

***ECHINOPLACA FURCATA*, A NEW SPECIES OF FOLICOLOUS LICHEN (GOMPHILLACEAE) FROM RWANDA**

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Summary. - *Echinoplaca furcata* Sérusiaux is described as new from Rwanda (Central-East Africa) where it is epiphyllous in montane rain forest. It is easily distinguished by its repeatedly and irregularly branched cilia growing on the prothallus and by the presence of needle-shaped crystals on the surface, emanating from the disintegrating excipulum.

Generic concepts in the lichen family Gomphillaceae W. Watson ex Hafellner have been recently revised by Vězda & Poelt (1987) who recognize ten genera : *Gomphillus* Nyl., *Actinoplaca* Müll. Arg., *Aulaxina* Fée, *Bullatina* Vězda & Poelt, *Calenia* Müll. Arg., *Caleniopsis* Vězda & Poelt, *Echinoplaca* Fée, *Gyalectidium* Müll. Arg., *Gyalideopsis* Vězda and *Tricharia* Fée. Since their survey of accepted taxa in these genera, thirty-one additional species have already been described (Kalb & Vězda 1988, Sérusiaux & De Sloover 1986, Vězda & Hafellner 1988); this clearly

demonstrates how widespread, diverse and poorly known the family is, especially in tropical areas.

Much work remains to be carried out in this family, even at the generic level. Indeed there is little doubt that the following genera belong to it : *Epilithia* Nyl., *Microlynchus* Funk, *Microspatha* P. Karsten and *Szczawinskia* Funk (Funk 1973 and 1983; Seifert 1985).

The aim of this paper is thus rather modest as it deals with just a single new foliicolous species of *Echinoplaca* found in Rwanda (Central-East Africa).

Echinoplaca furcata Sérusiaux sp. nov.

Fig. 1.

Thallus epiphyllus, dispersus, viridulus vel cinereo-viridis, cum albis verrucis e crystallis compositis, hyphophoris instructus; hyphophori 0.4(-0.5) mm longi, albidii vel pallido brunnei, setiformes, arcuati, cum conidica massa. Prothallus pilis instructus; pili 0.6-0.8 mm longi, albidii vel pallide brunnei, simplices vel irregulariter ramosissimi.

Apothecia orbicularia, 0.3-0.5(-0.7) mm lata, aurantiaco-brunnea; excipulum crystallis albis acicularibus mox obtectum, demum fatiscens et crystallinescens.

Hymenium 45-55 μm altum cum luteo-brunneo epihymenio; paraphyses ramosae anastomosantesque; asci 1-spore, saccati; sporae ellipsoideae usque fere sphaericae, murales, (26-)28-42 x (38-)40-52 μm .

Alga cellulis globosis viridibus, 10-12 μm diam., ad familiam Chlorococcacearum verosimiliter pertinens.

Thallus epiphyllous, up to 1.2 cm large, made up of orbicular to irregular patches not exceeding 0.4 mm in diam., greenish to grey-green, or almost pure white when covered with crystals, rather shiny, covering irregular clusters of angular crystals which give it a verrucose appearance (verrucae paler than the thallus, 0.2-0.5 mm in diam.), with a large (up to 0.6 cm wide) translucent prothallus between and around the patches. Corticiform layer of hyaline interwoven hyphae.

Cilia numerous over the prothallus, 0.6-0.8 mm long, simple and tapered towards their tip or repeatedly and irregularly branched, sometimes forming a mat of entangled threads around the thallus patches, whitish to pale brown, usually dirty because of accumulations of various fragments (incl. plants diaspores, and pollen grains).

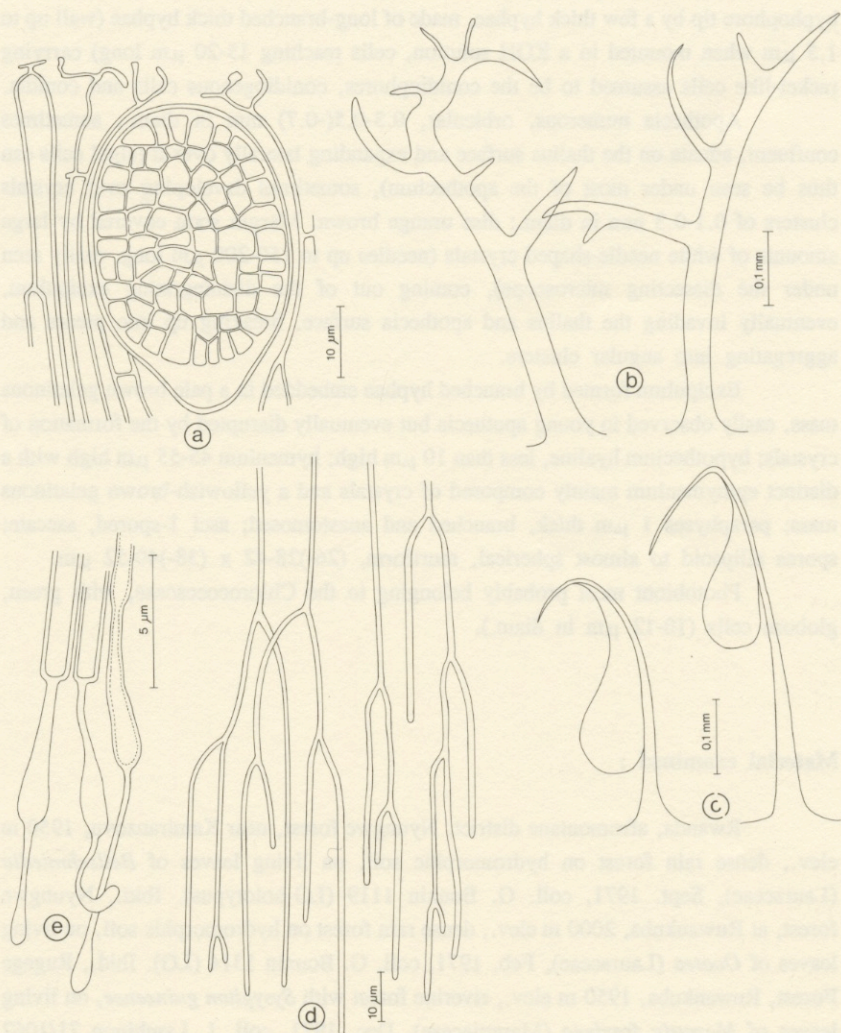


Fig. 1. *Echinoplaca furcata* Sérusiaux, holotype.

a - Hymenium, including an ascus with immature spore. b - Cilia. c - Hyphophores. d - Detail of the conidial mass (squash in water). e - Detail of the racket-like cells at the ends of hyphae present in the conidial mass.

Hyphophores absent on most specimens examined but numerous when present, growing only on thallus patches, 0.4(-0.5) mm long, whitish to pale brown, looking like long cilia, curved downwards near their tip, carrying a single conidial mass which is tear-shaped and stuck to the axis. Conidial mass hanging on the hyphophore tip by a few thick hyphae, made of long-branched thick hyphae (wall up to 1.5 μm when mounted in a KOH solution, cells reaching 15-20 μm long) carrying racket-like cells assumed to be the conidiophores, conidiogenous cells and conidia.

Apothecia numerous, orbicular, 0.3-0.5(-0.7) mm in diam., sometimes confluent, adnate on the thallus surface and expanding laterally over it (algal cells can thus be seen under most of the apothecium), sometimes developing over crystals clusters of 0.1-0.3 mm in diam.; disc orange brown. Margin soon covered by large amounts of white needle-shaped crystals (needles up to 150-200 μm long, easily seen under the dissecting microscope), coming out of the disintegrating excipulum, eventually invading the thallus and apothecia surface, breaking up into pieces and aggregating into angular clusters.

Excipulum formed by branched hyphae embedded in a pale brown gelatinous mass, easily observed in young apothecia but eventually disrupted by the formation of crystals; hypothecium hyaline, less than 10 μm high; hymenium 45-55 μm high with a distinct epihymenium mainly composed of crystals and a yellowish-brown gelatinous mass; paraphyses 1 μm thick, branched and anastomosed; asci 1-spored, saccate; spores ellipsoid to almost spherical, muriform, (26-)28-42 x (38-)40-52 μm .

Photobiont most probably belonging to the Chlorococcaceae, with green, globose cells (10-12 μm in diam.).

Material examined :

Rwanda, afromontane district, Nyungwe forest, near Kamiranzovu, 1950 m elev., dense rain forest on hydromorphic soil, on living leaves of *Beilschmiedia* (Lauraceae), Sept. 1971, coll. G. Bouxin 1119 (LG-holotypus). Ibid., Nyungwe forest, at Ruwankuba, 2000 m elev., dense rain forest on hydromorphic soil, on living leaves of *Ocotea* (Lauraceae), Feb. 1971, coll. G. Bouxin 1314 (LG). Ibid., Rugege Forest, Ruwankuba, 1950 m elev., riverine forest with *Syzygium guineense*, on living leaves of *Marattia fraxinea* (Marattiaceae), Dec. 1971, coll. J. Lambinon 71/1062 (LG). Ibid., Rugege Forest, hill between Muzimu Mt and Bigugu, ahead of river Kalundra, 2350 m elev., dense rain forest, on living leaves of *Schefflera myriantha* (Araliaceae), March 1972, coll. J. Lambinon 72/958 (LG).

Echinoplaca furcata is easily distinguished from all other representatives of the Gomphillaceae by its repeatedly and irregularly branched cilia growing only on the prothallus. To my knowledge, no other species presents these criteria. Cilia growing on the prothallus are rare in the genus *Echinoplaca* : only *E. atrofusca* R. Sant. has pale brown simple hairs on its prothallus.

E. furcata has an apothecium anatomy and hyphophores typical of the genus and there is thus no doubt about its generic position.

Echinoplaca furcata is also easily separated from other *Echinoplaca* species with 1-spored asci (*E. epiphylla* Fée and *E. similis* Kalb & Vězda) by the presence of long needle-shaped white crystals, at least on the excipulum outer surface. These crystals are not an artefact as in the four above cited collections, they are restricted to *E. furcata*, and are not present on associated species, including other representatives of the Gomphillaceae.

Acknowledgements

I am much indebted to Dr G. Bouxin and Prof. J. Lambinon who placed their valuable collections at my disposal. Prof. J. Lambinon and Dr B.J. Coppins are also to be thanked for their advice in improving the manuscript.

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