The reproductive biology of the isopod *Excirolana braziliensis* in upwelling areas off northern Chile

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Introduction

The pan-American isopod *Excirolana braziliensis* (Isopoda: Cirolanidae) numerically dominates the macrofauna of tropical, subtropical and temperate Pacific and Atlantic sandy beaches [1]. The present study evaluates if upwelling conditions in northern Chile give rise to deviations from large-scale patterns of the reproductive biology reported for this species [2].

Material & Methods

Samples were taken at Chipana and Hornitos, between June 2005 and May 2006. Three replicated sediment samples (0.16 m^2) were taken along an across-shore transect every four meters using an open ended push-corer. Retained *E. braziliensis* (1mm mesh) were counted, measured and classified as juveniles (< 4mm), adult male, adult ovigerous and non-ovigerous female (Fig. 1). Duration of breeding and recruitment season, maximum sizes of ovigerous females and juveniles and female : male ratio were estimated and compared with those reported in the literature for other locations (Fig. 2) [2].

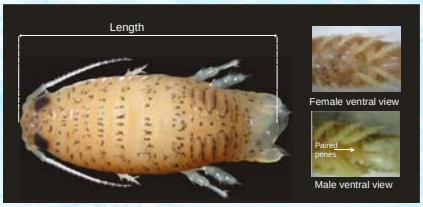

Fig. 1: *Excirolana braziliensis*. Length from the cephalon to the end of the telson and sexual differences between males and females are indicated.

Fig. 2: Study area (green and yellow) and geographic locations at the Pacific (filled circles) and Atlantic coast (empty circles) from literature [2].

Results and Discussion

No consistent differences were observed in the reproductive parameters of *E. braziliensis* between locations at the Pacific coast (i.e. upwelling zones) and Atlantic coast. Minimal size of juveniles was the only parameter lying outside the expected latitudinal pattern; juveniles from the Pacific coast are larger than their counterparts in the Atlantic (Fig. 3). The similarity of strategies at comparable latitudes for populations inhabiting both oceans suggests a comparable efficiency in the rates of conversion of food into somatic tissue. Beach morphodynamics could explain the observed local differences in reproductive parameters.

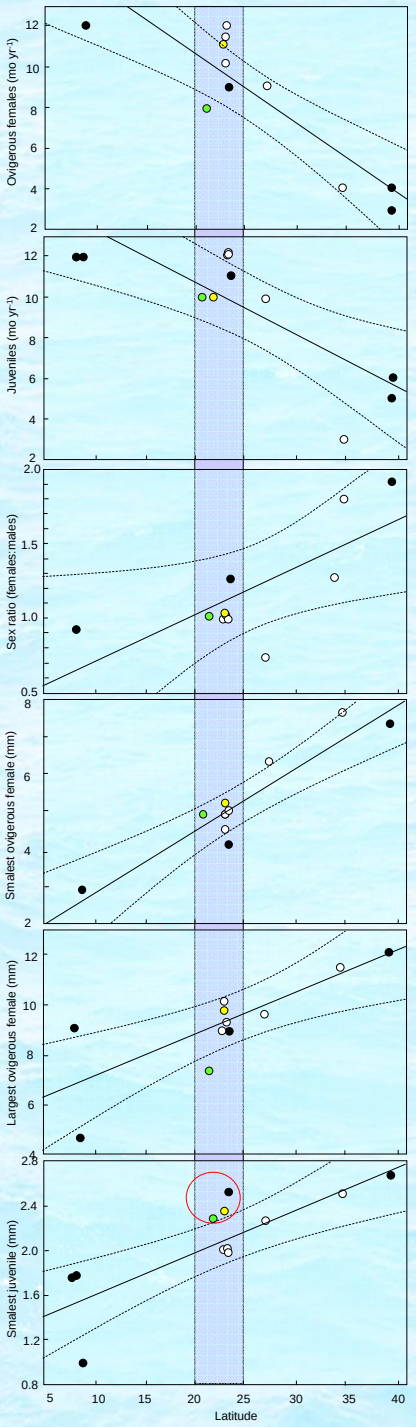

Fig. 3: Regression line (±95% confidence interval) between latitude and a) annual occurrence of ovigerous females; b) annual occurrence of juveniles, c) sex ratio, d-e) extreme length of ovigerous females; f) maximal length of juveniles for the study area (green and yellow), Atlantic (open circles) and Pacific (filled circles) beaches [2].

Acknowlegement

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References

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[2] Cardoso, R.S. & Defeo, O. 2003. Geographical patterns in reproductive biology of the Pan-American sandy beach isopod *Excirolana braziliensis*. Marine Biology 143:573-581

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