



Marine lobsters off Mozambique (Indian Ocean)

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Introduction

This work presents the preliminary results of two groups of decapods that will be part of the Ph.D Project “*Study of deep-sea decapod crustaceans communities in waters off Mozambique. Comparative with others African communities*”. In this study, the results obtained in the revision of the marine lobsters (Astacidea and Achelata infraorders) are presented, as well as the distribution of the main identified species in the study area. This revision has been performed from a morphological and genetic point of view. These two infraorders, known as marine lobsters, are composed of species with important commercial value, some of them being target species of certain national and international crustacean fisheries that develop in waters of Mozambique, Madagascar and/or South Africa, others being bycatch species with high local value for national consumption and others are potentially exploitable (Groeneveld and Everett, 2015). Because traditionally the studies carried out in this area about marine lobsters have focused on the evaluation of fishery resources (Groeneveld and Everett, 2015), there is a significant lack of information about others ecological aspects. Although recently some inventories have been published about decapods from waters of the south-east Africa (Poupin, 2016; Emmerson, 2016 a,b,c), there is still no knowledge about aspects such as the composition, abundance and distribution of the communities that make up the decapods in those waters, and specifically, in relation with the marine lobsters.

Materials and Methods

The specimens studied for this work belong to the Collection of Decapod and Stomatopod Crustaceans of the Oceanographic Centre of Cadiz (CCDE-IEO). Specifically, they come from three oceanographic surveys carried out in waters of Mozambique by the IEO in 2007, 2008 and 2009. The methodology used to capture the specimens was a trawling gear (“baka” type). The study area corresponded to the platform and slope off Mozambique, at depths from 100 to 700 meters. Once on board, the specimens were first identified, photographed and preserved in ethanol and later transferred to the IEO in Cadiz, where a more exhaustive identification was carried out. Molecular analyses were performed based on fragments of two mitochondrial genes, the Cytochrome Oxidase subunit I (COI) and the 16S rRNA. The extraction of the total genomic DNA has been carried out from muscle tissue, specifically from the pereopods (or pleopods in the case of females). Distribution areas and depth ranges of the identified species were analyzed from the survey georeferenced catch data.



Figure 1: Study area

Results

Astacidea is represented in this study by 2 species belonged to the Nephropidae family: the African lobster *Metanephrops mozambicus* and the Indian Ocean lobsterette *Nephropsis stewarti*, both distributed throughout the entire sampling area and at depth beyond the shelf (up to 250 m). About 3000 individuals were captured in the three surveys, and two specimens of each species are conserved at the CCDE-IEOCD. Two families represented the Achelata infraorder, the slipper lobsters Scyllaridae and the spiny lobsters Palinuridae. Around 3000 slipper lobsters belonged to 3 species, *Scammarctus batei batei*, *Scyllarides elisabethae* and *Ibacus novemdentatus* were captured in the three surveys. All of them were captured from 100 to 300 m, only *I. novemdentatus* till 500 m, and they were presented in all the prospected area. One specimen of each species is conserved in the CCDE-IEOCD. Near 2000 individuals of the Palinuridae family were collected, the majority belonging to the species *Palinurus delagoae*. Other two species were identified, *Puerulus angulatus* and *Linuparus somniosus*. Only 2 specimens of *L. somniosus* were captured (in 2007 and 2008). *P. delagoae* had a wide bathymetric and geographical range. *P. angulatus* were present from Mafamede Island to the north of Maputo, near Xai-Xai. The barcoding (16S and COI) of 5 species of these were obtained. In this work, the results obtained for *N. stewarti*, *S. batei batei* and *P. angulatus* are presented and discussed.

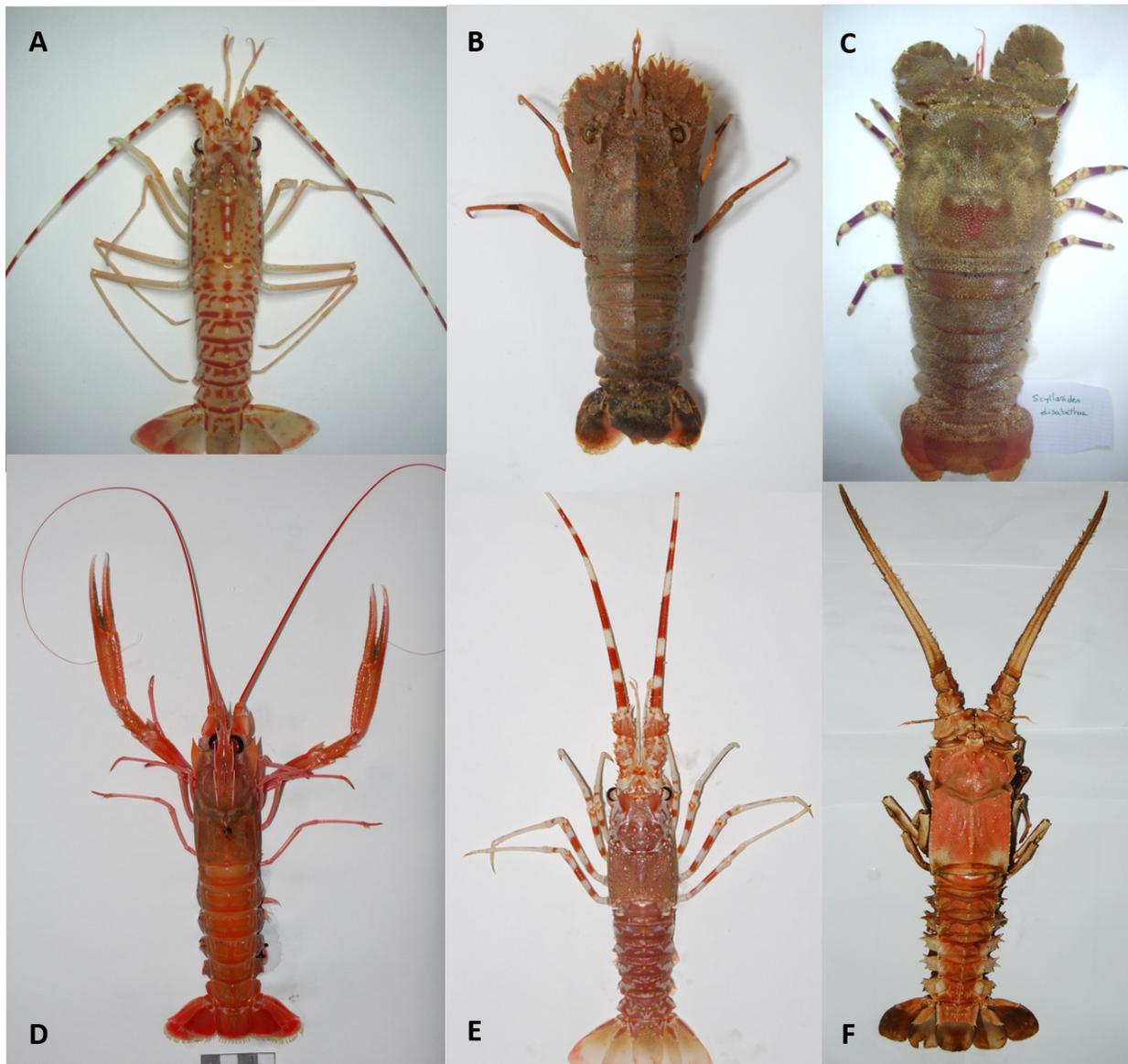


Figure 2: Specimens photographed on board (A: *Puerulus angulatus*; B: *Scammarctus batei batei*; C: *Scyllarides elisabethae*; D: *Metanephrops mozambicus*; E: *Palinurus delagoae* and F: *Linuparus somniosus*)

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