Creative destruction by the titan triggerfish (*Balistoides viridescens*). A preliminary report on a neglected mediator of coral reef bioerosion in the Maldives

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The durophagous Indo-Pacific titan triggerfish (*Balistoides viridescens* (Bloch & Schneider, 1801)) (Fig. 1A), is a predator of various hard- and soft-bottom invertebrate fauna (personal observation). Although the titan triggerfish consumes corallivores such as *Acanthaster* and *Drupella*, it more often eats bioeroding echinoids and endolithic invertebrates such as sipunculids and boring bivalves. *B. viridescens* was observed to access endolithic prey by systematically breaking open the upper parts of dead corals (Fig. 1B), where filter-feeding endolithic animals tend to be concentrated. The main prey item seems to be *Parapholas quadrizonata* (Spengler, 1792), which in Maldives is the dominant boring bivalve in dead coral (Kleeman 2008). An entourage of fishes was frequently observed scavenging for scraps of prey, boring sponges, and fleeing motile invertebrates as a titan fed (see also: Moosleitner 2010). Fresh feeding scars are obvious, and have an accumulation of coral chips on the substrate below them (Fig. 1C).

Most of the thousands of titan excavations examined by the author over the past two decades were in dead coral, and coral fragments produced on the same scale by other means have seldom survived in Maldives (Allison 1996). Thus *B. viridescens* is unlikely to be an agent of coral reproduction by fragmentation in the Maldives as posited for *Pseudobalistes naufragium* in the eastern Pacific (Guzman 1988). However corals have been observed to settle in boreholes within

![Fig. 1](image_url)

**Fig. 1** A. Titan triggerfish: note the robust dentition, scale bar 5 cm. B. Titan at work: note bivalve borings, exposed boring sponge (arrows). C. Titan feeding scar, 50% bivalve borings by surface area, coral chips below, scale bar 10 cm. D. *Pocillopora* sp. recruit (indicated by arrow), within titan feeding scar, scale bar 10 mm.
its feeding scars (Fig. 1D). In summary, *B. viridescens* is both a bioeroder and an agent of bioerosion control that might on balance, and over the longer term enhance carbonate accretion. I am collecting further data to assess the importance of the titan’s activity.

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**References**


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