

New records of Ascomycota in the northwestern Argentinean Yungas

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ABSTRACT: We report new records for nine species of ascomycetes from the Yungas of northwestern Argentina. *Capronia nigerrima*, *Capronia pulcherrima* and *Rosellinia dingleyae* are new records for South America. *Byssosphaeria rhodomphala*, *Camarops tubulina*, *Cercophora ambigua*, *Chaetosphaerella phaeostroma*, *Tubeufia cylindrothecia* are new species for Argentina, and *Togninia minima* is a new record for the biome.

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The Yungas of northwestern Argentina are located at the southern limit of a system of tropical and subtropical cloud montane forests extending on the oriental slope along the Andes in South America. Although they cover only less than 2% of the whole Argentinian surface, these mountain forests harbor over 50% of its biodiversity (flora and fauna) (Brown *et al.* 2005). All mycological investigations carried out in this region (Spegazzini 1896, 1909; Hladki 1997; Hladki and Romero 2005, 2010; Catania 2001, 2005; Catania and Romero 2009; Catania and Romero 2010; Robledo *et al.* 2003; Robledo and Rajchenberg 2007) indicate that the fungal diversity of this region is still very poorly known.

So far, 755 fungal species have been reported from the southern limit of the Yungas forests in the Tucumán province (Hladki *et al.* unpublished data). We started an exhaustive survey of two protected areas of the Yungas and their surroundings, the Reserva Experimental Horco

Molle (hereafter REHM) (65°19' W, 26°48' S) and the Parque Sierra de San Javier (hereafter PSSJ) (65°6'–65°20' W, 26°38'–26°57' S), located in the Yerba Buena and Tafi Viejo departments, Tucumán province, Argentina (Figure 1). Both areas are part of the Yungas Phytogeographic region of the Amazonic domain (Cabrera 1976).

Robledo and Rajchenberg (2007) have described in detail the Yungas ecosystem. The REHM has an extension of 200 ha; it is characterized by the presence of low hills (Figure 1) that do not exceed 650 m a.s.l. and is located at the base of the oriental slope of the San Javier Mountains. The climate is humid and temperate, with an annual average temperature of 18°C and an annual average precipitation of 1330 mm (Richard 2000). The forest is characterized by the presence of an upper canopy dominated mainly by *Anadenanthera colubrina* (Vell.) Brenan, *Blepharocalyx gigantea* Lillo, *Phoebe porphyria*

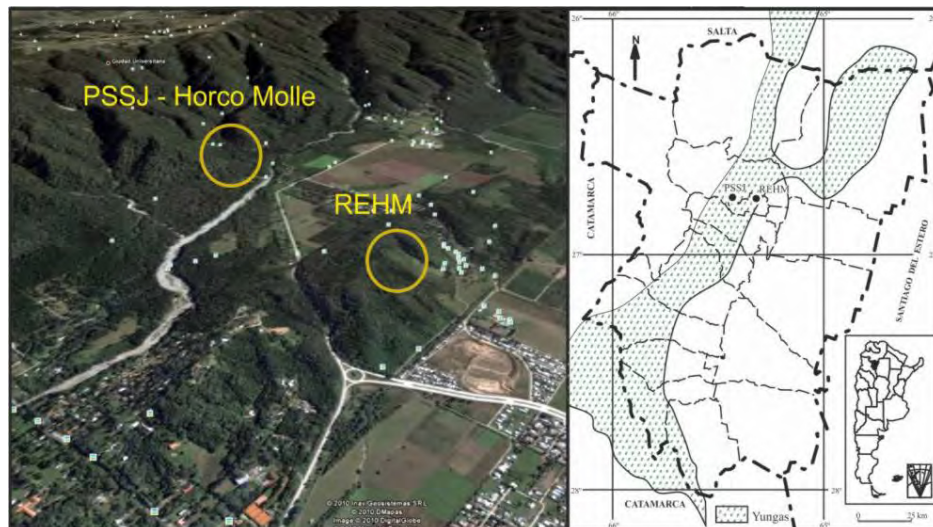


FIGURE 1. Location of the protected areas under study, Reserva Experimental Horco Molle (REHM) and Parque Sierra de San Javier (PSSJ).

(Griseb.) Mez and *Enterolobium contortisiliquum* (Vell.) Morong; the lower canopy is formed mainly by *Tecoma stans* (L.) Juss. ex Kunth and *Heliocarpus popayanenses* Kunth, whereas the understory is composed of a very diverse community of bushes and herbaceous plants (Podaza et al. 2004). In contrast, the PSSJ covers mainly the upper slopes and the tops of the San Javier Mountains, in the range 650–1850 m a.s.l., the main dominant trees being *Blepharocalyx gigantea* Lillo, *Calycophyllum multiflorum* Griseb., *Phyllostylon rhamnoides* (J. Poiss.) Taub., *Tipuana tipu* (Benth.) Kuntze and *Cinamomum porphyrium* (Griseb.) Kosterm. (Brown et al. 2002).

This work lists new records of species of Ascomycota so far not reported from South America, Argentina and/or the Yungas Biome region.

Sampling was carried out during 2010 and 2011. Macroscopic characters were observed under a binocular microscope and free hand sections mounted in KOH 5%, CB, Floxine and Melzer Reagent were studied using light microscopy. Collections are deposited at the Mycological Herbarium of the Fundación Miguel Lillo (LIL) (Thiers 2013). For each species, brief taxonomic and systematic information [basonym (\equiv); Family and Order] as well as short diagnostic description with notes and known distribution reported in the literature are provided. Species are listed under their telomorphic names; the name of the anamorph is mentioned when the anamorph-telomorph connection is known.

We are aware of the nomenclatural changes according to the ICN for Algae, Fungi and Plants (McNeill et al. 2012). However, for the purpose of this work, species are described under the teleomorph names until mycologists reach consensus on the list of protected names. Likely, some of these names will change according to the principle of priority between teleomorph-anamorph names. Author abbreviations follow www.indexfungorum.org. Collecting sites are abbreviated as follows: Reserva Experimental Horco Molle (REHM) and Parque Sierra de San Javier (PSSJ).

Byssosphaeria rhodomphala (Berk.) Cooke, Grevillea 15(75): 81 (1887) Figure 2: A-D
 \equiv *Sphaeria rhodomphala* Berk. (Melanommataceae, Pleosporales)

Ascomata perithecioid, globose or subglobose, scattered or loosely gregarious, superficial on subiculum, 250–500 x 300–500 μ m; apex rounded plane, non-papillate, with orange-reddish pulverulent tissue around the ostiolar zone, covered with sparse hyphae arising from the base of ascomata. Peridium 20–55 μ m wide, with reddish globose cells. Asci bitunicate, clavate, eight-spored, pedicellate, 100–125 x 12–15 μ m. Pseudoparaphyses abundant. Ascospores biseriate, fusoid with obtuse ends, 1-septate, slightly constricted at the septum, pale brown, smooth, 19–21 x 5–6 μ m.

Remarks: Our material fits well with the descriptions by Barr (1984) and Chen and Hsieh (2004), but the asci (Figure 2C) are shorter in the Argentinian material (100–125 vs 120–150 μ m); this hints to a possible difference that should be explored in the future with molecular techniques.

Byssosphaeria rhodomphala has a world-wide distribution and it grows on wood and bark of several tree species; so far, however, the species was not known from Argentina (Farr and Rossman 2013).

Known distribution: Brazil (Réblová 1997, Farr and Rossman 2013). Cuba, Panama, Trinidad (Barr 1984). China (Li and Zhuang 2008). Mexico (Chacón-Zapata and Tapia-Padilla 2013). Poland (Mulencko et al. 2008, Farr and Rossman 2013). Taiwan (Chen and Hsieh 2004, Farr and Rossman 2013). USA (Barr 1984, Wang et al. 2004). North America (Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: PSSJ, Horco Molle, camino al cielo, V.2010, Casanova Jesús-Catania 3172 (LIL 156.500). This is the first record for Argentina.

Camarops tubulina (Alb. & Schwein.) Shear, Mycologia 30: 585 (1938) Figure 2: E-G
 \equiv *Sphaeria tubulina* Alb. & Schwein. (Boliniaceae, Boliniales)

Stromata pulvinate, dark reddish-brown when mature, with separate ostioles on the surface, 5–15 (-45) x 4–8 (-14) mm, 1.0–1.5 mm high. Perithecia monostichous to polystichous, subglobose to ovoid, deformed by mutual pressure, 350–750 x 250–480 μ m. Asci cylindrical to clavate, J-, paraphysate, 130–137 x 5–6 μ m. Ascospores ellipsoid to ovoid, unicellular, brown, biguttulate, with indistinctly visible germ pores at pointed ends, 6–7.5 x 3–3.5 (-4) μ m.

Remarks: Stromata and perithecia are somewhat smaller in the material studied when compared with those described by Nannfeldt (1972) and Hilbert and Hilbert (1980), [5–15 (-45) x 4–8 (-14) mm vs 70–130 x 22–35 mm and 350–750 x 250–480 vs 600–1400 x 500–900 μ m, respectively]. According to Chlebicki (2008) stromata of *C. tubulina* are pale reddish-brown when mature and the perithecia monostichous to polystichous, which agrees with our observations.

Camarops tubulina is included in the Red Book and protected by law in the Czech Republic, where it is found mainly on decaying trunks of *Picea* and *Abies*, especially in virgin forests or minimally influenced forests (Holec 2005). Catania and Romero (2005) reported other four species of *Camarops* on bark and wood of *Podocarpus parlatorei* from the Argentinian Yungas. *Podocarpus parlatorei* (Near Threatened, Quiroga and Gardner 2013) is an endemic tree from the eastern-most flanks of the Andes of northwestern Argentina and Bolivia. This tree is much exploited because of its wood, thus all fungal species growing on it run the same risk as the host. *Podocarpus* is also important for bird nesting and its seeds serve as food for several birds, including the endemic parrot *Amazona tucumana* Cabanis (Vulnerable, BirdLife International 2012).

Known distribution: Germany, Czech Republic, Slovakia, North America, Poland, Sweden, Switzerland, United Kingdom (Nannfeldt 1972; Holec 2005; Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: REHM, 15.IV.2010, Casanova Jesús-Catania 3156 (LIL 156.501). This is the first record for Argentina.

Capronia nigerrima (R. R. Bloxam) M.E. Barr, Mycotaxon 41(2): 431 (1991) Figure 3: A-E

≡ *Sphaeria nigerrima* R. R. Bloxam (Herpotrichiellaceae, Chaetothyriales)

Ascomata perithecioid, globose to subglobose, ostiolate, gregarious, superficial, dark brown, setose, (55-) 57.5–80 (-87.5) x (50-) 52.5–80 μm . Setae simple, straight to slightly curved, with slightly acute endings, aseptate, dark brown, thick-walled, over the surface of the ascomatal wall, near to the ostiolar opening, up to 18 long, 3.5–4.5 μm wide at base. Ascomatal wall of *textura angularis* in surface view, cells dark brown, 3.5–4.5 μm diam. Asci bitunicate, clavate

to cylindrical, 8-spored, apex thick, 33.4–54 x 9–10.8 μm . Pseudoparaphyses absent. Ascospores biserialate, elliptical to fusiform, septate, with 5 (-7) transversal and 1 straight or oblique longitudinal septa passing through one or two cells, hyaline to light olivaceous brown, 13.5–15.5 (-18) x 3.6–4.5 (-5) μm .

Remarks: *Capronia nigerrima* was redescribed by Bigelow and Barr (1969) under *Berlesiella* on old stromata of members of Diatrypaceae; Barr (1991) later proposed a new combination into *Capronia*. Ascomata of *C. nigerrima* are closely aggregated, rarely solitary and non stromatic (Müller *et al.* 1987); the material studied

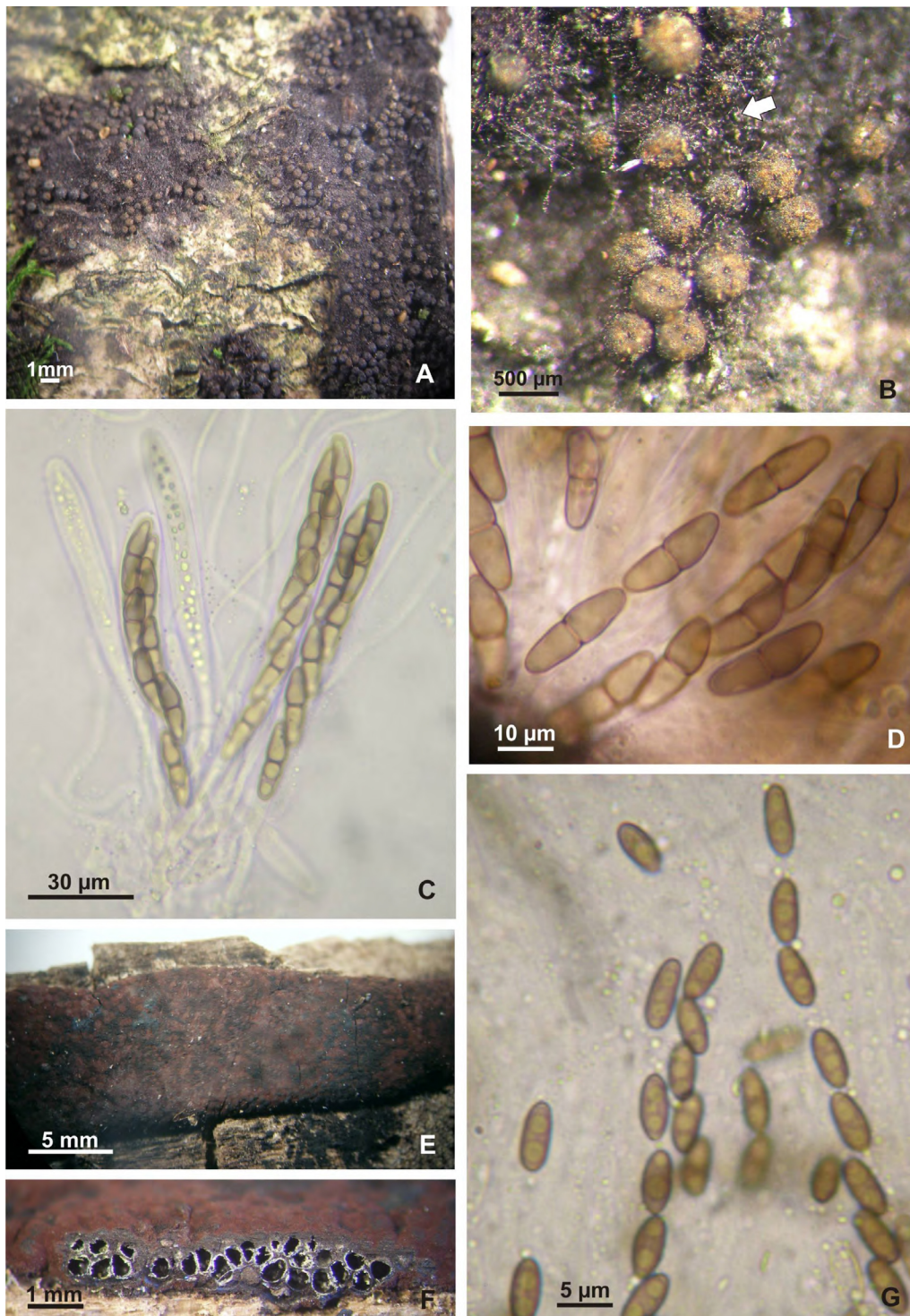


FIGURE 2. *Byssosphaeria rhodomphala*. A) Gregarious perithecioid ascomata on nature substrate; B) Detail. Subiculum at the basis of the ascomata; C) Mature and immature asci and pseudoparaphyses; D) Ascospores. *Camarops tubulina*. E) Stroma; F) Longitudinal section of stroma, polystichous perithecia; G) Ascospores.

grows on the necks of ascomata of *Rosellinia dingleyae* L. E. Petrini. The anamorph of *C. nigerrima* is *Exophiala*-like and is described and illustrated by Untereiner and Naveau (1999). *Capronia nigerrima* can be distinguished from *C. pulcherrima* (Munk) E. Müll., Petrini, P.J. Fisher, Samuels & Rossman by its ascomata which are aggregated, grow on old pyrenomycetous stromata, and have longer, fusoid ascospores (Untereiner 1997). *Capronia parasitica* (Ellis & Everh.) E. Müll., Petrini, P. J. Fisher, Samuels & Rossman, a species that also occurs on the stromata of diatrypaceous and xylariaceous fungi, can be distinguished from *C. nigerrima* by its fusoid, transversely 3-septate ascospores and its *Rhinochlaetia*-like anamorph (Untereiner and

Naveau 1999). The material studied differs from that described by Bigelow and Barr (1969) in having much shorter setae (up to 18 μm long vs up to 48 μm long respectively) and ascospores (13,5–15,5 μm vs 12–20 μm). *Capronia nigerrima* is found commonly growing over or associated with other fungi such as *Diatrype stigma* (Hoffm.) Fr. and *Eutypa flavovirens* (Pers.) Tul. & C. Tul. on fallen branches of several tree species of the northern hemisphere, e.g. *Acer*, *Alnus*, *Fagus*, *Ilex*, *Populus*, *Quercus*, *Salix*, *Sambucus*, *Ulmus* (Ellis and Ellis 1985). Mathiassen (1989) described it as *Berlesiella nigerrima* on *Salix nigricans* ssp. *borealis* (associated with *Crytosphaeria subcutanea*).

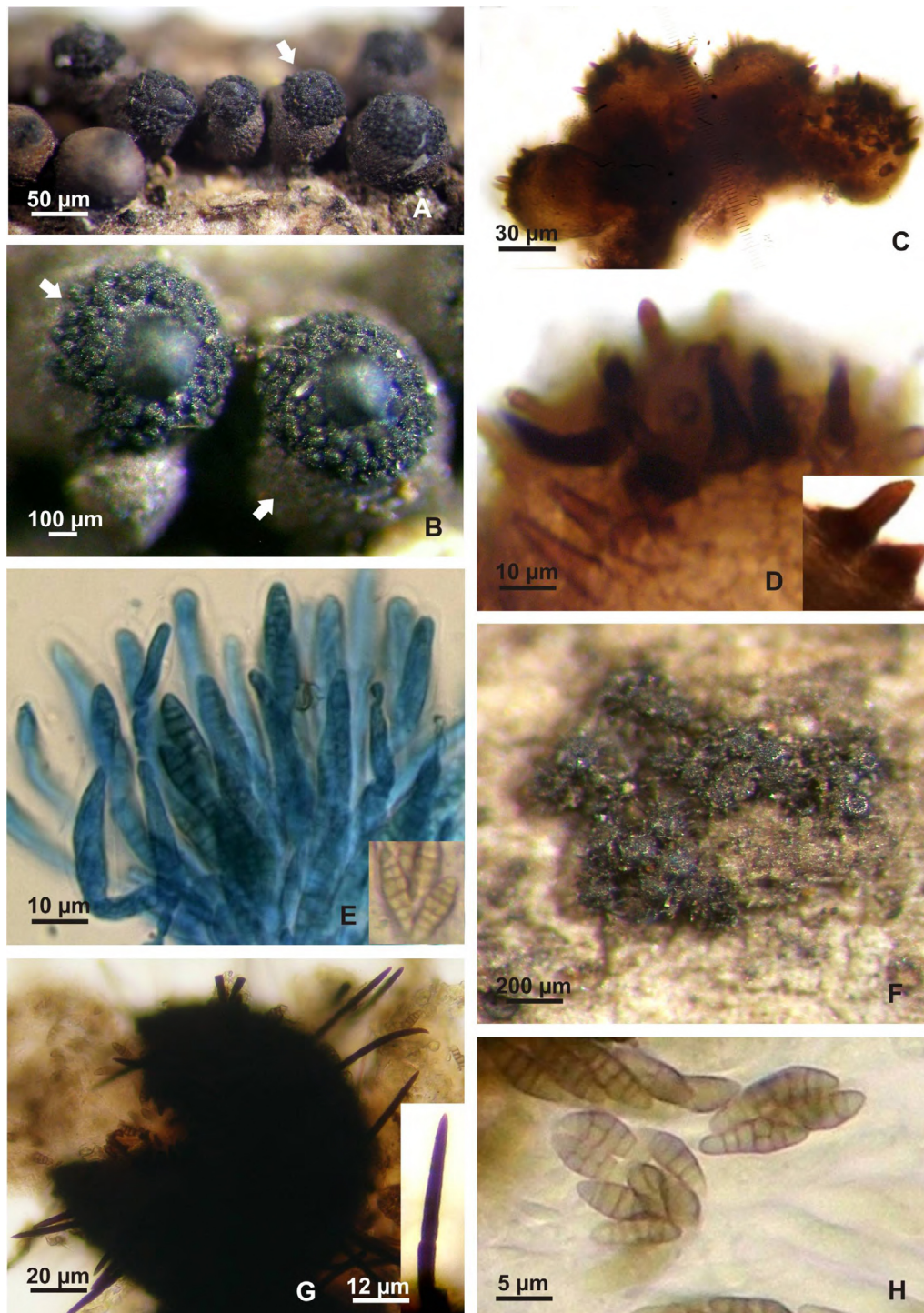


FIGURE 3. *Capronia nigerrima*. A) General aspect; B) Perithecial ascomata on ascomatal necks of *Rosellinia dingleyae* (arrow); C) Detail of gregarious ascomata; D) Setae at apex of ascoma; E) Asci and ascospores. *Capronia pulcherrima*. F) Perithecioid ascomata on substrate; G) Setose ascomata; H) Ascospores.

Known distribution: England, Russia, Sweden (Farr and Rossman 2013). Europe, North America (Untereiner and Naveau 1999). Norway (Mathiassen 1989).

Material examined: ARGENTINA. Tucumán Prov.: PSSJ, Horco Molle, camino al cielo, V.2010, Casanova Jesús–Catania 3280 (LIL 156.502). *Capronia nigerrima* is recorded for the first time in South America.

Capronia pulcherrima (Munk) E. Müll., Petrini, P.J. Fisher, Samuels & Rossman, Trans. Br. mycol. Soc. 88(1): 73 (1987) Figure 2: F-H
 ≡ *Dictyotrichiella pulcherrima* Munk (Herpotrichiellaceae, Chaetothyriales)

Ascomata perithecioid, globose to subglobose, superficial, scattered or gregarious, setose, 100–128 µm diam. Setae surrounding the ostiolar opening and longer setae scattered over the surface of the ascomata; brown septate hyphae covering the venter. Setae straight, with acute apices, aseptate, dark brown, thick walled, 31.5–47 (-58.5) x 2–4 µm. Ascomatal wall composed of cells forming a *textura angularis* in surface view, brown, with cells of 3.6–5.4 µm diam. Pseudoparaphyses lacking. Asci bitunicate, obclavate to cylindrical, 8-spored, 36–40.5 x 7.5–8.6 µm. Ascospores biseriate, elliptical to fusiform, with 5 transversal and 1 (-2) longitudinal septa, somewhat constricted at the septa, hyaline to yellowish brown, 10.8–13.5 x 3.6–4.5 µm.

Remarks: Our material agrees with the description given by Untereiner (1997), but we have observed longer setae (31.5–47 (-58.5) vs 15–30 µm) as well as smaller asci (36–40.5 x 7.5–8.6 µm vs 38.5–50 x 7.5–9.4 µm) and ascospores (10.8–13.5 µm vs 11.7–14.6 µm). Untereiner (1997) described and illustrated the anamorph of *C. pulcherrima*, belonging to *Exophiala* sp. *Capronia pulcherrima* can be distinguished from *Capronia pilosella* (P. Karst.) E. Müll., Petrini, P. J. Fisher, Samuels & Rossman by its more slow-growing, non mucoid colonies, shorter and broader conidiogenous cells, and broader conidia (Untereiner 1997). This species can also be confused with *C. nigerrima* (see also *C. nigerrima* remarks above). *Capronia pulcherrima* grows on lignicolous substrates, including woody dwarf shrubs (Friebes 2012).

Known distribution: Canada, Denmark (Untereiner 1997). Germany, Russia, Sweden (Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: REHM, 15.IV.2010, Casanova Jesús–Catania 3100 (LIL 156.503). This is the first record for South America.

The genus *Capronia* Sacc. comprises 77 taxa according to Index Fungorum (www.indexfungorum.org, last accessed Oct 2013). It is characterized by small, dark and setose ascomata, fissitunicate, 8- to polysporous asci, septate ascospores and the absence of interascal filaments (Müller et al. 1987; Barr 1991; Réblová 1996). Some species are common on rotten wood, old fungi or other organic material, but they are easily overlooked because of their typically small and inconspicuous ascomata (Friebes 2012). Many species of *Capronia* known from plant material also occur in association with or on other

fungi. They are common and may in fact be ubiquitous, but their inconspicuous ascomata are ephemeral and seldom produced in abundance in situ (Untereiner 2000). In Argentina, Romero (1998) described *C. pilosella* (P. Karst.) E. Müll., Petrini, P. J. Fisher, Samuels & Rossman growing on *Eucalyptus viminalis* Labill. *Capronia coronata* Samuels was cited by Carmarán et al. (2002) and also reported by Catania and Romero (2008) on *Podocarpus parlatorei* Pilg. Sánchez (unpublished data) described *C. chlorospora* (Ellis & Everh.) Barr on *Nothophagus obliqua* (Mirb.) Oerst. during her study on micromycetes from the Andean Patagonian forest (Bianchinotti and Sánchez 2009; Sánchez and Bianchinotti 2010; Sánchez et al. 2012).

Key to *Capronia* species present in Argentina

- 1 Ascospores with 1-3 transversal septa 2
- 1 Ascospores with more than 3 transversal septa 3
- 2 Ascomata perithecioid with a crown of shorter setae around the ostiolar opening, ascospores 11.5–13.5 x 4–5 µm *C. coronata*
- 2 Ascomata perithecioid with setae scattered over the surface of the ascomata, ascospores 11–15 x 3–5 µm *C. pilosella*
- 3 Ascospores 3-7 transversely septate, ascospore relatively wide, longitudinal septum through mid cells, 11-20 x 7-9 µm *C. chlorospora*
- 3 Ascospores 5-7 transverse septa, ascospore relatively narrow, 1 (-2) longitudinal septa 4
- 4 Setae up to 18 µm long, ascospores 13.5–15.5 (-18) µm *C. nigerrima*
- 4 Setae up to 31.5–47 (-58.5) µm long, 11–13.5 µm *C. pulcherrima*

Cercophora ambigua (Sacc.) R. Hilber, in Hilber & Hilber, Z. Mykol. 45(2): 212 (1979) Figure 4: A-N
 ≡ *Lasiosphaeria ambigua* Sacc. (Lasiosphaeriaceae, Sordariales)

Ascomata perithecial, ovoid to obpyriform, superficial on a sparse subiculum, in small groups or usually in groups of two, papillate, dark brown to black, 500–750 x 450–500 µm; surface tuberculate below the neck, setose; neck cylindrical to conical, 5–6 sulcate; subiculum composed of branched, thick-walled, septate, pale to dark brown hyphae, 4–4.5 µm diam. Setae rigid, straight or slightly curved, apex rounded, septate, pale to dark brown, 135–180 x 3–4.5 µm. Ascomatal wall of *textura angularis* in surface view, in longitudinal section 2-layered, 75–96 µm wide; outer layer 45–57 µm thick, composed of thick walled, isodiametric to rectangular, pale brown cells with Munk pores, (-6) 10–22.5 (-30) µm diam.; inner layer 14–19 µm wide, composed of thin walled, elongate, pale brown cells, 15–25 µm. Asci unitunicate, cylindrical, 8-spored, thin-walled, ring narrow shallow, refractive; subapical globule, 195–240 x 12–15 µm. Paraphyses numerous, branched septate, hyaline. Ascospores biseriate, cylindrical, becoming differentiated into a swollen head and pedicel, transversely uniseptate with rounded ends, slightly sigmoid or geniculate, appendaged, with abundant guttulae, aseptate, hyaline, 60–73 x 5–6 µm; head ovoid, 1–3 septate, 21–25 x 7.5–9 (-10) µm, subacute to rounded at the apex, truncate at the base, hyaline to pale brown;

pedicel 39–45 (–47) × 4–6 μm, 1–3 (–4) septate, hyaline to pale brown, with numerous oil drops; spores germinate producing hyphae branched or unbranched; phialides formed on hyphae or arising directly from the ascospore, 12–15 × 2.5–3 μm. Appendages hyaline and generally collapsing and disappearing with age.

Remarks: Our material agrees with the description given by Hilber and Hilber (1979), but it has smaller ascospores (60–73 μm vs. 65–83 μm) and a peridium with Munk pores. *Cercophora appalachianensis* O. Hilber & R. Hilber, *C. californica* (Plowr.) N. Lundq. and *C. argentina* Catania, A. I. Romero, Huhndorf & A. N. Mill. are three other *Cercophora* species that are known to have Munk pores in the peridial cells (Catania et al. 2011; Hilber et al. 1987). We observed germinating phialides directly from the ascospores as did Hilber and Hilber (1979);

this feature has been described in *Lasiochaeria ovina* (Pers.: Fr.) Ces. & de Not., *L. sorbina* (Nyl.) P. Karst. (Miller and Huhndorf 2004) and *C. rubrotuberculata* (Miller et al. 2007). *Cercophora ambigua* (Sacc.) R. Hilber and *C. arenicola* R. Hilber are very similar species, described as having tuberculate, dark brown to black, setose ascomata (Hilber and Hilber 1979), but differing mainly in ascospore size; *C. ambigua* has larger ascospores than *C. arenicola* (60–73 × 5–6 μm vs. 45–70 × 4.5–5.5 μm). *Cercophora ambigua* was described from wood of *Fagus* sp. and *Carya* sp. (Hilber and Hilber 1979), whereas our material was on dead, fallen, undetermined wood. *Cercophora ambigua* was found next to *Bactridium flavum* Kunze in the same substrate, in two collections from different sampling sites. This coincidence of simultaneous occurrence may suggest similar environmental requirements of the two taxa; on the

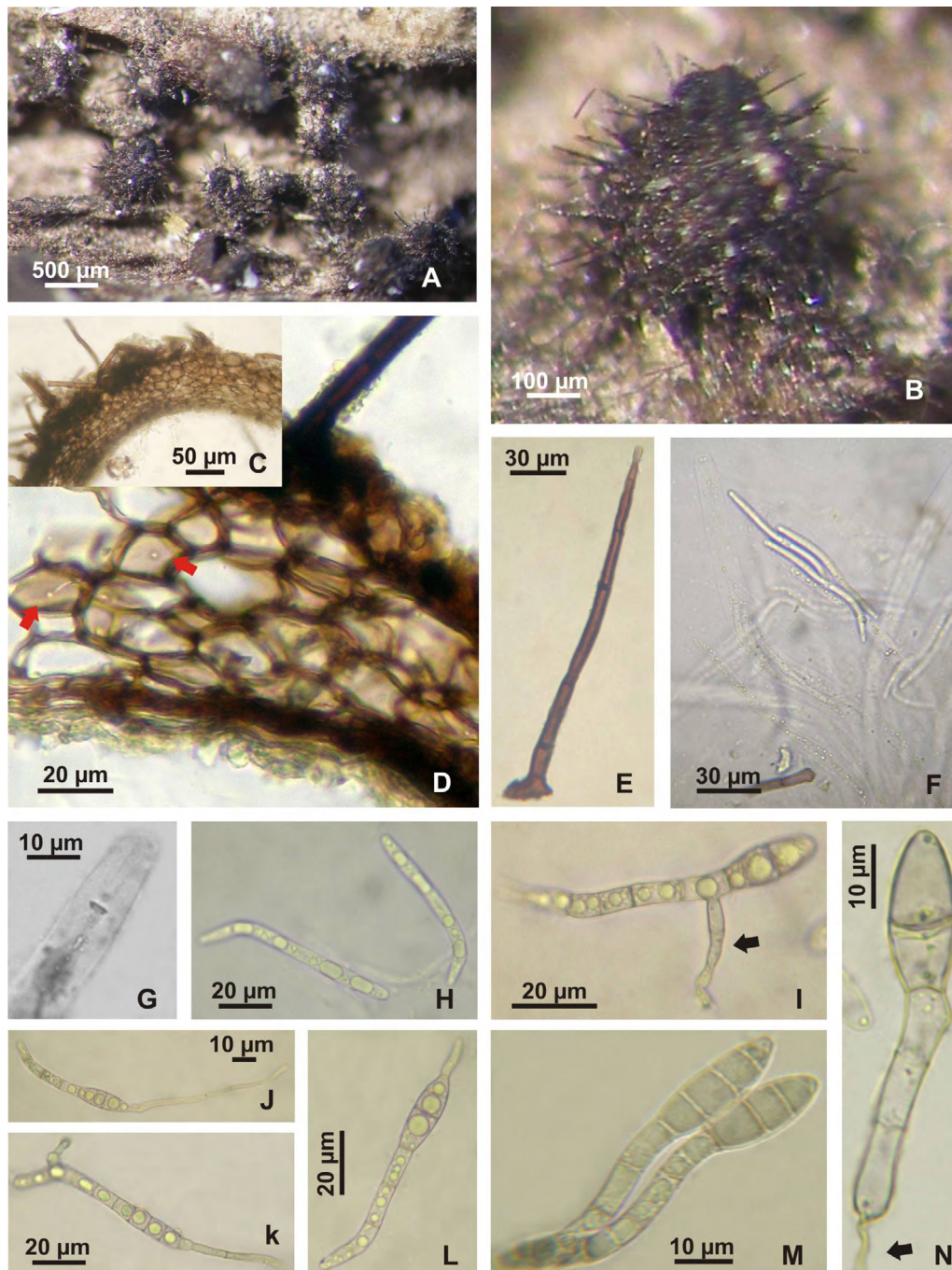


FIGURE 4. *Cercophora ambigua*. A) General appearance; B) Detail of a setose ascoma; C) Longitudinal section of ascomatal wall; D) Detail of ascomatal wall; cells with Munk pores (arrow); E) Setae; F) Immature asci and ascospores; G) Ascus apex; H–M) Germinating ascospores at different stages of development; I) Germinating ascospore with a phialide (arrow); N) Ascospore with appendage (arrow).

other hand, it may also hint to an association of unknown nature. According to McKenzie *et al.* (2002) *C. ambigua* is common on fallen wood of a wide range of hosts in New Zealand. In addition to *Cercophora ambigua* reported herein, Catania *et al.* (2011) reported new species and other new records of *Cercophora* from Argentina.

Known distribution: Italy, USA (Hilber and Hilber 1979). France, Italy (Veneto), Canada (Ottawa, Gatineau Park), New Zealand (Northland, Nelson) (These data were accessed through the GBIF Data Portal on 2013-05-21. New Zealand, France (Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: REHM, 22.VI.2010, Casanova Jesús–Catania 3220 (LIL 156.504); PSSJ, 14.IV.2010, Casanova Jesús–Catania 3198 (LIL 156.505); Depto. Monteros, Tafi del Valle, ruta

provincial 307, Catania 463 (LIL 156.506). This is the first record for Argentina.

Chaetosphaerella phaeostroma (Durieu & Mont.) E. Müll. & C. Booth, Trans. Br. mycol. Soc. 58(1): 77 (1972) Figure 5: A-F

≡ *Sphaeria phaeostroma* Durieu & Mont. (Chaetosphaerellaceae, Coronophorales)

Ascomata perithecial, obovoid, obpyriform, ostiolate, superficial, usually isolated, not collapsing when dry, 480–750 x 400–620 µm; with a roughened, tuberculate surface, attached to the substrate by a subiculum of sterile, dark brown hyphae; setae growing from the base of the ascomata, erect, acute, septate, unbranched, dark brown,

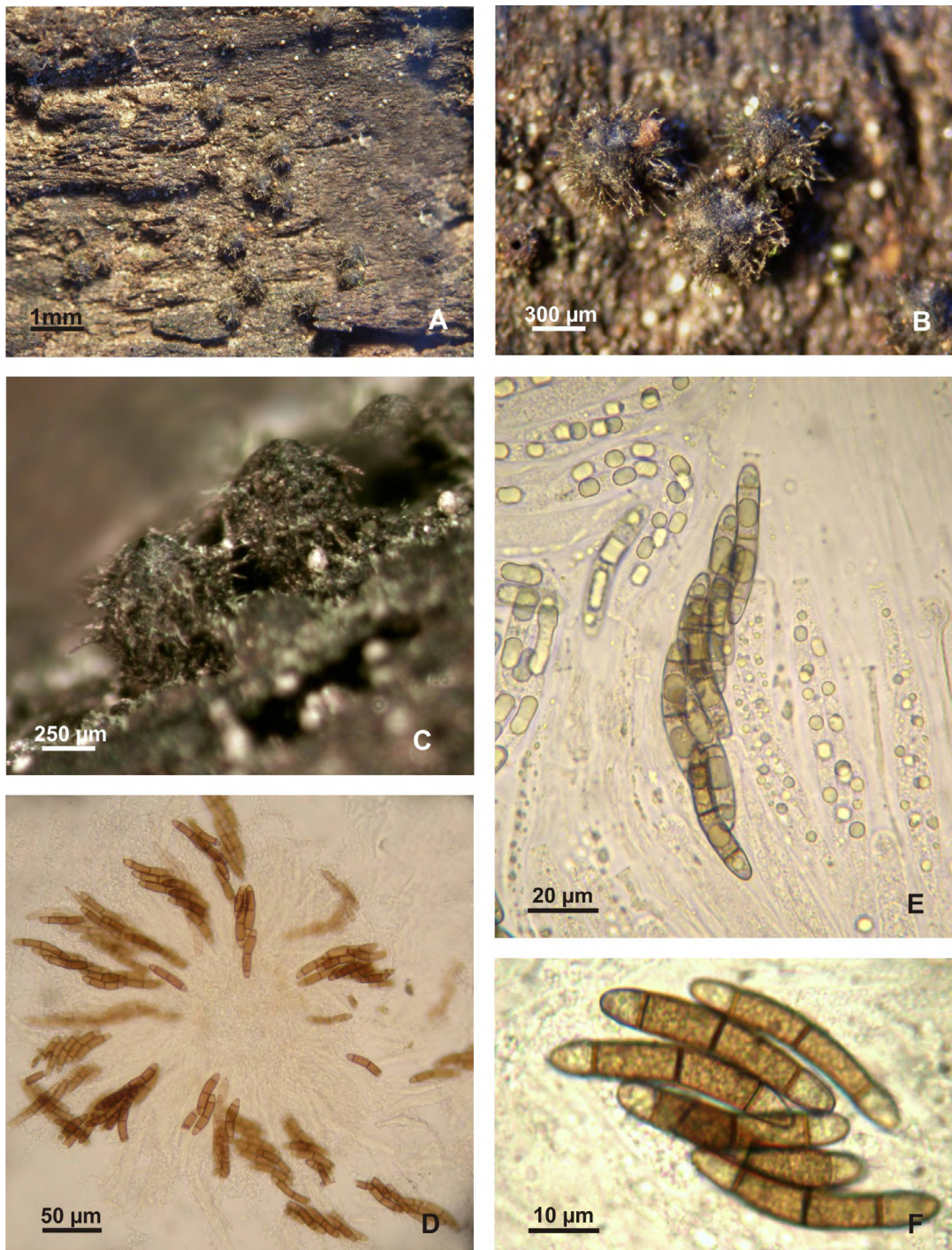


FIGURE 5. *Chaetosphaerella phaeostroma*. A) Ascomata on substrate; B-C) Detail of setose perithecial ascomata; D) Asci and pseudoparaphyses; E) Ascus with ascospores; F) Mature ascospore.

up to 200 µm long and 3–10 µm wide in the middle. Ascotal wall of *textura angularis* in surface view, two-layered in longitudinal section, 62–100 µm wide; outer layer 50–75 µm wide, formed by isodiametric to rectangular, pale brown cells with Munk pores, inner layer 10–12.5 µm wide, composed of elongate, thin walled, pale brown cells. Asci unitunicate, cylindrical-clavate, 8-spored, thin walled; with an evident apical ring, KI-, 200–235 x 15–17.5 (-20) µm. Paraphyses hyaline, unbranched. Ascospores biseriata, cylindrical, rounded at the ends, straight or slightly curved, 3-septate, not constricted or slightly constricted at the middle septum, 37–42.5 (-45) x 5–7.5 µm, with the end, hyaline, cells much shorter than central brown cells.

Remarks: The material studied fits well with the description given by Réblová (1999), but it has larger asci and ascospores (200–235 vs. 100–124 µm and 37–42.5 vs. 30–40 µm); in addition, inflated paraphyses were not observed and the asci have a distinct apical ring. *Chaetosphaerella* species have been associated with *Oedemium* and *Veramycina* synanamorphs (Réblová 1999). We only observed a *Brachysporiella* Bat. anamorph in the studied material.

Chaetosphaerella phaeostroma is a saprobe on bark and decorticated wood of several hosts (Reblová 1999), most of which are not present in the area studied. The wood on which our collection was present could not be identified. According to Reblová (1999) *C. phaeostroma* is widespread in tropical and temperate regions, thus its presence in this area suggests that it could be found also in other areas of Argentina.

Known distribution: Costa Rica (Huhndorf et al. 2004). Czech Republic, Denmark, Italy, Lithuania, Pakistan, United Kingdom (Farr and Rossman 2013). Austria, China, Czech Republic, Denmark, Italy, France, French Guiana, Germany, Great Britain, North America, Sweden (Réblová 1999).

Material examined: ARGENTINA. Tucumán Prov.: REHM, 15.IV.2010, Casanova Jesús–Catania 3103 (LIL 156.507) unidentified decorticated wood. This is the first record for Argentina.

Rosellinia dingleyae L. E. Petrini, New Zealand Journal of Botany 41: 71–138 (2003) Figure 6: A-G (Xylariaceae, Xylariales)

Stromata on dark brown subiculum, subglobose, dark brown to black, 700–880 (-900) x 600–765 µm, solitary or gregarious; ostioles pointed to papillate; ectostroma black, 35–48 µm thick; entostroma dark brown. Perithecia globose to subglobose. Asci cylindrical, eight-spored, with amyloid apical ring, 8.0–9.0 x 4.5–5.5 µm. Ascospores inequilaterally ellipsoidal, with pinched ends, unicellular, brown to dark brown, (32.5-) 35–39.5 (-40.5) x 8–9 (-10) µm, with sigmoid germ slit about 2/3 of the spore length, both extremities surrounded by a slimy sheath.

Remarks: Our material has larger ascospores [35–39.5 µm vs (26-) 30.7 (-36) µm; Figure 6 F-G] and a larger apical ring [8.0–9.0 vs (6.7-) 7.5 (-8.1) µm; Figure 6E] than that described by Petrini (2003), but agrees in all other characteristics. *Rosellinia dingleyae* is very similar to *R. franciscae* L. E. Petrini and *R. chusqueae* Pat., all having ascospores with a sigmoid germ slit. *Rosellinia dingleyae*

differs by its larger ascospores and the size of the germ slit, which is shorter than in *R. chusqueae* but larger than in *R. franciscae* (Petrini 2003).

Rosellinia dingleyae was originally described from decorticated wood of *Macropiper excelsum* (G. Forst.) Miq., an endemic Piperaceae of New Zealand (Petrini 2003). We could not identify the substrate of the present collection. Sir et al. (2012) reported other species of *Rosellinia* in their study on Xylariaceae species. Recently, Catania and Romero (unpublished data) have collected three species of *Rosellinia* on *Podocarpus parlatorei* Pilg. from the Yungas region.

Known distribution: New Zealand (Petrini 2003).

Material examined: ARGENTINA. Tucumán Prov.: PSSJ, Horco Molle, camino al cielo, V.2010, Casanova Jesús–Catania 3280 (LIL 156.502). This is the first record of *Rosellinia dingleyae* in South America.

Togninia minima (Tul. & C. Tul.) Berl., Icon. Fung. 3: 11 (1900)

≡ *Calosphaeria minima* Tul. & C. Tul. (Togniniaceae, Diaporthales)

Description and illustrations: Mostert et al. (2006); Catania and Romero (2010).

Remarks: Recently, Catania and Romero (2010) reported this species from fallen twigs of *Podocarpus parlatorei* collected in the southern limit of the Argentine Yungas. This new record has been collected further in the North on undetermined fallen branches (but not *Podocarpus*).

Togninia minima is known as one of the causal agents of Petri and ESCA diseases on grapevines and has been reported from *Vitis vinifera* in South Africa (Groenewald et al. 2001; Mostert et al. 2003; Baloyi et al. 2013) and three *Prunus* species in the Western Cape province of South Africa (Damm et al. 2008), but so far there is no report of these diseases in Argentina.

Known distribution: Argentina (Catania and Romero 2010). Canada, Europe, Italy, United States (Barr 1985; Reblová et al. 2004). Italy, South Africa, Yugoslavia (Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: REHM, 15.IV.2010, Casanova Jesús–Catania 3102 (LIL156.508).

Tubeufia cylindrothecia (Seaver) von Hohnel, Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl., Abt. 1, 68: 1479 (1909) Figure 6: H-K

≡ *Ophionectria cylindrothecia* Seaver (Tubeufiaceae, Pleosporales)

Ascomata perithecioid, elongate ovoid, pale yellowish or light translucent brownish, 250–270 x 210–230 µm, papilla 30–50 x 50–97 µm, ostiole circular; peridium 20–45 µm thick, forming *textura angularis*, cells 5–11 x 2.7–7.8 µm. Asci bitunicate, cylindrical to claviform, 54–87.5 (-92) x 10–12.5 µm. Pseudoparaphyses narrow, branched, parallel or somewhat interwoven, septate, 1–2 µm thick. Ascospores cylindrical-fusiform, acute ends, often curved, 6–12 septate, not constricted at septa, content with numerous guttules or one globule per cell, hyaline or slightly yellowish, smooth, 50–62.5 (-76.5) x 3–5.5 µm.

Remarks: The material agrees with the description by Barr (1980). *Tubeufia paludosa* (Crouan & Crouan) Rossman is another species with elongate ascomata, but the ascospores of *T. paludosa* are longer (100–200 μm) and up to 35-septate. On our material we observed a white colony with *Helicomyces*-like conidiophores and conidia [15–20 (–25) μm diam] together with the ascomata (Figure 6 M–O), which is often associated with the teleomorphic state (Barr 1980). Barr (1980) indicated the anamorph for *T. cylindrothecia* to be “*Helicosporium roseum*” (we believe this is a type mistake; it should probably have read *Helicomyces roseus*). Zhao et al. (2007), in their study on helicosporous hyphomycetes from China, observed the same teleomorphic-anamorphic connection between *T.*

cylindrothecia and *Helicomyces roseus*. In the cladogram presented by Tsui et al. (2007), however, *T. cylindrothecia* and *Helicomyces roseus* appeared in several separated clades. On the other hand, analysis of ribosomal SSU, ITS and partial LSU data has shown that *Tubeufia sensu* Barr and most of the helicosporic anamorphs were close relatives, clustering with 100% bootstrap support in a clade designated “*Tubeufiaceae s. str.*” (Tsui and Berbee 2006).

Tubeufia cylindrothecia is the second species of this genus reported from Argentina; previously, *T. cerea* was collected by Sánchez and Bianchinotti (2010) from the southern part of the country in *Nothofagus* forests. The

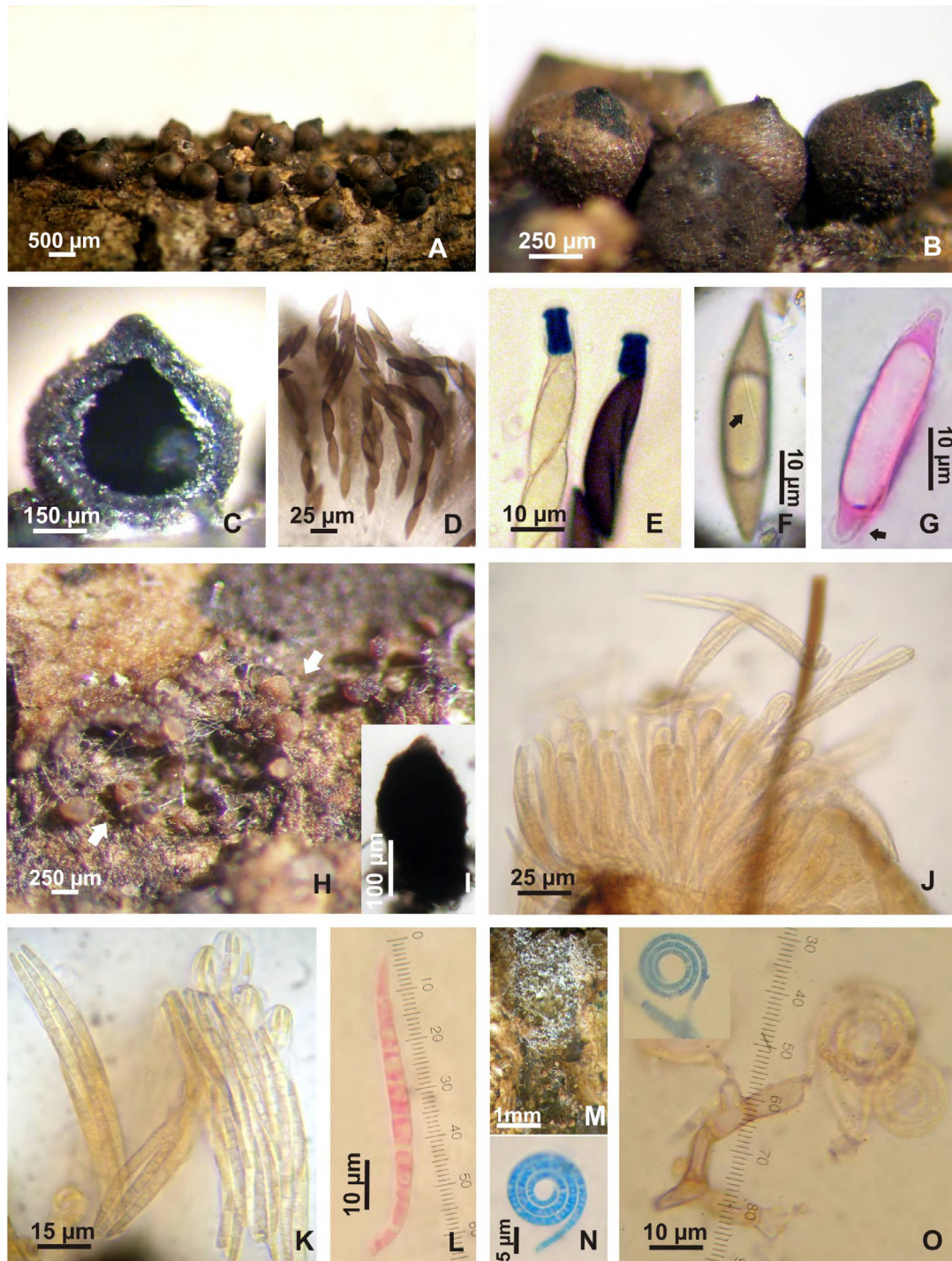


FIGURE 6. *Rosellinia dingleyae*. A) Ascomata on substrate; B) Detail; C) Longitudinal section of a uniperithecial stroma; D) Asci; E) Ascus tips, apical plug J+; F) Ascospore with sigmoid germ slit (arrow); G) Ascospores, note the sheath (arrow). *Tubeufia cylindrothecia*. H) Ascomata on the host surface; I) Detail of an ascoma; J–K) Asci; L) Ascospore; M) Anamorphic colony, general appearance; N–O) Conidia.

distribution of *T. cerea* in Argentina is in concordance with the expected distribution in temperate regions of the world for this species (Barr 1980; Cannon 1999). *Tubeufia cylindrothecia* has been reported from USA (Massachusetts, Texas), but has also been found in Bermuda, Panama, Colombia, Trinidad and Venezuela. These latter locations seem to be similar to the Argentinean Yungas, where the material was found.

Known distribution: Bermuda, Colombia, Panama, Trinidad, USA, Venezuela (Barr 1980). China (Zhao et al. 2007). Ecuador, New Zealand, West Indies (Farr and Rossman 2013).

Material examined: ARGENTINA. Tucumán Prov.: PSSJ, Horco Molle, camino al cielo, XII.2011, Casanova Jesús-Catania 3403 (LIL 156.509). This is the first record for Argentina.

So far, 755 fungal species have been reported from the Yungas forests in the Tucumán province (Hladki et al. unpublished data). Most of them, however, belong to the Basidiomycota and are members of different families of Agaricales s.l. (Hladki et al. unpublished data). With regards to the Ascomycota, the current knowledge is very scant. Hladki and collaborators have also collected fungi belonging to Xylariaceae, the only ascomycetous family that is well-known in this region. Catania (2001, 2004, 2005) and Catania and Romero (2001, 2005, 2006, 2007, 2008, 2009, 2010a, 2010b) have now provided a good starting point for the study of the diversity of ascomycetes on *Podocarpus parlatorei* in Argentina. The survey we carried out in these two small protected areas revealed eight new records from Argentina, including first records of *Capronia nigerrima*, *Capronia pulcherrima* and *Rosellinia dingleyae* for the southern hemisphere and confirms that the ascomycetes diversity of the Yungas forests is still far from being known.

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