

BRUCHIACEAE

(Jan-Peter Frahm)

Plants very small to medium sized, solitary or forming short tufts. **Stems** short, simple or few branched by innovations. **Leaves** mostly progressively larger distally, lanceolate to narrowly lanceolate or subulate from an oblong or oblong-ovate base; margins plane, entire or distal tips serrulate; costa single, subpercurrent to short excurrent; laminal cells smooth. **Asexual structures** absent. **Autoicous**. **Sporophytes** terminal; perichaetial leaves often larger and longer. **Seta** short to elongate, erect, smooth. **Capsule** immersed to exserted, urn pyriform with a neck distinctly elongate, occasionally as long as or much longer than the urn; stomata numerous in neck region, superficial; annulus often well developed. **Operculum** absent or present and rostrate. **Peristome** absent or single with 16 teeth. **Calyptra** cucullate or mitrate. **Spores** papillose to spinose.

DISCUSSION. The Bruchiaceae were originally included as a subfamily (Trematodontoideae) in the Dicranaceae but re-established as a family by Buck (1979). It includes four genera: *Bruchia*, *Pringleella* (3 species), *Eobruchia* (2 species) and *Trematodon*, of which only *Bruchia* and *Trematodon* are represented in Africa. Magill (1981) includes also *Cladophascum* in this group, which is treated here in the Dicranaceae. The family contains more than 100 species worldwide.

LITERATURE. **Buck, W. R. 1979.** A re-evaluation of the Bruchiaceae with the description of a new genus. *Brittonia* 31: 469-473. **Magill, R.E. 1981.** - see General refs.

1. Capsule cleistocarpous (without operculum, annulus, and peristome), immersed in the leaves *Bruchia*
1. Capsule stegocarpous (the operculum falling off, peristome present or absent), exserted on a long seta *Trematodon*

Bruchia Schwägr. (Fig. XX)

A genus of about 17 species, which are mainly distributed in the northern hemisphere, especially in North America. Only 3 species are known from Africa, *Bruchia brevipes* Harv. ex Hook. and *B. eckloniana* Müll.Hal. from South Africa and *B. queenslandica* I.G.Stone (*B. foveolata* Magill) from Namibia, which are keyed out and illustrated by Magill (1981 - see General refs.).

Plants very small, scattered or in small groups. **Stems** short, to 5 mm tall, simple. **Leaves** erect to erect spreading, larger above, from an ovate or oblong base lanceolate or linear-lanceolate, subulate, 1-2 mm long, acute to acuminate; margins plane, entire or serrulate; costa subpercurrent to short excurrent, rather weak; upper laminal cells narrowly rectangular, thick-walled; basal cells broader, oblong-rectangular, rather lax. **Perichaetial** leaves larger than stem leaves. **Seta** short, 0.3-0.4 mm long. **Capsule** immersed, urn pyriform, 1 mm long, neck distinct, 1/4-1/3 of the length of the urn, with numerous phaneropore stomata, lid with short beak. **Operculum** and peristome absent. **Calyptra** mitrate, smooth, base lobed. **Spores** large, 25-45 µm, papillose to spinose.

HABITAT. On open soil, together with other ephemeral mosses.

DISCUSSION. Plants of this genus are characterised by their small size, cleistocarpous capsule (lacking an operculum and peristome) immersed in the leaves. They are distinguished from other cleistocarpous short-lived mosses by the differentiated neck with numerous stomata.

LITERATURE. **Rushing, A. E. 1985.** Spore morphology in the genus *Bruchia* Schwaegr. (Musci). *American Journal of Botany* 72: 75-85. **Rushing, A. E. 1986.** A revision of the genus *Bruchia* Schwaegr. (Musci). *Journal of the Hattori Botanical Laboratory* 60: 35-83 [keys, illustrations].

Trematodon Michx.(Fig. XX)

A genus much in need of a revision in which 81 species have been described, of which one third were described once and never reported again. Twenty-six species are known from Africa, of which only a few species are widespread.

Plants gregarious or forming low, loose tufts, green to yellowish-green. **Stems** mostly short and erect, 1-2 mm long, in some species up to 8 mm long, radiculose. **Leaves** flexuose or contorted when dry, erect to erect-spreading when wet, lanceolate to broadly subulate from an ovate or oblong sheathing base, 1.5-4.0 mm long, apex acute to subobtus; margins plane, entire or with a few teeth at apices; costa subpercurrent; upper laminal cells subquadrate or rectangular above leaf shoulders, uni- or bistratose; lower and basal cells rectangular to oblong hexagonal, lax. **Perichaetial** leaves convolute, longer than stem leaves. **Seta** elongate, 2-20 mm long, slender, yellowish. **Capsule** erect to inclined, urn cylindrical, 1.2-3.0 mm long, sometimes strumose, with a distinct neck equal to or much longer than urn. **Operculum** long rostrate, oblique, 0.5 – 1.5 mm long. **Peristome** present and single, rudimentary (consisting of a basal membrane) or absent; teeth vertical-striate, perforate. **Calyptra** cucullate, naked. **Spores** 20 – 30 μm , papillose.

HABITAT. On open soil, often in disturbed sites in villages or along roadside banks; from the lowland to 2500 m.

DISCUSSION. The genus is characterised by capsules with a conspicuously long neck, which is otherwise only found (rarely) in Bryaceae.