

On the status of the genus *Viridoturris* Powell, 1964 (Gastropoda, Conoidea)

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The genus *Viridoturris* (type species *Xenuroturris corona* Laseron, 1954, original designation, Recent, Australia) was described by Powell [1964] as a monotypical taxon within the subfamily Turridae, family Turridae. The genus was compared by Powell with *Xenuroturris* Iredale, 1929, and the differences were stated to relate mainly to the protoconch, "which is paucispiral, a broad smooth dome of one whorl followed by less than whorl of axial threads". *V. corona* is, however, quite dissimilar from species of *Xenuroturris* in different sculpture and different anal sinus position, the latter character being the main distinguishing feature of the subfamily Turridae. The taxonomic position of the genus remained uncertain, because it does not correspond to the concept of Turridae, the members of which are generally characterized by an elongated-fusiform shell with a peripheral anal sinus. In the recent reclassification of the former family Turridae [Taylor et al., 1983], *Viridoturris* was assigned to Conoidea *incertae sedis*.

Subsequently, one Recent and one fossil species were added to the genus: *Viridoturris felix* Kuroda et Oyama, 1971 [in Kuroda et al., 1971: 211, pl. 58, fig. 11, pl. 110, fig. 1] from Sagami Bay, 250-300 m; and *Viridoturris powelli* Maxwell, 1988 from the Upper Miocene of New Zealand [Maxwell, 1988: 59, pl. 7, figs. i, l, m, p]. None of these authors discussed the status and position of the genus.

Through the courtesy of Ian Loch of the Australian Museum, Sydney, I was able to study the holotype of *Xenuroturris corona*. The holotype (Fig. 1 A, B), no. C.103503 (14.0 × 6.4 mm) was collected off Green Cape, New South Wales, 37°16' S, 150°13' E, 91-128 m. The protoconch is not exactly as described by Powell [1964]: it is dome-shaped, of 1.5 smooth whorls, and there are only very few weak axial folds in the area of a rather gradual transition to teleoconch, but not "less than whorl of axial threads", as in Powell's description. The shell is

distinctly angulated at the periphery. The spiral sculpture is strong and covers the entire shell including the broad and concave subsutural ramp. The subsutural fold is weak but distinct. Axial ribs are weak, expressed rather as peripheral nodules and producing a slight gemmulation in intersection with spiral cords. The ribs are strongly weakened on the last whorl. The anal sinus is moderately deep, asymmetrical, with the deepest point at the most abapical part of the subsutural ramp.

The species occurs along South-Eastern Australia, from New South Wales to Eastern Victoria, in 90-140 m [Wilson 1994].

The holotype of *Xenuroturris corona* appeared to have an obvious similarity to species of the genus *Typhlomangelia* G.O.Sars, 1878 (type species *Pleurotoma nivale* Lovén, 1846, monotypy, Recent, North Atlantic). The latter genus was assigned to the family Conidae, subfamily Clathurellinae, by Taylor et al. [1993]. A comparison with specimens of *T. nivalis* stored in the Muséum national d'Histoire naturelle, Paris (Fig. 1 C-E) convincingly evidences that both species are congeneric. They share all important conchological characters (the shell shape, the anal sinus shape and position, and the pattern of sculpture), including the protoconch [see Bouchet, Waren, 1980, fig. 200]. In fact, the only difference between the species is that the spiral sculpture is somewhat stronger and the anal sinus is more symmetrical in *T. nivalis*. Therefore, *Viridoturris* becomes a junior synonym of *Typhlomangelia*.

Species of *Typhlomangelia* are known from bathyal waters of the North Atlantic and the Southern Ocean [Powell 1966]. Recently, *Typhlomangelia* was also recorded in the Indo-Pacific fauna, with two bathyal species from the Gulf of Aden and Maldiv Islands [Sysoev, 1996]. The genus has not been previously recorded from Australia.

Of other species referred to *Viridoturris*, *V. felix* seems to be much closer to species of *Paradrillia* Makiyama, 1940 than to *V. corona*, and may be accommodated in that genus. *V. powelli* possesses a long canal and a peripheral anal sinus, indicating its position in the family Turridae, subfamily Turridae. It resembles species of *Gemmula* Weinkauff, 1875 but the exact generic placement, however, remains uncertain.