

Systematic Studies in *Lepidosperma* (Cyperaceae: Schoeneae) with particular reference to the *Lepidosperma laterale* complex

John Hodgson B.Sc. (Hons) student
Botany, University of New England, Armidale, NSW 2351

Throughout its geographical range *Lepidosperma laterale* is considered a variable taxon forming a complex that exhibits much morphological variation both within and between populations (Wilson 1993, 1994; Curtis & Morris 1994). Three varieties of *L. laterale* were recognised by Bentham (1878), but these have been synonymised under *L. laterale* in New South Wales, Victoria and Tasmania (Wilson 1993, 1994; Curtis & Morris 1994).

The major goal of the study was to investigate the apparent morphological variation within the *L. laterale* complex to obtain a clearer definition of species limits. However, during the course of collecting and assessing character-state data it became apparent (through intuitive assessment and comparison of specimens) that the species limits of other ingroup taxa, *L. curtisiae*, *L. elatius* and *L. gunnii*, also required investigation. A putative new species from Queensland, *L. sp. nov.* (Mt Cooloom; *P. R. Sharpe 5605A*), was also included to test its status. The emergence of these issues necessitated more sampling than first envisaged at the expense of a more thorough investigation of the taxonomic value of palynological, embryological and cytological data sources.

The aims of the study were to:

1. Explore the taxonomy of the *L. laterale* complex using non-molecular data sources.
2. Critically assess characters previously used to address taxonomic issues within *Lepidosperma* and the *L. laterale* complex.
3. Investigate novel characters and assess their taxonomic value within *Lepidosperma*.
4. Explore species limits within the *L. laterale* complex, *L. curtisiae*, *L. elatius* and *L. gunnii* based on phenetic analysis.

From the phenetic analyses evidence for the recognition of the *L. laterale* complex as a single, variable species as per the treatments of Wilson (1993, 1994) and Curtis and Morris (1994) is strong. However there remains further scope to characterise the heterogeneity across *L. laterale*. There is also strong support in the phenetic analyses for the recognition of *L. sp. aff. curtisiae* (Hardacres; *J. Hodgson 357*

& *J. J. Bruhl*), *L. sp. aff. elatius* (Whian Whian State Forest; *J. Hodgson 331* & *D. M. Hodgson*) and *L. sp. nov.* as species. In contrast there is strong evidence that the species limits of *L. gunnii* require further investigation. A possibly distinct taxon, *L. sp. aff. gunnii* (Coaldale; *J. Hodgson 313* & *D. M. Hodgson*), was identified but the recognition of this at the specific rank before a comprehensive investigation of species limits in *L. gunnii* would be premature.

Various morphological, anatomical, palynological and embryological characters were explored to assess their taxonomic value within *Lepidosperma*. Although the constancy of these characters was not established several characteristics appear worthy of further investigation.

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