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Description of a new species of the genus *Callochiton* GRAY,1847 from the south-west Pacific (Mollusca: Polyplacophora)

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CLASS **Polyplacophora** GRAY 1821
ORDER **Neoloricata** BERGENHAYN 1955
SUBORDER **Ischnochitonina** BERGENHAYN 1930
FAMILIA **Ischnochitonidae** DALL 1889
SUBFAMILIA **Callochitoninae** PLATE 1901

Callochiton bayeri n. sp.
~~*Callochiton cf. oligosulculatus* KAAS & VAN BELLE, 1985~~
Callochiton cf. oligosulculatus SCHWABE, 1997

Material.
Holotype: Vaisala-Lagoon (about 100 metres in front of the "Vaisala Hotel "), Vaisala/ Savaii-Western Samoa (06.1996), at night, at low tide on reef in 1 m; 13.7 x 7.2 mm; H. BAYER leg., dry; Collection Zoologische Staatssammlung München (Nr. 19981715).

Diagnosis.
Animal of moderate size, elongate oval, rather elevated (dorsal elevation of valve V about 0.5), side slopes rather straight. Intermediate valves slightly beaked, lateral areas weakly raised. The colouration of the tegmentum is red and yellow. The jugal area in all valves more or less reddish. Tegmentum sculptured with more or less deep longitudinal sulci on central area of the intermediate valves and the tail valve. Girdle rather wide, red with two broad yellow areas on both sides, covered with small inwardly directed spicules.

Description.
The measures (including the girdle) of the holotype - 13.7 mm in length, 7.2 mm in width and 5.25 mm in height. The width/length ratio is 0.53. The jugal angle about 104°.
Tegmentum red with some yellow parts: valve II (except the light reddish jugum), valve III (except the light reddish jugum and the lateral areas on both sides), valve VII (except the red jugum and a red blotch on the margin of the left lateral area) and the tail valve (except the postmucronal area and the margin of the left lateral area, the mucro and the jugum). The colouration of the girdle is equal to that of the intermediate valves. The yellow zones are from the anterior side of valve II to the middle of the lateral area of valve III and from the middle of the lateral area of valve VI to the middle of the lateral area of the tail valve.
Head valve semicircular, posterior margin V-shaped, tegmentum smooth, with a few fine growth lines, microsculpture of extremly fine granules, whole surface dotted with black shell eyes, easily visible under low magnification.
Intermediate valves more or less rectangular, with convex anterior margin and straight posterior margin. The apex is prominent and the jugum sharply rounded. In all intermediate valves the jugum is more or less eroded. The lateral areas more elevated in valves II, V, VI and VII than in the other ones. They are sculptured with fine granules, shell eyes absent in the central area of the valves.
The central areas are sculptured with several longitudinal grooves at both sides, 9 in valve II, 15 in valve III, about 11 in valve IV, about 12 in valve V, about 5 in valve VI and 14 in valve VII, forming an acute angle with the anterior end of the broad jugal area, becoming flater toward the jugum, sculptured like the lateral areas.
While examination the posterior margin of the left lateral area from valve V got a little damaged.
Valve VIII somewhat triangular in outline, postmucronal area less than semicircular, postmucronal slope rather steep and straight, mucro situated posteriorly and directed central. The antemucronal area, about more than the half lenght of the valve , with 11 longitudinal grooves.
Articulamentum (only the body is removed) with apophyses pinkish-white, very short, wide, broadly rounded, connected across the jugum by a concave lamina, insertion plates short, slit formula c. 18 /1/17(?), teeth blunt, short and broad.
Before body removed, examinated gills: about 14 ctenidia with interspaces on both sides, holobranchial (the first in middle of valve II) and abanal.
The major lateral tooth of th radula (by mistake dissolved) is tricuspidate (see Fig. A).
Girdle rather wide, red with two broad yellow areas on each side, dorsally covered with smooth bluntly

pointed, slightly curved spicules, 270 - 378 µm long, 41 - 43 µm thick, oval in diameter (the other width about 74 - 76 µm).

Blade of major lateral tooth of the radula

Distribution.
Only known from the type locality.

Observations.
The specimen, collected by HELMUT BAYER (Savaii -Western Samoa) in 1996, was temporarily categorised as *Callochiton* cf. *oligosulculatus* KAAS & VAN BELLE 1985, by RICHARD A. VAN BELLE (Belgium) in 1997.
After examination of the holotype of this species, it is clear that it is not the same species.
C. oligosulculatus differs from *C. bayeri* in having a more convex posterior slope, the presence of a small sinus between the apophyses of the tail valve, the smaller antemucronal area, the outline of the tail valve (in *C. oligosulculatus* more rounded!), the colour, the shorter length of the antemucronal area and the fewer longitudinal grooves which are deeper in *C. bayeri*.
Another similar species - *Callochiton sulculatus* SUTER 1907 differs from *C. bayeri* in its smaller size, the tegmentum coloration (light to dark fulvous), and the slightly concave postmucronal slope. I mean in *bayeri* there is only one slit at the sides in the intermediate valves, while *oligosulculatus* and *sulculatus* have two.
"The mucro of the tail valve is situated anteriorly and directed forward in *sulculatus*, in *oligosulculatus* central and backward." (KAAS & VAN BELLE, 1985: 67)

Acknowledgements.

Thanks are due to Mr. HELMUT BAYER for sending me the material from Western Samoa, to Mr. R. A. VAN BELLE (Belgium) for his friendly assistance, for critically reading the first draft and the precious remarks, to Mr. TOM SCHIØTTE (Zoological Museum, University of Copenhagen) for the loan of the holotype of *Callochiton oligosulculatus* and to Dr. B. RUTHENSTEINER (Zoologische Staatssammlung, München) for giving me the possibility to compare both species and to took photos of them, besides for sending me the measures of the girdle spicules.

Zusammenfassung

Der vorliegende Bericht beschreibt einen neuen Vertreter der Gattung *Callochiton* GRAY 1847- ***bayeri*** von den Western Samoa Inseln. Diese Art ist *Callochiton oligosulculatus* KAAS & VAN BELLE 1985 recht ähnlich, unterscheidet sich aber von dieser hauptsächlich durch ihre Größe und den unterschiedlichen Schalenaufbau, vor allem der Endplatte.

Summary

The preceeding report gives a description of a new member of the genus *Callochiton* GRAY 1847- ***bayeri*** from the Western Samoa Islands. This species is rather similar to *Callochiton oligosulculatus* KAAS & VAN BELLE 1985 from which it differs in the size and the features of the valves chiefly of the tail valve.

References

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KAAS, P. & R. A. VAN BELLE (1997): Catalogue of Living Chitons (Mollusca: Polyplacophora), 2. edition, Backhuys Pub./ Leiden 204 pp. .

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SALVAT, B. & C. RIVES (1975): Coquillages de Polynésie.- 391pp., 446 figs.- Les Editions du Pacifique, Papeete, Tahiti.

SCHWABE, E. (1997): Polyplacophora von Western Samoa .- Club Conchylia Informationen **29**, (3/4) : 22-24.

Fig. 1: dorsal view of holotype

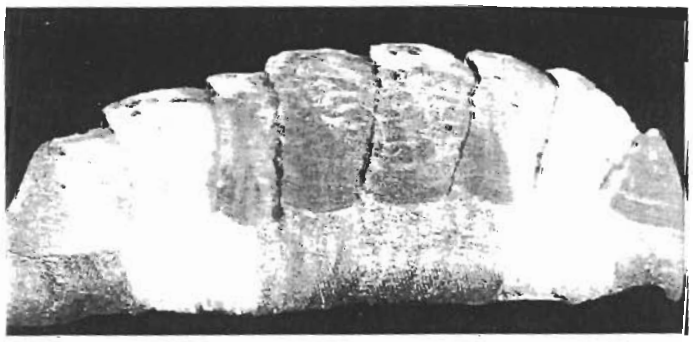

Fig. 2: lateral view of holotype

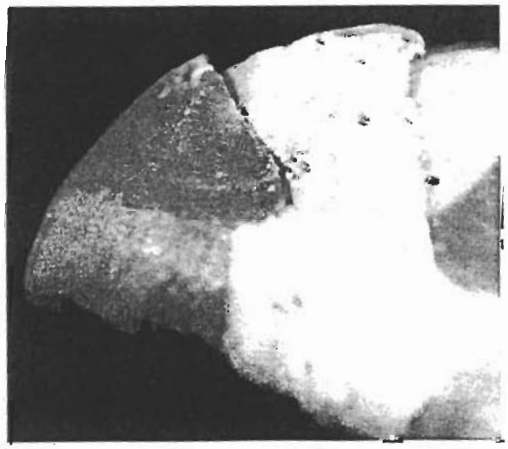

Fig. 3: detail of head valve

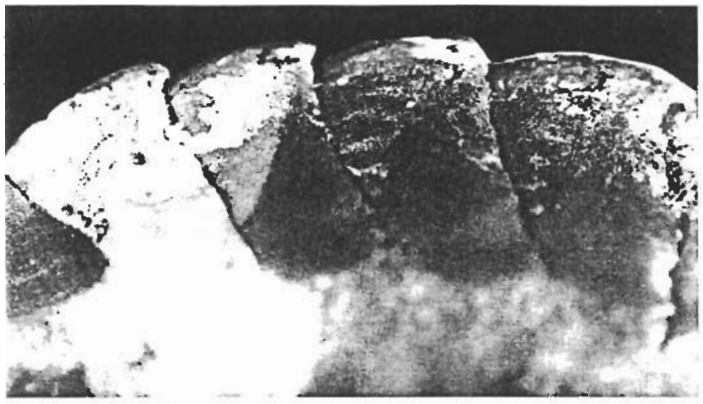

Fig. 4: close-up of fig. 2 to show detail of lateral areas

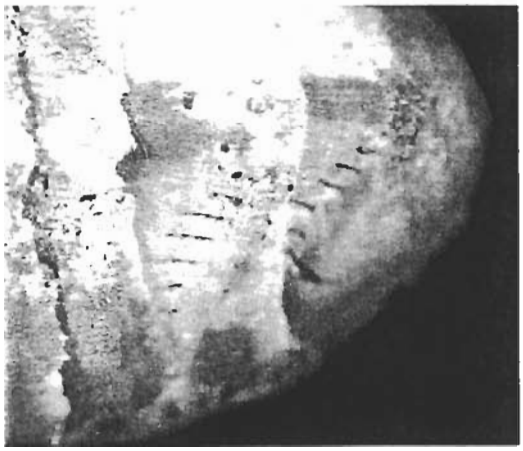

Fig. 5: close-up of tail valve

Fig. 6: detail of valve V (dorsal)

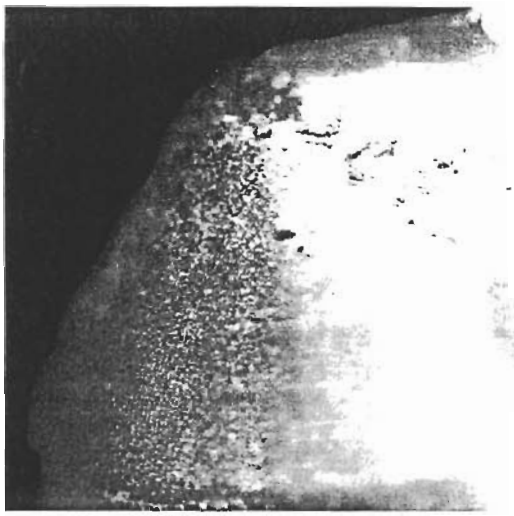

Fig. 7: close-up of tail valve (lateral)

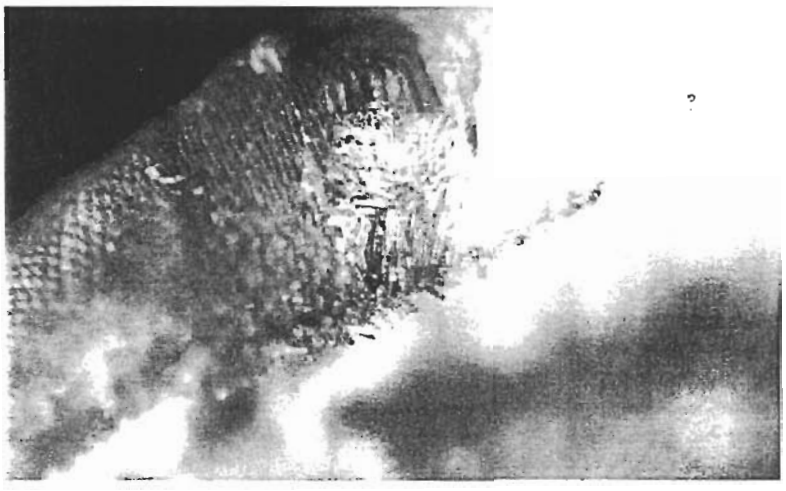

Fig. 8: detail of dorsal girdle spicules

Callochiton oligosulculatus KAAS & VAN BELLE 1985 (holotype)

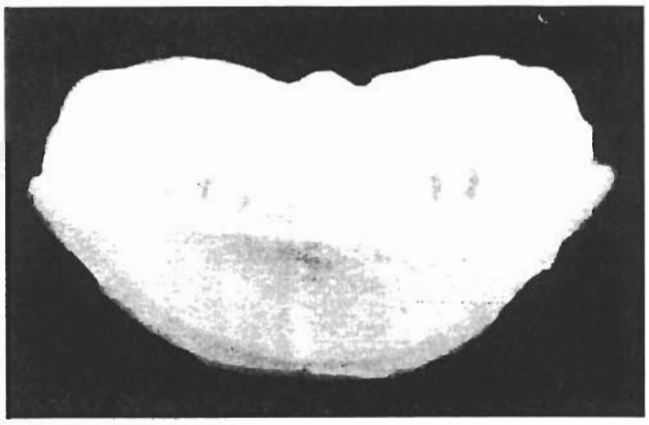

Fig.: 9 tail valve ,dorsal view

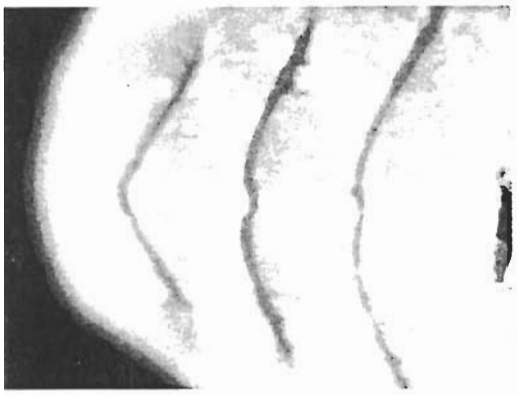

Fig.10: close-up of valve III to show details of tegmentum skulpture

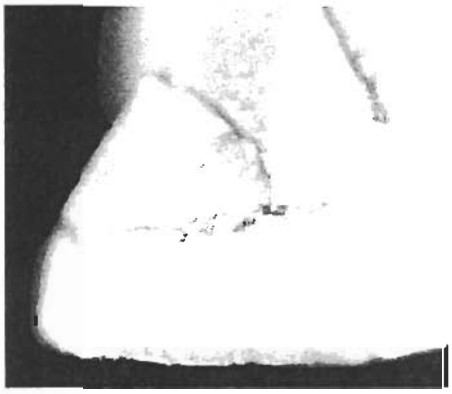

Fig.11: detail of head valve

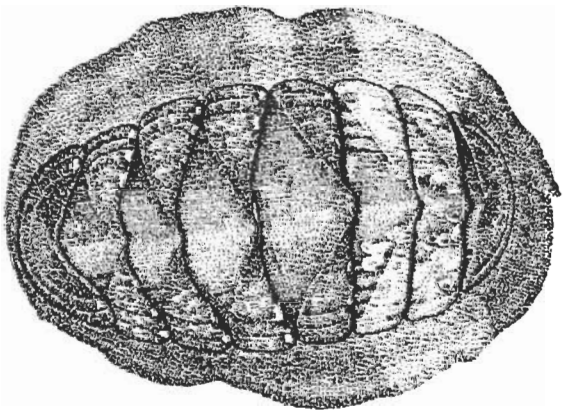

Fig.12: the whole specimen, dorsal view (scale bar 5mm) after KAAS & VAN BELLE1985 (:66)

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