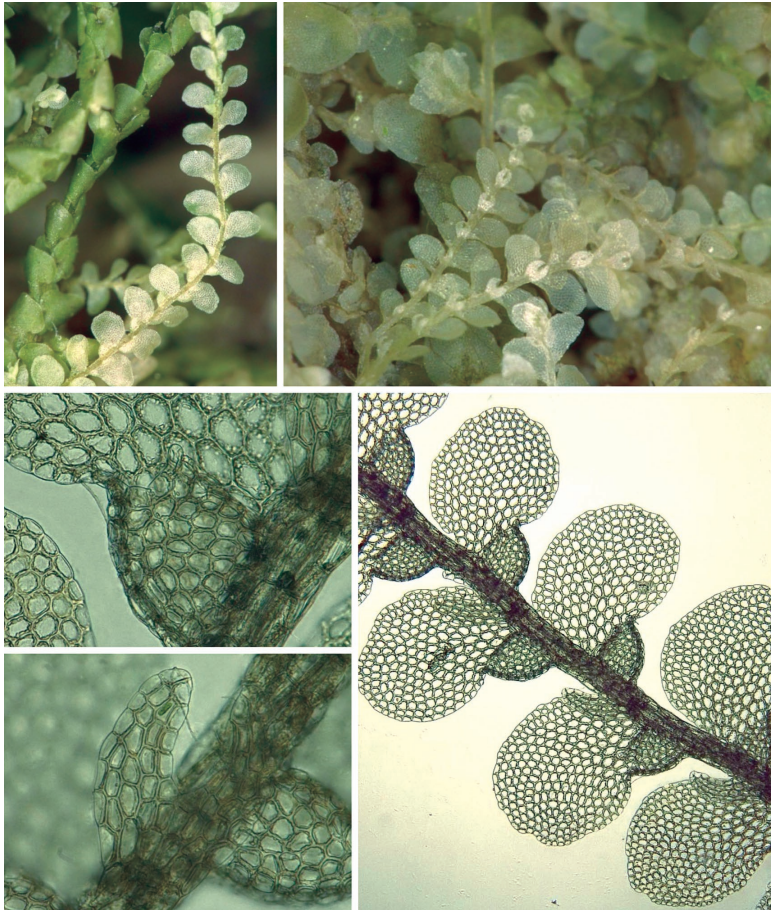


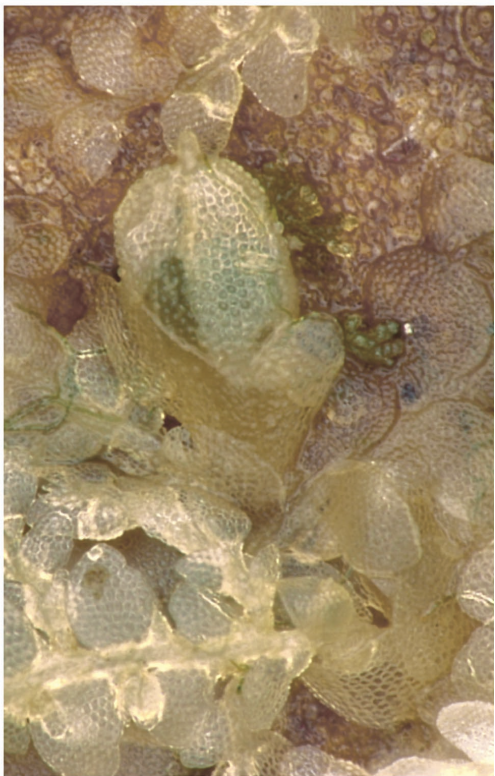
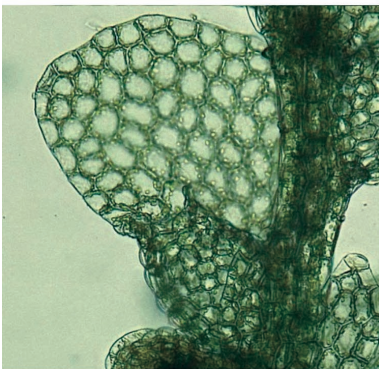
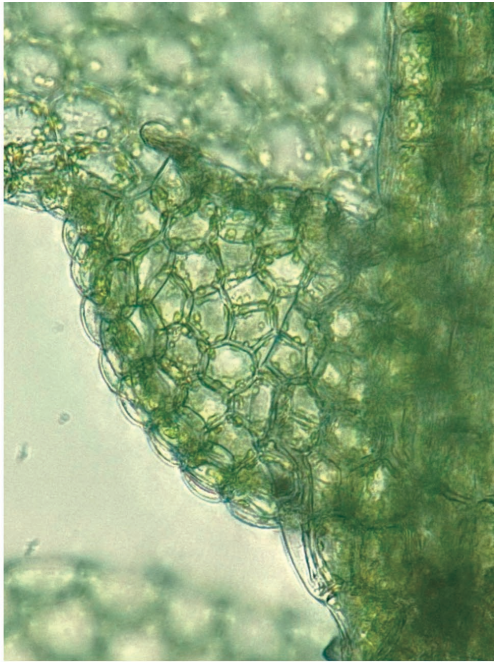
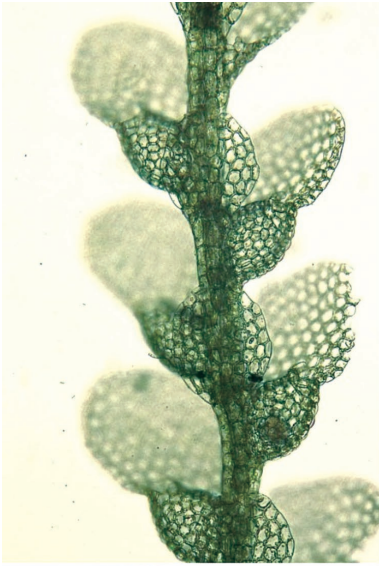
**Fig. 238. *Lejeunea amaniensis* E.W.Jones**

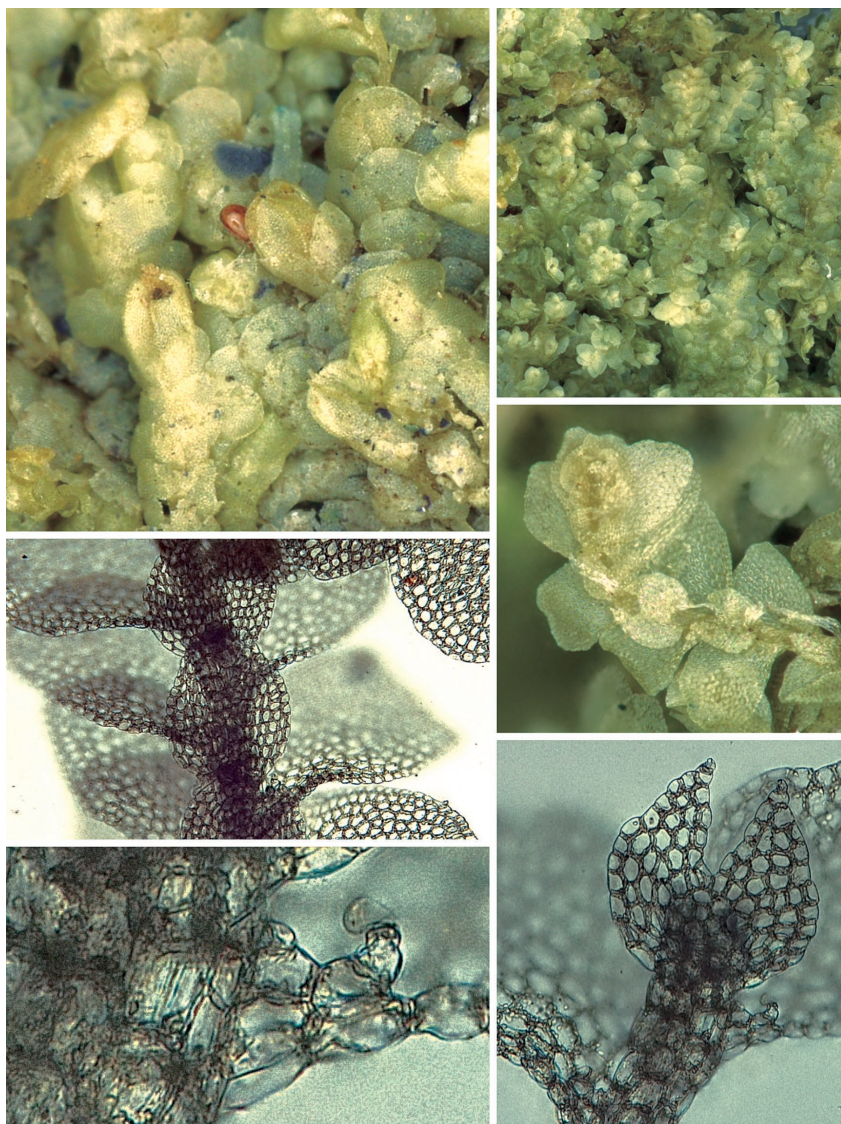
Plants with a glossy metallic sheen, c. 1 mm wide. Leaves imbricate, 0.6-1 x 0.4-0.7 mm, convex, ovate, acuminate, acumen strongly decurved, dorsal base straight near insertion and then arched across stem. Lobules large, 0.4-0.5 the length of the lobe, the keel strongly arched and forming an angle of 90° or more with ventral margin of lobe, strongly inflated, almost globose, apical tooth short, free margin of 6 or more cells. Underleaves broadly ovate, 3-5 x as wide as the stem, wider than long, shallowly 2-lobed to about 0.2 of their length, obtusely pointed or rounded. Cells large, isodiametric, 20-30 µm wide, very thin-walled but often with sharp trigones and intermediate thickenings, oil bodies numerous. Autoicous. Perianth 0.8-0.9 mm long, exserted from bracts to 0.5 of their length, with 5 equal keels. **Habitat:** Epiphytic in montane forest, 2000 m. **Distribution in Rwanda: Nyungwe NP:** Gisakura. **Distribution in Africa:** Cameroon, Kenya (Kakamega), Tanzania. Also Madagascar.



**Figs 239 and 240 (next page).** *Lejeunea caespitosa* Lindenb. in Gottsche, Lindenb. & Nees

Plants very variable, shoots 0.5-0.7(-1.2) mm wide. Leaves approximate, ovate to oval, 0.3-0.5 mm long, dorsal base truncate, apex broadly rounded, ventral margins nearly in line with the weakly arched keel. Lobules often reduced or lacking, when well developed 0.25-0.35 the length of the lobe, inflated, free margin inrolled, of 3-4 cells, apical tooth short. Underleaves 2-3 x as wide as the stem, oval, 2-lobed for 0.5-0.65 of their length, lobes narrowly triangular, (2-)4(-5) cells wide at base, acute, diverging, sinus wide, base rounded. Cells nearly isodiametric, (19-)25-27 x 25-30  $\mu\text{m}$ , walls thin, trigones and intermediate thickenings sharp or lacking. Autoicous. Perianths exerted to 0.5 of their length, compressed, obcordate, plane dorsally, with or without weak median keel, lateral keels wide around distal half of perianth, ventrally inflated, with 2 keels. **Habitat:** Epiphytic in montane forest, 2000-2500 m. **Distribution in Rwanda:** Nyungwe NP: Rwasenkoko, Karamba, Uwinka. **Distribution in Africa:** Sierra Leone, Ghana, Nigeria, Annobón, Príncipe, São Tomé, Bioko, Cameroon, Rio Muni, Central African Republic, Congo-Brazzaville, DR Congo, Uganda, Kenya, Angola, Malawi, Zimbabwe, South Africa. Also Cape Verde, Comoros, Madagascar, Mauritius, Réunion, Rodriguez, Seychelles.

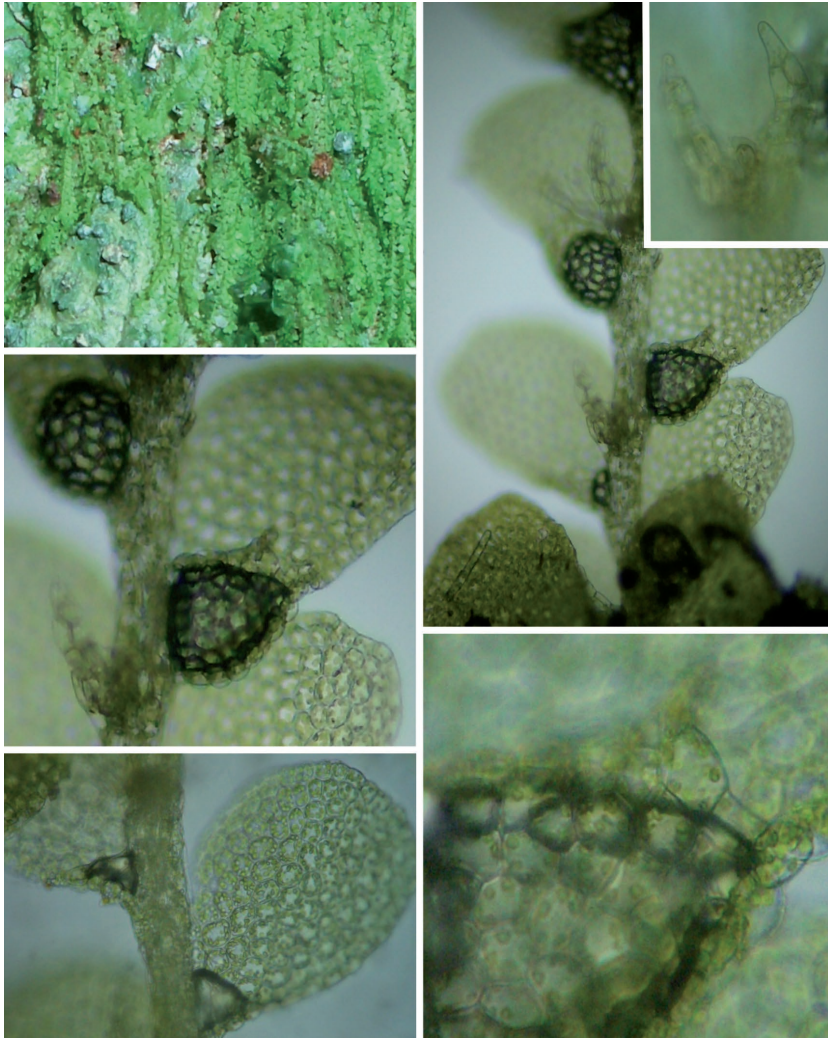




**Fig. 241. *Lejeunea capensis*** Gottsche in Gottsche, Lindenb. & Nees.

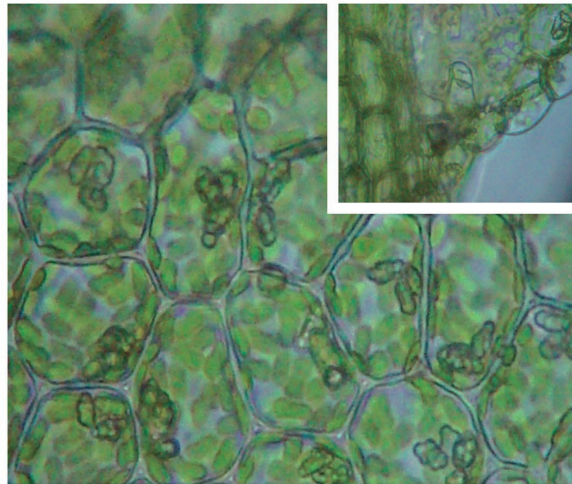
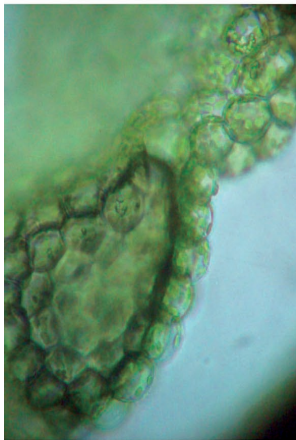
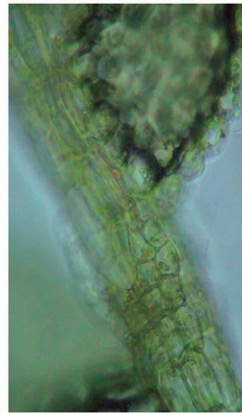
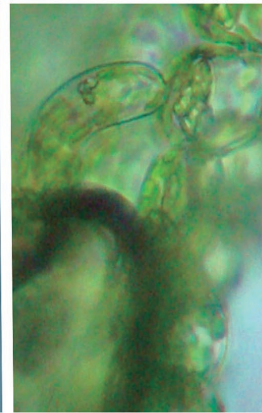
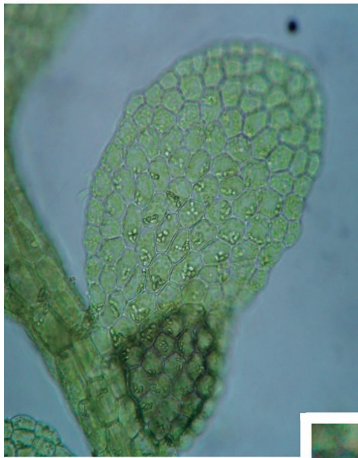
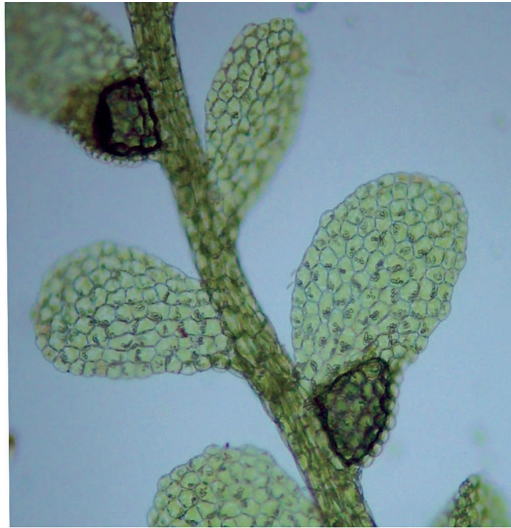
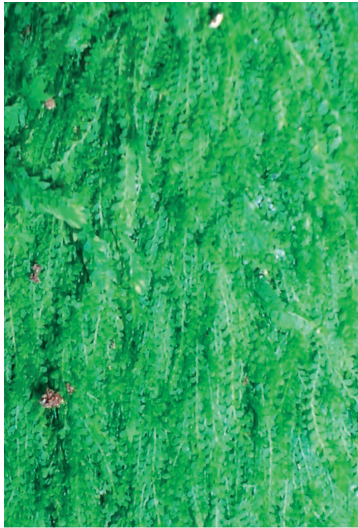
Synonym: *Inflatolejeunea capensis* (Gottsche) S.W.Arnell. Plants green, densely caespitose. Stems up to 10 mm long, 0.05 mm in diameter, richly and regularly branched. Leaves densely imbricate, orbicular, slightly concave, overlapping and crossing the stem. Lobule medium-sized to small, keel slightly arched, apex with 1-cellular apical tooth.

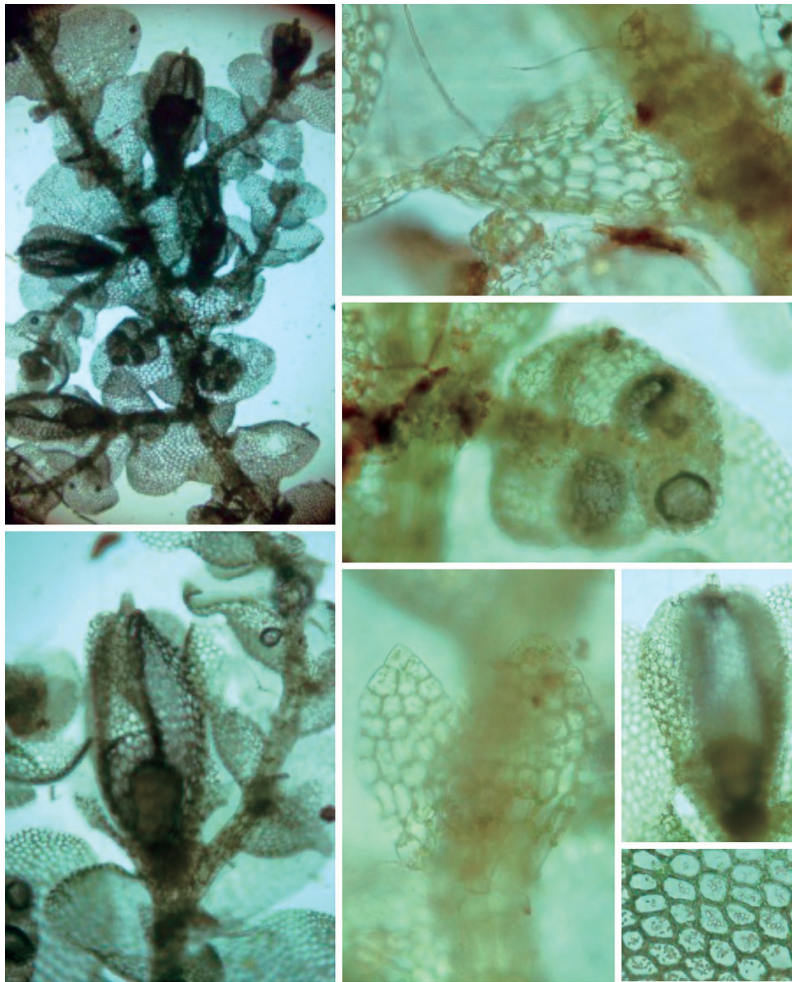
Underleaves small, patent, bilobed to 1/2 of their length, lobes triangular, acute, sinus wide, obtuse to subacute. Cells 24 x 24  $\mu\text{m}$ , walls thin without or with small trigones. Monoicous. Perianth pyriform, inflated, not plicate. **Habitat:** Epiphytic in montane forest, 2600 m. **Distribution in Rwanda: Volcano NP:** Sabinyo. **Distribution in Africa:** DR Congo, Kenya, Tanzania, Malawi, Lesotho, South Africa. Also Madagascar.



**Figs 242 and 243 (next page). *Lejeunea confusa* E.W.Jones**

Plants small, shoots 0.4-0.8 mm wide, little branched. Leaves uniform in size, distant to approximate, oval, lobe 0.2-0.25 x 0.13-0.2 mm, convex, hardly changed when dry, dorsal base slightly arched but hardly crossing the stem, apex broadly rounded, ventral margin forming a deep sinus with the ventral margin of the lobule. Lobule, when well developed, inflated, with strongly arched keel, free margin incurved, of 4 cells, apical tooth c. 3 x as long as wide, strongly curved. Underleaves small and delicate, 1-1.5 x as wide as the stem, bilobed to 0.5 or more, lobes 2-4 cells wide. Cells 20-24 x 22-28  $\mu$ m, walls thin, trigones minute or absent. Dioicous. Perianths rare, 0.4-0.5 x 0.3-0.35 mm, oblong-oval, compressed, laterally with long narrow keels. **Habitat:** Epiphytic or epiphyllous in montane forest, 2000-2100 m. **Distribution in Rwanda:** Nyungwe NP: Kamiranzovu, Uwinka. **Distribution in Africa:** Sierra Leone, Ghana, Nigeria, Bioko, Cameroon, Central African Republic, Gabon, DR Congo, Kenya, Tanzania. Also Comoros, Madagascar, Seychelles.



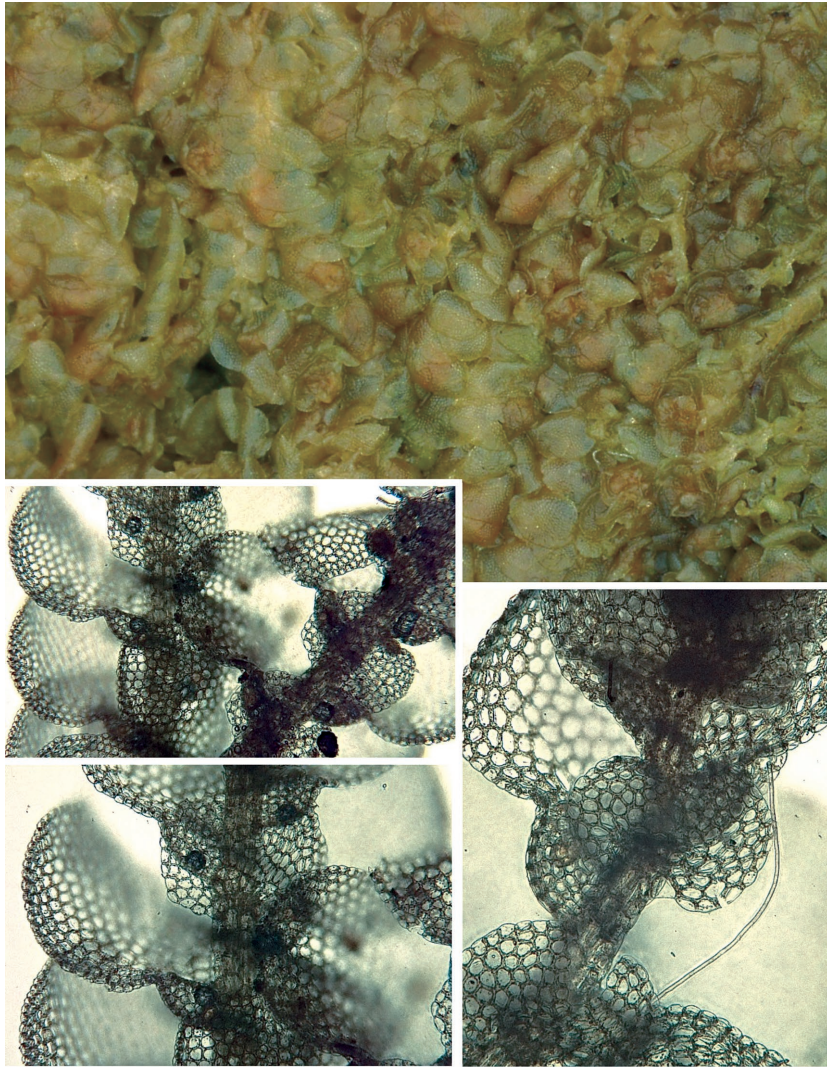


**Figs 244 and 245 (next page).** *Lejeunea cyathearum* E.W.Jones

Plants small, light green, shoots up to 0.75-1.2 mm wide. Leaves contiguous to imbricate, convex, spreading at right angles to the stem, lobe complanate, oval, 0.55-0.8 x 0.4-0.55 mm, apex broadly rounded, postical margin slightly arched. Lobules often lacking, when well developed with a keel arching through a quadrate and forming an angle of 90° with the postical margin of the lobe, 0.2-0.25(-rarely 0.3) of lobe length, apical tooth slightly incurved. Underleaves large, orbicular, convex, 3-6 x as wide as the stem, 0.3-0.6 mm wide, apex bilobed to 0.6 of the length, sinus V-shaped, lobes acute, base rounded to subcordate. Cells thin-walled, almost without trigones, or with small trigones and intermediate thickenings, 25-33 x 30-45 µm, oil bodies numerous. Monoicous. Perianth exserted for 0.3-0.5 of its length, pyriform, terete, 0.6-0.9 x 0.3-0.5 mm, equally 5-keeled, keels tuberculate or dentate. **Habitat:** Epiphytic in montane forest, usually on tree ferns (*Cyathea manniana*), 2000-2450 m. **Distribution in Rwanda:** Nyungwe NP: Rwasekoko, Uwinka. **Distribution in Africa:** DR Congo, Tanzania, Malawi. Also Comoros.





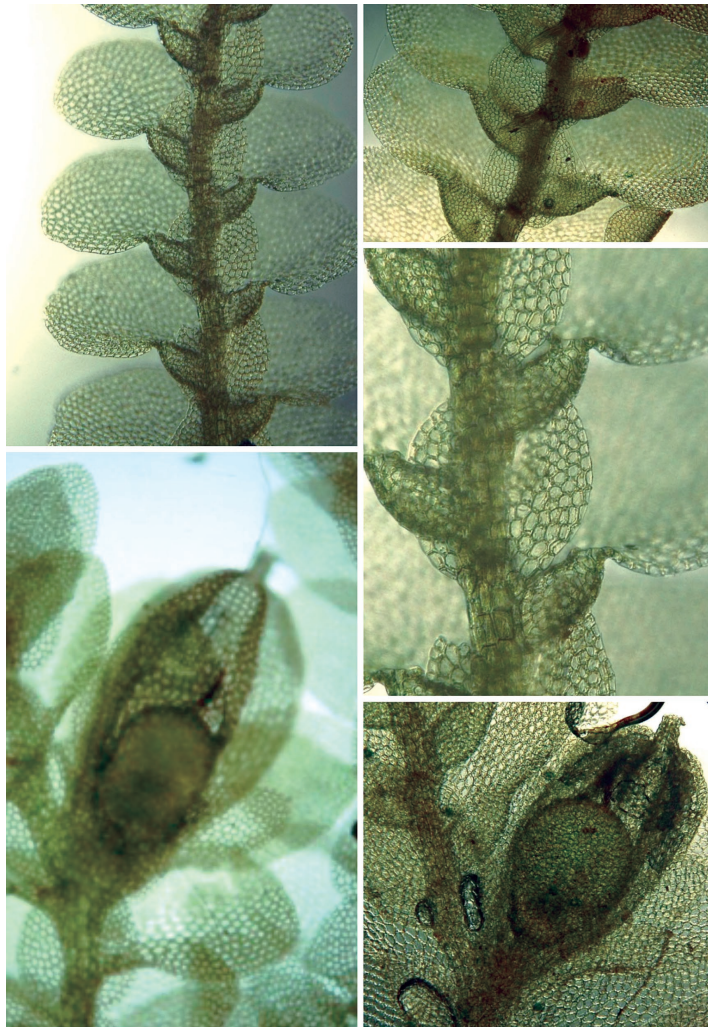


**Fig. 246. *Lejeunea eckloniana* Lindenb.**

Synonym: *Taxilejeunea heterofolia* Steph. Plants green. Shoots to 8 mm long and 0.8-1.4 mm wide. Leaves laxly imbricate, lobe ovate to orbicular, concave, apex rounded, ventral margin nearly straight, forming a wide angle with the keel or  $\pm$  in line with it. Lobule variable, 0.2-0.25 as long as the lobe, apex with an obtuse 2-celled tooth. Cells 25-30 x 21-27  $\mu$ m, walls thin, trigones small but distinct. Underleaves 2.5-3.5(-4) x as wide as the stem, 2-lobed to 0.4-0.5 of their length. Monoicous. Perianth pyriform, 0.5-0.75 mm long.

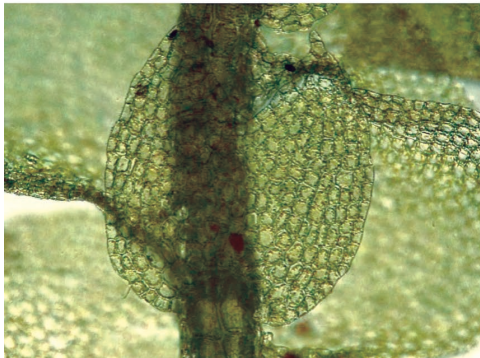
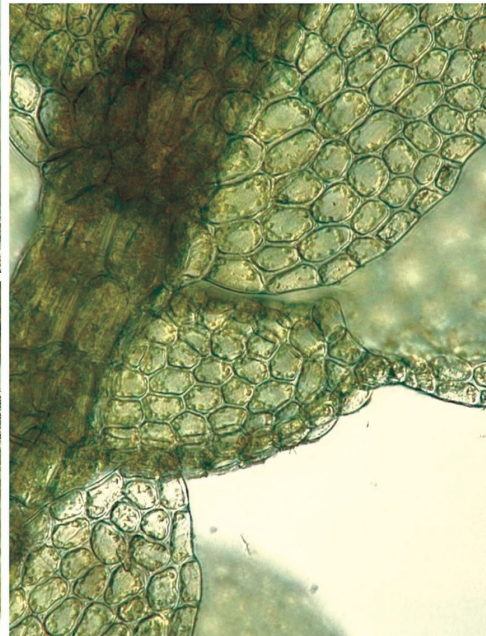
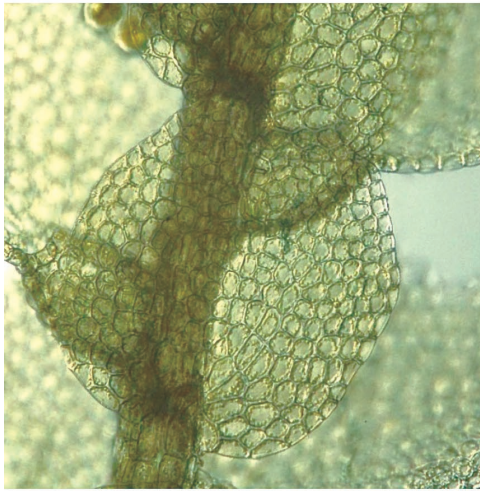
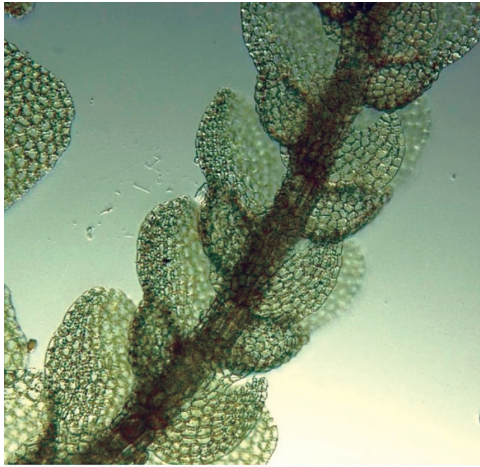
**Habitat:** Epiphytic in montane forest, 2100-2450 m. **Distribution in Rwanda:** Nyungwe

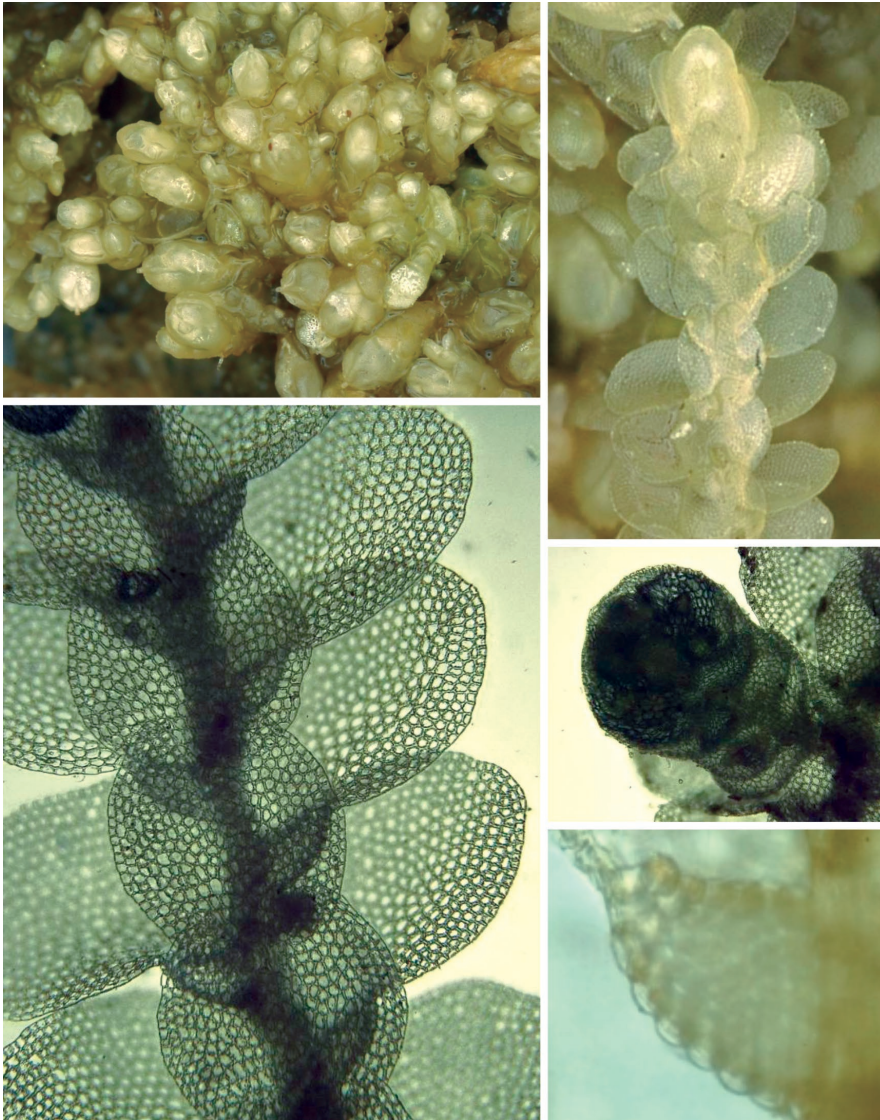
**NP:** Rwasekoko, Uwinka. **Distribution in Africa:** Guinea, Ghana, Togo, Nigeria, Bioko, Cameroon, Congo-Brazzaville, DR Congo, Djibouti, Uganda, Kenya, Tanzania, Angola, Malawi, Zambia, Zimbabwe, Lesotho, South Africa. Also Canaries, Cape Verde, Madagascar, Mauritius, Réunion.



**Figs 247 and 248 (next page). *Lejeunea flava* (Sw.) Nees**

Synonym: *Lejeunea flava* ssp. *flava*. Plants similar to *L. tabularis*, medium-sized, shoots rarely more than 1 mm wide. Leaves 0.5-0.7 mm long, spreading nearly to right angle to the stem. Lobule 0.35 the length of the lobe, with free margin inrolled or incurved, of 4 cells, apical tooth short. Underleaves approximate to distant (not imbricate), ovate, truncate at the base (not cordate), 2.5-3 x as wide as the stem. Perianths pyriform, exerted from the bracts to about 0.35 of their length, keeled in the apical half, dorsal face usually plane with a low keel or without keel, lateral and ventral keels strong, rostrum variable in length. **Habitat:** Epiphytic in montane forest and ericaceous heath, 2000-2700 m. **Distribution in Rwanda: Volcano NP:** Sabinyo. **Gishwati Forest :** Gikungu. **Nyungwe NP:** Rwasenkoko, Uwinka, Mt. Muzimu. **Distribution in Africa:** Sierra Leone, Ghana, Togo, Bioko, Congo-Brazzaville, Central African Republic, DR Congo, Uganda, Kenya, Tanzania. Also Cape Verde, Comoros, Madagascar, Réunion, Seychelles.





**Fig. 249.** *Lejeunea flavovirens* Ångstr.

Plants yellowish green. Leaves densely imbricate. Lobe 0.5 x 0.3-0.4 mm, apex rounded.

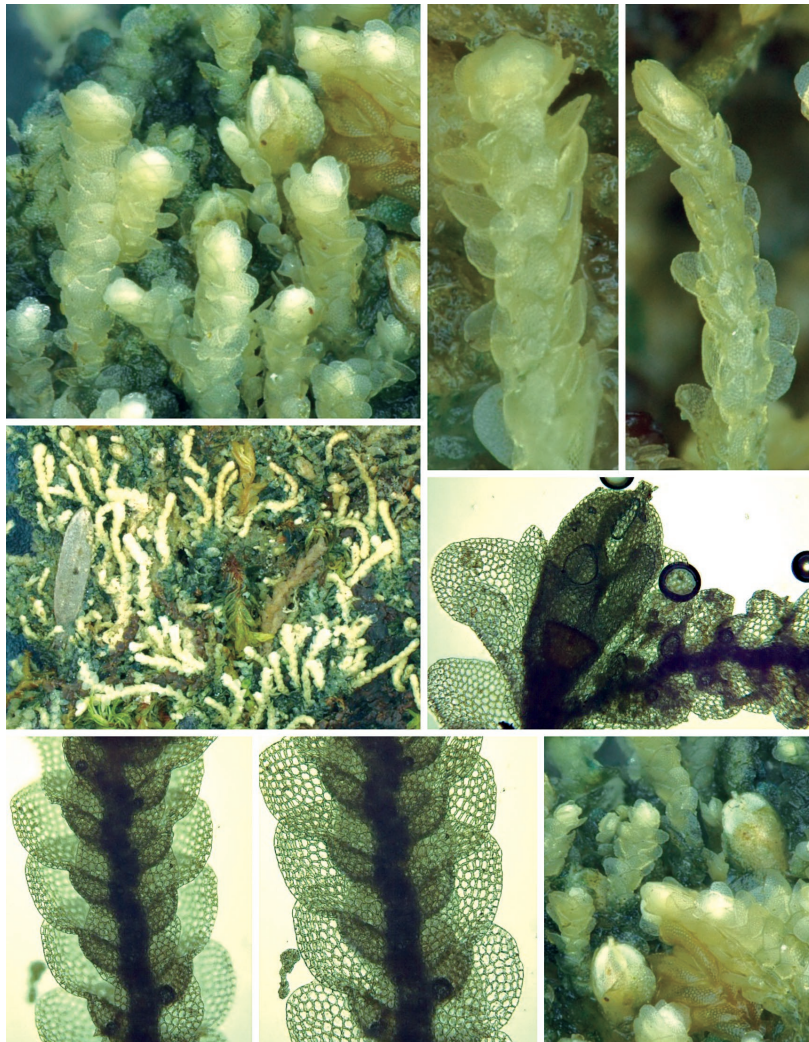
Lobule inflated, 0.13-0.15 x 0.08-0.09 mm. Cells with trigones, 22-35 x 19-23  $\mu$ m.

Underleaves nearly round, 4-5 x as wide as the stem, 0.4 x 0.39 mm, sinus 0.14 mm

long. Dioicous. Perianths terete, lacking keels. **Habitat:** Epiphytic in montane forest

up to *Hagenia-Hypericum* forest and the *Dendrosenecio-Lobelia stuhlmannii* paramo, 2450-3600 m. **Distribution in Rwanda:** **Volcano NP:** Karisimbi, at park gate, S-slope of Bisoke, in the saddle between Bisoke and Karisimbi, on the E-slopes along trail to summit.

**Nyungwe NP:** Rwasenkoko. **Distribution in Africa:** Sierra Leone, DR Congo, Uganda, Tanzania. Also Comoros, Madagascar, Mauritius, Réunion.

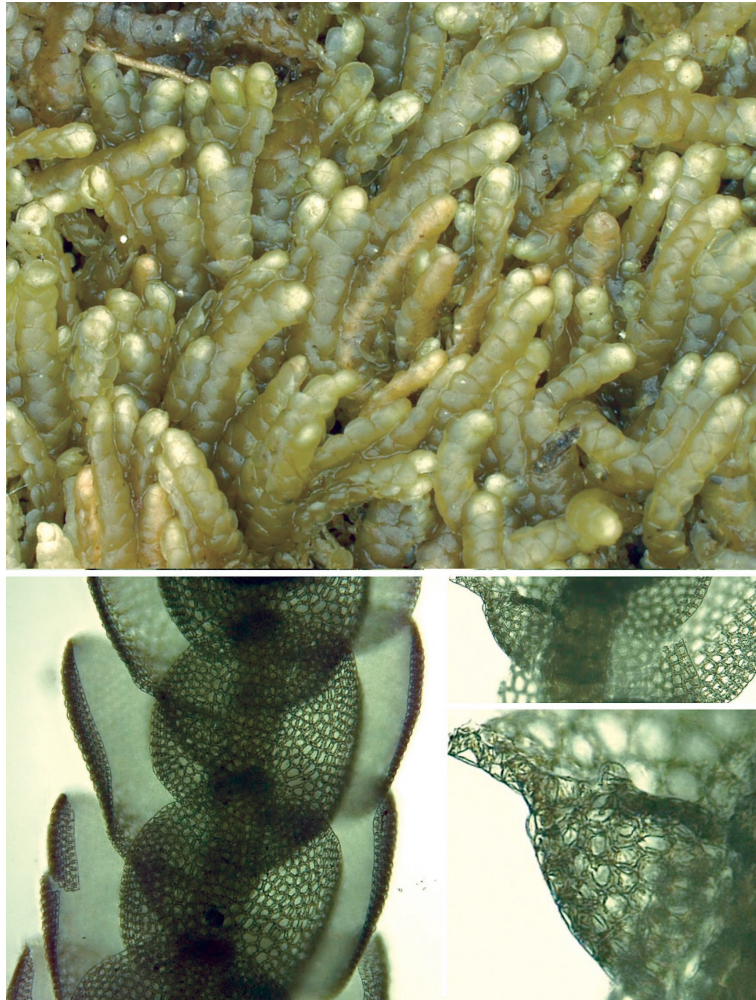


**Fig. 250.** *Lejeunea helenae* Pears.

Plants green, minute. Shoots to 8 mm long and 0.5-0.65 mm wide, subjulaceous.

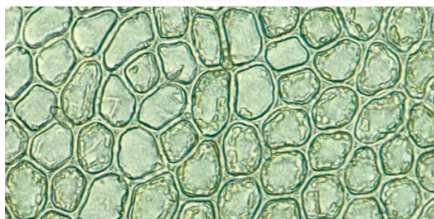
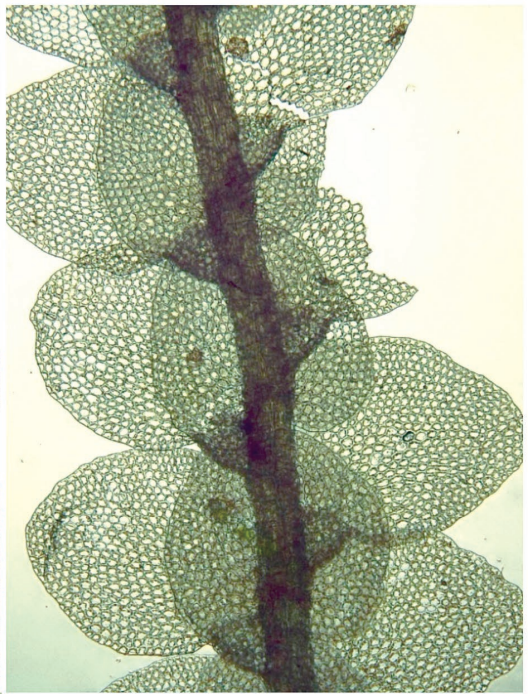
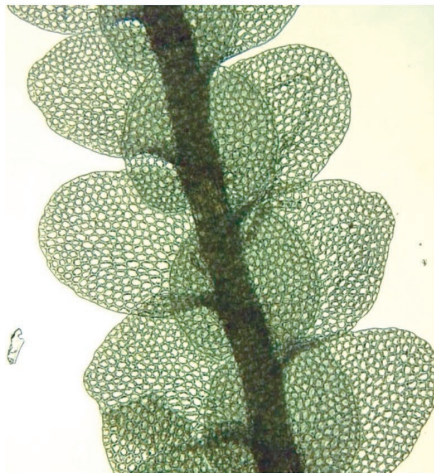
Leaves distant to approximate, erecto-patent, lobe slightly concave, 0.35 x 0.24 mm, asymmetrical, base rounded, covering the stem, apex obtuse and rounded, antical base arched, postical margin arched, forming a well defined sinus with the keel. Lobule often reduced to lacking, when well developed inflated, the keel extending c. 1/3 the distance from insertion to lobe apex, keel arching almost a quadrate, apical tooth curved, 2 x as long as wide. Underleaves oval, 2.5 x as wide as the stem, 0.1-0.12 x 0.17-0.2 mm, mostly longer than wide, 2-lobed to 0.5 of their length, lobes narrow triangular, acute, sinus acute. Dioicous. Perianth ovate to oblong, 5-keeled in upper half, rostrum short.

**Habitat:** Epiphytic in montane forest, 2300-2450 m. **Distribution in Rwanda:** Nyungwe NP: Rwasekoko, Uwinka. **Distribution in Africa:** DR Congo, Ethiopia, Uganda, Kenya, Tanzania, Angola, Malawi, Zimbabwe, South Africa.

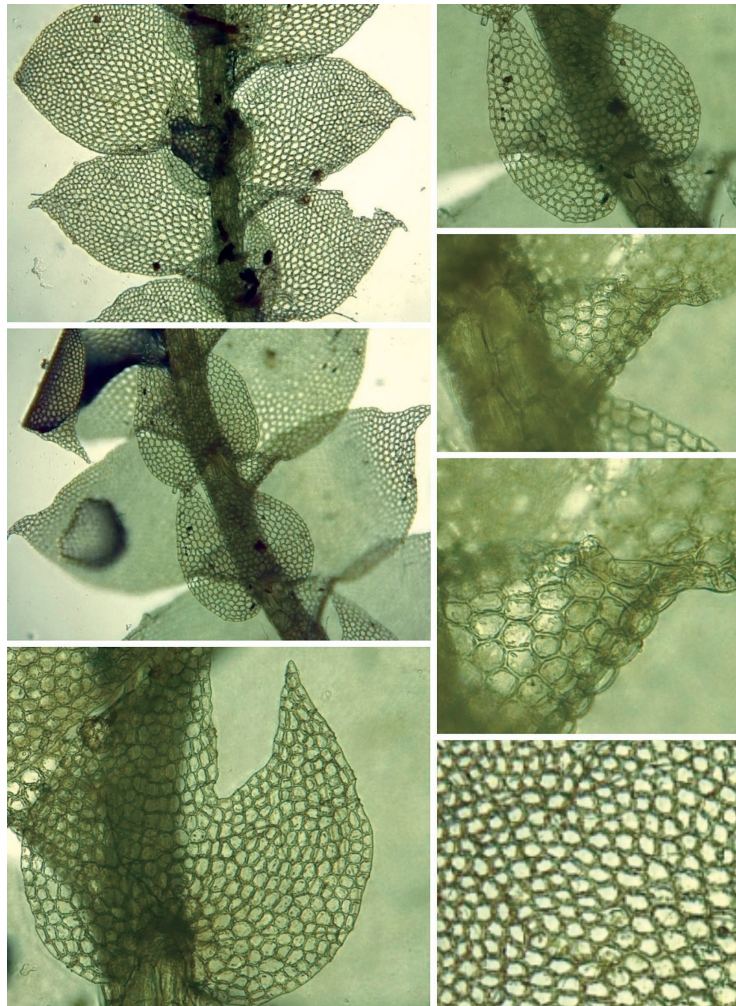


**Figs 251 and 252 (next page). *Lejeunea isophylla* E.W.Jones**

Plants green. Shoots elongate, up to 4 cm long and 0.8-0.9 mm wide, shortly and irregularly pinnately branched. Leaves distant to slightly imbricate, 0.5-0.7 x 0.35-0.5 mm, forming an angle of c. 50° with the stem, convex, inrolled when dry, ovate, antical base broadly rounded, crossing the stem, apex rounded, postical margin arched forming a well defined sinus with the keel. Underleaves orbicular, imbricate, very large, nearly equalling the leaves in size, their length exceeding the width of the adjacent leaves, 4-5 x as wide as the stem, base deeply cordate with rounded auricles. Cells 18-21 x 20-25 µm, wall with large trigones and confluent intermediate thickenings. Dioicous. Perianth inflated, pyriform, dorsal surface plane with a weak keel, ventral and lateral keels distinct. **Habitat:** Epiphytic in montane forest, 2000-2700 m. **Distribution in Rwanda:** Nyungwe NP: Rwasenkoko, Karamba, Kamiranzovu, Uwinka, Mt. Muzimu. **Distribution in Africa:** Ivory Coast, DR Congo, Burundi, Kenya, Tanzania, Malawi, Zimbabwe, Mozambique, South Africa. Also Comoros, Madagascar, Mauritius, Réunion, Seychelles.



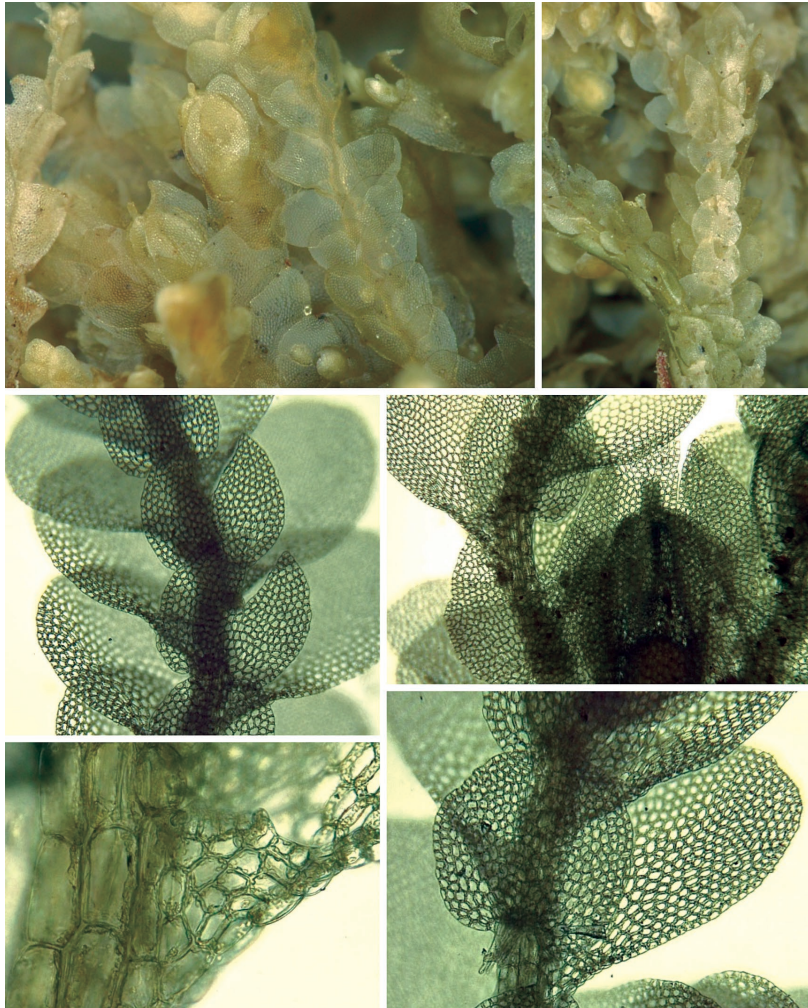




**Figs 253 and 254 (next page). *Lejeunea lyratiflora* Steph.**

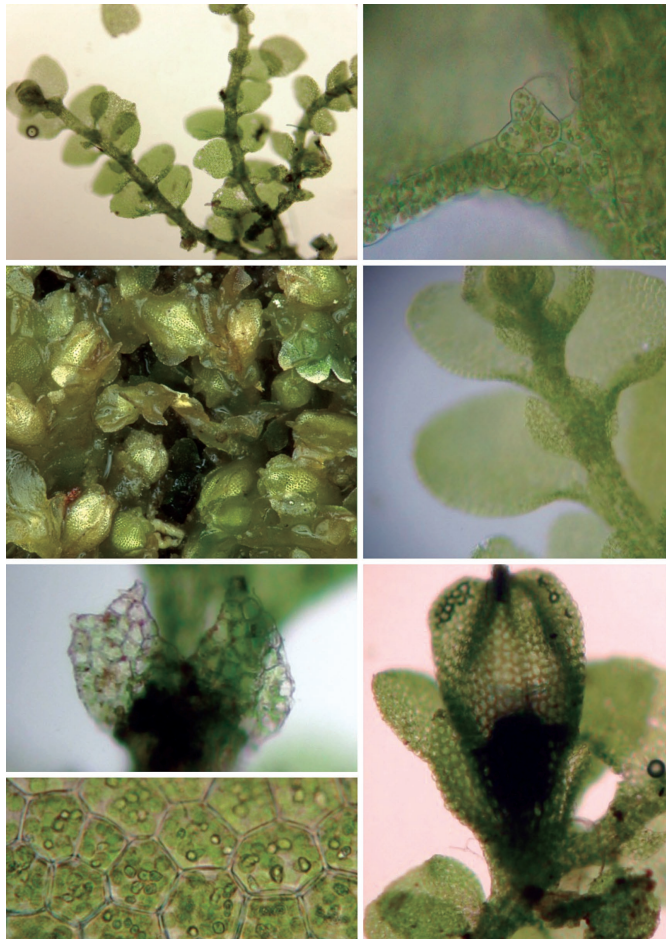
Synonym: *Taxilejeunea lyratiflora* (Steph.) Tixier. Plants with shoots up to 1-2 mm wide. Leaves approximate, directed upwards and forwards when moist, spreading from stem at an angle of c. 50°, lobes asymmetrically ovate, 0.5-0.7(-0.8) x 0.5 mm, base and dorsal margin strongly arched, apex narrow, obtuse to pointed or shortly apiculate, ventral margin incurved or nearly straight. Lobules often reduced, when well developed 0.25 x the length of the lobe, keel nearly straight, apex flat, apical tooth short, free margin of c. 8 cells. Underleaves rounded, 0.2-0.35 mm wide, 2.5-3.5 x as wide as the stem, bilobed to 0.5 of their length. Cells 24-30 x 24-33 µm, thin-walled with small but distinct trigones and intermediate thickenings. Autoicous. Perianth exserted, 0.75-1 mm long, half 5-keeled, keels abruptly expanded into spreading and inflated wings. **Habitat:** Epiphyllous or epiphytic in montane forest, 1900-2000 m. **Distribution in Rwanda:** Nyungwe NP: Karamba, Kamiranzovu, Rwankuba, km106 Butare-Cyangugu. **Distribution in Africa:** Cameroon, Burundi, Uganda, Tanzania.





**Fig. 255. *Lejeunea ramosissima* Steph.**

Plants light green, pinnately branched. Shoots 0.8-1.2 mm wide. Leaves approximate, concave, decurved, broadly elliptic, lobe 0.6-0.7 x 0.4-0.5 mm, antical base broadly rounded, crossing the stem. Lobule when well developed 0.2 of lobe length, keel arched, forming a sinus of 90-100° with the lobe. Underleaves orbicular, 0.6 mm wide and 0.55 mm long, 4-5 x as wide as the stem, bilobed for half of their length, sinus narrow, lobes acute. Cells 18-24 x 20-26 µm, walls thick, trigones medium, intermediate thickenings frequent but weakly defined, usually confluent with the trigones. Dioicous. Perianth longly exserted, clavate, completely without keels, with short cylindrical rostrum. **Habitat:** Epiphytic in montane forest, 2000 m. **Distribution in Rwanda: Nyungwe NP:** Gisakura. **Distribution in Africa:** Guinea, Sierra Leone, Togo, Annobon, Principe, São Tomé, Bioko, Cameroon, Congo-Brazzaville, DR Congo, Uganda, Tanzania. Also Seychelles. **Note:** Similar to *L. tabularis* but underleaves generally larger and round rather than ovate, 4-5 x as wide as the stem, strongly cordate at base.



**Figs 256 and 257 (next page).** *Lejeunea rhodesiae* (Sim) R.M.Schust.

Synonyms: *Rectolejeunea rhodesiae* (Sim) S.W.Arnell; *Lejeunea letabaensis* S.W.Arnell.

Plants pale green. Stem up to 12 mm long, shoots 0.6-0.8 mm wide. Leaves laxly imbricate, caducuous, lobe 0.4-0.5 x 0.25-0.35 mm, flat, nearly complanate, apex rounded, base 10-12 cells wide, lobe margins crenulate by protruding cells. Lobule variable in size, well developed lobules inflated with strongly arched keel, 2/5-1/2 x as wide as lobe, making a wide sinus with the arched postical lobe margin, apical tooth short, up to 2 x as long as wide, sometimes lobule reduced to 1-2 rows of cells. Cells without trigones or intermediate thickenings, 16-20 x 16-24  $\mu\text{m}$ , oil bodies 2-8 per cell. Underleaves usually wider than long, 1.5-2 x as wide as the stem, bilobed to 1/2, sinus wide. Dioicous. Perianth compressed, cordate, nearly equally 5-keeled, 0.5-0.7 x 0.3-0.46 mm. **Habitat:** Epiphytic savanna and gallery forest, also in cultivated landscape, 1300-1700 m. **Distribution in Rwanda:** **Central Rwanda:** Huye (Butare). **Akagera:** Lake Ihema, Lake Mpanga region. **Distribution in Africa:** Central African Republic, Congo-Brazzaville, DR Congo, Uganda, Tanzania, Angola, Malawi, Zambia, Zimbabwe, South Africa. Also Socotra, Rodriguez, Seychelles.