Connectivity of mangrove crab (*Scylla serrata*) populations in the Western Indian Ocean (WIO)

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INTRODUCTION

Mangroves provide habitat for *Scylla serrata*, a mangrove crab. But oceanographic factors and life history strategies of the species drive evolution in the ocean (Da Silva *et al.* 2011; Vogler *et al.* 2012). Therefore, the evolution of *Scylla serrata* is influenced by the physical and chemical properties of the ocean. As an important commercial commodity, population genetics studies conducted on the species will provide detailed information about its connectivity in the Western Indian Ocean (WIO).

Aim: to assess the extent of gene flow and population structure of the species

www.alibaba.com/product-free/108778017/mud_crab_scylla_serrata_.html

Scylla serrata is a portunid crab. Adult male and female crabs live in mangroves. It is carnivorus but also feeds on plant materials.

After mating, females migrate offshore to spawn; its breeding season is the months September and October (Hill, 1994).

The larvae spends about 3 to 4weeks offshore. It can reach about 600km offshore.

The immotile larvae is made motile by the oceanic currents. The oceanic currents allow mixing of larvae from different populations offshore. The larvae re-enter the mangrove as adults.

Fig. 1. Life history strategy of *Scylla serrata*

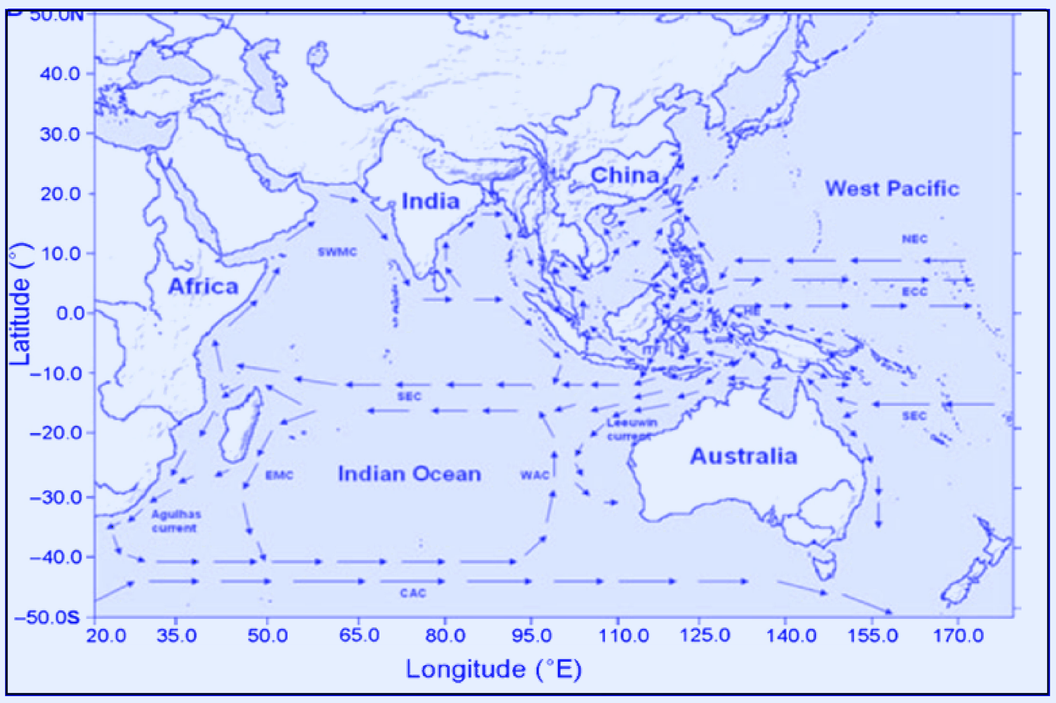

Fig. 2. Major currents in the Western Indian Ocean (He *et al.* 2011)

MATERIALS AND METHODS

Samples collected from the coasts of Kenya, Tanzania, South Africa, and Madagascar were preserved in a 96% alcohol. In all, a total of 165 samples were collected. A small piece of the propodus was taken as tissue sample from each crab. Chelex DNA extraction was performed on the samples to obtain the DNA extracts. PCR will be performed using the MJ research PTC 200 Peltier thermal cycler. Five microsatellites, identified and characterized by Gopurenko *et al.* 2002, will be used as genetic marker.

Table 1. Characteristics of the microsatellite markers for *Scylla serrata*, forward (F) and reverse (R) primer sequences (Gopurenko *et al*. 2002)

Locus	Primer sequences 5´-3´	Repeat motif	*Ta*	No. of alleles	Size range (bp)
Ss-101 (AF 508135)	F: HEX-ATTCAACACGCGCGCGTACGC R: GCAGTTTACCATATGCTTGGG	(AG)36	55	26	141-201
Ss-103 (AF 508134)	F: HEX-GTTATATAAGAAATAATGTCC R: GTTCCTGCTATGTAATCCCG	(GA)36	45	20	105-169
Ss-112 (AF 508133)	F: TCATTCTCAGTACCTTTAATC R: HEX-GTTATCGTCTGCTGGGACC	(GA)37	45	23	111-165
Ss-403 (AF 508132)	F: GACAAAGGAGCACTCAGCCAC R: HEX-GAAGGATTCACTTGTCCACGC	(CT)24	55	19	132-196
Ss-513 (AF 508131)	F: HEX-GGCCGGGTGAGGGATGAGCC R: CGTTTCCGCAACCAACAGATG	(CT)14	55	5	146-154

Annealing temperature (*Ta*) in °C

EXPECTED RESULT(S)

It is expected that the microsatellite will give a higher resolution (i.e. show population break in populations of *Scylla serrata* in the WIO) or confirm previous results by Fratini *et al*. (2010) and Mascaux *et al*. (2012).

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