

## The Glacidorbidae (Mollusca: Gastropoda: Heterobranchia) of Australia

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**ABSTRACT.** The heterobranch gastropod family Glacidorbidae (?Pulmonata) is known only from temperate Australia and Chile. The Australian taxa are reviewed and three new genera, *Benthodorbis*, *Striadorbis* and *Tasmodorbis* are described based on differences in their shells, especially the protoconchs, and in their opercula and radulae. Nineteen species of Australian glacidorbids are recognised, all but four of them new. Of the four Australian species previously included in *Glacidorbis*, only two, *G. hedleyi* (Iredale) from New South Wales and Victoria, and *G. occidentalis* Bunn & Stoddart from south Western Australia, are retained in that genus. Eleven new species of *Glacidorbis* are described, seven from Tasmania (*G. bicarinatus*, *G. catomus*, *G. atrophus*, *G. decoratus*, *G. costatus*, *G. tasmanicus* and *G. circulus*), one (*G. isolatus*) from New South Wales, two (*G. otwayensis* and *G. rusticus*) from Victoria and one (*G. troglodytes*) from South Australia. *Striadorbis* contains the Tasmanian *S. pedderi* (Smith), and two new species, *S. spiralis* from western Victoria and *S. janetae* from Tasmania. *Benthodorbis* contains two species, both from old lakes in Tasmania; *B. pawpela* (Smith) from Great Lake and *B. fultoni* from Lake Sorell. *Tasmodorbis* contains a single species found in western Tasmania, *T. punctatus*, unique in having internal shell pores. *Glacidorbis costatus* is known only from Pulbeena Swamp in NW Tasmania and appears to be recently extinct, possibly as a result of draining of the swamp in the early part of this century. A cladistic analysis with the South American member of the family, *Gondwanorbis*, as the outgroup, supports the monophyly of the genera recognised.

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Small-sized Australian freshwater molluscs have, in recent years, been shown to be much more diverse than previously imagined. Nearly all of this diversity is contained within the caenogastropod family Hydrobiidae (see Ponder, 1991 and Ponder & de Keyser, 1998 for review), while other families of small-sized freshwater gastropods such as the Assimineidae, Bithyniidae, Planorbidae and Glacidorbidae are known to contain a several undescribed taxa. This paper revises the taxa included in the Glacidorbidae.

A tiny flat-spined gastropod, *Glacidorbis hedleyi*, was described by Iredale (1943) from Blue Lake, Mount Kosciuszko, NSW. Iredale included his new taxon in the basommatophoran pulmonate family Planorbidae but Meier-Brook & Smith (1976) showed that the genus was operculate and reviewed the known species. While they suggested similarities with the hydrobiids, they did not make any decision on the placement of the genus pending anatomical investigation and Smith (1979) placed