

34th European  
Marine Biology Symposium  
Ponta Delgada, 13-17 September, 1999



PROGRAM AND ABSTRACTS

Departamento de Biologia, Universidade dos Açores  
Sociedade "Afonso Chaves"

## SUBTIDAL ALGAL COMMUNITIES AND THEIR ASSOCIATED MOLLUSCAN FAUNA IN SÃO VICENTE BAY (SÃO MIGUEL, AZORES)

A. I. NETO & S. P. ÁVILA

Secção de Biologia Marinha, Departamento de Biologia, Universidade dos Açores, Rua da Mãe de Deus, 9500 Ponta Delgada, Portugal

The subtidal communities of São Vicente bay (São Miguel, Azores) were surveyed in July 1997, under the project "Biodiversity of the archipelago of the Azores". Quantitative collections were made at two depth levels (10 and 30m depth) by scraping all the algae (and the associated fauna) inside a 2500 cm<sup>2</sup> quadrat into a fine mesh net bag. Laboratory techniques involved sieving and weighing the samples with posterior sorting of all the invertebrates larger than 1 mm. The algae and molluscs were sorted into species. The former were weighed on a top-pan balance and the molluscs were counted. Different algal communities were found at each depth level: the 10m community was dominated by *Dictyota dichotoma*, *Stypocaulon scoparia* and *Asparagopsis armata*, while *Zonaria tournefortii* with its epiphyte *Acrosorium* were dominant at 30m depth. Besides the overall dominance of *Bittium*, differences in the molluscan fauna were also observed. Multivariate analyses was conducted in order to identify the biological associations between the algae and the molluscs present in the samples.

## ALGAL CHARACTERISED ROCKY-SHORE BIOTOPES IN THE AZORES AND THEIR AFFINITIES

TITTLE, I.<sup>1</sup> & A. I. NETO<sup>2</sup>

<sup>1</sup> Department of Botany, The Natural History Museum, London SW7 5BD, UK

<sup>2</sup> Departamento de Biologia, Universidade dos Açores, 9500 Ponta Delgada, Portugal

Rocky sea-shores in the Azores archipelago support locally distinct animal and plant characterised biotopes (habitats and their associated communities). Recent detailed studies on the marine flora in the archipelago has yielded further information on community structure allowing provisional definition of plant characterised biotopes. Although the Azores shares algal biotopes with the Atlantic coast of mainland Europe, intertidal and subtidal sea-shores in the archipelago mostly lack the functionally important 'leathery macrophyte' communities of fucoids and laminarians widespread in the north Atlantic (*Fucus spiralis* is sporadic in the Azores while *Laminaria ochroleuca* is known from only one location). Other large brown algae (*Cystoseira* spp., *Sargassum* spp.) characterise sheltered deep pool, lagoon or some subtidal biotopes. Intertidal biotopes often include a turf comprising a mixture of algal species (a feature more typical of other parts of Macronesia and Africa than northern Europe), or distinct vertically zoned communities of *Gelidium microdon*, *Corallina* spp., *Pterocladia capillacea*, *Asparagopsis armata*,

and *Codium adhaerens*. On Faial Island a compact *Corallina* turf biotope extends to deep subtidal levels, while on Flores Island the foliose *Zonaria tournefortii* forms a distinct biotope (a feature also of Madeira and the Mediterranean). On São Miguel Island *Zonaria*, *Halopteris*, *Dictyota* and *Sphaerococcus* define subtidal communities to 30m depth. The biotopes outlined here will contribute an important southern element to a proposed Europe-wide classification.

## FEMALE CHOICE AND SPECIATION IN THE MACARONESIAN *CENTROLABRUS* (TELEOSTEI: LABRIDAE)

CEPEDA, H.; AZEVEDO, J.M.N.; HENRIQUE, M.

Departamento de Biologia, Universidade dos Açores, R. Mãe de Deus, 9500 Ponta Delgada, Portugal

Results of an ongoing investigation on the reproductive biology of *Centrolabrus caeruleus* Azevedo, 1999 are presented. Seasonal variation of GSI and underwater observations indicates that reproduction occurs mainly between March and May, when water temperature is lowest. Like most demersal spawning wrasses, this species is probably gonochoric. There is a marked sexual dichromatism. Small mature males and females have a similar (initial) colouration: they are brown with a dark chequered pattern and a black spot on the centre of the caudal peduncle. Larger males are deep blue with a similar, but faded, chequered pattern (terminal phase coloration). These males build elaborated algal nests in rock crevices. Females approaching the nest are chased by the nesting male and eventually, after a courtship ritual which includes circular chases, lay their eggs on the nest. This courtship ritual can involve several females at the same time. It is probable that mature but non-nesting males should have alternative reproductive strategies, such as sneaking, but these have yet to be documented. *C. caeruleus* is considered to be an endemic Azorean taxon, evolving by allopatric speciation from *C. trutta* (or from a common ancestor) following a post-glaciation colonization. Preliminary observations on this latter species showed a very similar reproductive biology. The most conspicuous difference between these species is the male nuptial coloration, which is bright green in *C. trutta*. Male chromatic display and female choice are proposed as the main selecting force driving this speciation process.