



## *Microlejeunea subaphanes*, a new synonym of *Cheilolejeunea decursiva* (Marchantiophyta, Lejeuneaceae) new to America

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Recent molecular phylogenetic studies have confirmed that *Microlejeunea* (Spruce 1884: 286) Stephani (1888: 61) is a good genus which is closely related to *Lejeunea* Libert (1820: 372) (Dong *et al.* 2013; Wei 2013). *Microlejeunea* is distinguished from *Lejeunea* by the presence of ocelli in the leaf lobe, transverse section of the stem consisting of seven cortical cells and three medullary cells, and keel of the female bract usually winged (Wei & Zhu 2013). Although about 50 species are currently accepted in *Microlejeunea*, most of them are still poorly known. *Microlejeunea subaphanes* Herzog (1950: 70) is a very rare species known only from the type specimen collected in São Paulo, Brazil (Herzog 1950; Gradstein & Costa 2003), and its identity is not clear (Bischler *et al.* 1963). Our examination of its type specimen showed that *M. subaphanes* does not belong to *Microlejeunea* because of the distal hyaline papilla of the leaf lobule, pycnolejeuneoid gynoecial innovation, keel of female bract not winged, transverse section of the stem consisting of 7–9 cortical cells and 4–5 medullary cells, and absence of ocelli in the leaf lobe (Fig. 1). Further critical study revealed that *M. subaphanes* is conspecific with *Cheilolejeunea decursiva* (Sande Lacoste 1855: 522) Schuster (1963: 112), which is widespread in tropical Africa and rare in Asia (Borneo, Java, Sri Lanka), Australia and Oceania (Fiji, Hawaii) (Zhu & Lai 2005).

### Formal treatment

The format of this note follows Söderström *et al.* (2012).

*Cheilolejeunea decursiva* (Sande Lac.) R.M.Schust., *Beih. Nova Hedwigia* 9: 112. 1963.

Basionym:—*Lejeunea decursiva* Sande Lac., *Ned. Kruidk. Arch.* 3: 522. 1855 (Sande Lacoste 1855). Type:—INDONESIA. Java, *Junghuhn s.n.* (holotype L-0061074!; isotypes JE!, L-0371531!, L-0061075!).

≡ *Eulejeunea decursiva* (Sande Lac.) Schiffn., *Consp. Hepat. Arch. Ind.*: 248. 1898 (Schiffner 1898). ≡ *Strepsilejeunea decursiva* (Sande Lac.) Herzog, *Feddes Repert. Spec. Nov. Regni Veg. Beih.* 54: 252. 1951 (Herzog 1951).

= *Trachylejeunea oahuensis* A.Evans, *Trans. Conn. Acad. Arts Sci.* 10: 434. 1900 (Evans 1900). Type:—U.S.A. Hawaii. Oahu, lateral ridge of Nuuanu, 23 July 1898, *Cooke, Jr.* (lectotype designated by Grolle (1977) YU; isolectotype JE-H2176!).

= *Cheilolejeunea tisserantii* Vanden Berghen & Ast in Jovet-Ast & Vanden Berghen, *Rev. Bryol. Lichénol.* 20: 105. 1951 (Jovet-Ast & Vanden Berghen 1951). Type:—CENTRAL AFRICA REPUBLIC. Boukoko, Oubangui, sur bois pourri, *R. P. Tisserant 11090 p.p.* (holotype PC; isotype BR, JE!).

= *Cheilolejeunea spatulata* Mizut., *J. Hattori Bot. Lab.* 33: 229. 1970 (Mizutani 1970). Type:—MALAYSIA. Sabah, Mt. Kinabalu, 2000–2146 m, on boulder, *M. Mizutani 2442* (holotype: NICH; isotype: JE!).

= *Microlejeunea subaphanes* Herzog, *Memoranda Soc. Fauna Fl. Fenn.* 25: 70. 1950 “1949” (Herzog 1950). Type:—BRAZIL. “Alto da Serra (S. Paulo), Estação Biológica”, *F. C. Hoehne 682 p.p.* (holotype JE!), *syn. nov.*

Representative specimens examined:—AUSTRALIA. Queensland, Barron State Forest, Herberton Range, 11 km SSW of Atherton, 17°22'S, 145°36'E, 1050 m, *Eucalyptus* dominated savannah on gentle ridge top, on *Eucalyptus* trunk, 2 March 1983, *H. Streimann 27266 p.p.* (CANB). FIJI. Viti Levu, ca. 3 km W of Nandarivatu, moist hardwood

forest with planted pines, ca, 2500 m, 21 Sept. 1981, *W. Buck 1324* (NY as *Cheilolejeunea spathulata*). U.S.A. Hawaii. Maui, Puu kukui, summit bog auf *Frullania* sp. nistend. 1938, *Cranwell et al. 5142/a* (JE). REUNION. Plaine des Cafres, epiphyllous, mixed with *Taxilejeunea conformis*, *Gimalac 74.R.8620/b* (JE). SRI LANKA. Nuwara Eliya, Nazaret retreat, 1850 m, 15 March 1976, *Onraedt 76.L.3711* (JE). TANZANIA. N-Uluguru Mts., 2100 m, epiphyllous, *T. Pócs 6233/J* (JE).

Notes:—*Cheilolejeunea decursiva* is characterized and easily recognized by the minute size of the plants (only 0.4–0.7 (–0.8) mm wide), autoicous condition, more or less obovate and falcate leaves, strongly elongate, unicellular apical tooth of the leaf lobule, large leaf lobules about 2/5–1/2 as long as the leaf lobes, pycnolejeuneoid leaf sequence of the gynoeical innovations, and male bracteoles only at the base of the androecium (Fig. 1). It is reported for America for the first time. In America, it is similar to and possibly confused with *C. insecta* Grolle & Gradstein (in Grolle *et al.* 2002: 1071), but the latter can be immediately separated by the dioicous condition, very shortly bifid underleaves, and male bracteoles present throughout the androecium (Grolle *et al.* 2002). By its minute size, large lobules, autoicy, pycnolejeuneoid innovations and male bracteoles restricted to the base of the male spike, *C. decursiva* is also similar to *C. discoidea* (Lehmann 1834: 47) Kachroo & Schuster (1961: 509), a species widespread in SE Brazil (Gradstein & Costa 2003), but in the latter the lobule tooth is short and blunt, the leaves are not falcate and the angle between keel and ventral leaf margin is wide, not narrow as in *C. decursiva*.

Based on the Brazilian material *C. decursiva* becomes a pantropical species. It is surprising that only one record of this widespread species is known from America. More detailed investigations on *Cheilolejeunea* in Brazil and other neotropical regions may reveal further localities of this species in the New World.

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