



**World Congress of Malacology
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ABSTRACTS

edited by

Kurt Jordaens, Natalie Van Houtte, Jackie Van Goethem & Thierry Backeljau



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A remarkable new genus of sessile, predatory septibranch bivalves

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A new genus of sessile septibranch bivalves is presented. The new taxon encompasses at least three species: an unnamed one from the slope off the Florida Keys, another from 950961 m off Vanuatu, and “*Corculum*” *inexpectatum* Crozier, 1996, collected at 805 m off the Three Kings Islands, New Zealand. Unusual symmetry and form constitute peculiar morphological features of the new taxon. There is strong antero-posterior compression and lateral expansion associated with rotation of the largest dimension (height), which forms about 30° with the antero-posterior axis. The hinge includes a single (possibly secondary) cardinal tooth and interlocking socket on each valve and sunken ligament. The two unnamed species are known from live-collected specimens found adhering to boulders of possible volcanic origin by means of a robust byssal system. Features of gross anatomy such as absence of ctenidia, size and arrangement of siphons and siphonal tentacles, extensive fusion of mantle edges, and presence of septum with ostial apertures allocate the species within the septibranch bivalves. Presence of ostracods in the digestive tracts is evidence of predation. Phylogenetic relationships are yet to be determined for the new taxon; however, a siphonal area with 1315 tentacles, large and possibly eversible incurrent siphonal cowl, presence of three paired groups of ostial apertures in septum, and hermaphroditic reproductive system suggest inclusion in the Poromyidae. Shell shape and outline in the new taxon crudely evoke those of the cardiid genus *Corculum*. In fact, despite differences in proportions and shell sculpture between “*Corculum*” *inexpectatum* (soft parts unknown) and the two unnamed species, general shell morphology and hinge dentition suggest that the three species are closely related. Notwithstanding lack of understanding of the precise means of prey capture, it is clear that the new taxon represents a rare instance of predation on motile invertebrates by sessile mollusks.

Tahitian tree snail mitochondrial clades survived recent mass-extirpation

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Oceanic islands frequently support endemic faunal radiations that are highly vulnerable to introduced predators. This vulnerability is epitomized by the rapid extinction in the wild of all but five of 61 described Society Islands partulid tree snails, following the deliberate introduction of an alien biological control agent: the carnivorous snail *Euglandina rosea*. Tahiti's tree snail populations have been almost completely extirpated and three of the island's eight endemic *Partula* species are officially extinct, a fourth persisting only in captivity. We report a novel molecular phylogenetic estimate of Tahitian *Partula* mitochondrial lineage survival calibrated with a 1970 reference museum collection that pre-dates the predator's 1974 introduction to the island. Although severe winnowing of lineage diversity has occurred, none of the five primary Tahitian *Partula* clades present in the museum samples is extinct. Targeted conservation measures, especially of montane refuge populations, may yet preserve a representative sub-sample of Tahiti's endemic tree snail genetic diversity in the wild.