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ADDITIONAL SPECIES OF CRUSTODERMA

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SUMMARY

Two new combinations, Crustoderma teustatum and Crustoderma sabinicum, are proposed. Basidiocarp and culture descriptions of C. testatum are included.

INTRODUCTION

In an earlier paper (Nakasone, 1984), I discussed nine species of Crustoderma.Since then I have found that two additional species, Corticium testatum Jackson et Dearden and Hyphodermasabinicum Manjón et Moreno, belong in Crustoderma. Methods and materials are described in Nakasone and Gilbertson (1982) and Nakasone (1984).

THE TAXA

Crustoderma sabinicum (Manjón et Moreno) Nakas., comb nov.

Basionym: Hyphoderma sabinicum Manjón et Moreno, Anales Jard. Bot. Madrid 40: 12. 1983.

Specimen examined: SPAIN--G. Moreno and J. L. Manjón No. 5614, on log of Juniperusthurifera L., Tamajón, Guadalajara, 7 I11 1980 (part of holotype received from Dr. J. L. Manjón, Universidad de Alcalá de Henares, Madrid).

Remarks: See Manjón and Moreno (1983) for a description and illustration of this species. Their figure clearly shows a thickening subhymenium and pedunculate basidia. These are important characters found in Crustoderma. In the holotype I examined, the basidiospores are slightly thick-walled, as in other species of Crustoderma.

Crustoderma sabinicum is very similar to 5. dryinum (Berk. et Curtis) Parm. but can be distinguished by three critical characters. First, the basidiocarps of the former species are lighter in color (Pale Ochraceous Buff with white margins) than in the latter. Second, although the basidiospore size overlaps, they are slightly wider in C. sabinicum (7-9 x (3.5-)4-4.5µm) than in C. dryinum (7.5-9.5 x 3.5-4(-4.5 µm)). Third, while C. dryinum has a worldwide distribution, C. sabinicum is known only from Spain.

I also received from Dr. Manjón a paratype specimen of H. sabinicum, G. M. and J.L.M. No. 5043. This specimen, however, is not

conspecific with the holotype No. 5614. Drs. J. L. Manjón and G. Moreno now believe that No. 5043 is a new species of Hyphoderma (personalcommunication).

Crustoderma testatum (Jackson et Dearden) Nakas., comb. nov. Fig. 1

Basionym: Corticiumtestatum Jackson et Dearden, Canad. J. Res., Sect. C, Bot. Sci. 27: 151. 1949.

Basidiocarp annual, effused, forming elongate, fusiform patches up to 60 x 20 mm, up to 250 µm thick, adnate; fertilearea continuous, smooth, with scattered warts, ceraceous, slightly velutinous, Cartridge Buff to Pinkish Buff; margin abrupt.

Hyphal system monomitic. Subiculum thin or absent, composed of tightly agglutinated hyphae arranged parallel to substrate; subicular hyphae 3.5-7.5 µm diam, evenly or irregularly thick-walled, nodose septate, much branched. Subhymenium thickening, up to 200 µm thick, composed of agglutinated, vertically arranged thick-walled cystidia and hyphae. Dendrohyphidia lobed or branched at apex, 40-50 x 1-5 µm, hyaline, thin-walled, clamped at basal septum, smooth, arising from hymenium. Cystidia of two kinds: (a) clavate to cylindrical, 40-75 x 8-30 µm, hyaline, slightly thick- to thick-walled, clamped at basal septum, smooth, not protruding, containing nonstaining, refractive and phloxine staining, nonrefractive materials, abundant throughout subhymenium and hymenium; (b) ventricose, 60-100 x 7–10 µm, hyaline, thin-walled, clamped at basal septum,

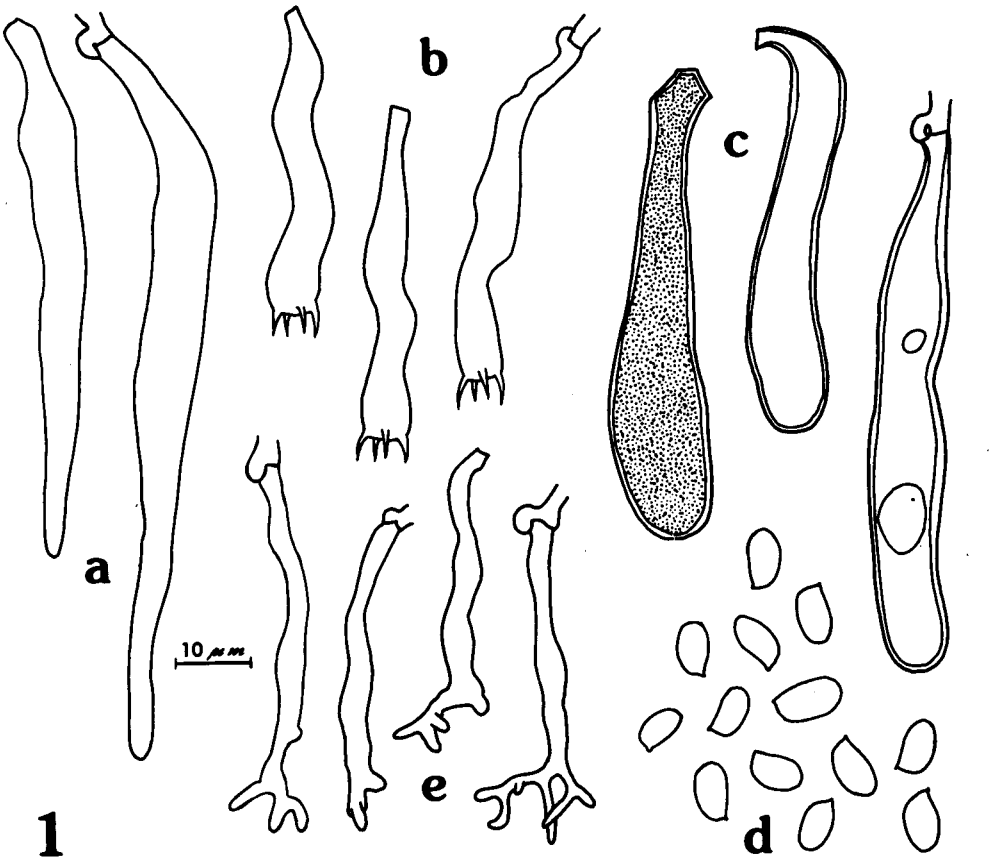

Fig. 1 (FP 133722)--a. Ventricose cystidia; b. basidia; c. clavate cystidia; d. basidiospores; e. dendrohyphidia. (ML84 5788)

smooth, protruding up to 65 µm, containing nonstaining, refractive and phloxine staining, non-refractive materials, numerous in hymenium. Basidia clavate, 30-50 x 5-6.5 µm, hyaline, smooth, thin-walled, clamped at basal septum, 4-sterigmate, sterigmata 4-5 µm long. Basidiospores ellipsoid, flattened on the adaxial side, 7-9.5 x 4-5 µm, hyaline, slightly thick-walled, smooth, negative in Melzer's reagent, acyanophilous.

Specimens examined: CANADA--BRITISH COLUMBIA: V-2627 on Pseudotsuga taxifolia (Lamb.) Britton, Cowichan Lake, Vancouver Island, 14 III 1947, coll. P. J. Salisbury (holotype, TRTC). U.S.A.--OREGON: FP 133722 on conifer, near Cougar Mountain, Lincoln County, 9 X 1973, coll. M. J. Larsen.

Culture description: Growth on 2% malt extract agar very slow, 55 mm diam by 6 wk, mats white, moderately thick, raised and woolly around inoculum, then becoming appressed and felty toward margin at 2 wk, by 6 wk white to Cream-Buff, moderately thick, zonate, appressed and felty around inoculum, then becoming slightly raised, short-woolly towards margins; margins even to slightly uneven, appressed; odor none at 2 wk, fruity at 6 wk; agar unchanged at 2 and 6 wk; not fruiting by 6 wk. Oxidase reactions on 0.5% gallic and tannic acid agars negative and with no growth. Microscopic characters--Advancing zone hyphae 2.5-4.5 µm diam, slightly thick-walled, nodose septate, sparingly branched. Submerged and aerial hyphae 2-5.5(-10) µm diam, slightly thick-walled at first, then becoming irregularly thick-walled, nodose septate, moderately to frequently branched. Aerial mat with numerous, yellow, refractive globules. Chlamydospores globose to limoniform, 13.5-16 x 9-12 µm, hyaline, thin-walled at first, then becoming thick-walled, intercalary, scattered in submerged and aerial mats at 2 and 6 wk.

Remarks: Crustoderma testatum is easily distinguished from other species in the genus because it has dendrohyphidia and two kinds of cystidia. It is associated with a brown rot of conifers in British Columbia and the Pacific Northwest region of the U.S.A.

The specimen from Oregon is well developed, and the basidiocarp description is based primarily on that specimen. I also noticed some minutely rough-walled basidiospores in the specimen. Because these spores are smaller than the smooth basidiospores, I believe that they are immature basidiospores. The holotype specimen from British Columbia, however, is poorly developed. It lacks dendrohyphidia and a distinct, thickening subhymenium. The context consists of a gelatinous matrix with scattered hyphae and thick-walled, clavate cystidia. Despite these differences, I am convinced that the two specimens represent the same species. The size and shape of the two types of cystidia, basidia and mature basidiospores of the two specimens are similar.

ADDENDUM TO: KEY TO THE SPECIES OF CRUSTODERMA

In a key to the species of Crustoderma, both C. sabinicum and C. testatum key out to the same place, couplet 11 (Nakasone 1984, p. 49). The key section found below incorporates the two species treated here into my earlier key.

11a. With two types of cystidia, thin-walled, ventricose and thick-walled, clavate cystidia. . . . . C. testatum

11a. With one type of cystidia 11.b

llb. Basidiocarps nearly white (Pale Ochraceous-Buff); known only from Spain. . . . . C. sabinicum
llb. Basidiocarps not white and not limited to Spain 11.c
llc. Rare species, known only from Austria and Fennoscandia . . . . . C. longicystidium
llc. Common species, widely distributed . . . . . .C. dryinum

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