola* and *Laccaria cyanolamellata* are proposed as new species, whereas *Gymnopilus lepidotus*, *Leucopaxillus gracillimus*, *Marasmius viegasii*, *Mycena euspeirea*, *Mycena niveipes*, *Pleurocollybia praemultifolia*, *Agaricus endoxanthus*, *Pluteus subcervinus*, *Hypholoma* aff. *trinitensis*, *Leucoagaricus rubrosquamosus* and *Macrolepiota gracilenta* constitute new records for Argentina.

Key words: *Galerina*, *Laccaria*, *Lulesia*, macrofungi, new species, subtropical

Introduction

During a survey carried out throughout the last 30 years of the mycota of Iguazú National Park, Misiones, Argentina, a number of new species of macrofungi were encountered (cfr. Wright and Wright, 2005). Specimens collected in the last years during several trips permitted us to discover new species that merit description, as well as several taxa which constitute new records for Argentina.

Materials and methods

Specimens were collected, photographed (diapo) and dried according to the procedures given by Wright and Albertó (2002). Herbarium acronyms are according to Holmgren *et al*. (1990). Colours follow Maerz and Paul (1930).

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Taxonomy

HYDNANGIACEAE

Laccaria cyanolamellata Lechner & Wright, **sp. nov.** (Figs. 1, 4)

Etymology: *from xúavoc (Greek) = blue*. *Refers to blue lamellae*.

Pileus leviter campanulatus vel applanatus, brunneis, glabrous, 30-40 mm diam., 20 mm altus. *Lamellae* cyanescentes, 2-3 mm amplitudine, parvis incrassatae, pulverulentibus in sicco. *Stipes* longus, 85-120 × 2-4 mm, aliquantum helicoides, compactus, glabrous, pulverulentus sub lente, niveus. *Pileipellis* cellulis claviformibus, perpendicularibusque exornatus, 29-68 × 11-20 µm. *Contextus hyphis* fibulatis, hyalinis, fragillibus, parietibus parce incrassatis, parce ramosis, 2.6-13 µm diam. formantibus. *Stipitipellis* in cutis cum fasces hyphis afibulatis, parce incrassatis, parallelis, 2.6-10 µm diam. *Basidia* 60-70 × 11-14 µm, 2-sporulatis, raro 1-3-4-sporulatis, sterigmata usque ad 10 µm long. *Sporis* grosse aculeatis, hyalinis, globosis, 10-20 µm diam. (cum spinis).

Holotype*:* ARGENTINA, Misiones, Parque Nacional Iguazú, El Palmital, ruta 107, ad terram, 5 March 2003, col. Orlando Popoff, in Herbario BAFC 51334, conservatus est.

Pileus (Fig. 4) 30-40 mm diam., 10-20 mm high, campanulate to applanate, not striate, buck-skin (A6P14, Maerz and Paul, 1930) to alamo (A12P14, Maerz and Paul, 1930), non striate or translucent striate when fresh, glabrous. *Lamellae* adnate to subdecurrent, close to subdistant, relatively thin to thick, greyish-blue, 2-3 mm wide, appearing powdery when dry. *Stem* long, 85-120 × 2-4 mm, somewhat twined, equal, dry, compact, smooth, powdery under the lens, greyish becoming whitish. *Pileipellis* (Fig. 1A) formed by perpendicular, thin walled, clavate elements, 29-68 × 11-20 µm, some golden brownish in KOH mixed with hyaline ones. *Context hyphae* (Fig. 1B) 2.5-13 µm diam., wider towards the centre, hyaline, clamped, sparsely branched, fragile, wall thin to slightly thickened. *Hymenophoral trama* subparallel, Stipitipellis a cutis with irregular tufts of clampless, thin to thick-walled hyaline hyphae with a parallel arrangement, 2.6-10 µm diam. *Basidia* (Fig. 1C) 60-70 × 11-14 µm, 2-spored, rarely 1-3-4-spored, sterigmata up to 10 µm long. *Basidiospores* (Fig. 1D) (excluding ornamentation) (10.4-)11.4-14(-18) × 11.4-15 µm diam. ($\bar{x}$ = 12.7 × 12.2), Q = 1-1.12, hyaline, globose to subglobose, equinulate, equinulae 1-3.5 µm long ($\bar{x}$ = 1.9 ± 0.9).

Habitat: *on humus*, *solitary or gregarious*.

Notes: The bluish lamella place this species in metasection Amethystina, characterised by the presence of violet pigments (Mueller, 1992). Differing from the species in this metasection by its particular elongate, somewhat twined, whitish stem, lamellae not very thick as occurs in most Laccarias and globose spores, more than 10 µm diam.

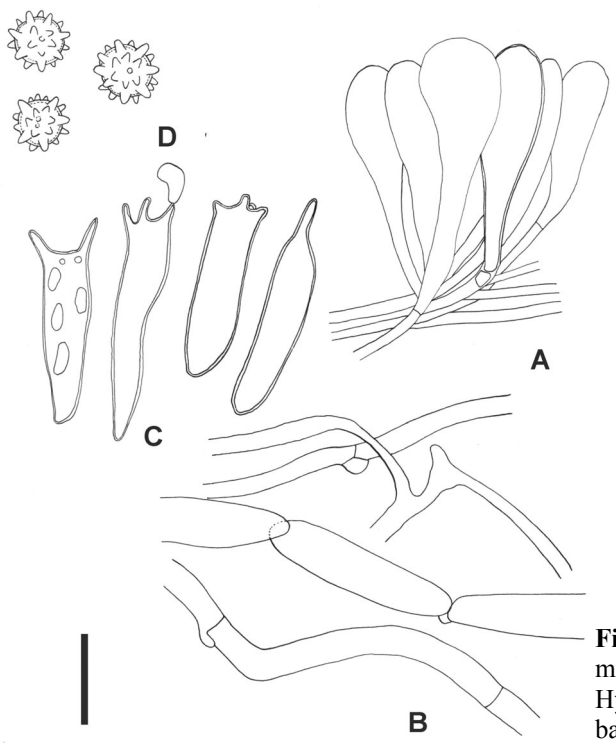

Fig. 1. *Laccaria cyanolamellata*, micromorphology. **A.** Pileipellis. **B.** Hyphae; **C.** Basidia. **D.** Spores. Scale bar = 20 µm for A and 30 µm for B-D.

TRICHOLOMATACEAE

Lulesia lignicola Lechner & Wright, **sp. nov.** (Figs. 2, 5)

Etymology: from lignum (Latin) = madera and cola (Latin) = dweller.

Pileus brunneo, 20-30 mm diam., aliquantum ad centrum differentiatus. Stipes brunneo, centralis vel subcentralis, solidus, 10-25 × 1-1.5 mm. Lamellis decurrentibus, angustis, confertis, 0.5-1 mm latis. *Pileipellis* trichodermis hyphis brunneis, crassitunicatis, effibulatis, 4-5 µm diam. efformantibus. *Contextu hyphis* intermixtis, 2.1-6.7 µm diam, aliquot crassitunicatis, aliquot tenuitunicatis, hyphis conductivis intermixtis, cytoplasma dense granulata, 3-5 µm diam. *Stipitipellis hyphis* brunneis, dextrinoideis, 3-5 µm diam. intertextis, ad centrum parallelis, hyalinis efformantibus, effibulatis, 3-6.5 µm diam. *Subhymenium* parce evolutum, 2.6-7.8 µm crassus. *Trama hymenophorale* hyphis hyalinis, effibulatis, subparallelibus, 1.5-5.2 µm diam., efformantibus. Pleurocystidia? 19-21 × 5-6 µm, parce evolutis basidia similantibus. *Basidia* 14-20 × 4.2-5.2 µm, bi- vel tetrasporis, sterigmata parvi, sublateralibus. Sporis subglobosis, hyalinis, inamyloideis, 3.5-5 × 3.5-4.7 µm, glabris vel polygonalis.

Holotype: ARGENTINA, Misiones, Parque Nacional Iguazú, El Timbó, ruta 101, in ligno dejecto; 6 March 2003, col. Popoff, in Herbario BAFC Nº 51332, conservatus est.

Pileus (Fig. 5) 20-30 mm diam., new cocoa (A10P7, Maerz and Paul, 1930) to moose (C10P8, Maerz and Paul, 1930), subglabrous, somewhat differentiated at the centre, margin entire, at first convex, soon depressed to cyathiform, orbicular, dry. *Lamellae* whitish, decurrent, narrow, 0.5-1.5 mm wide, very crowded. *Stem* 10-25 × 1-1.5 mm, concolourous with the pileus

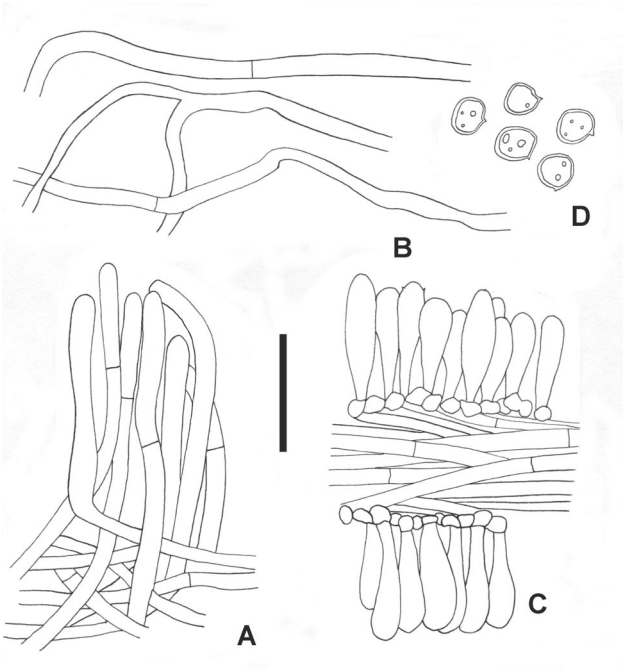

Fig. 2. *Lulesia lignicola*, micromorphology. **A.** Pileipellis. **B.** Hyphae. **C.** Hymenium, subhymenium and hymenophoral trama. **D.** Spores. Scale bar = 20 µm.

surface, central to subcentral, solid, glabrous, subequal. *Rhizomorphs* not observed. *Pileipellis* (Fig. 2A) a trichodermis with brown, thick-walled, clampless hyphae, 4-5 µm diam. *Context hyphae* (Fig. 2B) densely intertwined, clampless, 2.1-6.7 µm diam., some thick-walled, mixed with a few conducting hyphae with dense contents, 3-5 µm diam. *Stipitipellis* formed by intertwined, brown, dextrinoid hyphae, 3-5 µm diam.; in the central portion they are parallel, hyaline, clampless, 3-6.5 µm diam. *Subhymenium* (Fig. 2C) scarcely developed, 2.6-7.8 µm thick. *Hymenophoral trama* (Fig. 2C) with subparallel, hyaline, clampless hyphae, 1.5-5.2 µm diam. *Pleurocystidia* (Fig. 2C) 19-21 × 5-6 µm, poorly differentiated, hardly larger than basidia. *Basidia* (Fig. 2C) 1-2 spored, 14-20 × 4.2-5.2 µm, sterigmata very small, emerging sublaterally from the basidia. *Basidiospores* (Fig. 2D) 3.5-4.7 × 3.6-5 µm, $\bar{x}$ = 4.05 × 4.2, Q = 1-1.3, subglobose, rarely globose, hyaline, inamyloid, smooth or nearly so, some appearing angular.

Habitat: on dead wood of dicotyledonous trees, gregarious.

Notes: Singer (1970) differentiated *Lulesia* from *Armillariella* by having smaller spores, a trichodermial covering, a tendency toward bitter, rather than astringent taste, a zonate pileus, very narrow lamella and a humiculous habitat. The macro- and micromorphology place this species in *Lulesia*, characterised by a lignicolous habitat and smaller spores and basidia than *Lulesia densifolia*, the only species described by Singer (1986).

Leucopaxillus gracillimus Singer & Smith**,** A Monograph of the genus *Leucopaxillus*. Michigan Academy of Sciences, Arts and Letters 28: 131. 1943.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, garden of CIES, 26 June 2003, col. Lechner & Popoff, BAFC Nº 51264.

Mycena euspeirea (Berkeley & Curtis) Saccardo**,** Sylloge Fungorum 5: 287. 1887.

Material examined: Argentina, Misiones, Parque Nacional Iguazú, Upper Circuit, 26 June 2003, col. Lechner & Popoff, BAFC 51307; same location, same date, col. Lechner & Popoff, BAFC 51308; same location, same date, col. Lechner & Popoff, BAFC 51311; same location, same date, col. Lechner & Popoff, BAFC 51309; same location, 27 June 2003, col. Lechner & Popoff, BAFC 51310.

Mycena niveipes (Murrill) Murrill, Murrill, W.A. Mycologia 8: 221. 1915.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Upper Circuit, 26 June 2003, col. Wright, Lechner & Popoff, BAFC 51296.

Pleurocollybia praemultifolia (Murrill) Singer, Mycologia 39: 80. 1947.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Palo rosa forest (El Palmital), on route 101, VI-2000, Col. E. Albertó, Ed 650, BAFC 51403.

MARASMIACEAE

Marasmius niveus Mont., Annales des Sciences Naturelles, Ser. IV, 1: 117. 1854.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Upper circuit, 26 June 2003, Col. B. Lechner & O. Popoff, BAFC 51273; Cataratas Park, 27 June 2003, Col. B. Lechner & O. Popoff, BAFC 51279.

Marasmius viegasii Singer, Boletim da Superintendencia do Serviço do Café 32 (364): 14. 1957.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, El Palmital, 5 March 2003, col. Popoff, BAFC 51299.

POLYPORACEAE

Lentinus strigellus Berkeley**,** Journal Linnean Society, Botany 10: 302. 1868.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Sendero Yacaratiá, col. E. Vadell, February 2001, BAFC 51404.

PLUTEACEAE

Pluteus subcervinus (Berk. & Br.) Sacc., Sylloge Fungorum 5: 666.1887.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Cataratas railway station, col. Popoff, 27 April 2004, BAFC 51405.

Galerina mycenaeformis Lechner & Wright, **sp. nov.** (Figs. 3, 6)

Pileus convexus, 20-30 mm diam., usque ad 10 mm altus, sulcatus praeter apicem, solitarius vel cespitosus, flavo brunneis. *Lamellae* 1-1.5 mm, margo integer, subdistantibus vel subadpressus. *Stipes* 20-40 × 1-3 mm, basis subbulbosis, niveis, ad basim fibrillosis, annulo absentibus. *Sporis* in pulvere rubro-brunneis. *Pileipellis* in cutis 15-20 µm crassus, hyphis parietibus leviter incrassatis, 4-8 µm diam. *Contextus* tenuis, hyphis trama hymenophorale similantibus, 60-80 × 10-12 µm crassus. dispositione irregulare, fibulis raris. *Trama hymenophorale* hyphis parallelis, crasse tunicatis efformantibus. *Stipitipellis* hyphis gracillimis, fibulatis, 2.6-5 µm diam., crassior versus medulla. *Pleurocystidia* cylindricis, obtusis, 50-75 × 6.5-8.5 µm. *Cheilocystidia* similaribus, 35 × 6.5 µm. *Basidia* 4-sporis, claviformibus, 20-25 × 6-7 µm. *Sporis* brunneis, ellipsoideis, dextrinoideis, calyptratis, exosporio valde irregularibus, 6.9-9 × 4-6 µm, poro germinativo indifferentiato.

Holotype: ARGENTINA, Misiones, Parque Nacional Iguazú, circuito superioribus, ad trumcum putridum, col. Lechner & Popoff, 27 June 2003, in Herbario BAFC 51333, conservatus est.

Pileus (Fig. 6) convex, 20-30 mm diam., up to 10 mm high, sulcate except the apical portion, surface glabrous, margin crenate, burnished gold (L7P12, Maerz and Paul, 1930). *Lamellae* 1-1.5 mm wide, adnate, margin entire, subdistant to subcrowded. *Stem* 20-40 × 1-3 mm, base subbulbous, whitish, with fibrils at the base, hollow. *Ring* absent. *Spore* print reddish-brown. *Pileipellis* (Fig. 3A) a cutis, 15-20 µm thick, formed by thin- to thickened walled hyphae, 4-8 µm diam. *Context* with thin to thick, hyphae with scant clamps and an irregular arrangement. *Hymenophoral trama* (Fig. 3B) formed by slender, thick-walled, clamped hyphae, 2.6-5 µm diam., becoming wider towards the medulla. *Pleurocystidia* (Fig. 3B) cylindric, blunt, 50-75 × 6.5-8.5 µm. *Cheilocystidia* similar, 35 × 6.5 µm. *Basidia* (Fig. 3B) 4-spored, clavate, 20-25 × 6-7 µm. *Basidiospores* (Fig. 3C) (6.5-)7-8.5(-9) × (4-)5-6 µm ($\overline{x}$ = 7.9 × 5.2), Q = 1.3-1.75, brownish, ellipsoid, dextrinoid, calyptrate, with a very irregular exosporium, germ-pore indistinct.

Habitat: on dead trunk, solitary to caespitose.

Notes: This species differs from other species of *Galerina* by the particularity of its calyptrate spores and notorious pleurocystidia, two characteristics very difficult of observing in the same species; being *G. filiformis* Smith & Singer, the only species with these two morphological characteristics that differs macro- and microscopically in other aspects.

Galerina mycenaeformis should be placed in Section Calyptrospora Smith & Singer.

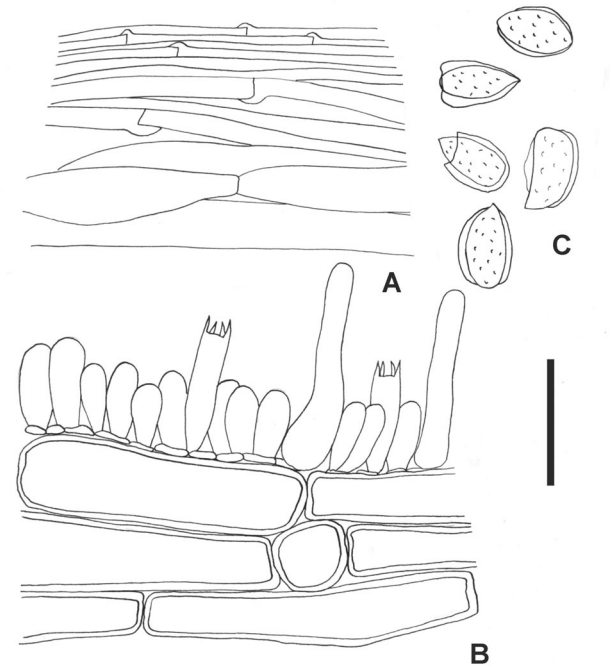

Fig. 3. *Galerina mycenaeformis*, micromorphology. **A.** Pileipellis. **B.** Hymenium, subhymenium and hymenophoral trama. **C.** Spores. Scale bar = 20 µm for A and C; 30 µm for B.

Gymnopilus lepidotus Hesler**,** in Hesler & Smith, North American Species of Gymnopilus, p.40. 1969.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Isla San Martín, on wood, 27 June 2003, col. Lechner & Popoff, BAFC 51393.

STROPHARIACEAE

Hypholoma aff. *trinitensis* (Dennis) Singer, The Agaricales in Modern Taxonomy, p. 564. 1986.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Camping Ñandú, 29 April 2004, col. O. Popoff, 3851. BAFC 51390.

Notes: Our material mainly differs from the original diagnosis by its glabrescent stem.

AGARICACEAE

Agaricus endoxanthus Berkeley & Broome**,** Journal of the Linnean Society, Bot. 11: 528. 1871.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, behind Garganta del Diablo, 26 June 2003, col. Wright, Lechner & Popoff, BAFC 51274.

Fig. 4. Basidiomata of *Laccaria cyanolamellata*. **Fig. 5.** Basidiomata of *Lulesia lignicola*. **Fig. 6.** Basidiomata of *Galerina mycenaeformis*. Scale bar= 40 mm for 4, 60 mm for 5-6.

Leucoagaricus rubrosquamosus (Rick) Singer, Lilloa 22: 422. 1951.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Route 101, behind Garganta del Diablo, 27 June 2003, col. Lechner & Popoff, BAFC 51263.

Macrolepiota gracilenta var. *goossensiae* (Beeli) Heinemman, Bulletin du Jardín Botanique National de Belgique 39(3): 211. 1969.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Upper Circuit, 26 June 2003, col. Wright, Lechner & Popoff, BAFC 51268.

COPRINACEAE

Coprinus aff. *rufopruinatus* Romagnesi**,** Bulletin de la Société de Mycologie de France 92: 204. 1976.

Material examined: ARGENTINA, Misiones, Parque Nacional Iguazú, Macuco, 27 June 2003, col. Lechner & Popoff, BAFC 51262.

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