Neckera hymenodonta (Neckeraceae, Bryopsida) reinstated, with an emended description

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Neckera hymenodonta Müll. Hal. is reinstated from the synonymy of N. pennata Hedw. and treated as a distinct species. The morphological differences between the two are elaborated and N. hymenodonta is illustrated in line drawings. It is known from New Zealand and Australia. Neckera pennata var. tasmanica Hampe, N. aurescens Hampe and N. leptotheca Mitt. are synonymized with N. hymenodonta. Neckera pennata is excluded from the New Zealand flora.

Key words: Neckera hymenodonta, N. pennata, New Zealand moss flora, nomenclature, taxonomy

The present report is an outcome of the first author’s ongoing Ph.D. project, a revision of the Asian and Australasian taxa of the moss genus Neckera (Neckeraceae). So far the project has produced descriptions of two new species from the Himalayan region (Nepal and China) and one new generic placement (Ji et al. 2005, Ji & Enroth 2006, Enroth & Ji 2007).

Neckera hymenodonta was described by Müller (1851) from Tasmania. The name was synonymized with N. pennata by Sainsbury (1952), and that notion was followed by Beever et al. (1992), Fife (1995) and Streimann and Klazenga (2002). We examined numerous older specimens from Tasmania and New Zealand identified as N. hymenodonta, as well as specimens bearing the name N. pennata from New Zealand and elsewhere. It became clear that there are several clear differences between the two species (Table 1), one of the most striking being the consistent presence of paraphyllia in N. hymenodonta and their consistent absence in N. pennata. All specimens from New Zealand examined by us and named either N. pennata or N. hymenodonta represent the latter taxon, and thus N. pennata is excluded from the New Zealand flora.

Although we have not been able to locate and examine the type specimen (cited below) of N. hymenodonta we feel confident with the taxonomic conclusion presented here. Fife (1995) listed only two species of Neckera from New Zealand, viz. N. pennata and N. laevigata. The latter differs from N. hymenodonta in several characters, such as the non-undulate leaves with rounded or obtuse leaf apices, and by the absence of paraphyllia. Neckera hymenodonta is fairly common in New Zealand; Sainsbury (1955) said
it was “abundant” there. The specimens of *N. hymenodonta* examined by us agree with the descriptions by Müller (1851) and Sainsbury (1952, as *N. pennata*) although both of those authors failed to mention the paraphyllia. Also, there is a specimen in H-BR (2880 026) from “Hb. C. Müll.”, and the label with the name *Neckera hymenodonta* is written by C. Müller’s own hand.

**Neckera hymenodonta** Müll. Hal. (Fig. 1)


**Neckera pennata** Hedw. var. *tasmanica* Hampe, Linnaea 25: 715. 1853, **syn. nov.** — **Type**: Australia. Tasmania (”Van Diemen’s Land”), 1850 Stuart C. s.n. (isotype MEL!).

**Neckera aurescens** Hampe, Linnaea 28: 212. 1856, **syn. nov.** — **Type**: Australia. Broadribbriver, 1854 F. Mueller (iso-

**Table 1.** Main morphological differences between *Neckera hymenodonta* and *N. pennata*.

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>N. hymenodonta</em></th>
<th><em>N. pennata</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem leaf shape</td>
<td>ovate to broadly ovate</td>
<td>narrowly oblong to lingulate</td>
</tr>
<tr>
<td>Leaf margins above</td>
<td>strongly denticulate</td>
<td>serrulate</td>
</tr>
<tr>
<td>Paraphyllia</td>
<td>uniseriate to biseriate</td>
<td>absent</td>
</tr>
<tr>
<td>Exostome teeth</td>
<td>420–500 µm long</td>
<td>610–650 µm long</td>
</tr>
<tr>
<td>Endostome membrane</td>
<td>55–65 µm high</td>
<td>absent</td>
</tr>
<tr>
<td>Spores</td>
<td>(30–)35–40 µm</td>
<td>(15–)20–25 µm</td>
</tr>
</tbody>
</table>
Neckera hymenodonta has a wide distribution in New Zealand, both in North Island and South Island, the altitudinal amplitude ranging from 40 m to 1745 m above sea level. It thrives in moist forests, where it grows on trunks and upper branches of large trees and vines, and also on dead or rotten tree trunks. Occasionally it can be found on rock surfaces. Outside of New Zealand we here verify specimens from Australia (Tasmania, Victoria, New South Wales), but its exact distribution in that country remains to be elaborated.

**Selected specimens examined: Neckera hymenodonta.**


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**References**


