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## Taxonomic results of the BRYOTROP Expedition to Zaire and Rwanda

### 32. Bryaceae

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**Abstract :** 16 species of Bryaceae collected during the Bryotrop expedition to Rwanda and Zaire were examined resulting in 7 new records for Central Africa.

#### Abbreviations:

\* New record for Rwanda (viz. Zaire)

KB : Kahuzi-Biega (Zaire)

Ka : Karisimbi (Rwanda)

Ny : Nyungwe Forest (Rwanda)

Ak : Akagera region (Rwanda)

Ki : Kigali region (Rwanda)

100-171, number of collecting site.

For locality data and a description see the contribution by E. Fischer on the vegetation of the study area in *Tropical Bryology* 8:13-37, 1993.

#### Key to the genera of Bryaceae in Central Africa

1. Plants small, 1.5cm tall or less.....2
- 1.\* Plants robust, usually more than 3cm tall.....7
2. Leaves linear, flexuose, unbordered, crowded together; plants less than 0.5cm tall, capsule erect, ellipsoid with tapering neck; seta

- flexuose.....*Orthodontium*
- 2.\* Leaves ovate to lanceolate, leaves crowded above but lower leaves distantly spaced.....3
3. Sporophyte lateral.....*Mielichhoferia*
- 3.\* Sporophyte terminal.....4
4. Leaves with costa excurrent, seta reddish brown, capsule usually pendant.....*Bryum*
- 4.\* Leaves with costa excurrent, percurrent or ending below the apex; seta usually straw coloured.....5
5. Leaves with costa excurrent, plants gemmiferous or not, leaf margin bordered or unbordered .....*Brachymenium*
- 5.\* Leaves with costa percurrent or ending below the apex.....6
6. Plants whitish green, in soft tufts; stem without tomentum.....*Mniobryum*
- 6.\* Plants green to yellow green; stems sparsely tomentose to tomentose, leaf margin unbordered.....*Pohlia*
- 7 Stems erect, frequently arise from rhizomes,

leaves ovate to lanceolate, arranged in a rosette with lower leaves reduced or leaves distantly and equally spaced almost all along the stem, costa excurrent and has a very narrow stereid bundle.....*Rhodobryum*  
7.\* Rhizomes absent, leaves equidistant and about equal in size, costa ending below apex, costa has a very thick stereid bundle.....*Bryum*

*Orthodontium loreifolium* Besch.

The plants are identified by their 1) small size, 0.5cm tall or less; 2) the leaves are crowded together, linear with acuminate apices; 3) flexuose seta; 4) erect ellipsoidal capsule with a tapering neck.

The plants are corticolous on *Hagenia abyssinica* in *Hagenia-Hypericum* forest, on *Agauria* in *Juncus effusus* bog and in *Hagenia-Arundinaria* forest between 2400m. and 3300m.

Distribution : East African montane to Lemurian  
**Ka**: 159, *Pócs* 8280, 8241; **KB**: 134, *Pócs* 7222; 128, *Pócs* 7396.

*Mielichhoferia cratericola* Broth.

Syn. *Schizymenium cratericola* (Broth.) Ochyra.  
The plants are 1) small in size, the stems measure 1cm or less; 2) leaves are distantly spaced along the stem; and are 3) lanceolate, 4) the costa ends below the apex; 5) the sporophyte is laterally placed; and 6) the capsule is inclined and more or less asymmetrical.

The plants are rupicolous at 3200m. in Elfin forest-like *Syzygium* stand and *Erica* heath.

Distribution : Zaire  
**KB**: 148, *Pócs*: 7866, 7876.

*Mniobryum linderi* Thér.

The plants are 1) small, less than 0.5cm tall; 2) stem reddish; 3) leaves ovate-lanceolate; 4) costae percurrent, to 36  $\mu\text{m}$  in diameter.

The plants are terricolous near a waterfall at 2400m.

Distribution : Zaire  
**Ny**: 104, *Frahm* 6200b.

\**Brachymenium angolense* (Welw. & Dub.) Jaeg.  
The plants have leaves that are 1) strongly concave, with long excurrent costae, 2) an obtuse apex

and 3) no distinct border. 4) laminar cells are thin walled and inflated.

The plants are corticolous at 1300m. in a mosaic vegetation type consisting of dry *Acacia* woodland, dry forest and swamp forest.

Distribution : Southern Africa, East Africa and Zaire..

**Ak**: 171, *Pócs* 8376. New to Rwanda.

\**Brachymenium philonotula* Broth.

The plants possess 1) lanceolate leaves distantly spaced along the stem; and 2) leaves with very long acuminate apices with very long excurrent costae.

The plants are terricolous on soil covered rocks of quartzite with dry grassland vegetation at 1500m.

Distribution : Burundi, Rwanda Zaire, Kenya, Tanzania, Madagascar.

**Ak**: 170, *Pócs* 8392.

\**Pohlia afro-cruda* (C.Müll.) Broth.

The plants are 1) small in size, 1 cm or less; 2) stems are tomentose with reddish brown rhizoids; 3) the leaves are distantly spaced along the stem, the leaves are larger above, reduced below; 4) the costa ends below the apex

The plants are rupicolous in the Ericaceous belt between 2560m. and 2610m.

Distribution : afroalpine

**KB**: 137, *Frahm* 6954, *Pócs* 6959; **Ny**: 106, *Frahm* 6277.

*Pohlia elongata* Hedw.

The plants are 1) small; 2) the stems measure 1.5cm or less; 3) the leaves are distantly spaced along the stem; 4) the stems are tomentose; 5) the leaves are lanceolate with acuminate apices; 6) the costa ends below the apex; 7) capsules are asymmetrical, curved, pyriform and 8) spores are light-brown, rounded, 11.5  $\mu\text{m}$  in diameter.

The plants are lignicolous in *Sphagnum-Juncus* bog at 2470m. and terricolous along the roadside at 2400m.

Distribution : subcosmopolitan

**KB**: 134, *Pócs* 7225; **Ny**: 104, *Frahm* 6202. New for Rwanda and Zaire.

\* *Bryum alpinum* Huds.ex With.

The plants are frequently red to reddish green in colour. This species is recognised by 1) the densely tufted plants with 2) crowded leaves, more or less evenly spaced along the stem, 3) leaves are lanceolate with acuminate leaf apices, 4) short excurrent costae and 5) thick-walled laminal cells. The plants are rupicolous along stream in *Hagenia-Hypericum* forest (3300m.), terricolous in open *Senecio-Lobelia wollastonii* paramo (3980m.), corticolous and lignicolous on *Senecio* stem (3560m and 3570m.) in *Senecio refractisquamatus* paramo.

Distribution : cosmopolitan, afro-montane.

**Ka**: 163, *Pócs* 8117; 162, *Pócs*, 8140, 8168, 8224: 159, *Frahm* 8049. New for Rwanda.

*Bryum arachnoideum* C.Müll.

The plants are 1) small, silvery white with 2) very short julaceous stems, 3) broad, ovate, concave leaves with acuminate apices, 4) leaf margins unbordered, with denticulate hair points and 5) hyaline upper laminal cells. These plants were already identified by J-P. Frahm.

The plants are rupicolous on quartzitic rocks at 1500m.

Distribution : Uganda, Rwanda, Kenya, Malawi, Rhodesia and Madagascar.

**Ak**: 170, *Pócs* 8386, 8366, *Frahm* 8397, 8364, 8363.

*Bryum argenteum* Hedw. var *lanatum* (P.Beauv.) Hampe.

*Bryum argenteum* is easily identified by 1) the silvery green appearance of the plants; 2) julaceous stems with 3) broad, ovate concave leaves with acuminate apices, 4) leaf margins unbordered and 5) hyaline upper laminal cells. Plants of *B. argenteum* with excurrent costae are treated under the var. *lanatum*.

The plants are terricolous in a road-cut area in *Lobelia mildbraedii-Cyperus denudatus* bog with patches of *Erica rugegensis* heath at 2450m.

Distribution : cosmopolitan, widespread in tropical Africa, and frequently found in disturbed areas. **Ny** : 101, *Frahm* 6089.

\* *Bryum huillense* Welw. & Duby.

The plants are 1) distinctly rosulate tufted, 2) the

leaves measure less than 8mm long, 3) obovate, 4) distinctly bordered, the border consists of much thicker walled linear cells and 5) leaf margins serrate with single teeth.

The plants are terricolous in mesic montane evergreen forest at 2400m.

Distribution : pantropical

**Ny** : 110, *Pócs* 6497. New to Rwanda.

*Bryum keniae* C.Müll.

1) The upper leaves are tightly rosulate and the lower leaves are distant and reduced; 2) large and 3) the costa is generally long excurrent with a denticulate tip.

The plants are terricolous in giant heather (*Erica*) vegetation belt between 2700m. and 2900m.

Distribution : widespread afro-montane species.

**KB** : 130, *Frahm* 6930; 145, *Frahm* 7897.

\* *Bryum lonchophyllum* Broth.

Plants 1) robust to 4cm tall; 2) leaves ovate, concave with a distinct border of 2-4 rows of cells; 3) leaf apices obtuse, rounded with 4) strong costae ending below the apex.

The plants are rupicolous along stream in *Hagenia-Hypericum* forests at 3300m.

Distribution : Cameroun and Fernando Po Island.

**Ka** : 159, *Frahm* 8047. New to Rwanda.

*Bryum pseudotriquetrum* (Hedw.) Gaertn., Meyer & Schreb.

Plants 1) green to reddish-green above, brownish to reddish brown below; 2) leaves crowded above, distantly spaced below, twisted to spirally twisted around the stem when dry; 3) stems frequently densely tomentose below; 4) leaves broad, concave, decurrent; 5) Leaf margin serrated near the apex, bordered.

The plants are rupicolous near a waterfall, terricolous and ramicolous in montane rain forests between 900m. and 2300m.

Distribution : cosmopolitan, widespread in northern and southern hemispheres.

**Ny** : 111, *Frahm* 6422; 155, *Frahm* 7967. **KB** : 122, *Frahm* 6646, 6805.

\* *Rhodobryum commersonii* (Schwaegr.) Par.

The plants are 1) robust; 2) stems arise from rhizomes; 3) leaves crowded or loosely rosulate above, distant and smaller below; 3) leaves flat to weakly undulate; leaf apices acuminate; leaf margin bordered with 2-3 rows of cells; margins in upper half of leaves serrated, dentition prominent with large tooth cells

The plants are terricolous in montane mossy forest between 1300m. and 2000m.

Distribution : Paleotropical, tropical regions to South Africa, Comores, Reunion and India.

**Ny** 155, *Frahm* 7985. **KB**: 126, *Pócs* 6818; 125, *Pócs* 6716. New to Rwanda and Zaire.

\* *Rhodobryum perspinidens* (Broth.) Pócs.

The plants have 1) leaves that are distantly spaced along the stem, 2) the leaves are distinctly decurrent with a broad base and 3) the leaf margins have very long, spine-like teeth that are vertically directed.

The plants are terricolous in montane rainforest at 2500m.

Distribution : afro-montane

**Ny** : 103, *Frahm* 6178. New to Rwanda.

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