

A NEW SPECIES OF *LODDERENA* (TROCHOIDEA, SKENEIDAE) FROM GUAM ISLANDS (PACIFIC OCEAN)

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Abstract A species belonging to the genus *Lodderena* was found in Guam Island. After comparing it with other species of similar morphology, it was found to be new to science and is described here.

Key words Skeneidae, *Lodderena*, new species, Guam Islands.

INTRODUCTION

The species included in the genus *Lodderena* Iredale, 1924 are very small, with planispiral or almost planispiral shells; they are found throughout the world and are often very similar morphologically.

The first species described (Tenison-Wood, 1878) was included in the genus *Liotia*. Later Iredale (1924) described the genus *Lodderena*, which was employed by Powell (1930) for the New Zealand species. Later still, the known American species of this group were included in the genus *Cyclostremiscus* by Pilsbry & Olsson (1945) (*C. pachynepion*), and the ones subsequently described in the subgenus *Pachystremiscus* by Olsson & McGinty (1958). Finally, all were returned to the genus *Lodderena*. In recent years, since the use of electronic microscopy, these small species could be examined in greater detail and compared and as a result new species were described by Moolenbeek (1996), Rubio, Rolán & Redfern (1998) and Redfern & Rolán (2005).

During a trip of one of the authors (AC) to Guam Island, where biological material was collected, a sample of a species of *Lodderena* was preserved on 70% ethanol. After close study and comparison with other known species, the conclusion was that it was new to science and it is described in the present work.

The microscopy study was made in a Zeiss Evo 60TM Scanning Electron Microscope.

SYSTEMATICS

Family Skeneidae W. Clark, 1851

Genus *Lodderena* Iredale, 1924

Type species by original designation *Liotia minima* Tenison-Woods, 1878. South Australia.

Lodderena vladimiri spec. nov.

Type material Holotype (Fig. 1A) in the Museum of the Institute of Marine Biology of Vladivostok (MIMB, 30691); also a paratype (Fig. 1D)(MIMB, 30692); 2 paratypes in the Zoological Museum of Far Eastern Federal University of Vladivostok (ZMFU, XII 43793/Ga-9385) (Figs 1B–C); 2 paratypes in the Muséum National d'Histoire Naturelle of Paris (MNHN).

Type locality Piti Bay, Guam Island, at 1m depth, on cretaceous red algae (collected 9th May 2015).

Dimensions The holotype is 0.78mm in diameter; juveniles can be under 0.6mm in diameter.

Description Shell minute, rounded, planispiral. Protoconch (Figs 1E–F) of about 200µm in diameter with a little more than one whorl, nucleus ovoid, with a surface with tubercles; the latter have a typical distribution in all the examined shells: two fine fillets are in subsutural position; below, there is a sort of irregular cord that begins after the nucleus and finishes before the end. There is a fine line which begins after the nucleus,

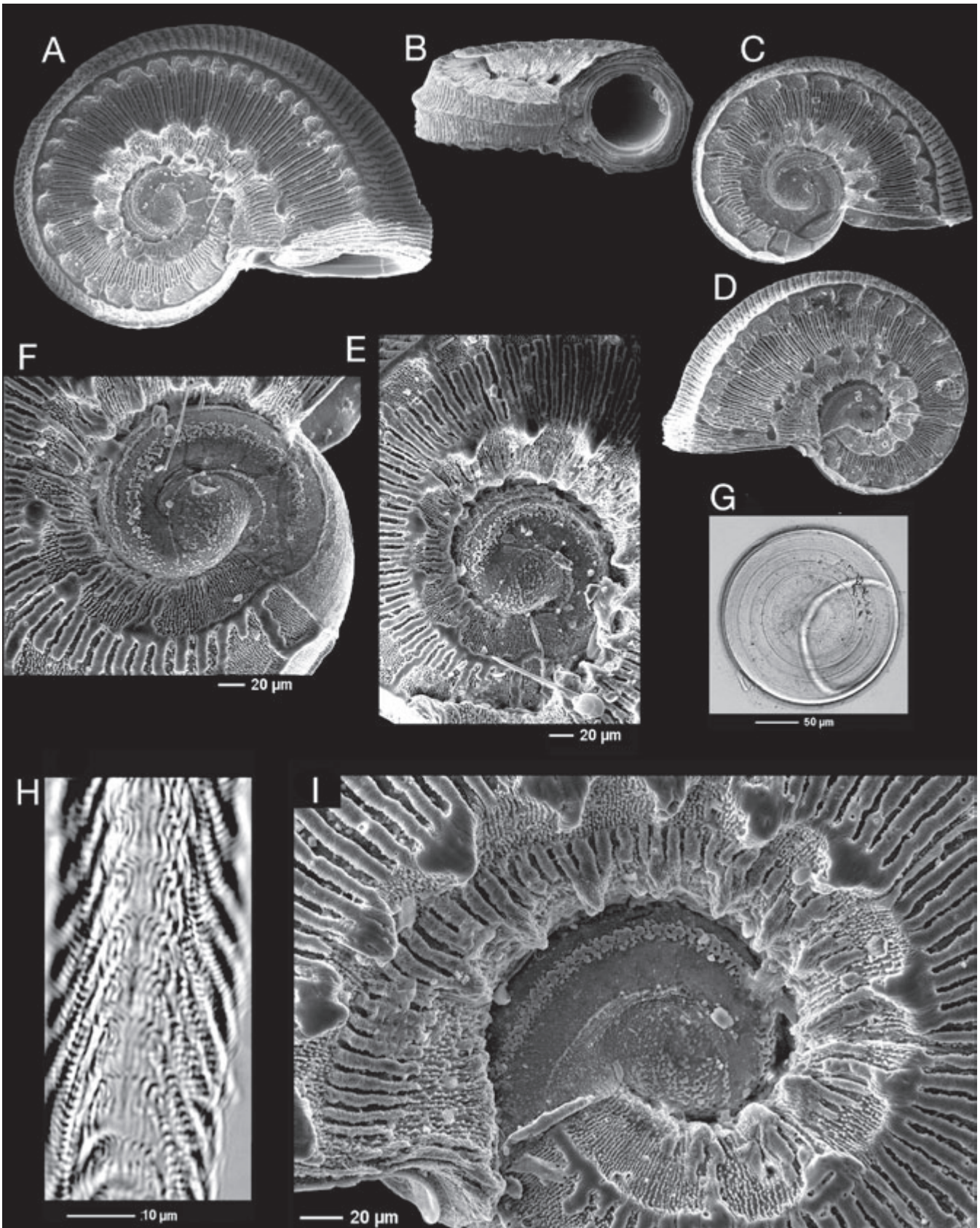


Figure 1 A holotype, 0.78mm (MIMB, 30691); B–C paratypes, 0.64 and 0.52mm (ZMFU, XII 43793/Ga-9385); D paratype, 0.79mm (MIMB, 30692); E, protoconch of the holotype; F, protoconch of the paratype of figure C. G, operculum H, radula; I, detail of the microsculpture;.

which it crosses, and finishes near the end of the protoconch at the suture. Teleoconch of one whorl or a little less in juvenile shells. There are three spirals formed by pointed nodules: one near the suture, the second in the middle of the surface but closer to the first one; a third one near the periphery as a continuous cord with a variable number of nodules. The space between these cords has a microsculpture (Fig. 1I) formed by axial concentric lines, and on those spaces not covered by them, a similar sculpture appears but smaller in size. The periphery is wide, limited by peripheral cord number three, and another in the center; between them the axial sculpture covers the entire surface. Aperture rounded with an external thickening, heptagonal profile due the end of the spiral cords, and several lines in the peristome.

Soft parts not observed. Radula (Fig. 1H) with formula N.5.1.5.N has a rachidian rhomboid tooth with elongate marginals, similar to that showed in Rubio, Rolán & Redfern (1998).

Operculum (Fig. 1G) corneous, multispiral and with a central nucleus. By transparence the semi-circular ridge on the inner surface can be seen.

Distribution Only known from the type locality.

Etymology The specific name is after Vladimir Zolotkyh, who cooperated in the collection of the Guam material.

Remarks *Lodderena vladimiri* spec. nov. is apparently similar to other species of the same genus, but the protoconch (examined in several specimens) is very characteristic and different from any other.

Lodderena pulchella (Olsson & McGinty, 1958) has a protoconch totally covered by a rough surface with perforations. *Lodderena ornata* (Olsson & McGinty, 1958) and *L. emery* (Ladd, 1966) have similar sculpture, but additionally some parts show a fine spiral microsculpture (which is absent in *L. vladimiri*), the external border has a drawing of rectangles, and the protoconch has a rounded nucleus and a more regular surface.

Lodderena minima (Tenison-Woods, 1878) is almost smooth with spiral microsculpture and the aperture is lower at the planispiral level. The aperture

is in a lower position as in *L. formosa* and *L. nana* Powell, 1930.

Lodderena janetmayae Rubio, Rolán & Redfern, 1998, and *L. bunnelli* Redfern & Rolán, 2005 have very different microsculpture and a simpler protoconch.

Lodderena omanensis and *L. tanae* Moolenbeek, 1996, have shells that lack of spiral cords or have only one in the dorsal area, and the protoconchs are rough with many micro depressions.

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