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TWO NEW FOLIICOLOUS LICHENS FROM TROPICAL AFRICA

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In the course of studying large collections of foliicolous lichens from tropical Africa, the following two new species have been discovered.

Byssoloma vanderystii Sérusiaux sp. nov.
(Fig. 1)

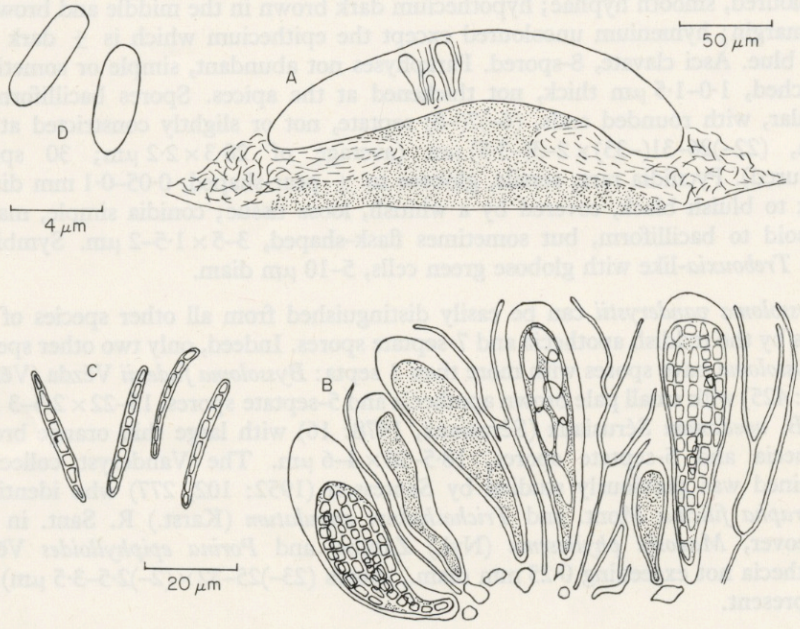

FIG. 1. *Byssoloma vanderystii* (holotype). A, Vertical section of apothecium. B, Hymenium. C, Ascospores. D, Conidia.

Thallus ± orbicularis, continuus vel versus peripheriam dispersus, laevis vel minute farinosus, cinereo-viridis vel atroviridis, 10–20 μm crassus; apothecia orbicularia, 0·2–0·6 mm diam, 0·2–0·25 mm crassa, sessilia; discus primum planus sed celeriter valde convexus, atroruber, margo byssaceus, albidus vel brunneolus, 0·1–0·2 mm latus. Excipulum subhypotheciale ± paraplectenchymaticum, ad latera hymenii ex hyphis hyalinis dense intricatis contextum hypothecium atrofuscum in parte centrali, fuscum ad marginem, hymenium hyalinum, 65–75 μm crassum, I + caeruleum. Asci clavati, 8-spori. Paraphyses simplices vel interdum

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ramosae, 1–1·5 μm crassae. Sporae bacilliformes–aciculares, 7-septatae, ad septa non vel paulum constrictae, 26–31 × 2–3 μm. Pycnidia sessilia, globosa, 0·05–0·1 mm lata, atra; conidia exobasidialia, simplicia, generaliter ellipsoidea, 3–5 × 1·5–2 μm. Alga cellulis globosis, viridibus, 5–10 μm crassis.

Typus: Zaïre, Banza Boma (15° 09′ E, 04° 57′ S). 1932, *H. Vanderyst 31679* (BR—holotypus).

Thallus ± circular, covering large surfaces of the leaf, continuous or in the peripheral part dispersed, smooth to very slightly farinose, greenish grey to dark green, 10–20 μm thick. Apothecia not very abundant, circular, 0·2–0·6 mm diam, (margin included), sessile to slightly constricted at the base; disc plane when young but becoming rapidly strongly convex, reddish black with a dark red ring; margin byssoid, 0·1–0·2 mm thick, whitish to pale brown, spreading laterally over the thallus while becoming gradually thinner towards the edge. Excipulum ± paraplectenchymaticous below the hypothecium, laterally formed by loosely woven, uncoloured, smooth hyphae; hypothecium dark brown in the middle and brown at the margin; hymenium uncoloured except the epithecium which is ± dark red, I + blue. Asci clavate, 8-spored. Paraphyses not abundant, simple or sometimes branched, 1·0–1·5 μm thick, not thickened at the apices. Spores bacilliform to acicular, with rounded ends, (6–)7(–8) septate, not or slightly constricted at the septa, (22–)26–31(–33) × 2–3(–3·5) μm (average of 28·3 × 2·2 μm; 30 spores measured). Pycnidia rare, sessile, globose to ± pear-shaped, 0·05–0·1 mm diam., black to bluish black, covered by a whitish, loose tissue; conidia simple, mainly ellipsoid to bacilliform, but sometimes flask-shaped, 3–5 × 1·5–2 μm. Symbiotic alga: *Trebouxia*-like with globose green cells, 5–10 μm diam.

Byssoloma vanderystii can be easily distinguished from all other species of the genus by the reddish apothecia and 7-septate spores. Indeed, only two other species of *Byssoloma* have spores with more than 3 septa: *Byssoloma fadenii* Vězda (Vězda, 1975: 425) with small pale brown apothecia and 5-septate spores, 15–22 × 2·5–3 μm, and *B. vezdanum* Sérusiaux (Sérusiaux, 1978: 16) with large thin orange brown apothecia and 5-septate spores, 18·5–28 × 4–6 μm. The Vanderyst collection examined was previously studied by Santesson (1952: 102, 277) who identified *Opegrapha filicina* Mont. and *Trichothelium annulatum* (Karst.) R. Sant. in it.* Moreover, *Mazosia phyllosema* (Nyl.) Zahlbr. and *Porina epiphylloides* Vězda (perithecia not exceeding 0·25 mm diam., spores (23–)25–32 × (2–)2·5–3·5 μm) are also present.

Porina pseudofulvella Sérusiaux sp. nov.

(Fig. 2)

Thallus tenuis, maculis orbicularibus, ± confluentibus constitutus, aurantiaco-brunneus, opacus. Perithecia copiosissima, verrucas hemisphaericas, thallo tectas, 0·1–0·2 mm diam, formantia, thallo concoloria, leviter nitida, ± translucida. Paries externus pallide brunneus, K+ fusco-rubens, strato algifero obductus. Paries internus flavescens vel hyalinus. Asci clavati, 8-sporae. Paraphyses simplices, ± flexuosae, ±1 μm crassae. Sporae fusiformes, apicibus obtusis, 3-septatae, 18–23 × 2·5–3 μm. Algae ad *Phycopeltis* pertinentes.

Typus: Kenya, Karura forest, 1750 m, semi-deciduous xerophilous forest with *Croton megalocarpus*, *Albizzia gummifera*, *Teclea*, etc., epiphyllous on leaves of *Rawsonia lucida*, 1975, *Lambinon 75/220* (LG—holotypus; hb. Vězda—isotypus).

* Santesson incorrectly gave the locality as 'Bonga Boma, Sanda'; it is correctly 'Banza Boma' in the Province of Sanda (see Bamps, 1968: 11).

Thallus thin, formed by monocarpous, later confluent patches, finally covering large areas of the leaf surface, orange brown to brown, opaque, totally dominated by the algal layer. Perithecia very abundant, lens-shaped with their basal part slightly spreading, 0·1–0·2 mm diam, orange brown, concolorous with the thallus,

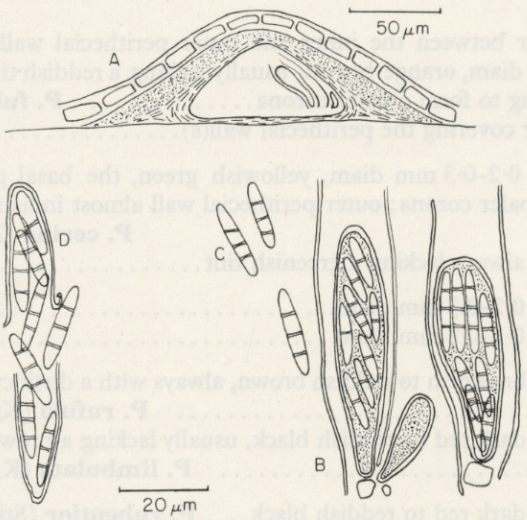

FIG. 2. *Porina pseudofulvella* (holotype). A, Vertical section of perithecium. B, Hymenium. C, Ascospores. D, Mature ascus.

slightly nitidous and almost translucid. Outer perithecial wall light brown, K + brownish red, covered by the algal layer. Inner perithecial wall yellowish or uncoloured. Asci clavate, 8-spored. Paraphyses simple, ± flexuose, ±1 μm thick. Spores fusiform with obtuse ends, 3-septate, 18–23 × 2·5–3 μm. Symbiotic alga: *Phycopeltis* with rectangular cells regularly radiately arranged.

Other specimens examined: **Kenya**: Karura forest, 1750 m, epiphyllous on leaves of *Drypetes gerradii*, 1975, *Lambinon 75/215* (LG), of *Uvariodendron anisatum*, *Lambinon 75/216* (LG), and of *Teclea villosa*, *Lambinon 75/218*, *75/219* (LG).

Porina pseudofulvella was found in a collection of lichens made by Lambinon in the Karura forest, north of Nairobi, alt. 1750 m, in 1975. This is a semi-deciduous xerophilous forest with *Croton megalocarpus*, *Albizzia gummifera*, *Teclea*, etc., and foliicolous lichens were collected on leaves of *Drypetes gerrardii* (*Lambinon 75/215*), *Uvariodendron anisatum* (*Lambinon 75/216*), *Teclea villosa* (*Lambinon 75/218*, *75/219*), *Rawsonia lucida* (*Lambinon 75/220*, *75/234*) and *Teclea simplicifolia* (*Lambinon 75/264*). The following further nine species have been determined in this collection: *Calenia caucasica* (Elenk. & Woronich.) Vězda, *Mazosia melanophthalma* (Müll. Arg.) R. Sant. (new to Kenya), *Porina epiphylla* (Fée) Fée (Vězda, *Lich. Sel. Exs.*, no. 1526), *Raciborskiella prasina* (Müll. Arg.) R. Sant. (new to Kenya, mainly epiphyllous; Vězda, *Lich. Sel. Exs.*, no. 1527), *Strigula elegans* (Fée) Müll. Arg., *S. nemathora* Mont., *S. maculata* (Cooke & Massee) R. Sant. (new to Kenya), and

Sporopodium xantholeucum (Müll. Arg.) Zahlbr. As the perithecial wall of *Porina pseudofulvella* reacts K + intensely red and without the formation of any crystals, it clearly belongs to the *Porina rufula*-group as understood by Santesson (1952: 199–211). The following key should permit identification of any specimen of the *rufula*-group with lens-shaped perithecia and 3-septate spores (see also Sérusiaux, 1977: 40).

1. Algal layer between the inner and outer perithecial wall; perithecia 0·2–0·4 mm diam, orange brown, usually lacking a reddish tint, the basal part spreading to form a paler corona..... **P. fulvella** Müll Arg.
Algal layer covering the perithecial wall(s).....2

2(1). Perithecia 0·2–0·3 mm diam, yellowish green, the basal part spreading to form a paler corona; outer perithecial wall almost indistinct or absent... **P. cerina** (Zahlbr.) R. Sant.
Perithecia always lacking a greenish tint.....3

3(2). Perithecia 0·2–0·3 mm diam.....4
Perithecia 0·1–0·2 mm diam.....5

4(3). Perithecia brownish to reddish brown, always with a distinct red tint; thallus brown..... **P. rufula** (Krempelh.) Vainio
Perithecia dark red to reddish black, usually lacking a brownish tint; thallus greenish..... **P. limbulata** (Krempelh.) Vainio

5(3). Perithecia dark red to reddish black.. **P. rubentior** (Stirton) Müll. Arg.
Perithecia orange to light brown..... **P. pseudofulvella** Sérusiaux

Porina pseudofulvella superficially recalls *P. fulvella* but with minute perithecia, but the two species are however very different on closer examination: *P. fulvella* has perithecia with the algal layer between the outer and the inner walls, giving the perithecia a lustreless colour, whereas *P. pseudofulvella* has perithecia covered by the algal layer (the outer and inner walls developed beneath the algae). Under high magnification, the distinct cellular structure on the perithecial surface is seen. Almost translucent perithecia are frequent amongst species with the algal layer covering the perithecia (e.g. *P. rufula*, *P. limbulata*, *P. pseudofulvella*), but never occur in ones similar to *P. fulvella*.

Summary

Two new foliicolous lichens are described from tropical Africa: *Byssoloma vanderystii* Sérusiaux from Zaïre, and *Porina pseudofulvella* Sérusiaux from Kenya.

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