

Short communication

On the recovery of a tagged sacred chank, *Xancus pyrum* var. *acuta* Hornell, 1916 (Gastropoda: Turbinellidae) after Six Years

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Abstract

A tagged chank, *Xancus pyrum* var. *acuta* was recovered in the Gulf of Mannar off Chinnapalam, six years after release for the first time. It was obtained at 9.5m depth at Chinnapalam in the Gulf of Mannar whereas it was released at 7.0m depth off Kundukal point, Pamban, Gulf of Mannar indicating its restricted movement within the ecosystem. The chank was found to have grown to 30mm in length, 16.8mm in breadth and 305g in weight during the 6 years. The monthly growth rates estimated in terms of shell length ($0.41 \text{ mm month}^{-1}$), maximum shell diameter ($0.23 \text{ mm month}^{-1}$) and total weight ($4.17 \text{ g month}^{-1}$) indicates slow growth. The chank traveled a distance of 11.02 km within 6 years confirming its slow migration.

Introduction

The sacred chank or the Indian conch, *Xancus pyrum* var. *acuta*, is abundant in the shallow water of the Gulf of Mannar between India and Srilanka. It has played an important role in the daily life of the Indian people for thousands of years. Exploitation of chanks in the Gulf of Mannar is known from time immemorial. Tagging methods have been useful to several species of gastropods, largely because of the existence of an external shell on which marks or tags can be attached with little or no adverse effect to the animals (Jones, 1979; Gosselin, 1993). The mark/recapture experiments with gastropods have been used in various types of studies, to assess migration (Eversole and Anderson 1988; Himmelman 1988), and growth or growth rate (Hancock 1963; Eversole and Anderson 1988; Vasconcelos et al. 2006).). During 1996 – 2000, mark/recapture experiments were carried out in the Gulf of Mannar to test the feasibility of tagging of chanks (CMFRI annual report). The present work aimed to collect preliminary information about the survival, the natural growth and the migration of this species by mark/recovery experiments in the natural condition.

Materials and Methods

Live chanks were collected from the wild and maintained in one-ton FRP tank with flow-through water exchange system and with sand substratum. Chanks were fed with wedge clams (*Donax spp*) and polychaetes. After 2 – 3 weeks of acclimatization, the chanks were tagged using 'Letro'9mm adhesive labels tape with 'Araldite' after removing about 25×10 mm of periostracum. The maximum shell diameter, length and weight of the chanks were carefully measured to the nearest 0.01mm and nearest gram using Vernier calipers and digital balance. A week prior to tagging with adhesive label tape, wide publicity was given at all trawl landing centers along the Gulf of Mannar. An incentive reward of Rs. 40/chank was announced to encourage reporting of recovery.

Results

A tagged chank No: MC/260 was released off Kundukal Point in the Gulf of Mannar on 18 December 2000 at a depth of 7.0m. The chank was recaptured off Chinnapalam from the Gulf of Mannar after six years on 22 January 2007 (Fig. 1). The details of morphometric measurements of the tagged and recaptured *X.pyrum var. acuta* are given in Table 1.



Fig. 1. Map showing the place of release and recovery of sacred chank.

Table 1. Particulars of tagged and recovered *X.pyrum var. acuta* from the Gulf of Mannar.

Date of release	Date of recovery	Total length at release (mm)	Total length at recovery (mm)	Total MSD* at release (mm)	Total MSD* at recovery (mm)	Total weight at release (g)	Total weight at recovery (g)	Sea area where released	Sea area where captured
18.12.2000	22.1.2007	113.5	143.48	57.6	74.44	165	470	Kundugal point, GOM*	Off chinnapalam, GOM*

GOM* =Gulf of Mannar, MSD* = Maximum shell depth

Discussion

From the recaptured data it could be inferred that the chank could attain a monthly growth rate of 0.41mm in length, 0.23mm in MSD and 4.17g in weight. The chank migrated to a distance ranging from 9 – 11kms from the site of release (Fig. 1). The present growth rate of 0.23mm in MSD is almost similar to the observed growth rate of 0.29 mm in MSD reported earlier, based on the growth data from chank tagging studies (Sambandamurthy and Chacko, 1969) and vonBertalanffy growth parameters studies (Devaraj and Ravichandran, 1988). The growth increment of the present recaptured chank is also similar to the range of the growth increment of 33 recaptured chanks observed during 1996 – 2000 on the growth of chanks by tagging. (Lipton and Selvakku, 2001). But the present growth rate of recaptured chank is slow when compared to the growth rate of cultured chank observed in the laboratory (Lipton and Selvakku, 2000) as the laboratory reared chank expend little energy in searching for food. The tagged chank not only survived in the natural environment but also migrated within the coastal water of the Gulf of Mannar. The tagged chank traveled 11 km in a southern direction which indicates that these chanks do not migrate very much in their habitat. It is well known that the coastal water of the Gulf of Mannar with rich sea grass beds, is a favorable habitat for *Xancus pyrum var. acuta* and that might be the reason for the restricted mobility. The recovery of one chank after six years is not sufficient to confirm the patterns of migration.

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