



<http://dx.doi.org/10.11646/phytotaxa.173.1.11>

## Notes on Early Land Plants Today. 59. *Leptolejeunea himalayensis* and *Leptocolea mirpurensis* (Marchantiophyta, Lejeuneaceae) synonymous with *Lejeunea cocoes* and *Cololejeunea raduliloba*, respectively

LEI SHU<sup>1</sup>& RUI-LIANG ZHU<sup>1,2,3</sup>

<sup>1</sup>Department of Biology, School of Life Sciences, East China Normal University, 3663 Zhong Shan North Road, Shanghai 200062, China; rlzhu@bio.ecnu.edu.cn

<sup>2</sup>Shanghai Key Lab for Urban Ecological Processes and Eco-Restoration, East China Normal University, 500 Dongchuan Road, Shanghai 200241, China

<sup>3</sup>Author for correspondence

Lejeuneaceae is the largest family of the liverworts with about 1700 currently accepted species (He & Zhu 2011, He *et al.* 2012), but some of them are poorly known and their status is still unclear. *Leptolejeunea himalayensis* Pandé & Misra (1943: 168) is known only from India and previously suspected of belonging to one member of *Lejeunea* Libert (1820: 372) (Awasthi 1986). *Leptocolea mirpurensis* Khan (1957: 23) from Bangladesh has never been studied since its first description in 1957. Although the types of the two taxa were not available for our study, the original description and illustrations (Pandé & Misra 1943, Khan 1957) undoubtedly indicate that *Leptolejeunea himalayensis* and *Leptocolea mirpurensis* are conspecific with *Lejeunea cocoes* Mitten (1861: 114) and *Cololejeunea raduliloba* Stephani (1895: 251), respectively. *Lejeunea cocoes* has been reported for India (Singh & Nath 2007, Manju *et al.* 2012), and is also known in China, Indonesia, Malaysia, Papua New Guinea, and Sri Lanka (So & Zhu 1998, Zhu & So 2001, Lee 2013), furthermore from Chagos, Diego Garcia (Seaward *et al.* 2006) and from the Fiji Islands (Pócs *et al.* 2013). *Cololejeunea raduliloba*, a paleotropical species (Zhu & So 2001), is newly reported for Bangladesh.

### Formal treatment

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

***Cololejeunea raduliloba* Steph., Hedwigia 34(5): 251. 1895 (Stephani 1895).**

≡ *Physocolea raduliloba* (Steph.) Steph., Sp. Hepat. 5: 903. 1916 (Stephani 1916). Type:—VIETNAM. Tonkin. Khang-Thuong (Ma Co), 9 Nov. 1885, Bon s.n. (holotype G-1957!). ≡ *Pedinolejeunea raduliloba* (Steph.) P.C.Wu & But, In: Hepatic Flora of Hong Kong: 136. 2009 (Wu & But 2009).

= *Leptocolea mirpurensis* Sultan Khan, Bryologist 60: 23. 1957 (Khan 1957). Type:—BANGLADESH. Dhaka “Dacca”. Mirpur forest, epiphyllous, on dicot leaf, Jan. 1955, S. A. Khan s.n. (holotype DACB), *syn. nov.*

For further synonyms, see Zhu (1995) and Zhu & So (2001).

***Lejeunea cocoes* Mitt., J. Proc. Linn. Soc. Bot. 5: 114. 1861 (Mitten 1861)**

Type:—Sri Lanka “Ceylon”. Balagom, “Ad truncos *Cocos nucifera*”, Gardner 1399 “1499” (holotype NY!; isotype BM!).

= *Leptolejeunea himalayensis* Pandé & R.N.Misra, J. Indian Bot. Soc. 22: 168. 1943 (Pandé & Misra 1943). Type:—INDIA. “Eastern Himalayas, Mungpoo (4,000') Darjeeling”, epiphyllous, *s.d.*, S. N. Das Gupta (holotype LUW), *syn. nov.*

For further synonyms, see Zhu & So (2001).

### Acknowledgements

This research was sponsored by the National Natural Science Foundation of China (nos. 31370238, 31170190), the Special Program for the National Basic Work of the Ministry of Science and Technology, China (No. 2012FY110600), and 211 Project for the East China Normal University. We also thank the curators of G, BM, HSNU and NY for making specimens available for study through loans or visits.

## References

- Awasthi, U.S. (1986) The genus *Leptolejeunea* (Spruce) Steph. in India. *Journal of the Indian Botanical Society* 65: 117–123.
- He, Q. & Zhu, R.-L. (2011) Spore output in selected species of Lejeuneaceae (Marchantiophyta) from China. *Cryptogamie Bryologie* 32: 107–112.  
<http://dx.doi.org/10.7872/cryb.v32.iss1.2011.107>
- He, Q. & Zhu, R.-L., Chantanaorrapint, S., Kornochalert, S. & Printarakul, N. (2012) *Drepanolejeunea laciniata* (Lejeuneaceae), a new species from northern Thailand. *Cryptogamie Bryologie* 33: 291–298.  
<http://dx.doi.org/10.7872/cryb.v33.iss3.2012.291>
- Khan, S.A. (1957) Observations on species of *Leptocolea*. *The Bryologist* 60: 23–28.
- Lee, G.E. (2013) A systematic revision of the genus *Lejeunea* Lib. (Marchantiophyta: Lejeuneaceae) in Malaysia. *Cryptogamie Bryologie* 34: 381–484.  
<http://dx.doi.org/10.7872/cryb.v34.iss4.2013.381>
- Libert, M.-L. (1820) Sur un genre nouveau d'hépatiques, Lejeunia. *Annales générales des sciences physiques* 6: 372–374.
- Manju, C.M., Leena, T.N., Deepa, K.M., Rajesh, K.P. & Prakashkumar, R. (2012) *Lejeunea cocoes* (Lejeuneaceae, Marchantiophyta) in the western Ghats of India. *Acta Botanica Hungarica* 54: 341–343.  
<http://dx.doi.org/10.1556/abot.54.2012.3-4.11>
- Mitten, W. (1861) Hepaticae Indiae Orientalis: An enumeration of the Hepaticae of the East Indies. *Journal of the Proceedings of the Linnean Society. Botany* 5: 89–128.  
<http://dx.doi.org/10.1111/j.1095-8312.1861.tb01343.x>
- Pandé, S.K. & Misra, R.N. (1943) Studies in Indian Hepaticae. II. On epiphyllous liverworts of India and Ceylon (1). *Journal of the Indian Botanical Society* 22: 159–169.
- Pócs, T., Sass-Gyarmati, A., Naikatini, A., Tuiwawa, M., Bragins, J., Pócs, S. & von Konrat, M. (2011) New liverwort (Marchantiophyta) records for the Fiji Islands. *Telopea* 13: 455–494.
- Seaward, M.R.D., Ellis, L.T., Pócs, T. & Wigginton, M.J. (2006) Bryophyte flora of the Chagos Archipelago. *Journal of Bryology* 28: 11–19.  
<http://dx.doi.org/10.1179/174328206x90440>
- Singh, A.P. & Nath, V. (2007) *Lejeunea cocoes* Mitt. An addition to the Indian bryoflora. In: Nath, V. & Asthana, A.K. (eds.): *Current Trends in Bryology*. Bishen Singh Mahendra Pal Singh, Dehra Dun, pp. 365–371.
- So, M.L. & Zhu, R.-L. (1998) On six species of the genus *Lejeunea* in China, including one new species. *The Bryologist* 101: 137–143.
- Söderström, L., Hagborg, A. & von Konrat, M. (2012) Notes on Early Land Plants Today. *Phytotaxa* 65: 41–42.  
<http://dx.doi.org/10.11646/phytotaxa.112.1.3>
- Stephani, F. (1895) Hepaticarum species novae VIII. *Hedwigia* 34: 232–253.
- Stephani, F. (1916) *Species Hepaticarum* 5. George & Cie, Genève & Bale, pp. 833–1008.
- Wu, P.-C. & But, P.P. (2009) *Hepatic Flora of Hong Kong*. North-Eastern Forestry University Press, Harbin, 194 pp.
- Zhu, R.-L. (1995) Notes on some species of the genus *Cololejeunea* (Lejeuneaceae, Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83–109.
- Zhu, R.-L. & So, M.L. (2001) Epiphyllous liverworts of China. *Beihefte zur Nova Hedwigia* 121: 1–418.