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# CHANK FISHING OF KERALA WITH SPECIAL REFERENCE TO LONG LINE FISHERY\*

## Introduction

In India the important chank beds are located in the Gulf of Kutch and Trivandrum in the west coast and in Palk Bay and Gulf of Mannar in the east coast. In recent years chank landings have been reported from Ratnagiri, Cochin, Portonovo and Orissa coasts also. Chank fishery along a stretch of 65 km of Trivandrum coast is known from very early times. The heraldic designs of royal houses as well as the emblems of both Travancore and Cochin States had the sinistral chank as a prominent motif. These states also used chank designs on coins and early stamps, thus giving a high status for chank in Kerala tradition.

The sacred chank *Xancus pyrum* with five distinct sub-species is widely distributed along Indian coast. Skin diving is the main method of chank fishing in India. Occasional catches from gill nets and trawl

nets have also been reported. At Vizhinjam near Trivandrum fishing of chanks by employing longlines is being practised. This being a unique method for chank fishing a detailed account of this method is given here along with other fishing methods. The important chank landing centres and various methods of fishing are shown in Figure 1.

## Methods of Fishing

### i) Skin diving

Skin diving for chank is an age old practice carried out in the southern part of the coast of Kerala. Active divers varying in numbers from 20 to 30 drawn from Poovar, Vizhinjam, Kovalam, Valiathura and Poonthura commence diving operations from January of each year, when the sea is calm and clear. They reach the chank beds around these areas in catamarans during early morning and dive at depths ranging from 10 to 20 m. using locally made mask for good vision under water. Two divers going for fishing in each catamaran dive in turn to collect chanks. If the water is clear with very little underwater drift, each diver can collect an average of 10 chanks per day. The important chank landing centres for chank diving along Kerala Coast are Poovar, Mulloor, Vizhinjam, Kovalam, Valiathura, Poonthura, Sangumugham, Anchengo, Varkala and Paravoor. Mostly the divers from Vizhinjam and surrounding areas (Muslim divers) migrate for chank diving to other nearby chank landing centres during fishing season (January to April). During 1978-79 and 1979-80 period most of the chank divers from Kerala Coast migrated to Tuticorin area during chank fishing season as the price offered for chank fished was high at Tuticorin.

### ii) Gill net and trawl net catches

Chanks get entangled in the meshes of gill net, mostly in bottom set gill nets. Though these nets are not operated exclusively for chank, stray numbers are caught throughout the year, especially from Poovar to Quilon. The length of the shell caught in gill nets varies from 70 to 200 mm. Occasionally catches are also noticed in drag nets from these areas. Considerable number of chanks are collected from trawl

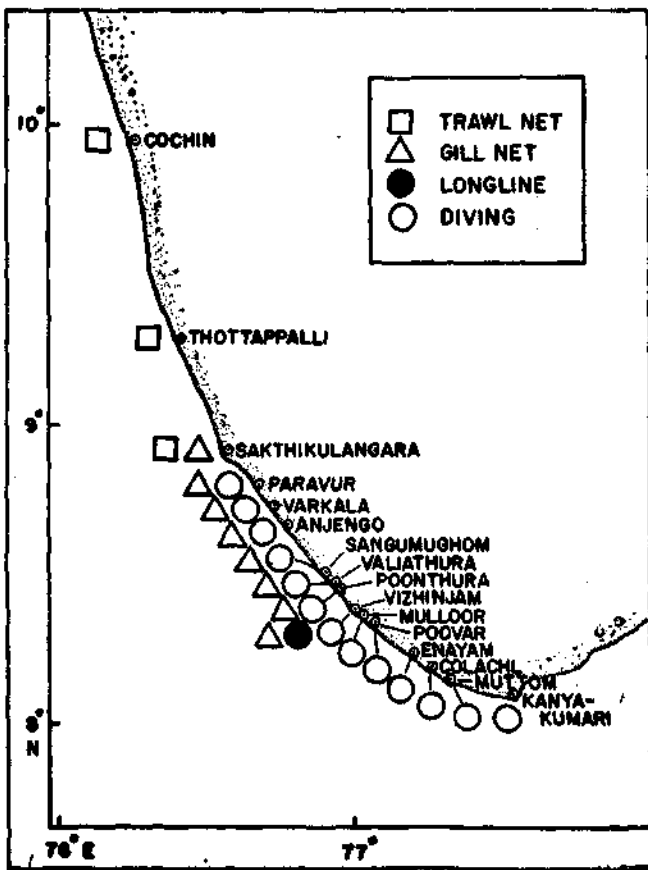


Fig. 1. Map showing the various methods of chank fishing at different centres from Cape Comorin to Cochin.

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Fig. 2. Longline hooks arranged in between reapers.

catches every year from Sakthikulangara to Cochin area. The main landing centres are Sakthikulangara, Thottappally and Cochin. During July-August 1976, shrimp trawlers operated off Cochin are reported to have netted an estimated 12,000 sacred chank, *Xancus pyrum* var. *acuta* from a depth of 70 m. (CMFRI Newsletter, 1977-78). The shells ranged from 85 to 227 mm. in length and 37-105 mm in breadth. These chanks were sold for Rs. 3 to Rs. 13 per shell. The peak landing season observed at Sakthikulangara, an important trawl landing centre is from August to December. Regular observations and enquiry with shell merchants at Sakthikulangara reveal that good quantity of shells are landed every year in shrimp trawlers from a depth ranging from 40 to 50 fathoms. The length of shells caught from this area ranges from 100 to 220 mm in length and 71-100 mm in breadth. Chanks are caught in gill nets and trawl nets throughout the year in Kerala Coast, the peak period for trawl landing observed being July to December.

### iii) Longline fishing at Vizhinjam

The traditional catamarans and a modified version of longline (Ayiramthundi) are used for the specific method of chank fishing. The main line of the unit is of twisted nylon rope (10-15 mm thick) ranging from 250 to 500 m. long. The gangions, or hook thread is 1 m. long attached to the main line at an interval of half m. distance. Gangion thread is plastic monofilament known locally as 'kangoose'. To the free end of each gangion one hook is attached firmly and the hook number is 6 or 8. The number of hooks for each unit varies from 500 to 1000 according to the length of the main line. Other essential components of the unit are single large plastic/aluminium float, number

of sinkers and two granite anchors weighing 8-10 kg. The length of anchor rope tied to main line varies according to the length of gangion thread and the length of rope attached to the float from the main line depends on the depth at which the unit is operated, usually 20-30 m.

Longline operation starts at Vizhinjam by December and lasts till March with peak landings during December to January period, when water is clear. Before starting the fishing operation every day, the hooks are arranged in between bamboo splits or two wooden reapers to avoid twisting and entangling of gangion (Fig. 2). The fishermen during peak season leave the shore by early morning, reach the bed within an hour and start operating the unit. The end with float and anchor is laid out first, keeping in mind, the depth of the area and as the catamaran is towed forward, the main line with gangion, hooks and sinkers are released one after the other till all hooks are released in the water. The anchor in the opposite end is now fixed and a long rope from main line is tied to the catamaran. As the hooks are also dragged along with the underwater drift over the chank beds, the foot of the chank gets hooked firmly (Fig.3). If the catch is good, the oper-



Fig. 3. Hooks attached to foot of chank.

ation is repeated twice or thrice a day in the same area; and returning in the evening. The chanks caught are removed by cutting gangion thread (Figs. 4 & 5). Longline operation for chank commenced in this area in 1976. Observations have shown that 30-60 numbers of chanks with an average of 45 numbers are caught in a single unit during a day in the peak season. Units operated varies from 15 to 30 numbers and total number of active fishing days varies from 20 to 25 days. The maximum number of chanks landed was 12,000 numbers



Fig. 7. *Xancus pyrum* var. *globosa*



Fig. 4 & 5. Chanks removed from the longline

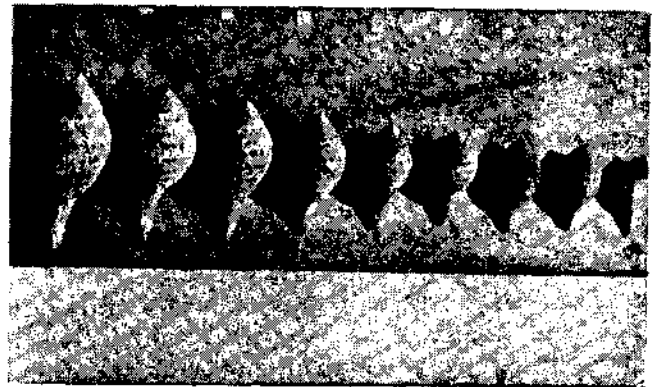


Fig. 8. 9 Commercial grades of chanks

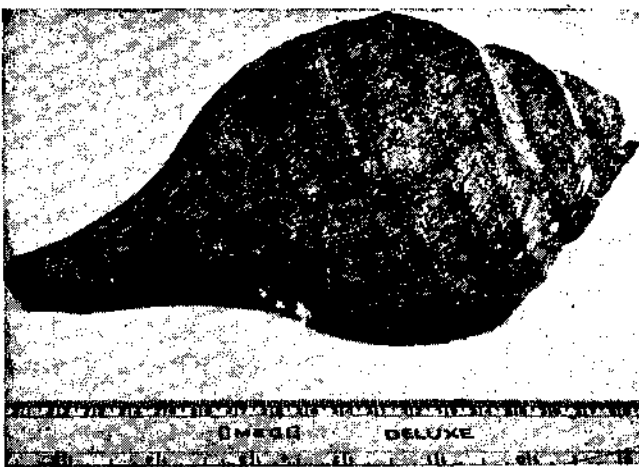


Fig. 6. *Xancus pyrum* var. *acuta*



Fig. 9. Wormed chanks

during 1976-77 period forming 80% of the total catch. The size of chank ranged from 80 to 235 mm. in length. In 1977-78, 70% (710 numbers) in 1978-79, 86% (5395 numbers) and in 1979-80, 73% (1273 numbers) were landed in longline and the rest by diving and gill nets.

#### Varieties of chank fished from Kerala Coast

Examination of specimens collected from Trivandrum Coast reveals the occurrence of at least three of the five sub-species namely *X. pyrum* var. *globosa*, *X. pyrum* var. *comorinensis* and *X. pyrum* var. *acuta*. Of these the bulk of the catches belong to *X. Pyrum* var. *acuta*, which exhibits narrow and moderately elongate body with a well balanced spire of the whorls, the profile of which is more or less convex (Fig. 6). Majority of the shells fished from the shallow and deeper waters beyond Vizhinjam belong to var. *acuta*. A few which exhibit inflated body portion with thick shell and red tinge in the labrum and labial region, particularly the inner lip, show similarity to the descriptions of Hornell's var. *globosa*. Some shells collected from the bottom set gill nets operated near Vizhinjam possess these characters (Fig. 7). A few shells landed by skin diving from this region far south of Trivandrum appears to show similarity of characters of *X. pyrum* var. *comorinensis*.

#### Processing and marketing of chanks

The right of collection of chanks along Kerala Coast is leased out to Co-operative Societies or private parties every year by Government of Kerala. According to the term of lease the lessee can collect chanks from the territorial waters of Kerala from Kollenkodde to Manjeswar using nets, motor boats, catamarans or by using ordinary fishing tackles. Those who clandestinely indulge in chank fishing will be proceeded against the Travancore Cochin Fisheries Act, 1950.

The chanks are collected by the shell merchants who have taken lease and are dumped in godowns for allowing the flesh to get decayed. The shells are covered with saw dust to avoid rotting. The main chank godowns are located at Vizhinjam, Chakkai near Trivandrum, Sakthikulangara and Cochin. Once the flesh is decayed the shells are graded into 9 commercial grades based on its length and girth (Fig. 8) and packed in gunny bags for sending to shell dealers at Calcutta. No chank processing industry exists now in Kerala.

There is good demand for chank flesh as an item of food for some section of the people and the operculum is in great demand for making incense stick. Bangles sawn from chank are carved and polished before marketing. There is good market for chank bangles in Bengal. Thus chank fishery has got good scope for improvement in Kerala Coast.

Analysis of data on landings of chanks from 1964-1980 (Table 1) shows that there had been steady increase in landings in recent years, the average annual landings being 22,000 as against 10,000 prior to 1960. The lessee purchased the chanks from fishermen through authorised agents at Rs. 1.00 to Rs. 5.00 depending on the size and quality. A good diver earns anywhere between Rs. 30/- to 40/- per day during season. The longline fishing fetches Rs. 70/- to 90/- per day during peak season.

**Table 1.** The total landing and amount received by Govt. of Kerala from 1964-65 to 1979-80.\*

Year	No. of chanks	Royalty collected by Govt.	
		Rs.	Ps.
1964-65	8296	10032.50	
1965-66	11918	6666.66	
1966-67	11500	9001.00	
1967-68	9997	13003.00	
1968-69	14538	8167.86	
1969-70	17814	17201.77	
1970-71	34025	20001.00	
1971-72	41179	22001.00	
1972-73	27850	23000.00	
1973-74	8339**	24000.00	
1974-75	17004	18274.00	
1975-76	4750**	26100.00	
1976-77	15075	26100.00	
1977-78	Not leased out	.....	
1978-79	35117	12345.67	
1979-80	44670	27000.00	

\* Details obtained from Administrative Report of the Department of Fisheries, Kerala.

\*\* Data incomplete.

#### Diseases and destruction

Among the exploited chanks from Kerala Coast, 5-10 per cent are found to be wormed by *Lithophaga* spp. (bivalve) and by *Cliona* spp. (sponges) (Fig. 9). These

wormed shells are discarded while grading for marketing. Study of wormed shells collected from various centres reveals that the bivalves mostly damage thick part of the shell especially the spire, central portion of the body and anterior part, whereas sponges do not show any preference to the area of attack. The magnitude of destruction varies considerably and shells collected from shallow waters by diving and from gill nets show more percentage of damage than that from trawl catches and longline catches. About 5-10 per cent of chanks landed by trawl catches and longline are undersized ranging from 50 to 70 mm.

### Prospects

The chank fishery in the west coast of India is quite insignificant compared to the east coast. But in recent years a spurt in the landings has been witnessed with catches being brought in by different fishing tackles. Once believed to be restricted to Trivandrum Coast only, the landings from places like Quilon and Cochin in recent times reveal potentialities of these areas for greater exploitation by following suitable methods. Though conventional diving was

considered as the most important method of fishing, the major component of chanks landed in Kerala at present is constituted by trawl and longline catches.

In this context it is worthwhile to mention that the longline fishing method shows great potential for fishing out chanks from deeper waters which remained untapped due to limitations in skin diving exploitation. The introduction of 'SCUBA' diving might help to exploit the beds lying within 15 fathoms limit. Trawling and longline can be successfully employed in deeper waters.

A proper assessment of the chank resources of the different areas is very essential. From the available data, it would appear that there is ample scope for large scale development of this fishery. Longline fishing can also be done at other centres along the Kerala Coast for increased production of chanks, as being observed at Vizhinjam in recent years. With a proper survey of the chank resources of our waters and increase in the tempo of the exploitation by adopting various fishing methods there is every possibility of the chank industry expanding further.

