

COLLARIA CHIONOPHILA, A NEW MYXOMYCETE FROM SPAIN*

by
CARLOS LADO**

Resumen

LADO, C. (1992). *Collaria chionophila*, una nueva especie de mixomicete encontrada en España. *Anales Jard. Bot. Madrid* 50(1): 9-13 (en inglés).

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

LADO, C. (1992). *Collaria chionophila*, a new Myxomycete from Spain. *Anales Jard. Bot. Madrid* 50(1): 9-13.

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.

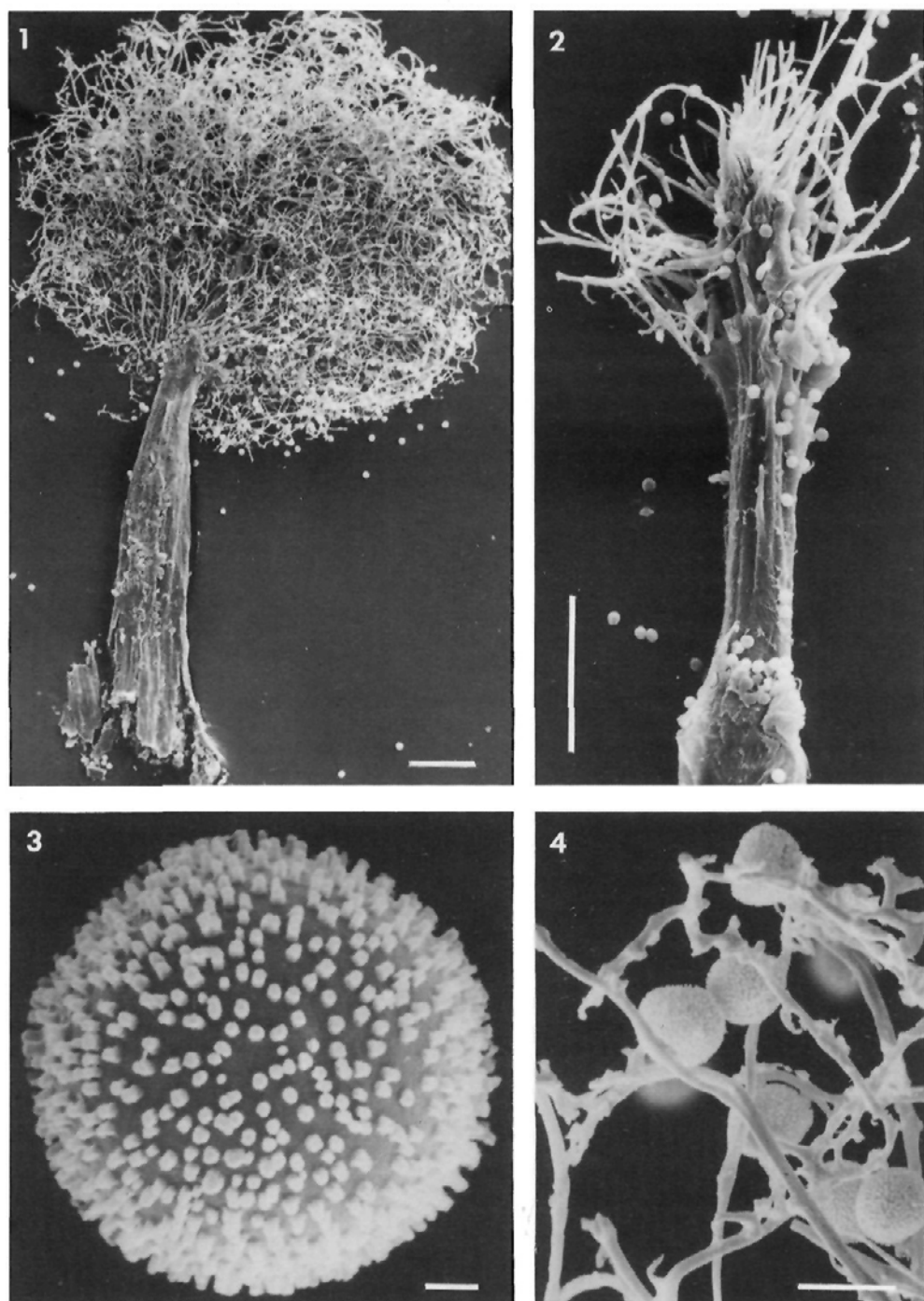
We describe a new species of *Collaria* with distinctive morphological features, found on fallen trunks and large branches of conifers (*Pinus sylvestris*, *P. uncinata* and *Abies alba*) near melting snow banks and debris left by avalanches.

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 membranaceum, 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, filamentis diametro uniformibus, ramificatis, anastomosatis, extus coalitis sed et ostendentibus extremitates liberas, nodulosas, dichotomas, obtusas*. *Sporae* 9-10(-11) μm diametro, *verrucose, uniformiter. Plasmodium ignotum*.

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** Real Jardín Botánico, CSIC. Plaza de Murillo, 2. 28014 Madrid.



Figs. 1-4.—*Collaria chionophila* (SEM micrographs): 1, sporangium (5244 Lado) (scale bar = 100 μ m); 2, columella and primary branches of the capillitium (5187 Lado, holotype) (scale bar = 100 μ m); 3, spore (5244 Lado) (scale bar = 1 μ m); 4, capillitium showing free ending dichotomous tips with irregular nodules (5238 Lado) (scale bar = 10 μ m).

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) × (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.

Collections examined. HUESCA: Benasque, Plan d'Estan, 1840 m, 31TCH0628, on fallen trunk of *Pinus*

uncinata near melting snow, 17-VI-1991, C. Lado & M. Dueñas, 5234 Lado, MA-Fungi 27728. Benasque, Pleta de la Renclusa, 1920 m, 31TCH0827, on fallen trunk of *P. uncinata* near melting snow, 18-VI-1991, C. Lado & M. Dueñas, 5238 Lado, MA-Fungi 27729. Benasque, Baños de Benasque, 1700 m, 31TCH0226, on fallen trunk of *Abies alba* in an avalanche, 18-VI-1991, C. Lado & M. Dueñas, 5243 Lado, MA-Fungi 27730; idem, 5244 Lado, MA-Fungi 27731. 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, 5163 Lado, MA-Fungi 27724; idem, 5179 Lado, MA-Fungi 27725; idem, 5190 Lado, MA-Fungi 27726; idem, 5204 Lado, MA-Fungi 27727.

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, columella 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 columella 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-*

nii 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 (\equiv *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 capillitia 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 capillitium 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.

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