Two new polypores from Malawi

Mycologia Helvetica 5: 143 – 148, 1992

Two new polypores from Malawi

by Anxious J. Masuka,
Forestry Research Centre, P.O. Box 595
Highlands, Harare, Zimbabwe

and

Leif Ryvarden
Department of Botany, University of Oslo
P.O. Box 1045 Blindern, N-0316 Oslo, Norway.

Abstract. *Coltricia africana* and *Fomitopsis widdringtoniae* are described as new species from the Mulanje Mountains in Malawi. The former ist separated from the related and widespread *C. cinnamomea* (Pers.) Murr. by smaller pores and spores. *F. widdringtoniae* is related to *F. spraguei* (Berk. & Curt.) Gilbn. & Ryv. which however, is restricted to hardwoods and has larger spores.

The Mulanje Massif is a spectacular volcanic mountain in the southern part of Malawi with peaks up to about 3000 m about sea level. The area has the largest natural forests of *Widdringtonia nodiflora* (L.) Powrie in Africa. *Widdringtonia* is related to *Juniperus*, separated in principle only by having dry cones contrasting the fleshy berry-like cones of *Juniperus*.

Widdringtonia is endemic to southern Africa (see Palgrave 1988: 60 for maps and descriptions of all known species). Considering its primitive status and isolated situation, it seemed worthwhile to make a detailed investigation of *Widdringtonia's* wood-inhabiting fungal flora. It is a well known principle that quite often the antiquity of the host reflects that of its parasites. Further, one of us (L.R.) had previously collected on the mountain (1973) and the many interesting collections then made it tempting to undertake a more comprehensive inventory.

We thus visited the area in January 1992 and made a total of 280 collections, mainly on *Widdringtonia*. A complete list of recorded species including results from cultural studies, will be published later.

Here we describe two new species first collected in 1973 and since then filed as "nova species"". This time we found more specimens that enabled a detailed study. In addition their type of rot has been acertained and confirmed their status as undescribed species.

Coltricia africana Maskua & Ryvarden nov. sp.

Fructificatio stipitata, pileus pubescens, brunneus, pororum facies brunneum, stipes centrales brunneus, pori 6-7 per mm, systema hypharum monomiticum, hyphae generatoriae afibulatae, sporae ellipsoideae, hyalinae ad pallidas aureas, 4-5 x 5-6(7) um.

Holotypus: Malawi, Southern prov. Thylo district, Mulanje Mts, Lichenya hut. 10 March 1973, Ryvarden 11393 (O), Isotypus in K. Other specimen: Same locality 25 January 1992, Ryvarden 31458 (O).

Basidiocarp annual, stipitate, up to 8 cm high, pileus funnel shaped, circular with a wavy margin, strongly curled inwards when dry, um 10 cm in diameter, upper surface warm rusty brown, soft and adpressed velutinate, becoming almost glabrous in zones with age, narrowly concentrically zonate, stipe 2-10 mm in diameter, slightly swollen at the base, colour and surface concolorous with that of the pileus, in section with a darker denser core; hymenophore rusty brown, pores 6-7 per mm, almost invisible to the naked eye, tubes up to 4 mm deep; context dense and homogenous, 1-4 mm thick, soft an pilable when fresh, stiffer when dry.

Hyphal system monomitic, generative hyphae with simple septa, richly branched on the pileus, in the trama and context running parallel in a dense structure, 4-7.5 um in diameter with thickened walls, hyaline in the subhymenium, otherwise pale yellow to rusty brown; setae absent; basidia barrel shaped, 12-15 x 6-8 um with 4 sterigmata; spores ellipsoid, smooth, 4-4.5(5) x 4.5-6(7) um, slightly dextrinoid.

On the ground under *Widdringtonia nodiflora*.

Known only from the type locality.

The new species is seemingly close to *C. cinnamomea* (Pers.) Murr. (for a description, see Gilbertson & Ryvarden 1986:203), but is distinctly separated by its smaller pores and spores (2-4 per mm and 6-10 x 4.5-7 um respectively). The pileus surface is however identical in the two species.

Coltricia is an interesting genus as it has been demonstrated that the type species, *C. perennis* (Fr.) Murr. may have a mycorrhizal association (Danielson, 1984). It is our guess that this will also be the case for the new species, probably connected to *Widdringtonia nodiflora* under which it was found. We were unable to produce a spore print necessary to prove such a association in culture.

Fomitopsis widdringtoniae Masuka & Ryvarden nov. sp.

Basidiocarp pileata usque ad 3 cm lata, 5 cm longa, 1.5 cm crassa, pileus albus, laeves, pori facies albus, pori 5-6 per mm, contextus albus, systema hypharum trimiticum, hyphae generatoriae fibulatae, hyphae skeletales et ligativae hyalinae, sporae globosae, laeves, tenuitunicatae, 4.5-5 um in diametero.

Holotypus: Malawi, Southern province, Thylo distr. Mulanje mts. Lichenya hut 25 January 1992, on dead *Widdringtonia nodiflora* with distinct brown cubical rot. Ryvarden 31459 (O), isotypus in K.

Basidiocarp annual, pileate, sessile, up to 3 cm wide, 5 cm long and 1.5 cm thick, corraceous when fresh, shrinking when dried and then dense and woody, upper surface whitish with some greyish to dirty brown spots and streaks, smooth and azonate, pore surface white, pores 5-6 per mm, round and entire, becoming greyish and soiled when dried, tubes white when fresh, up to 4 mm deep, context white, pale dirty whitish with some slight concentric zones when dry, up to 1 cm thick at the base.

Hyphal system trimitic, generative hyphae with clamps, hyaline, 2-3 cm wide in the subhymenium, 2-5 um um wide in the context, skeletal hyphae thick-walled, hyaline, 3-5 um in diameter, binding hyphae rare, tortuous, apparently solid, 2-5 um wide, basidia clavate, 18-22 x 5-6 um with four sterigmata, cystidioles present in the hymenium, ventricose to bottle-shaped, smooth, thin-walled, up to 18 um long, spores globose, smooth, thin-walled, IKI negative, 4.5-5 um in diameter. On stumps of *Widdringtonia nodiflora* with a distinct brown cubical rot. The trimitic hyphal system and the brown cubical rot clearly place this species in *Fomitopsis*, which includes species with just these characteristics. The new species is related to *Fomitopsis spraguei* (Berk. & Curt.) Gilbn. & Ryv. (For a description, see Gilbertson & Ryvarden 1986:284), which however, has larger and ovoid to ellipsoid spores (5.5-7 x 4-5 um). *F. spraguei* has only been collected on hardwoods in the Northern hemisphere.

Bibliography

Danielson, R.M. 1984. Ectomycorrhizal association in jack pine stands in Northern Alberta. Can. J. Bot. 62:932-939.

Gilbertson, R.L. & Ryvarden, L. 1986. North American Polypores 1:1-433. Fungiflora, Oslo, Norway.

Palgrave, K.C. 1988. Trees of Southern Africa. Struik Publishers, Cape Town, South Africa, 959 pp.

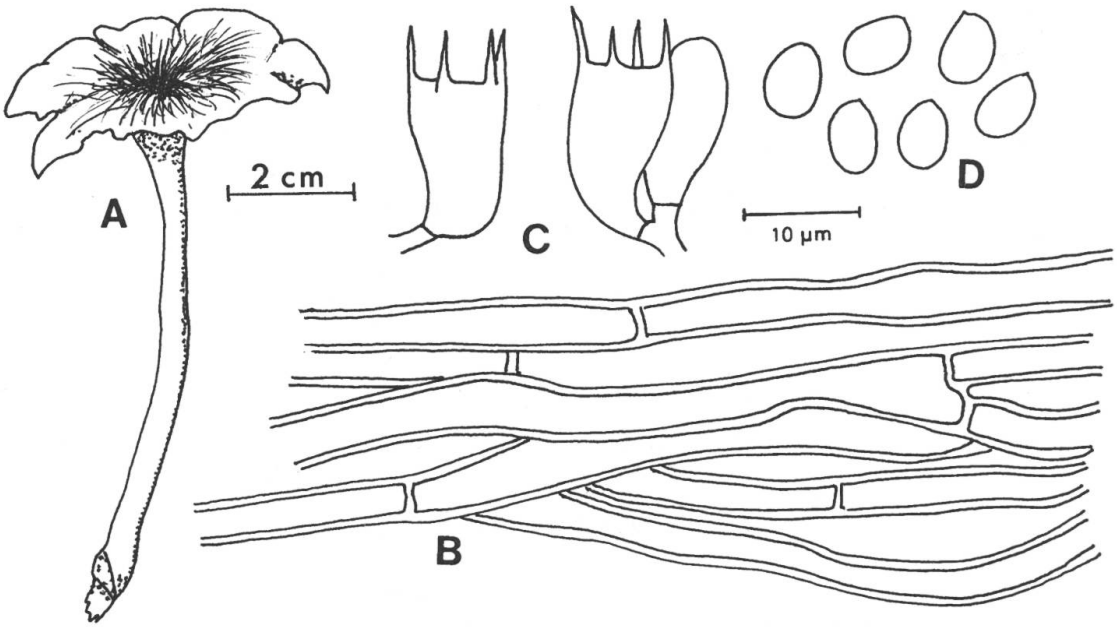

Fig. 1. *Coltricia africana* A) Basidiocarp, B) hyphae from the context, C) basidia, D) spores. From the holotype.

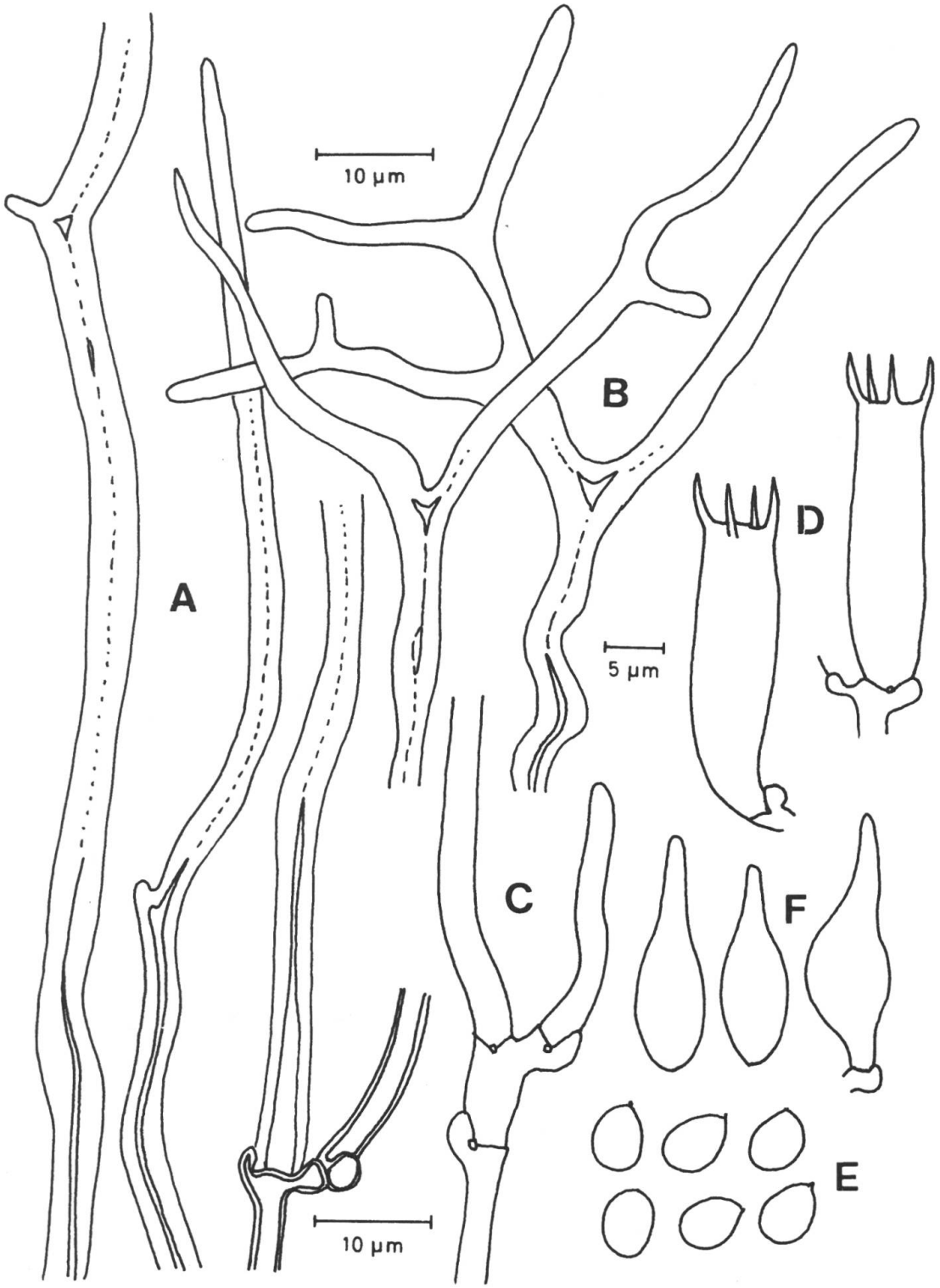

Fig. 2. *Fomitopsis widdringtoniae* A) skeletal hyphae, B) binding hyphae, C) generative hypha, D) basidia, E) spores, F) cystidiols. From the holotype.