Grimmia torenii Hasting, The Bryologist 111: 463-475

Type: U.S.A., California: Lake Co., Mendocino National Forest, Lake Pillsbury area, alt. 585 m, exposed metavolcanic outcrop, 20 May 2006, Toren & Dearing 9477, holotype PMAE; isotypes CAS, MO, NY

Distribution: Am. 1.

Description

Grimmia torenii grows in whitish adherent tufts, dark green to brownish black; central strand well developed, leaves ovate-lanceolate, concave, appressed when dry, perichaetial leaves sharply contrasting with stem leaves, enlarged, broadly lingulate, filmy hyaline throughout except for a small chlorophyllose area projecting into awn. Costa not projecting on dorsal side, hair-points short to long, strongly denticulate, not decurrent, typically narrowly attached, often projecting into lamina, margins plane.Distal areolation 2 stratose, lamina often with hyaline mammillate or papillate cells imbedded in the cuticle, mid-leaf cells quadrate to short-rectangular, sinuose, thick-walled, basal marginal cells short to long-, straight, thin-walled, entire basal area typically hyaline, basal juxtacostal cells elongate, pellucid, slightly sinuose, thick-walled. Sexuality dioicous, seta straight, 0.5-1.0 mm long, centrally attached to urn. Capsules occasionally present, immersed, obloid to cylindric, smooth, yellow-brown; exothecial cells quadrate to short-rectangular, thin-walled; peristome composed of disarticulated teeth, calyptra mitrate, erose, small, operculum long-rostrate to subulate with bulging marginal cells and inner layer of operculum remaining attached to peristome as a thin membrane after dehicence

Discussion

Grimmia torenii is intermediate between *G. tergestina* and *G. ovalis*. Like *G. ovalis*, *G. torenii* has ovate-lanceolate leaves from an ovate base, its awns are narrowly attached, not decurrent, and both species have the same basal areolation. However, *G. torenii* has robust denticulate awns, resembling those of *G. laevigata*. The perichaetial leaves and some structures of the sporophyte imply a close relationship between *G. torenii* and *G. tergestina*, but even here are subtle but significant differences. The distal leaf cells in *G. torenii* are consistently thick-walled and fusiform while those in *G. tergestina* are notable thinner and are either quadrate or weakly fusiform, the awns are narrowly attached in *G. torenii*, broadly attached in *G. tergestina*, the basal juxtacostal cells thick-walled and sinuose in *G. torenii*, thin-

walled and straight in *G. tergestina*, the peristome teeth disarticulated in *G. torenii*, solid in *G. tergestina*.

Specimens examined

U.S.A. California: Lake Co.., Mendocino National Forest, Lake Pillsbury area, 39° 24.5' N, 112° 58.8' W, 585 m, exposed metavolcanic outcrop, 20 May 2006, Toren 9477 and Dearing (holotype PMAE, isotypes CAS, MO, NY); 21 February 2005, Toren 9355, (paratype PMAE); Mendocino National Forest, Elk Mountain, below summit, 39° 17' N, 122° 55.6' W, 1100 m, exposed metavolcanic rock, 20 May 2006, Toren 9475 and 3 September 2001, Toren 8871 and Dearing, (paratypes CAS, PMAE); Hells Peak north end of Bachelor Valley about 5 air miles northwest of Upper Lake, 39° 12' 45" N, 122° 59' 45" W, 1900-2000 ft, July 1972, Toren 778 (paratype SFSU), 30 November 1997, Toren 6857 and Dearing (paratype CAS); Big Canyon Road, south of Howard Springs, 38° 50.5' N, 122° 39.3' W, 500 m, 20 March 2005, Toren 9389 and Dearing (paratype CAS, PMAE). CONTRA COSTA CO., Mt. Diablo State Park, summit area northeast of lookout, 37° 52' 54" N, 121° 54' 50" W, 1160 m, on exposed metavolcanic rock, 15 October 2006, Toren 9498 (paratype CAS, MO, PMAE). SANTA CRUZ CO., Big Basin Redwoods State Park, Basin Trail, near China Grade, 37° 12' 37" N, 122° 12' 39" W, 685 m, on sandstone knob, full sun, 21 January 2001, Kellman 1293 (paratype CAS); Pine Mountain Trail northeast of Buzzard's Roost, 37° 09' 20" N, 122° 13' 22" W, 600 m, on exposed sandstone outcrop in chaparral, 19 July 2002, Kellman 2522 (paratype CAS).

References

Hastings, R.I. 2008. *Grimmia torenii* sp. nov. (Grimmiaceae) from California and its
separation from *G. ovalis* and *G. tergestina*. The Bryologist 111: 463 - 475.