

A NEW SPECIES OF TERTIARY CHITON (MOLLUSCA: POLYPLACOPHORA: ACANTHOCHITONIDAE) FROM SOUTH AUSTRALIA

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Summary

GOWLETT-HOLMES, K. L. & MCHENRY, B. J. (1988) A new species of Tertiary chiton (Mollusca: Polyplacophora: Acanthochitonidae) from South Australia. *Trans. R. Soc. S. Aust.* **112**(2), 81-82, 31 May 1988.

A new species of Tertiary chiton, *Notoplax* (*N.*) *arenaria* sp. nov., is described from the Dry Creek Sands (Pliocene, Yatalan) from South Australia. The new species most closely resembles the extant *N. (N.) mayi*, but is distinguished from it by a more regularly grooved jugum and by the strong lateropleural rib on the median valves.

KEY WORDS: Chiton, Polyplacophora, Acanthochitonidae, South Australia, *Notoplax*, Tertiary, Pliocene, new species.

Introduction

A large number of Tertiary chiton species have been described from southern Australia, but very few are recorded from South Australia (Cotton & Godfrey 1940; Cotton & Weeding 1941; Cotton 1964). The last species description from South Australia was by Ashby (1940). During an examination of the fossil chiton collection of the South Australian Museum (SAM) we located two median valves of a species of *Notoplax* that differed from all known fossil and extant species of the genus. This new species is described here.

Notoplax (*Notoplax*) *arenaria* sp. nov.

FIG. 1

Holotype: SAM P12839, one median valve with slight chips to the insertion plates and sutural lamina, 4.75 × 5.6 mm, in excellent state of preservation, collected from 100.9 m (331 feet) Angas Home Bore, Parafield Gardens, Section 2259, Hundred of Yatala, County Adelaide, S. Aust. (34°47'06"S 138°36'26"E), collector unknown, 1940.

Paratype: SAM P27904, one worn median valve, sculpture eroded from jugum and part of pleural areas, insertion plates and sutural lamina broken and worn, 5.7 × 5.9 mm, with same collection data as holotype.

Diagnosis: Carinated. Jugum about 1/3 width of valve with regular grooves; valves beaked; prominent lateropleural rib; pustules oval, flat-topped. Slit formula ?/1/2.

Description of Holotype: Tegmentum about 50% of articulamentum. Jugum with regular grooves, ridges at edge of jugum breaking up into elongate pustules posteriorly; prominent beak (Fig. 1A). Prominent diagonal rib separates lateral and pleural areas, lateropleural areas including rib sculptured with irregular, oval, radiating, flat-topped pustules, smaller near beak, not differentiated on rib. Slit 1, 1/4 width of articulamentum, in deep groove to edge of tegmentum. Insertion plates and sutural lamina well developed (Fig. 1B).

Etymology: From the Latin "arenarius" — relating to sand, sandy; from its type stratum, the Dry Creek Sands.

Variation: Although worn, the paratype (Fig. 1D) is like the holotype. The anterior and posterior valves are unknown.

Stratigraphical occurrence: The specimens were retrieved from the Angas Home Bore at a depth of 100.9 m (331 ft), where the bore bottomed in "shell sands" which are consistent with a stratigraphic determination of Dry Creek Sands (Lindsay 1987).¹ The two valves of *N. (N.) arenaria* would therefore be Yatalan (Late Pliocene) in age.

Comparison with other species: *N. (N.) arenaria* was compared with other Tertiary and extant species of Acanthochitonidae in the collections of SAM and with extant species of *Notoplax* in the collections of the Australian Museum, Sydney (AM), the Museums of Victoria, Melbourne (NMV), the Western Australian Museum, Perth (WAM) and the Tasmanian Museum and Art Gallery, Hobart (TM). It most closely resembles the extant species *N. (N.) mayi* (Ashby, 1922) but can be readily distinguished from it by the regularly grooved jugum and the strong lateropleural rib. The new species can be easily distinguished from *N. (N.) adelaidae* (Ashby & Cotton, 1936), which is also from the Dry Creek Sands, by its much greater percentage of tegmentum to articulamentum, the straight posterior edge of

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¹Lindsay, J. M. (1987) Identification and depositional environment of Dry Creek Sands, Angas Home Bore (1940), Parafield Gardens, S. Aust. *Dept. Mines & Energy Rept. Bk. No. 87/96:1-6*, fig. 1. Unpubl.

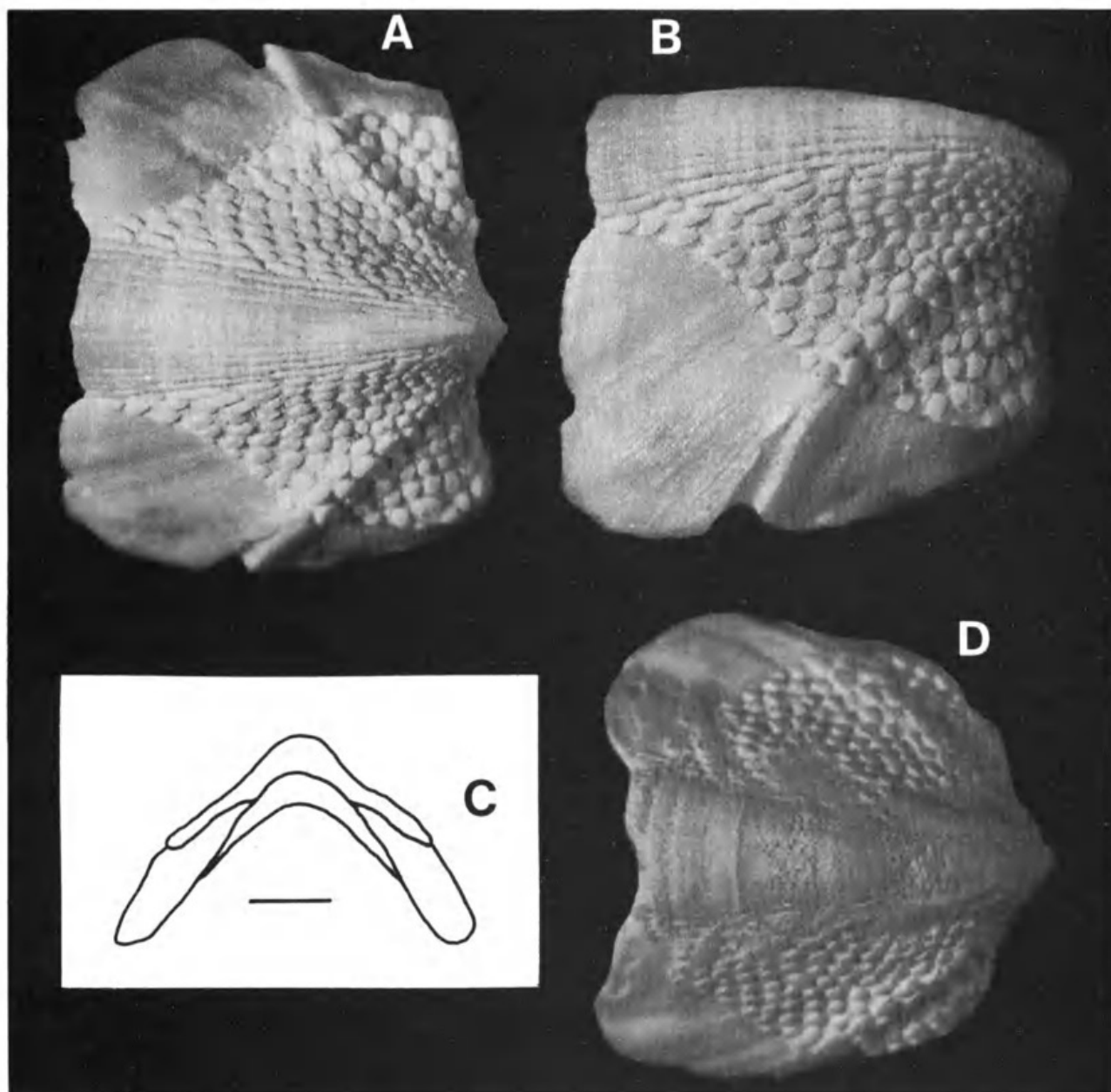


Fig. 1. *Notoplax* (*N.*) *arenaria* sp. nov. holotype (SAM P12839) A. top view, $\times 13$; B. side view, $\times 14.3$; C. anterior profile, scale bar = 1 mm; paratype (SAM P27904) D. top view, $\times 10$.

the median valve, the lateropleural rib and the grooved jugum. It can be distinguished from other Tertiary and extant members of the Acanthochitonidae by the shape and arrangement of the pustules, the presence or position of the lateropleural rib, the form of the insertion plate slit and the jugal sculpture.

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