Schoenobryum concavifolium (Cryphaeaceae, Bryophyta) new record for Togo, Tropical West Africa

Fabiano Santos DANTAS[1], Denilson Fernandes PERALTA[2] & Emilia de Brito VALENTE[3]

[1] *Programa de Pós-Graduação em Botânica, Universidade Estadual de Feira de Santana, BA, Brasil. E-mail: fabianodantas.bio@gmail.com (correspondence author)*
https://orcid.org/0000-0002-1059-2770
[2] *Instituto de Pesquisas Ambientais, SP, Brasil. E-mail: denilsonfperalta@gmail.com*
https://orcid.org/0000-0003-4304-7258
[3] *Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, BA, Brasil. E-mail: ebvalente@gmail.com*
https://orcid.org/0000-0002-9801-2370

Abstract: Dantas, F.S., Peralta, D.F. & Valente, E.B. (2025): *Schoenobryum concavifolium* (Cryphaeaceae, Bryophyta) new record for Togo, Tropical West Africa. *Frahmia* 43:1-3*.
Schoenobryum concavifolium is a new record for Togo. The specimen examined was collected in a region of mountain, with vegetation of semideciduous rainforest, on tree branches. We present in this study a comprehensive characterization for this species, accompanied by morphological description, illustrations and ecological notes.

Key words: Hypnales, Pleurocarpous mosses, Sub-Saharan Africa.

1. Introduction

The moss genus *Schoenobryum* Dozy & Molk. comprises species characterized by the presence of a terminal perichaetium on secondary branches, a simple peristome, and papillose peristome teeth (Manuel 1982). This genus was previously revised for Africa by O'Shea (2003), who concluded that *Schoenobryum concavifolium* (Griff.) Gangulee is the sole representative on the continent, with all other taxa previously cited in the literature being synonymized. As part of our global revision of the genus, we corroborate that this is indeed the only species present in sub-Saharan Africa. Notably, one of the specimens examined during this study represents a new record of this species for Togo.

The hornwort and liverwort flora of Togo was investigated by Abalo-Loko *et al.* (2019). Nevertheless, the moss flora of the country remains largely undocumented and lacks a systematic catalogue, with the only reference being the general checklist of mosses from Sub-Saharan Africa compiled by O'Shea (2006). In this context, new species records provide valuable insights into bryophyte diversity, particularly in tropical regions, which, as emphasized by Frahm (2003), are among the most critical areas requiring comprehensive bryofloristic research.

* Published online: November 11, 2025

Accordingly, this study presents a brief discussion of *Schoenobryum concavifolium* in Togo, based on the specimen examined, and includes a detailed morphological description, illustrations, and notes on its ecology and geographic distribution.

2. Material and methods

The analyzed specimen is deposited in the bryophyte collection of the SP Herbarium that was sent by Dr. Goudjo Ameto Abalo-Loko. It was examined following standard methodologies for the study of tropical bryophytes (Frahm 2003).

3. Systematic treatment

Schoenobryum concavifolium (Griff.) Gangulee, Mosses E. India 5: 1209. 1976. (Fig. 1)
≡ *Orthotrichum concavifolium* Griff., Calcutta J. Nat. Hist. 2(8): 484. 1842.

Plants frondose, branch leaves imbricate when dry, erect-expanded when moist, primary stem stoloniferous, secondary stem pinnated, foliate; leaves elliptical to orbicular-lanceolate, frequently concave, base decurrent, apex acute to short-acuminate, margins planes, recurved below, costa subpercurrent; alar cells quadrate to short-rectangular, short-linear near the costa, median and upper cells oblong to rhomboidal, prorate; pseudoparaphyllia present; perichaetial leaves differentiate, oblong to obovate, margins contorted above, costa long-excurrent; sporophyte terminal, cladocarpous, capsule ovoid, peristome simple, calyptra mitriform, operculum rostrate.

Specimen examined: TOGO, Tomégbé, 7º30’99’’N, 0º35’86’’E, 352 m, épiphyte, forêt semi-décidue, 01 Nov 2013, *Abalo-Loko 45* (SP 486334).

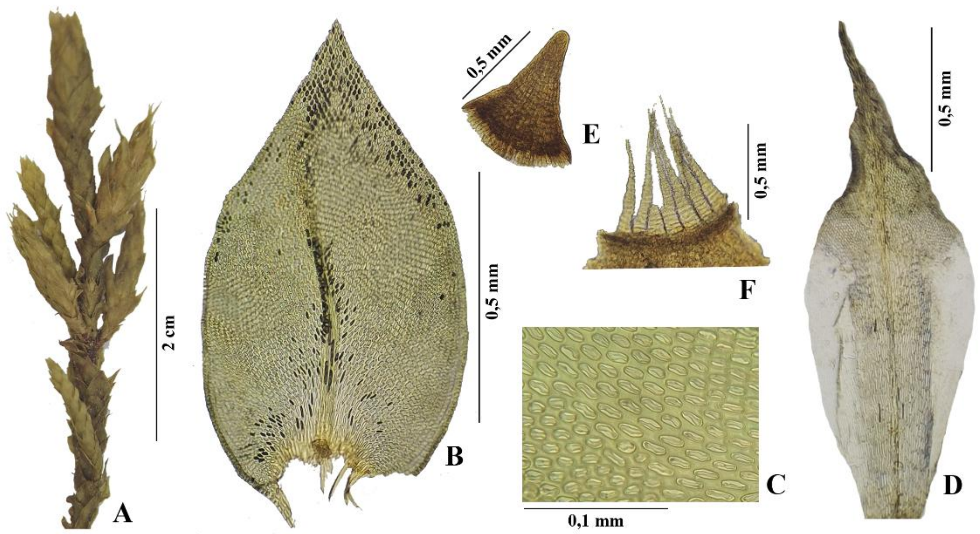

Figure 1. *Schoenobryum concavifolium* (Griff.) Gangulee. A. Habit. B. Leaves. C. Median cells. D. Perichaetial leaves. E. Operculum. F. Peristome.

Comments: *Schoenobryum concavifolium* is distinguished from other species of the family Cryphaeaceae in Africa by the presence of a terminal sporophyte in the secondary branches and simple peristome teeth, while species of the genus *Cryphaea* F.Weber have lateral capsules and double peristome teeth.

Habitat: Epiphytic, on tree and shrub branches. **Elevation:** 0–2500 m alt.

Ecological notes: According to Abalo-Loko *et al.* (2019), the region where the specimen was collected is characterized by mountains area, with semi-deciduous rainforest vegetation intercut by Guinean savannas. In Togo, *Schoenobryum concavifolium* occurs associated with *Spruceanthus floreus* (Mitt.) Sukkharak & Gradst. and *Thysananthus auriculatus* (Wilson) Sukkharak & Gradst.

World range: Pantropical.

Distribution in Africa: Angola, Central African Republic, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Ethiopia, Ghana, Ivory Coast, Kenya, Madagascar, Malawi, Nigeria, Rwanda, Sierra Leone, South Africa, Tanzania, Uganda (O'Shea 2003, 2006) and new for Togo.

4. Acknowledgments

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) – Finance code 001 (process nº 88887.921862/2023-00).

5. Bibliography

ABALO-LOKO, G.A., GUELLY, K.A., WIGGINTON, M. & REEB, C. (2019) Checklist of liverworts and hornworts of Togo. *Cryptogamie, Bryologie* 40(18): 233–245.

FRAHM, J.P. (2003) Manual of Tropical Bryology. *Tropical Bryology* 23: 1–195.

MANUEL, M.G. (1982) A brief review of the systematics of the Leucodontaceae and the Cryphaeaceae. *Beiheft zur Nova Hedwigia* 71: 281–289.

O'SHEA, B.J. (2003) A revision of *Schoenobryum* (Cryphaeaceae, Bryopsida) in Africa. *Tropical Bryology* 24: 147–159.

O'SHEA, B.J. (2006) Checklist of the mosses of sub-Saharan Africa. *Tropical Bryology Research Reports* 6: 1–252.