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Cuphophyllus pegleri sp. nov. (*Hygrophoraceae*) from the Lesser Antilles

D. JEAN LODGE[1,2]

Summary. A new species of *Cuphophyllus* in sect. *Virginei* is described and illustrated from the Lesser Antilles, and comparisons made with *Camarophyllus niveicolor*.

INTRODUCTION

In 1983, Pegler described collections from the Lesser Antillean islands of Martinique and Dominica of what were thought at the time to be Camarophyllus *niveicolor* (Murrill) Singer. Pegler (1 983) noted that collections from the Lesser Antilles had a distinct odour of mint, but that Murrill (1911) made no mention of odour in his original description of this species from Mexico. Although *C. niveicolor* is not easily distinguished from related species in the field, it has very large spores that easily separate it microscopically from other white species of *Cuphophyllus* sect. *Virginei* (Bat.) Singer.

During the British Mycological Society expedition to Cuyabeno in Amazonian Ecuador in 1993, Thomas Læssøe collected specimens of *Cuphophyllus* in sect. *Virginei* that closely resembled the type collection of *C. niveicolor* both macroscopically and microscopically. The Ecuadorian collection was completely odourless, which suggested that the collections which Pegler described from the Lesser Antilles might he an undescribed species and not *C. niveicolor*. Subsequent comparisons of the relevant collections revealed that the Lesser Antillean specimens differed from *C. niveicolor* in several microscopic features and the mint odour. This distinctive species is formally described and illustrated below in honour of David Pegler's mycological work in the Lesser Antilles and on the *Hygrophoraceae* of Puerto Rico.

TAXONOMIC DESCRIPTION

Cuphophyllus pegleri *Lodge,* **sp. nov.** *Camarophyllus niveicolor* (Murrill) Singer similis sed basidiomata grandiora, 7–18 mm lata, basidiosporae latiores, 10 – 15 × 8

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[1] Center for Forest Mycology Research, USDA-Forest Service, Forest Products Laboratory, PO Box 1377, Luquillo, PR 00773-1377, U.S.A.

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– 10.5 µm, hyphae carnis phlei et lamellarum inflatiores, 3 - 26 µm latae, hyphae pileipellis angustiores, 1.5 - 6 µm latae, menthae odorata. Holotypus: Dominica: St. Paul, Archibold Preserve, Sylvania, solitary between tree roots in primary hygrophytic forest, 630 m, 4 Nov. 1977, *D. N. Pegler* 3171, K(M) 50491.

Pileus 7 - 18 mm diam., broadly convex with a decurved margin, truncate-parabolic or nearly cylindric, with a small umbilicus; surface white, dry, smooth; margin crenate. *Lamellae* long decurrent, white, thick, distant, with few lamellulae. *Stipe* 10 - 40 × 1 - 4 mm, cylindric, tapering below, stuffed. Context white, fleshy, of loosely woven, hyaline hyphae 3 - 7 µm diam., some much inflated up to 37 µm diam., with clamp-connections; lactiferous hyphae with refractive contents, odour distinctive, resembling mint. *Basidiopores* 8.8–14.0 x 7.2 - 12.8 (mean 11.20 ± 1.21 × 9.85 ± 1.21) µm, mean Q = 1.14 ± 0.11, subglobose to broadly ovoid, hyaline, thin-walled with refractive, oleaginous contents. Basidia 55 - 70 x 7 - 10 µm, elongate clavate, 4-spored; sterigmata 5 - 7 µm long. *Cheilocystidia* and *pleurocystidia* absent. *Hymenophoral trama* irregular, of hyaline, interwoven hyphae 2 - 5 µm diam., many much inflated, up to 26 µm diam. *Subhymenium* 25 - 30 µm broad, composed of non-inflated interwoven hyphae. *Pileipellis* a little differentiated epicutis of subparallel repent hyphae 2 - 6 µm diam., only slightly inflated.

SPECIMENS EXAMINED. *Cuphophyllus pegleri*: DOMINICA. St. Paul, Archibold Preserve, Sylvania, solitary between tree roots in primary hygrophytic forest, 650 m, 4 Nov. 1977, *Pegler* 3171, Type K(M) 50491; MARTINIQUE. Plateau Perdroc, on forest floor, 27 Sept. 1977, *Pegler* 2878, K(M) 50497.

ADDITIONAL SPECIMENS EXAMINED. *Camarophyllus niveicolor*: ECUADOR. Prov. Napo, Cuyabeno, Lat. 0° 0', Long. 76° 10', Research Trail B, 7 Aug. 1993, *T. Læssøe* (D. J. Lodge EC-123), CFMR, PUCE; MEXICO: mountainside near Motzorongo, 15 Jan. 1910, *Murrill* 1050 (NY, type of *Clitocybe niveicolor*).

The description above is largely from Pegler (1983), except for spore Q. The mean spore Q given by Pegler (1983) for collections from the Lesser Antilles was 1.22, which corresponds exactly io the spores drawn using a drawing tube on a sheet enclosed with Pegler's collection 3171, and illustrated in Pegler (1983). However, measurement of apparently mature, non-collapsed spores in the lamellar mounts examined yielded mean spore Q's of 1.14 and 1.15 in collections 3171 and 2878, respectively. The spores of *Cuphophyllus pegleri* are significantly broader than those of *Camarophyllus niveicolor* (7.2 - 12.8 µm versus 6.4 - 8.2 µm; $p < 0.001$), and they are consequently subglobose to broadly ovoid (Fig. 1B) rather than ellipsoid as in *C. niveicolor* (Fig. 1D). The mean spore width given by Pegler (1983) for Lesser Antillean collections was 9.4 ± 0.66 µm, similar to my mean measurements of 9.63 and 10.25 from the same collections, and greater than the maximum spore width in both the type collection and the recent Ecuadorian collection of *C. niveicolor* (Table 1). An analysis of variance indicated significant differences in spore Q among the collections (Table 1, $p < 0.001$), and a post-hoc pairwise comparison of means using Tukey's test showed that the type collection of *C. niveicolor* from Mexico did nut differ significantly from the collection from Ecuador ($p = 0.145$) whereas spore Qs of the two collections of *Cuphophyllus pegleri* were

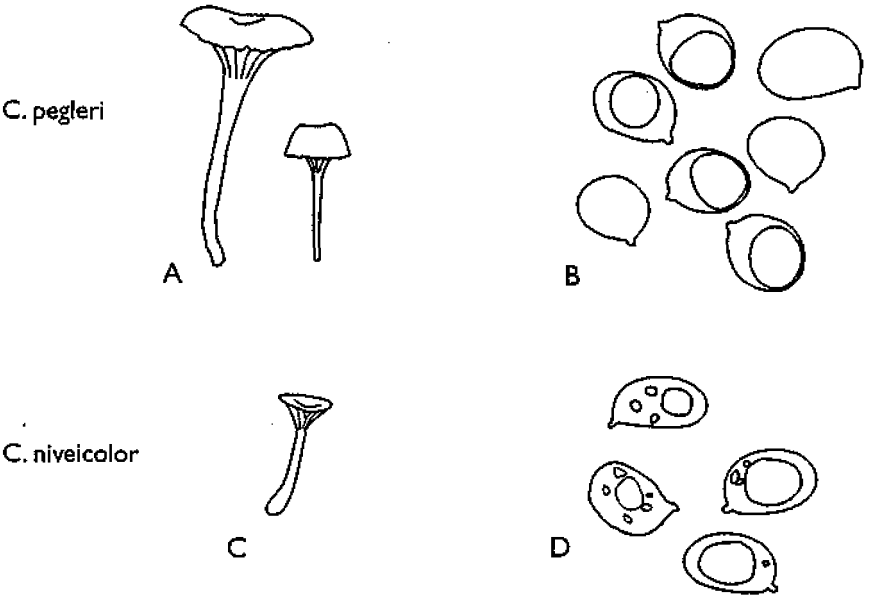

FIG. 1. *Cuphophyllus pegleri* and *Camarophyllus niveicolor*. **A** *Cuphophyllus pegleri* basidioines; **B** *C. pegleri* basidiospores; **C** *Camarophyllus niveicolor* Ecuador EC-123 basidiomes; **D** *C. niveicolor* EC-123 basidiospores.

TABLE 1. A comparison between *Cuphophyllus pegleri* and *Camarophyllus niveicolor.*

	C. niveicolor Type: *Murrill* 1050	*C. niveicolor* Ecuador: EC-123	*C. pegler* Type: *Pegler* 3171 & *Pegler* 2878
Pileus diameter (mm)	3–7	4–5	7–18
Stipe dimensions (mm)	10–15× 1–1.5	10 × 1 – 3	10–45× 1–4
Stipe shape	broader at base	broader at base	tapered to base
Odour	not noted	none	mint-like
Spore length (µm)	9.6 - 13.6	10.0 - 12.6	8.8 - 14
Spore width (µm)	6.4 - 8.2	6.8 - 8.8	(7.2 –) 8.8 - 12.8
Mean spore width (µm) ± std. deviation	7.57 ± 0.48	7.77 ± 0.50	9.85 ± 1.21
Mean spore Q ± std. deviation	1.55 ± 0.13	1.45 ± 0.13	1.14 ± 0.11
Spore shape	ellipsoid	ellipsoid	subglobose to broadly ovoid
Hymenophoral trama hyphae diameter (µm)	3.2 - 8(- 17)	4-10	2 - 26
Pileus context hyphae diameter (µm)	4 – 8	5.6 - 10	3-37
Pileipellis hyphae diameter (µm)	4–28	5.6 - 24	(1.5 –) 2.5 - 6

significantly different from both the Mexican and Ecuadorian collections of *Camarophyllus niveicolor* ($p < 0.001$). In addition, the tramal hyphae of *Cuphophyllus pegleri* are more inflated and the pileipellis hyphae narrower than in *Camarophyllus niveicolor* (Table 1). Characteristics of the type collection of *C. niveicolor* in Table 1 are from Hesler & Smith (1963) and confirmed by the author, except that Hesler & Smith (1963) reported lamellar trama hyphal diameters up to 17 µm diam. whereas I found hyphae only up to 8 µm diam. The pileus of *Cuphophyllus pegleri* is Larger than in *Camarophyllus niveicolor* (7 - 18 versus 3 - 7 mm diam.). The distinctive mint-like odour noted by Pegler in the Lesser Antillean specimens of *Cuphophyllus pegleri* was not noted in the type of *Camarophyllus niveicolor* nor in a recent collection of *C. niveicolor* from Ecuador.

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