

New species of *Parachiton* (Mollusca: Polyplacophora) from the South China Sea

Новый вид *Parachiton* (Mollusca: Polyplacophora) из Южно-Китайского моря

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A new chiton species *Parachiton laevisquamatus* **sp. nov.** was described from the southeastern South China Sea. It differs from congeners in having smooth dorsal scales, trapezoidally-shaped intermediate valves in rostral view and a shorter antemucronal area of the tail valve.

Новый вид панцирных моллюсков *Parachiton laevisquamatus* **sp. nov.** описан из юго-восточной части Южно-Китайского моря. Он отличается от родственных видов гладкими дорсальными чешуйками, трапециевидной формой промежуточных щитков в ростральном виде и относительно коротким антемукрональным полем последнего щитка.

Key words: chitons, South China Sea, Polyplacophora, Lepidopleurida, Leptochitonidae, *Parachiton*, new species

Ключевые слова: хитоны, Южно-Китайское море, Polyplacophora, Lepidopleurida, Leptochitonidae, *Parachiton*, новый вид

INTRODUCTION

Species of the genus *Parachiton* Thiele, 1909 are widely spread in shallow tropical waters of the Indo-West Pacific and the Mediterranean Sea (Kaas et Van Belle, 1985; Saito, 1996). These species have a long tail valve with subterminal mucro, rows of granules with 3–5 pores of aesthetes, arranged usually longitudinally in the central area of the intermediate valves and also in the antemucronal area of tail valve, a strong tricuspid head of major lateral teeth and split central teeth of radula (see diagnosis of *Parachiton* in Saito, 1996).

In the expedition onboard R/V Kallisto, one specimen of the genus *Parachiton* was

found in southeastern South China Sea. It was discovered to be new to science.

The found specimen was preserved in 75% ethanol. Its valves, armature of girdle and radula were boiled for 15 minutes in 7% KOH solution to remove soft tissues. Then the valves I, IV, V and VIII half of armature of girdle and half of radula were used for a study with a Scanning Electron Microscope, while the remaining half of armature of girdle and radula were put in Canada Balm to be examined under a light microscope.

The holotype of the new species is deposited at the Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia (ZISP), No ZISP 2253.

SYSTEMATICS

Class **POLYPLACOPHORA**

Gray, 1821

Subclass **NEOLORICATA**

Bergenhayn, 1955

Order **LEPIDOPLEURIDA**

Thiele, 1909

Suborder **LEPIDOPLEURINA**

Thiele, 1909

Family **LEPTOCHITONIDAE**

Dall, 1889

Genus *Parachiton* Thiele, 1909

Type species: *Lepidopleurus (Parachiton) acuminatus* Thiele, 1909, by original designation.

Distribution: Indo-West Pacific and the Mediterranean Sea, Miocene-Recent.

Parachiton laevisquamatus sp. nov.

(Figs 1–3)

Holotype. Adult specimen, (No ZISP 2253), the southeastern South China Sea, Haimatan Bank, depth 10–300 m, dead corals and sand, 10°43'N, 117°45'E, 17 Nov. 1974, coll. B.I. Sirenko.

Distribution. The species is only known from type locality.

Diagnosis. Body small. Valves white, rounded, not beaked, tail valve with terminal mucro, postmucronal slope very steep. Intermediate valves trapezoidal in rostral view. Tegmentum sculptured with finely oval granules arranged in longitudinal rows on central area of intermediate valves and antemucronal area of tail valve, and in radiating rows on other areas. Each granule with three aesthete pores. Girdle covered with smooth, curved scales and, intersegmental and marginal needles. Major lateral teeth with three obtuse cusps. Seventeen gills on each side.

Description. Holotype 8.0 × 4.6 mm. Shell elongate oval, high elevated (dorsal elevation ratio 0.52), back rounded, valves not beaked. Color of tegmentum white.

Head valve semicircular, front slope convex, posterior margin very widely V-shaped. Intermediate valves broadly rectangular in dorsal view, trapezoidal in rostral view, with straight posterior margin, side margins rounded, apex inconspicuous, lateral areas not raised. Tail valve narrower than head valve, front margin slightly wavy, mucro terminal, antemucronal slope slightly concave, postmucronal slope very steep, ratio of length of antemucronal area to length of postmucronal area 2.2.

Tegmentum sculptured with oval fine granules arranged in longitudinal rows on central area of intermediate valves and antemucronal area of tail valve and in radiating rows on head valve, lateral areas of intermediate valves and postmucronal area of tail valve. Each granule with three almost equal aesthete pores.

Articulamentum white, weakly developed, apophyses small, short, widely separated, triangular in intermediate valves and trapezoidal in tail valve.

Girdle rather narrow, about 0.3 mm wide near valve V (width 4.0 mm), dorsally densely covered in smooth, curved and sharply pointed scales (75–80 × 20 μm). Scales near valves longer (100 × 29 μm). Intersegmental areas with two or three long needles (190–370 × 19–20 μm). Marginal needles smaller than intersegmental (256 × 28 μm). Ventrally, girdle covered with elongate, smooth, sharply pointed scales (77 × 17 μm).

Radula 3.0 mm long, with 39 transverse rows of mature teeth. Central teeth elongate and narrow. Major lateral teeth with tricuspid dental cap.

Holotype with 17 gills on each side, extending from valve V to near anus.

Etymology. Named after Latin *laevis* (smooth) and *squamatus* (squamos) alluding to the smooth dorsal scales.

Comparison. The new species is similar to *Parachiton guamensis* Saito, 1996 and *P. eos* Saito, 1996 and differs from each of them by the presence of terminal mucro (subterminal mucro in both the above-named species),

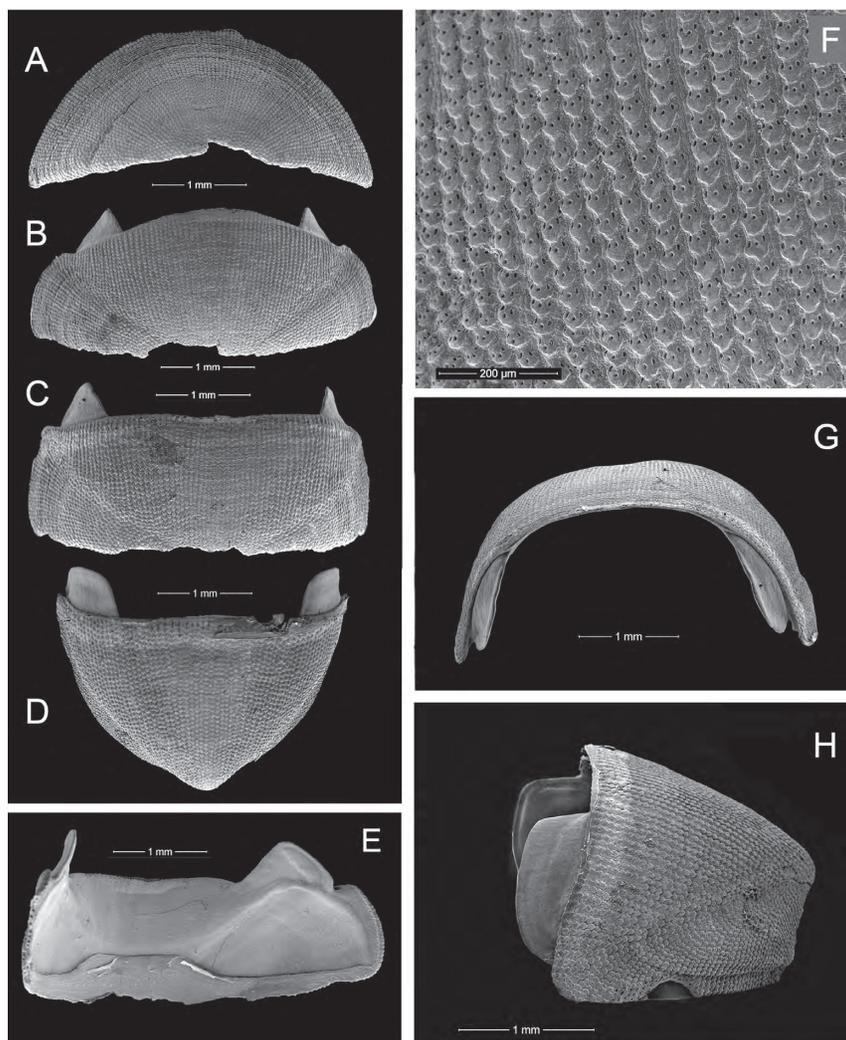


Fig. 1. *Parachiton laevisquamatus* sp. nov. (holotype). **A** – valve I, dorsal view; **B** – valve II, dorsal view; **C** – valve V, dorsal view; **D** – valve VIII, dorsal view; **E** – valve IV, ventral view; **F** – valve V, tegmentum sculpture in central area; **G** – valve V, rostral view; **H** – valve VIII, lateral view.

trapezoidal intermediate valves in rostral view (arcuated in both the above-named species), smooth dorsal scales (ribbed in both the above-named species), smaller granules and aesthete pores. *P. laevisquamatus* sp. nov. has tail valve narrower than head valve (head valve wider than head valve in *P. eos*). The new species is also similar to *Parachiton hylkiae* (Strack, 1993) and differs from the latter in having smooth dorsal scales (ribbed in *P. hylkiae*), trapezoidal intermediate valves in rostral view (arcuated in *P. hyl-*

kiae) and shorter antemucronal area of tail valve, ratio of length of antemucronal area to length of postmucronal area 2.2 (in *P. laevisquamatus* sp. nov.) and 3.5 (in *P. hylkiae*).

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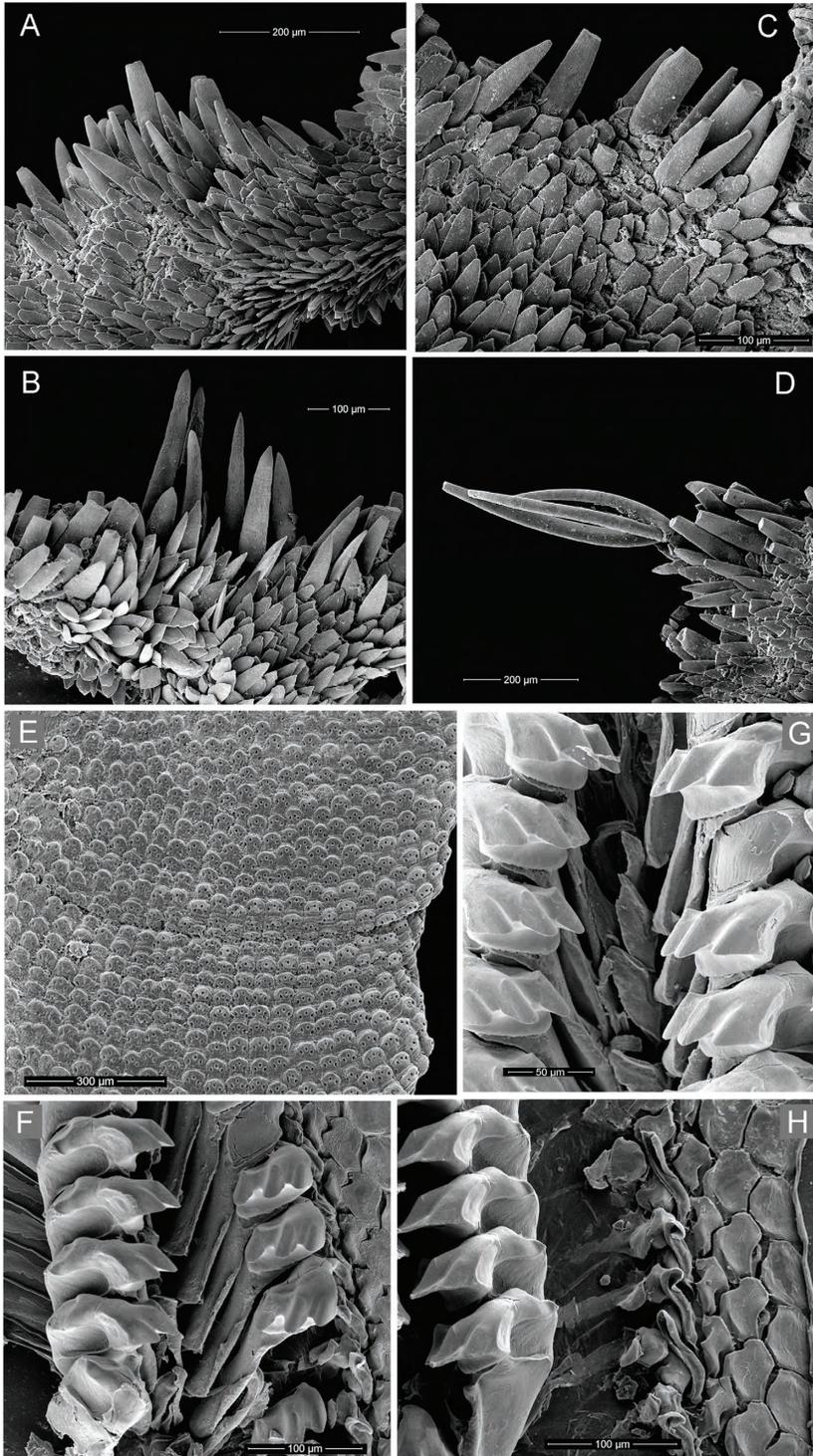


Fig. 2. *Parachiton laevisquamatus* sp. nov. (holotype). **A, B** – dorsal scales and marginal needles; **C, D** – dorsal scales and intersegmental needles; **E** – valve V, tegmentum sculpture in lateral area; **F, G, H** – radula.

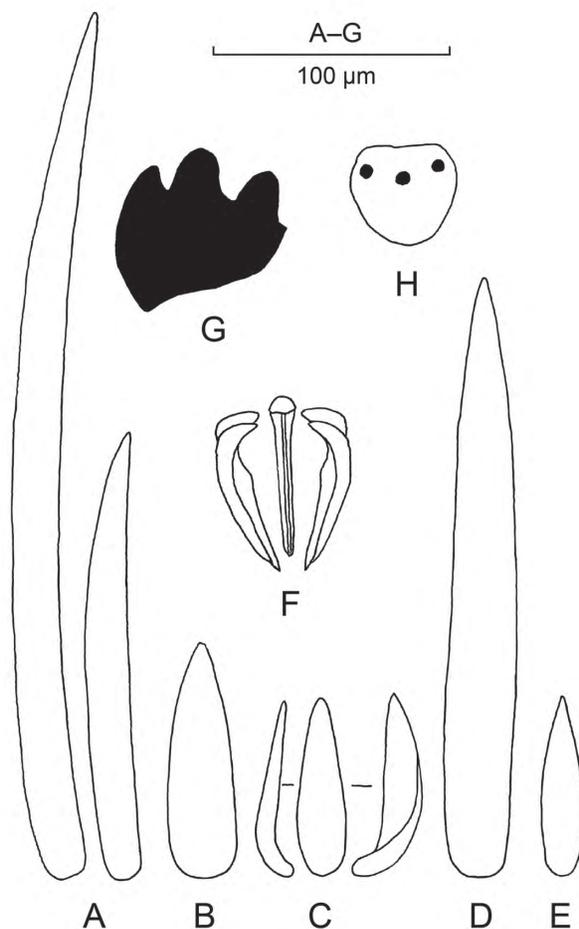


Fig. 3. *Parachiton laevisquamatus* sp. nov. (holotype). **A** – intersegmental needles; **B** – dorsal scale near valve; **C** – dorsal scales; **D** – marginal needle; **E** – ventral scale; **F** – central and first lateral teeth of radula; **G** – head of major lateral teeth of radula; **H** – aesthete group. Scale bar: 100 μm (A–G).

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