

10. Description of species from Rwanda

10.1. Leafy liverworts



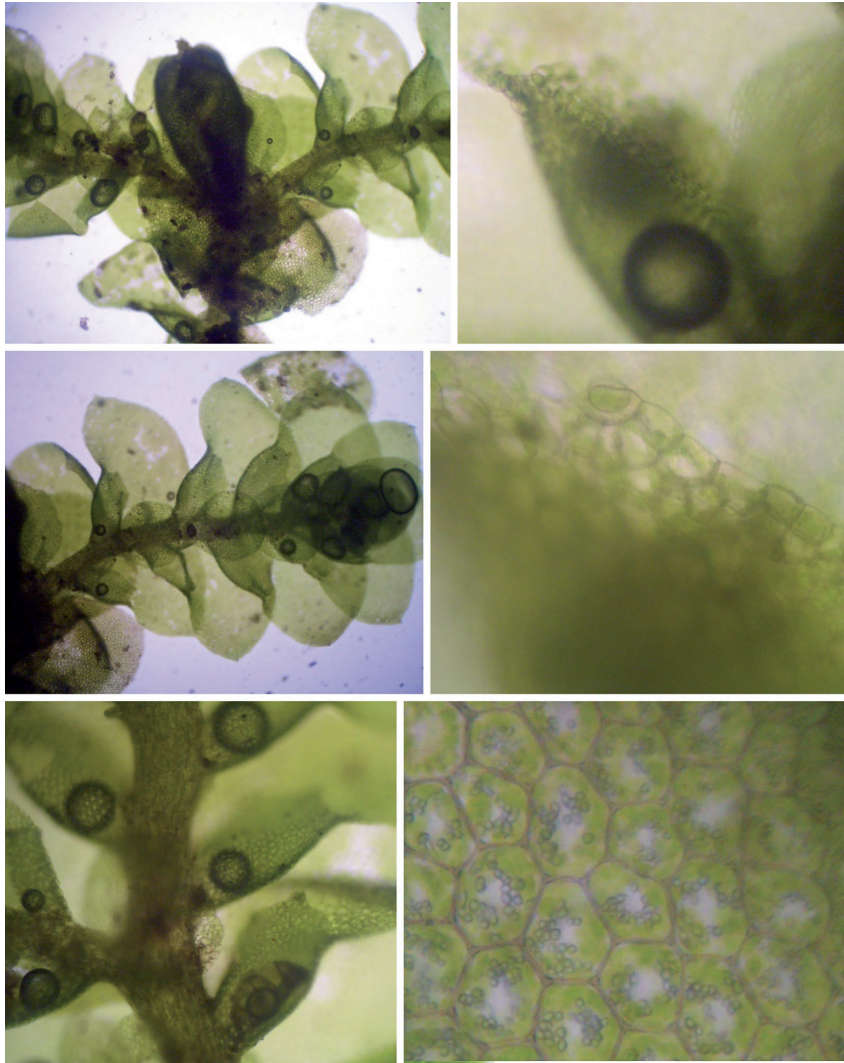
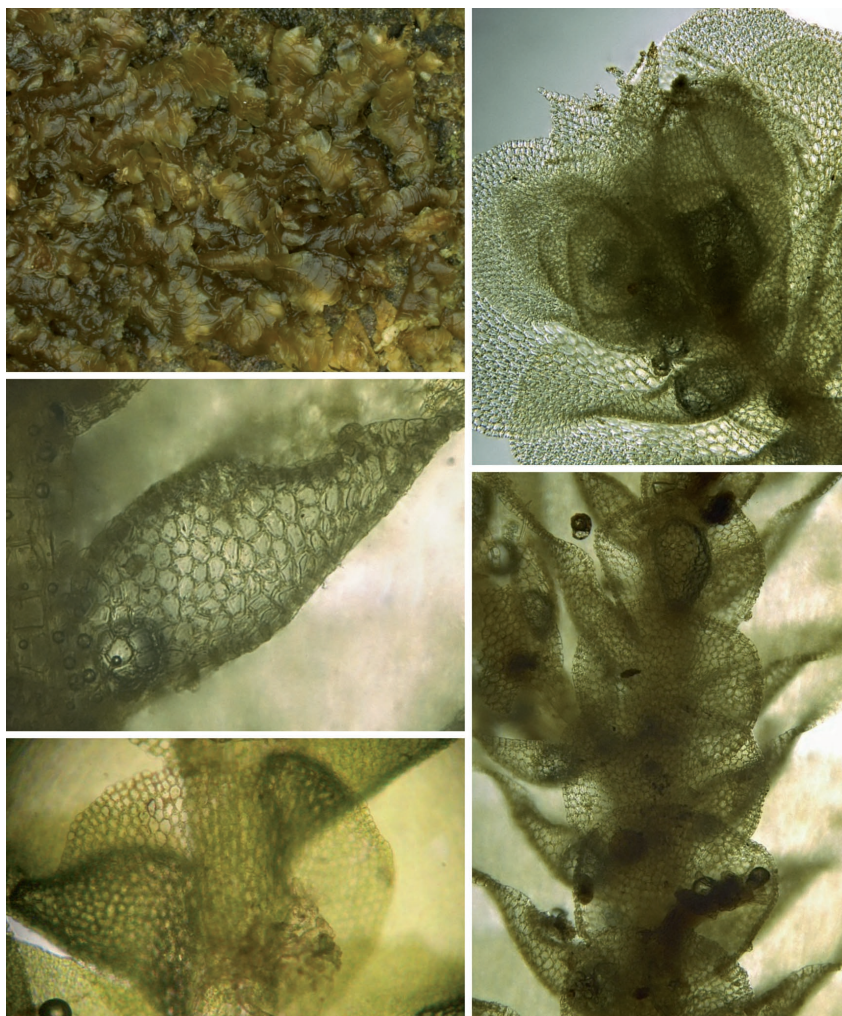
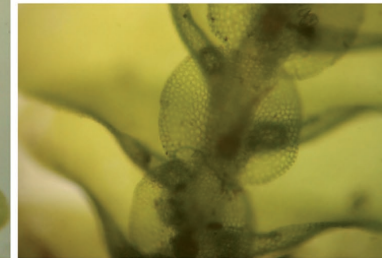
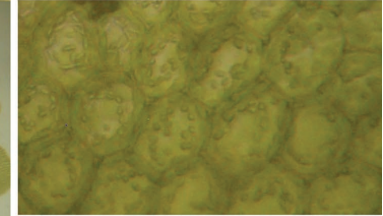
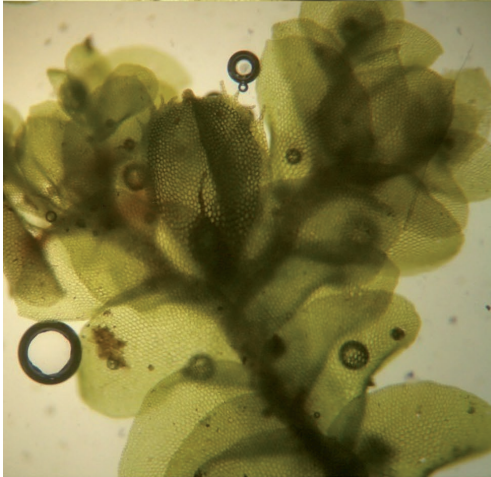
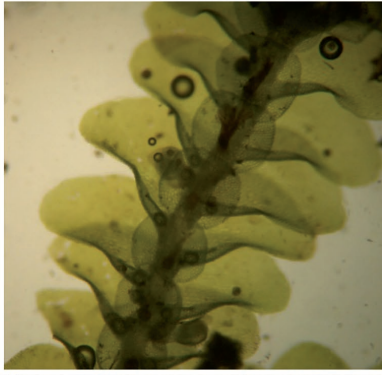
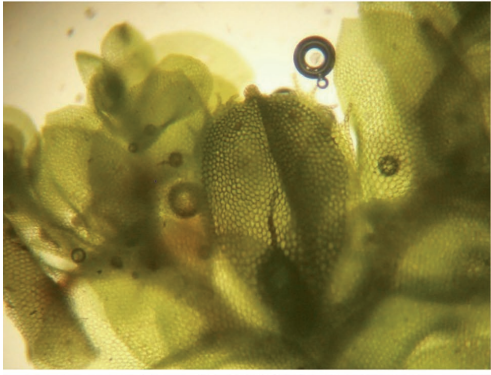


Fig. 38. *Acanthocoleus chrysophyllus* (Lehm.) Kruijt

Synonym: *Dicranolejeunea chrysophylla* (Lehm.) Grolle. Plants epiphytic, dark-green to brown, irregularly branched, 1-1.5 mm wide. Leaves alternate, loosely imbricate. Lobes wide-spreading, ovate, 0.75-1.1 x 0.5-0.7 mm, apex acuminate, margin entire or rarely dentate towards apex. Lobules about 0.35 of lobe length, often reduced, keel strongly arched, with 2 teeth, apical tooth often with 2 cells, second (proximal) tooth smaller, sometimes obscure. Underleaves undivided, 2.5-3.5 times as wide as the stem, margin entire. Autoicous. Perianths with narrow or almost lacking wing, laciniae, if present, only 1-3 on each side. **Habitat:** Epiphyte in montane forest, 2000 m. **Distribution in Rwanda:** Nyungwe NP: Gisakura. **Distribution in Africa:** Cameroon, Nigeria, Uganda, Kenya, Tanzania, Zambia, Zimbabwe, South Africa. **Note:** Very similar to *A. madagascariensis* and only distinguished by the antheridia in unspecialized bracts below gynoecium.



Figs 39 and 40 (next page). *Acanthocoleus madagascariensis* (Steph.) Kruijt.
 Synonym: *Dicranolejeunea madagascariensis* Steph. Plants epiphytic, dark-green to brown, irregularly branched, 1-1.5 mm wide. Leaves alternate, loosely imbricate. Lobes wide-spreading, convolute when dry, ovate, 0.75-1.1 x 0.5-0.7 mm, apex acuminate, margin entire or rarely dentate towards apex. Lobules about 0.35 of lobe length, often reduced, keel strongly arched, with 2 teeth, apical tooth often with 2 cells, second (proximal) tooth smaller, sometimes obscure. Underleaves undivided, 2.5-3.5 x as wide as the stem. Autoicous. Perianths compressed, pyriform, 0.7-0.9 x 0.4-0.6 mm, the apex truncate or cordate, usually winged and ciliate-laciniate near apex. **Habitat:** On the stem of planted exotic trees at 1700 m, also in montane forest at 1800 m. **Distribution in Rwanda:** Central Rwanda: Butare. **Nyungwe NP:** Cyamudongo. **Distribution in Africa:** Sierra Leone, Burundi, Tanzania, Zimbabwe, South Africa. Also Comoro Islands, Madagascar, Mauritius, Réunion.



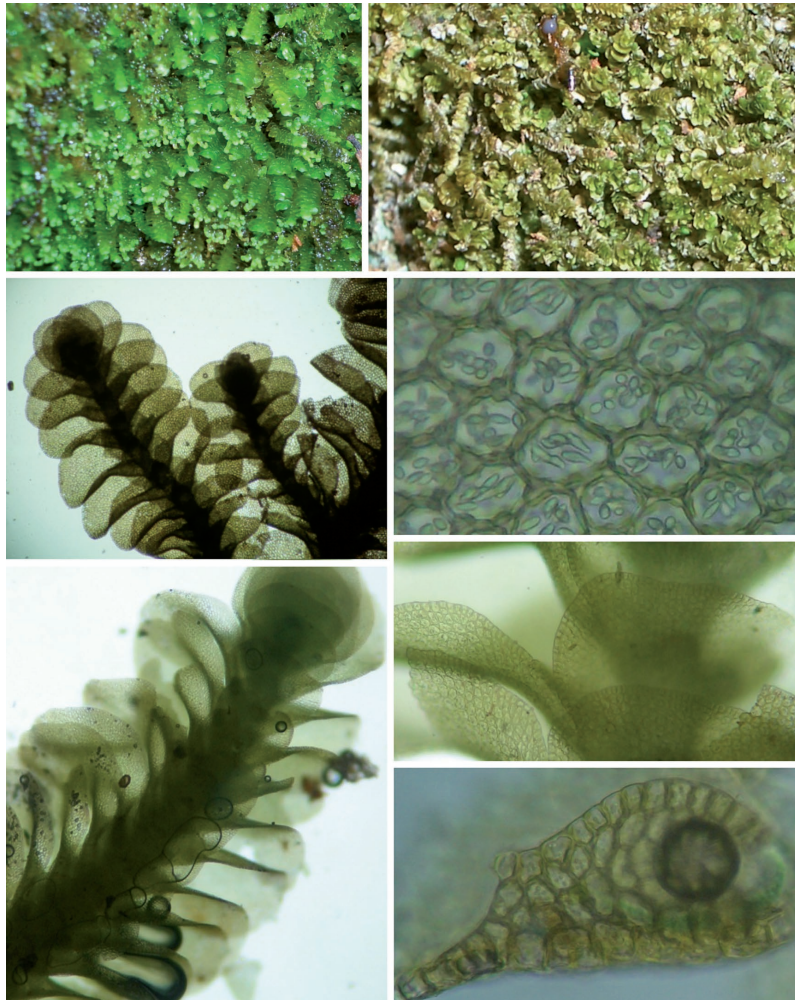


Fig. 41. *Acrolejeunea emergens* (Mitt.) Steph.

Plants epiphytic, brownish-green to brown, about 1.5 mm wide, small, microphyllous shoots with tiny caducous leaves often present at the apex of main shoots. Leaves alternate, closely imbricate. Lobes subelliptic, entire, 0.8-1 x 0.4-0.8 mm, obtuse. Lobules ovate-triangular, 0.4-0.5 x length of the lobe, with (2-)3-4 small straight or curved teeth, each with 1-3 cells. Underleaves imbricate, reniform, entire, truncate at apex, about 3 x as wide as the stem. Autoicous or sometimes dioicous. Perianths hidden by involucre bracts, or only slightly exerted, pyriform, with 4-8(-10) keels all over its length.

Habitat: Epiphytic in dry forests in savanna habitats, 1300-1500 m. **Distribution in Rwanda:** Central Rwanda: N of Nyamata. **Akagera:** Lake Mpanga region, Lake Mihindi. **Distribution in Africa:** Senegal, Guinea, Sierra Leone, Côte d'Ivoire, Ghana, Benin, Nigeria, Rio Muni, Congo-Brazzaville, Central African Republic, DR Congo, Burundi, Uganda, Kenya, Tanzania, Angola, Malawi, Zambia. Also Cape Verde, Madagascar, Seychelles, Réunion, Mauritius, Rodriguez.

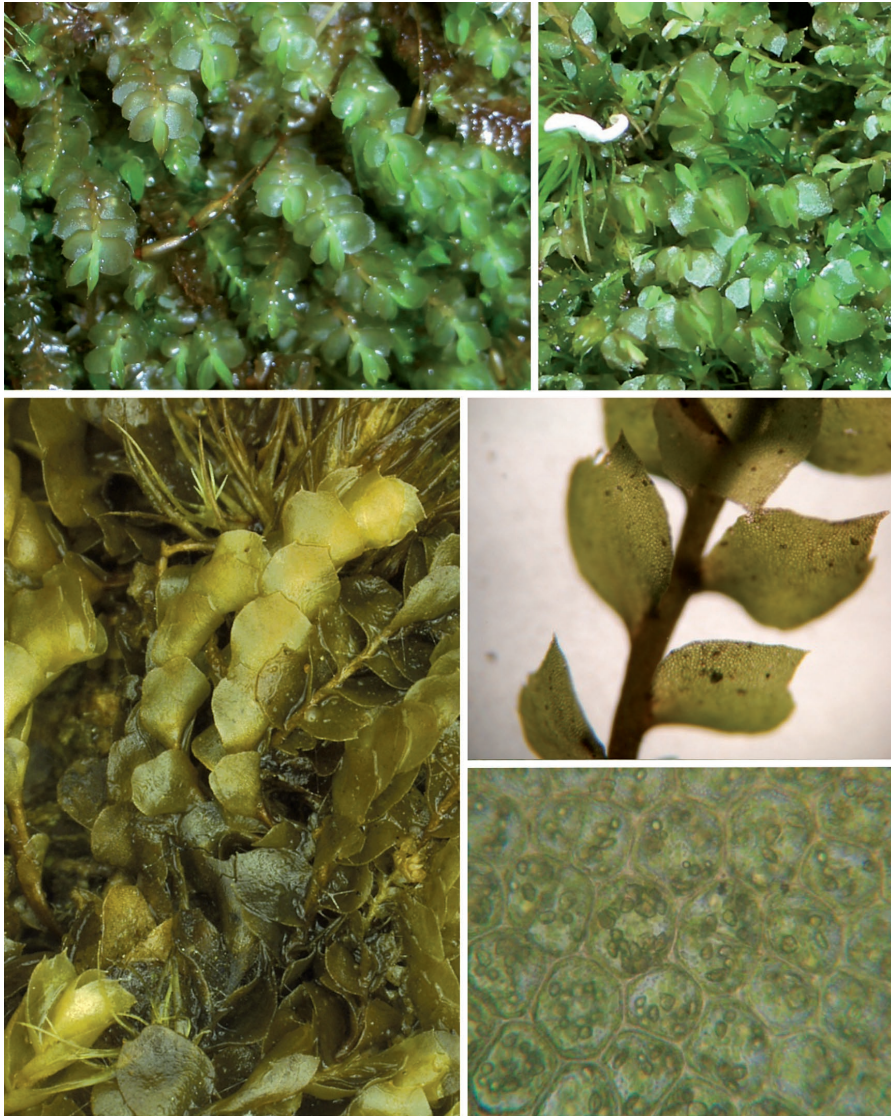


Fig. 42. *Adelanthus decipiens* (Hook.) Mitt.

Plants epiphytic or saxicolous, green to dark green. Stems erect to ascending, 5-15 mm long and 0.2-0.25 mm wide, unbranched. Leaves oval to rounded, about 1 mm long, dorsal margin entire, inflexed, decurrent, ventral margin typically with 2 teeth. Underleaves absent or rudimentary. Fertile plants not observed in Rwanda. **Habitat:** Epiphyte on bark of *Hypericum* and *Erica* and lithophyte on rocks between 2500 and 3700 m. **Distribution in Rwanda:** **Volcano NP:** Karisimbi, Karisoke, Sabinyo. **Nyungwe NP:** Rwasenkoko, Mt. Bigugu. **Distribution in Africa:** Bioko, Cameroon, DR Congo, Ethiopia, Tanzania, Malawi, South Africa. Also Europe, Azores, Madeira, St. Helena, Tristan da Cunha, Caribbean, Costa Rica to Bolivia, Galapagos, Réunion, Mauritius.

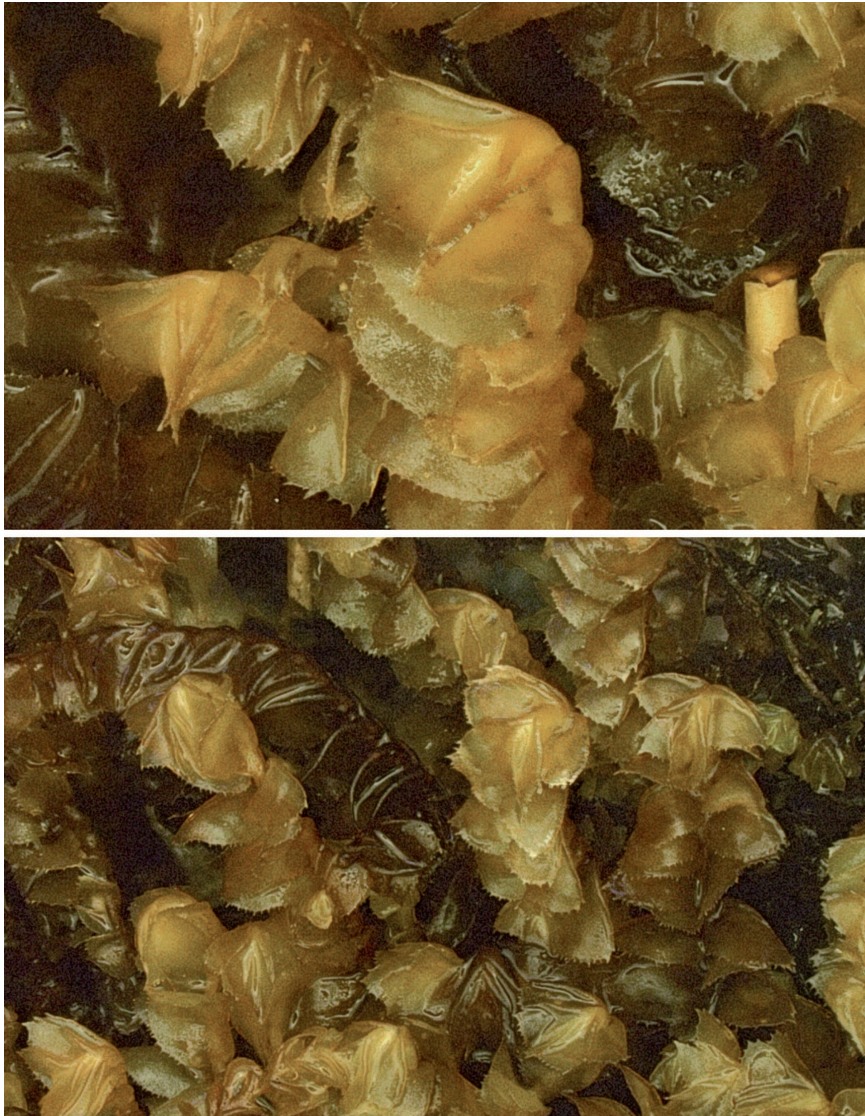


Fig. 43. *Adelanthus lindenbergianus* (Lehm.) Mitt.

Plants epiphytic, reddish-brown to brownish. Stems erect, 20-100 mm long and 0.2-0.25 mm wide, unbranched or sparsely branched. Leaves oval to rounded, ventrally second, imbricate, decurrent, about 0.9-1.4 mm long and 0.7-1 mm wide, dorsal margin entire, inflexed, decurrent, ventral margin dentate from base to apex. Underleaves absent. Fertile plants unknown. **Habitat:** Epiphyte on bark of *Agauria* and *Erica*, occasionally on ground between 2400 and 3200 m. **Distribution in Rwanda:** Nyungwe NP: Uwinka. **Distribution in Africa:** DR Congo, Uganda, Kenya, Tanzania, Lesotho, South Africa. Also Europe, Mexico, Costa Rica, South America, Tristan da Cunha, South Georgia, Falkland Islands, Tierra del Fuego, Juan Fernandez Islands, Madagascar, Réunion, Mauritius.



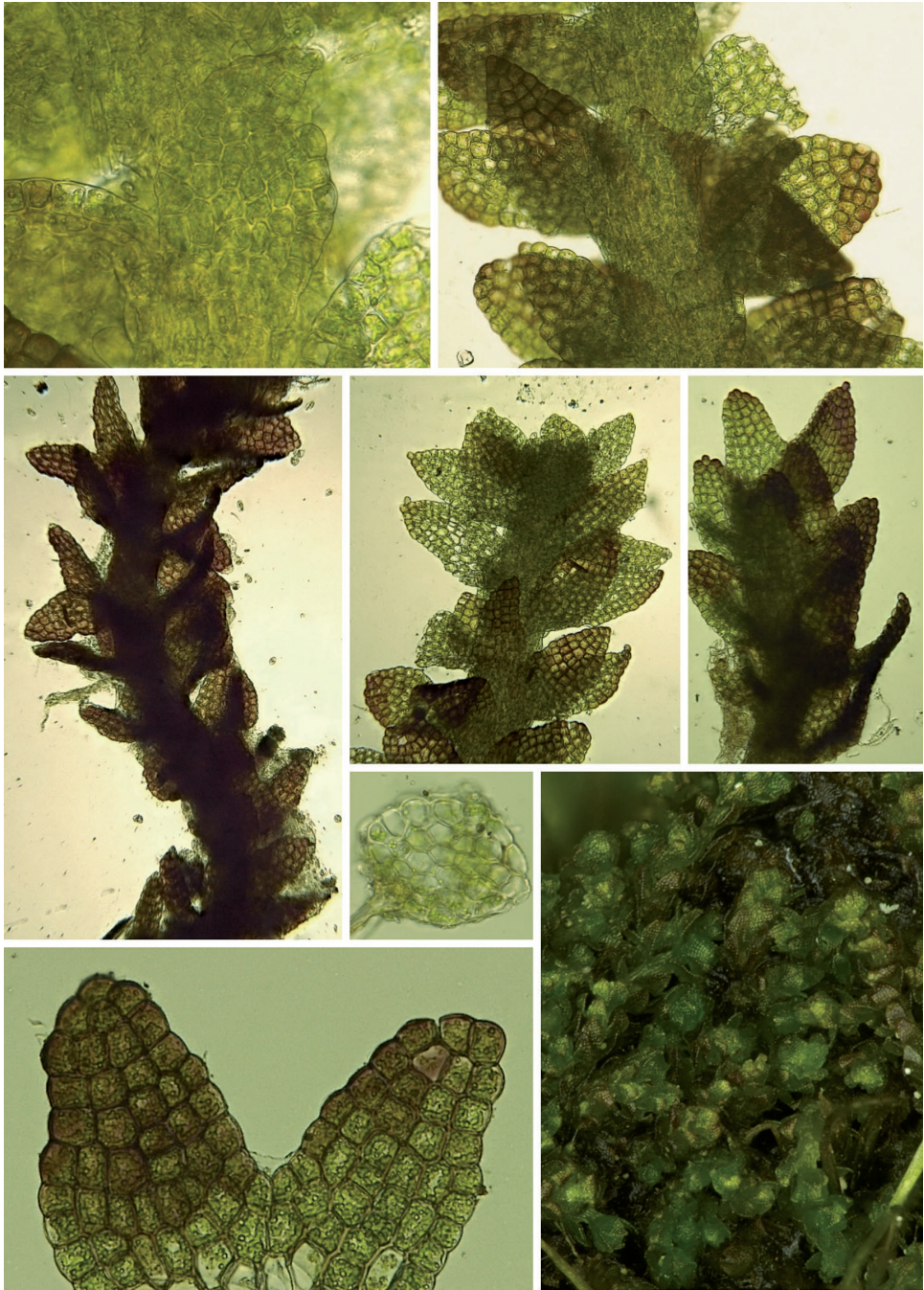
Figs 44 and 45 (next page). *Amphicephalozia africana* Váňa & Wigginton

Plants minute, about 5-7 mm long and 0.25-0.35 mm wide. Stems procumbent. Leaves obliquely to subtransversally inserted and oriented, distant to imbricate, 0.15-0.43 x 0.25-0.49 mm, quadrate-rounded to ovate, bilobed to half of their length, the lobes triangular, subequal, 10-15 cells wide at base. Cells thick-walled, without trigones, 15-25 x 15-20 μ m. Underleaves undivided, variable, 2-6 cells wide and 3-15 cells long, c. 0.3-0.5 the width of the stem. Asexual reproduction by 1-2-celled gemmae on leaf lobe tips. Autoicous.

Perianths clavate, widest in upper third, 1.4-1.9 x 0.6-0.7 mm, deeply 3(-4)-plicate.

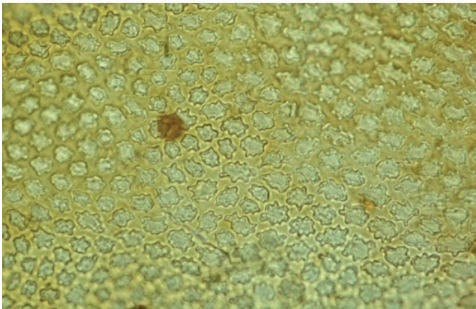
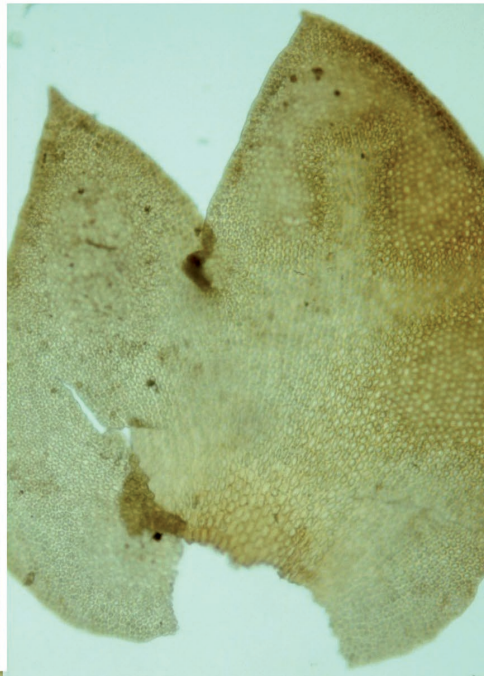
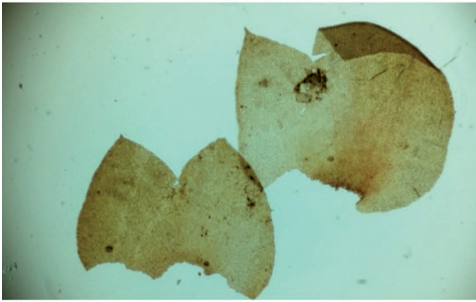
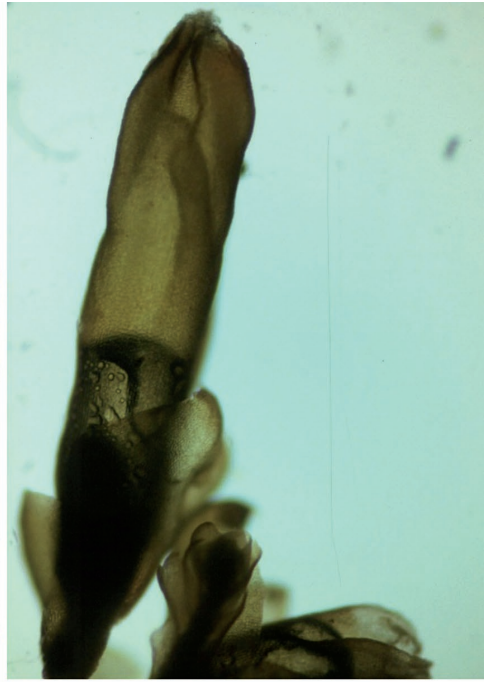
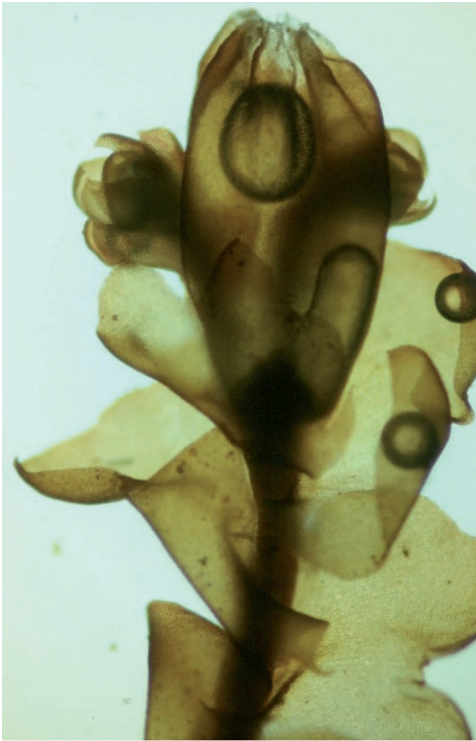
Habitat: *Dendrosenecio adnivalis*-*Lobelia stuhlmannii*-paramo, on decaying stems of *Dendrosenecio*, 3570 m, also in *Cyperus* swamp at 2540 m. **Distribution in Rwanda:**

Volcano NP: Karisimbi, E-slopes along trail to summit, foot of Mt. Gahinga.





Figs 46 and 47 (next page). *Anastrophyllum auritum* (Lehm.) Steph.
 Synonyms: *Anastrophyllum gambaragarae* Gola; *A. calcaratum* Steph.; *A. grossitextum* Steph. Plants small to medium sized, dark reddish-brown or purple. Stems up to 0.5-4 cm long, creeping to erect. Leaves succubous, contiguous to imbricate, ± asymmetrically 2-lobed to 0.25-0.5 of their length, leaf lobes strongly incurved. Cells with wide trigones, 10-20 µm in diameter. **Habitat:** Epiphytic or on rocks, 3000-4450 m. **Distribution in Rwanda: Volcano NP:** Karisimbi. **Distribution in Africa:** Bioko, Cameroon, DR Congo, Ethiopia, Uganda, Kenya, Tanzania, Lesotho, South Africa. Also Réunion.



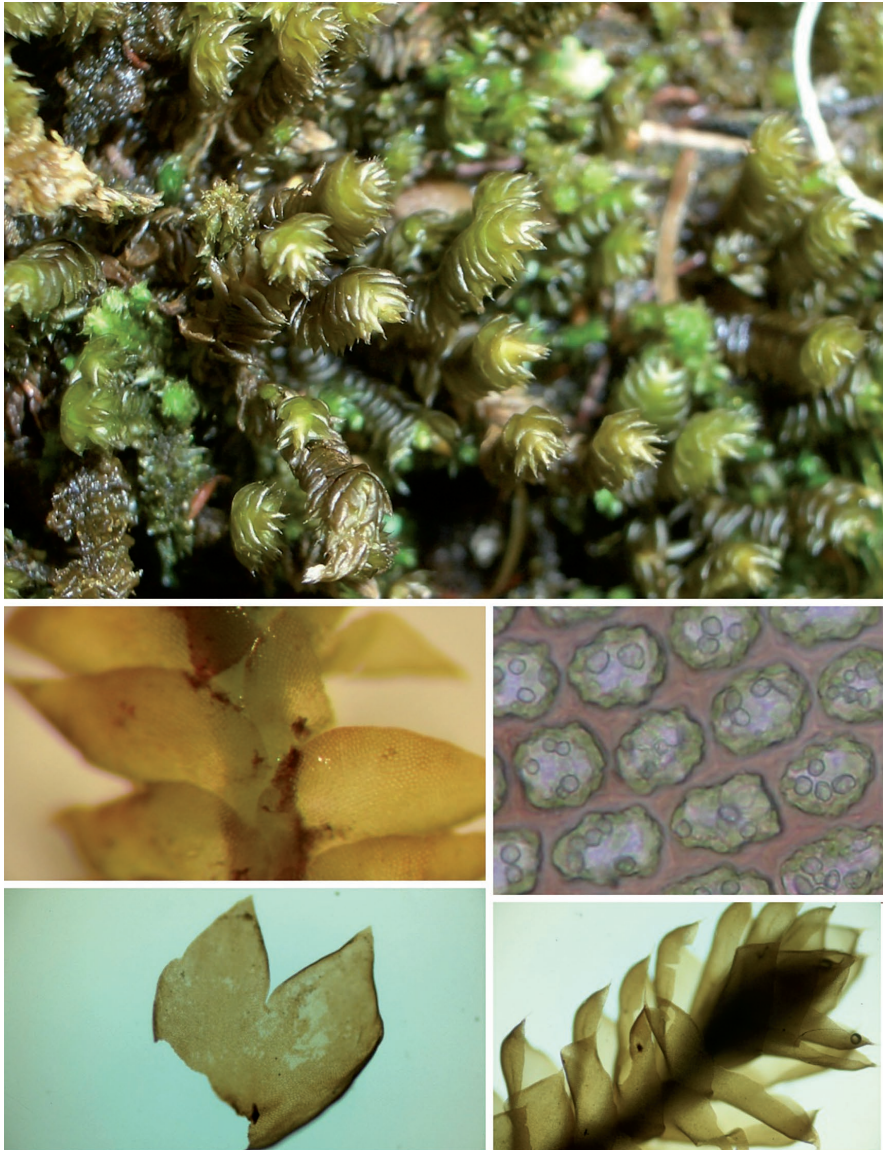


Fig. 48. *Anastrophyllum piligerum* (Nees) Spruce

Plants large, dark reddish-brown, rigid. Stems up to 3-4 cm long, forming a large compact tuft. Leaves densely imbricate, strongly secund dorsally, \pm asymmetrically 2-lobed to 0.5-0.65 of their length, 1.8-2.2 x 1.8-2.2 mm, leaf lobes triangular-ovate, apices subacute. Cells with wide trigones, 10-20 (-35) μ m in diameter. **Habitat:** Rocky slopes in ericaceous forest, 2000 m. **Distribution in Rwanda: Nyungwe NP:** Karamba. **Distribution in Africa:** Tanzania, Zimbabwe. Also Ascension, Madagascar, Mauritius, Réunion, Seychelles, Cuba, Jamaica, Peru, Brazil, Sri Lanka, Thailand, Sumatra, Java, Borneo, Salomon Islands, New Caledonia, Samoa.

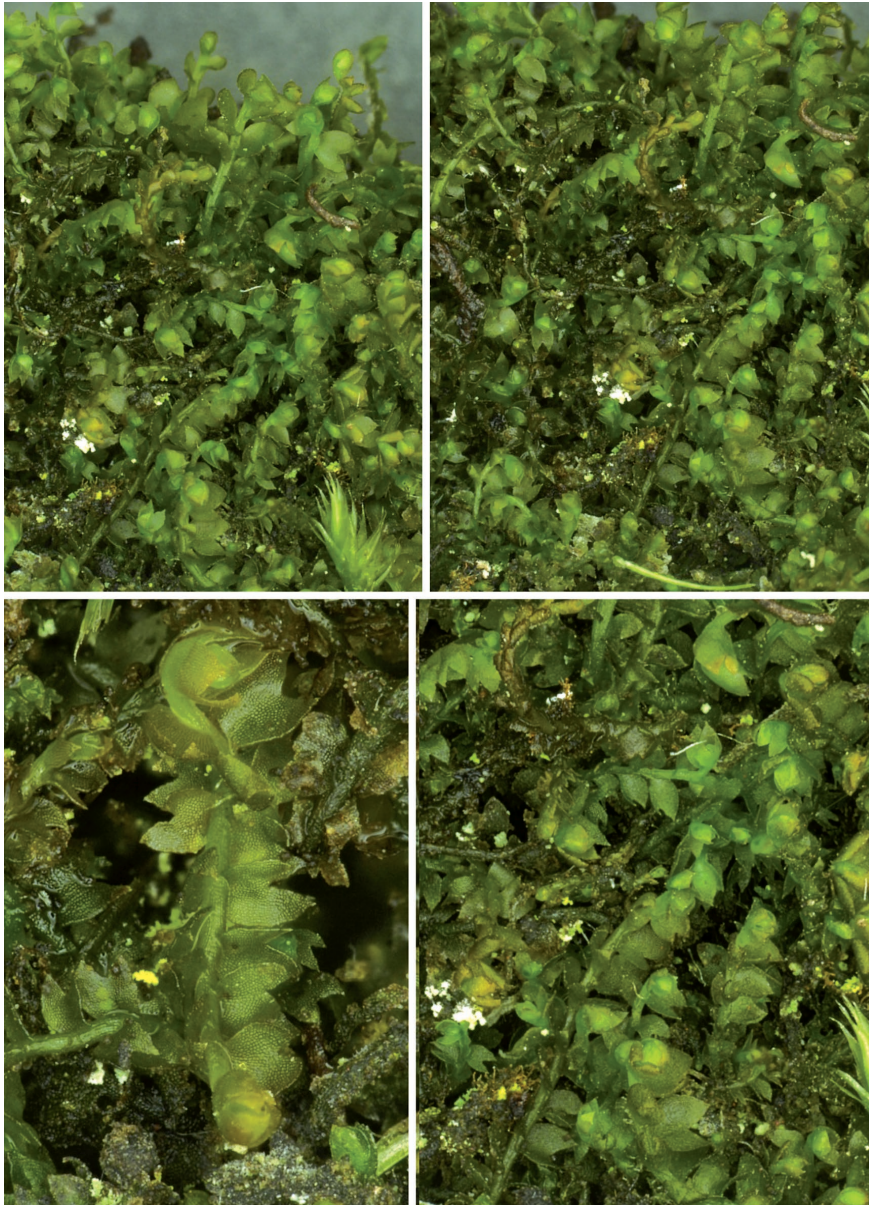


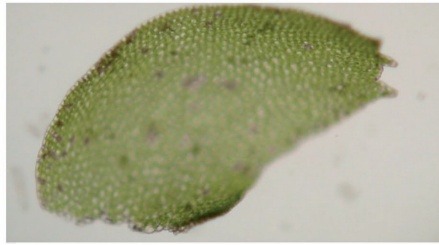
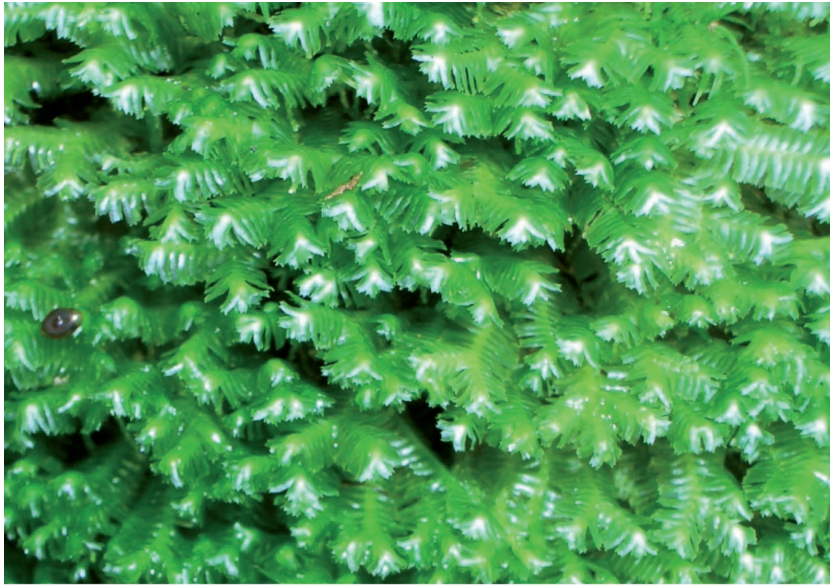
Fig. 49. *Andrewsianthus bilobus* (Mitt.) Grolle

Synonym: *Lophozia ruwenzorensis* S.W.Arnell. Plants epiphytic, c. 2 cm long and 0.11-0.18 cm wide, brownish. Leaves succubous, usually bilobed up to 1/3 of their length, margins edentate. Cells usually with distinct trigones, 20-25 μ m in diameter. **Habitat:** Epiphyte in montane forest and ericaceous shrub, also on rocks and boulders, 2500-3300 m. **Distribution in Rwanda:** **Volcano NP:** Karisimbi. **Nyungwe NP:** Rwasenkoko. **Distribution in Africa:** Bioko, Cameroon, DR Congo, Ethiopia, Uganda, Tanzania.



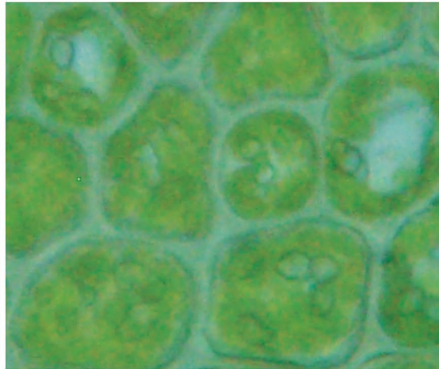
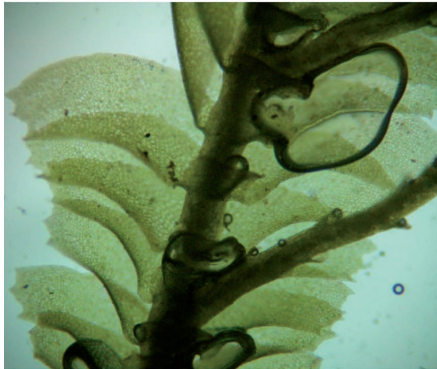
Fig. 50. *Apomarsupella africana* (Steph. ex Bonner) R.M.Schust.

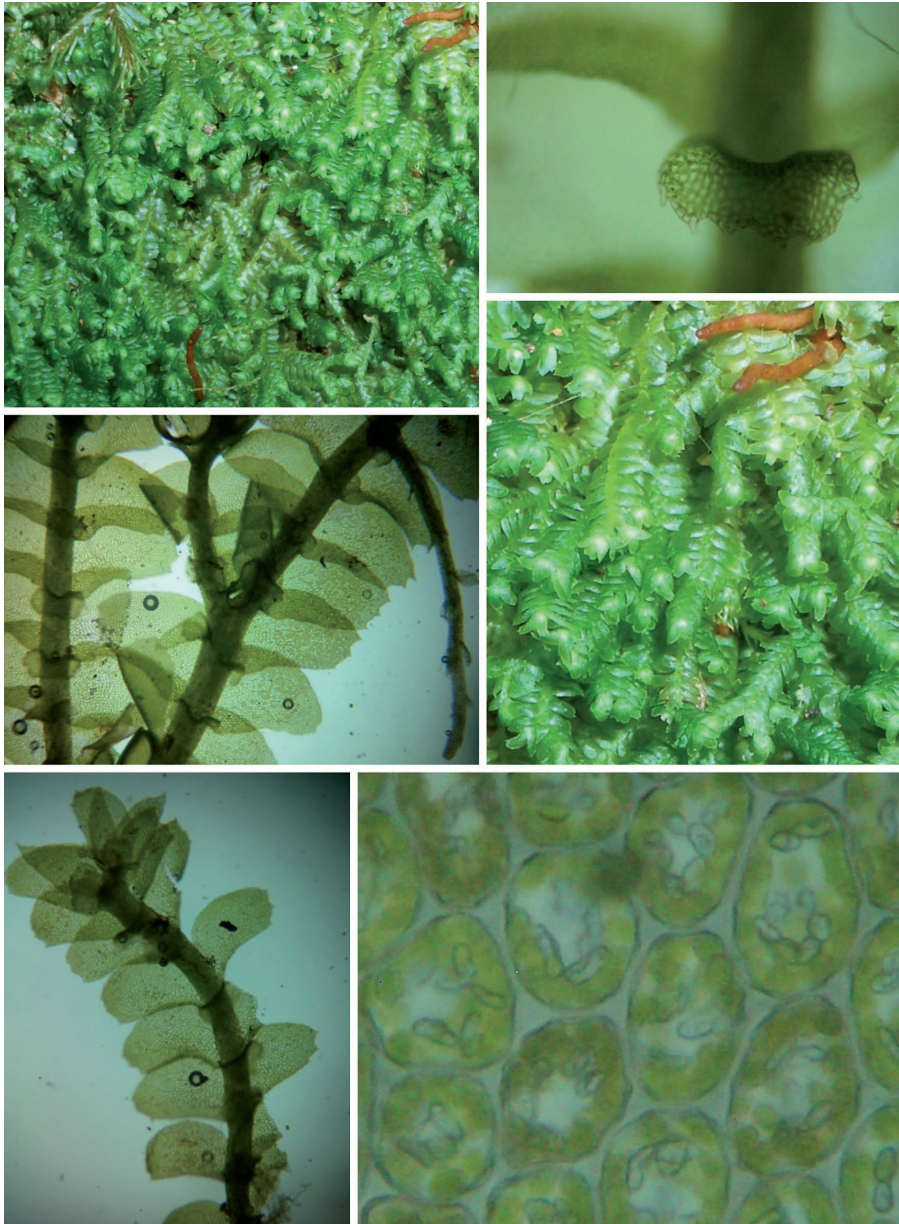
Synonym: *Marsupella africana* Steph. ex Bonner. Plants in dense tufts or patches, brownish or blackish, shoots 10-30 x 1.2-2 mm. Stems prostrate to ascending. Leaves imbricate, spreading, decurrent on both sides, bilobed, leaf lobes obtuse. Cells thick-walled, trigones large, (10-)20 x 15 μ m. **Habitat:** Rocks and boulders in the alpine belt, 4200-4450 m. **Distribution in Rwanda:** Volcano NP: Karisimbi. **Distribution in Africa:** DR Congo, Uganda, Kenya, Tanzania.



Figs 51 and 52 (next page). *Bazzania decrescens* (Lehm. & Lindenb.) Trev. ssp. *decrescens*

Plants bright green to olive-green, medium-sized to wide plants, shoot width (1.6-)2-3.6(-4) mm. Leaves not caducous, 0.6-1.3 mm long, 1.8-2.5 x as long as wide, apex truncate and divided into 3 wide teeth. Underleaves shallowly 2- or 4-lobed. **Habitat:** Epiphytic or on dead wood in montane rainforests, 1900-2300 m. **Distribution in Rwanda:** **Volcano NP:** Karisimbi. **Nyungwe NP:** Karamba, Kamiranzovu, Uwinka, Gisakura. **Distribution in Africa:** Bioko, Congo-Brazzaville, Gabon, DR Congo, Uganda, Kenya, Tanzania, Zambia, Zimbabwe, Malawi, Mozambique, South Africa. Also Comoros, Madagascar, Mauritius, Réunion, Seychelles.





Figs 53 and 54 (next page). *Bazzania descrescens* ssp. *pumila* (Mitt.) Pócs
 Synonym: *Bazzania pumila* Mitt. Similar to *Bazzania descrescens* ssp. *descrescens*. Leaves caducous, small to medium-sized plants, shoot width never exceeding 2 mm, underleaves usually 2-lobed. **Habitat:** Epiphytic or on dead wood, 1900-2500 m. **Distribution in Rwanda:** Nyungwe NP: Rwasenkoko, Karamba, Uwinka. **Distribution in Africa:** Bioko, DR Congo, Tanzania. Also Comoros, Madagascar.



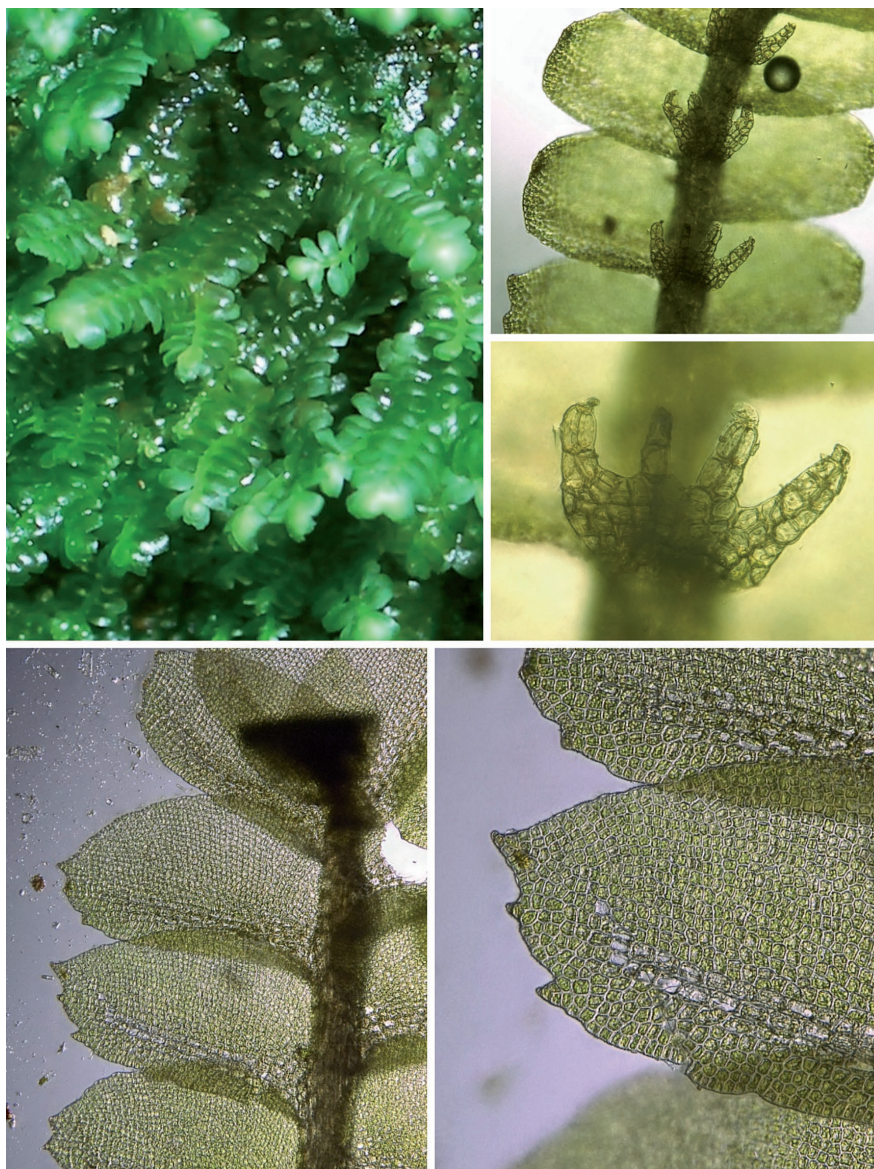


Fig. 55. *Bazzania nitida* (Web.) Grolle

Plants green, glossy, shoots up to 1.8 mm wide. Leaves 0.9-1.3 x 0.5-0.7 mm, apex truncate, with 3 short decurved apiculi, with a vitta of 2-4 rows of wide rectangular cells extending nearly to leaf-apex. Underleaves not much wider than stem, 2-4-lobed to half of their length. Cell walls colourless. **Habitat:** Epiphytic or on dead wood, 1900-2100 m. **Distribution in Rwanda:** Nyungwe NP: Karamba, Kamiranzovu, Uwinka, Gisakura. **Distribution in Africa:** Bioko, Cameroon, DR Congo, Burundi, Tanzania, Malawi, South Africa. Also Comoros, Madagascar, Mauritius, Réunion, Seychelles.



Fig. 56. *Bazzania roccatii* Gola

Synonym: *Mastigobryum laxifolium* Steph. Plants brown, glossy, with soft slender shoots up to 2 mm wide. Leaves ovate to ovate-oblong, apex narrow, with (2-)3(-4) teeth.

Underleaves orbicular, usually 1.5-2.5 x as wide as the stem, cell walls with brown pigment. **Habitat:** Epiphyte on *Erica* and *Hagenia*, 2800-3300 m **Distribution in Rwanda:** **Nyungwe NP:** Mt. Bigugu. **Volcano NP:** Karisimbi, Karisoke, Sabyinyo. **Distribution in Africa:** Bioko, Cameroon, DR Congo, Uganda, Kenya, Tanzania, Malawi.