

***Diplasiolejeunea riclefgrollei*
(Lejeuneaceae, Jungermanniopsida),
a remarkable new species from Cuba**

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In memoriam Dr. Riclef Grolle

Abstract – A further new species of *Diplasiolejeunea*, *D. riclefgrollei* from Cuba, is described and figured. It is characterized by its relatively small size, strongly saccate lobule, well developed first tooth, and large underleaves.

Zusammenfassung – Eine weitere neue Art der Gattung *Diplasiolejeunea*, *D. riclefgrollei*, wird beschrieben und abgebildet. Die Art ist relativ klein, hat einen stark wassersackartigen Lobulus mit gut entwickeltem ersten Zahn und große Unterblätter.

Cuba / *Diplasiolejeunea* / Lejeuneaceae / new species

Some time ago Riclef Grolle let me have part of his very rich *Diplasiolejeunea* material. Working up these collections I came across a remarkable new species which is named in honour of Riclef Grolle, master of hepaticology, to whom I owe most of my knowledge about hepatics.

DESCRIPTION

***Diplasiolejeunea riclefgrollei* Schäfer-Verwimp, sp. nov.** (Fig. 1)

Dioica (?). *Planta parva, ramicola* (?). *Caules pauciter ramosi, usque ad 15 mm longi, 0,12-0,14 mm crassi, cum foliis 1,2-1,5 mm lati. Lobus foliorum 0,7-0,85 mm longus, 0,7-0,9 mm latus. Cellulae lobi quadratae ad irregulariter hexagonales, 10 × 10 µm vel 20 × 20 µm, cum trigonis triangularis. Lobulus in situ curvatus, maxime inflatus, 1,5-2 × longior quam latus, usque ad 2/3 – 4/5 lobi. Amphigastria ad 0,5-0,6 bifida, lobus 220-250 µm longa, 170-200 µm lata, apex ± obtusa. Perianthia ignota.*

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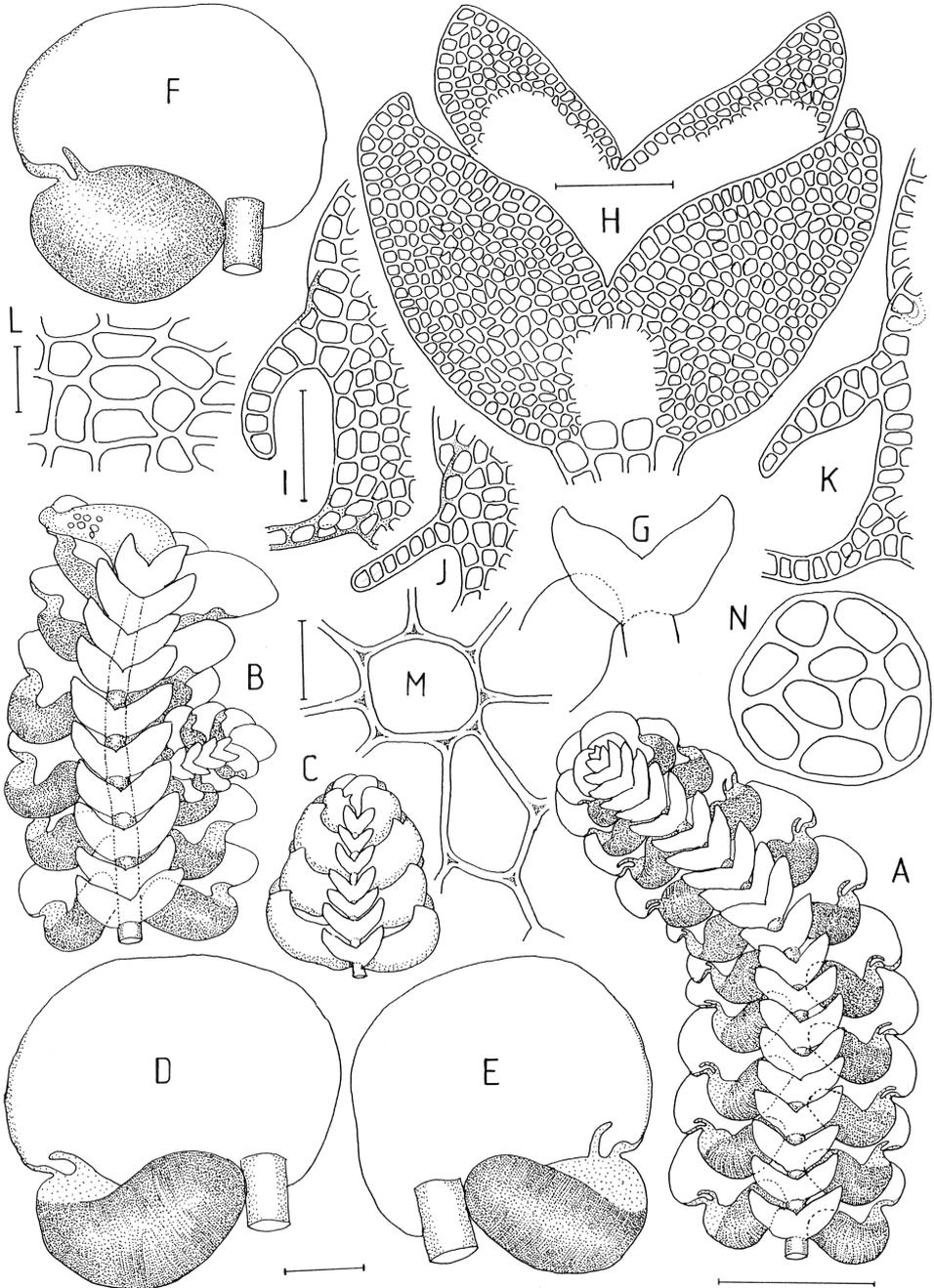


Fig. 1. *Diplasiolejeunea riclefgrollei* Schäfer-Verwimp, sp. nov. — **A**: habit of plant, scale = 1 mm; **B**: habit of plant, at tip brood body producing leaves, scale as in **A**; **C**: Androecium, scale as in **A**; **D**, **E**: two leaf lobes, scale = 200 μ m; **F**: leaf lobe, flattened, scale as in **D**; **G**: underleaf with part of lobule, scale as in **D**; **H**: two subsequent underleaves, scale = 100 μ m; **I**, **J**, **K**: part of lobule, scale = 80 μ m; **L**: cells of lobule, scale = 20 μ m; **M**: cells of central leaf lobe, scale = 10 μ m; **N**: cross section of stem, 135 μ m wide. (all figs. from the type).

Holotypus: CUBA, Prov. Oriente, Palenque: Cuchillas de Toa, charrascos de la Loma de Yarey, 26.3.1972, J. Bisse, H. Lippold y R. Berasain 22157b, JE.

Dioecous (?). **Plants** small, 10-15 mm long and up to 1,5 mm wide, olive-green to brownish green when dry, ramicolous (? – the type specimen only consists of some single isolated plants). **Stems** up to 140 μ m in diameter, in cross section with 3 medullary and 7 cortical cells. **Leaves** densely imbricate, \pm horizontally spreading, lobe convex (in dorsal view), appressed to substrate, asymmetric, slightly wider than long, up to 0,85 mm long and 0,9 mm wide (including the lobule), margins entire, one cell row of apical margin often up- or incurved towards ventral side of lobe. **Cells of lobe** more or less quadrate to irregularly hexagonal, from about $10 \times 10 \mu$ m to $14-20 \times 20 \mu$ m, towards margin becoming smaller, the marginal cell row of mostly short rectangular cells, 10-14 μ m, trigones triangular, more or less conspicuous, intermediate thickenings lacking. Possibly 10-15 dispersed ocelli, in old herbarium material hardly visible. **Lobules** up to 500 μ m long and 300 μ m wide, strongly inflated, ventral margin strongly curved, nearly semi-circular, the lobule thus appearing like an appendage of the leaf lobe, strongly arched at the junction with the ventral leaf lobe. First tooth (median tooth) always well developed, fingerlike, 5-7 cells (mostly 80 μ m) long, 1 cell wide, rarely partly 2 cells wide, usually curved and usually visible in situ. Second tooth (apical tooth) very short and inconspicuous, always hidden. Hyaline papilla not seen. Cells of lobules predominantly longer than wide, up to $10 \times 20 \mu$ m. **Underleaves** about 3,5-5 \times stem width, the lobes 220-270 μ m long (14-18 cells, the marginal cell row from sinus to apex consisting of 18-22 cells), 170-180(-200) μ m wide at base (9-12 cells), divided to 0,55-0,65, sinus sharp, spreading at an angle of ca. $100^\circ-140^\circ$, long oval, apex usually narrowly obtuse to broadly acute, tipped by one single cell; rhizoid disc \pm quadrate to short rectangular. **Androecia** lateral on short branches, bracts slightly smaller than leaves, in ± 5 pairs, subequally bilobed, 1-2 bracteole per pair of bracts (7 bracteoles and 5 pairs of bracts seen); antheridia not seen. **Perianth** not seen. Asexual reproduction by discoid gemmae, specialized, cup-forming leaves at stem apex producing brood bodies once seen, however, no intact gemmae found.

DISCUSSION

Diplasiolejeunea riclefgrollei is unique among its congeners and unmistakable by its huge, strongly curved and inflated lobule with a well developed, usually curved first tooth, and its large underleaves with ovate-oblong lobes which are at apex narrowly obtuse to broadly acute. It is a member of Subgenus *Diplasiolejeunea* as defined by Schuster (1971) and Tixier (1985) because of its large underleaves, occurrence of discoid gemmae and (supposedly) leaf lobes with dispersed ocelli. It is placed here – with some hesitation - in sect. *Villaumeae* Tixier because of the shape of underleaf lobes (more or less obtuse, not acute to acuminate as in sect. *Pellucidae* Tixier), lack of a hyaline leaf border (often present in sect. *Pellucidae*), and presence of only one lobule tooth well developed (usually two in sect. *Pellucidae*). However, all species of section *Villaumeae* are considerably larger plants (e.g., *D. rudolphiana*, *D. unidentata*, *D. johnsoniana*, *D. pauckertii*, *D. columbica*) with quite differently shaped lobules. Indeed, the unusual lobule structure of *D. riclefgrollei* readily separates it from all other members of subgenus *Diplasiolejeunea*.

Cuba seems to be one of the centers of diversity of the genus *Diplasiolejeunea*, especially its eastern part, where the largest number of the 14 species [*D. armatiliba* Steph., *D. borhidiana* Reyes, *D. brunnea* Steph. (syn.: *D. galloana* Jovet-Ast), *D. cavifolia* Steph., *D. cobrensis* Gottsche ex Steph., *D. cubensis* Tixier, *D. evansii* Tixier, *D. grolleana* Reyes, *D. johnsonii* A. Evans, *D. malleiformis* (A. Evans) Tixier, *D. pellucida* (Meissn. em. A. Evans) Schiffn., *D. pocsii* Reyes, *D. rudolphiana* Steph., *D. unidentata* (Lehm. & Lindenb.) Schiffn.] occurs (Reyes, 1982; Tixier, 1985). It is expected that further fieldwork in Cuba may raise this number to 20 or more, equalling the number of species presently known from the Andes of South America (Schäfer-Verwimp, 2004, 21 taxa). Only 8 species are reported from Mexico (Fulford & Sharp, 1990), 10 from Colombia (Uribe & Gradstein, 1998), and 5 species from Costa Rica (Morales, 1991). However, extensive fieldwork in Costa Rica in recent years has added 6 further species (Gradstein *et al.*, 1994; Dauphin *et al.*, 1998; Holz *et al.*, 2001; Schäfer-Verwimp, 2001).

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