

First Record of *Amphidromus* from Australia, with Anatomical Notes on Several Species (Mollusca:Pulmonata:Camaenidae)

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ABSTRACT. *Amphidromus cognatus* Fulton, 1907, described from a single specimen without locality data, is here recorded from several places north of Darwin in the Northern Territory. This is the first record from Australia of this South-east Asian to Timor genus of arboreal snails. Dissections of the genotype, *Amphidromus perversus* (Linné, 1758) from Bali and *A. poecilochrous jaeckeli* Laidlaw, 1954, from Flores, Indonesia, provide comparative data on genital and radular structures of *A. cognatus*. There are easily observable species differences in the terminal genitalia, although shell variation is great and confusing.

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Amphidromus Albers, 1850, is a genus of colourful tree-dwelling land snails that has long been popular with shell collectors. Species now referred to this genus are known in the region from the Garo and Khasi Hills of Assam throughout South-east Asia and Indonesia as far as the Celebes, Banda Islands, Timor, and Tanimber Islands. The northern limits seem to be the Southern Philippines (Mindanao and the Balabac-Palawan chain), Vietnam, Thailand, Burma and Assam. *Amphidromus* is replaced in New Guinea and parts of Wallacea by the papuinid complex of genera (Solem, 1959: 274, fig. 21). The occurrence of *Amphidromus* on Melville and Bathurst Islands and the Cobourg Peninsula, Northern Territory, Australia is thus a significant range extension.

Early well-illustrated studies by Fulton (1896) and Pilsbry (1900) are still the standard references for identification of *Amphidromus* species and colour forms from shell features. The synoptic catalogue of Laidlaw and Solem (1961) incorporates post-1900 literature and summarizes current knowledge. Description of two colour varieties from Komodo Islands, Indonesia (Djajasasmita, 1963); a review of variation in Thailand taxa (Solem, 1965); brief anatomical notes on *A. palaceus* (Mousson, 1848), *A. javanicus* (Sowerby, 1841), *A. heerianus* (Pfeiffer, 1871), and *A. porcellanus* (Mousson, 1848) by Bishop (1977), and on the terminal genitalia of *A. poecilochrous jaeckeli* Laidlaw, 1954 by Minato (1979), are the only subsequent papers other than catalogue listings in faunal checklists. The most significant contribution to knowledge of *Amphidromus* remains the masterly account of variation in East Timor species by Haniel (1921). Subsequent commentaries by Rensch (1931,

1935) on the systematics of the Timor populations only emphasize the complex nature of local variation and the inadequacies of using shell morphology alone to determine species limits.

The data on anatomical variation presented below, when interpreted with the aid of concepts on species recognition structures developed in studies of Australian camaenids (Solem, 1979, 1981a,b), confirm that variations in the terminal genital structures are most useful in recognizing species limits. Radular teeth of *Amphidromus* show several unique features that depart significantly from the normal pattern found in the family Camaenidae.

ABBREVIATIONS

AM: Australian Museum, Sydney.
 BM(NH): British Museum (Natural History), London.
 FMNH: Field Museum of Natural History, Chicago.

Family CAMAENIDAE Pilsbry, 1893

Genus *Amphidromus* Albers, 1850

Amphidromus cognatus Fulton, 1907

Figs 1-7, 14, 23, 24

Amphidromus cognatus Fulton, 1907: 151, pl. IX, fig. 7.—
 Laidlaw and Solem, 1961: 592, 610.