

**Grimmia afroincurva Broth. in Mildbr. Wiss. Ergebn. Deutsch. Zentr.  
Afr. Exp. 2: 148. 13 f. 17. 1910**

**Type:** Africa, Rwanda/Zaire, Volcano Karisimbi, alt. about 1000 m, Sept. 1907.

**Distribution:** Afr.2.

### **Description**

*Grimmia afroincurva* grows in green to blackish usually rounded cushions, cortex of the stem with two layers of steroids, the leaves are straight to slightly incurved when dry, erecto-patent to patent when moist, oblong- to linear-lanceolate, tapering to a slender and acuminate apex, keeled above, the costa is projecting on dorsal side, the hair-points are short to long, weakly denticulate, the margins are narrowly recurved at both sides. The distal areolation is unistratose throughout, also at margins and apex, the mid-leaf cells are rectangular, with incrassate, sinuose walls, the basal marginal cells are rectangular, with thin walls, the basal juxtacostal cells are elongate, pellucid, yellowish, with incrassate and slightly sinuose walls. The sexuality is autoicous, antheridia very small, just below archegonia, the seta is sigmoid to arcuate, capsules are usually present, they are emergent to exerted, obloid, exothecium cells are thick-walled, stomata absent, annulus deciduous, and operculum is rostellate.

### **Discussion**

*G. afroincurva* is endemic to the summit regions of the volcanos in central Africa (Rwanda, Burundi, Zaire, Uganda, Tanzania). It is easily known by rounded, dark-green, richly fruiting cushions with linear, slightly contorted leaves and yellow-brown capsules. Brotherus described the species erroneously as dioicous. Greven (2003) treated it as a synonym of *G. incurva* Schwaegr. A renewed study of the autoicous plants from North America as well as those from Africa revealed that two taxa could be distinguished at specific level: *Grimmia milleri*, endemic to North America and *G. afroincurva* (Hastings & Greven 2007). The autoicous *G. afroincurva* differs from the dioicous *G. incurva* by the usually present capsules, straight to only slightly incurved unistratose leaves, mid-leaf cells without obvious trigonae, leaves erecto-patent to patent when moist, seta sigmoid to arcuate, annulus deciduous and entirely unistratose leaves.

### **Specimens examined**

**Tanzania.** Kilimanjoro, Mawenzie slope, alt. 4600 m, leg. G. Volkens nr. 1374, 01-10-1893, BR 50251; Mt. Meru, summit, leg. C. Uhlig, 20-11-1901, H-Br 1824020; Kilimanjoro, baranco Bivouac, alt. 3900 m, leg. T. Pocz nr. 6935/F, 03-07-1976, EGR, KRAM; **Rwanda.** Volcan Karisimbi, alt. 4000 m, leg. J. Mildbread, 01-09-1907, PC, herb. J. Cardot; Volcan Karisimbi, summit, alt. 4500 m, leg. H. Humbert nr. 7415, 01-06-1929, PC; **Uganda.** Ruwenzori mts., alt. 4750 m, leg. L. Hauman nr. 888, June 1936; Ruwenzori mts., Elena glacier, alt. 15.000 ft, leg. J.G.B. Newbold nr. 5203, 17-09-1959; Ruwenzori mts., Elena glacier, alt. 4570 m, leg. Hamilton nr. 256,

June 1968; Ruwenzori mts., Elena hut, alt. 4500 m, leg. M. Lenz nr. UG 1/12, 04-02-1987; **Zaire**. Ruwenzori mts., col between Umberto and Mt. Emin, alt. 4450 m, leg. S. Lisowski nr. 2580, 27-01-1974, BR;

### **References**

- Greven, H.C. 2003. *Grimmias of the World*, Backhuys Publishers, Leiden, The Netherlands.
- 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.