

A Revision of the Australian Endemic Clam Shrimp Genus *Limnadopsis* Spencer & Hall (Crustacea: Branchiopoda: Spinicaudata: Limnadiidae)

BRIAN V. TIMMS

Research Associate, Australian Museum, 6 College Street, Sydney NSW 2010, Australia
brian.timms@gmail.com

ABSTRACT. Species of *Limnadopsis* Spencer & Hall occur in temporary pools in arid and semi-arid areas of Australia. The genus is redefined and *Limnadopsium* Novojilov treated as a junior synonym. As in other spinicaudatans, most morphological characters are variable, this variability is given in expanded and rewritten descriptions of the three previously described species: *L. birchii* Baird, *L. parvispinus* Henry, and *L. tatei* Spencer & Hall. Five additional species from northern and western parts of Australia are described: *L. minuta* n.sp., *L. multilineata* n.sp., *L. occidentalis* n.sp., *L. paradoxa* n.sp., and *L. pilbarensis* n.sp. *Limnadopsis brunneus* Spencer & Hall is considered a nomen dubium. The most useful features for discriminating species are the shape of the carapace, the relative development of the dorsal carinae of the carapace, the number and relative size of the telsonic denticles, the number of spines on the cercopods, and the surface morphology of the eggs. A key is provided for all species. Western Australia has six species; much of the rest of Australia has 2–3 species, but none has been recorded from relatively well watered Victoria, Tasmania, and north Queensland.

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Of the eight genera of clam shrimps (within the Laevicaudata, Spinicaudata, and Cyclestherida) known so far from Australia, only *Limnadopsis* is endemic (Richter & Timms 2005). This genus was erected by Spencer & Hall (1896) to accommodate three new species, *L. squirei*, *L. tatei*, and *L. brunneus*. Central to their genus definition was the presence of “spinous processes on the dorsal edge of the carapace”, and the presence of 26–32 pairs of legs. Sayce (1903) realized what was then known as *Estheria birchii* (of Baird 1860) was synonymous with *L. squirei*, and so designated the latter as the type of *Limnadopsis*. Henry (1924) added a new species *L. parvispinus*, but this publication went virtually unheeded (e.g., Novojilov 1958, Thiéry 1996). Much later Novojilov (1958) thought all three of Spencer & Hall’s (1896) species were so different from each other that they represent three different genera, so he split off *L. tatei* into a new genus *Limnadiopsium*, but he never

proposed a new genus for *L. brunneus*. Daday (1925) confused the spelling and definition of *Limnadopsis*, and this problem continues (Novojilov 1958, Straškraba 1965a, Thiéry 1996, Dumont & Negrea 2004), although Brtek (1997) corrected the spelling of *Limnadopsis*, *L. birchii*, and *L. squirei*. Some authors (e.g., Richter & Timms 2005) have not recognized *Limnadiopsium*, and there are problems with the descriptions of *L. parvispinus* and *L. brunneus* (Richter & Timms 2005), all of which further confuse the taxonomy of this group. The only other study on the genus is by Pabst & Richter (2004), on larval development in *L. parvispinus*.

Four undescribed species of *Limnadopsis* have been found in Western Australia, and another nearby in the Northern Territory. Given the confused state of the taxonomy of this genus and its associates, it is the aim of this paper to revise the genus.