Fungal Planet 651 – 20 December 2017

Ramaria cistophila P.P. Daniëls, M.P. Martín, C. Rojo & Camello, sp. nov.

Etymology. From Greek kistos (κιστός) and philos (φιλός), referring to its host plants affinity, which are mainly Cistus species.

Classification. — Gomphaceae, Gomphales, Phallomyctidae, Agaricomycetes.

Macroscopic characteristics. — Basidiomata branched, initially obconical or ovoid, then canpanulate or widely ovoid, 4–6 × 3–5.5 cm. Base glabrous, with basal branches 5–16 mm thick, white; mycelium inconspicuous, white. Ramification polychotomous in the basal zone, otherwise, usually trichotomous, U- and V-shaped, ramification range 3–6; branches cylindrical, initially densely grouped, then divergent; orange yellow to orange with orange yellow spore print. Apices obtuse, short, initially yellow, then concolorous with the branches. Context fibrous, compact, brittle in the branches, homogeneous, concolorous with external surface; taste sour in branches, softer through the base; flavour which reminds one of a rubber eraser. Chemical reactions: FSW (+) bluish green in hymenophore.

Microscopic characteristics. — Generative hyphae without clamps, partially with ampulliform septa up to 15 μm diam, with conspicuous granular ornamentation; hyphae of 4–9 μm wide in the trama, with thin to moderately thick walls; hyphae of the mycelium 2–4(–5) μm wide, with thin to moderately thick walls; those of the external part sometimes with amorphous crystalline or granular incrustations. Secretary hyphae in the trama and in the mycelium, the former linear and 2–4 μm wide, the latter acanthodendroid 1.5–3 μm wide. Hyphidia filliform, 2–4 μm wide. Basidia claviform, without basal clamp, (46--)50–73(–80) × (8.5--)9–11 μm, with 4 sterigmata. Spores oblong-elliptical, (8.5--)9.5–11.5(--13) × 4.5–5.5 (Lm = 10.9 μm; Wm = 4.7 μm; Em = 2.3); spore wall thin, yellowish with verrucose ornamentation.

Typus. Specimen. Spain, Zamora, Mellanes, La Sierra, alt. 840 m, shrubland of Cistus ladanifer, 19 Nov. 2015, C. Rojo, AH 47781 (holotype, Herbarium of Alcalá de Henares University; isotype, MA-Fungi 90716, Herbarium of the Real Jardín Botánico-CSIC, Madrid; ITS sequence GenBank MF564292, MycoBank MB822118).

Additional materials examined. Spain, Cáceres, Aliseda, alt. 450 m, shrubland of Cistus ladanifer, 24 Jan. 2015, F. Camello, AH 47771, ITS and LSU sequences GenBank MF564294 and MF564304; Cádiz, Jimena de la Frontera, Las Casillas, under Quercus suber, 29 Nov. 2014, A. Lobo, AH 47764; Cádiz, Jimena de la Frontera, Los Gavilanes, under Quercus suber and Cistus, 29 Nov. 2014, L. Estrada, AH 47775, ITS sequence GenBank MF564293; Zamora, Mellanes, La Sierra, alt. 840 m, shrubland of Cistus ladanifer, 2 Nov. 2015, C. Rojo, AH 47782.

Notes. — Although the appearance and micromorphology looks like a small-sized basidiome of Ramaria aurea, R. cistophila has a dark green positive reaction with FSW, it grows in a Mediterranean climate with Cistus shrubs and Quercus suber trees, and it has a different ITS sequence. Other quite similar uncamped species of Ramaria are R. neoformosa and R. fagetorum, but they have larger basidiomata and grow in the eurasierian region. Ramaria magnifica (= R. sardiniiensis) differs by bearing a violet to purple hue on the base context and has a different ITS sequence; R. dolomitica also has a violet hue when bruised. The molecular analyses (parsimony and maximum likelihood), based on three collections of Ramaria cistophila, and a number of previously unpublished sequences from our team, clearly grouped the new sequences with R. anizana (isotype) from Australia, collected under Nothofagus. However, R. anizana has shorter spores (7–10.5 μm long according to Young 2014), and has a pinkish colour on branches. Other closely related species is R. praecox from Europe but it is a vernal fruiting species with a different colour pattern, being completely yellow.

Colour illustrations. Spain, Zamora, Mellanes, shrubland of Cistus ladanifer: a. basidiome (AH 47781); b. basidiome (AH 47771); c. spores (AH 47785). Scale bar = 2 μm.

The single maximum likelihood tree obtained through heuristic search with the model GTR + I + G selected in PAUP v. 4.0b10. Sequences of Ramaria acrisiccescens were included as outgroup. Number at nodes represent percentage of bootstrap support from parsimony (first number) and maximum likelihood (second number) analyses; only bootstrap support > 50 % are indicated. The R. cistophila sequences are marked in bold. The accession numbers from GenBank sequences are indicated at all the terminals (* after GenBank Accession Number: new sequences obtained in this study).

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