Response to “The response to ‘the New Guinean Thysananthus appendiculatus (Lejeuneaceae) discovered in the Western Ghats of India’ by A. E. D. Daniels and R. D. A. Raja”

A. E. D. Daniels and R. D. A. Raja

The recent discovery of the liverwort *Thysananthus appendiculatus* Steph. by Daniels and Raja (2011) in the Western Ghats of India has caused doubt in P. Sukkharak and S. R. Gradstein, the monographs of the genus *Thysananthus* (in litt.) on the identity of the material. The reasons cited by them are that Daniels and Raja (2011) did not provide certain key characters such as the branching type, stem anatomy, the presence of the characteristic and consistent appendage which is usually found on the keel of the lateral leaf lobes and the shape of the leaf laminal cells which were described as quadrate-hexagonal to elongate-hexagonal and not elongate-hexagonal and stated that the material might have been wrongly identified as *T. appendiculatus*. Based on the figures and the description provided therein they further concluded that the material is the common *Spruceanthus semirepandus* (Nees) Verd. Gradstein et al. (Acta Bot. Fenn. 174: 70. 2002), in the generic concept of *Thysananthus* Lindenb. categorically stated that the genus is characterized by purely *Lejeunea*-type branches. However, material of *T. spathulistipus* from the Western Ghats determined by us and later confirmed by R. L. Zhu (HSNU) shows *Frullania*-type branching (Daniels et al. 2011). Similarly, material of the recently reported *T. appendiculatus* also shows *Frullania*-type branching which once again contradicts Gradstein et al.’s (l.c.) generic concept. Zhu (in litt.) while confirming the identity of some of the Lejeuneaceae members from the Western Ghats enlightened us with his comments on species such as *Spruceanthus semirepandus* and *Psycheanthus striatus* (Lehm. & Lindenb.) Nees, of which we have several collections, could vary depending on the habitat. Material of *S. semirepandus* so far collected by us in the Western Ghats has only smooth oil bodies and orbicular to oblong underleaves whereas *P. striatus* has either large-segmented or grape-cluster type oil bodies. But the material of *T. appendiculatus* from the Western Ghats has small-segmented oil bodies in only a few cells and in the rest they had disintegrated. Hence, we did not mention this feature in the description. Since, we were not aware of the taxonomic significance of the appendage at that point of time, it was not included in the figures (Daniels and Raja 2011). However, after going through Sukkharak and Gradstein (2010) to which we had no access at the time of writing the paper, we critically examined again the material we have and as a result, figures showing the key characters such as the presence of the leaf appendage, stem anatomy, an additional strange, foliose appendage found on some of the underleaves and the elongate-hexagonal nature of leaf laminal cells (though there are quadrate-hexagonal ones too) (Fig. 1, 2–8) are now provided. Figure 1D in Sukkharak and Gradstein (l.c.) drawn based on Clemens 5414 (W) and their statement that the appendages are found on the keel of the leaves and inserted partially on the stems (p. 309, line two from above) may now prove that our material is *T. appendiculatus* only (vide Fig. 1,4). We do hope that the information and figures provided now would convince the monographers.

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References


