

**Pascahinnites n. gen. for "Pecten (Chalmys)" [sic] *pasca* Dall, 1908,  
a cemented Easter Island scallop (Bivalvia: Pectinidae)**

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'*Pecten (Chlamys)*' *pasca* Dall, 1908, has been observed *in situ* and collected alive for the first time. Previous records concern beach-drifted specimens only. In their adult stage the animals are cemented to rocks with the right valve. The species is endemic for Easter Island (Pacific). It is considered representative of a separate genus, described as *Pascahinnites* n. gen.

Key words: Bivalvia, Pectinidae, *Pascahinnites* gen. nov., Easter Island.

## INTRODUCTION

The present species was described by Dall (1908) from a single left valve, and placed in *Chlamys*. Subsequently, Rehder (1980) described both left and right valves. Steele (1957), Grau (1959) and Rombouts (1991) placed *P. pasca* in *Hinnites*, merely based on the distorted valves. These authors had never observed cemented specimens. Bernard (1986: 71) also treated *P. pasca* as a *Hinnites* species, with the note that it is probable 'an attached variant of the widespread Indo-Pacific *Chlamys coruscans* (Hinds, 1843)' as a result of idiomorphic growth. However, the present live taken specimen of *P. pasca* was clearly cemented and not byssally attached or idiomorphic of growth.

For collections the following abbreviations are used: HD, Henk H. Dijkstra, Sneek; BR, Bret Raines, Victorville; USNM, United States National Museum of Natural History, Washington D.C.

## MATERIAL

In April 1998, over 150 valves of *P. pasca*, and one live specimen, were collected sublittorally by the junior author and Mary Taylor at Rapa Nui, Easter Island: 27°05'S 109°20'W. Single valves were collected from both beach drift and shell grit gathered at depths from 10 to 40 m. Mr. Michel Garcia, a local resident and dive shop owner, confirmed the existence of a thermal cline in that area (see DiSavo, Randall & Cea, 1988). He supposed that *P. pasca* is living below that zone and proved to be correct. The first and only live specimen was collected at 58 m. This was a fully mature animal, cemented to a rock, maybe the first live specimen ever collected.

In addition to the collected specimens the junior author could examine all of the Easter Island material at the Los Angeles County Museum of Natural History. This material was donated to the museum as unworked material, collected by Robert Schmieder during an expedition to Easter Island in September 1997. From this material he was able to examine an additional 18-20 valves (NE. Easter Island, Poike, 12-37 m).

## TAXONOMY

Pectinidae Wilkes, 1810 [emend. Waller, 1978]

Chlamydinae von Teppner, 1922

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### *Pascahinnites* gen. nov.

Type species.— *Pecten* (*Chlamys*) *pasca* Dall, 1908. Only one species known.

Diagnosis.— Byssate (juvenile stage) or cemented (adult stage). With antimarginal microsculpture only in the preradial stage (between dissoconch and radial stage). Hexagonal (shagreen) or quadrangular microsculpture and radial macrosculpture present. Antimarginal and commarginal sculpture absent on disc.

Discussion.— *Pascahinnites* has a chlamydoid form with a *Semipallium*-like sculpture in early stages, when the animals are attached to the substratum by byssus, and a *Hinnites*-like appearance in a later stage, when they are cemented to the hard substratum with the right valve. Specimens of *Semipallium* species are attached to the substratum by byssus throughout their life and are never cemented.

On shells of *Chlamys* species, antimarginal striae are more prominent and also present near the lateral margins and rib interspaces, whereas a shagreen microsculpture is more consistent and prominent in *Pascahinnites*. In *Chlamys* the animals are only byssally attached to the substratum, not cemented. Shells of *Crassadoma* species differ from *Pascahinnites* by the absence of antimarginal and the presence of intercalated commarginal lirae in early stages. In *Pascahinnites* there are antimarginal striae in the preradial stage and a shagreen microsculpture on the radial rib interspaces.

In *Hinnites* species, the shells have a more prominent antimarginal microsculpture and no shagreen microsculpture. Both genera are cemented in late stages.

Distribution.— Pacific, Isla de Pascua [= Easter Island]; Recent, sublittoral.

### *Pascahinnites pasca* (Dall, 1908) (figs. 1-2)

*Pecten* (*Chlamys*) [sic] *pasca* Dall, 1908: 401; Kabat, 1996: 17.

*Pecten* (*Hinnites*) *pasca*; Steele, 1957: 113.

*Hinnites pasca*; Grau, 1959: 134; Bernard, 1986: 71.

*Chlamys pasca*; Rehder, 1980: 109, pl. 13 figs. 3-6.

*Chlamys* (*Hinnites*) *pasca*; Rombouts, 1991: 25.

Type material.— Holotype (left valve) USNM 110765

Type locality.— Easter Island, beach, December 1904.

Other material examined, all from Easter Island.— off Motu Tautara, 27°06'S 109°26'E, 58 m, in situ, cemented to rock, 1 live specimen, 18.iv.1998 (HD 7142); Anakena Beach, 27°04'S 109°21'W, beach drift, many valves (juveniles), 4-28.iv.1998 (BR & HD); off Pta Rosalia, 27°04'S 109°19'W, 10-40 m, amongst shell grit, many valves (juveniles), 4-28.iv.1998 (BR & HD).



Figs. 1-2. *Paschinnites pasca* (Dall, 1908), Easter Island, off Motu Tautara, 27°06'S 109°26'E, 58 m, cemented to rock, live-collected (HD 7142); height 20.1 mm, width 20.5 mm. 1, left valve, exterior; 2, right valve [partly], exterior.

Description.— Free living or byssally attached (juvenile stage) chlamydoid shell, up to ca. 9-11 mm high. Cemented (adult stage) and distorted up to ca. 20 mm high. Slightly equivalve and equilateral; umbonal angle ca. 90-95°. Auricles unequal in size (anterior larger than posterior). Prodissoconch and dissoconch darker than the preradial and radial stage. Shells whitish, creamy, yellowish or reddish with spots and/or streaks; right valve paler than left one. Left valve sculptured with 12 prominent, rather angulated, primary radial ribs, commencing 0.5 mm below the umbonal top. In addition to these primary ribs there is an increasing number of intercalated secondary ribs, up to ca. 35 at the ventral margin. Preradial stage ca. 0.5 mm high and sculptured with irregularly spaced antimarginal striae. Commarginally arranged, variable shagreen microsculpture on auricles and prominent on disc, except for the crest of ribs. Rib-crests with some fine spines. The centres of rib interspaces with a coarse and exposed shagreen microsculpture. Disc distorted after 9-11 mm, up to the ventral margin. Anterior auricle with four small radial riblets, posterior one with two or three. Hinge line straight. Radial ribs of right valve bi- or tripartite, weaker and less angulated than those of the left valve, and more irregularly arranged with broad interspaces. Auricles with 5-9 small prickly radial riblets, more prominent on the anterior auricle. In the juvenile stage, byssal notch moderately deep, byssal fasciole broad and active ctenolium well developed with 4-6 teeth. After cementation to the substratum, the auricles and the disc become strongly distorted.

Measurements: height, 1.72-19.65 mm; width, 1.67-20.79 mm. All but seven of the specimens collected, were less than 12 mm in height. All previously published measurements (Rehder, 1980: 109) fall within this range.

Distribution.— Endemic for Easter Island.

Habitat.— DiSavo, Randall & Cea (1988) conducted a survey of the marine environment surrounding Easter Island and reported that many specimens of *P. pasca* were attached to *Leptoseris paschalensis* Wells, 1972 (a species of hard coral), caught by a fisherman at 100 m depth. In the same report, it was noted that divers had experienced a thermal cline between 50-60 m. The present live taken specimen was cemented to hard substrate in open habitat, not nested in a crack or a hole.

Remarks.— *Semipallium coruscans* (Hinds, 1845) is somewhat similar to juvenile *P. pasca*, but differs in having tripartite radial ribs on the left valve, with interstitial shagreen microsculpture, which is not commarginally arranged. The tri- or quadripartite radial ribs of the right valve are more regularly spaced than they are in *P. pasca*. Adult specimens of *S. coruscans* are byssally attached to rocks or coral, but never cemented.

It appears that *P. pasca* is actually a deep water species (in that habitat at least fully adult specimens are found), and that the single valves collected at shallower depths are a result of intertidal drift. This is supported by the fact that the island experiences a strong underwater surge even at depths of 20-30 m. This surging action does not lend itself to supporting sedentary fauna at shallower depths.

The microsculpture, dissoconch and prodissoconch of both the smaller, regular shells and of the larger, distorted ones, were compared. It turned out that they are identical, confirming that the two forms are conspecific. The smaller immature specimens have an active ctenolium, which suggests that they are byssally attached at this stage.

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## REFERENCES

- BERNARD, F.R., 1986. *Crassadoma* gen. nov. for "Hinnites" giganteus (Gray, 1825) from the Northeastern Pacific Ocean (Bivalvia: Pectinidae).— *Venus* 45: 70-74.
- DALL, W.H., 1908. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, etc. 14: The Mollusca and Brachiopoda.— *Bulletin of the Museum of Comparative Zoology, Harvard* 43: 203-487.
- DISALVO, L.H., J.E. RANDALL & A. CEA, 1988. Ecological Reconnaissance of Easter Island Sublittoral Marine Environment.— *National Geographic Research* 4: 451-473.
- GRAU, G., 1959. Pectinidae of the eastern Pacific. — Allan Hancock Foundation Pacific Expeditions 23: i-viii, 1-308. University of Southern California Publ., Los Angeles.
- KABAT, A.R., 1996. Molluscan types of the Albatross Expeditions to the Eastern Pacific described by W.H. Dall (1908).— *Bulletin of the Museum of Comparative Zoology* 155: 1-31.
- REHDER, H.A., 1980. The marine mollusks of Easter Island (Isla de Pascua) and Sala y Gomez.— *Smithsonian Contribution to Zoology* 289: i-iv, 1-167.
- ROMBOUTS, A., 1991. Guidebook to Pecten shells. Recent Pectinidae and Propeamussiidae of the world: 1-157. Universal Book Services, Dr. W. Backhuys, Oegstgeest.
- Wells, J.W., 1972. Notes on Indo-Pacific scleractinian corals. VIII. Scleractinian corals from Eastern Island. — *Pacific Science* 26: 183-190.