Transfer of two Asiatic taxa from *Lejeunea* to *Microlejeunea* (Lejeuneaceae, Marchantiophyta)

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**Abstract** – Two Asiatic *Lejeunea* species with ocelli in the leaf lobe, *Lejeunea moniliata* Mizut. and *Lejeunea wallichiana* (Lehm.) Gottsche, Lindenb. et Nees, are transferred to *Microlejeunea* (Lejeuneaceae, Marchantiophyta). Two new combinations are proposed: *Microlejeunea moniliata* (Mizut.) R.L.Zhu et Y.M.Wei comb. nov. and *Microlejeunea wallichiana* (Lehm.) R.L.Zhu et Y.M.Wei comb. nov. *Microlejeunea moniliata* is only known from the type locality in northern Thailand, where it was rediscovered in 2011, and is suggested to be placed in the red list of Thai bryophytes.

**Hepaticae / Lejeunea moniliata / Lejeunea wallichiana / liverworts / red list / Thailand**

**INTRODUCTION**

The systematic position of the pantropical genus *Microlejeunea* Steph. has long been controversial. Some authors (e.g., Jvet-Ast, 1958; Bischler et al., 1963; Grolle, 1995; Gradstein et al., 2003; Crandall-Stotler et al., 2009; Ah-Peng & Bardat, 2011; He & Zhu, 2011; Lavocat & Schäfer-Verwinp, 2011; Thouvenot et al., 2011; Marline et al., 2012; Thiers et al., 2012) treated *Microlejeunea* as a separate genus, whereas Schuster (1955, 1963, 1980, 2001), Pippo (1990), Dey et al. (2008), and Katagiri & Furuki (2012) placed it in *Lejeunea* Libert. A recent molecular phylogenetic study confirmed that *Microlejeunea* is a good genus (Dong et al., 2013). *Microlejeunea* is well characterized and easily separated from *Lejeunea* by the presence of ocelli in the leaf lobe, transverse section of stem consisting of seven cortical cells and three medullary cells, and keel of female bract usually winged. Our examination of Asian *Lejeunea* taxa reveals that *Lejeunea moniliata* Mizut., endemic to Thailand (Mizutani, 1979; Lai et al., 2008), and *Lejeunea wallichiana* (Lehm.) Gottsche et al. from the Himalayas (Zhu & Long, 2003) share the above mentioned important characters of *Microlejeunea*. Moreover, our unpublished molecular data (ITS, *trn*G and *trn*L-*F*; Wei & Zhu, in prep.) showed that *L. moniliata*, *L. wallichiana* and other *Microlejeunea* species form a monophyletic lineage. Therefore, the following new combinations are necessary.

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TAXONOMIC TREATMENT

**Microlejeunea moniliata** (Mizut.) R.L.Zhu et Y.M.Wei, *comb. nov.*


**Type:** Thailand. Payap, Mt. Chiengdao, 1900-2100 m, on tree trunk and branches, 1965, *A. Touw 9313* (holotype: L!).


**Type:** India Orient., *Wallich s.n.* (holotype: S; isotype: G-008145!).


**Type:** India. Sikkim, Chongtam, 6000 ft, s.d., *J.D. Hooker & T. Thomson s.n.* (holotype: NY!).


**Type:** India. “India Himalaya”. 7000 ft., s.d., *J.D. Hooker s.n.* (holotype: G-16250!).


**DISCUSSION**

and Microlejeunea (Dong et al., 2013) did not contain the above-mentioned taxa. Our studies reveal that none of these species belong to Lejeunea. Two of them, Lejeunea moniliata and L. wallichiana, are treated here. The systematic position of the three remaining species will be published in separate papers.

Microlejeunea moniliata is very remarkable owing to its moniliate ocelli of the leaf lobe (Figs 2-3). It was originally described by Mizutani (1979), based on

Figs 1-3. 1. The camping area of Doi Luang Chiang Dao, Chiang Mai, Thailand where Microlejeunea moniliata (Mizut.) R.L.Zhu et Y.M.Wei was found on tree trunks, shrub trunk and tree branches by R.-L. Zhu (front row right) and local bryologists (S. Chantanaorrapint, N. Printarakul, S. Kornochalert, front row, left to right) in December 2011. 2-3. Microlejeunea moniliata (Mizut.) R.L.Zhu et Y.M.Wei. 2. Habit. 3. Portion of plant showing moniliate ocelli, dorsal view. All from R.-L. Zhu 20111219-20A.
a single collection made by A. Touw in northern Thailand in 1965. Recent detailed investigations have reported many new species and new records of bryophytes from northern Thailand (Akiyama & Furuki, 2011; He et al., 2012; Kornochalert et al., 2012; Printarakul et al., 2012). Microlejeunea moniliata, however, remains known only from the type locality in Doi Luang Chiang Dao, northern Thailand, where it was recollected by the second author in December 2011 (Fig. 1). Therefore, we recommend that this species be protected locally and placed in the red list of Thai bryophytes. The species grows on tree trunks, tree branches and shrubs in dry evergreen forests at altitudes of 1900-2100 m. An intensive search for M. moniliata in Thailand and neighboring countries would be desirable to unravel further occurrences and potential habitats and to determine the actual range and conservational status of this species.

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