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Classification of Australian Buliniform Planorbids (Mollusca: Pulmonata)

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ABSTRACT. The genera of Australian buliniform planorbids have been examined anatomically and their classification reviewed. The major conclusions reached are: 1. *Isidorella* is not congeneric with *Bulinus* and is an endemic Australian genus; 2. Iredale's genera *Lenameria, Tasmadora* and *Mutalena* are synonyms of *Physastra* Tapparone-Canefri which, in turn, is a synonym of *Glyptophysa* Crosse. *Glyptamoda* Iredale is also a synonym of *Glyptophysa;* 3. *Oppletora* Iredale, synonymised with *Bulinus* by Hubendick, is actually related to *Glyptophysa* and is placed in a separate subgenus; 4. *Ancylastrum* Bourguignat has been examined and the results confirm Hubendick's opinion that this limpet-like genus is related to *Glyptophysa.* Two species can be separated by simple anatomical characters; 5. The genus *Bayardella* Burch includes two species, *B. johni* and *B. cosmeta,* the latter once considered to be a species of *Glyptophysa;* 6. *Amerianna* Strand includes species with either a terminal or lateral pore on a simple pendant penis; 7. A new genus *Leichhardtia* is erected for the northern species *Bullinus sisurnius* Hedley 1918.

All these genera are placed in the planorbid subfamily Bulininae.

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The African planorbid *Bulinus* Müller, 1781 has become one of the best known and most intensely studied of all molluscs because of its role in the transmission of the human trematode parasite *Schistosoma haematobium* (Bilharz, 1852). Several Australian freshwater molluscs are morphologically similar to Bulinus and, as a consequence, this generic name has frequently been applied to lymnaceans from this country. This has not only caused confusion for taxonomists but has also supported the belief that snails capable of transmitting human schistosomes are present in Australia (Anon, 1972). The name *Bulinus* was first used by Adanson in 1757 in a description of a small freshwater mollusc from Senegal. Since the original description was pre-Linnean, Adanson cannot be quoted as author and Müller, who used the name in 1781, is now given authorship. In 1815, in a compilation of Müller's work, Oken emended the spelling to *Bullinus* and this form was subsequently widely adopted by authors until Pilsbry & Bequaert (1927) pointed out that *Bullinus* Oken is an unnecessary emendation for *Bulinus* Müller, and has no status in nomenclature.

The classification of Australian buliniform planorbids has been confounded since its beginnings by a surfeit of species names and an ignorance of generic relationships. These problems have their origins in the traditional reliance of taxonomists on the molluscan shell as a major taxonomic character, an unfortunate choice in the light of the extreme variability of the freshwater Basommatophora. From 1826, with the description of *Physa novaehollandiae* by Blainville, until 1881 (Tate & Brazier, 1881), 54 species of *Physa* Draparnaud were named from Australia. Tate (1882) was convinced, however, that the sinistrally coiled Australian freshwater snails were not physids and stated ". . . in no instance have I found those distinctions which characterise *Physa* as separable from *Bulinus.* The mantle margin is neither expanded nor digitate".

Cooke (1889) also considered that the "So Called Physae of Australia" were related to *Bulinus.* He also