

Grimmia tortuosa Hook. f. & Wils. - London J. Bot. 3: 540. 1844.

Type: Falkland Islands, leg. J.D. Hooker, lectotype, designated by Muñoz (1999), BM!; isolectotypes, BM! 7 replicates, FH! 4 replicates, H-SOL, NY.

Distribution: Am.6, Austr.2

Description

Grimmia tortuosa forms dark green to blackish-green frequently rounded patches, leaves flexuous and crisped when dry, erectopatent when moist, oblong-lanceolate, acuminate, carinate, costa prominent, projecting on dorsal side, hair-points short to rather long, smooth to denticulate, margins plane. Distal areolation unistratose, only at margins bistratose, more rarely with some bistratose ridges, mid-leaf cells isodiametric, rounded with straight to slightly sinuose walls, basal marginal cells rectangular with straight walls, basal juxtacostal cells elongate, walls thin and straight to slightly nodulose. Sexuality autoicous, capsules on short and straight seta usually present, they are immersed, cupulate, smooth, dark-coloured, exothecial cells with extremely thick walls, operculum mammillate to conic.

Discussion

Based on a worldwide revision of *Schistidium*, Bremer (1981) listed *G. tortuosa* as an insufficiently known taxon and noted: "The material is quite bad and just from one locality (S, BM) but it seems to belong in *Schistidium*". Recently, Cao and Churchill (1995) found good material with sporophytes of an isotype of *G. tortuosa* at NY. Careful examination of the type indicated that *G. tortuosa* is a distinct species which should remain in *Grimmia* and not in *Schistidium*. It is characterized by leaves strongly twisted when dry, oblong-lanceolate, with long hair-points, carinate, margins plane and entire, costa stout, projecting on dorsal side, basal leaf cells elongate, with thin and straight walls, operculum plano-convex, bluntly mucronate, perichaetial leaves much larger than vegetative leaves, with longer hair-points, seta very short, capsules deeply immersed in the perichaetial leaves, subspherical with a wide mouth, exothecial cells conspicuously thick-walled, and calyptra mitrate with shortly lobed base.

Specimens examined

New Zealand. South Island, Mt. Cook Nat. Park, Hooker valley, on lateral moraine on westside of Hooker glacier, alt. 3500 ft, 20-05-1966; South Island, Mt. Cook Nat. Park, above Muzzic Saddle, alt. 7500 ft, leg. Ar 2847, 02-01-1954, CHR 241595; South Island, Mt. Fyffe, CHR 496974; Inland Kaikoura Ra, Mt. Mitra, leg. R.

Mason & D.R.M. Mc Queen; South Island, Inland Kaikoura Range, Marlborough, slope of Mt. Mitre, above Muzzle Saddle, alt. 7500 ft, leg. R. Mason & D.R. Mc Queen nr. 2847, 02-01-1954, CHR 241595; South Island, Mt. Cook Nat. Park, Hooker Valley, lateral moraine along Hooker glacier, alt. 3500 ft, leg. Science students, 21-05-1966, OTA 14309; South Island, Canterbury, Mt. Cook Nat. Park, Tasman glacier, Husky flat, alt. 3100 ft., leg. J.E. Beever, 17-05-1984; South Island, Canterbury, Rangitata Range, Mc. Coy stream, lateral moraine, alt. 1300 m, leg. D. Glenney nr. 4259, 28-12-1992, WELT M 29038; South Island, Marlborough, Mt. Fyffe, alt. 1275 m, leg. A. J. Fife nr. 10.169, 30-10-1993, CHR 496974; South Island, Mt. Cook Nat. Park, base of Hooker glacier, alt. 890 m, leg. H.C. Greven nr. NZ 48, 22-02-1997; South Island, Mt. Cook Nat. Park, Red Tarns, alt. 1060 m, leg. H.C. Greven nr. NZ 47, 23-02-1997; South Island, Fiordland, Homer Saddle, alt. 1150 m, leg. H.C. Greven nr. NZ 46, 25-02-1997;

References

- Bremer, B. 1981. A taxonomic revision of *Schistidium* (Grimmiaceae, Bryophyta). *Lindbergia* 7: 73-90.
- Cao, T. & S.P. Churchill. 1995. An assessment of *Grimmia tortuosa* Hook. f. & Wils. *Nova Hedwigia* 60: 515-518.