Further reports on the brown Parmeliaceae of southern Africa

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Three previously unknown members of the lichen genus Neofuscelia Essl. are described: N. esterhuysei Essl., N. nonreagens Essl., and N. pseudoloriola Essl. New South African records for other members of the genus are given as well, and N. subimitatrix (Essl.) Essl. is reported from New Zealand for the first time. Apothecia of the recently described South African genus Almboria Essl. have been observed for the first time and they are typically parmeliaceous.

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Introduction

Through the kindness of Dr Ove Almborn, I have recently had the opportunity to study further southern African collections of brown Parmeliaceae, primarily collected by Miss E. E. Esterhuysen and belonging to the Bolus Herbarium in Cape Town. Among these specimens were included three previously undescribed species in the genus Neofuscelia Essl. (Esslenger 1978). Descriptions of these new species are provided below, and additional information regarding some other southern African members of the genus is also included. Some of the specimens cited extend known distributions while others are included simply because of the rarity of the species involved.

The southern part of the African continent is the major center of distribution for the lichen genus Neofuscelia. In my original paper (Esslenger 1977), thirty-four species of Neofuscelia were reported from the area (as Parmelia subg. Neofusca (Gyeln.) Essl.), of which 23 were thought to be endemic to the area. Since that time, only one of the supposed endemics has been found elsewhere: Neofuscelia subimitatrix (Essl.) Essl. is now also known from New Zealand (Canterbury: Mt. Cassidy, Bartlett, 1980; Castle Hill Basin, Bartlett, 1979; both in Herb. Bartlett & Herb. Esslinger). With the three additional species described here, that brings the total to 37 species of Neofuscelia known to occur in southern Africa, of which 25 are endemic to the area.

Each of the specimens cited in this paper has been chemically analyzed using the standardized thin-layer chromatography techniques described by Culberson (1972). However, chemical results are presented only for those species that exhibited some variance from my previous chemical reports (Esslenger 1977) and for the newly described species. The approximate relative abundances of lichen substances as judged by spot size and intensity are indicated (in descending order) by ++++, ++, +, or trace.

Almboria cafferensis Essl.

Republic of South Africa. Clanwilliam Division: Adelberg, Tafelberg, 1950 m, rocky summit, Esterhuysen 21374 (BOL).

This collection is typical even though somewhat more strongly torulose than the original specimens (Esslenger 1981). Apothecia are present (previously unknown from this species) and they are typically parmeliaceous: Apothecia scattered, sessile, up to 2 mm in diameter (mostly ca. 1 mm or less), slightly concave to more or less flat or reflexed with age, margin entire. Hymenium 52–58 μm thick, subhymenium 56–60 μm thick, spores simple and hyaline, 9–10.5 × 5–6 μm, obvoid.
Neofuscelia atroviridis (Essl.) Eszl.


Although otherwise typical, these specimens are quite dark and the usually distinctive color reactions with K and HNO₃ on the cortex are somewhat obscure.

Known previously only from the type specimen, also from the Cape Province of South Africa.

Neofuscelia cafferensis (Essl.) Eszl.


Known previously from the Cape Province and the Transvaal region of South Africa.

Neofuscelia conturbata (Müll. Arg.) Eszl.

Republic of South Africa. Cape Province: Laingsburg, Golder, 1928 (BOL).

Known previously only from the type specimen, from South West Africa.

Neofuscelia esterhuyseniae Eszl., sp. nov.

Type: Republic of South Africa, Ceres Div., Roodeberg, Hex River Mountains, 2050 m, Esterhuysen 20975, 1952 (BOL, holotype).

Thallus sorediis isidiisque destitutus, lobis 0.4-1 mm latis, 110-150 μm crassis, lineari-elongatis; subtus palidus, sine rhizinis; norlobaridonium continens.

Thallus foliose, appressed to pulvinate, moderately to loosely adnate, up to 4 cm in diameter. (Fig. 1). Lobes (0.2–) 0.4–1 (–1.5) mm broad, 110–150 μm thick, flat, linear-elongate and mostly angular at the ends. Upper surface yellow-brown to olive-brown or darkening; mostly smooth; dull to slightly shiny, especially on the lobe-ends; without soredia, isidia, or pseudocyphellae. Lower surface surface pale tan to pale brown, flat and mostly smooth; erhzinate but adnate by loboid holofasts. Apothecia unknown. Pycnidia common; conidia 4.5–7 × 1 μm, fusiform to weakly bifusiform.

Thallus reactions: cortex K−, HNO₃+ blue-green (very faintly so on the paler portions of the thallus); medulla PD−, K− or dingy yellowish, C−, KC+ rose-red. Constituent: norlobaridone.

Neofuscelia esterhuyseniae is known only from the type material which was collected from a sandy rock surface, where it occurred with *N. lichinoidea* and *N. pseudoloriloba*. This new taxon is obviously closely related to *N. lichinoidea*, (Nyl. ex Crombie) Eszl., which shares the same chemistry, erhzinate lower surface, and very similar coloration. One might almost think the two were ecotypes of the same species, except the type of *N. esterhuyseniae* has a small admixture of *N. lichinoidea* in it, and the two are very distinct. The thalli of *N. esterhuyseniae* are distinctly foliose rather than subfruticos in *N. lichinoidea*, and its lobes are distinctly flattened rather than becoming terminally teretitorulose. This species is named in honor of Miss Elsie E. Esterhuysen (BOL) who collected many of the cited specimens.

Neofuscelia fissurina (Essl.) Eszl.

Republic of South Africa. Cape Province: Div. Tulbagh, Gr. Winterhoek, 1850 m, Esterhuysen 19861a (LD); Ceres-Worcester Div., Sonklip Peak (N of Matroosberg), 1500 m, Esterhuysen 18700 (BOL); Worcester Div., Mt. Superior, Waaiohoek Mts, 1700 m, Esterhuysen 18236 (BOL); N. Cedarberg Mts, summit of Scorpionsberg, 1600 m, Esterhuysen 12281 (BOL).

All the specimens cited represent primarily the loosely adnate and almost pulvinate form of the species.

Known previously from South Africa and Lesotho.

Neofuscelia foveolata (Essl.) Eszl.

Republic of South Africa. Cape Province: Ceres Div., Schureweberg (next to Tafelberg), 1400 m, Esterhuysen 20599
More firmly attached to rock by loboid holdfasts or cortical agglutinations. A few also have a very small amount of hyposalazinic acid (trace) accompanying the major constituent, norstictic acid (+ + +).

Known previously from the Cape Province of South Africa.

**Neofuscelia namaënsis** (J. Stein. & Zahlbr.) Essl.


This specimen contains a trace of salazinic acid with the norstictic (+ + +) acid rather than connorstictic acid as the two previously cited specimens (Esslinger 1977) had.

Known previously only from the Lüderitzbucht area of South West Africa.

**Neofuscelia nonreagens** Essl., sp. nov.


Thallus soredii isidiisique destitutus, lobis 0.5–1.5 mm latis, 130–160 μm crassiss; subitus niger, modice rhizinosus; cortice superiore cum HNO, non reagenti.

Thallus foliose, appressed to weakly pulvinate, moderately adnate, 2–4 cm in diameter. Lobes 0.5–1.5 (~2) mm broad, 130–160 μm thick (dry), flat, short and rounded to somewhat elongate, mostly imbricate. Upper surface yellow-brown or red-brown to dark brown, slightly paler at the periphery; mostly smooth or becoming somewhat fissured or rugose inward; weakly shiny, lightly pruinose on some lobe-ends; without pseudocyphellae, soredia or true isidia, although in part with isidioid lobules produced on lobe margins in older parts of thallus. Lower surface mostly black, smooth and dull; moderately to sparsely rhizinate, the rhizines concolorous with the lower surface, up to 0.5 mm long. Apothecia frequent, sessile, concave, to 3 mm in diameter; margin entire or lacerated with age; hymenium 38–45 μm thick, subhymenium 51–67 μm thick; spores 8, ellipsoid, 8–9 × 4.5–5μm. Pycnidia infrequent, conidia not seen.

Thallus reactions: cortex K–, HNO₂–; medulla PD+ orange-yellow, K+ yellow turning orange-red, C– or faint dingy yellow, KC+ rose-red. Constituents: physodic acid (+ + +), norstictic acid (+ or trace) and salazinic acid (trace).

This previously unknown species is known from only two collections, both made in the Worcester area of the Republic of South Africa from noncalcareous soil. Although a number of other species currently placed in **Neofuscelia** have a HNO₂– cortex (Esslinger 1977), most of these differ also in some other ways from typical (i.e., like N. pulla (Ach.) Essl.) members of the group, and may in fact eventually be found to belong elsewhere. **Neofuscelia nonreagens** is unique, on the other
Thallus foliose, loosely appressed, not or only very loosely adnate, up to 4 cm in diameter. Thallus foliose, loosely appressed, not or only very loosely adnate, up to 4 cm in diameter. (Fig. 2). Lobes mostly 0.5–1 mm broad, 110–160 μm thick (dry), flat to slightly channeled, linear-elongate, dichotomously to somewhat irregularly branched. Upper surface yellowish-brown to reddish-brown, soon becoming distinctly grey-brown inward (see discussion); more or less smooth throughout, although sometimes becoming pitted in the older parts due to senescent pycnidia; dull to slightly shiny, particularly on the lobe-ends; without soredia, isidia or pseudocyphellae. Lower surface black, mostly smooth to weakly rugose; dull to slightly shiny; erinizate. Apothecia common, sessile, concave to more or less flat, up to 2.5 (rarely 4) mm in diameter; margin mostly entire or weakly crenate; hymenium 54–68 μm thick, subhymenium 65–85 μm thick; spores 8, ellipsoid, 9–13.5 × 4.5–6.5 μm. Pycnidia numerous; conidia 5.5–9 × ca. 1 μm (or slightly less), weakly bisporiiform, often unequally so.

Thallus reactions: cortex K-, HNO,--; medulla PD+ orange-yellow, K+ yellow turning red-orange, C-. Constituents: norstictic acid (+ + +) and a trace of con-norstictic acid.

The type material of N. pseudoloriloba was originally collected as a minor (but ample) part of a very large collection consisting mostly of N. lorioba. These two species appear at first very similar, but N. pseudoloriloba can easily be distinguished by the lack of a cortical reaction with HNO, . Despite their strong superficial resemblance, the two species can also be easily distinguished from one another without the spot test.

Neofuscelia pseudoloriloba is a coarser, less finely branched species with slightly broader lobes, and also a somewhat paler color. The development of a (necrotic?) waxy gray layer on the cortex in older thallus parts of N. pseudoloriloba also distinguishes the two. This new species is known only from the Republic of South Africa, where it occurs on sandy rock surfaces in the mountains.


**Neofuscelia pseudoloriloba Essl., sp. nov.**


Thallus sorediis isidiisque destitutus, lobis 0.5–1 mm latis, 110–160 μm crassis, lineari-elongatis; subitus niger, sine rhizinis; acidum norsticticum continens, cortice superiore com HNO, non reagenti.

References

