

BRACHYURAN (XANTHIDAE) CRAB PREDATION ON *BOUCHARDIA ROSEA*
(BRACHIOPODA, TEREBRATULIDA) AND ITS PALEOBIOLOGICAL AND
TAPHONOMIC IMPORTANCE¹

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Modern durophagous brachyurans appeared in the Early Jurassic, where they are known to prey on marine gastropods. Herein it is described, for the first time, attacks of the rocky crab *Eurypanopeus dissimilis* on living specimens of *Bouchardia rosea*.

Specimens of *Eurypanopeus dissimilis* from Couves Island, on the Northwest coast of the State of São Paulo, Brazil, where accidentally introduced in marine aquaria where specimens of *Bouchardia rosea* were kept. In order to gain access to edible soft parts, the small xanthidid kept the 18.9 mm long brachiopod under its cephalothorax, holding the prey with its pereipods and left cheliped, and crushing the shell with its major (10.6mm) cheliped.

After killing the brachiopod (~ 4 hours latter), the shell remained articulated, but showing a distinctive breakage pattern on the anterior margin of the pedicle and brachial valves. These margins, specially the one of pedicle valve, show several semicircular nicks produced by the crab claws. Curiously the attacked margin was the thinnest one.

Notably this conspicuous breakage pattern, and others, are found in modern and subfossil specimens of *Bouchardia rosea* that occur in dense superficial accumulations (brachiopod shell-beds in the making) from the same geographic area. Thus these taphonomic signatures may be now linked with crab predation, indicating that xanthidid crabs are important taphonomic agents.

Within this scenario, the recognition of the breakage pattern described open new ways for its identification on Bouchardiidae fossil record, tracing back to the K/T boundary. Our findings have important paleobiological implications:

- (a) to trace back the origin of this habit and ecological interactions,
- (b) to elucidate the origin and function of morphological traits in brachyurans,
- (c) to determine the time and environment where this niche was filled, and
- (d) to understand the potential taphonomic bias introduced by crushing invertebrates on the Bouchardiidae fossil record.

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