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Wrasses clean up in the Azores

Photographs by A.A. Bertoncini

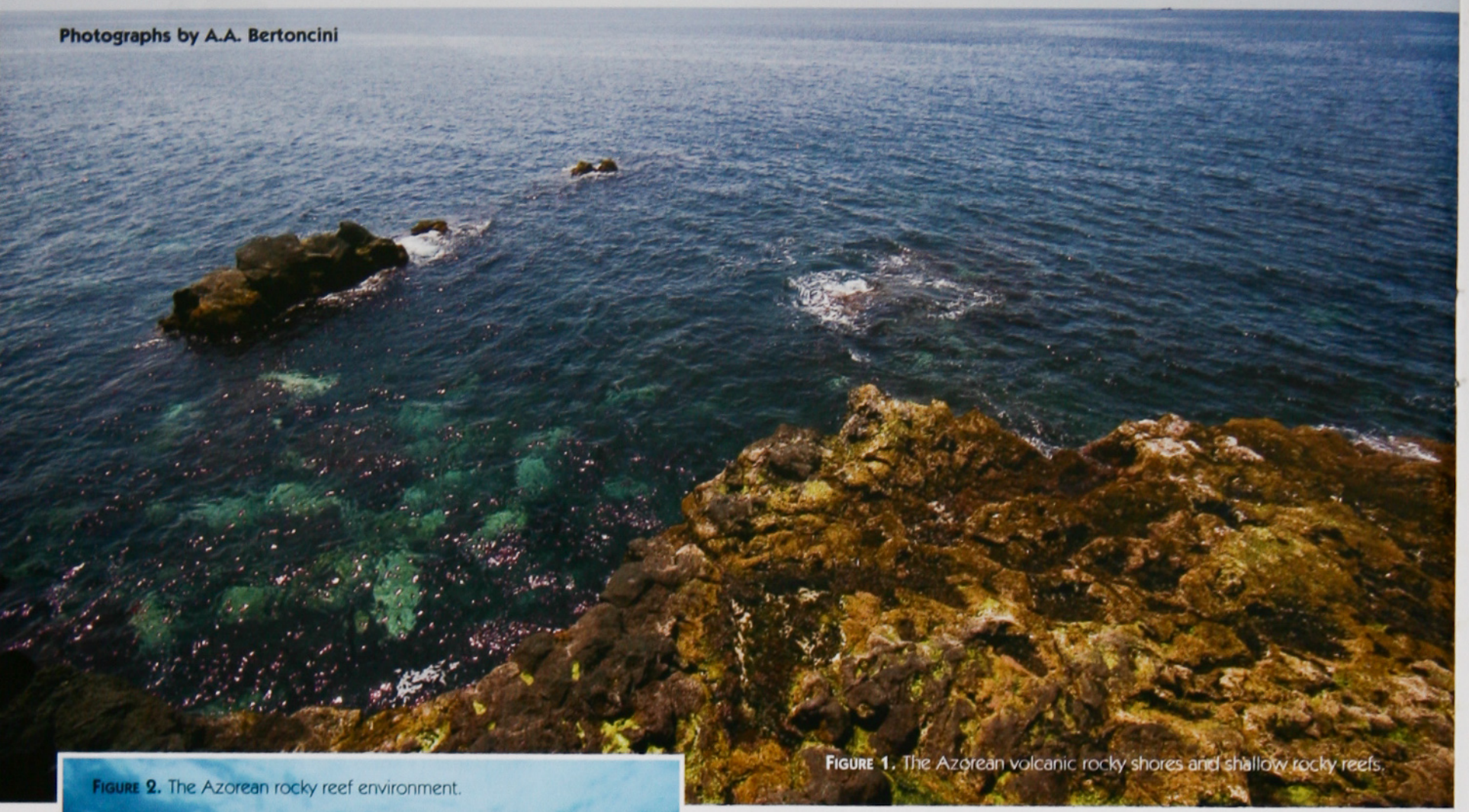

Figure 1. The Azorean volcanic rocky shores and shallow rocky reefs.

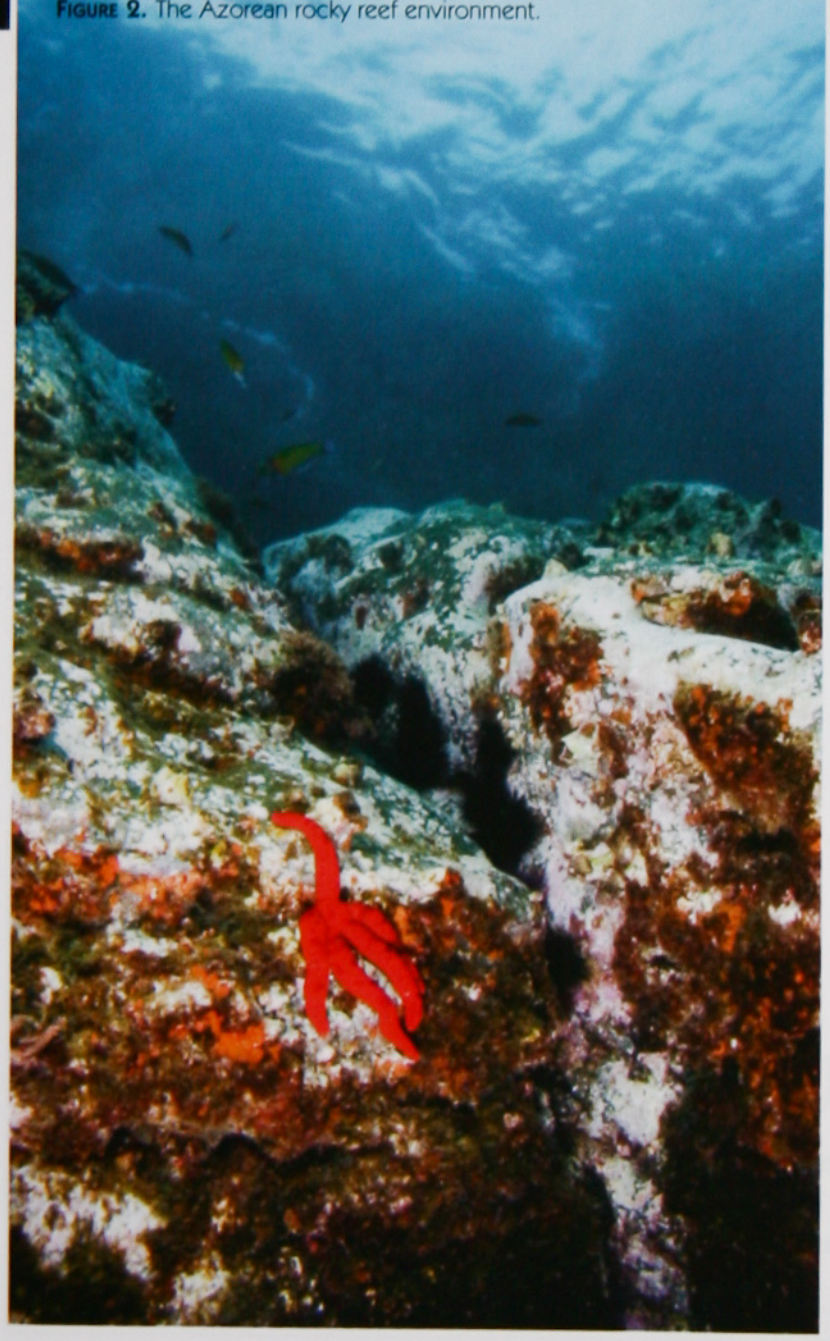

Figure 2. The Azorean rocky reef environment.

The mutualistic relationships of fish cleaning interactions on reefs are commonly reported from shallow tropical waters but little is known about temperate waters, such as the Azorean Islands and their volcanic rocky shores (Figures 1, 2 & 3).

Cleaning interactions among fish, involve small fish or 'cleaners', which remove ectoparasites and other items, such as dead tissue, from the body of generally larger, cooperating fish 'clients'. They usually occur at traditional sites, known as cleaning stations, where cleaners make use of a series of short-distance signals to facilitate the recognition of cleanerfish by their clients. These may include colour displays and other visual signals, such as cleanerfish dances or physical contact. Cleaners are thought to share common colour patterns, which may help clients to recognize them easily.

The rainbow wrasse, *Coris julis*, is a small rocky-shore fish which inhabits shallow waters, and is site-attached throughout its adult life and exhibits conspicuous morphological variations between populations. However, the Azorean blue wrasse, *Centrolabrus caeruleus*, is an endemic rocky-shore fish which inhabits shallow waters in the Azores. It has only recently been distinguished from a very similar species, *Centrolabrus trutta,* which inhabits Madeira and presumably the Canary Islands and Cape Verde.

During a free diving expedition in an open tidal pool at Corvo Island in 2007 (Figure 4), two cleaning stations were detected and observed, exposed to depths from 2–4 m.

Azorean blue wrasses always started the cleaning processes, positioned close to 90° head-up (Figure 5) 30 cm from the bottom, near a boulder (1 m high) over a dark-brown sandy bottom. All fins were fully extended and no colour changes were observed. The rainbow wrasse however, inspected and cleaned the clients' body for short intervals of

5 seconds, swimming around and then returning. The flanks were the most explored areas of the clients' bodies, where damaged tissue but no parasites were evident (Figure 4). One or two rainbow wrasses were involved in the cleaning stations and 1–5 clients were observed posing simultaneously. Clients (10–15 cm total length (TL)) were usually not much larger than the cleaners (8–10 cm TL).

In a single event, while five Azorean blue wrasses were posing, a single Azorean blue wrasse (7 cm TL) started cleaning their conspecifics. Such a bout lasted less than 15 seconds. Although no photographic records were possible, this is the first observation of this endemic and poorly known wrasse performing such cleaning activities on its own species. Azorean blue wrasses are particularly shy, and after such cleaning interactions, they hide in algae turfs, where juveniles are commonly observed swimming around (Figure 5).

We believe that the observed cleaning activity of the Azorean blue wrasse is a rare and opportunistic event, since it is abundant in the Azores, but has not been observed as a cleaner before. It behaves as a facultative cleaner like the rock cook *Centrolabrus exoletus,* in which picking material from the body surface of other fish is not the dominant form of feeding behaviour. More observations in natural conditions and detailed experiments on the ontogeny of cleaning behaviour of the Azorean blue wrasse are needed. In addition detailed investigations on the establishment of the rainbow wrasse cleaning stations are required.

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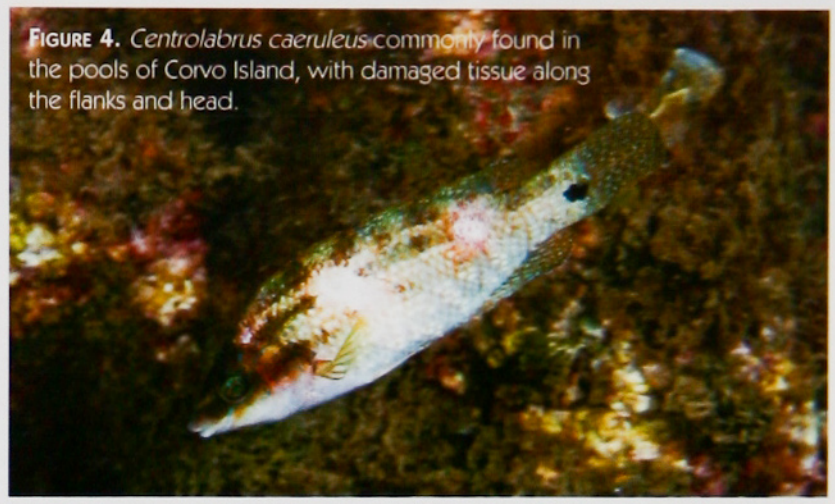
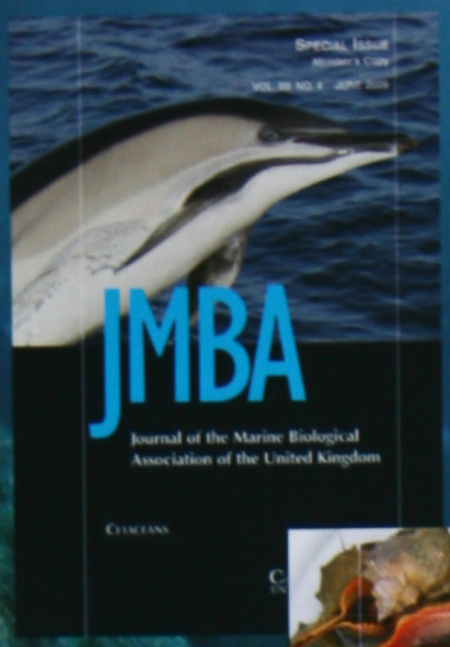
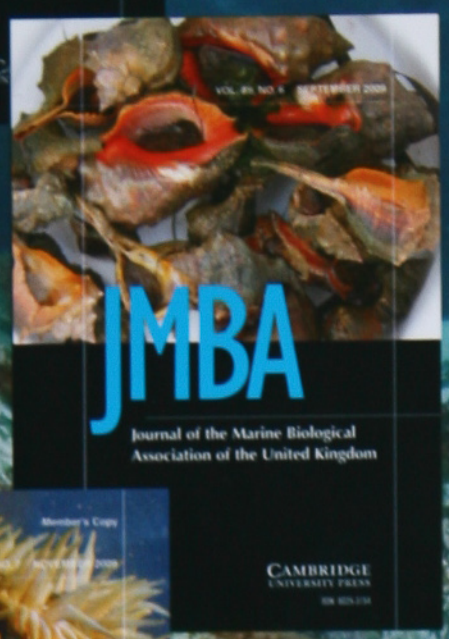


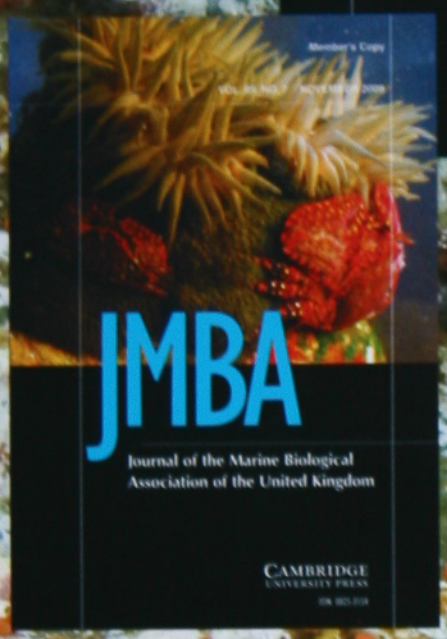
Figure 4. *Centrolabrus caeruleus* commonly found in the pools of Corvo Island, with damaged tissue along the flanks and head.

Figure 5. *Centrolabrus caeruleus* hiding among the algae turfs of *Asparagopsis armata,* after a cleaning event.

Figure 3. The Azorean volcanic rocky shore and the open tidal pool at Corvo Island.







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