

**BAZZANIA ORBANII (LEPIDOZIACEAE), A NEW SPECIES
FROM MADAGASCAR.
EAST AFRICAN BRYOPHYTES, XXVIII.**

Tamás Pócs

Eszterházy College, Department of Botany, Eger, Pf. 43, H-3301, Hungary;
phone: (36)-36-434-685, e-mail: colura@chello.hu

Bazzania orbanii from Madagascar

Key words: *Bazzania*, endemism, Isalo National park, Lepidoziaceae, Madagascar

Abstract: *A new species of Bazzania is described from Isalo National Park in the Toliara Province of south central Madagascar. The new species was collected from a very isolated wet spot of the otherwise dry area, notorious for its endemic succulent plants. The new species differs from all known African taxa by its recurved underleaf margin consisting of elongate cells with incrassate, brownish walls.*

Introduction

Members of the Botany Department of Eszterházy College (Eger) participated in a collecting expedition organized by Missouri Botanical Garden in Madagascar, during September and early October of 1994, to investigate the bryological diversity of the island. One group of them, Sándor Orbán, András Szabó and András Vojtkó, visited the dry southeast part of the island, poor in bryophytes. But even in this area there are small pockets of ecologically different habitats. Such was the so called “Piscine Naturelle” in the otherwise dry, rocky Isalo National Park, where a brook, leading through a sandstone gorge in a depression forms this natural pool surrounded by a riverine forest large specimens of *Pandanus pulcher* (plates I–II). On the shady rocks and soil of the banks some ferns and bryophytes are abundant, like *Calypogeia longifolia* Steph. (Pócs 2005). At this place collected S. Orbán also a sample of *Bazzania* which is peculiar for the first sight, having recurved underleaf margins, which are conspicuous under dissecting microscope, also by their brown colour (see plate III). Jones (1975) in his revision of African *Bazzania* discusses in details the great variability and difficult delimitation of the taxa within section *Connatae*, where also this species belongs, but none of the other African taxa

has recurved margin of the amphigastria with incrassate, brownish cell walls. On this base the Madagascar plant collected at the “Piscine Naturelle” of Isalo National Park is described as new to science.

Description of the new species

Bazzania orbanii Pócs, sp. nov. (Figs. 4: 1 and 3-7; 5)

Differt a *Bazzania decrescente* (Lehm. et Lindenb.) Trevis *marginibus recurvis amphigastrii et a* *B. recurvolimbata* (Steph.) Kitagawa *parietibus incrassatis et brunneis cellularum marginis amphigastrii.*

Typus: SW Madagascar, Toliara Province, Isalo National Park, “Piscine naturelle”, a deep pool of a brook in a sandstone gorge, shaded by *Pandanus pulcher* trees, at 800 m alt., under overhanging streambank rocks, on soil. Coll. S. Orbán, 9455/J (Holotype EGR, Isotypes MO, TANA).

Pale green, weft forming plant with 10-20 mm long, slightly branching, 1.5 mm wide, in dry state quite julaceous shoots. Stem 250 µm thick, medullary cells in about 8 layers and evenly incrassated walls. Flagelliform vertical intercalary branches 3–5 mm long, 150 µm thick. Side leaves falcato-ovate, imbricate, 700–750×480–500 µm, in dry state incurved, with rounded or slightly 1–3 apiculate apex. Cells with nodulose trigones, at the leaf apex with incrassate walls. Apical cells 10–28 x 10–20, the median 30–35×25–28 and the basal ones 30–50×25–30 µm in size. Underleaves imbricate or contiguous, reniform oval, wider than long, 250–300×350–460 µm, with rounded or sunuose-truncate or seldom slightly bilobed apex and with partly or wholly recurved margin. Marginal cells elongated parallel to the margin, 25–32×15–20 µm, with strongly and evenly incrassate, brown tinged walls, in 1–4 rows without chloroplasts. The other cells are similar to those of the side leaves. Sterile.

Etymology: It is named after its collector, prof. Sándor Orbán, renowned bryologist.

Discussion

Bazzania orbanii is a member of Sectio *Connatae* (Steph.) Fulford and seems to be related to the widespread *Bazzania decrescens* (Lehm. et Lindenb.) Trevis, which is a very polymorphic taxon (Jones 1975, Grolle 1995). Especially in Madagascar and in the neighbouring islands several uncertain taxa of this group were already described, which badly need revision. There are some small sized forms of *Bazzania decrescens* with entire leaves and underleaves, collected at many localities, also in Isalo National Park, which can be compared with the new species (see fig. 1: 2). Anyhow, none of them has this peculiar

amphigastrial margin, on which base the species easily can be separated. Similar recurved underleaf margin is observed in certain Asian species, like in *Bazzania recurvolimbata* (Steph.) Kitagawa of Thailand and Vietnam (Kitagawa 1967, Pócs 1969). It differs even from this species by its thick, brown walled marginal underleaf cells, which are in *B. recurvolimbata* hyaline and thin walled. The generally dry and very rocky Isalo National Park have several endemic species, both in the xeric habitats (e.g. the succulent *Adenia isaloensis*, *Aloe isaloensis*, *Euphorbia primulifolia* var. *begardii*, *Pachypodium rosulatum* ssp. *gracilius* and a legume with phyllocladia, *Mundulea phylloxylon*, according to Rauh 1995) and in the gorges with permanent running water (*Ravenea rivularis*, a tall palm tree, see Dransfield & Beentje, 1995). The new *Bazzania* species seems to be a nice addition to these Isalo endemics.

Acknowledgements

The Author is grateful to the National Geographic Society, USA (Grants No. 5201/94, to the Hungarian Academy of Sciences and to the Hungarian Scientific Research Fund OTKA (Grant No. T 038319) for sponsoring and to Dr. Robert E. Magill (MO) for organizing the Madagascar expedition, finally to Prof. Sándor Orbán to place at his disposal the *Bazzania* specimen.

References

- Dransfield, J. & Beentje, H. (1995). The Palms of Madagascar. Royal Botanic Gardens, Kew.
- Grolle, R. (1995). The Hepaticae and Anthocerotae of the East African Islands. An annotated catalogue. *Bryophytorum Bibliotheca* 48: 1–178.
- Jones, E.W. (1975). African Hepatics XXVII. *Bazzania*. *Journal of Bryology* 8: 299–316.
- Kitagawa, N. (1967). Studies on the Hepaticae of Thailand. I. The genus *Bazzania*, with general introduction. *The Journal of the Hattori Botanical Laboratory* 30: 249–270.
- Pócs, T. (1969). A short survey of the *Bazzania* of North Viet-Nam. *The Journal of the Hattori Botanical Laboratory* 32: 79–94 + 204.
- Pócs, T. (2006). East African Bryophytes, XX. Observations on some Calypogeiaceae. *Acta Academiae Paedagogicae Agriensis, Nov. Ser., Sectio Biologiae* 25: 29–35.
- Rauh, W. (1995). Succulent and Xerophytic Plants of Madagascar, I. Strawberry Press, Mill Valley.



Fig. 1: Dry rock vegetation in Isalo National Park with *Mundulea phylloxylon* (Fabaceae) in the foreground. (Photo by S. C. Kozma)



Fig. 2: The “Piscine Naturelle” in Isalo National Park. (Photo by S. C. Kozma)



Fig. 3: The habit of *Bazzania orbanii* sp. nov. (Photo by T. Pócs)

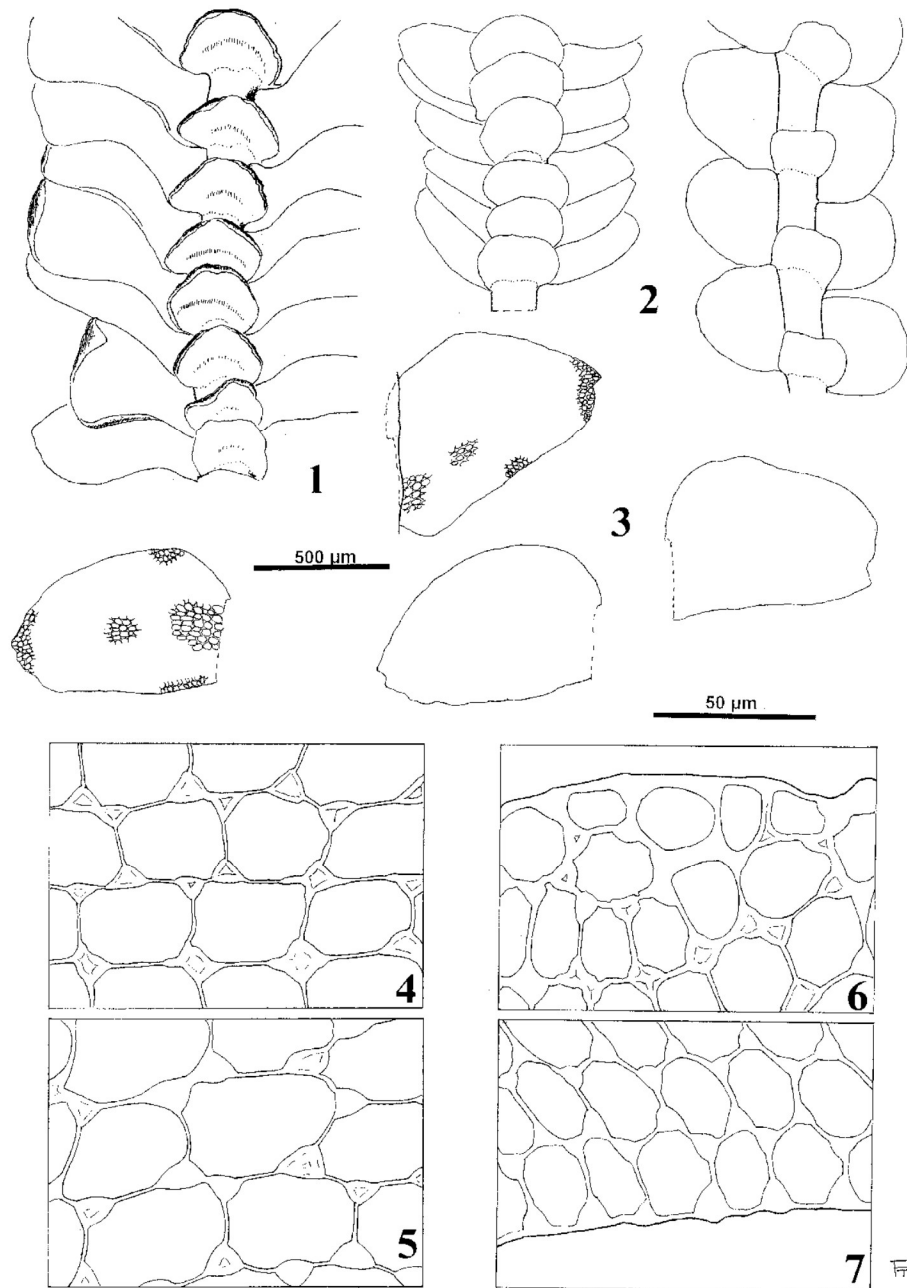


Fig.4. 1 and 3-7: *Bazzania orbanii* Pócs, drawn from the type, Orbán 9455/J. 2: Small forms of *Bazzania decrescens* (Lehm. & Lindenb.) Trev. collected by Orbán, 9456/C and F, also from the area of Isalo National Park, in the sandstone gorge high above the “Piscine Naturelle”, under shady sandstone cliffs.
 1-2: Habit. 3: leaves. 4: Median, 5: basal, 6: apical and 7: marginal leaf cells.

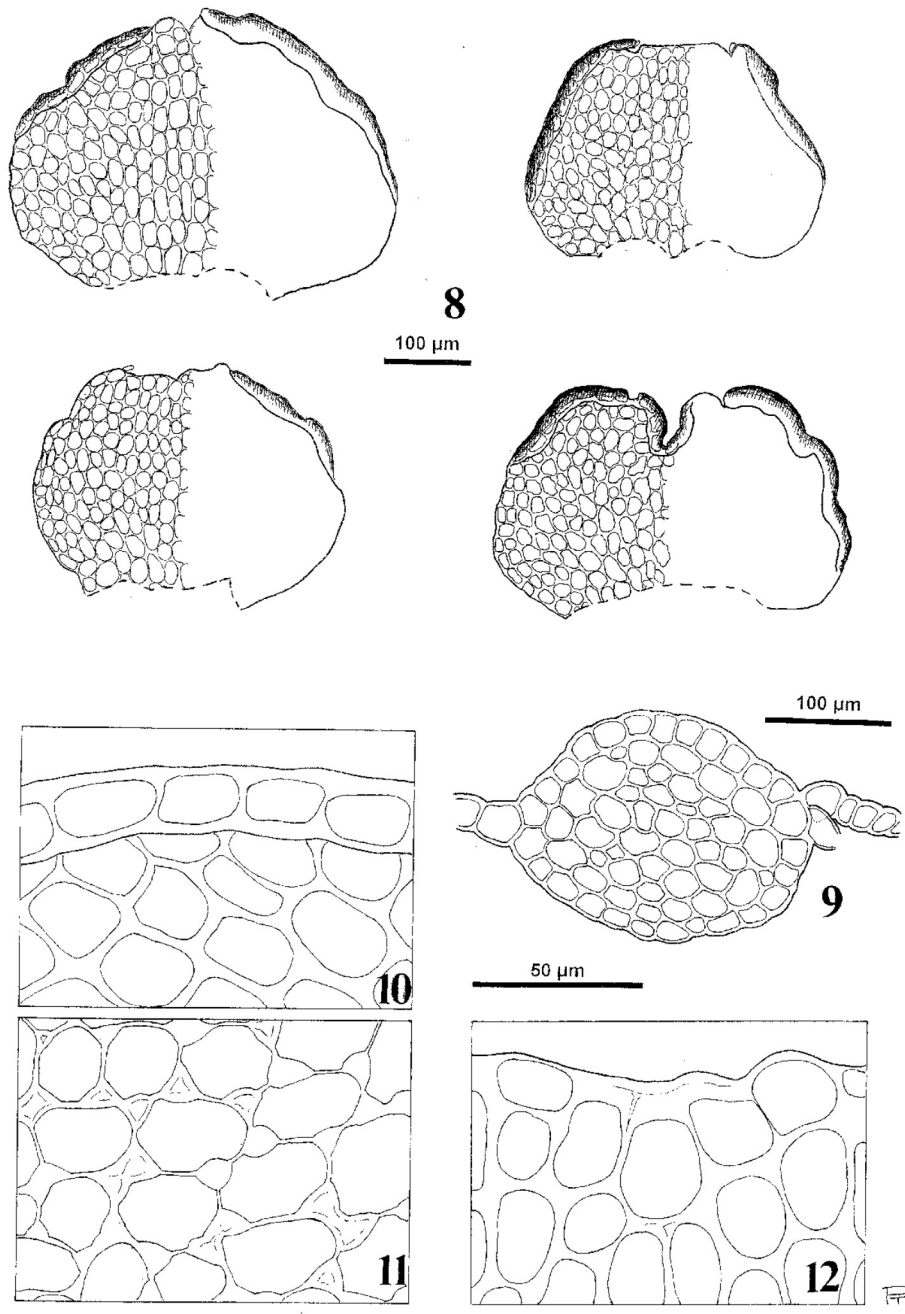


Fig.5. *Bazzania orbanii* Pócs, drawn from the type. 8: Underleaves. 9: Stem section. 10: Marginal, 11: median and 12: apical underleaf cells.