

## FOLIICOLOUS LICHENS FROM ZIMBABWE

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**Abstract:** Twenty-nine species of foliicolous lichens are reported from Zimbabwe. *Arthonia nigratula* (Müll. Arg.) R. Sant. is mentioned for the first time in Africa, and *Catillaria vandenberghenii* sp. nov. is described.

Foliicolous lichens are very poorly known in the southern parts of Africa. Santesson (1952) reported three species in Malawi (formerly Nyasaland) and a few more from South Africa, mainly from Natal. During the past four years I have had opportunity to examine a few collections made in southern Africa and, in early 1982, I searched for foliicolous lichens in Transvaal and Natal in the Republic of South Africa. This paper reports the results from a small but very interesting collection from the eastern border of Zimbabwe. The collection was made in 1974 by Professor C. Vanden Berghen during a field trip together with Professor P. Bamps and Professor J. J. Symoens.

The area from which the specimens were collected is a part of the Chimanimani regional mountain system (White 1978). All the specimens were in afro-montane rainforest between 1200 and 1650 m in the Mt Vumba zone.

Table 1 summarizes the species identified in the collection examined; material of these is preserved in LG. Further notes on three of the more interesting species are provided below.

### *Arthonia nigratula* (Müll. Arg.) R. Sant.

*Symb. bot. upsal.* 12 (1): 86 (1952).—*Arthoniopsis nigratula* Müll. Arg., *Lich. epiph. novi*: 18 (1890); type: Brazil, prope Apiahy, s.n. (G—holotype!).

The Zimbabwe collection closely matches the description provided by Santesson (1952: 80) except that the ascocarps are somewhat irregular in shape and not rounded as in the type collection. The ascospores number 8 per ascus, 3-septate, oblong-ellipsoid, and  $9-11 \times 3-4 \mu\text{m}$ . The species was formerly known only from the type locality in Brazil and is new to Africa.

### *Bacidia scutellifera* Vězda

*Folia geobot. phytotax.*, Praha 10: 421 (1975); type: Tanzania, Prov. Morogoro, Pócs 6438 (hb Vězda—holotype; LG [Vězda *Lich. Sel. Exs.* no. 1310]—isotype!).

The specimens in the Zimbabwe collections bear numerous apothecia but lack the typical scutelliform isidia of the species. The shape of the thallus glomerules

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TABLE 1. *Foliicolous lichens in the collections studied*

Species	Locality						
	1	2	3	4	5	6	7
<i>Arthonia nigratula</i> (Müll. Arg.) R. Sant.	—	—	×	—	—	×	—
<i>Aspidothelium fugiens</i> (Müll. Arg.) R. Sant.	—	×	—	—	—	—	—
<i>Bacidia apiahica</i> (Müll. Arg.) Zahlbr.	—	×	×	×	—	×	—
<i>B. fuscata</i> (Müll. Arg.) Zahlbr.	—	—	—	×	—	—	—
<i>B. scutellifera</i> Vězda	—	—	—	×	—	—	—
<i>Byssolecania fumosonigrans</i> (Müll. Arg.) R. Sant.	—	×	×	×	—	—	—
<i>Byssoloma leucoblepharum</i> (Nyl.) Vainio	×	×	×	×	×	×	—
<i>B. subdiscordans</i> (Nyl.) P. James	—	—	—	—	—	—	×
<i>Catillaria bouteillei</i> (Desm.) Zahlbr.	—	—	—	×	—	—	—
<i>C. vandenberghenii</i> Sérusiaux	—	—	—	×	—	—	—
<i>Dimerella epiphylla</i> (Müll. Arg.) Malme	—	×	—	×	—	—	—
<i>Gyalectidium filicinum</i> Müll. Arg.	—	×	—	×	—	—	—
<i>Mazosia melanophthalma</i> (Müll. Arg.) R. Sant.	—	×	—	—	—	—	—
<i>M. phyllosema</i> (Nyl.) Zahlbr.	—	—	—	—	×	—	—
<i>Porina epiphylla</i> (Fée) Fée	×	×	×	×	—	×	—
<i>P. fulvella</i> Müll. Arg.	—	×	—	—	—	—	—
<i>P. leptosperma</i> Müll. Arg.	—	×	—	—	—	—	×
<i>P. nitidula</i> Müll. Arg.	×	—	×	×	—	—	—
<i>P. limbulata</i> (Krempelh.) Vainio	×	×	—	×	—	—	—
<i>P. sphaerocephala</i> Vainio	×	×	—	—	—	—	—
<i>P. trichothelioides</i> R. Sant.	—	—	—	×	—	—	—
<i>Raciborskiella prasina</i> (Müll. Arg.) R. Sant.	—	×	—	—	—	—	—
<i>Strigula elegans</i> (Fée) Müll. Arg.	×	—	—	—	—	—	—
<i>S. nemathora</i> Mont.	—	×	—	—	—	×	—
<i>S. nitidula</i> Mont.	—	—	×	—	—	—	—
<i>S. schizospora</i> R. Sant.	—	—	—	—	—	×	—
<i>S. subtilissima</i> (Fée) Müll. Arg.	—	—	×	×	—	×	—
<i>Tapellaria epiphylla</i> (Müll. Arg.) R. Sant.	—	—	—	×	—	—	—
<i>Tricharia armata</i> Vězda	—	×	—	×	×	—	×

1 = near Umtali, Cloudland, 1670 m, no. 1; 2 = Mt Vumba, Bunga Forest, 1450 m, s.n. 1; 3 = *ibid.*, s.n. 4; 4 = Mt Vumba, Leopard Rock, 1600 m, s.n. 2; 5 = *ibid.*, 1500 m, no. 579 6 = *ibid.*, 1500 m, s.n. 3; 7 = Jarka, Peni Forest, 1200 m, no. 863.

is so characteristic that I do not hesitate to refer these specimens here. This lichen is also known from other countries in Africa (West Guinea, Zaïre and Tanzania) and from Asia (West Malaysia and India) (Vězda 1980).

### ***Catillaria vandenberghenii* Sérusiaux sp. nov.**

'*Catillaria vandenbergheri* Sérusiaux *ined*', in Vězda, *Folia geobot. phytotax. Praha* 15: 77 (1980).

Thallus foliicolous, ± orbicularis, 10 mm diam, pallide flavidus, difformis et variabilis granulis instructus. Granula ab initio propria super filamentoso hypothallo sed mox confluentia et imbricata sunt. Apothecia copiosa, orbicularia, 0.15–0.5 mm diam, basi arcte constricta, fere substipitata; discus ab initio leviter concavus mox planus, brunneolus vel badius; margo distinctus, brunneolus, persistens sed leviter prominens. Hymenium I + caeruleum, 60–70 µm crassum, epithecium brunneum; hypothecium brunneum, 25 µm crassum; excipulum hyalinum, paraplectenchymaticum, 40 µm crassum.



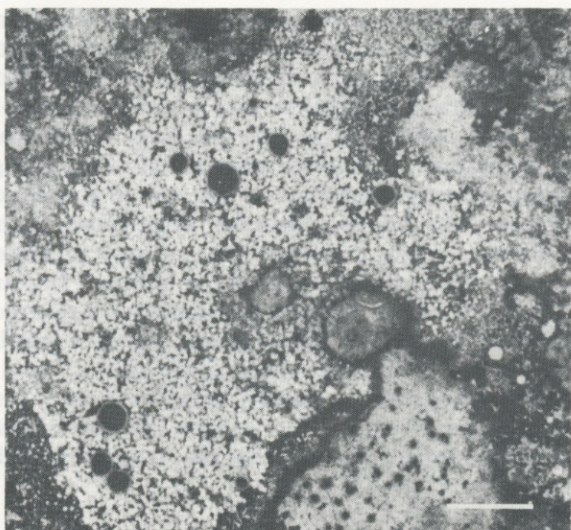
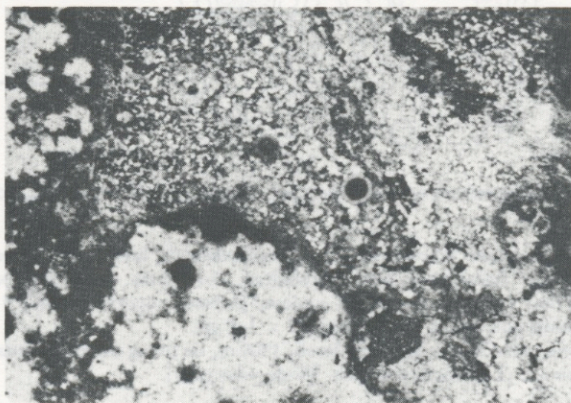
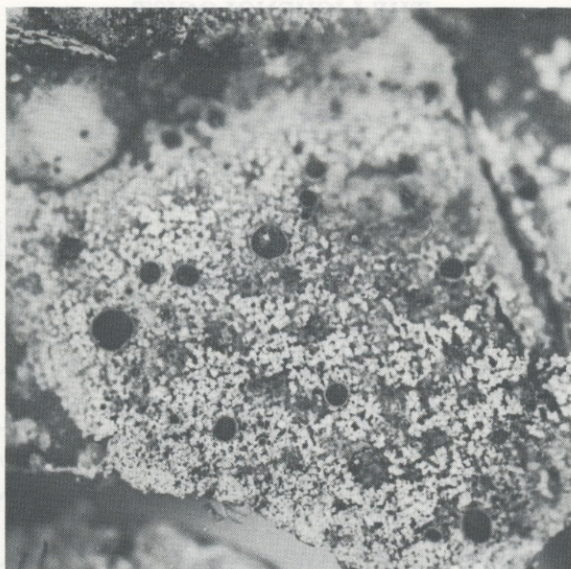


FIG. 1. *Catillaria vandenberghemii* (holotype), habit. Scale = 1 mm.



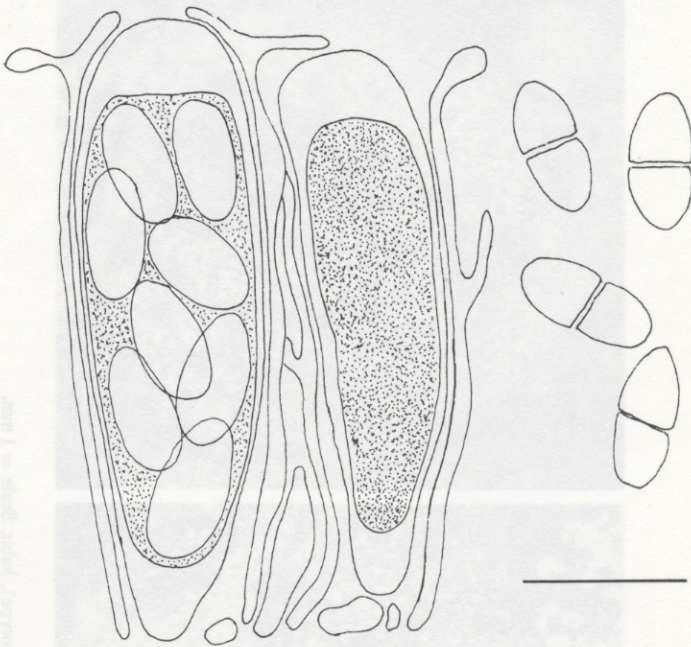


FIG. 2. *Catillaria vandenberghemii* (holotype), hymenium and ascospores. Scale = 10  $\mu$ m.

Paraphyses rariores, ramosae praesertim in parte epihymeniali, leviter anastomosantes, 1.5–1.8  $\mu$ m crassae. Asci 8-spori. Ascospores late ellipsoideae, 1-septatae, ad septa paulum constrictae, 9–12(–13)  $\times$  4–5  $\mu$ m. Pycnidia plerumque copiosa, globosa, superne tubulo, 0.15–0.3 mm longo, caesio-cinerea; conidia ellipsoidea vel bacillaria, 5  $\times$  1.5  $\mu$ m.

Typus: Zimbabwe, Mt Vumba, Leopard Rock, 1500 m, on living leaves in dense forest, 4. i. 1974, C. Vanden Berghen s.n. (LG—holotypus; hb. Vězda—isotypus).

*Thallus* more or less circular, to 10 mm diam, very pale yellow, made of granules 0.05–0.1 mm diam which are variable in shape. The granules at first separated from each other on a whitish filamentous prothallus but soon becoming confluent and overlapping each other; the thallus then a thick sorediate-like layer. The granules comprise algal colonies (algal cells spherical, 5–8  $\mu$ m diam, thin walled) closely encircled by hyphae. *Apothecia* numerous but rarely contiguous, circular, 0.15–0.5 mm diam, strongly constricted at the base to almost substipitate; disc at first slightly concave but soon becoming flat, beige–brown to chocolate–brown; margin always distinct, beige, persistent but not very prominent. Hymenium colourless, I+ dark blue, 60–70  $\mu$ m thick, epithecium brown; hypothecium brown, 25  $\mu$ m thick; excipulum colourless, paraplectenchymatous, 40  $\mu$ m thick, apothecial base brown. *Paraphyses* rather sparse, branched mostly at the apices, slightly anastomosed, not or slightly inflated at the apices, 1.5–1.8  $\mu$ m thick, in a gelatinous matrix. *Ascospores* 8 per ascus, broadly ellipsoid, 1-septate, slightly constricted at the septum, 9–12(–13)  $\times$  4–5  $\mu$ m (30 spores measured, average 10  $\times$  4.5  $\mu$ m). *Pycnidia* usually abundant but absent on a few thalli, flask-shaped,



strongly inflated at the base, 0.15–0.3 mm long, superficial, blue-grey, usually with a 0.05 mm large, translucent drop of conidia at the tip; conidia ellipsoid or bacilliform, one end inflated and the other truncated,  $5 \times 1.5 \mu\text{m}$ .

There is no doubt that this collection represents a new species of *Catillaria* Massal., as understood by Santesson (1952). Vězda (1980) already included this taxon in his world-wide key to the foliicolous species of *Catillaria*. The almost sorediate thallus, the rather broad apothecia, and the pycnidia are the characteristic features of this new species. The flask-like pycnidia recall those of *Bacidia africana* Vězda (Vězda 1975), but in that species they are shorter, more irregular and sometimes completely embedded in the thallus granules.

I wish to thank Professor C. Vanden Berghen for placing his valuable lichen collections from Zimbabwe at my disposal. I am also indebted to Dr A. Vězda who continues to help me deal effectively with the taxonomy of foliicolous lichens; and thank the curator of the herbaria BM, FH, G, LD, UPS, W and ZT for allowing me to study material in their care. I am further grateful to Drs P. Bamps, V. Demoulin, J. Lambinon and C. Vanden Berghen for their comments on my manuscript.

#### REFERENCES

- Santesson, R. (1952) Foliicolous lichens I. *Symb. bot. upsal.* **12**(1): 1–590.
- Vězda, A. (1975) Foliikole Flechten aus Tanzania (Öst-Afrika). *Folia geobot. phytotax., Praha* **10**: 383–432.
- Vězda, A. (1980) Foliicole Flechten aus Zaire. Die Arten der Sammelgattungen *Catillaria* und *Bacidia*. *Folia geobot. phytotax., Praha* **15**: 75–94.
- White, F. (1978) The Afromontane Region. In *Biogeography and Ecology of Southern Africa* (M. A. J. Werger, ed.): 463–513. The Hague: Junk.

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