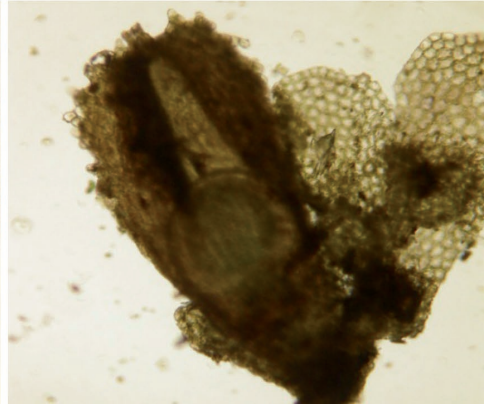
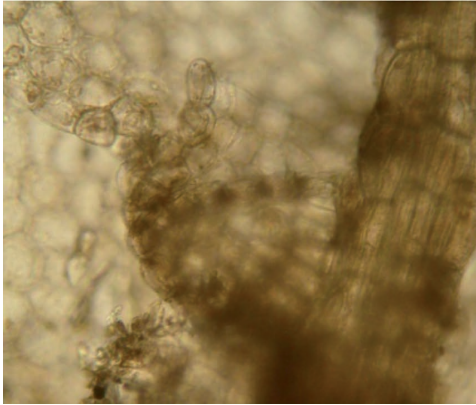
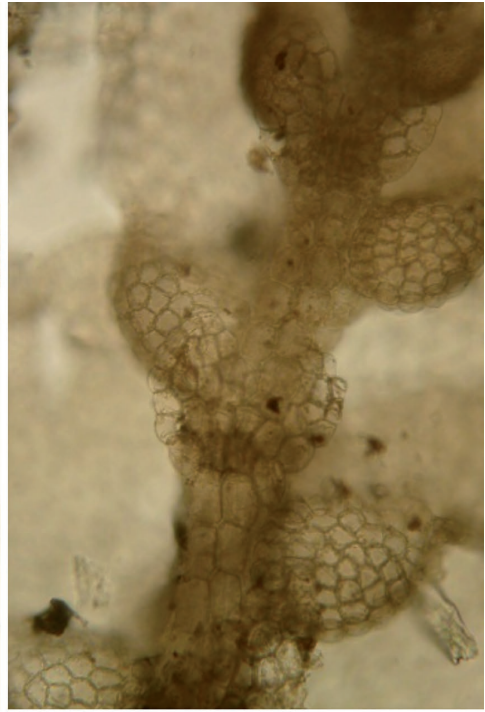
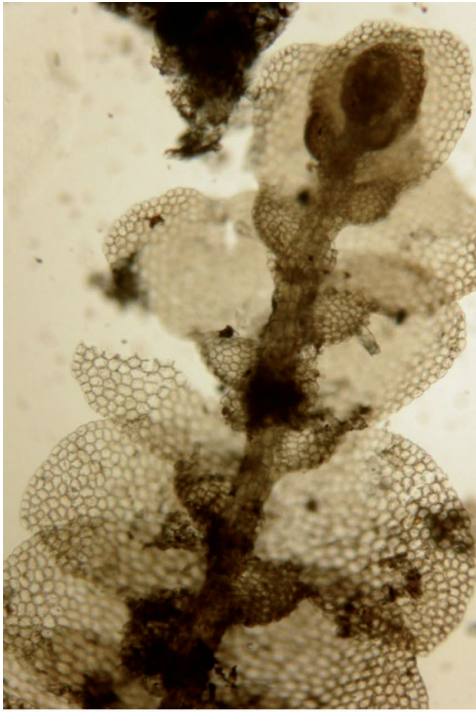
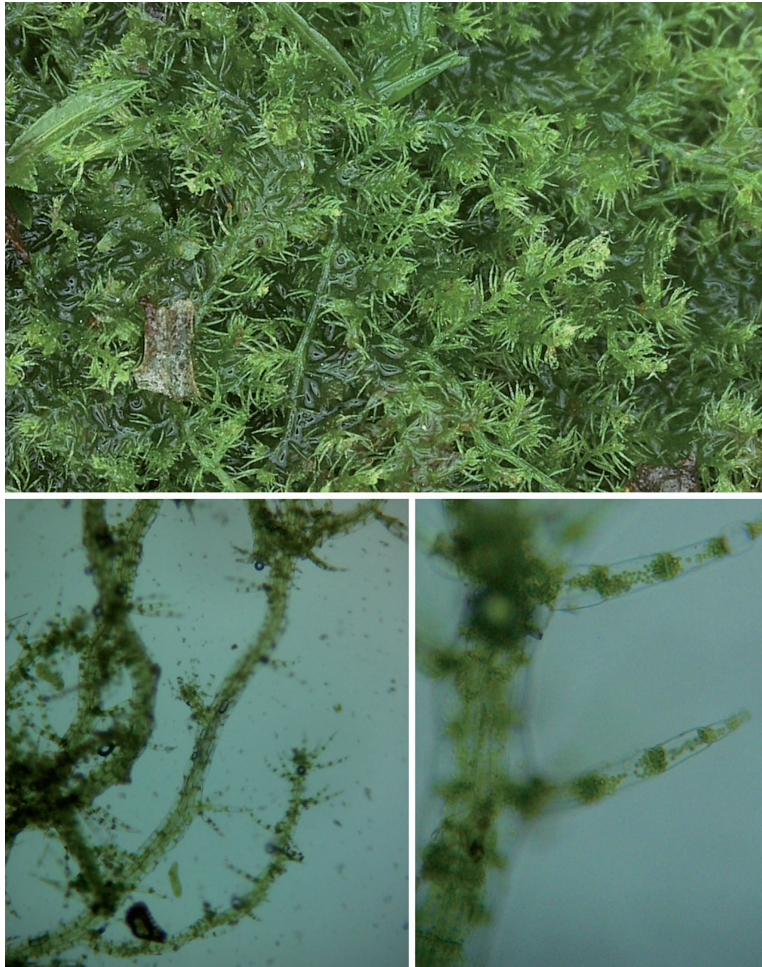


Figs 358 and 359 (next page). *Taxilejeunea pulchriflora* Pears.

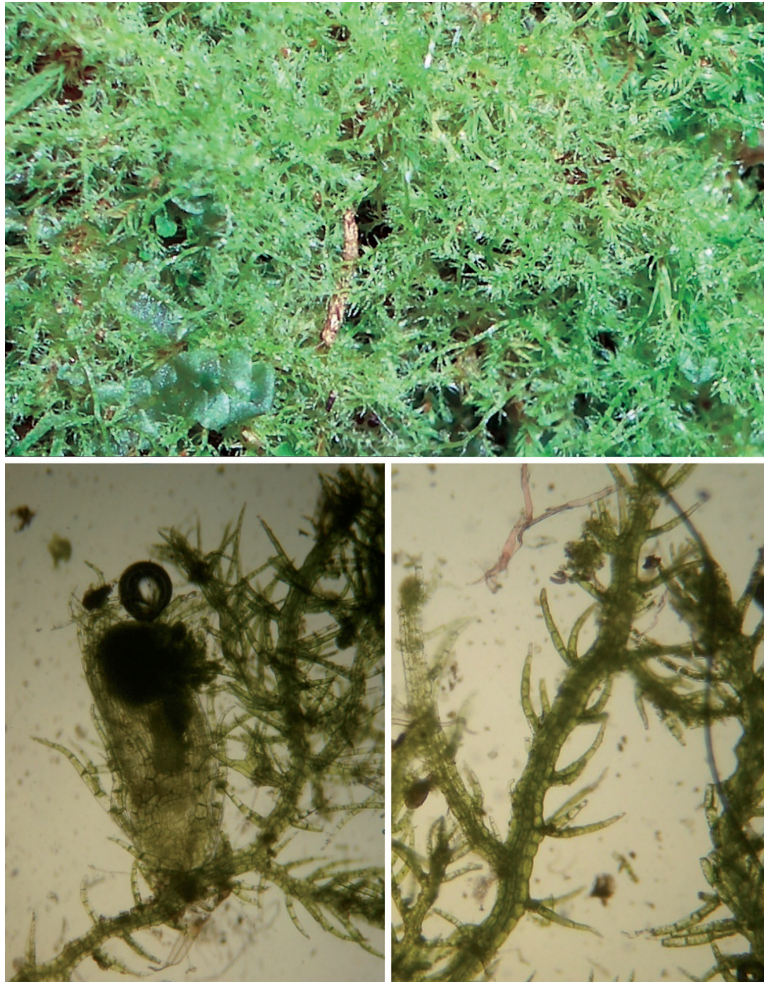
Plants green, 0.6-1 mm wide. Leaves ovate, 0.4-0.5 x 0.3-0.45 mm, apex acuminate and deflexed, sometimes rounded. Lobules very variable, often reduced to a fold, if well developed inflated, with a strongly arched keel, 1/3-1/2 the length of the lobe, apical tooth one-celled, with hyaline papilla on proximal side. Cells pellucid, 18-25(-30) x 25-40 μ m in leaf centre, walls thin, trigones and intermediate thickenings small but distinct. Underleaves broadly orbiculate, bifid to middle, sinus V-shaped, base rounded, 1.5-2 x the width of stem. Monoicous. Perianths pyriform, exserted for 1/2 or more of its length, with 5 equal keels in the upper 1/3-1/2, the keels cristate. **Habitat:** Montane forest with *Dicranoloma billardieri*-mossballs in canopy, *Carapa grandiflora*-*Syzygium* swamp forest, 2000 m. **Distribution in Rwanda:** Nyungwe NP: Karamba, Kamiranzovu. **Distribution in Africa:** Guinea, Liberia, Sierra Leone, Ivory Coast, Ghana, Togo, Cameroon, Central African Republic, DR Congo, Kenya, Tanzania.



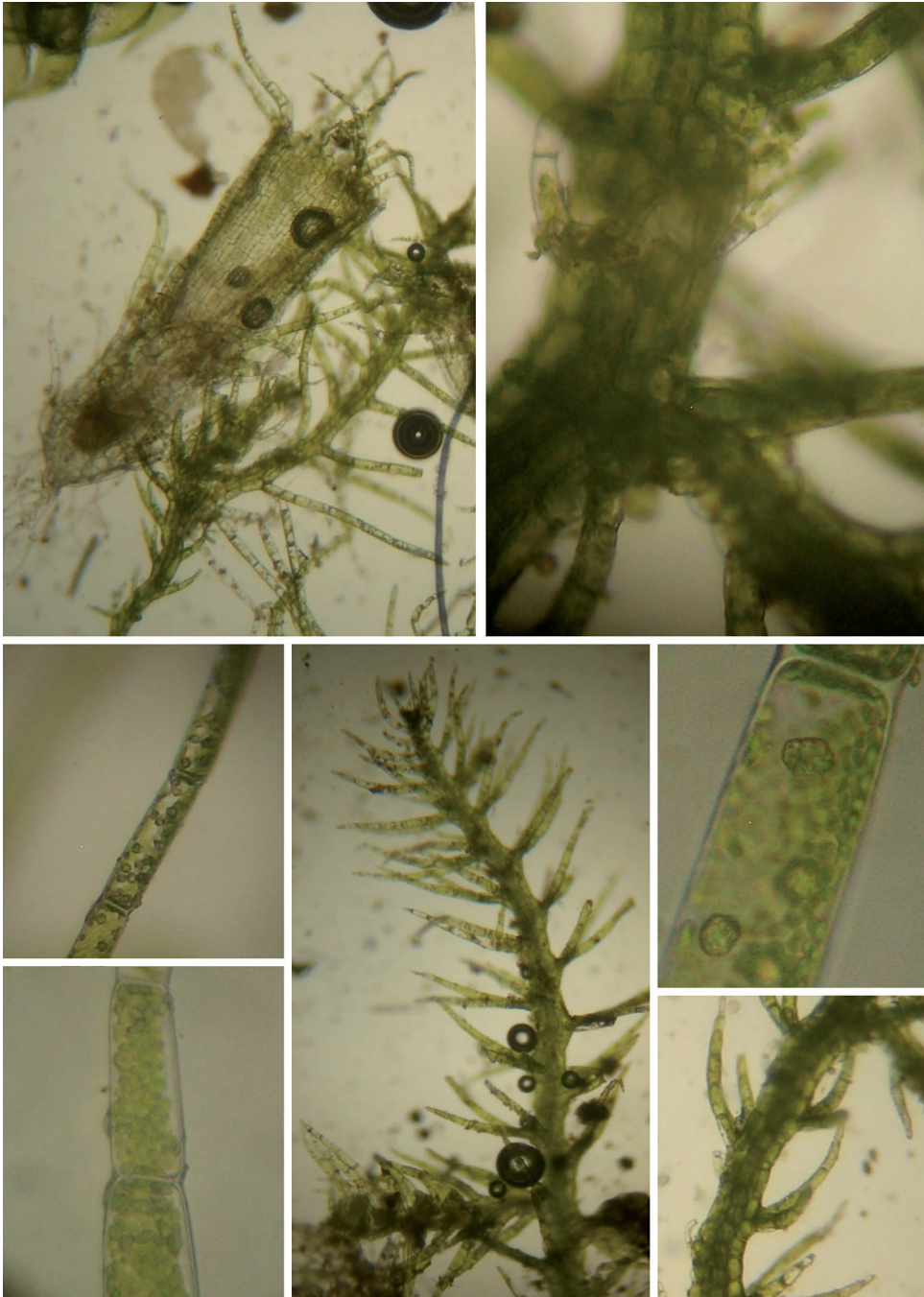


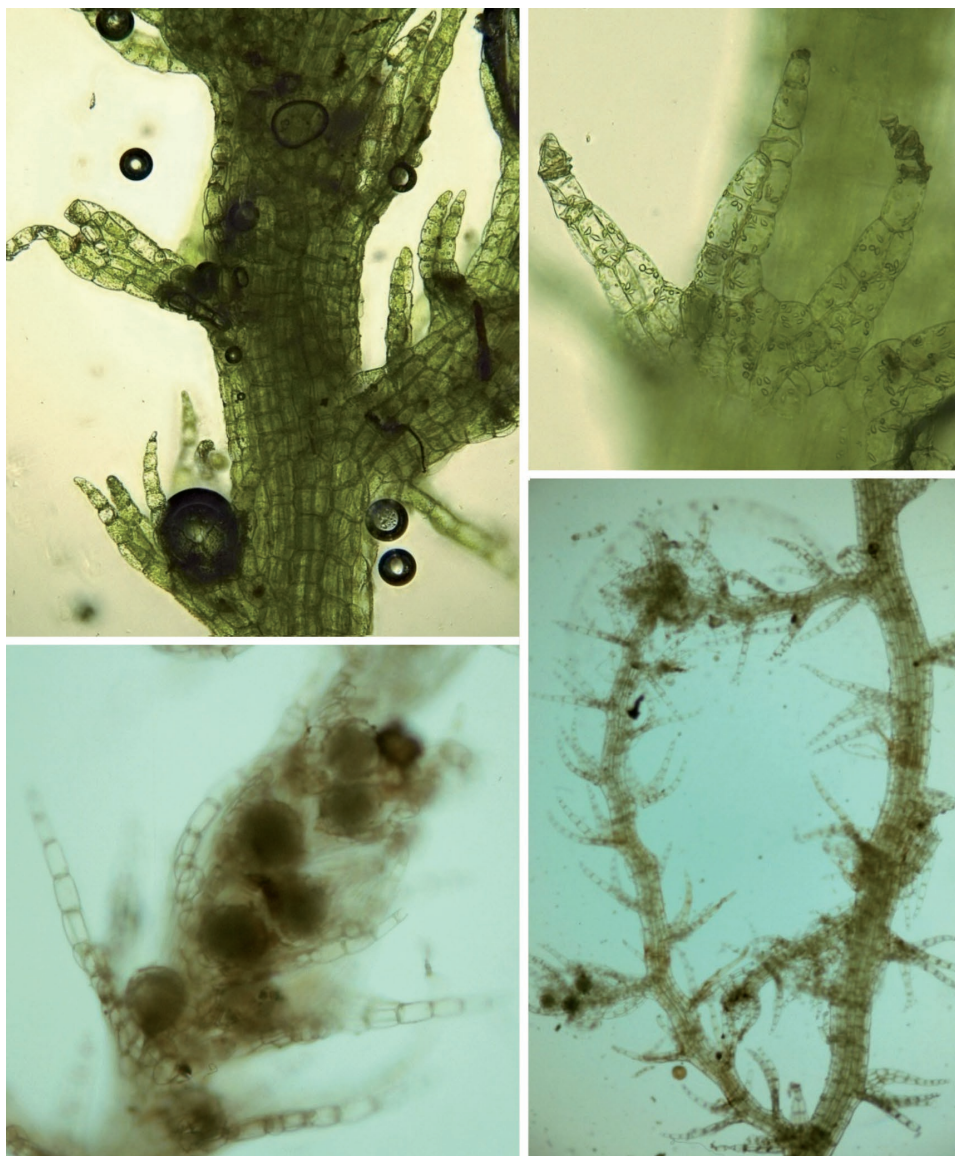
Figs 360 and 361 (next page). *Telaranea coactilis* (Spruce) J.J.Engel & G.L.S.Merr. Synonyms: *Arachniopsis coactilis* Spruce; *A. diacantha* auct. non (Mont.) Howe. Plants very small and fragile, on decaying wood or terrestrial, filamentous, with hair-like leaves, whitish-green. Stems irregularly branched, branches purely ventral-intercalary, flattened, very thin, with a hyalodermis. Rhizoids at base of underleaves, sparse. Leaves transverse, divided to the base into 1-2 uniseriate filaments, the filaments only 1 cell wide from base to apex and 8-10 cells long. Cells longer than wide, thin-walled, oil bodies not observed, eventually lacking. Underleaves lacking or very small, consisting of 2 small, adjacent cells, each with a slime papilla at apex. Autoicous. Perianths very long, cylindrical, mouth with long, bristle-like lacinia. **Habitat:** On soil, peat, rotten wood and on rocks, 2000-3200 m. **Distribution in Rwanda:** Nyungwe NP: Rwasekoko, Karamba, Kamiranzovu, Uwinka. **Distribution in Africa:** Sierra Leone, Ivory Coast, Ghana, Annobón, DR Congo, Tanzania, Zambia, Zimbabwe, Malawi, Mozambique, South Africa. Also Madagascar, Mascarenes, South America (Guyana, Brazil). **Note:** Probably all records of *Telaranea* (= *Arachniopsis*) *diacantha* from Africa and Madagascar belong to *T. coactilis*.





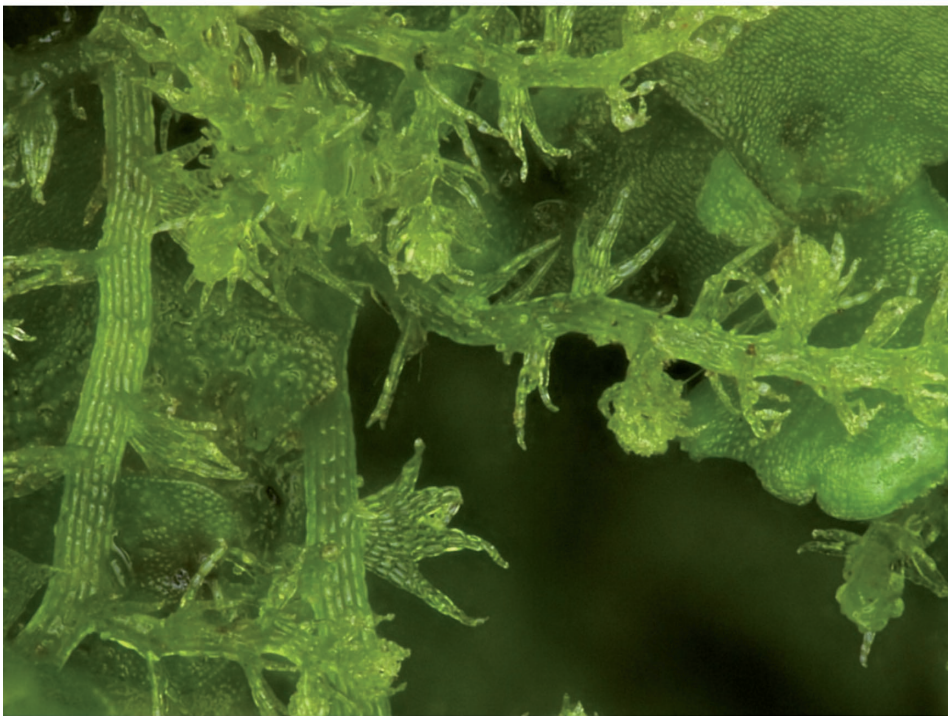
Figs 362 and 363 (next page). *Telaranea redacta* (Steph.) J.J.Engel & G.L.S.Merr. Synonyms: *Lepidozia redacta* Steph.; *Telaranea nematodes* auct. non (Gottsche ex Aust.) Howe. Plants very small and fragile, filamentous, with hair-like leaves, whitish-green. Stems “zig-zag”-like. Rhizoids at base of underleaves, sparse. Leaves transverse, to succubous, leaf lobes biseriate at base, uniseriate filaments distinctly constricted at septada. Underleaves very small, 2-3-lobed. Autoicous. Perianths subcylindrical, eplicate, mouth with few bristle-like lacinia, not constricted. **Habitat:** On rocky slopes in heath forest and on decaying wood or soil in montane forest, 2000-2400 m. **Distribution in Rwanda:** **Gishwati Forest:** Gikungu. **Nyungwe NP:** Karamba, Kamiranzovu, Uwinka. **Distribution in Africa:** Ghana, DR Congo, Burundi, Kenya, Tanzania, Zambia, South Africa. **Note:** Stephani (1914) described the species from the Nyungwe (= Rugege) forest as *Lepidozia redacta*. It was later listed as a synonym of *Telaranea nematodes* (Wigginton & Grolle, 1996) until Engel & Merrill (2004) raised it again to specific rank. *Telaranea nematodes* seems to be restricted to lowland- and mid-altitude rainforests in Western and Central Africa.





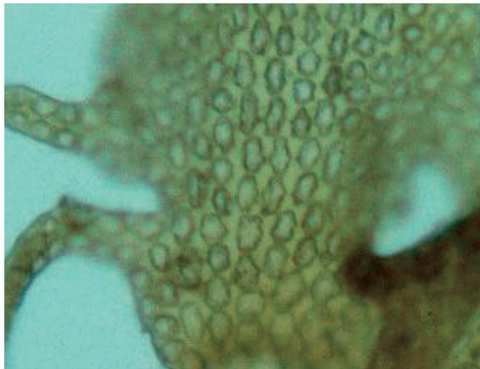
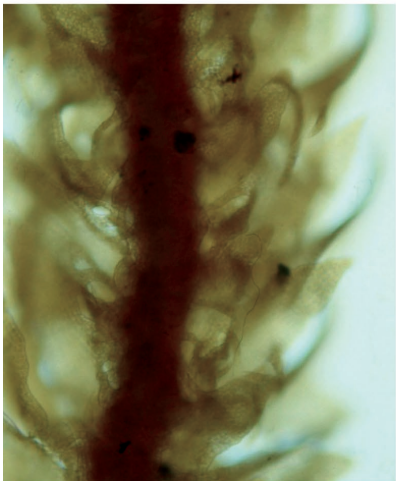
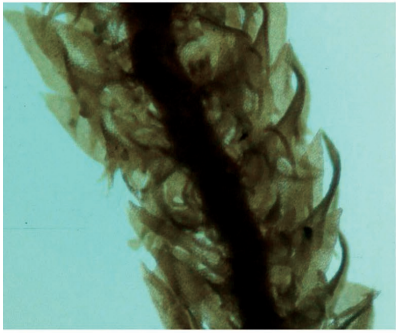
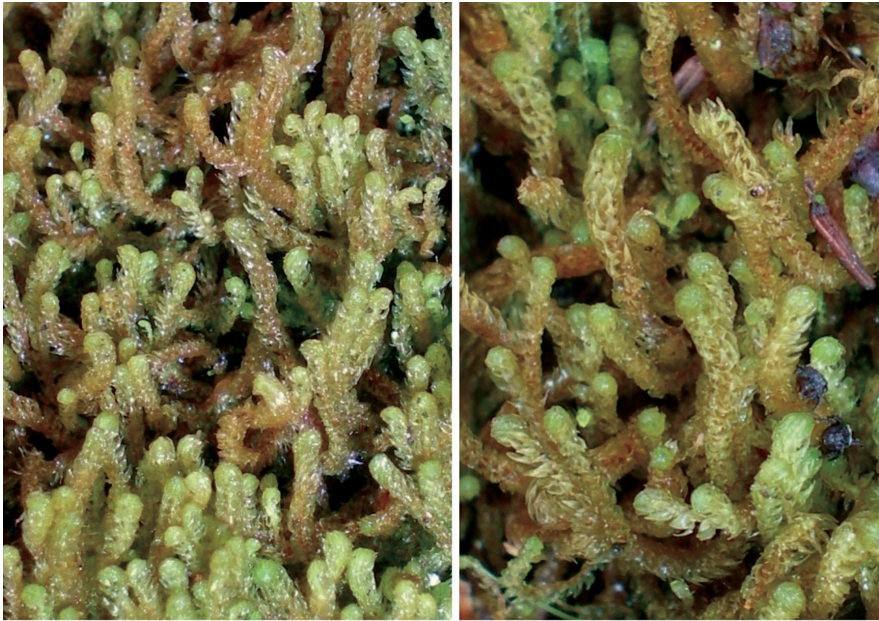
Figs 364 and 365 (next page). *Telaranea trifida* (Steph.) R.M.Schust.

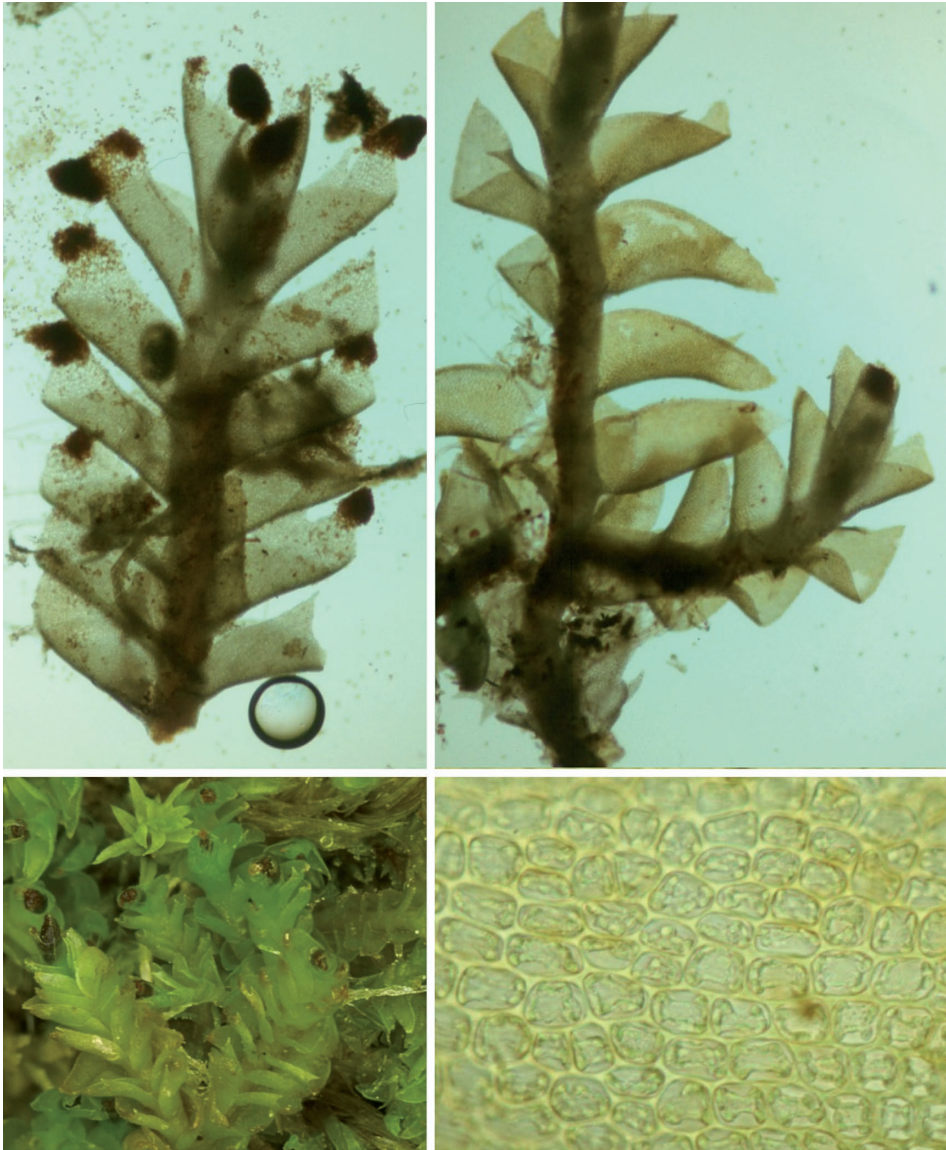
Synonym: *Lepidozia trifida* Steph. Leaves (3) 4-lobed, the lobes 3-4 cells wide at base, the uniseriate row 4-5 cells long. Underleaves 4-lobed, the lobes with uniseriate row of 2 cylindrical cells. Autoicous. **Habitat:** The ecological amplitude seems to be rather narrow as it was collected only in swamps and peat bogs, 2330-2400 m. **Distribution in Rwanda:** **Nyungwe NP:** along road from Butare to Cyangugu at border of district, Rwasenkoko, 2330-2400 m. **Distribution in Africa:** Cameroon, DR Congo, Uganda.





Figs 366 and 367 (next page). *Tetralophozia cavallii* (Gola) Váňa
Synonyms: *Chandonanthus cavallii* (Gola) S.W.Arnell; *C. quadrifidus* Steph. Plants epiphytic or rupicolous, small, reddish-brown, growing in tufts. Stems prostrate to suberect, simple, (0.6-)1-2 cm long. Leaves imbricate, transversely inserted, deeply symmetrically (3-)4-lobed, wider than long, c. 0.6 mm long, margin almost entire, ciliate near base, cilia up to 55 μ m long. Cells with indistinct trigones, nodulose, mid-leaf cells 18 x 19 μ m. Underleaves similar to leaves, but deeply 2-lobed, c. 0.55 mm long. **Habitat:** *Hagenia-Hypericum* forest, ericaceous forest and *Dendrosenecio-Lobelia* paramo, 3000-3900 m. **Distribution in Rwanda: Volcano NP:** Karisimbi, in the saddle between Mt. Bisoke and Mt. Karisimbi, Karisimbi, on E-slopes along trail to summit Bisoke, Sabinyo, Gahinga. **Distribution in Africa:** DR Congo, Ethiopia, Uganda, Kenya, Tanzania, Zimbabwe (?).



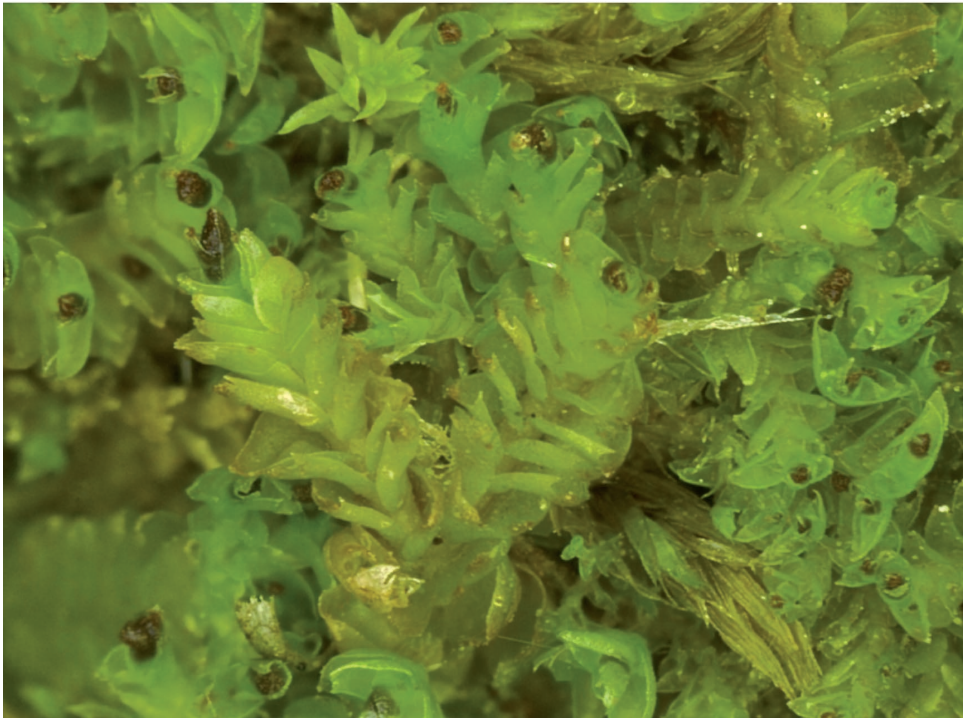
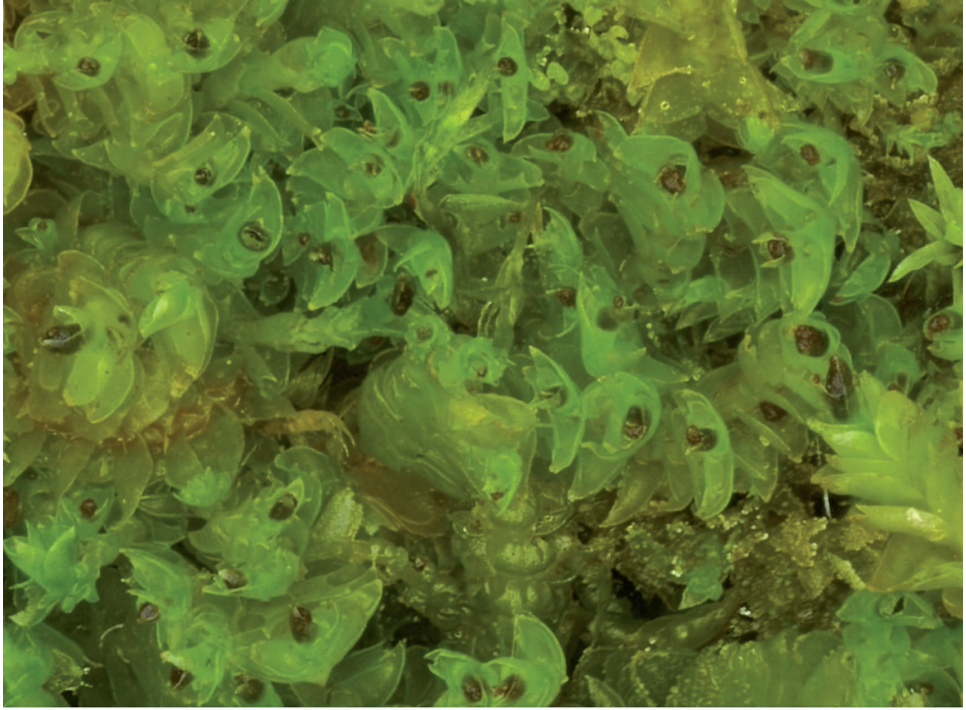


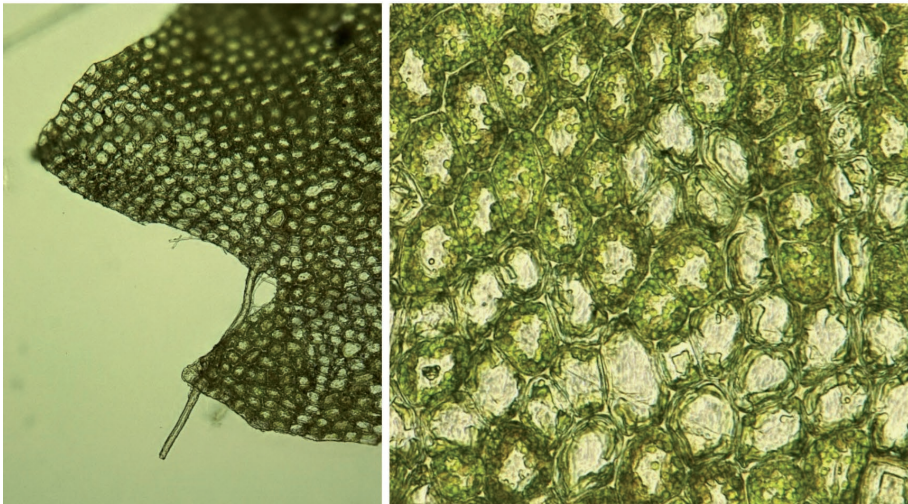
Figs 368 and 369 (next page). *Tritomaria exsecta* (Schmidel ex Schrad.) Schiffn. ex Loeske

Plants in loose or dense patches. Stems up to 1-2 cm long, flaccid, ascending to erect.

Leaves imbricate, suberect or spreading, canaliculate to concave, ovate, unequally (2-)3-lobed, 0.65-0.8(-1) mm long. Cells thick-walled, with minute trigones, 10-20 x 8-15 μm . Gemmae in masses at apices of lobes of sterile plants. **Habitat:** *Hagenia-Hypericum* forest (with mossballs on branches), 3000-3300 m. **Distribution in Rwanda:** **Volcano**

NP: Karisimbi, in the saddle between Mt. Bisoke and Mt. Karisimbi. **Distribution in Africa:** Ethiopia, Uganda, Kenya, Tanzania, Malawi, South Africa.





Figs 370 and 371 (next page). *Tylimanthus laxus* (Lehm. & Lindenb.) Spruce
 Synonym: *Tylimanthus ruwenzorensis* S.W.Arnell. Stems 2-3 (5) cm tall, arising from microphyllous stolons. Leaves obliquely ovate, ventrally secund, dorsally and ventrally decurrent (similar to *Plagiochila*), 2-4 x 0.8-2 mm, leaf apex variable, shallowly 2-lobed to retuse or rounded, leaf margin sometimes with rhizoids. Cells 22 x 35-45 μ m, with trigones. **Habitat:** Afroalpine species, *Lobelia stuhlmannii*-*Dendrosenecio adnivalis*-paramo, 3700 m. **Distribution in Rwanda: Volcano NP:** Karisimbi. **Distribution in Africa:** Ghana, Ethiopia, Uganda (Ruwenzori), Kenya (Mt. Kenya), Tanzania (Kilimanjaro, Uluguru mountains), Malawi. Also Réunion, Azores, Madeira, South America.



10. 2. Thallose Liverworts





Figs 372 and 373 (next page). *Aneura pinguis* (L.) Dumort.

Thallus dorsally concave, fleshy, yellowish-green to dark green, greasy in appearance, branches (20-)30-60(-70) x 3-7 mm, in the middle (9-)10-13(-20) cells thick. Dioicous. Calyptra clavate, up to 4-15 x 2 mm, fleshy, surrounding sporophytes. **Habitat:** Montane swamps and bogs, 2300-2500 m. **Distribution in Rwanda:** Nyungwe NP: Rwasenkoko, swamp along road to Bweyeye c. 2 km S of Pindura. **Distribution in Africa:** Tanzania, South Africa. Also Réunion, Seychelles. Subcosmopolitan and widespread in the Northern Hemisphere.





Fig. 374. *Aneura pseudopinguis* (Herzog) Pócs

Synonym: *Riccardia pseudopinguis* Herzog. Thallus flat, translucent, green, opaque, closely adhering to the substrate (usually decaying wood or bark), branches up to 100 mm x 3-8 mm, in the middle only 5-7(-9) cells thick tapering to an unistratose margin 2-6 cells wide. Dioicous. Calyptra clavate, up to 5 x 1-2 mm, fleshy, surrounding sporophytes.

Habitat: Soil and rotten wood, 2000-2600 m. **Distribution in Rwanda:** Nyungwe NP: Kamiranzovu, Mt. Bigugu. **Distribution in Africa:** Ivory Coast, Bioko, Rio Muni, DR Congo, Uganda, Tanzania, Zimbabwe, South Africa. Also South America, Seychelles.



Figs 375 and 376 (next page). *Asterella abyssinica* (Gottsche) Grolle, Synonym: *Fimbriaria abyssinica* Gottsche in Gottsche *et al.* Thalli small to medium-sized, in crowded mats, green to light olive-green, simple or furcate. Ventral surfaces green, with large scales in two rows. Autoecious. Antheridia in sessile cushions. Gynoecial receptacles on 4-5 mm long stalk, carpocephala suborbicular, 3.5-4 mm diameter, pseudoperianth with 8-10 white segments. **Habitat:** *Hagenia-Hypericum* forest, on stream banks or damp rocks, 2000-3300 m. **Distribution in Rwanda:** **Volcano NP:** Karisimbi, in the saddle between Mt. Bisoke and Mt. Karisimbi, Kinigi, foot of Muhabura. **Nyungwe NP:** Cyamudongo. **Distribution in Africa:** Sierra Leone, Bioko, Cameroon, DR Congo, Burundi, Ethiopia, Tanzania, Malawi, Zimbabwe, South Africa.