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Palinustus mossambicus Barnard, 1926 (Crustacea: Decapoda: Achelata: Palinuridae); morphology of the puerulus stage

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Abstract

Two adults of the rare buffalo blunthorn spiny lobster, *Palinustus mossambicus* Barnard, 1926 and a puerulus specimen were found while curating material from the first R/V "*Dr. Fridtjof Nansen*" expedition to the Western Indian Ocean. Furthermore, another puerulus-stage specimen of this spiny lobster species was found caught near Zanzibar, Tanzania. The morphological characters of the puerulus specimens indicated that they belonged to *P. mossambicus*, although the puerulus stage is somewhat dorsoventrally flattened, and has proportionally large pleopods. This constitutes the first puerulus description for the spiny lobsters of the genus *Palinustus*.

Key words: Crustacea, Decapoda, Achelata, *Palinustus*, puerulus

Introduction

The Achelata lobsters, assigned to the families Palinuridae Latreille, 1802, Scyllaridae Latreille, 1825, and Synaxidae Bate, 1881, are decapod crustaceans characterized by the presence of the phyllosoma, a larval phase specially adapted for long time dispersal (Scholtz and Richter, 1995). Several Achelata species of commercial importance are identified along the eastern Africa coast (Fischer and Bianchi, 1984). The Palinuridae include 18 Western Indian Ocean representatives, ranging in maximum body length from about 10 to 40 cm. Most are shallow-water forms, rarely extending beyond 100 m in depth. They live on coral reefs, rocky areas or other habitats that offer protection, although some genera like *Palinustus*, *Justitia*, *Linuparus* and *Puerulus* are to be found mainly in deeper water, down to over 400 m (Holthuis, 1991). The lobster fishery is important locally in some areas of East Africa, especially in tourist hotels and restaurants. Commonly targeted species in Tanzania are *Panulirus longipes*, *P. versicolor*, *P. homarus*, *P. penicillatus*, and *P. ornatus* (Mutagyera, 1975). The Scyllaridae species *Thenus unimaculatus* (as *Thenus orientalis*), *Parribacus antarcticus* and *Scyllarides squamosus* are also found in the area, though in small numbers and of least or no commercial value (Kyomo, 1999).

After spending several months drifting in oceanic waters to complete its development, the last phyllosoma instar of palinurid lobsters metamorphoses into another planktonic stage called the puerulus (Booth and Phillips, 1994). The puerulus is the settlement or transitional stage from the planktonic to a benthic existence (Herrnkind *et al.*, 1994; Lipcius and Eggleston, 2000). Following settlement, the puerulus finally metamorphoses into the adult-like juvenile (Cooke and McDonald, 1981; Báez and Ruiz, 2000). Even though its importance as a key stage for the recruitment to parental populations, the puerulus stage still remains unknown for several stridentes genera namely *Palinustus, Linuparus, Justitia, Puerulus* and *Palibythus*. The

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