

Grimmia milleri Hasting & Greven, The Bryologist 110: 500-505

Type: U.S.A., Maine: Piscataquis Co. Baxter State Park, Katahdin area, ca. 20 miles NNE of Millinocket, east of Chimney Pond, 2950 ft, Miller 14784, 1 Sept. 2004, holotype NYS!, isotype PMAE!

Distribution: Am. 1.

Description

Grimmia milleri grows in dense cushions, dark-green to almost black, stems 10-20 mm long, central strand present but weak, leaves are incurved and moderately to strongly contorted when dry, spreading when moist, narrowly lanceolate to linear lanceolate, tapering to a slender acuminate apex, the costa is projecting on dorsal side, hair-points are short to long, denticulate, margin is plane, or one margin recurved proximally. Perichaetial leaves enlarged. The distal areolation is 1-2 stratose, mid-leaf cells are quadrate to short-rectangular, slightly sinuose, thick-walled, basal marginal cells are short to long-, straight, thin-walled, entire basal area is typically hyaline, basal juxtacostal cells are elongate, pellucid, slightly sinuose, thick-walled. The sexuality is autoicous, seta is straight, 2-3 mm long, capsule are usually present, they exerted, pale yellow-brown, oblong, smooth, exothecial cells are thin-walled, stomata are present, annulus is persistent, the operculum is mammillate to rostellate, beak straight to slightly bent.

Discussion:

G. milleri is only known from mountains in the northeastern United States, from northeastern New York State to Maine. It is found at higher altitudes from 900-1550 m, and is usually reported to be near tree line or in alpine tundra. Crum and Anderson (1981) considered *G. milleri* as a shade form of *G. donniana* and the type specimen (Miller 14784, NYS) contains separate clumps of *G. donniana* in the packet. It appears that the two species can grow at the same microsite and yet maintain a distinct morphology. Specimens of *G. incurva* have also been collected near populations of *G. milleri* but again the species retain their morphological integrity. Greven (2003) reported that he had seen autoicous *G. incurva* from North America as well as from Africa. A renewed study of this material gave sufficient evidence to treat the autoicous material at specific level: *G. milleri*, endemic to the northeastern United States, and *G. afroincurva*, endemic to the summit area of volcanoes in central Africa.

Specimens examined

U.S.A. New York. Essex Co., Town north of Elba: Algonquin Peak, southeast side of summit, 44° 08' 37" N, 73° 59' 13" W, 5080 ft alt., 18 August 1999, Leonardi 1813 (holotype, NYS); Mount Marcy, summit, 16 August 1934, A. H. Smith (paratype NYS); Mount Skylight, 9 August 1950, Ketchledge 599 (paratype MICH); Mount Haystack, 10 August 1950, Ketchledge 619 (paratype MICH); Algonquin Peak, 23 August 1950, Ketchledge 701 (paratype MICH); Whiteface Mountain, 4800 ft alt., 21 August 1962, S. J. Smith 34717 (paratype MICH); 4700 ft alt., 24 August 1963, S. J. Smith 36368 (paratype MICH); Whiteface Mountain, 4872 ft alt., 24 August 1963, Bird 8948 (paratype PMAE); Mt. MacIntyre [Algonquin Peak], 5100 ft alt., 25 August 63, Bird 8973 (paratype PMAE). **NEW HAMPSHIRE.** Mt. Washington, 27 July 1876, Allen (paratype MICH); 8 September 1916, Taylor (paratype MICH); 8 September 1916, Macfarlane and Taylor 1808 (paratype MICH); 9-12 August 1939, Haring, Wickes, Grout. North American Musci Perfecti 353. *Grimmia donniana* Sm. (paratype MICH); 10 August 1962, S. J. Smith and N. G. Miller 34085 (paratype MICH); **MAINE.** **PISCATAQUIS CO.** Mt. Katahdin and vicinity, ca. 20 miles north-northeast of Millinocket, floor of North Basin. 45° 55' 46" N, 68° 54' 43" W, 3240 ft. alt., 6 September 2002, Miller 14321 (paratype NYS); Baxter State Park, Katahdin area, ca. 20 miles north-northeast of Millinocket, east of Chimney Pond. 45° 54' 41" N, 68° 54' 40" W, 2950 ft. alt., 1 September 2004, Miller 14784 (paratype NYS); between top of Saddle and Caribou Spring. 45° 55' 47" N 68° 55' 55" W, 4460 ft alt., 4 September 2004, Miller 14859 (paratype NYS).

References:

- Crum, H.A. & L.E. Anderson, 1981. Mosses of eastern North America, vol. 1. Columbia University Press, New York.
- Greven, H.C. 2003. *Grimmias of the World*. Backhuys Publishers, Leiden.
- Hastings, R.I. & H.C. Greven, 2007. *Grimmia milleri* sp. nov. (Grimmiaceae) from northeastern North America and the status of *Grimmia afroincurva*. *The Bryologist* 110: 500-505.