

Taxonomic Results of the BRYOTROP-Expedition to Zaire and Rwanda 31.

The Andean *Daltonia latolimbata* Broth. in Herzog in Africa

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Abstract. *Daltonia latolimbata* Broth. described in 1916 from the Bolivian Andes occurs also in the high African mountains, consequently is an Andean-Afroalpine species.

Daltonia latolimbata was described as a new species by Brotherus (in Herzog 1916) from Incacorral in the Bolivian Andes, and was mentioned in "Die natürlichen Pflanzenfamilien" (Brotherus 1925). Nobody has collected it again in Latin America since Herzog, therefore it was thought to be an Andean endemic species (Bartram 1931). Later E. and P. Hegewald published this species from the Columbian Andes (1985), confirmed by Menzel (1992), but their specimen proved to be *Daltonia brevinervis* Bartr. During the revision of African Daltoniaceae I concluded, that *Daltonia latolimbata* was collected several times since 1971 in the East African mountains and also in Central Africa by the BRYOTROP expedition in 1991. The species seems to be widespread in the Afroalpine region

Description of the species, supplementing those of Brotherus (1925) and Bartram (1931):

***Daltonia latolimbata* Broth. in Herzog** *Bibl. Bot.* 87:129. (1916).

(*See figs. I and fig. II*)

Plants robust compared to other members of the genus. In small tufts, glossy, golden green above, pale brown below. *Stems* about 2-3 cm high, simple or branched, erect or ascendent, 3-4 mm wide with leaves, lightly radiculose below. *Rhizoids* smooth. *Leaves* crowded, erect-spreading and slightly twisted when dry, more widely spreading under the microscope and somewhat flexuose when wet, a little carinate in the middle, therefore with a median fold near the costa, oblong lanceolate, gradually acuminate, to 4

mm long, 0,9 mm wide at base; *margin* narrowly revolute, often merely reflexed or even flat in acumen, entire; *border* pellucid, rather indistinct, (10-)12-15 rows wide at the base, (4-5)-7-9 rows at the middle and 2-3 rows wide at the apex, formed by long, narrow cells; *costa* 45µm wide at base, ending about 4/5 the leaf length or longer; *cells* of apical blade with oval lumina, incrassate, pellucid, about 7µm wide and 20µm long, median cells between border and costa linear-oblong and linear-rhomboidal, incrassate and pellucid, a band of *juxtacostal cells* on either side of costa of 8-10 rows of long cells with narrow lumina, similar to the border cells and not extending beyond the costa. Autoicous, *seta* 7-8 mm long, slender, reddish, twisted when dry, slightly rough above by bulging cells; *capsule* dark-brown, erect or suberect, oval, 1.1-1.5 mm long, narrowing to seta; *peristome* teeth yellow to brownish-yellow, very papillose; *operculum* yellowish above, brown on the lower part, conical, with an erect rostrum, *calyptra* 1.5 mm long, lower 1/3 fimbriate; *spores* almost smooth, very finely papillose, 25µm in diameter.

Daltonia latolimbata Broth. belongs to a group of Andean species which have elongate juxtacostal cells such as *D. brevinervis* Bartram, (Bartram 1931), *D. gomezii* Crosby, (Crosby 1974) and *D. fenestrellata* Griffin (Griffin, 1980). Although *D. latolimbata* shows similarity to the other members of this group in the above mentioned feature, nevertheless it is well differentiated in other characters.

Key for the identification of the African and American species with elongate juxtacostal cells:

1. Costa extending to 4/5 leaf length
 - a. The elongate juxtacostal cells spreading from just above the base to about halfway to the apex beyond the costa; border ending just below the acumen; seta smooth*D. gomezii*
 - b. The elongate juxtacostal cells extending from base to end of the costa (not extending beyond); the border ending in the acumen; seta slightly rough above.....*D. latolimbata*
2. Costa ending at midleaf
 - a. The border ending in the acumen; seta scabrous only in its upper part*D. fenestrellata*
 - b. The border extending only to 1/3 of the margin;

seta throughout scabrous.....*D. brevinervis*

Distribution:

(See fig. III)

BOLIVIA: Incacorral, 2200 m alt. *Herzog 4950a* (holotype H-BR).

KENYA: Mt. Kenya, 2400-2700 m alt., *T. Pócs 6601/BF*, 29. Nov. 1971. (EGR, EA) and 3050 m alt., *T. Pócs 9235/K*, 2-3. Feb. 1992. (EGR).

TANZANIA: Southern Highlands: Mt Rungwe, 2500-2600 m alt., *T. Pócs*, & *I. F. Swai 6767/Q*, 17. Aug. 1972. (EGR); Mt. Meru, 2400-2650 m alt., *T. Pócs*, *Mnyonga* & *V. R. Nsolomo 89193/D*, 21. June 1989. (EGR).

COMORO ARCHIPELAGO: Ngazidja (Grande Comore) Island, Kartala volcano, 740 m alt., *T. Pócs 88088/R*, 19. March 1991. (EGR). All of these occur on bamboo stems and branches.

ZAIRE: Prov. Kivu, Kahuzi-Biega National Park, on bamboo, 147, *T. Pócs 7642* (B); on bamboo, *T. Pócs 91130* (EGR, B).

RWANDA: Nyungwe Forest, on Erica. 101, *T. Pócs 6027* (B). Karisimbi, on giant Senecio 161, *T. Pócs 8253* (B, EGR); on Lobelia, 162, *Frahm 8170* (B); on Senecio, *T. Pócs 8105* (B, EGR); 2500-3700 m altitude.

The distribution of *Daltonia latolimbata* presents an altimontane version of bicontinental (Afro-American) disjunction on the analogy of several other species, for example *Andrewsianthus jamesonii*, *Isotachis aubertii* and *Marsupella africana* (summerised by Gradstein et al. 1983 and by Delgadillo 1993, and Vána 1982), *Campylopus incacorralis*, *C. nivalis*, *C. jamesonii* (Frahm 1982, 1985, 1990), *Leptodontium luteum* (DeSloover 1987). (See fig. 2.)

Habitat:

The species occurs in Africa in the Afroalpine, Afrosubalpine and upper montane belts of the high African volcanoes, as an epiphyte on bamboo (*Sinarundinaria alpina*) or on Afroalpine plants, such as *Lobelia*, *Erica*, or *Dendrosenecio* species. Unfortunately we have no information

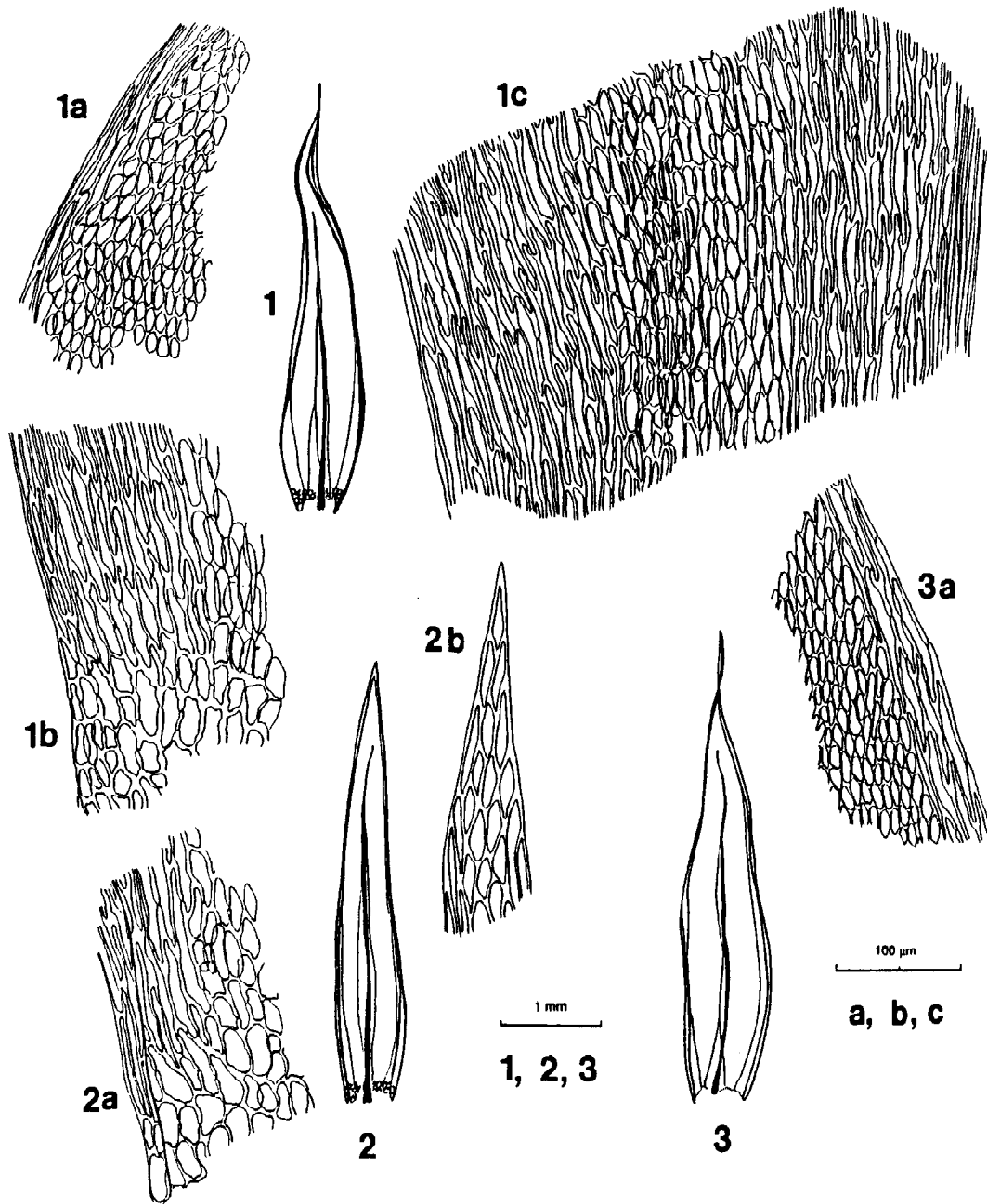


Fig. I: *Daltonia latolimbata* Broth. in Herz. (after holotype H-BR). 1-3: Different leaves. 1a, 3a: Upper leaf margin. 1b, 2a: Basal margin cells. 1c: Border- and juxtacostal-cells at the lower part of the leaf. 2b: Leaf apex.

Fig. II: *Daltonia latolimbata* Broth. (1, 2, 3: after *T. Pócs, Mnyonga & V. R. Nsolomo 89193/D*, EGR; 4: *T. Pócs 91130*, EGR) 1: Exostomium teeth. 2: The plant on a branch of bamboo. 3: Cellwall-thickenings in the sporangium wall. 4: Endostomium teeth.

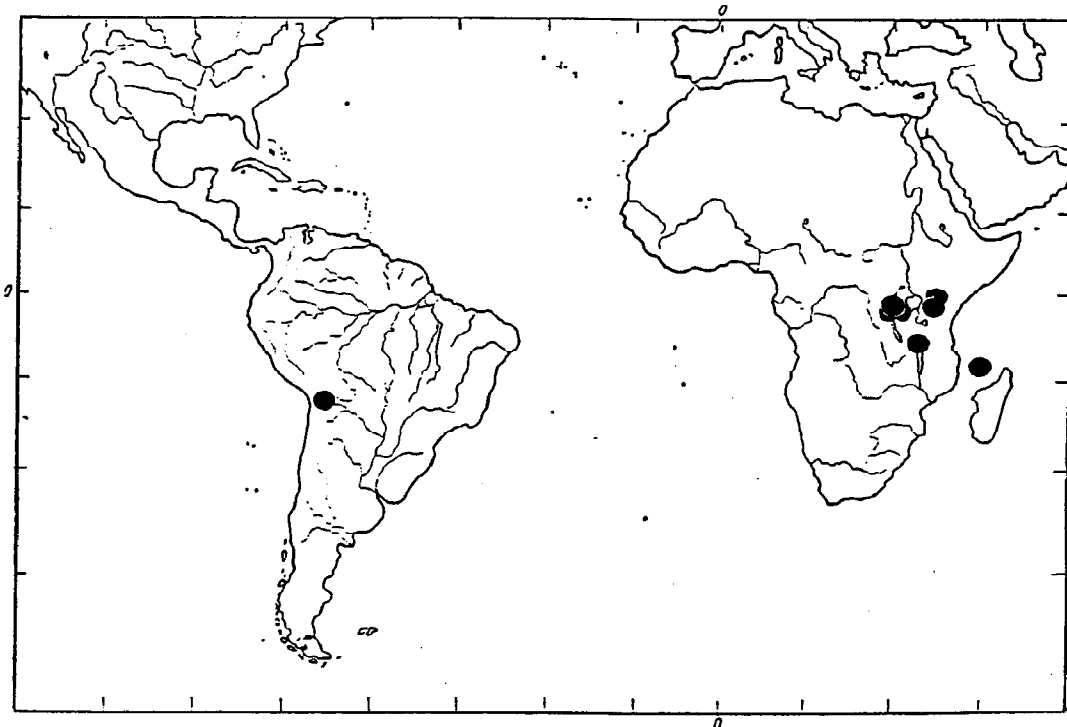


Fig. III: Distribution of *Daltonia latolimbata* Broth.

tion on its Andean habitat, where it occurs on rocks.

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