

***Thyrea otaviana* Brusse, sp. nov.**

Thallus subfruticosus, e haptero radiatim lobatus, in sicco usque ad 18 mm diametro, dolomiticola. *Lobi* subascendentes, lineares, simplices vel ramosi, usque ad 10 mm longi et 0,4–1,5 (–2,5) mm lati, madefacti

400–600 μm crassi. *Pagina superior* carbo-atra, hebetata vel granulate-isidiosa, laevis. *Cortex* 5–15 μm crassus, paraplectenchymatus, cellulis 3,5–4,5 μm diametro. *Stratum gonidiale* 20–50 μm crassum; algae cyanescentes (Chroococcales aut Pleurocapsales).



FIGURE 10.—*Thyrea otaviana* Brusse, habit. Brusse 4163, holotype. Scale in mm.

Medulla hyalina, 390–560 μm crassa; hyphae in reticulum regulare dispositae, 1,4–2,5 μm crassae. *Pagina inferior* carbo-atra, hebetata, laevis, in sicco canaliculata. *Apothecia* laminalia, sessilia, lecanorina, in sicco usque ad 0,5 mm diametro. *Pagina hymeniorum* badia, nitida. *Excipulum thallinum* in lateribus 80–150 μm crassum. *Excipulum* hyalinum, pericliniate prosoplectenchymatum, 15–20 μm crassum, J–. *Hypothecium* hyalinum, 40–50 μm crassum, J+ caeruleum, paraplectenchymatum, cellulis 2,5–4,0 μm diametro. *Hymenium* hyalinum, 70–100 μm altum, J+ caeruleum. *Paraphyses* ramosae et anastomosae, septatae, luminibus 1,5–1,7 μm crassis, gelatinosae, gelatina J+ caerulea. *Asci* clavati, cum parietibus tenuibus, J–. *Ascospores* hyalinae, simplices, ovaes, octonae, 11–17 $\times$ 8,0–9,5 μm . *Pycnidia* non visa.

TYPE.—1916 (Gobaub): Etosha Pan, Halali Hill, on S faces of dolomite outcrops on a SE slope (–AB), *Brusse* 4163, 1984.03.19 (PRE, holo.; BM, COLO, LD, MB, iso.). Figure 10.

Thallus subfruticose, radiately lobate from a central holdfast, up to 18 mm across when dry, on dolomite. *Lobes* subascending, linear, simple to branched, up to 10 mm long and 0,4–1,5 (–2,5) mm wide when dry, 400–600 μm thick when wet. *Upper surface* charcoal, matt to granular-isidiate, smooth. *Cortex* 5–15 μm thick, small-celled paraplectenchymatous, cells 3,5–4,5 μm diam. (Figure 11). *Algal layer* 20–50 μm thick; algae blue-green (Chroococcales or Pleurocapsales). *Medulla*

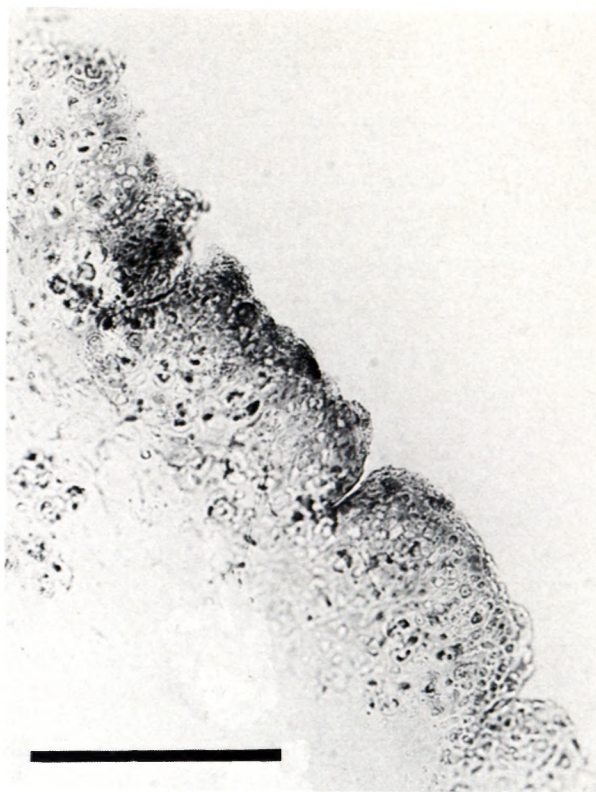


FIGURE 11.—*Thyrea otaviana* Brusse, thin section of cortex in lactophenol cotton-blue. *Brusse* 4163, holotype. Bar = 100 μm .

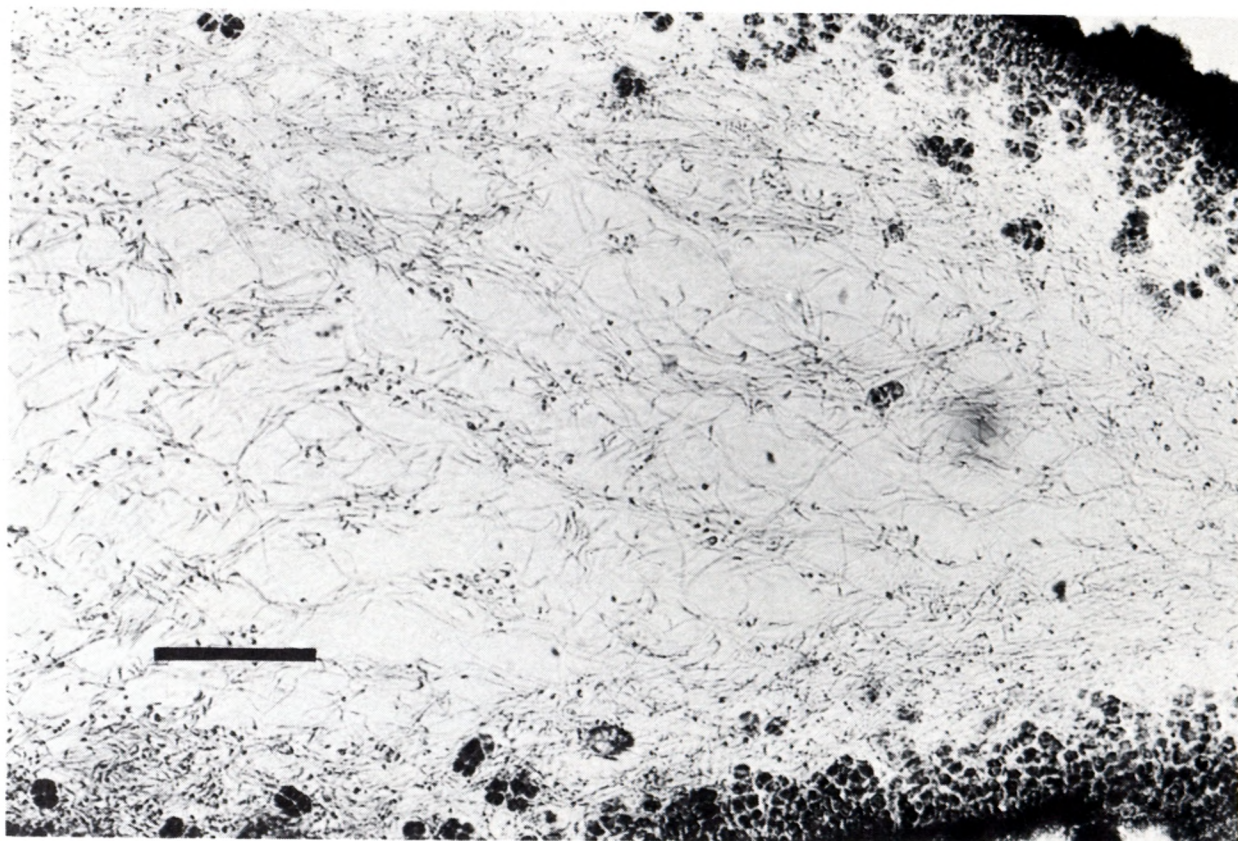


FIGURE 12.—*Thyrea otaviana* Brusse, thickish section in lactophenol cotton-blue showing reticulated medulla. *Brusse* 4163, holotype. Bar = 100 μm .

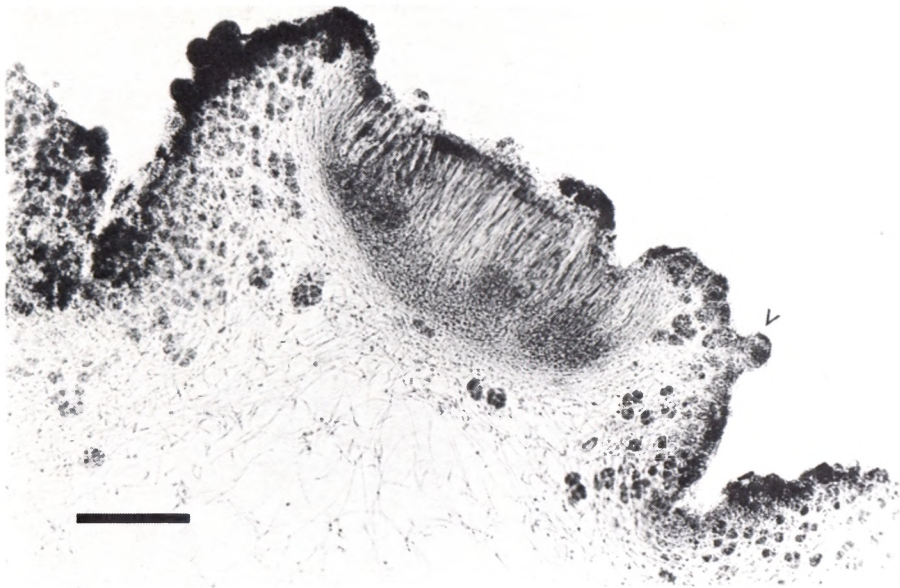


FIGURE 13.—*Thyrea otaviana* Brusse, section of apothecium in lactophenol cotton-blue. Arrow indicates a sectioned isidium. Brusse 4163, holotype. Bar = 100 μ m.

hyaline, 390–560 μ m thick; hyphae reticulately arranged (Figure 12), 1,4–2,5 μ m thick. Lower surface charcoal, matt, smooth, canaliculate when dry. Apothecia (Figure 13) laminal, sessile, lecanorine, up to 0,5 mm (dry). Hymenial surface brown, nitid. Thalline exciple 80–150 μ m thick on sides. Exciple hyaline, periclinal prosoplectenchyma, 15–20 μ m thick, J–. Hypothecium hyaline, 40–50 μ m thick, J+ blue, small-celled paraplectenchyma, cells 2,5–4,0 μ m diam. Hymenium hyaline, 70–100 μ m high, J+ blue. Paraphyses branched and anastomosed, septate, lumens 1,5–1,7 μ m thick, gelatinized, gel J+ blue. Asci 8-spored, clavate, walls thin, J– (Figure 14). Ascospores hyaline, monolocular, oval, 11–17 $\times$ 8,0–9,5 μ m. Pycnidia not seen.

Two new species of this genus have recently been described from Africa (Henssen 1986; Henssen, Büdel & Wessels 1985), but these, like the other species of *Thyrea* (Henssen 1980; Poelt 1969; Zahlbruckner 1926), lack a cortex, the outer surface terminating in relatively undifferentiated hyphae. *Thyrea otaviana* displays a weakly developed cortex with the hyphae becoming swollen and conglutinate near the surface, so that it is anticlinally paraplectenchymatous (Figure 11). The new species is therefore the most highly evolved species of this genus known to date (at least as far as thalline morphology is concerned). The medullary hyphae are fascicled or drawn together at regular intervals to give a reticulate pattern (Figure 12) as in *T. rotundata* Büdel *et al.* (Henssen, Büdel & Wessels 1985).

The ascospores of this new species are also larger than any known lobate (as opposed to peltate) *Thyrea*, reaching 17 μ m long in a small sample of eight ascospores measured.

The new species is presently known only from the type locality, Halali Hill, Etosha Pan on dolomite on a south-east facing slope, in the partial shade of *Moringa ovalifolia* trees. Halali hill is composed of dolomite of the Otavi group of the Damara geological sequence, and the specific name alludes to this fact. The lichen is probably more widespread on dolomite in the northern part of South West Africa/Namibia.

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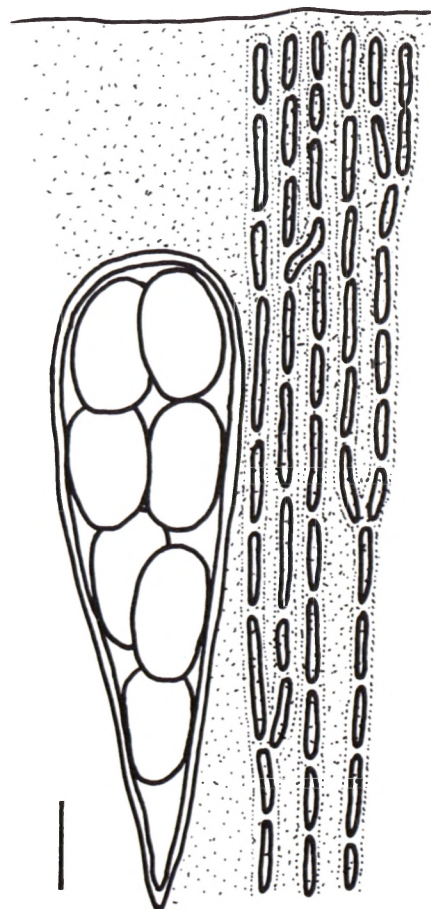


FIGURE 14.—*Thyrea otaviana* Brusse, ascus and paraphyses. Brusse 4163, holotype. Bar = 10 μ m.

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