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## New species of *Pouzarella* (Entolomataceae, Agaricales) from the Dominican Republic and Jamaica

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**Abstract:** Four new species of *Pouzarella* are described from the Dominican Republic and this report is the first of this genus from Hispaniola. A new variety of one of these newly described species is also described from Jamaica. *Crinipellis* (*Pouzarella*) *squamifolia*, previously described from Jamaica by Murrill, is also discussed and illustrated. A new record for the Dominican Republic, *P. caribaea*, is also reported. We now know of seven species and varieties of *Pouzarella* from the Greater Antillean islands in the Caribbean.

**Key words:** Agarics, Caribbean islands, *Crinipellis*, Entolomataceae, Greater Antilles, key to species *Pouzarella*, taxonomy.

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**Introduction:** *Pouzarella* was first monographed by Mazzer (1976) on a world wide scale, but the genus name has been little used for taxa in the Entolomataceae that fit the generic circumscription (Largent, 1994; Baroni & Ortiz, 2002). The name *Pouzaromyces* Pilát had been employed by a wider range of authors (Horak, 1973, 1980, 1983; Noordeloos, 1979; P. D. Orton, 1991; Desjardin and Baroni, 1992) until recently. Mazzer (1976) proposed *Pouzarella* to replace the unacceptable name of *Pouzaromyces* because the type species of *Pouzaromyces*, *Nolanea fumosella* G. Winter (as *Agaricus fumosellus* Winter in Noordeloos, 1992), consists of a description only and that description is considered to represent a member of the Coprinaceae (Mazzer, 1976; Noordeloos, 1984 and 1992). Therefore the name *Pouzaromyces* cannot be applied to members of the Entolomataceae (Art. 10.1). Noordeloos (1992) accepted *Pouzarella* as a Subgenus of *Entoloma* based on several distinctive features: mycenoid basidiomata with strongly fibrillose-hairy or squamulose pileus (often resembling an *Inocybe*), lamellae often dark gray-brown, stipe with strongly radiate strigose base, with pigment encrusted hairs over the rest of the stipe, the pileus surface (pileipellis) composed of septate pigment encrusted hairs forming a cutis or with transitions to a trichodermium, clamps absent. Other helpful characters, in addition to the ones listed above, that define *Pouzarella* in the Entolomataceae are: hyphal walls of pileus and lamella trama thickened and with intraparietal and heavily encrusting brownish pigments, the hymenium frequently with scattered basidia showing dark brown content ("aborted" basidia) (Mazzer, 1976), and the basidiospores polygonal (6-9 facets) and heterodiametric. As stated in a previous paper (Baroni and Lodge, 1998), in opposition to using one single very large

genus like *Entoloma*, we prefer to recognize the segregate genera of *Entoloma* s. l., since these genera are clearly defined by macroscopic and microscopic characters and thus are easily recognized morphotypes which strongly suggest monophyletic lineages. Some limited molecular data sets have not resolved this issue as yet, but do suggest that there are at least some clearly defined lineages in *Entoloma* s.l. (Moncalvo et al., 2002; Hoffstetter and Baroni, unpublished).

We report here one new record and four new species of *Pouzarella* from the Dominican Republic and one new variety from Jamaica. We also discuss *Pouzarella squamifolia* (Murr.) Mazzer originally described from Jamaica and also reported from Cuernavaca, Tepeite Valley in Mexico.

**Materials and Methods:** Color notations in parentheses are from Kornerup and Wanscher (1978). Microscopic features were studied in 3% KOH, NH<sub>4</sub>OH, Congo Red, Cotton Blue and Melzer's Reagent. The presence or absence of siderophilous inclusions in basidia were checked for using cotton blue since the siderophilous and the cyanophilous reaction of these bodies is similar when they are present, and thus the cyanophilous reaction of the basidiospore walls can also be noted in the same reaction (Baroni, 1981). For basidiospore measurements, the hilar appendix was excluded. In those measurements Q refers to the length divided by the width of an individual spore. The notation n/5 = 78, means that 78 individual basidiospores were measured from 5 different collections, while n=48 means that 48 individual spores were measured from a single sample. Mean<sub>L</sub> is the mean length, mean<sub>w</sub> is mean width, and mean<sub>Q</sub> is the mean of the length divided by the width of all basidiospores measured.

Descriptive statistical analysis of basidiospores was developed using EXCEL 5.0 and Sigmastat 1.0. All line drawings of microscopic structures were made with the aid of a drawing tube and reproduced with a digital WACOM tablet using Adobe Illustrator 10.

## Results

### *New Species:*

***Pouzarella ferrerii*** T. J. Baroni, Perd.-Sánchez & Cantrell, sp. nov., Figs. 1-3, 18-19

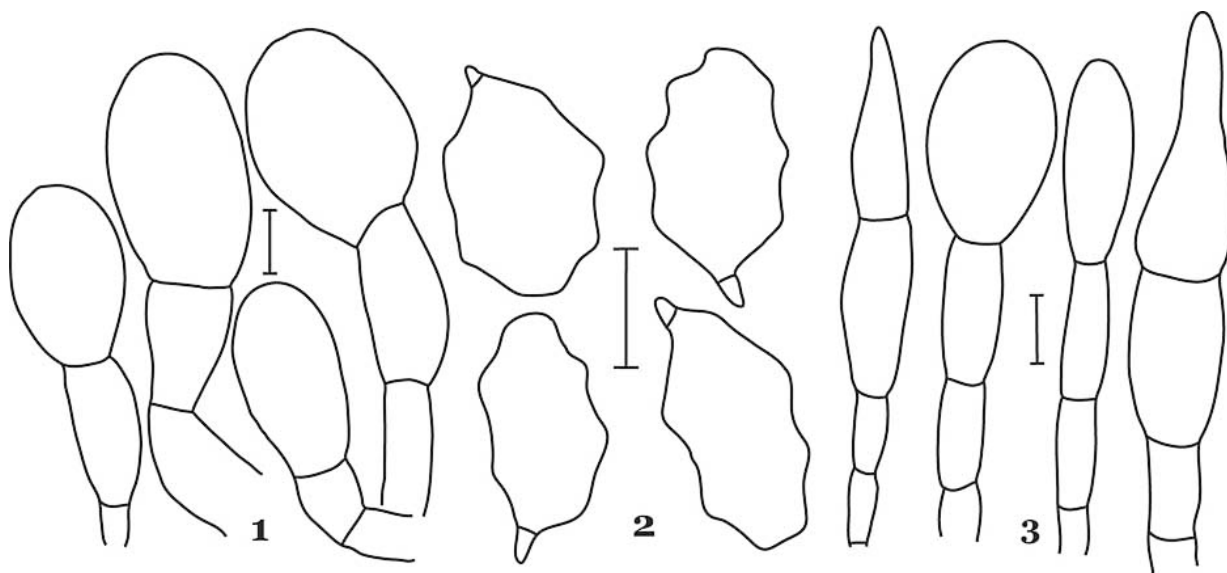
*A congeneris Sectionis Dysthalium differt fibrillis in pileo stipiteque rubrescenti vel aurantiaco-rubrescenti, eae vulneratae tarde fuscescentes, superficie stipitis ubique citrina, atque cheilocystidiis maximam partem globosis vel sphaero-pedunculatis vel late clavatis. Holotypus 8454 T. J. Baroni (JBSD).*

**Mycobank #:** MB 511348

**Pileus** brownish orange (7D8 Burnt Sienna) when young with a darker reddish brown disc (8E-F8 Persian Red), becoming deep reddish brick color or deep orange red (8D-E7-8 Paprika Red, Venetian Red, Fox, Persian Red) with expansion and showing a bright yellow ground color around margin as the fibrils separate from one another, hairs and agglutinated fibrils brownish on tips and reddish below at first, eventually the hairs all reddish, becoming duller brownish with age, 5-15 mm broad, conical or broadly conical-convex at first, becoming broadly convex, occasionally with a slightly depressed disc, densely erect hispid fibrillose scaly overall at first, becoming densely appressed fibrillose overall or fibrillose squamulose appressed, slightly sulcate or striate around margin, fibrils staining slowly fuscous when bruised. **Context** white at first but quickly turning dark fuscous rapidly when exposed, otherwise dark grayish brown or dark fuscous watery with age when cut open, 0.5 mm thick. **Lamellae** reddish blond or

brownish orange at first (5C-D3 brownish orange, Nougat), soon grayish brown (6D3 Café-au-lait) or dark grayish brown (5-6E4 Hair Brown), adnate or arcuate with short decurrent tooth, subdistant (L= 12-14-18, l = 1-2), edges densely white fimbriate or granulate, staining black on edges where bruised, broad (2-3 mm). **Stipe** pale sordid lemon yellow at first (4A3-4-5 Pale Yellow, Pastel Yellow, Butter Yellow) for ground color, especially over the upper 1/2-3/4, white over lower 1/3, with orange-yellow dense pubescent erect hairs over upper 1/2-3/4, soon becoming dull reddish ochre (5C6-7 Pompeian Yellow, Yellow Ochre) over apex to near base, but base remaining almost white, entire stipe ± covered at first with deep bright yellow or reddish brick colored erect pubescence, these fibrils becoming darker reddish brick colored with age then these fibrils and stipe surface staining black from handling or injury, stipe base with pale grayish long strigose covering or matted coating, 1-2 mm broad at apex, 15-60 mm long, equal, terete, densely erect short fibrillose or long hispid tangled fibrils overall, whitish or sordid white and solid at first inside, becoming hollow. **Odor and Taste** none or not distinctive. Entire fruit body turning completely dark brown or black when dried.

**Basidiospores** 13-19.4 x 8.8-13 µm (n/3 = 45, mean<sub>L</sub> = 16.24 ± 1.16, mean<sub>W</sub> = 10.68 ± 0.80, Q = 1.29-1.85, mean<sub>Q</sub> = 1.53 ± 0.11), heterodiametric, 7-9 (-10) angled from depressed facets in profile and face views, 5-6 rounded angular in polar view, walls pale brown or yellow brown, evenly cyanophilic. **Basidia** 30-40 x 14-18 (-20) µm, broadly clavate, 4-sterigmate, lacking cyanophilic bodies, a large percentage filled with dark brown coagulated pigment. **Cheilocystidia** mostly globose or broadly clavate or sphaeropedunculate, some fusiform or bullet-shaped, 20-42 x 14-24 µm, pale brown from intraparietal pigments in ± thickened walls, produced from cylindrical or slightly inflated hyphae with 2-3 septate segments immediately below the cystidium. **Pleurocystidia** absent.



Figs. 1-3: *Pouzarella ferrerii* (8454 T. J. Baroni, Isotype). Fig. 1 cheilocystidia, Fig. 2 basidiospores, Fig. 3. caulocystidia. Scale bars 10  $\mu\text{m}$ .

**Lamella trama** dark brown or brown, parallel, cylindrical or inflated, heavily encrusted hyphae, 3.2-16  $\mu\text{m}$  in diam, with a distinctive subhymenium of pseudoparenchyma, cells 8-15  $\mu\text{m}$  in diam. **Pileipellis** a dark brown layer of repent hyphae with transitions to a trichodermium in clustered patches, or more uniformly trichodermial over disc, formed by chains of inflated fusoid or sausage-shaped disarticulating cells, dark brown pigments intraparietal and also finely encrusting, terminal cells 52-180 x 12-30  $\mu\text{m}$ . **Pileus context** dark yellow brown, of interwoven cylindric or inflated, heavily encrusted hyphae, 2.4-12  $\mu\text{m}$ .

**Stipitipellis** over apex a dark brown or golden brown layer of repent, cylindrical, heavily encrusted hyphae, 4-10  $\mu\text{m}$  in diam, producing clusters of  $\pm$  erect, septate, inflated, filamentous caulocystidia, terminal cells globose, broadly clavate, fusiform, bullet-shaped or broadly ventricose, 22-66 x 10-28  $\mu\text{m}$ , with intraparietal and finely encrusting brown pigments. **Clamp connections** absent.

**Habit, Habitat, Fruiting period:** solitary, scattered or gregarious on wet leaves and decaying leaf litter in moist crevices around rocks in seepage area under ferns and mixed tropical hardwood trees of mango, guava and orange in a dry creek bed/watershed. January.

**Material Examined: Dominican Republic:** La Vega Province, Jarabacoa, El Mogote de Jarabacoa, approximately  $\frac{1}{2}$  way up the mogote on the right side of the trail, 19° 04' 30" N 70° 40' 07" W, approx. 760 m elev., 14 January 1997, leg. O. Paino, 8440 T. J. Baroni (**CORT**); same location, 16 January 1997, 8454 T. J. Baroni (**HOLOTYPE, JBSD; ISOTYPE, CORT**); same location, 21 November 1999, leg. T. J. Baroni and T. R. Armstrong, 8966 T. J. Baroni (**JBSD, CORT**).

**Additional Material examined: Brazil:** São Paulo, Blumenau, Parque Natural Municipal São Francisco de Assis, 5 September 2004, F. Karstedt #435, SP307949 (**SP**) – see Karstedt et

al. (2007). **Costa Rica:** Talamanca Mountains, 7815 R. E. Halling (NYBG) – see Halling & Mueller (2005).

**Etymology:** this species is named in honor of Sr. Andrés Ferrer of the Dominican Republic who devoted a great deal of his personal time helping us set up expeditions in the Dominican Republic to explore for new species of macrofungi.

**Commentary:** This brightly colored and visually striking species is named after Mr. Andres Ferrer of the Dominican Republic. Sr. Ferrer was an avid sponsor of our research work in his country, providing us with logistic support and every kindness possible to make our field excursions comfortable and profitable. Sr. Ferrer was formerly the head of Fundación Moscoso Puello, and is now the Director of the Nature Conservancy in the Dominican Republic. We are pleased and honored to name this beautiful mushroom on his behalf.

There are two different varieties of *Pouzarella ferrerii* based on the colors of the basidiomata. The more common variety, *Pouzarella ferrerii* var. *ferrerii*, from the Dominican Republic, Central America and South America is richly reddish or reddish orange colored species, with a densely fibrillose-squamulose pileus and stipe. The other variant, *P. ferrerii* var. *pallidonigrescens* from Jamaica, has a paler colored pileus and stipe with the stipe also having a white ground color. In contrast, the stipe of *P. ferrerii* var. *ferrerii* has a striking lemon yellow ground color and is densely covered with yellow hairs and squamules over the apex that give way to reddish ochre then reddish brick colored hairs and squamules towards the base. Those hairs and squamules on the pileus and stipe, in both varieties, turn quickly black or dark brown when damaged by handling.

A study of the type collection of *Crinipellis squamifolia*, W. A. and E. L. Murrill Nbr. 271, revealed smaller basidiospores and differently

shaped cheilo- and caulocystidia than *Pouzarella ferrerii*, in addition to the differences in macroscopic features. The muted, unchanging colors for *C. squamifolia*, the fusiform or clavate cheilocystidia (see full description below) contrasted sharply with the mostly globose or sphaeropedunculate cheilocystidia found in all of our collections of *Pouzarella ferrerii*. For further discussion see the comments under *P. ferrerii* var. *pallidonigrescens* and *Pouzarella squamifolia*.

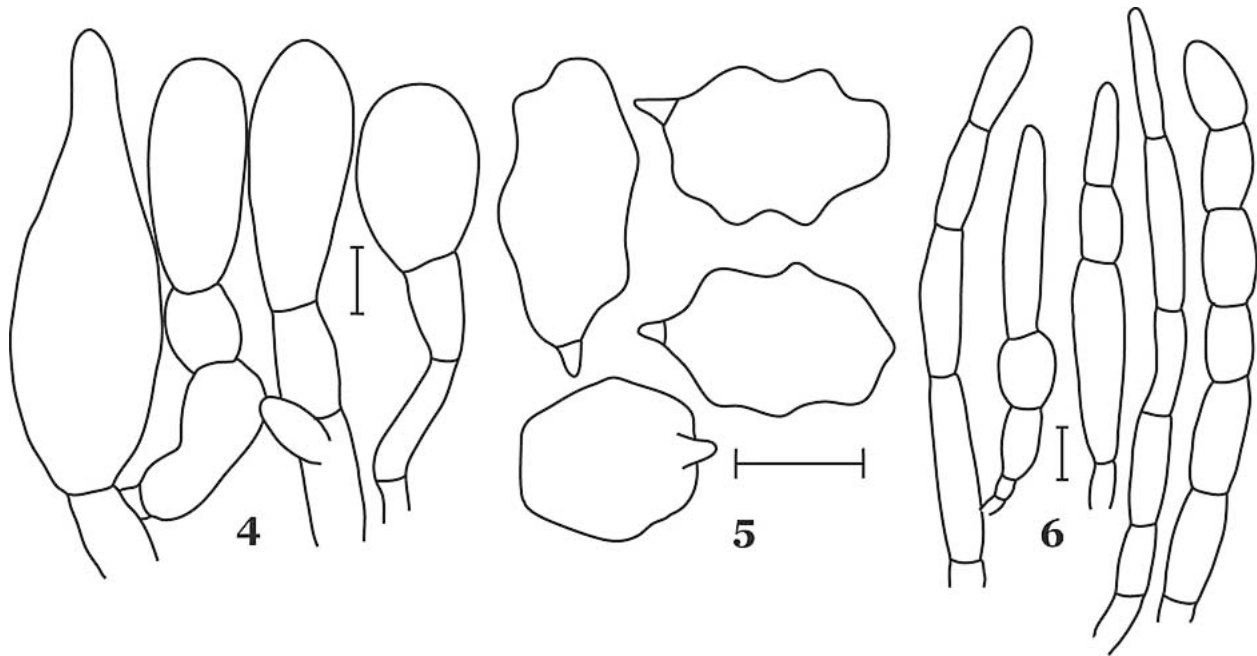
Horak (1983) described three new species of *Pouzaromyces* from Argentina, two of which have red or reddish brown densely squamulose or short bristle-like fibrillose pileus surfaces, i.e. *Pouzaromyces aureocrinitus* Horak and *P. erinaceus* Horak. Both of these taxa have grayish colored stipes, pileus, stipe and lamella surfaces that do not stain black from handling, and they lack cheilocystidia, thus they are distinct from *P. ferrerii*. Each of these three species are truly members of *Pouzarella*, the new combinations are found in an Appendix at the end of this paper.

***Pouzarella ferrerii* var. *pallidonigrescens***  
T. J. Baroni & Cantrell, var. nov., Figs. 4-6, 20

*A typo speciei coloribus pilei pallidioribus atque superficie stipitis omnino alba differt.*  
*Holotypus:* 8876 T. J. Baroni (IJ).

**Mycobank #:** MB 511349

**Pileus** Deep orange brown (7E-D7-8 Brick Red, Terra Cotta, Burnt Sienna, Henna), becoming paler with expansion (6D7-8 Raw Sienna, Light Brown) and with orange hues (near 5C5 Topaz) but disc remaining dark brown, 4-13 mm broad, conical-convex at first, becoming broadly conical, then nearly plane with age, densely fibrillose-squamulose overall, these hairs matted or erect, turning blackish when injured, margin smooth or becoming striate. **Context** quickly turning blackish when cut or fuscous at first, thin (0.5 mm). **Lamellae** dull grayish brown on face,



Figs. 4-6: *Pouzarella ferrerii* var. *pallidonigrescens* (8876 T. J. Baroni, Isotype). Fig. 4 cheilocystidia. Fig. 5 basidiospores. Fig. 6 caulocystidia. Figs. 4-5 scale bars = 10  $\mu$ m. Fig. 6 scale bar = 20  $\mu$ m.

paler and ashy grayish on thickened fimbriate edges, broadly adnexed, subdistant ( $L = 11-12$ ,  $l = 1$  or  $2$ ), broad, 2 mm. **Stipe** generally pallid at first from near apex to base (sordid white), but apex rich golden ochre and base with dense grayish ashy strigose hairs, soon developing dense tawny squamulose-fibrillose hairs from apex to near base, fibrillose hairs turning blackish when injured from handling, hairs over base more ashy grayish, 0.5-2 mm broad at apex, 10-35 mm long, equal, terete, flexuous or strict, solid becoming narrowly hollow, dull yellowish brown inside. **Odor and Taste**: not noted. Surface of pileus, stipe and lamellae bruising blackish or fuscous when injured or with age, and drying dark brown or blackish brown.

**Basidiospores** 14.2-19.9 x 9.5-12.4  $\mu$ m ( $n = 38$ ,  $mean_L = 16.7 \pm 1.35$ ,  $mean_W = 10.7 \pm 0.77$ ,  $Q = 1.41-1.73$ ,  $mean_Q = 1.57 \pm 0.08$ ) heterodiametric, 7-10 angled from depressed facets in profile and face views, 5-6 rounded angular in polar view, walls pale brown, evenly cyanophilic. **Basidia**

38-51 x 14-17  $\mu$ m, 4-sterigmate, clavate, a large percentage filled with dark brown coagulated pigment, lacking cyanophilic bodies.

**Cheilocystidia** versiform, but mainly globose, inflated clavate, some broadly fusiform or ventricose-rostrate, pale yellow brown in 3% KOH, produced from cylindrical or slightly inflated hyphae with 1-2-3 septate, often slightly inflated cells immediately below the cystidium, 24-64 x 14-22  $\mu$ m. **Lamella trama** yellowish brown to dark brown, parallel or interwoven, cylindrical or inflated, dark brown encrusted hyphae, 3.2-16  $\mu$ m in diam, subhymenium conspicuously pseudoparenchymatous, cells 6-15  $\mu$ m in diam. **Pileipellis** a dark brown or fuscous brown layer of repent or erect inflated septate hyphae, with transitions to a trichodermium, end cells narrowly clavate or bullet shaped, tending to disarticulate, 54-98 x 14-30  $\mu$ m, brown pigments intraparietal and finely encrusting. **Pileus context** brown, of interwoven, cylindrical or inflated hyphae, 4-9  $\mu$ m in diam, with dark brown encrusting pigments. **Stipitipellis** at the

apex a brown layer of repent, cylindrical hyphae, 4-12 µm in diam, walls, thickened, brown from intraparietal pigment, producing clusters of cylindrical, multiseptate, filamentous caulocystidia, 400 µm long, terminal cells cylindrical or fusoid mostly, some narrowly clavate or ellipsoidal, 32-98 x 10-20 µm, each filament composed of 3-8 cells, 20-26 (-30) µm broad. **Clamp connections** absent.

**Habit, Habitat, Fruiting Period:** Scattered on clay soil with leaf litter in a tropical hardwood secondary growth forest on banks of sink hole in karst/limestone area. June.

**Material Examined: Jamaica;** Manchester Parish, Sutton Farm, 18° 03' 32.9" N 77° 31' 51" W, approx. 580 m elev., 8 June 1999, leg. S. A. Cantrell & T. J. Baroni, 8876 T. J. Baroni (**Holotype, IJ; ISOTYPE, CORT**).

**Etymology:** pallidonigrescens, pallid but turning blackish from handling, referring to the stipe.

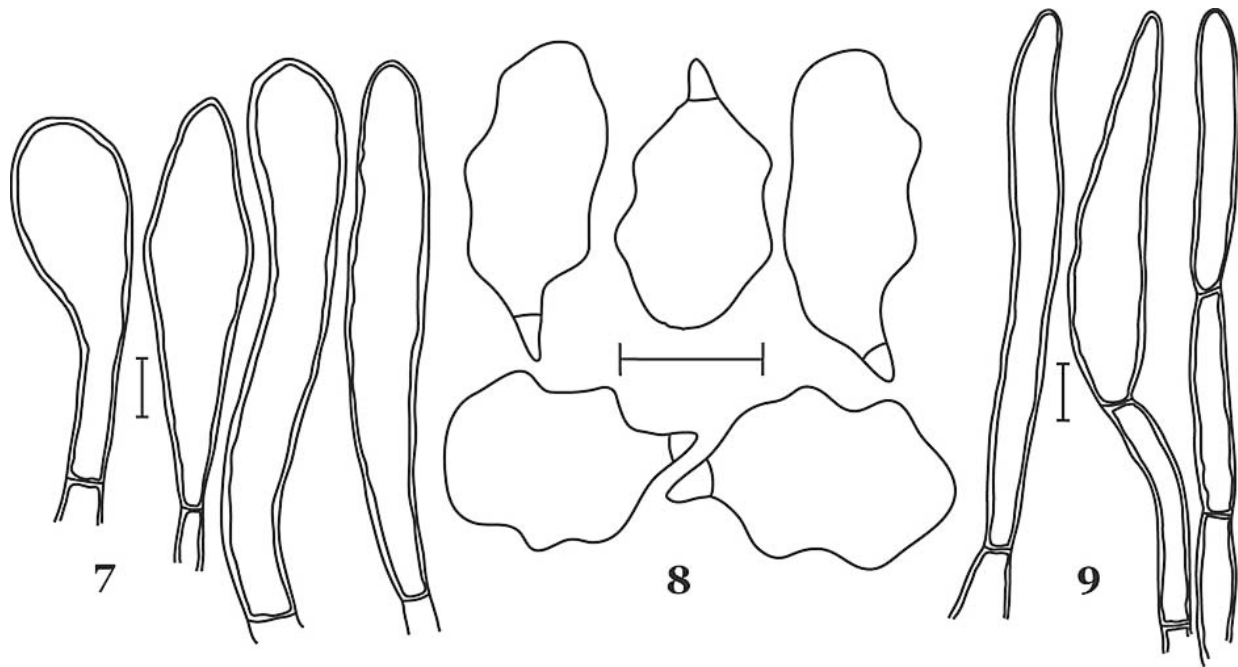
**Commentary:** *Pouzarella ferrerii* var. *pallidonigrescens* has some similar macroscopic features when compared with *P. squamifolia*, i.e. the pallid stipe with reddish brown squamules and hairs over the colorless background, the plush tawny squamules and fibrils of the pileus, and the broad ± distant, grayish adnate lamellae. However, these species are easily separated based on other characters. *Pouzarella ferrerii* var. *pallidonigrescens* turns quickly black on the pileus, stipe, lamella edges and context when injured, features not noted for the *P. squamifolia* in the protolog. In addition, the basidiospores of *P. ferrerii* var. *pallidonigrescens* are larger than those of the *P. squamifolia* (i.e. 12-16 x 8.5-10.5 µm for *P. squamifolia* versus 14.2-19.9 x 9.5-12.4 µm for *P. ferrerii* var. *pallidonigrescens*) and the cheilocystidia are differently shaped and smaller (i.e. fusiform or clavate, thin-walled and 54-100 x 18-28 µm *P. squamifolia* and mainly globose, inflated clavate, some broadly fusiform or

ventricose-rostrate and 24-64 x 14-22 µm for *P. ferrerii* var. *pallidonigrescens*).

***Pouzarella argenteolanata*** T. J. Baroni, Perd.-Sánchez & Cantrell sp. nov., Figs. 7-9, 23 *Ab congeneris indumento pilei stipitisque argento-lanato, vulneratum colore atro-brunneo vel fusco tingente, differt. Species praeterea cheilocystidis crasso-tunicatis clavatis, caulocystidiis longis tenuitunicatis non setiformibus, cellulis in contextu pilei prope pellem inflatis distincta. Holotypus: 8456 T. J. Baroni (JBSD)*

**Mycobank #:** MB 511350

**Pileus** silvery grayish from long hispid lanate fibrils, overlying a dark grayish brown ground color (6F3 Negro), becoming paler grayish brown or brownish beige with expansion (6 D-E 3 Café-au-lait, Saruk), slightly hygrophanous over disc and disc becoming silvery cream color, also tips of silvery lanate covering becoming dark brownish to fuscous where injured, 2-17 mm broad, conical-parabolic in button stages, soon conical becoming conical campanulate or broadly conical with expansion (6-10 mm high), margin incurved, becoming decurved with expansion, striate over margin on older ones where fibrils lost. **Context** pale sordid white, approx. 1 mm thick. **Lamellae** grayish brown (6E3 Saruk) with pale gray or sordid white pubescent-fimbriate edge, deeply arcuate-sinuate or arcuate-sinuate with short decurrent tooth, close (L = 17-19, l = 1-2), broad (4 mm). **Stipe** pale silvery grayish (nearest 5B5) from dense clumps of long hispid entangled clusters of fibrils, fibrils becoming brownish to fuscous when handled, with age darker brownish gray over the base, 0.5-1 mm broad, 5-40 mm long, equal, terete, densely hispid strigose ± overall, or these hispid fibrils clumping into knots producing a pubescent-fufuraceous covering from apex to base, hollow, dark grayish brown inside, rather tough stout specimens. **Odor** none. **Taste** mild.



Figs. 7-9: *Pouzarella argenteolanata* (8456 T. J. Baroni, Isotype). Fig. 7 cheilocystidia. Fig. 8 basidiospores. Fig. 9 caulocystidia. Figs. 7-8 scale bars = 10  $\mu\text{m}$ . Fig. 9 scale bar = 20  $\mu\text{m}$ .

**Basidiospores** 12.3-16.6 x 8.6-10.4  $\mu\text{m}$  ( $n/2 = 39$ ,  $\text{mean}_L = 14.04 \pm 1.01$ ,  $\text{mean}_W = 9.3 \pm 0.46$ ,  $Q = 1.27-1.68$ ,  $\text{mean}_Q = 1.51 \pm 0.09$ ),

heterodiametric, elongate (6-) 7-8 angled from depressed facets in profile and face views, 5-6 rounded angled in polar view, apiculus 1.6-2.4  $\mu\text{m}$  long. **Basidia** 34-48 (-62) x 13-16 (-20)  $\mu\text{m}$ , clavate, 4 sterigmate, with abundant dark brown plasmatic pigments in most basidia.

**Cheilocystidia** mostly clavate, some cylindrical some broadly fusoid,  $\pm$  thick walled, dark or light brown from intraparietal pigment, 54-98 x 14-22  $\mu\text{m}$ . **Lamella trama** brownish, interwoven, cylindrical or inflated hyphae, 6-12  $\mu\text{m}$  in diam, subhymenium pseudoparenchymatous, cells 4-10  $\mu\text{m}$  in diam. **Pileipellis** dark brown layer of repent or loosely entangled hyphae, producing long cylindrical or narrowly clavate end cells, hyphae and end cells brown from irregularly thickened walls with intraparietal pigments, and with brown encrusting pigments also. **Pileus context** bi-stratose, most of context a brownish layer of radially arranged, cylindrical hyphae, 4-

12  $\mu\text{m}$  in diam, with intraparietal and shiny encrusting pigments, just under the pellis a paler yellow brown layer of radially arranged inflated hyphae, 10-30  $\mu\text{m}$  in diam. **Stipitipellis** a dark brown layer of repent, cylindrical, heavily dark brown encrusted hyphae, 3.2-8  $\mu\text{m}$  in diam, also with dark brown plasmatic pigments, producing clusters of long cylindrical, septate, caulocystidia, walls unevenly thickened, with dark to light brown intraparietal pigments, terminal cells cylindrical, some clavate or ventricose, 64-220 x 14-23  $\mu\text{m}$ . **Clamp connections** none.

**Habit, Habitat, Fruiting Period:** gregarious or subcaespitose on decaying wet leaves or soil under orange, mango, guava, etc. in mixed tropical hardwood dry scrub forest in a dry creek bed/watershed approximately half way up the mogote. January.

**Material Examined: Dominican Republic:** La Vega Province, Jarabacoa, El Mogote de Jarabacoa, approximately  $\frac{1}{2}$  way up the mogote



on the right side of the trail, 19° 04' 30" N 70° 40' 07" W, approx. 760 m elev., 16 January 1997, leg. O. Paino & S. A. Cantrell, 8456 T. J. Baroni. (**HOLOTYPE, JBSD; ISOTYPE, CORT**); same location, 16 January 1997, leg. S. A. Cantrell & O. Paino, 8459 T. J. Baroni (**JBSD; CORT**); same location, 21 November 1999, leg. T. J. Baroni & T. R. Armstrong, 8965 T. J. Baroni (**CORT**); same location, 21 November 1999, leg. T. J. Baroni & T. R. Armstrong, 8967 T. J. Baroni (**NYBG**); same location, 21 November 1999, 8969 T. J. Baroni (**NYBG; CORT**); same location, 21 November 1999, 262 T. R. Armstrong (**CORT**)

**Etymology:** argenteo for silver colors, lanata for the densely, long pubescent fibrils of the pileus and stipe.

**Commentary:** *Pouzarella argenteolanata* is a member of Section *Dysthales* Subsection *Inflatae* (Mazzer, 1976) because of the long pubescent-fibrillose pileus surface, the ± thick walled cheilocystidia, the long, septate cylindrical, non-setiform caulocystidia and the inflated cells in the subpellis or upper pileus trama. The silvery lanate covering of the pileus and stipe, which stains dark brown or fuscous when injured, immediately separates this taxon from all others in. *Pouzarella argenteolanata* seems phenetically most similar to *P. deceptiva* Mazzer (Mazzer, 1976), because of the inflated cells in the pileipellis and context, the presence of thick-walled cheilocystidia, and similar size range of the basidiospores. However, *P. deceptiva* is not covered in silky lanate fibrils but has minute fibrillose scales on the pileus that do not change to darker colors when injured (Mazzer, 1976), has cheilocystidia that are clavate-mucronate or fusoid-ventricose (actually ventricose-rostrate with a long rostrum vide Mazzer (1976) illustrations; our type studies found only broadly fusoid or narrowly clavate cheilocystidia). The cheilocystidia of *P. argenteolanata* are clavate or narrowly fusoid. The ecology of these two species differs also with *P. deceptiva* occurring on

decaying wood in the temperate zones, while *P. argenteolanata* is found on decaying wet leaves of tropical trees and shrubs.

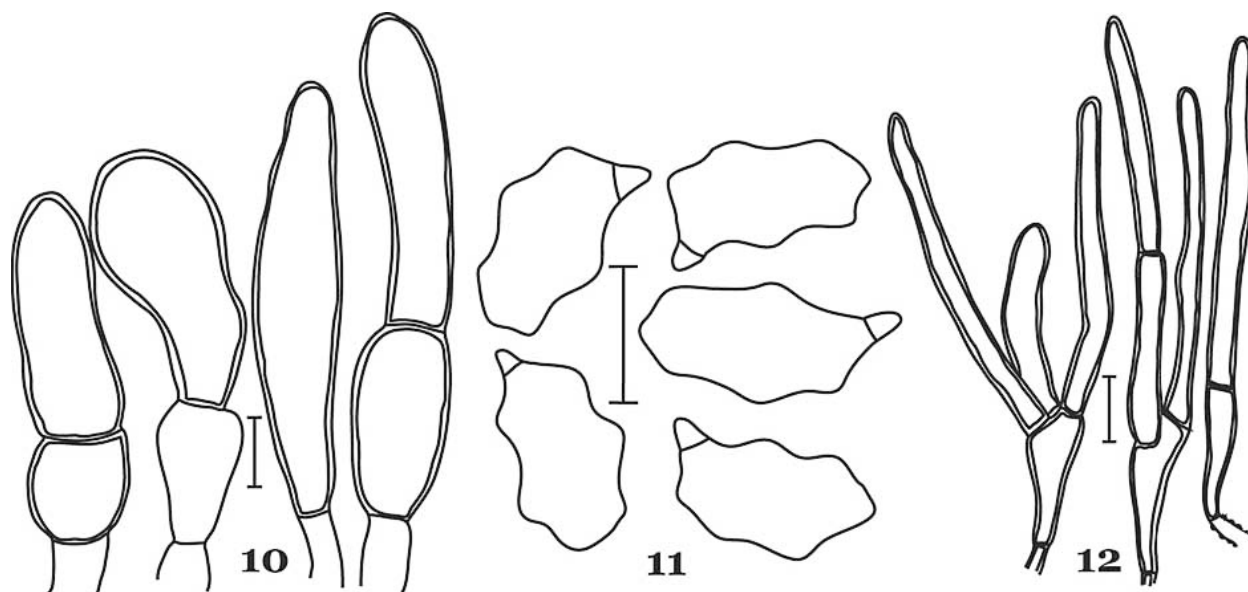
*Pouzarella argenteolanata* is a rather striking, and durable species for the typical *Pouzarella*. The heavily silvery lanate covering on the pileus and stipe should help one easily identify this taxon in the field.

***Pouzarella nitens*** T. J. Baroni & Cantrell, sp. nov. , Figs. 10-12, 22

*Ab speciebus in Sectione Pouzarellarum stipite pubescenti, argenteo-canescenti, dense hispido atque caulocystidiis 1-2-septatis, interdum ramosis, crasso-tunicatis, brevi-setiformibus differt. Holotypus 8457 T. J. Baroni (JBSD).*

**Mycobank #:** MB 511351

**Pileus:** dark grayish brown (6E3 Saruk) becoming pale grayish brown (5C-D3 Brownish Orange, Nougat) with a slightly darker disc (5D4 Dark Blonde) with age, 7-18 mm broad, conical convex or broadly convex at first, then plane and slightly depressed over disc, dry, densely erect hispid pubescent or finely squamulose overall, fibrils reddish brown or concolor with surface, squamules becoming repent over margin with age, some sulcate to near disc, margin decurved becoming plane. **Context** concolorous with pileus surface, thin, 0.5-1 mm. **Lamellae** dark grayish brown (6E3-4 Saruk) becoming paler grayish yellow brown (5D4 Dark Blonde), broadly adnexed or arcuate-adnate with long decurrent tooth (2-3 mm down stipe), subdistant or distant (L = 10-15, l = 1-2), broad (2-2.5 mm), edges whitish fimbriate. **Stipe** pale silvery grayish (5B2 Marbel White) or only slightly paler than pileus with a reddish brown profusely strigose base, 0.5-2 mm broad, 20-40 mm long, equal, terete, densely covered with abundant erect hispid pubescence that is concolorous with the surface or developing pale grayish tan clumps of pubescent fibrils overall, narrowly hollow and



Figs. 10-12: *Pouzarella nitens* (8457 T. J. Baroni, Isotype). Fig. 10 cheilocystidia. Fig. 11 basidiospores. Fig. 12 caulocystidia. Figs. 10-11 scale bars = 10  $\mu$ m. Fig. 12 scale bar = 20  $\mu$ m.

concolorous inside. **Odor** slightly fragrant or not distinctive. **Taste** not tried. **Basidiospores** 11.3-14.6 x 7.9-10.5  $\mu$ m ( $n = 32$ ,  $\text{mean}_L = 12.59 \pm 0.70$ ,  $\text{mean}_W = 8.74 \pm 0.60$ ,  $Q = 1.33-1.63$ ,  $\text{mean}_Q = 1.44 \pm 0.08$ ), heterodiametric, mostly with 6-7 angled from depressed facets in profile and face view, 5-6 rounded angular in polar view.

**Basidia** 34-40 x 12-14  $\mu$ m, 4-sterigmate, clavate, frequently filled with dark brown pigment.

**Cheilocystidia** pale brown,  $\pm$  thick-walled and with brown intraparietal pigments, abundant and making the edge  $\pm$  sterile, versiform but often cylindrical, narrowly clavate, clavate, ventricose, contorted, and often supported by a short, inflated, thick-walled penultimate cell or connected directly to the heavily encrusted cylindrical trama hyphae, 36-50 x 10-16  $\mu$ m.

**Pleurocystidia** absent. **Lamella trama** brown, of parallel, cylindrical or inflated, heavily encrusted hyphae, 3-24  $\mu$ m in diam. **Pileipellis** two layered, suprapellis a brown layer of repent hyphae with transitions to clusters of erect chains of septate, tapering, hair-like hyphae, 210-360 x

20-34  $\mu$ m, cells elliptical or sausage shaped, disarticulating, terminal cells mostly fusiform, disarticulating, 34-64 x 9-14  $\mu$ m, all cells thick-walled (approx. 2  $\mu$ m) and with brown intraparietal pigments and some with encrusting pigments, subpellis pale yellowish brown or pale golden brown, mostly of inflated pseudoparenchymatous cells, 20-40  $\mu$ m in diam.

**Pileus context** a dark brown layer of radially arranged, cylindrical or inflated, heavily encrusted hyphae, 4-18  $\mu$ m in diam.

**Stipitipellis** a pale brown layer of repent, cylindrical, heavily encrusted hyphae, 5-8  $\mu$ m in diam, producing scattered clusters of often very elongate, dark brown, tapered, frequently septate, and occasionally branched caulocystidia, all cells distinctly thick-walled (0.8-2.4  $\mu$ m) and brown from intraparietal pigments, 38-172 x 8-24  $\mu$ m. **Clamp connections** absent.

**Habit, Habitat, Fruiting Period:**

subcaespitose in rich humus or on wet leaves under orange, guava, mango, etc. in mixed

tropical hardwood dry scrub forest in a dry creek bed/watershed. January.

**Material Examined: Dominican Republic:**

La Vega Province, Jarabacoa, El Mogote de Jarabacoa approximately half way up the mogote, 19° 04' 30" N 70° 40' 07" W, approx. 760 m elev., 16 January 1997, leg. S. A. Cantrell, 8457 T. J. Baroni (**HOLOTYPE, JBSD; ISOTYPE, CORT**); same general location, 14 January 1997, leg. S. A. Cantrell, 8436 T. J. Baroni (**NYBG**).

**Etymology:** *nitens* for the shining silvery white stipe.

**Commentary:** *Pouzarella nitens* belongs in Section *Pouzarella* because of its thick-walled modified (short) setiform caulocystidia (Mazzer, 1976). It is the only species of Section *Pouzarella* known from the Caribbean so far and is distinctive because of the dark grayish brown pileus and silvery grayish densely hispid pubescent stipe which produces 1-2 septate and occasionally branched, thick-walled short setiform caulocystidia.

One species that seems vaguely similar to *P. nitens* due to the macromorphology is the European *Pouzarella hirta* (Velen.) Mazzer (Noordeloos, 1979). These two taxa have similar grayish colored pileus and stipe with dark grayish brown, adnexed, subdistant lamellae, and densely fibrillose pileus surfaces. However, they differ by several important characters. The stipe of *P. hirta* is described as glabrescent (Noordeloos, 1979), while the stipe of *P. nitens* is densely covered with pale grayish pubescence or with age tan colored clumps of pubescent fibrils. There are also some important differences in the microscopic characters: i.e. the caulocystidia of *P. hirta* are not setiform nor thick-walled (Noordeloos, 1979); the cheilocystidia of *P. hirta* are slender or broadly clavate with rounded conical apices, but some are also subglobose, with thin or slightly thickened brownish walls (Noordeloos, 1979) and not ventricose or

contorted with a penultimate cell that is inflated, thick-walled and brown; and finally the basidiospores of *P. hirta* are (10.2-) 11-15 x 6.8-8 (-9)  $\mu\text{m}$  with a median Q value of 1.55 while those of *P. nitens* are 11.3-14.6 x 7.9-10.5  $\mu\text{m}$ , with a mean Q value of 1.44.

*P. hirta* is considered a xerophytic grassland species that grows on calcareous soils with *Prunus spinosa* and *Juniperus communis* (Noordeloos, 1979), while *P. nitens* is obviously a mesophytic species found in drainage watershed under tropical hardwoods scrub forests.

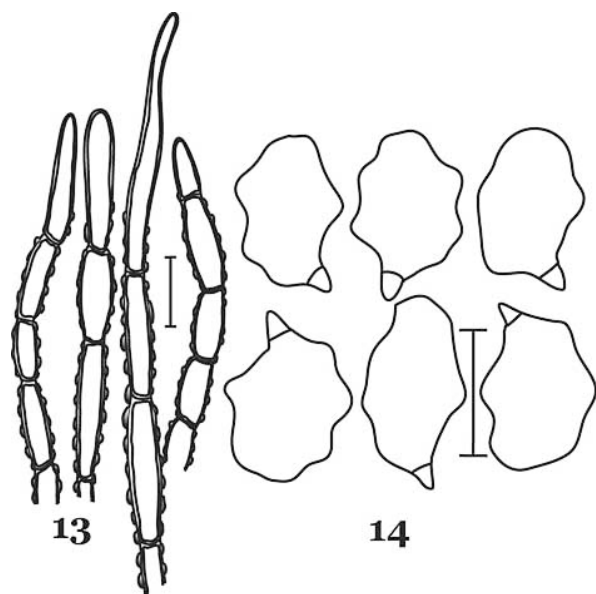
Like so many *Pouzarella* species, *P. nitens* appears to be a rare taxon.

***Pouzarella domingensis*** T. J. Baroni, sp. nov.  
Figs. 13-14, 21

*Affinitas speciebus Sectionis Dysthalium pileo stipiteque confertim pubescentibus, caulocystidiisque tenuitunicatis, angustatis, multiseptatis, filamentosis. Affinitas speciebus Subsectionis Inflatarum Mazzer (Mazzer, 1976) cellulis in subpelle inflatis, sed a congeris in illa Subsectione cheilocystidiis nullis, odore nullo, basidiosporis minoribus imprimis differt. Holotypus: 8455 T. J. Baroni (JBSD).*

**Mycobank #:** MB 511352

**Pileus** dark gray brown (6F3-5 Negro, Chocolate, Teak), becoming paler grayish brown (6D3 Café-au-lait), 1.5-5 (-7) mm broad, conical with inrolled margin at first, becoming convex or eventually broadly convex, then plane, densely erect pubescent overall, even at first, but subsulcate to disc, also shallowly depressed over disc with age, margin inrolled then incurved, eventually decurved. **Lamellae** grayish brown (6D3 Café-au-lait), adnate with decurrent tooth, subdistant (L = 11-13, l = 1), edge even, concolor. **Stipe** concolor with pileus but with silvery tan pubescence overall, and with a pale grayish silvery strigose base at first, eventually becoming



Figs. 13-14 *Pouzarella domingensis* (8455 T. J. Baroni, Isotype). Fig. 13 caulocystidia, scale bar = 20  $\mu\text{m}$ . Fig. 14 basidiospores, scale bar = 10  $\mu\text{m}$ .

pale tan strigose over base, 0.1-0.5 mm broad, 5-12 mm long, equal, terete, finely pubescent overall. **Odor** none. **Taste** not tried.

**Basidiospores** 9.7-12.3 (-14)  $\times$  6.7-8  $\mu\text{m}$  ( $n = 33$ ,  $\text{mean}_L = 11.02 \pm 0.80$ ,  $\text{mean}_W = 7.62 \pm 0.43$ ,  $Q = 1.21-1.68$  (-1.75),  $\text{mean}_Q = 1.45 \pm 0.11$ ), heterodiametric, 6-8 angled from depressed facets in profile and face views, 5-6 (-7) rounded angular in polar view. **Basidia** 30-38  $\times$  11-14  $\mu\text{m}$ , 4-sterigmate, broadly clavate, hyaline, but also with numerous brown pigment filled ones present. **Hymenial cystidia** absent. **Lamella trama** dark brown and strongly contrasting with hyaline hymenial layer, parallel or interwoven, cylindrical or inflated, heavily brown pigment encrusted, 4-14  $\mu\text{m}$  in diam, walls thickened and with brown intraparietal pigments. **Pileipellis** two-layered, suprapellis a brown layer of repent cylindrical heavily brown encrusted hyphae producing abundant clusters of long tapering septate filaments, 140-240  $\times$  20-34  $\mu\text{m}$ , filaments consisting of chains of inflated, subglobose, elliptical or barrel-shaped cells with terminal cell

fusoid or cylindrical, 24-66  $\times$  9-20  $\mu\text{m}$ , all cells thick-walled with brown intraparietal and occasionally encrusting pigments, subpellis a distinct brown layer of inflated, pseudoparenchymatous cells. **Pileus context** a dark brown layer of radially arranged, cylindrical or inflated, heavily encrusted hyphae, 6-16  $\mu\text{m}$  in diam. **Stipitipellis** dark brown layer of repent, heavily brown encrusted, cylindrical, septate hyphae, 2-8  $\mu\text{m}$  in diam, producing clusters of erect or recurved, tapering septate, filamentous caulocystidia, 50-200  $\times$  11-14  $\mu\text{m}$ , cells of filaments elliptical, sausage-shaped with mostly fusoid terminal cells, 20-88  $\times$  8-14  $\mu\text{m}$ , walls brown from intraparietal pigments and also finely to heavily encrusted. **Clamp connections** absent.

**Habit, Habitat, Fruiting Period:** scattered on leaves, twigs and other decaying plant debris in wet seepage area under orange, guava, mango, etc. in mixed tropical hardwood dry scrub forest in a dry creek bed/watershed January.

**Material Examined: Dominican Republic:** La Vega Province, Jarabacoa, El Mogote de Jarabacoa, approximately  $\frac{1}{2}$  way up the mogote, 19° 04' 30" N 70° 40' 07" W, approx. 760 m elev., 16 January 1997, 8455 T. J. Baroni (**HOLOTYPE, JBSD; ISOTYPE CORT**).

**Etymology:** domingensis, of the Dominican Republic.

**Commentary:** This new species belongs in Section *Dysthales* because of its densely pubescent pileus and stipe, and the thin-walled tapering multiseptate filamentous caulocystidia. *P. domingensis* is a member of Subsection *Inflatae* Mazzer (Mazzer, 1976) due to the inflated cells in the subpellis. The lack of odor and small basidiospores readily separates *P. domingensis* from others in that subsection (Mazzer, 1976).

The short basidiospores and lack of cheilocystidia prompt one to compare *P. domingensis* with species in Subsection *Dysthales* that also have short basidiospores and lack cheilocystidia. Members of Subsection *Dysthales* are not characterized by inflated layers in their lower pellis/upper context junction however, but the comparison is instructive. Mazzer (1976) described two species with short basidiospores and the lack of cheilocystidia in Subsection *Dysthales*, *P. hirta* and *P. dunstervillei* (Dennis) Mazzer. Mazzer (1976) was not actually able to examine a collection of *P. hirta* during his studies, but placed this species in his keys using a couplet stating that cheilocystidia were absent for *P. hirta*. Noordeloos (1979) clearly illustrates and describes obvious inflated cheilocystidia for *P. hirta* and also thin-walled, cylindrical, non-encrusted, 1-3 celled hairs on the stipe. *P. domingensis* has strongly developed, multiseptate tapering caulocystidia that are often encrusted with brown pigments, and cheilocystidia are completely lacking. As far as a comparison with *P. dunstervillei*, *P. domingensis* seems to be most phenetically similar to this taxon based on a combination of subsulcate pileus with similar dark brown or dark grayish brown colors, small basidiospores and lack of cheilocystidia. However, *P. dunstervillei* is only minutely squamulose over the disc and has a glabrous stipe, while the pileus of *P. domingensis* is densely erect pubescent overall and the stipe of this species is silvery tan pubescent overall as well. With the additional features of inflated cells in the subpellis of the pileus and the strongly developed tapering, multiseptate, heavily encrusted caulocystidia, *P. domingensis* is morphologically distinguished from *P. dunstervillei* and all other taxa of *Pouzarella*.

*New record:*

***Pouzarella caribaea* T. J. Baroni and B. Ortiz**, 2002. *Mycotaxon* 82: 276-278.

**Material Examined: Dominican Republic:** Santiago Prov., La Celestina Community Forest, near San José de Las Matas, 19° 23' 17" N 71° 01' 57" W, approx. 550 m elev., 10 January 2002, coll. S. A. Cantrell, leg. D. J. Lodge DR-71, CFMR database number DR-2174 (JBSD, NY).

**Commentary:** The collection fits perfectly into the morphological species concept described by Baroni and Ortiz (2002), and is the first report of this species outside of Puerto Rico.

*Type studies:*

***Pouzarella squamifolia* (Murrill) Mazzer**, 1976. *Bibliotheca Mycol.* 46: 103.

≡ *Crinipellis squamifolia* Murrill. 1915.

*North American Flora* 9(4):288.

≡ *Rhodophyllus squamifolius* (Murrill)

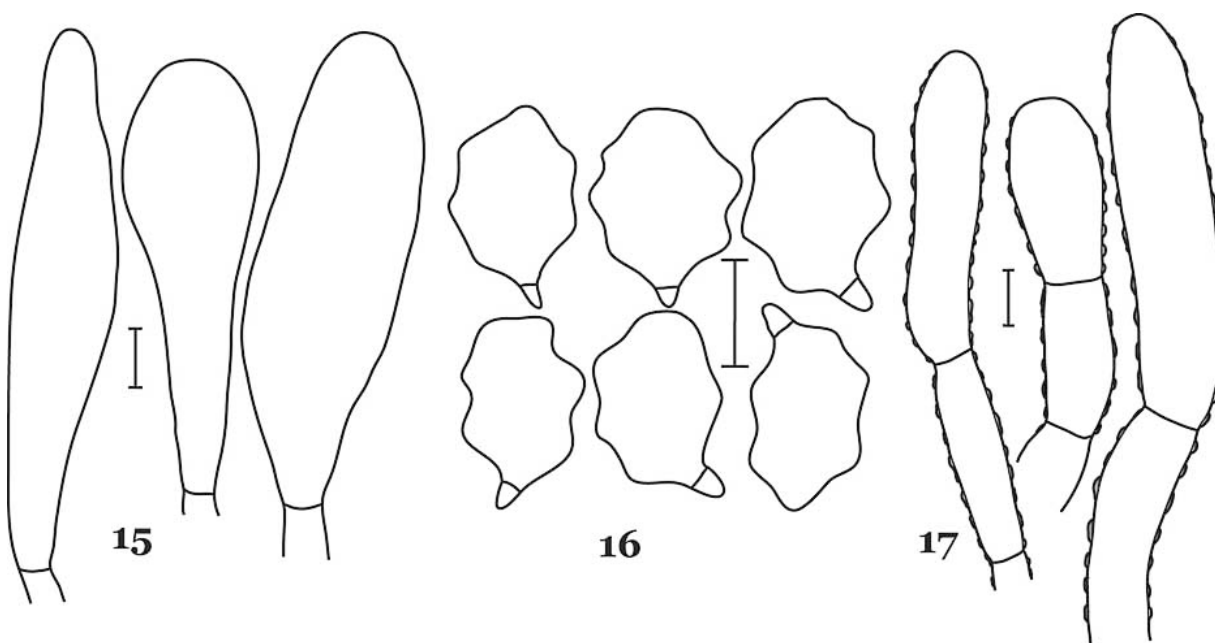
Singer. 1942. *Lilloa* 8:214.

Figs. 15-17

The following description of macroscopic characters is quoted directly from Murrill (1915), the microscopic features presented here are the result of a recent examination of the type specimens.

*“Pileus conic to convex, not expanding, solitary or gregarious, 1 cm. broad and 5 mm high; surface melleous, conspicuously covered with long, loose, shaggy, ferruginous-fulvous hairs, margin entire, even, concolorous; lamellae distant, adnate, ventricose, very pale russet to grayish, covered with hyaline or yellowish scales, which are irregular, angular, about 12-14 x 7-9 μ; spores ovoid, smooth, hyaline, 7 x 5 μ: stipe cylindric, equal, enlarged at the base, pallid, with conspicuous, ferruginous hairs similar to those on the pileus, becoming subglabrous with age at the apex, 4 cm long, 1.5 mm thick.”*

**Basidiospores** 12-16 x 8.5-10.5 μm (n = 32, mean<sub>L</sub> = 14.28 ± 0.90, mean<sub>W</sub> = 9.57 ± 0.53, Q =



Figs. 15-17: *Pouzarella squamifolia* (W. A. & E. L. Murrill 271, Holotype). Fig. 15 cheilocystidia. Fig. 16 basidiospores. Fig. 17 caulocystidia. Scale bars = 10  $\mu$ m.

1.28-1.68, mean<sub>Q</sub> = 1.49  $\pm$  0.09), heterodiametric, mostly 7-8 angled in profile and face views with depressed facets, 4-5 rounded angular in polar view. **Basidia** 40-50 x 16-18  $\mu$ m, 4-sterigmate, broadly clavate. **Cheilocystidia** pale brown from intraparietal pigments and some finely encrusting brownish pigments, fusiform or clavate, thin-walled, mostly collapsed and taking some time to revive, 54-100 x 18-28  $\mu$ m.

**Pleurocystidia** absent. **Lamella trama** a dark brown layer of  $\pm$  interwoven, cylindrical, heavily encrusted hyphae. **Pileipellis** a brownish or reddish brown layer of repent, cylindrical or inflated hyphae, formed by chains of fusiform or sausage shaped cells with moderately thickened walls with brown intraparietal pigments, terminal cells, 30-90 x 14-24  $\mu$ m. **Pileus context** too collapsed to determine details. **Stipitipellis** a dark brown layer of repent, parallel, cylindrical and heavily encrusted hyphae, 4-8  $\mu$ m in diam,

producing lax or erect single or clustered septate caulocystidia, with clavate or cylindrical terminal cells with brown intraparietal pigments and fine or moderately heavy encrustations, 28-60 x 7-15.5  $\mu$ m. **Clamp connections** none observed.

**Habit, Habitat, Fruiting period:** solitary or gregarious on soil of moist bank, among decaying sticks. December.

**Material Examined:** **Jamaica:** Chester Vale, 3000-4000 ft elev. 21-24 December 1908, **W. A. and E. L. Murrill 271**, (HOLOTYPE, NYBG); same location and date, **W. A. and E. L. Murrill 361** (NYBG – only 4 small fragments of stipe, no pileus or lamella fragments present, ). **Mexico,** Cuernavaca, Tepeite Valley, moist virgin forest along the Tepeite River, 7000 ft elev., 28 December 1909, **W. A. and E. L. Murrill 461** (NYBG).





Fig. 18-19: *Pouzarella ferrerii* (8454 T. J. Baroni, Holotype). Basidiomata, x1. Fig. 20: *Pouzarella ferrerii* var. *pallidonigrescens* (8876 T. J. Baroni, Holotype). Basidiomata, x1.5. Fig. 21: *Pouzarella domingensis* (8455 T. J. Baroni, Holotype) Basidiomata, x2. Fig. 22: *Pouzarella nitens* (8457 T. J. Baroni, Holotype) Basidiomata, x1. Fig. 23: *Pouzarella argenteolanata* (8965 T. J. Baroni,) Basidiomata, x1.

**Commentary:** The type of *Crinipellis squamifolia* is based on two collections (W. A. and E. L. Murrill 271 and 361) described by Murrill (1915) from Jamaica. The third collection cited in the protolog, W. A. Murrill and E. L. Murrill 461, from Mexico is a completely different species according to our type studies. In notes with this collection in Murrill's handwriting he states that #461 is "darker than the type and smaller" and on a separate piece of note paper drew an image of one specimen and wrote the following next to it "fumoso-umbrinum cap & fulig. stem with base shaggy and upturned chaffy scales, dry..." An examination of the remaining material of #461, which consists of a few small pileus fragments devoid of lamellae and one stipe fragment, revealed narrow cylindrical thick-walled caulocystidia, completely different than what is found on the type material of *C. squamifolia* and basidiospores that were larger and differently shaped than those of the type, e.g.  $13.9\text{-}18.4 \times 7.4\text{-}10.2 \mu\text{m}$  ( $n = 38$ ,  $\text{mean}_L = 15 \pm 0.84$ ,  $\text{mean}_W = 8.7 \pm 0.51$ ,  $Q = 1.54\text{-}2.08$ ,  $\text{mean}_Q = 1.73 \pm 0.13$ ). Murrill (1915) quite clearly states that *Crinipellis squamifolia* has a pileus with "surface melleous, conspicuously covered with long, loose, shaggy, ferruginous-fulvous hairs...stipe cylindric, equal, enlarged at base, pallid, with conspicuous ferruginous hairs similar to those on the pileus, becoming subglabrous with age at the apex..." (underlining our emphasis). Clearly collection #461 from Mexico is not conspecific with the *Pouzarella squamifolia* from Jamaica.

We found one collection of a species somewhat similar to *Pouzarella squamifolia* in Jamaica in Manchester Parish on the Sutton Farm, consisting of 7 specimens that include young and older stages of development. However, this Manchester Parish collection also reminded us of *Pouzarella ferrerii* from the Dominican Republic but it displayed paler colors than the specimens of *Pouzarella ferrerii* we find in the

Dominican Republic, Costa Rica and Brazil (see description above). The Manchester Parish collection has conspicuously and more or less completely whitish ground colors on the stipe, as described for *C. squamifolia* but not typical of *P. ferrerii*. The major difference macroscopically between our Jamaican collection and the description of *Crinipellis squamifolia* provided by Murrill (1915) is that our collection quite clearly bruised blackish or dark brown on the pileus, lamella edges and stipe when handled, just as in *Pouzarella ferrerii*. Additionally, when the specimens of our Manchester Parish collection were dried they turned sordid grayish overall which is similar to the reaction of *Pouzarella ferrerii* fruit bodies when dried. *Crinipellis squamifolia* retains its rusty reddish coloration in the dried state (Holotype! <http://sweetgum.nybg.org/vh/specimen.php?irn=816714>). Also, the microscopic characters for our Manchester Parish collection show differences from *Pouzarella squamifolia* in larger basidiospores and globose and strongly inflated cheilocystidia, features typical for *Pouzarella ferrerii* but not *Pouzarella squamifolia*. Thus we realized this Manchester Parish collection represented a pale variant of *Pouzarella ferrerii* and we describe it here as *Pouzarella ferrerii* var. *pallidonigrescens* (see the description above). Unfortunately, we were not able to recollect *Pouzarella squamifolia* during our field studies in Jamaica.

Mazzer (1976) originally suggested that *P. squamifolia* is (phenetically) close to *Pouzarella fulvolanata* (Berk. & Br.) Mazzer based on coloration of the basidiomata, but differing from *P. fulvolanata* because the stipe surface is white in *P. squamifolia* and tawny from a coating of hairs in *P. fulvolanata*. Pegler (1986) describes an obviously smaller basidiospore size for *P. fulvolanata* (as a synonym of *Pouzaromyces myodermus* (Berk. & Br.) Pegler) than the size cited by Mazzer (1976) for *P. fulvolanata*, e.g.  $9\text{-}13\text{-}15 \times 5.5\text{-}7 \mu\text{m}$  for *P. myodermus* vide Pegler,



1986 versus 12-16 x 7-8 µm for *P. fulvolanata* vide Mazzer, 1976. Since Pegler (1986) points out that both *P. fulvolanata* and *P. myodermus* are based on the same collection, Thwaites 855, then his selection of *Pouzaromyces myodermus* must be followed (Art. 11.5). It is disconcerting that two different authors apparently studied the same type material and published two clearly different basidiospore dimensions for the same specimens.

Unfortunately, *Pouzaromyces* is not a usable name since the type species, *Nolanea fumosella* Winter, is represented by a description only and this description is considered by some authors to

represent a member of the Coprinaceae (Mazzer, 1976 and Noordeloos, 1992). Therefore a new combination is provided in an Appendix at the end of this paper.

*Pouzarella myoderma* may have some distant relationship to *P. squamifolia*, but is not conspecific with it. *P. myoderma* has tawny, not ferruginous fibrils and squamules on the basidiomata as found in *P. squamifolia*. Furthermore the cheilocystidia are pyriform in *P. myoderma* (vide Mazzer, 1976), not fusiform or clavate as found in *P. squamifolia*, and these cystidia are much smaller for *P. myoderma* 35-40 x 12-16 µm (vide, Mazzer, 1976).

### Key to *Pouzarella* species of the Caribbean Islands:

1. Pileus and stipe with a dense bright rusty-tawny or brick-red fibrillose or fibrillose scaly covering .....2
1. Pileus and stipe with grayish or grayish brown colors .....4
  2. Pileus, stipe and lamella edges turning black or fuscous when injured, cheilocystidia mainly globose, some inflated clavate, fusiform or ventricose-rostrate.....3
  2. Pileus, stipe and lamella edges not changing color when injured; cheilocystidia mainly fusiform or clavate, 54-100 x 18-28 µm; basidiospores 12-16 x 8.5-10.5 µm.....*P. squamifolia*
3. Stipe pallid or almost white from ground color, but may have a fine coating of yellowish or ferruginous hairs covering the colorless surface that turn fuscous when handled... *P. ferrerii* var. *pallidonigrescens*
3. Stipe ferruginous or brick-red from dense fibrillose or fibrillose-squamulose covering, ground color a pale lemon yellow, pileus similarly colored and adorned, pileus, stipe and lamella edges turning black when bruised, context white but quickly turning fuscous when exposed or watery grayish fuscous with age..... *P. ferrerii* var. *ferrerii*
4. Cheilocystidia absent; stipe dark grayish fuscous, short with the length approx. 2x time the pileus diameter ..... *P. domingensis*
4. Cheilocystidia present; variously colored; stipe more than 2x longer than the pileus diameter .....5
5. Pileus and stipe thickly covered with silvery lanate appressed fibrils, deep fuscous black ground color under fibrils; cheilocystidia clavate or cylindrical or broadly fusoid with thick uneven walls ..... *P. argenteolanata*
5. With pale to dark grayish brown colors and differently shaped cheilocystidia .....6
  6. Caulocystidia thick walled (0.8-2.4 µm), septate, cylindrical or tapered to a rounded apex, mostly of 2-4 cells, 40-120 µm long, often branched 2-3 times from a slightly swollen, thick-walled basal cell, with brown intraparietal pigments, not encrusted .....*P. nitens*
  6. Caulocystidia thin walled (less than 1 µm thick), terminal cell of caulocystidia variously shaped but most always inflated ventricose, ventricose-rostrate, pyriform, clavate, etc., not branched, with brown intraparietal pigments, and encrusted or not encrusted .....7
7. Odor of rotting fish, basidiospores 13-17 x 7-10.5 (mean dimensions 15.3 x 8.6 µm!)... *P. foetida* Mazzer
7. Odor not distinctive, basidiospores 14.5-18 x 9-11.5 µm (mean dimensions 16 x 10 µm) ..... *P. caribaea* T. J. Baroni & B. Ortiz

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It is a pleasure to dedicate this paper in honor of Dr. Jack D. Rogers who has contributed so much to our knowledge of macrofungi from temperate and tropical ecosystems.

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**Appendix: New combinations**

***Pouzarella myoderma* (Berk. & Br.) T. J. Baroni, basionym: *Agaricus myodermus* Berk. & Br. 1871. *J. Linn. Soc., Bot.* 11:523.**

***Pouzarella aureocrinitus* (Horak) T. J. Baroni, basionym: *Pouzaromyces aureocrinitus* Horak, 1983. *Cryptog., Mycol.* 4:25.**

***Pouzarella sepiaceobasalis* (Horak) T. J. Baroni, basionym: *Pouzaromyces sepaceobasalis* Horak, 1983. *Cryptog., Mycol.* 4:26.**

***Pouzarella erinaceus* (Horak) T. J. Baroni, basionym: *Pouzaromyces erinaceus* Horak, 1983. *Cryptog., Mycol.* 4:28.**