

A newly discovered *Tudivasum* Rosenberg & Petit, 1987 (Mollusca: Vasidae) from Western Australia

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ABSTRACT A new species of *Tudivasum* is circumscribed from deep water south-western Australia. *Tudivasum leemanense* sp. nov. is described based on morphology. The new species differs from *Tudivasum ashmoreense* Morrison, 2020, *Tudivasum chaneysi* Morrison, 2020, *Tudivasum inerme* Angas, 1878, and *Tudivasum spinosum* (H. & A. Adams, 1864) in having a lamellate sculpture, and differs from *Tudivasum kurtzi* (Macpherson, 1964) and *Tudivasum westrale* Morrison, 2020 in lacking fine sharp spines that cover the body whorl.

KEYWORDS Morphology, New Species, Taxonomy, *Tudivasum leemanense*, Vasidae

INTRODUCTION

The Australian Vasidae have undergone a recent significant revision after a long period of stasis (Angas 1879; Abbott 1958, 1959). More recent studies have led to a renaissance of interest in the group with recent descriptions of taxa based on morphology (Dekkers and Maxwell 2018; Morrison *et al.* 2020). It has been demonstrated that significant morphological differences within a complex correspond to genetic distinctiveness, validating the use of morphology as a sound basis for circumscribing new taxa (Morrison *et al.* 2020). Further work on *Altivasum*, containing large species endemic to southern and south-western Australia, has shown strong biogeographical patterns in their speciation (Maxwell and Dekkers 2019; Cooper and Maxwell 2020). Similar biogeographical patterns of diversification have been observed in the Queensland *Tudivasum* (Maxwell *et al.* 2024; Zheng and Maxwell 2025b), and this pattern appears to be analogous within that genus in Western Australia, indicating the need

for a more thorough revision of Western Australian taxa (Morrison *et al.* 2020). In this study, we introduce a new taxon of *Tudivasum* from the central deep waters of Western Australia, and the identification of this species aids in understanding the distributional patterns and morphology of that complex in that state.

ABBREVIATIONS

BSRF	BlueSky Research Foundation Collection, Cairns, Queensland.
DSC	Drew Strickland Collection, Geraldton, Western Australia.
YZC	Yao Zheng Collection, Perth, Western Australia
H.	Axial height of the shell

METHODS

Material for this study was provided by Drew Strickland and Ray Walker, who collected the material with the use of a remotely operated vehicle (ROV). The study uses morphological information to circumscribe this new taxon, a

method that has been used to describe several molluscan taxa from Australia in recent years: Columbariidae (Zheng and Maxwell 2025a), Strombidae (Maxwell and Dekkers 2021; Maxwell 2022), Vasidae (Maxwell *et al.* 2024; Zheng and Maxwell 2025b), Volutidae (Maxwell and Berschauer 2023b; Zheng and Maxwell 2025c); and from Western Australia in particular: Conidae (Maxwell and Berschauer 2023a), Clavatulidae (Zheng and Maxwell 2024), Volutidae (Zheng and Maxwell 2025d). The use of species rank was based on the theoretical understanding contained within Maxwell *et al.* (2020, 2021). Genetic material was available for this study, but the cost of undertaking that task was outside the funding scope of the authors.

SYSTEMATIC PART

Class Gastropoda Cuvier, 1795

Order Caenogastropoda Cox. 1960

Superfamily Turbinelloidea Swainson, 1835

Family Vasidae Adams & Adam, 1853

Genus *Tudivasum*

Tudivasum leemanense Zheng and
Maxwell sp. nov.
(Plates 1-2)

Description. Shell small, with ovate an extended rostrum; protoconch mamillated with three smooth whorls; teleoconch covered in rows of fine axial lamellations and wide axial ribs; the suture is located below the shoulder of each whorl; shell with five whorls that are rounded with broad raised axial ribs that are crossed with spiral threads; nine to eleven sharp, short, hollow triangular and spirally angled spines on the shoulder; the threads on the body whorl are largest mid whorl and decrease in size towards the rostrum; entire surface of body whorl lamellated; rostrum without lamellations, long, with fine axial

threads posteriorly, becoming completely smooth towards the anterior; rostrum with two rows of dorsally recurved spines that commence at the mid anterior of the aperture; aperture ovate pinched anteriorly forming a long partially open canal along the rostrum; columella thickened with an anterior plate and three plaits that are located toward the anterior; outer lip joins below the shoulder, a row with nodules separated by a channel below the thick, glossy, smooth nodulous labrum; early whorls tan in colour becoming white with maturity.

Type Material. West of Cervantes/Jurien Bay area, central Western Australia, 180 m on continental slope, H. 45 mm, leg. Drew Strickland (BSRF0035). Paratype 1 - West of Leeman, central Western Australia, 180 m, H. 43.9 mm (DSC); Paratype 2 - Western side of southern group Abrolhos about 10 miles west, 140 m, H. 38.1 mm (DSC); Paratype 3 - Coast Cape Area, SE Naturaliste, 90-95 m, Western Australia, H. 37.1 mm (YZC); and Paratype 4 - West Pelsarts Bank, off Southern Group of the Abrolhos, Western Australia, 140 m H. 44.9 mm (DSC).

Type Locality. Taken in 180 m of water off Leeman, Western Australia, on the sandy slopes of the continental shelf.

Distribution. Known from central and southern Western Australia, 90-180 m on continental slopes (Figure 1).

Etymology. Named after the coastal community that neighbours the range and type locality.

Ecology. Found in association with deep sedimentary/sandy ground around reef areas with small rubble pieces.

Discussion and Comparative Remarks. *Tudivasum leemanense* sp. nov. differs from *Tudivasum ashmoreense* Morrison, 2020, *Tudivasum chaneyi* Morrison, 2020, *Tudivasum inerme* Angas, 1878, and *Tudivasum spinosum* (H. & A. Adams, 1864) in having lamellations that cover the entire body whorl, and a rostrum

with two rows of spines. *Tudivasum leemanense* differs from *Tudivasum westrale* Morrison, 2020 in the lack of fine, sharp spines that cover the body whorl, and the long thin spines on the shoulder, indicative of that species.

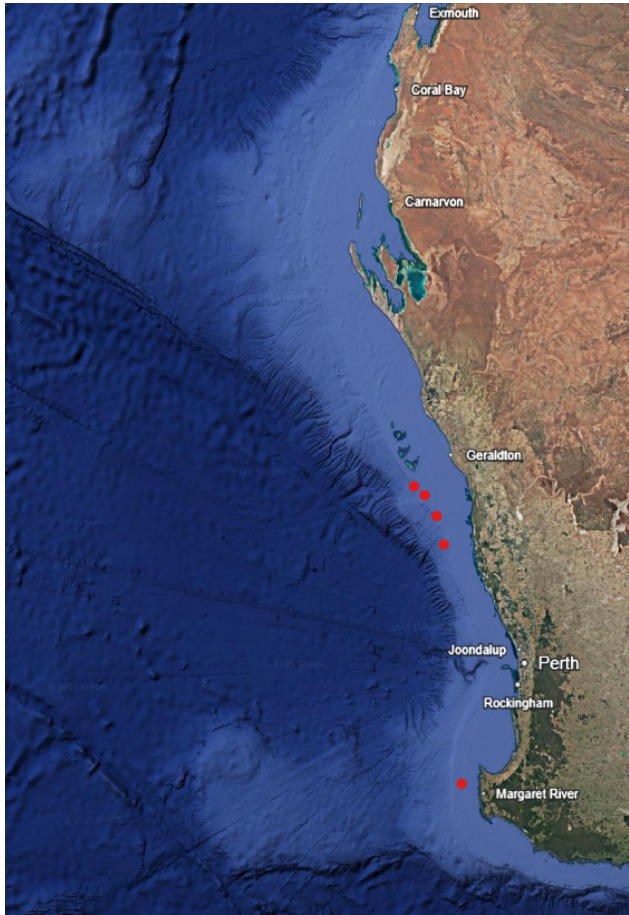


Figure 1. Confirmed known records for *Tudivasum leemanense* n. sp. along the south-western Australian Coast (source-Google Earth accessed 1.11.2025).

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Plate 1. Holotype of *Tudivasum leemanense* n. sp., West of Cervantes/Jurien Bay area, central Western Australia, 180 m on continental slope, H. 45 mm, leg. Drew Strickland (BSRF0035).



Plate 2. Comparative plate of *Tudivasum*: *Tudivasum leemanense* n. sp.: **A**= Paratype 1 - West of Leeman, central Western Australia, 180 m, H. 43.9 mm (DSC); **B**= Paratype 2 - Western side of southern Abrolhos group about 10 miles to west, 140 m, H. 38.1 mm (DSC); **C**= Paratype 3 - Coast Cape Area, SE Naturaliste, Western Australia, H. 37.1 mm (YZC); **D**= Paratype 4 - West Pelsarts Bank, off Southern Group of the Abrolhos, Western Australia, 140 m, H. 44.9 mm (DSC). **E**= *Tudivasum spinosum* (H. & A. Adams, 1864) West of Coral Bay, North-west Cape, Western Australia, 149 m, H. 55.4 mm (DSC); **F**= *Tudivasum westrale* Morrison, 2020, Dirk Hartog Island, off Carnarvon, Central Western Australia, 120-135 m, H. 58.0 mm (DSC).