

LICHENES

TWO NEW SPECIES IN THE AGYRIACEAE (LICHENIZED ASCOMYCOTINA, LECANORALES) FROM SOUTHERN AFRICA

***Trapelia rediviva* Brusse, sp. nov.**

Thallus crustosus, saxicola, usque ad 75 mm diametro, rimoso-areolatus. *Thallus superne* hebetatus, laevis, violaceo-cinereus, sorediis isidiisque destitutus. *Cortex superior* 9–14 μm crassus, paraplectenchymatus, cellulis 3,0–4,5 μm diametro. *Stratum gonidiale* 30–50 μm crassum, algis viridibus, coccoideis, 4,5–12,0 μm diametro. *Medulla* alba. *Apothecia* adnata, usque ad 1 mm diametris, discis rosculentibus vel carneis, marginibus furfuraceis, albidis, interdum evanescentibus. *Excipulum thallinum* 20–40 μm crassum, madefactum atrogiseum ob aerem inretitum, post purgationem stramineum, paraplectenchymatum, cellulis 3–7 μm diametro. *Excipulum proprium* reductum, hyalinum, 8–10 μm crassum. *Hypothecium* hyalinum, 15–30 μm crassum. *Hymenium* hyalinum, 110–135 μm crassum, J (perdilutum) + pallide caeruleum. *Asci* clavati, tholis J (perdilutis) + perpallide caeruleis vel hyalinis (Figura 7). *Ascospores* octonae, hyalinae, simplices, ellipsoideae, guttulae, non halonatae, 22,0–33,5 $\times$ 12–20 μm . *Pycnidia* hyalina, globosa, circa 100 μm diametro. *Pycnidiospores* hyalinae, aciculares, rectae, 21,0–28,5 $\times$ 0,5–0,7 μm . *Thallus* acidum gyrophoricum continens.

TYPUS.—Qwaqwa, 2828 (Bethlehem): 33 km S of Phuthaditjhaba, on path to Mont-aux-Sources via chain ladder. Western slopes of the Sentinel. On basalt outcrops with steep to vertical W faces, alt. 2 800 m, (–DB), *F. Brusse* 5738, 1990-04-15 (PRE, holo.; BM, iso.). Figure 8.

Thallus crustose, saxicolous, up to 75 mm across, rimose-areolate. *Upper surface* matt, smooth, mauvish grey, not sorediate and not isidiate. *Upper cortex* 9–14 μm thick, paraplectenchymatous, cells 3,0–4,5 μm diam. *Algal layer* 30–50 μm thick, algae green, coccoid, 4,5–12,0 μm diam. *Medulla* white. *Apothecia* adnate, up to 1 mm across, disc pinkish or flesh-coloured, margins whitish scurfy, sometimes evanescent. *Thalline exciple* 20–40 μm thick, dark grey when wet due to trapped air, stramineous on clearing (with ethanol), paraplectenchymatous, cells 3–7 μm diam. *Proper exciple* reduced, hyaline, 8–10 μm thick. *Hypothecium* hyaline, 15–30 μm thick. *Hymenium* hyaline, 110–135 μm thick, J (very

dilute) + pale blue. *Asci* clavate, eight-spored, tholus J (very dilute) + very pale blue or hyaline (Figure 7). *Ascospores* hyaline, simple, ellipsoid, guttulate, non-halonate, 22,0–33,5 $\times$ 12–20 μm . *Pycnidia* hyaline, globose, about 100 μm diam. *Pycnidiospores* hyaline, straight needles, 21,0–28,5 $\times$ 0,5–0,7 μm . *Chemistry*: gyrophoric acid present.

Trapelia rediviva is similar to *Trapelia mooreana* (Carroll) P. James, and also contains gyrophoric acid, but the discs are pinkish in colour and not brown as in *T. mooreana*. The pycnidiospores are also much longer (21,0–28,5 μm) than those of *T. mooreana* (5–14 μm ; Hertel 1977). *Trapelia coarctata* (Turn.) Choisy is also similar and contains gyrophoric acid, but this lichen also has brown apothecial discs, and a poorly developed thallus. Unfortunately the pycnidia of this lichen have never been found (Hertel 1977), an observation supported by my examination of a few specimens of *T. coarctata*.

Trapelia chiodectionoides Brusse is similar in thalline characters to *T. rediviva*, and is from a fairly nearby locality. However, *T. chiodectionoides* is a peculiar lichen with clustered apothecia and halonate ascospores (checked by negative staining with indian ink water). The hypothecium is also much thicker (40–100 μm) than that of *T. rediviva* (15–30 μm), and the ascospores are distinctly smaller (16–21 $\times$ 8,0–10,5 μm) than those of *T. rediviva* (22,0–33,5 $\times$ 12–20 μm).

The chemistry of this species, gyrophoric acid, is very common in this genus, and in the closely related *Trapeliopsis* (Coppins & James 1984; Hertel & Leuckert 1969; Schneider 1980). Thus far, this new species is known only from the type locality, the vicinity of Mont-aux-Sources in the northern Drakensberg.

***Trapeliopsis parilis* Brusse, sp. nov.**

Thallus squamulosus, terricola, usque ad 50 mm diametro. *Lobi* elongati, 0,4–1,0 mm lati, 130–160 μm crassi, discreti. *Thallus superne* albidus, furfuraceus, hebetatus, marginibus avellaneis vel mellinis. *Stratum epinecrale* 10–25 μm crassum, mox solvens. *Cortex superior*

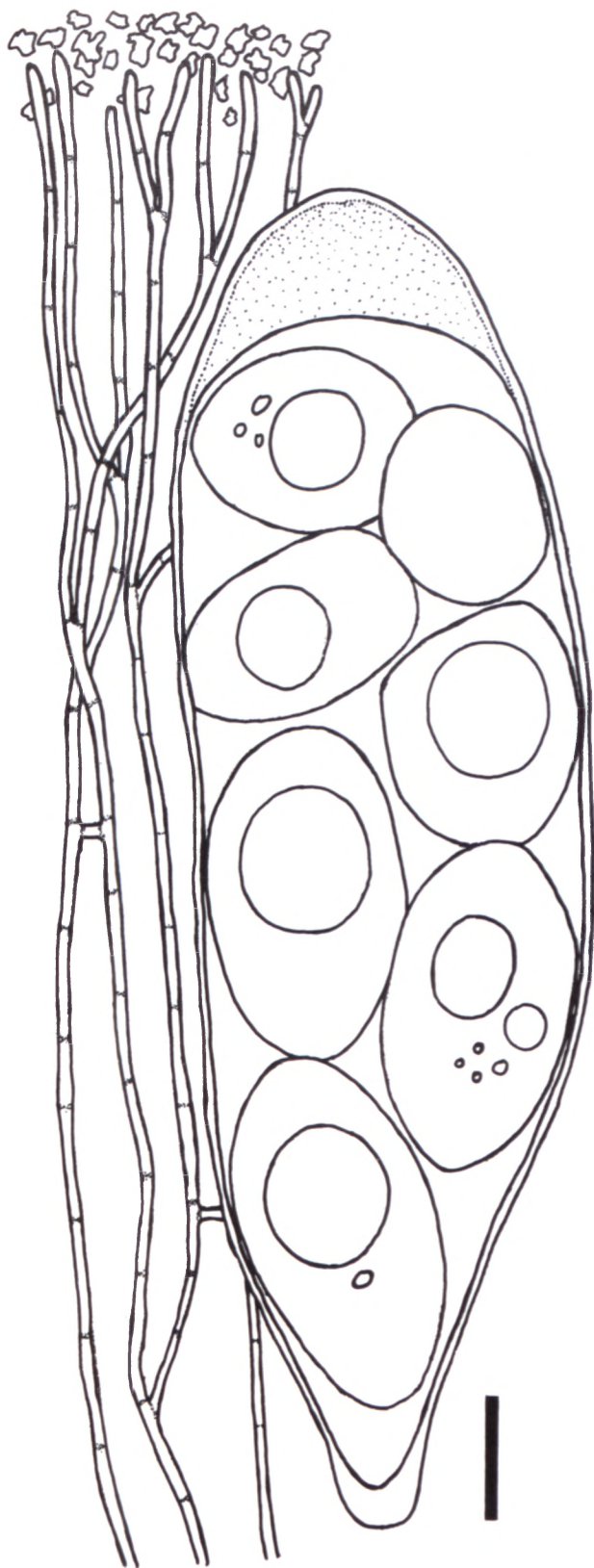


FIGURE 7. —*Trapelia rediviva*, ascus and paraphyses. F. Brusse 5738, holotype. Bar = 10 μ m.

paraplectenchymatus, 20–35 μ m crassus, cellulis 3,5–8,0 μ m diametro. *Stratum gonidiale* 35–50 μ m crassum, algis viridibus, coccoideis, 3,5–9,0 μ m diametro. *Medulla* alba, 50–90 μ m crassa. *Cortex inferior* non bene evolutus. *Apothecia* adnata, usque ad 0,8 mm diametro, discis concavis, atro-brunneis, marginibus albidis, furfuraceis. *Excipulum thallinum* (solum cortice) 40–60 μ m crassum, paraplectenchymatum, cellulis 4,0–12,5 μ m diametro. *Excipulum proprium* reductum, 10–25 μ m crassum.

Hypothecium hyalinum, usque ad 85 μ m crassum. *Hymenium* hyalinum, J (perdilutum) + pallide caeruleum, 65–90 μ m crassum. *Asci* clavati, tholis J (perdilutis) + pallide caeruleis vel hyalinis (Figura 9). *Ascospores* octonae, hyalinae simplices, ellipsoideae, saepe guttulae, non halonatae, 11,5–16,5 $\times$ 4,5–7,0 μ m. *Pycnidia* (in typo non visa) hyalina, globosa, circa 100 μ m diametro. *Pycnidiospores* hyalinae, rectae, aciculares, 17–29 $\times$ 0,7 μ m. *Thallus* acidum gyrophoricum continens.

TYPUS. —Transvaal, 2528 (Pretoria): 2 km from the Balmoral interchange to Pretoria on the Witbank–Pretoria highway. Farm Eenzaamheid 534 JR. On soil near granite pavements on SW slope, with some seasonal water trickling. Alt. 1 500 m (–DD), F. Brusse 5786, 1990-07-03 (PRE, holo.; BM, COLO, LD, iso.). Figure 10.

Thallus squamulose, terricolous, up to 50 mm across. *Lobes* elongate, 0,4–1,0 mm wide, 130–160 μ m thick, discrete. *Upper surface* whitish, scurfy, matt; margins tan. *Epinecral layer* 10–25 μ m thick, soon disintegrating. *Upper cortex* paraplectenchymatous, 20–35 μ m thick, cells 3,5–8,0 μ m diam. *Algal layer* 35–50 μ m thick; algae green, coccoid, 3,5–9,0 μ m diam. *Medulla* white, 50–90 μ m thick. *Lower cortex* not well developed. *Apothecia* adnate, up to 0,8 mm across; disc concave, dark brown; margins whitish, scurfy. *Thalline exciple* (cortex only) 40–60 μ m thick, paraplectenchymatous, cells 4,0–12,5 μ m diam. *Proper exciple* reduced, 10–25 μ m thick. *Hypothecium* hyaline, up to 85 μ m thick. *Hymenium* hyaline, J (very dilute) + pale blue, 65–90 μ m thick. *Asci* clavate, eight-spored, tholus J (very dilute) + pale blue to hyaline (Figure 9). *Ascospores* hyaline, simple, ellipsoid, often guttulate, not halonate, 11,5–16,5 $\times$ 4,5–7,0 μ m. *Pycnidia* (not seen in type) hyaline, globose, about 100 μ m diam. *Pycnidiospores* hyaline, straight needles, 17–29 $\times$ 0,7 μ m. *Chemistry*: gyrophoric acid present.

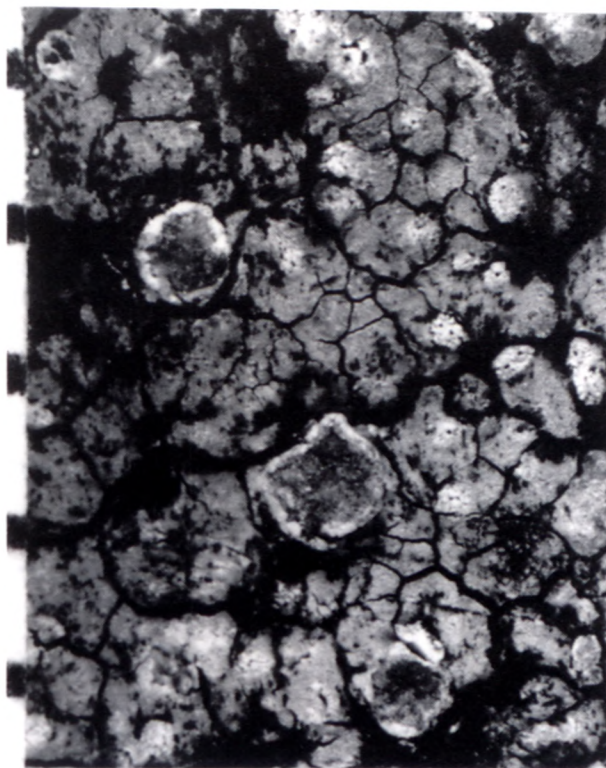


FIGURE 8. —*Trapelia rediviva*, habit. F. Brusse 5738, holotype. Scale in mm.