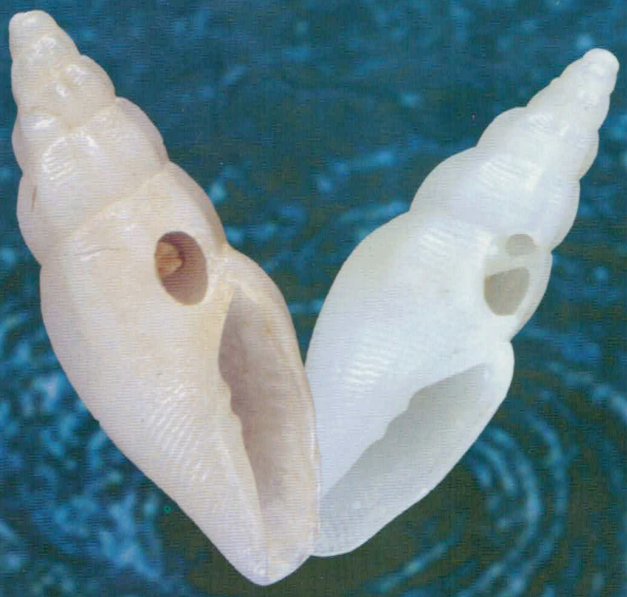
# La Conchiglia

## The Shell



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# A new species of Conidae (Gastropoda: Toxoglossa) from Western Australia: *Conus garywilsoni* sp. nov.

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**Key words**
Northwestern Australia, Conidae, *Conus garywilsoni*, new species.

**Abstract**
On a recent diving expedition to Northwestern Australia, a new species of Conidae was discovered in a restricted spot off the tip of the Northwest Cape, W. Australia. It is here described in honor of its discoverer Gary Wilson of Albany, Western Australia.

***Conus garywilsoni* sp. nov.**

**Material**
Thirty live collected specimens from the type locality.

Measurements (length x greatest width in mm):

Holotype: 19.8 x 9.9;
Paratypes #1: 17.8 x 9.0;
#2: 16.4 x 8.3;
#3: 20.5 x 10.6;
#4: 20.1 x 9.8;
#5: 17.7 x 8.5;
#6: 16.9 x 8.6;
#7: 19.1 x 9.5;
#8: 15.2 x 7.5;
#9: 15.5 x 8.1;
#10: 17.6 x 8.6;
and 19 further paratypes.

Depository:

Holotype, Paratypes 15, 22: Western Australian Museum.

Paratype 18: Naturkundemuseum Stuttgart.

Paratypes 2-5, 7, 10, 12, 17, 21, 26: Coll. F. Lorenz.

**Description**
*Shell morphology.* The holotype is rather heavy, small, conical, with a moderately high, pointed spire. The protoconch is conspicuous and smooth, consisting of three whorls with a maximum diameter of 0.4 mm. The postnuclear whorls are not tuberculate. The outline of the spire is slightly concave, the eight teleoconch whorls are slightly stepped. The shoulder is angulated. The sutural ramp shows five distinct, somewhat undulating spiral grooves. The last whorl is very slightly convex and smooth, except for the anterior fifth where there are shallow spiral ribs. These are rather distant at first, becoming denser towards the anterior tip. The aperture is straight, slightly widening anteriorly. The operculum is rather narrow and slightly curved, measuring one fifth of the aperture's length.

*Coloration.* The protoconch is reddish-brown. The ground color of the teleoconch whorls is purplish, except for the shoulder, which is whitish. The purplish sutural ramps are ornamented with widely spaced, chestnut-colored radial streaks that extend just below the shoulder. The body whorl is uniformly brown in the upper half, forming a wavy, darker-bordered middle band. In the lower half, the holotype displays much of the ground color, interrupted by irregular brown blotches. The aperture and the anterior end are rich purple.

*Measurements and Variability.* The measurements are enumerated according to the shell-formula proposed by RÖCKEL *et al.* (1995): L = shell-length (mm); RW = relative weight (g/mm); RD = relative diameter of last whorl; PMD = position of the maximum diameter of the last whorl; RSH= relative spire height.

L= 15 - 20
RW= 0.04 – 0.05
RD= 0.48 – 0.52
PMD= 0.68 – 0.71
RSH= 0.25 – 0.26

The paratypes display no perceptible variability in the morphological shell features, whereas the coloration varies considerably. In most specimens, the ground color has a more or less intense purplish tint, but in some shells most of the body whorl is plain white. All shells show widely

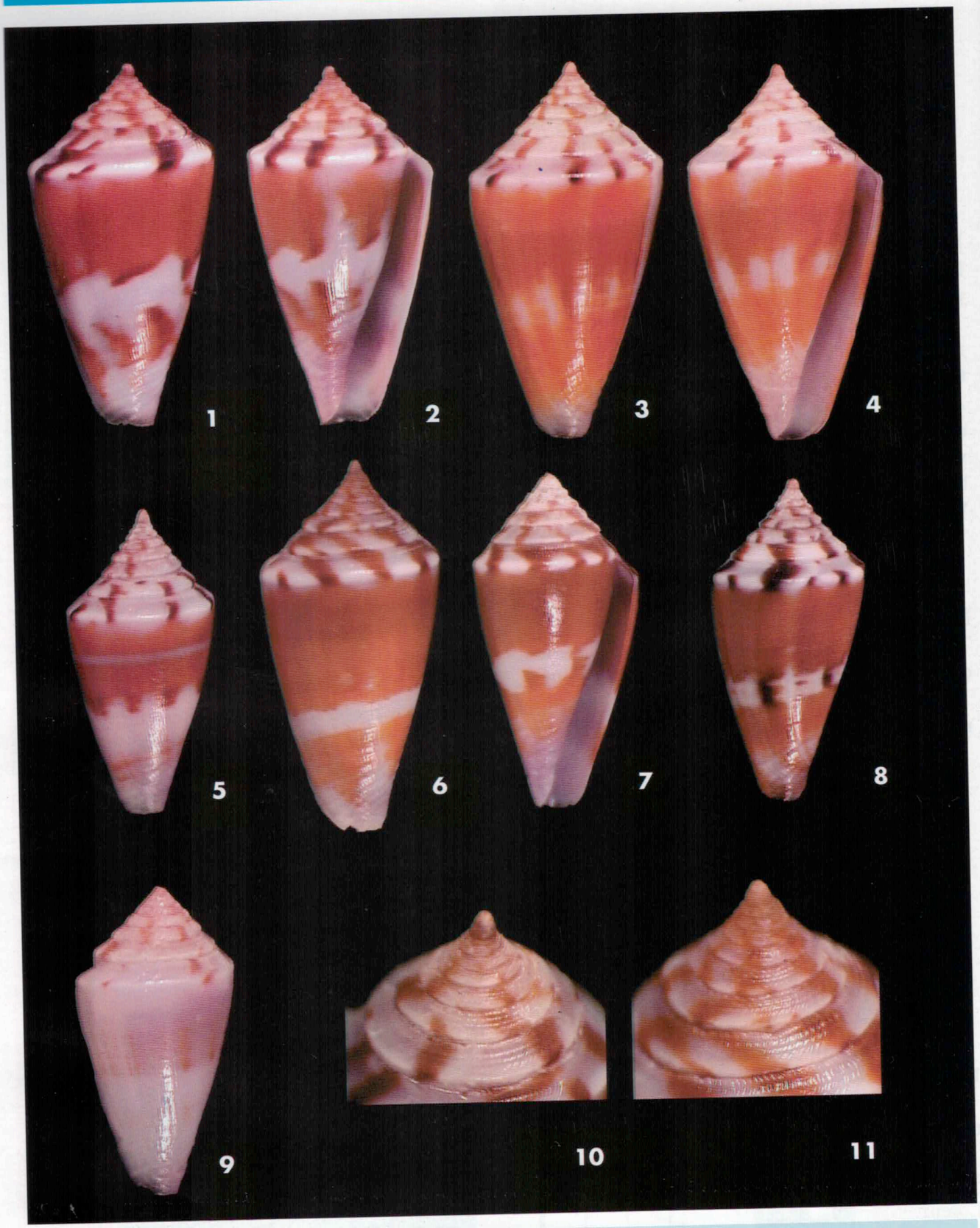


**Plate 1:** *Conus garywilsoni* sp. nov.
**Figs. 1-2:** holotype; **3-4:** Paratype 3; **5:** Paratype 17; **6**: Paratype 5; **7**: Paratype 20; **8**: Paratype 5; **9**: Paratype 6; **10:** Paratype 21, close up of spire; **11:** Paratype 27, close up of spire.

spaced reddish to chestnut-colored radial streaks. Some specimens are densely mottled with brown, but there is always a more or les wide middorsal band. In a few shells, there are fine brownish spots

running transversely across parts of the shell; in others, there are very fine brownish lines across the darker colored regions of the body whorl. In all shells, the anterior is tinted purple, which is more apparent in those whose ground color is paler than in the holotype. The darker color bordering the middle band may be more conspicuous in some than in others. One specimen (paratype #6) is nearly immaculate, except for having pale radial streaks and a few very pale brownish freckles on the body whorl.

**Distribution**

All known specimens of *Conus garywilsoni* sp. nov. were collected a few kilometers offshore in the Exmouth area (114°17'40"E, 21°37'00"S), Northwest Cape, Western Australia.

**Habitat**

WILSON(1993) describes the habitat as follows: "The depth varies from 35-45 metres. The habitat is a vast sand desert with absolutely no rock or reef within 3 km. The sand has a quicksand likeness as you can thrust a hand easily into the sand up to the elbow. It is also covered by a thin film of silty green colored algae. This habitat is also home to small *Xenophora* and Trochidae."

**Discussion**

*Conus garywilsoni* sp. nov. is a very distinctive species comparable only to *Conus articulatus* Sowerby III, 1873, from the western Indian Ocean and scattered occurrences around India, Thailand, Japan, the Philippines to Melanesia, and Queensland (see RÖCKEL *et al.*, 1995: pl. 52, Figs. 1-10; WALLS, 1979: 112). It has not been reported from Western Australia. *Conus garywilsoni* differs from *articulatus* in that the first 3-6 postnuclear whorls of *articulatus* are distinctly tuberculate, whereas in *garywilsoni* they are smooth. The teleoconch sutural ramps of *articulatus* are smooth (RÖCKEL *et al.*, 1995); in garywilsoni they show a distinct spiral sculpture. The spiral grooves on the last whorl of *articulatus* are more prominent and reach at least towards the shell's middle; in *garywilsoni* they are only found toward the anterior. The relative diameter of *articulatus* varies from 0.62 and 0.74, while *garywilsoni* has a relatively narrower shell (0.48 to 0.52). Generally, *Conus garywilsoni* is smaller than *articulatus* (15-20 mm as opposed to 18-29 mm). The radial streaks of *garywilsoni* are sparser than in articulatus. The finely dotted spiral lines that constitute an important pattern-component in articulatus (and especially its eastern populations) are reduced to absent in *garywilsoni*. Because of the mostly larger size, *articulatus* is also a relatively heavier shell (RW = 0.4-0.11 against 0.4-0.6 in garywilsoni), and the spire of articulatus is lower, which can be traced in the differences between the PMD (0.83-0.95 in *articulatus* against 0.68-0.71 in garywilsoni), and the RSH (0.16-0.3 against 0.25-0.26).

Other species that superficially resemble *garywilsoni* are *eximius* Reeve, 1849 (see RÖCKEL *et al.*, 1995: pl. 25, Fig. 5; and WALLS, 1979: 300) from the northeastern Indian Ocean and the northwestern Pacific, as well as certain species of *Conus* whose taxonomic assignments inconsistently range between a generalization called *Conus lischkeanus* Weinkauff, 1875, or a species-complex to which *kermadecensis* Iredale, 1913, *tropicensis* Coomans & Filmer, 1985, and *subroseus* Röckel & Korn, 1992, are assigned (see RÖCKEL *et al.*, 1995: pl. 24, e.g. Figs. 15, 16 and pl. 52 Figs. 9, 10). All these taxa are larger, have a lower, less pointed spire, a different color pattern and no purple tinting of the anterior end. The shell formulae differ accordingly, which becomes most apparent by comparing the RD of 0.61-0.73 and the PMD of 0.82-0.95 in the *lischkeanus*-group and RD = 0.60-0.68 and PMD = 0.82-0.94 in *eximius* with the measurements of the much smaller *garywilsoni*.

Finally, certain juveniles of *Conus nielsenae reductaspiralis* Walls, 1979 from Western Australia might have a resemblance to *garywilsoni* by having a dotted shoulder. In this taxon, however, the spire is much lower, the body whorl has fine transverse lines and lacks the colorful pattern making *garywilsoni* perhaps the most conspicuous of the Australian endemic *Conus*.

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