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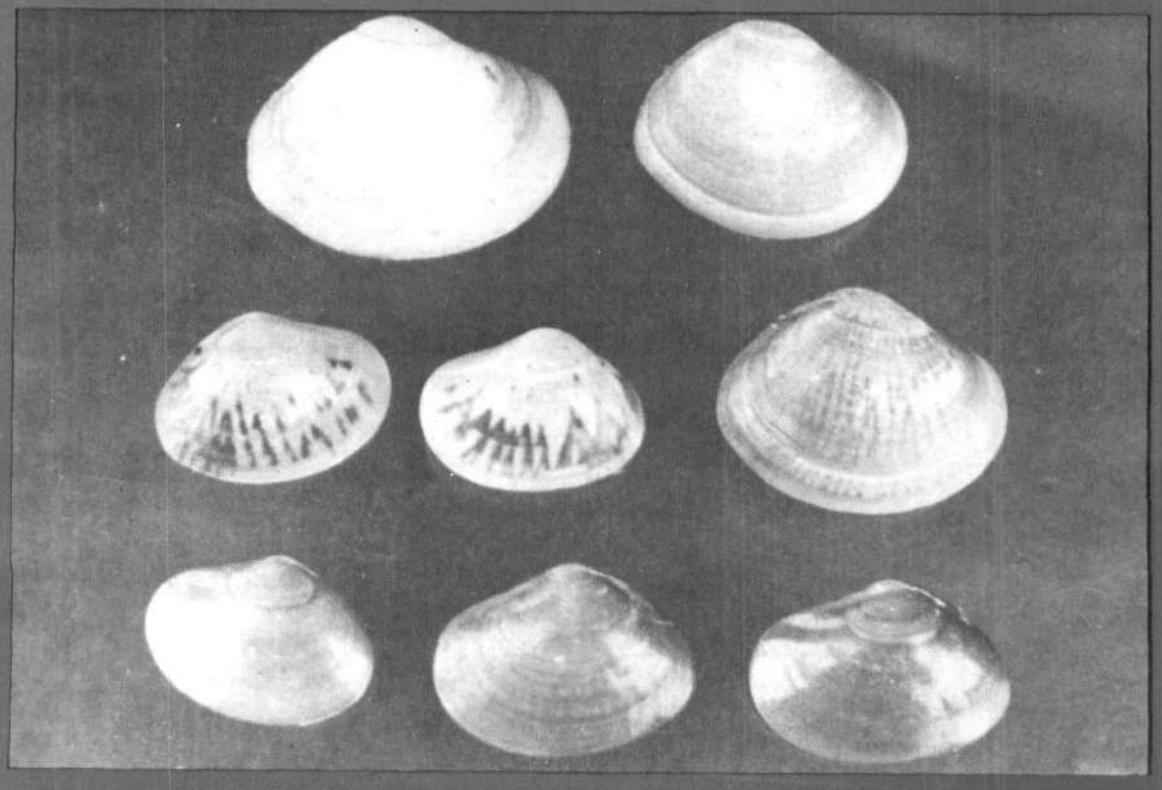

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RANCHING OF CLAMS IN THE ASHTAMUDI LAKE*

Introduction

It is well known that ranching of the hatchery-produced seed of commercially important finish and shellfish in the natural habitat or the other suitable areas would enhance their population. Certain aspects in the ecology and biology of the clams such as their restricted movements, feeding by filtering the naturally available plankton in the water and their occurrence in shallow coastal waters which renders monitoring easy, make the clams highly suitable for ranching.

Clam resources, exploitation and utilisation

Among the exploited bivalve resources, clam occupy top position with an annual production of about 50,000 t. Kerala ranks first accounting for 72% of clam landings. Several species of clams contribute to the fisheries, the notable being *Villorita cyprinoides, Meretrix meretrix, M. casta, Katelysia opima, Paphia malabarica* and *Anadara granosa.* They are fished all along the Indian coasts in numerous estuaries and bays. Men, women and children collect the clams usually during low tide either by hand-picking or with the help of a hand-operated scoop net or dredge. They are a cheap source of animal protein for coastal people and play an important role in the rural economy. The shell is used in several lime-based industries.

A beginning was made in the export of frozen clam meat to Japan in 1981 and since then the market has expanded and now the clam products are being exported to several countries like U. S. A., Australia, Kuwait, Belgium, France, Italy and U. K. In 1990 the exports amounted to 520.7 t valued at Rs. 1.01 crores. Among the clams, *P. malabarica* followed by *K. opima* are much sought after in the export trade. A recent addition to the exports is the individually quick frozen meat of *M. casta* and *V. cyprinoides.*

Development of hatchery technology

The Central Marine Fisheries Research Institute at its Tuticorin Research Centre has initiated work in 1987 to develop hatchery technology for the production of clam seed. A break through was achieved and hatchery technology has been developed for the production of the seed of *M. casta, A. granosa* and *P. malabarica.* The methods are being standardised by scaling-up the operations.

Selection of species for ranching

In view of its ready acceptance and the high value it fetches, *P. malabarica* holds a prime place in the overseas markets. The meat is sold at Rs. 20 to Rs. 30/ kg depending upon the size, at the production centres to the processing plants. This species contributes to the bulk of clam export earnings and a 20 hactare bed in the Ashtamudi area is contributing significantly to the export earnings. In view of its importance in the export market, *P. malabarica* has been chosen as a candidate species for ranching.

Ranching of *P. malabarica* at Ashtamudi and Munambam

P. malabarica was spawned at the Tuticorin hatchery in September 1992, and after nursery rearing in the Tuticorin Bay the seed were transported to Ashtamudi and Munambam near Cochin.

In Ashtamudi near Delavapuram, a total of 64,000 seed of *P. Malabarica* measuring 12.4 mm average length were ranched on 18.2.1993 in 25 m^2 area in 1 m depth and the site was fenced with 3.0 mm netlon screen. On 19.3.93 they measured 20.4 mm and by 3.5.93 they grew to 30.3 mm. In the same area a total of 30,000 seed of *P. malabarica* measuring 4.9 mm length were reared in cages as their size was small for planting in the field. By 3.5.93 they attained 12.2 mm and were ranched in the same area. These seed were covered with 1 cm mesh synthetic net to protect them from predators.

At Munambam, *P. malabarica* occurs rarely and with a view to study whether a population of this species can be established by introduction, a consignment of 8,500 seed were ranched in 10 m^2 area on 19.2.93 in 0.5 m depth. The clam seed measured 12.4 mm and they were covered

* This article is based on the work carried out by K. A. Narasimham, D. Sivalingam, T. S. Velayudhan, V. Kripa, K. Jayapalan and M. Enose. The article was prepared and presented by K. A. Narasimham.

with 1 cm mesh synthetic net. By the end of April they attained 23.4 mm length.

Future work

A beginning has been made in ranching the seed of *P. malabarica* at two different places in Kerala. The seed production programme will be intensified and the ranching will be scaled-up in the coming years and studies will be taken up to assess the effect of ranching of seed on the population structure of clams in the study area.

Discussion

G. Luther: What is the shell-meat ratio in *Paphia malabarica*?

K. A. Narasimham: The meat is about 11-14% of the total weight (shell-on weight).

K. H. Mohamed: Why was *Paphia* selected for sea ranching experiments?

K. A. Narasimham: This is one clam which has got much demand in export market but the resource is limited.