COLLARIA CHIONOPHILA, A NEW MYXOMYCETE FROM SPAIN*

by

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Resumen


Se describe Collaria chionophila Lado, sp. nov., que se encontró junto a la nieve, en troncos y ramas grandes de coníferas (Pinus spp. y Abies alba).

Palabras clave: Myxomycetes, Collaria, España, taxonomía.

Abstract


Collaria chionophila Lado, sp. nov., was seen developing on fallen trunks and branches of conifers (Pinus spp. and Abies alba) near melting snow.

Key words: Myxomycetes, Collaria, Spain, taxonomy.

The nivicolous Myxomycetes of Spain are rather poorly known (cf. LADO, 1991). GRACIA (1986) published a short paper on three species from the Pyrenees, and a year later (GRACIA, 1987) reported two more from the pre-Pyrenees mountains. During the spring of 1991 we had the opportunity to collect several Myxomycetes in two mountain regions in Spain: the Sierra de Guadarrama, Central Spain, between the provinces of Madrid and Segovia (1200-2400 m alt.) and the Central Pyrenees, north of the province of Huesca, near Mt. Aneto (3404 m), one of the highest peaks in Spain.

We describe a new species of Collaria with distinctive morphological features, found on fallen trunks and large branches of conifers (Pinus sylvestris, P. uncinata and Abies alba) near melting snow banks and debris left by avalanches.

Collaria chionophila Lado, sp. nov.

Sporangia subnigra (ISCC-NBS: 235 p Black), stipitata, sparsa vel gregaria, globosa [0,8-1,2 mm diametro] vel subglobosa [(0,5-)0,6-1,04(-1,2) × (0,7-)0,8-1,2(-1,3) mm longa lataque]. Hypothallus disciformis. Stipes niger, erectus, robustus (0,4-)0,5-1(-1,1) mm altus. Peridium membranaeum, cito evanidum praeterquam quoad basim, ubi residua permanent annularia. Columella nigra, medium sporangium attingens (240-)280-640(-720) μm longa, subcylindrica. Capillitium nigrum, densum, e columellae parte superiore (1/3-1/2) enascens, filamenti diametro uniformibus, ramificatis, anastomotatis, extus coalitis sed et ostendentibus extremitibus liberas, nodulosas, dichotomas, obtusas. Sporae 9-10(-11) μm diametro, verrucose, uniformiter. Plasmodium ignotum.

* This contribution reports on a project within the “Flora Micológica Ibérica” (PR87-0370) and was supported by the DGICYT and CSIC.

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Figs. 1-4.—*Collaria chionophila* (SEM micrographs): 1, sporangium (5244 Lado) (scale bar = 100 μm); 2, columella and primary branches of the capillitium (5187 Lado, holotype) (scale bar = 100 μm); 3, spore (5244 Lado) (scale bar = 1 μm); 4, capillitium showing free ending dichotomous tips with irregular nodules (5238 Lado) (scale bar = 10 μm).
Holotypus. SEGOVIA: La Granja, road from mountain pass of Navacerrada to mountain pass of Los Cotos, 1840 m, 30TVL1616, on fallen trunk and big branches of *Pinus sylvestris* near melting snow, 29-V-1991, C. Lado, 5187 Lado, MA-Fungi 27723 (isotypus in the herbarium of N. E. Nannenga-Bremekamp sub No. 16664).

Sporangia (fig. 1) scattered to gregarious, in small groups, usually less than ten sporangia per group, stalked, globose, 0.8-1.2 mm diam. to subglobose, (0.5-)0.6-1.04(-1.2) x (0.7-)0.8-1.2(-1.3) mm, 1-2 mm in total height, purple black (ISCC-NBS: 235 p Black) to nearly black. Hypothallus well-developed, thin, discoid, sometimes adjacent hypothalli coalescing, reddish brown, shiny. Stipe erect, robust (0.4-)0.5-1(-1.3) mm in length, black in reflected light, very dark brown to black in transmitted light, red brown and netted in the lower 50-150 μm, subcylindrical, tapering slightly towards the apex (80-)120-240(-440) μm diam. at the base, 40-120(-140) μm diam. at the apex. Peridium membranous, evanescent but persisting as a collar (80-)100-240(-500) μm diam. at the base of the sporangium. Columella (fig. 2) attaining about one-half the height of the sporangium (240-)280-640(-720) μm high, black, subcylindrical to slightly conical, occasionally expanding towards the blunt apex. Capillitium dense, black or very dark brown, uniformly coloured, branching and anastomosing into a net, arising from the upper half or third of the columella (fig. 2), rather uniform throughout in diameter, not expanded at the axils, closed at the periphery but also with blunt dichotomous free ends covered with irregular nodules (fig. 4). Spores globose to subglobose, blackish in mass, violaceous brown by transmitted light, with a pale area, covered with evenly distributed warts (baculate under SEM, fig. 3), 9-10(-11) μm diam. Plasmodium unknown.

The name derives from the Greek *chion*, -onos (snow) and *philos* (loving), snow-loving.


Habitat. On fallen trunks and large branches of conifers (*Pinus* spp., *Abies alba*) near melting snow, in springtime.

Distribution. Mountain regions in Central and Northeastern Spain.

The similarity between our material and *Lamproderma* and *Comatricha* (genera linked by *Collaria*; cf. NANNENGA-BREMEKAMP, 1967) is obvious, but, in our opinion, the morphological characters of the new species agree with the concept of *Collaria*: i.e., peridium persistent as a collar, columnella ending abruptly near the centre of the sporangium and splitting near the apex into the branches of the capillitium.

*Collaria chionophila* combines features that distinguish it from all other known species of *Collaria* and *Lamproderma*: the nearly black sporangia and the dense, black capillitium radiating from the upper 1/2-1/3 of the columnella which is rather uniform throughout in diameters and closed at the periphery but also with numerous dichotomous free extremities bearing irregular nodules. *Collaria arcyronema* (Rostaf.) Nann.-Brem. ex Martin & Alexop. has a dense, branching and anastomosing capillitium but the primary branches are few and thick, the net has few free ends and lacks irregular nodules. In addition, the stalk is longer (two-thirds to three-fourths the total height; cf. MARTIN & ALEXOPOULOS, 1969: 212), the spores are smaller (6-8 μm diam.) and ornamented with clusters of larger, darker warts. This species is common in lowland areas (cf. KOWALSKI, 1970: 625).

Nannenga-Bremekamp (pers. comm.) sees a relationship with *Lamproderma colli-
Lakhanpal & Mukerji, a taxon described from India on Abies pindrow (cf. Lakhanpal & Mukerji, 1978: 10), but its spores are smaller, 7-8 µm diam. in the original description, emended to include specimens with spores (6-)7-9(-10) µm diam. by Nannenga-Bremekamp (1974: 237; 1983: 487), and with darker and larger clusters of warts; the peridium is persistent and iridescent, and the sporangia are smaller, (0.2-)0.4-0.6 mm diam.

Collaria biasperospora (Kowalski) Dhillon & Nann.-Brem. ex Ing (= Lamproderma biasperospora Kowalski) is also recorded from decaying coniferous wood, near melting snow (cf. Kowalski, 1968: 759; 1970: 629) and it also has an evanescent peridium. It differs, however, from C. chionophila in its small sporangia, 0.25-0.5 mm in diam, its capillitium forming a weak, lax net with numerous short free ends, all the branches arising from the apex of the columella and becoming progressively paler towards the extremities, and its spores which are spinulose with clusters of larger, darker warts.

C. chionophila, Lamproderma fuscatum Meylan and L. arcyrioides (Sommerf.) Rostaf. are rather similar. They are alpine and can have sporangia with similar dimensions, identical kinds of columellae and capillita arising predominantly from the apex or the upper half of the columella. However, L. fuscatum has a thick, firm and persistent peridium, capillitium forming a net with abundant sharp free ends, and dull, rust-coloured spores, capillitium and peridium (cf. Kowalski, 1970: 632). L. arcyrioides by contrast has an iridescent, normally persistent peridium, splitting irregularly into large fragments, usually firmly attached to the capillitial ends, a capillita with hyaline, usually minutely spotted extremities, and axial expansions on the primary branches (cf. Kowalski, l.c.).

Our species shares with Lamproderma nigricapillitium Nann.-Brem. & Bozonnet, a nivicolous taxon from France (cf. Nannenga-Bremekamp, 1989: 510), the form and dimensions of the sporangium and spores, and the dark capillitial filaments that are blunt and nodulose at their free ends. However, L. nigricapillitium has a longer columella (usually 2/3-4/5 of the sporangial height), with the capillitial branches joined to the whole length of the columella and conically expanded at their base (cf. Nannenga-Bremekamp, l.c.).

A capillitium with irregular nodules, particularly near at on its tips, is characteristic of Comatricha nodulifera Wollman & Alexop., which can be distinguished from Collaria chionophila by its capillitial ends being very pale (cf. Wollman & Alexopoulos, 1968: 157). Nodules are sometimes also present in/on the capillitium of other species, e.g. Enerthenema papillatum (Pers.) Rostaf. — compare Mitchell’s figures (Mitchell, 1978: 103) —, which is a variable and sometimes confusing taxon. However, as a rule this species can be recognized, apart from an apical peridial plate (rarely lacking), by its non-anastomosing capillitium; moreover, from C. chionophila, which is rather constant in its features (in 50 sporangia from 9 collections), it differs also in its slightly larger spores.

ACKNOWLEDGEMENTS

I wish to thank Mrs. N. E. Nannenga-Bremekamp for her advice and comments, Dr. M. Lainz, S.J., for his Latin translation and Dr. E. Descals for kindly checking the English.

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(Aceptado para publicación: 7-V-1992)