

PLAGIOTHECIACEAE
(R. Ochyra & B.J. O'Shea)

The family is here interpreted as monotypic, although in the past various classifications have included several other genera in it. They have been presented by Buck and Ireland (1985).

Plagiothecium (Fig. XX)

Six species are recorded for Africa, two of them endemic to Africa. The genus is distributed mainly in temperate regions, and confined to the higher altitudes in the tropics.

Plants small to medium-sized, slender to rather robust, in loose to dense, flat mats, glossy, green to yellowish-green. **Stems** creeping to ascending, mostly freely, irregularly branched, occasionally nearly simple; in cross-section with a small but distinct central strand; pseudoparaphyllia and paraphyllia none; rhizoids reddish-brown, smooth, branched, intercalary below the leaf insertion. **Leaves** weakly to strongly complanate, very rarely julaceous, mostly asymmetric, ovate, oblong-ovate to ovate-lanceolate, flat to concave, acute to narrowly acuminate, narrowly or broadly short- to long-decurrent; margins plane throughout to variously reflexed or recurved, entire or sparsely serrulate at the apex; costae short, forked, with unequal branches, usually reaching 1/3–1/2 way up the leaf, sometimes absent; laminal cells smooth, linear-flexuose to oblong-rhomboidal above, shorter and broader and often lax at base, thin- to firm-walled; alar cells often differentiated, consisting of few, quadrate to oblong cells forming decurrencies; nematogen cells sometimes present at the apex. **Propagula** occasionally present, cylindrical, smooth. **Autoicous** or dioicous. **Perichaetia** lateral; perichaetial leaves somewhat enlarged, sheathing, with spreading tips. **Seta** smooth, elongate, twisted above, becoming reddish with age. **Capsule** suberect and symmetric to strongly curved, or inclined to horizontal and asymmetric, obloid-cylindrical from a short neck, smooth or longitudinally wrinkled-plicate when dry and empty; exothecial cells isodiametric, thick-walled; annulus in 2-3-seriate, deciduous. **Operculum** conic to rostrate, oblique. **Peristome** double; exostome teeth 16, cross-striate below, distally papillose, occasionally papillose throughout, bordered, trabeculate on back; endostome composed of 16 keeled and perforated segments arising from high basal membrane, cilia 1-3, nodose, rarely rudimentary or none. **Calyptra** cucullate, smooth, naked. **Spores** mostly spherical, smooth or lightly papillose.

HABITAT. On soil, humus, tree roots and trunks, logs, rotten stumps and rocks, mostly in dry and shaded situations; from mid-montane forest to alpine zone, 2200–4250 m.

DISCUSSION. *Plagiothecium* is recognized by the generally complanate-foliate habit, the commonly asymmetric, ovate to ovate-lanceolate, gradually acuminate or acute leaves with short and inflated alar cells and thin-walled cells extending down the stem in triangular or oval decurrencies, entire or slightly serrulate margins at the apex, the smooth and strongly chlorophyllose, linear to oblong-hexagonal cells, sometimes with a group of nematogen cells in the apex and short and double costae. An unpublished revision of the genus in Africa has been completed by the first author and some individual species have recently been treated in separate accounts.

Study guide. Species of *Plagiothecium* can be successfully determined in sterile condition because leaves are sufficient for identification. However, they must be carefully removed from the stem in order to preserve the base intact for examination of decurrencies.

LITERATURE. **Buck, W.R. 1993.** Taxonomic results of the BRYOTROP expedition to Zaire and Rwanda. 24. Leskeaceae, Brachytheciaceae, Stereophyllaceae, Plagiotheciaceae, Entodontaceae, Sematophyllaceae p.pte, Hypnaceae (except *Hypnum*). Tropical Bryology 8: 199-217. [description of *P. nitidifolium*]. **Buck, W. R & Ireland, R.R. 1985.** A reclassification of the Plagiotheciaceae. Nova Hedwigia 41: 89-125. **Ochyra, R. 1993.** Taxonomic results of the BRYOTROP expedition to Zaire and Rwanda. 20. Grimmiaceae, Funariaceae, Bartramiaceae (*Philonotis*), Amblystegiaceae, Plagiotheciaceae. Tropical Bryology 8: 181-187. [description of *P. nitens* (= *membranosulum*) & *P. mildbraedii* (= *nitidifolium*)]. **Ochyra, R. & Buck, W.R. 2002.** A re-appraisal of the type material of *Plagiothecium drepanophyllum*. Bryologist 105: 641-644. [illustration of *P. standleyi*].

Ochyra, R., Kempa, R. & Buck, W.R. 2000. *Plagiothecium lucidum* (Hook.f. & Wils.) Paris in tropical Africa. *Tropical Bryology* 18: 147-152. [illustration of *P. lucidum*].