A NEW SPECIES OF *GONOHYMENIA* FROM ETOSHA PAN LIMESTONE

Gonohymenia etoshica *Brusse*, sp. nov.

Thallus peltatus, calcicola, usque ad 3 mm diametro, madefactus 240–320 μm crassus, homoeomerus. *Pagina superior* carbo-atra, hebetata, undulata vel cerebriformis, ambitu breve lobata. *Pagina inferior* carbo-atra, hebetata, laevis vel grosse et radiatim plicata. *Apothecia* immersa vel substipitata, lecanorina, thallinocarpa, usque ad 0,7 mm diametro. *Excipulum thallinum* in lateribus 70–150 μm crassum. *Excipulum* hyalinum, J–, 8–12 μm crassum, periclinate plectenchymatum, in lateribus destitutum. *Hymenium* hyalinum, in dimidio superiori cum algis inspersum, 70 μm altum, J+ caeruleum. *Hypothecium* tenue, fere nullum. *Paraphyses* graciles, simplices vel leviter ramosae (in regionibus algarum bene ramosae), luminibus 0,8–1,0 μm crassis, septatae, gelatinosae, gelatina J+ caerulea. *Asci* obclavati, 8-, 12-vel 16-spori, parietibus omnibus tenuibus, J–, 25–40 × 9–14 μm. *Ascosporae* hyalinae, ellipsoideae, 6–7 × 3,5–4,5 μm, simplices. *Pycnidia* globosa, hyalina, circa 50 μm diametro. *Spermatia* bacillaria, 2,8–3,6 × 0,8–1,0 μm.

TYPE.—1916 (Gobaub): Etosha Pan, 28 km from Halali to Okaukuejo, Salvadora, on littoral limestone outcrops—gentle N slope (–AB), *Brusse 4155*, 1984.03.19 (PRE, holo.; LD, iso.). Figure 6.

Thallus peltate, on limestone, up to 3 mm diam., homoeomerous, 240–320 μm thick when wet (Figure 7). *Upper surface* charcoal, matt, undulate to cerebriformwrinkled, simple to shortly lobate at margins. *Lower surface* charcoal, matt, smooth to coarsely radiate plicate. *Apothecia* (Figure 8) immersed to substipitate, lecanorine, thallinocarpous, up to 0,7 mm diam. *Thalline exciple* 70–150 μm thick on sides. *Exciple* hyaline, J–, 8–12 μm thick, dense periclinal plectenchyma, absent from margins (Figure 8). *Hymenium* hyaline, inspersed with algae in upper half, 70μm high, J+ blue. *Hypothecium* thin, almost absent. *Paraphyses* slender, simple or lightly branched (well branched in algal areas), lumens 0,8–1,0 μm thick, septate, gelatinized, gel J+ blue. *Asci* obclavate, 8-, 12- or 16-spored, walls thin, J– (Figure 9), 25–40 × 9–14 μm. *Ascospores* hyaline, ellipsoid, 6–7 × 3,5–4,5 μm, simple. *Pycnidia* hyaline, globose, about 50 μm diam. *Spermatia* hyaline rods, 2,8–3,6 × 0,8–1,0 μm.

This new species is most similar to the European species, *Gonohymenia nummularia* (Nyl.) Henss., but has smaller and fewer ascospores per ascus.

The number of algae in the upper half of the hymenium seems to vary considerably. Sometimes algae are quite scarce, e.g. in the specimen cited below, but the type is rich in hymenial algae. The asci of this species are obclavate with acute apices and with thin walls (no tholus development). However the hymenial gel is blue in Lugol's iodine solution. The asci containing 12 or 16 spores are larger than those containing only 8 ascospores, so that the ascospores from 8-spored asci are of the same overall size as those from 16-spored asci. It is

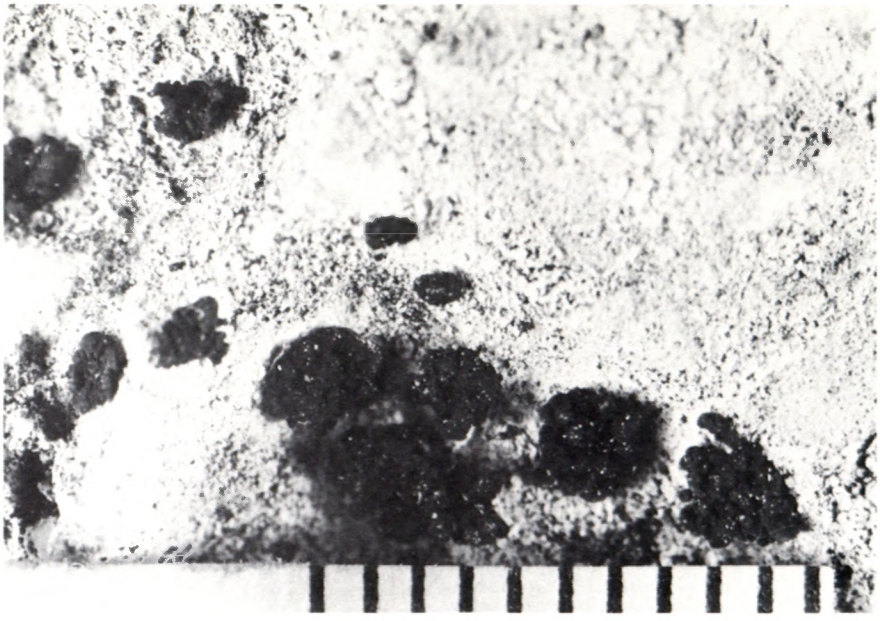

FIGURE 6.—*Gonohymenia etoshica* Brusse, habit. *Brusse 4155*, holotype. Scale in mm.

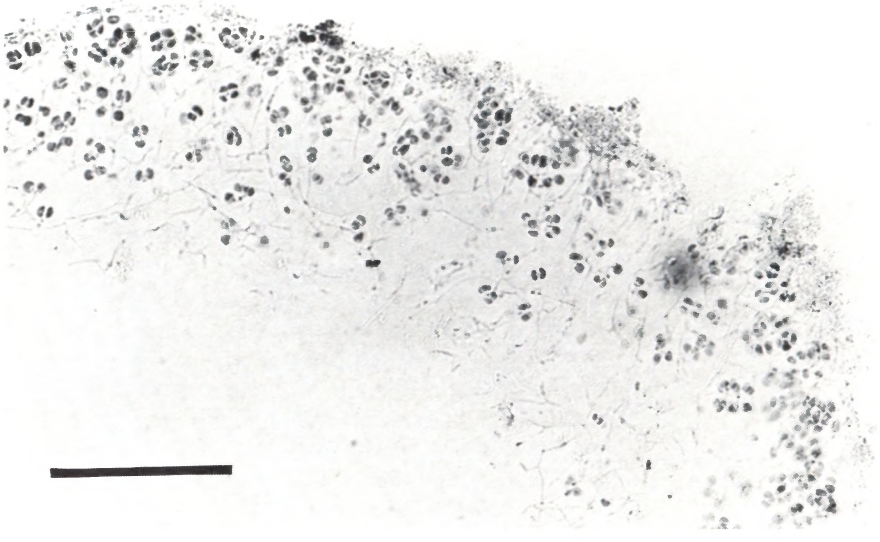

FIGURE 7.—*Gonohymenia etoshica* Brusse, edge of lobe section in lactophenol cotton-blue, showing undifferentiated hyphae anticlinal to the surface, and algal cells concentrated near the surface. *Brusse 4155*, holotype. Bar = 100 μm.

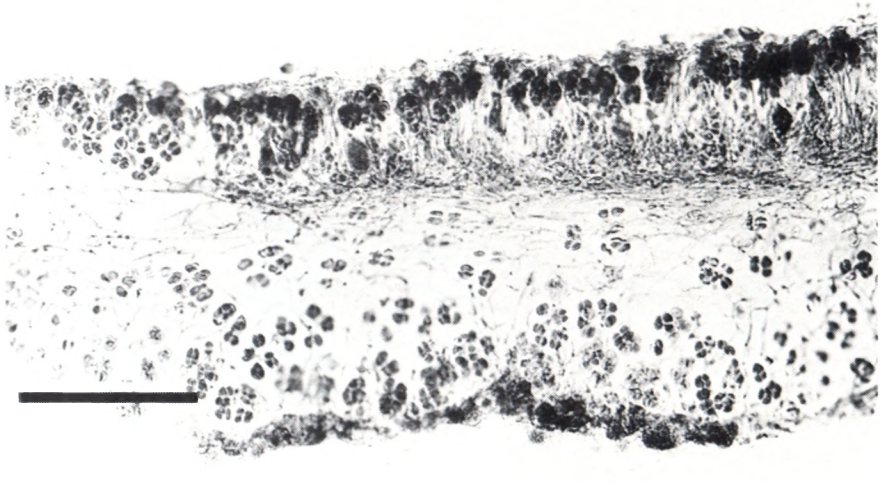

FIGURE 8.—*Gonohymenia etoshica* Brusse, part of an immersed apothecium in section in lactophenol cotton-blue. *Brusse 4155*, holotype. Bar = 100 μm.

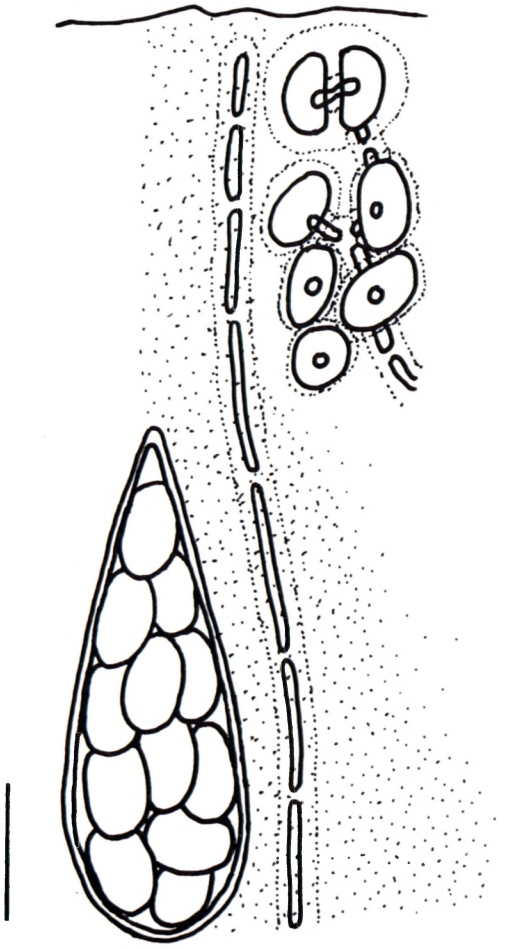

FIGURE 9.—*Gonohymenia etoshica* Brusse, ascus and paraphyses. *Brusse 4155*, holotype. Bar = 10 μm.

interesting that the exciple terminates before reaching the flanks of the hymenium (Figure 8), and probably allows for intrusion of alga-bearing thalline tissue into the hymenium, during development.

Several new combinations in this genus were made by Henssen (1980), where good photographs of some species are given. Poelt (1969) treated the European species, some under *Thyrea*, in key form.

At present this species is known from two localities on the edge of Etosha Pan, on limestone.

SWA/NAMIBIA.—1816 (Namutoni): Etosha Pan, 8 km N of Namutoni, on Pan's Edge road, on limestone on W rise (–DD), *F. Brusse 4177*, 1984.03.20 (PRE, LD).

ACKNOWLEDGEMENTS

The author is grateful to game rangers Karen and Trevor Nott for company during a stay at Etosha Pan, and to Otavi Tsumeb for armed protection against dangerous wild animals.

REFERENCES

HENSSEN, A. 1980. Problematik der Gattungsbegrenzung bei den Lichinaceen. *Berichte der Deutschen Botanischen Gesellschaft* 92: 483–506.

POELT, J. 1969. *Bestimmungsschlüssel europäischer Flechten*. Cramer, Lehre.