

Grimmia austrofunalis C. Müll. - Hedwigia 37: 165. 1898.

Type: Australia, Grampians, Mt. William, 1883, leg. D. Sullivan, holotype MEL!; iso-types MEL! (2 replicates), S.

Synonyms: *Grimmia benoistii* Thér., *G. britannica* A.J.E. Smith, *G. crassiretis* Card. & Broth., *G. meridionalis* (Müll. Hal.) E. Maier, *G. pansa* Williams, *G. robusta* Ferg., *G. decipiens* var. *robusta* (Ferg.) Braithw., *G. trichophylla* var. *robusta* (Ferg.) A.J.E. Smith, *Racomitrium austrosudeticum* Broth.

Distribution: Am. Austr. Eur

Description

Grimmia austrofunalis grows in dense to loose hoary, blackish-green tufts, the leaves are loosely appressed, straight to slightly twisted when dry, erecto-patent when moist, of uniform length throughout stem, lanceolate, sharply keeled above; clusters of orange-brown gemmae on short stalks are occasionally present in upper leaf axils, the costa is slightly projecting on dorsal side, the hair-points are long, smooth to slightly denticulate, flattened at base, the margins are recurved on one side. The distal areolation is unistratose, at upper margins and apex bistratose,

mid-leaf cells are irregularly quadrate with sinuose and incrassate walls, basal marginal cells are quadrate with thickened transverse walls, basal juxtacostal cells are linear with smooth to sinuosely-incrassate walls. The sexuality is dioicous, capsules on flexuose setae are only sporadically present, they are exserted, brown, ribbed, ovoid, clavate with a rostrate operculum.

Discussion:

Grimmia austrofunalis has a misleading name and a disjunct distribution because, described from Australia, it is widely spread in Europe and America and it has nothing to do with *G. funalis* (Greven 1997). From Britain, it was described as *G. robusta* Ferg., later on renamed as *G. britannica* (Smith 1992). From Spain, it was described as *G. trichophylla* var. *meridionalis* Müll. Hal., later on renamed as *G. meridionalis* (Müll. Hal.) E. Maier, (Maier 2002). Muñoz (1999) synonymized it incorrectly with *Grimmia trichophylla*. Fergusson, as well as Smith and Maier, realized that the species was significantly differing from *G. trichophylla*. However, because none of them was familiar with *Grimmia austrofunalis*, they all described it as a new species. Greven (2009) showed that *Grimmia austrofunalis* occurs in Britain and Ireland, and that the key in Muñoz (1999) is incorrect. *G. austrofunalis* might be confused with large forms of *G. trichophylla*, differing in reddish-brown stems, blackish below, leaves of uniform length along stem, margin recurved on one

side only, basal juxtacostal cells linear with incrassate walls, seta flexuose when moist, and brown clavate capsules.

Selection of specimens examined

Crete: Chania, Laki, alt. 30 m, leg. R. Düll; Rethimnion, Anogia, alt. 1220 m, leg. R. Düll; **Cyprus:** Troodos, Pano Platres, alt 1100 m, leg. H.C. Greven, nr. 2133; **Elba:** Monte Capanne, alt. 950 m, leg. H. Lauer, nr. It. 593; **England:** S. Devon, Dartmeet, leg. B.O. van Zanten; **France:** Aix en Provence, Beaufeuil, St. Victoire, alt. 300 m, leg. J. Werner, nr. 394-4; Provence, Lubéron, leg. J. Werner; **Germany:** Baden, Handschühshheim, alt. 180 m, leg. R. Düll; **Ireland:** Kerry, Killarney, Gap of Dunloe, leg. H.C. Greven, nr. 2028, 2223; Connemara, Killadoon, alt. 150 m, leg. H. van Melick, nr. 871349; **Scotland:** Angus, Clova, Juznjorge, leg. Duncan; Perthshire, Glen Lyon, leg. Binstead; Isle of Sky, Carn Leag, leg. Birks; **Spain:** Cantabria, Valderrible, alt. 850 m, leg. J. Muñoz; **Wales:** Snowdonia, Llyn Idwal, alt. 120 m, leg. H.C. Greven, nr. 2020, 2021, 2228, 2649; **Australia:** Victoria, Grampians, Mt. William, leg. D. Sullivan, March 1883, MEL 29152 (**type specimen**); Eyre Peninsula, Mt. Lofty, waterfall gully, leg. C. Beauglehole nr. 15019, 30-09-1965, MEL 1041016; New South Wales, Southern Tablelands, Talbingo, leg. M.E. Phillips nr. 2147, 03-02-1955, MEL 33792; Victoria, Grampians, Black Range State Park, Double-headed Mountain, leg. C. Beauglehole nr. 9384, 04-09-1962, MEL 1044595; Victoria, Warby Range, Brien's Falls, leg. G.A.M. Scott, 30-04-1991, MELU 1210; Victoria, Benambra-Black mountain road near Beloka Gap, 29 km NE of Omea, alt. 1000 m, leg. Streimann nr. 50641, 29-12-1992, CANB 97017-403; New South Wales, Yarrangobilly Caves near Hot Springs, leg. W.W. Watts nr. 8570, 17-01-1906, NSW 403229; New South Wales, Kosciusko Nat. Park, Talbingo, along Snowy Mts. Highway, alt. 720 m, leg. H.C. Greven nr. Aus. 18, 19, 13-03-1997; Victoria, road up to Mt. Buffalo Nat. Park, 3 km after entrance, alt. 555 m, leg. H.C. Greven nr. Aus. 16,17, 13-03-1997; Victoria, road Whitfield to Mansfield, 26 km south of Whitfield, alt. 845 m, leg. H.C. Greven nr. Aus. 10, 20, 21, 14-03-1997; Victoria, road up to Mt. Buller, White Bridge, alt. 1055 m, leg. H.C. Greven nr. Aus. 25, 15-03-1997; Victoria, road up to Mt. Buller, Chalet creek, alt. 1100 m, leg. H.C. Greven nr. Aus. 15, 22, 15-03-1997; **Tasmania:** East Coast, Douglas-Apsley Nat. Park, Apsley Gorge, leg. A. Moscal nr. 26430, 25-12-1994, HO s.n.; St. Marys Pass State Reserve, alt. 330 m, leg. A. Moscal nr. 25356, 02-07-1993, HO s.n.; Tasmania without locality,

leg. Gunn, BM; **New Zealand:** Holmwood No. 2 Island, Lake Manpouri, leg. W.B. Schofield, 06-06-1072, BM; Newthorn road past Scratchback, alt. 2000', leg. J. Child s.n., BM; South Island, Lake Manapouri, Mahara Id. no. 3, alt. 600', leg. P.N. Johnson nr. 188, 25-01-1970, OTA 27599; South Island, Kakanui Ecol. Region, Dansey Ecol. Distr., Dansey Pass, leg. J.K. Bartlett, August 1980, AK 187942; South Island, Canterbury, Craigieburn Ra, Lake Lyndon, alt. 870 m, leg. H.C. Greven nr. NZ 16, 17-02-1997; South Island, Arthur's Pass Nat. Park, Arthur's Pass, alt. 920 m, leg. H.C. Greven nr. NZ 14, 18-02-1997; South Island, Queenstown, Remarkable mts, alt. 1475 m, leg. H.C. Greven nr. NZ 65, 27-02-1997; South Island, Southern Alps, Mt. Cook Nat. Park, campsite at Foliage Hill, alt. 793 m, leg. H.C. greven nr. NZ 15, 21-02-1997; **U.S.A.:** California, Del Norte Co., Gordon mountain, boulder along Big Flat Road, leg. D.H. Norris nr. 7856, 30-09-1967, H, MICH; California, Road 89, 5 miles south of Quincy, alt. 885 m, leg. H.C. Greven C 200, 14-10-2002; **Mexico:** Amecameca, Volcan Iztacuatl, above La Joya, leg. H.C. Greven nr. M 118, 119, 02-12-1997; **Bolivia:** La Paz, boulder along road nr. 3, south of La Cumbre, alt. 4200 m, leg. H.C. Greven Bol nr. 50, 21-05-2005; La Paz, Takesi trail, alt. 3605 m, 06-06-1999, leg. H.C. Greven Bol. 21, 24; La Paz, Copacabana, Observatoria Astronomica, alt. 3860 m, leg. H.C. Greven Bol 18, 09-06-1999; La Paz, Prov. Inquisiri, Cerro Ventanani, alt. 3800 m, leg. Lewis 87750, 06-08-1987; **Chile:** Region VI, Parque Nacional, La Campina, east of Valparaiso, alt. 1400 m, leg. B.O. van Zanten & J. Redon No. 79.01.48, 08-01-1979; Patagonia, Lac San Martin, Vallee Trias, leg. C. Skottsberg, 27-01-1909, PC; **Columbia:** Boyaca, Paramo de la Rusia, nw Duitama, Serrania Pena Negra, Laguna Aqua Clara, alt. 3935 m, leg. A. Cleef 7006, 10-12-1972, U; Boyaca, Mun. Duitama, Paramo de la Rusia, alt. 3500 m, leg. M. Kuc, 26-10-1988; **Peru:** Inca Trail to Machu Pichu, Abra de Warmiwanusca, alt. 4210 m, leg. H. Boomsma, 10-06-1999; **Venezuela:** Estado Merida, Apartaderos, Lago Mucubaji, alt. 3550 m, leg. H.C. Greven nr. Ven 1, 2, 3, 18-01-2004; Estado Merida, Paso del Condor, alt. 4050 m, leg. H.C. Greven nr. Ven 4,5, 16-01-2004;

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