

A FEW EPIPHYLLOUS LIVERWORTS COLLECTED BY DAVID J. MABBERLEY IN NEW CALEDONIA

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Abstract: David J. Mabberley in 1984, as the Dean of Wadham College at Oxford University, made a plant collection trip to the Eastern Melanesian New Caledonia in the Southern Pacific. This collection included some epiphyllous bryophytes too, which were kindly sent to me for identification. Although the number of liverwort species on the leaves was not more than seven, one of them, *Cololejeunea triapiculata* proved to be new for New Caledonia, while three endemics, *Cololejeunea caledonica*, *C. virotana* and *Radula viillardii* became known from new localities from the island.

Keywords: Eastern Melanesia, endemics, new records, Pacific

INTRODUCTION

Since the beginning of its botanical exploration in the 19th century is known, that the flora of New Caledonia is very rich, not only in sense of diversity but also in the proportion of endemics and taxa of old relationships. The explanation is in the old Precambrian age of this island group as a part of former Gondwana and probably also in the mostly favourable wet tropical climatic conditions. The recently updated account of Thouvenot and Müller (2021) recognizes 1064 bryophyte species of which 528 are liverworts, 14 hornworts and 522 mosses. The high endemism is valid to the bryoflora compared to the vascular flora to somewhat less extent, bryophytes being easier dispersed by their spores than seed plants. According to the first modern checklist of liverworts and hornworts (Thouvenot *et al.* 2011) 13% of these are confirmed and another 26% potential endemics.



MATERIAL AND METHODS

The collection contained five envelopes of carefully pressed leaves, of them four had liverworts and one a moss (*Spiridens* sp.) growing on its surface. The dates and localities of the collections were the following:

2010A. 24-Aug-1984. Thy River Valley, SE of Nouméa, c. 100 m elevation.

2018A. 28-Aug-1984. Mt Rembai, E of Col d'Amieu, montane forest, c. 550 m elevation.

2018B. 28-Aug-1984. Mt Rembai, E of Col d'Amieu, montane forest, c. 550 m elevation.

2020A. 31-Aug-1984. En route à Table Unio, Col d'Amieu, c. 800 m elevation.

2023/1. 5-Sept-1984. Plaine de Lacs, Forêt Nord, 200–400 m elevation.

The identified specimens are deposited in the Herbarium of the Eszterházy Károly Catholic University (EGR). Some of the duplicates go to F and to NSW.

RESULTS

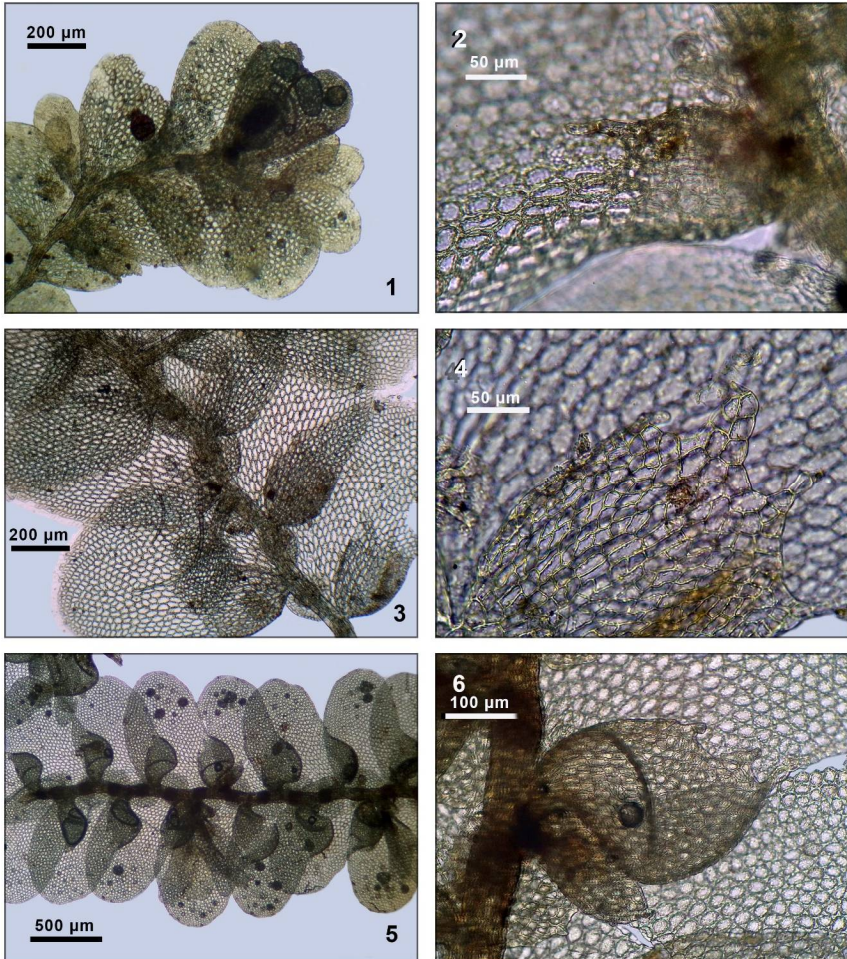
Annotated enumeration of the collected species

Cololejeunea caledonica Steph. – Mabberley 2023/1 (*Figures 1–2*)
A species endemic to New Caledonia (Tixier 1979). Characteristic are the equally long, uniseriate lobule teeth. Tixier established a new subgenus *Austrocololejeunea* in this publication for a certain group of relatively large New Caledonian species with thick leaf cell walls and inflated lobules, turning downwards at an angle of 110–140° to the stem, with often inrolled margin and with 4-plicate perianth (two ventral keels), compressed at apex. Members of this group differ from each other mostly by the lobule dentition.

Cololejeunea lanciloba Steph. – Mabberley 2023/1

A widespread Pantropical species with smooth hyaline margin surrounding the lobe and with lanceolate or ligulate lobule with one tooth on its outer side (Zhu and So 2001).

Cololejeunea triapiculata (Herzog) Tixier – Mabberley 2020A (Figures 3–4) Apart from the hyaline margin consisting of a few rows of rectangular cells, the tridentate lobuli with 2–4 cells long teeth are the main characters. This Indomalasian species is known from Sri Lanka to New Guinea (Pócs and Piippo 2011), recently found also in Australia (Renner 2011), hitherto unknown from New Caledonia. (Tixier 1985).



Figures 1–2. *Cololejeunea caledonica* Steph. Habit and one lobule, ventral views. **3–4.** *Cololejeunea triapiculata* (Herzog) Tixier. Habit and one lobule, ventral views. **5–6.** *Cololejeunea virotana* Tixier. Habit and one lobule, ventral views.

Cololejeunea virotana Tixier – Mabberley 2023/1 (*Figures 5–6*)
Endemic for New Caledonia. It is also a member of subgen. *Austrocololejeunea* with saccate, inflated lobules turned downwards at 120–140° to the stem. The two lobule teeth broad triangular, 1–3 cells long and wide. The female bracts are relatively narrow with parallel sides and rounded apex. Their lobule is almost equal to the lobe. According to Tixier (1979) the leaf bases are often decurrent.

Leptolejeunea epiphylla (Mitt.) Steph. – Mabberley 2010A, 2020A, 2023/1. This small sized, pale green Palaeotropical species is widely distributed from Africa to the Pacific Islands. Typical are its parallel sided, truncate leaves with scattered ocelli and its lobules often reduced into a small, subquadrate or triangular blades formed only by 6–9 cells. It usually forms densely branching mats, adherent to the leaves not much changing after rewetting.

Leptolejeunea maculata (Mitt.) Schiffn. – Mabberley 2023/1. A somewhat larger species with dentate leaves and cell walls having obvious triangles and intermediate thickenings. It is a common Palaeotropic species distributed from Africa to the Pacific. In rewetted stage very often turns black.

Radula vieillardii Gottsche ex Steph. – Mabberley 2018A and 2023/1. A rare endemic of New Caledonia (Hürlimann 1978). According to Yamada (1985) and to So (2006) it is easily separated from the other species of South Pacific region by its lace like areolation formed by large cells (up to 45 µm) and by its widely spreading, fan-like leaf lobes, finally by the female bracts much larger than average leaves.

DISCUSSION

Even small collections can contribute to the better knowledge of the biodiversity of such hot spots, like New Caledonia. It is remarkable, that from seven random like collected species three are endemics and one is new to the island, encouraging botanists for further intensive investigation of its bryoflora.

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