

Contributions to the Bryoflora of Australia, I.

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Abstract: During a joint field trip organised by H. Streimann in 1999, the authors collected large amount of bryophytes in Queensland, New South Wales, and Victoria states and in the Austral Capital Territory (A.C.T.). Some of them proved to be new state records, or new records for Australia. The list below is the first selection of these records in Hepaticae, with 16 species newly reported from the whole continent.

Introduction

The senior author is taking part in the Flora of Australia Project, revising the genus *Frullania*, sponsored by the Australian Biological Resources Study Participatory Program. The junior author, the late Heinar Streimann, who hosted the study in the Australian National Herbarium, Canberra, was very kind organising a joint collecting expedition over a 9000 km long itinerary, along the eastern, forested belt of Australia, from Queensland to Victoria states, between 15 August and 6 October, 1999. During the trip we jointly collected at 146 different localities, approximately 400 numbers of *Frullania* and more than 1000 of other hepaticae, including a high number of epiphyllous species.

The hepaticae enumerated here were identified by T. Pócs (except for Jungermanniaceae by J.

Váòà), while the mosses by the junior author and some of them were already published (Streimann 2000). Our *Metzgeria* collection was revised by M.L. So (2002), and the ptychanthoid Lejeuneaceae by A. Sass-Gyarmati (2003).

The identification work already resulted in a number of novelties within the genus of *Frullania*, as well as several new species of Lejeuneoideae too, which will be published in separate studies. Apart from these groups, there are still a number of new records.

In this paper, we enumerate only those, which are new for the state or for the whole of Australia, or which species are known hitherto only from their type locality. We used the catalogue of McCarthy (2003) to establish the Australian

distribution of liverworts. The voucher specimens are deposited in CBG and in EGR. The specimen numbers in the list are the collecting numbers of T. Pócs, consisting of a locality number and of a letter indicating the different species collected at the same locality. We do not repeat the description of locality if another species is already listed from the same place (under the same locality number, marked by a different letter).

Enumeration of species

(State abbreviations used: **NSW**: New South Wales, **QLD**: Queensland)

JACKIELLACEAE

Jackiella cf. *javanica* Schiffn. – **QLD: 9987/F**, Main Coast range, Daintree River Nat. Park, Mossman Gorge area 4–5 km W of Mossman town. Rex Creek. 140 m alt. Open, rocky mesic evergreen forest along stream.. Det. J. Váða. On stream bed rocks. Widespread, Indomalaysian-Oceanian species. **Newly reported from Australia.**

JUNGERMANNIACEAE

Jungermannia infusca (Mitt.) Steph. – **QLD: 9993/B**, Daintree National Park, Cape Tribulation road near Noah Creek, 35 km NNE of Mossman. 5–10 m alt. Lowland rainforest.. Det. J. Váða. On riverside earth bank. Also in China, Japan, Philippines. **Newly reported from Australia.**

Jungermannia obliquifolia (Schiffn.) Váða – **QLD: 9987/D** and **E**, on stream bed rocks. An Indomalaysian species known from Sumatra to New Guinea. it was published already for Australia (Váða, 1975): Queensland: Brisbane, coll. Barley 252, det. Mitten as *J. montana* (NY); Stringillurra Creek, coll. Flecker in 1938, det. Herzog as *J. montana* (JE); Blumfield river, coll. Kärnbach in 1887, (FH), but not enumerated in McCarthy (2003).

Jungermannia truncata Nees – **QLD: 9969/J**, Clarke Range, 70 km W of Mackay, at the corner of Dalrymple and Black Roads, 4 km ENE of Eungella, 910 m alt. Pastureland with sole *Alphitonia* & *Acacia* trees, near forest. **99102/**

B, w from Mt. Finlayson Range. In a valley bottom at the N side of Mt. Misery, along the Shipton Flat track, 43 km SSE of Cooktown. 430 m alt. Wet sclerophyll forest along streamlet with *Melaleuca*, *Schefflera*, *Acacia* and *Pandanus*. **99134/H**, Kroombit Tops State Forest, 47 km SW of Calliope, at Munholm Creek. 860 m alt. Submontane rain forest dominated by *Syncarpia* and by many palms, with tree ferns (*Cyathea*), on streambed and other shady rocks. A southeast Asiatic species distributed from India to Indonesia and Japan. **Newly reported from Australia.**

Notoscyphus lutescens (Lehm. et Lindenb.) Mitt. – **QLD: 9993/C**, on riverside earth bank. Palaeotropic species, from Africa through tropical Asia and Indomalaysia to Hawaii and to Samoa. **Newly reported from Australia.**

LEPIDOLAENACEAE

Lepidolaena reticulata (Hook. f. & Taylor) Trevis. – **NSW: 99152/B**, New England National Park, 34 km SW of Dorrigo. Along the Lookout approach road. At 1420 m alt. Wet sclerophyll *Eucalyptus*–*Leptospermum* dominated forest rich in bryophytes. On *Eucalyptus* bark. **Newly reported from New South Wales.**

LEPIDOZIACEAE

Psiloclada clandestina Mitt. ssp. *clandestina* – **NSW: 99190/H**, southernmost part of NEW SOUTH WALES, Maxwells Flora Reserve ESE of Timbillica, 14 km W from the coast. At 130–200 m alt. Temperate rain forest dominated by *Acmea smithii* (Myrtaceae), *Eucryphia moorei* (Eucryphiaceae) and by tree ferns: *Dicksonia antarctica*, *Cyathea australis* and *C. leichhardtiana*. On tree fern (*Dicksonia*) stem. **Newly reported from New South Wales.**

LEJEUNEACEAE

Cheilolejeunea ventricosa (Schiffn.) X. L. He (See Fig. 1) – **QLD: 9976/AE**, Paluma Range. In the garden of A. & W. Cairns in Paluma

village. 19°04'S, 146°12.5'E. 900 m alt. Opening of a submontane rain forest full of epiphytes. **99109/BS**, Atherton Tableland. Hugh Nelson Range. Summit around the telecommunication tower; 22 km S of Atherton. 1240 m alt. Somewhat disturbed montane rainforest dominated by large *Acacia* and *Alphitonia*. **99114/AJ**, Atherton Tableland. Cardwell Range. On E slope of Mt. Fisher (extinct volcano), 9 km NE of Ravenshoe. 940-1000 m alt. Disturbed submontane rainforest. Epiphyllous. A somewhat rare Malesian species, known from Mauritius, the Moluccas: Amboina, and Malaysia: Penang, Singapore and southern China. **Newly reported from Australia.**

Cololejeunea haskarliana (Gottsche) Benedix – **QLD: 9986/R**, Main Coast range, Daintree River Nat. Park, Mossman Gorge area 4-5 km W of Mossman town. 110-160 m alt. Tropical lowland rainforest with many buttressed trees. **9997/F**, north spurs of Mt. Finlayson Range. Home Rule Falls along Staty Creek, 32 km SSE of Cooktown. 240-310 m alt. Tropical forest dominated by *Tristaniaopsis* beside permanent creek in gorge. Epiphyllous and on decaying wood. Distributed from the Seychelles and India to Japan and to New Caledonia. **Newly reported from Australia.**

Cololejeunea kapingaensis H.A. Miller – **QLD: 9976/Z**, ramicolous. A Pacific species previously known from the Caroline and Marshall islands. **Newly reported from Australia.**

Cololejeunea lanciloba (Steph.) Steph. – **QLD: 9960/T**, Fraser Island (Great Sandy Nat. Park). Pile Valley along the Kingfisher Bay – Eurong Road. 55 m. Hab.: subtropical rainforest formed by the endemic, 50-60 m tall *Syncarpia hillii* = „satinay“ (Myrtaceae). Epiphyllous. An Indochinese species. **Newly reported from Australia.**

Cololejeunea inflata Steph. – **QLD: 9981/AM**, Centre peak of Mt. Bellenden Ker, NW of Babinda, in Wooroonooram National park. 1550 m alt. Montane elfin forest with 3-4 m tall, umbrella shaped trees. Epiphyllous. Recently published also from the Atherton Tableland by Eggers, Infante & Heras (2004). A Southeast

Asiatic – Pacific species known from Sri Lanka to New Caledonia, northwards to Japan.

Cololejeunea schmidtii Steph. – **QLD: 99113/M**, Atherton Tableland. Main Coast Range. Mt. Lewis., 49 km NNE of Mareeba. 1050 m alt. Grazed opening with small trees in a swampy area of disturbed submontane rainforest. Epiphyllous. A Southeast Asiatic species distributed from Sri Lanka to Japan and Papua New Guinea. **Newly reported from Australia.**

Cololejeunea vidaliana Tixier – **QLD: Pócs No. 9960/W; 9995/B**, Mitchell River Watershed along the Mt. Malloy Road, 9 km SW of Mossman. 450 m alt. Regrowth of mesic forest and plantation (*Acacia*). **9976/Y, 99103/AE**, Cape Tribulation area, Gap Creek. 35 km S of Cooktown, 5 km S along the Rossville – Bloomfield River Road. 240 m alt. Lowland rainforest beside a small stream. Epiphyllous and ramicolous. Scattered from Rodrigues Island in the Indian Ocean to New Caledonia. Previously reported only from one locality in Australia: Palmerston Nat. Park near Innisfail, Queensland (O'Shea et al., 1977).

Colura apiculata (Schiffn.) Steph. – **QLD: 9989/K**, Daintree National Park, Cape Tribulation. „Botanical Circuit“ along Noah Creek. 5 m alt. Temporarily waterlogged lowland rainforest, rich in *Licuala* palms, in prop-rooted and in cauliflorous trees. Epiphyllous. Found also in Indochina and Indonesia. **Newly reported from Australia.**

Colura leratii (Steph.) Steph. – **QLD: 9983/AT**, „The Boulders“ rainforest reserve along Babinda Creek, 5 km W of Babinda town. 85 m alt. Tropical lowland rainforest rich in epiphytes, interwoven by rattan (*Calamus*) palm. **9989/AA**, epiphyllous. Distributed from Indochina to Oceania. **Newly reported from Australia.**

Colura crispiloba Ast – **QLD: 99103/Y**, epiphyllous. Previously known only from its type locality in Queensland: Kirrima state forest near Cardwell (Jovet-Ast 1984).

Colura ornata Goebel – **QLD: 99117/AS**, eastern edge of Atherton Tableland. Wooroonooram Nat. Park, Henrietta Creek, 33 km WSW of Innisfail, along the Palmerston

Highway. 375 m alt. Lowland rainforest with scattered *Agathis robusta* trees in canopy. Epiphyllous on *Agathis* leaf. Widespread in the Malesian Archipelago. **Newly reported from Australia.**

Colura queenslandica Thiers – **QLD: 9965/E**, Fraser Island (Great Sandy Nat. Park). Along the road between the Central Station and Eurong. 60 m alt. Closed *Syncarpia* & *Agathis* forest. Epiphyllous. Previously known only from its type locality in Coolool Nat. Park (Thiers 1987)

Lepidolejeunea integristipula (J.B. Jack & Steph.) R.M. Schust. – **QLD: 9990/D**, corticolous. Daintree National Park, Cape Tribulation. „Botanical Circuit“ along Noah Creek, 38 km NNE of Mossman. 1-2 m alt. Mangrove forest with *Rhizophora* and with *Cheilocarpus* (Meliaceae), rich in epiphytes. A Malesian-Oceanian species. **Newly reported from Australia.**

Leptolejeunea picta Herzog – **QLD: 9986/AA**, epiphyllous. Distributed from Indochina to Ryukyu Archipelago. **Newly reported from Australia.**

Pycnolejeunea contigua (Nees) Grolle – **QLD: 9963/E**, Fraser Island (Great Sandy Nat. Park). Deep in Wongoolba Creek N of the Central Station. 45 m. Subtropical rain forest dominated by *Syncarpia* and by „piccabeen“ palms. **9983/H** and **99118/D**, corticolous. Bingil Bay near Mission Beach. Licuala Forest Park, Tam O'Shafter State Forest. 10 m alt. Swampy lowland rain forest dominated by *Licuala* palm. A pantropical species. **Newly reported from Australia.**

Siphonolejeunea schiffneri (Steph.) Herzog (see Fig. 2). – **QLD: 99120/R**, Kirrama Range, along the Kennedy – Kirrama Road, 29 km NW of Cardwell. 620 m alt. Seasonal tropical forest with many giant specimens of *Agathis robusta*. Epiphyllous on *Agathis* and on fern leaf. An unmistakable species due to its tubular and sigmoid lobule. Rare, known only from Java and Papua New Guinea. **Newly reported from Australia.**

Discussion

As it can be seen, almost all the new records coming from Queensland represent mostly Indomalayan and Oceanian tropical elements. It indicates, that this diverse area, which was once upon a time in land connection with New Guinea, is bryologically still imperfectly known. Thiers (1990) gave a short account on the phytogeographical relationships of the Lejeuneaceae flora of Australia. The floral evolution of this area is discussed in details by Crisp et al. (1999) whose analysis only partially explains the evolution of the local bryoflora where long range air dispersal plays a more important role than it does among the phanerogams.

The senior author revisited tropical and subtropical Queensland and New South Wales during the years of 2000 and 2001, but without Heinar Streimann, who at this time already suffered from his illness. The floristic and taxonomic results of these later trips will be accounted in another paper.

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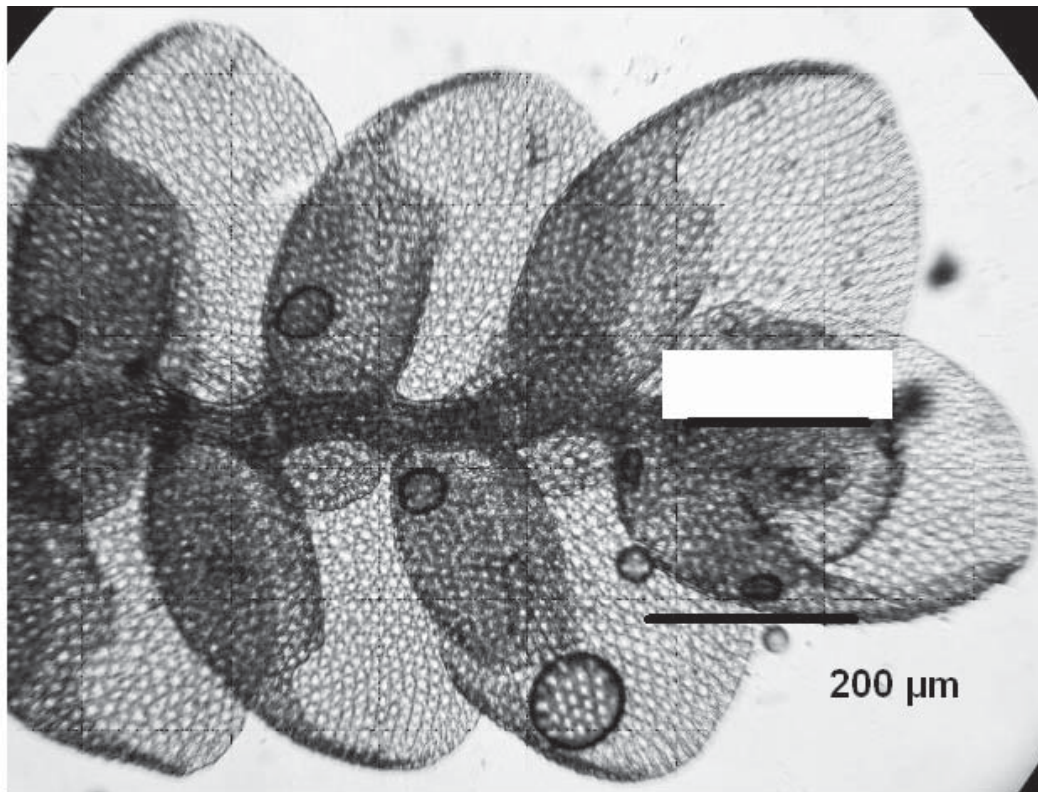


Fig. 1. *Cheilolejeunea ventricosa* (Schiffn.) X.-L. He, from Australia. (Microphoto made from Pócs No. 99109/BS)

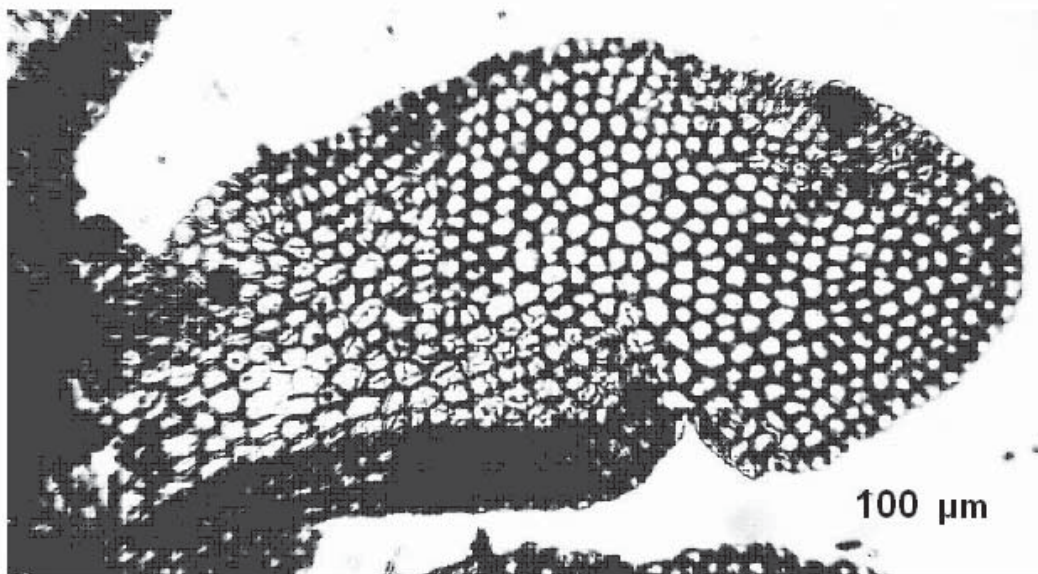


Fig. 2: *Siphonolejeunea schiffneri* (Steph. in Schiffn.) Herz., from Australia. (Microphoto made from Pócs No. 99120/R)

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