

A special palate structure of *Ctenochaetus striatus* - a hidden tool for bioerosion

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Abstract

A particular characteristic of *C. striatus* are the bristle teeth. During aquarium experiments a second dentiform structure was detected.

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The stripe is rigid and consists of numerous single hard knobs which do not rest in the upper jaw bones, but are embedded in elastic tissue. The elementary composition of the single knobs (by energy-dispersive X-ray analysis; EDX) suggests robust horny substance (α -keratin). Thorough close-up observations in the field (Ras Mohammed National Park, Sinai-Peninsula) and during aquarium experiments revealed two different grazing techniques in this species: firstly, brushing the surface of reef rock and coral slabs with the bristle teeth, exerting only slight pressure, to ingest detritus and fine algae (as described by Purcell and Bellwood 1993), and secondly, chafing the substrate with energetic grasping bites with contact pressure being generated by a shaking of the whole body. During the second feeding mode the jaws are wide open, allowing the palate dentation to rasp and erode the reef substrate.