

CMFRI

bulletin 42

Part One

AUGUST 1988



NATIONAL SEMINAR ON SHELLFISH RESOURCES AND FARMING

TUTICORIN

19-21 January, 1987

Session - I

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
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17. CHANK FISHERY OF PORTONOVO COAST

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ABSTRACT

Chank fishery of Portonovo relies mainly on catches from mechanised trawlers and to a limited extent catches from gillnets. A total of 56,539 chanks were landed during May 1976 to December 1977. May-July were observed to be more productive than others in a year. *Xancus pyrum* var. *obtusa*, commonly known as "Patti" variety was landed at this centre. Marketing was dealt by middlemen, since there was no government procurement. Chanks ranging in length from 51 mm to 270 mm and in diameter from 20 mm to 129 mm were common. Landings of undersized chanks ranged from 1 to 14% while worm infested chanks formed 0 to 24% of the catches in various months. For establishing a regular fishery for chanks it is suggested to carry out a survey of beds off Portonovo and also to introduce regular diving with modern diving equipments.

INTRODUCTION

Of all the commercially important molluscs of India, the sacred chank, *Xancus pyrum* Linnaeus is the most exploited. The fishery for the chank has been known since time immemorial from the south east coast of India. Extensive details about the distribution, exploitation, utilization and biological aspects of the sacred chank in Indian and Ceylon waters are available in the works of Hornell (1914, 1915 and 1916), Gokhale (1960), Mahadevan and Nayar (1966), Nayar and Mahadevan (1973 and 1974), Jonklass (1973) and Appukuttan (1980). Pillai and Devadoss (1974) reported on the occurrence of *X. pyrum* in large quantities, off Portonovo. Since no detailed information on the catch, size composition and distribution, worm infestation on the chanks and economics of fishery from this centre was available, a study was undertaken in May 1976 and the results of the observations are presented in this account.

MATERIAL AND METHODS

The data presented in this account is for the period from May 1976 to December 1977. Chanks landed by trawls and bottom set gill nets were sampled once a week. The quantity landed for the day was obtained from fishermen, who collect the chanks from the boats and sell them to merchants.

Length (measured from the tip of the shell to the drawn siphonal canal) and maximum width (measured by sharp edge) were measured by sharp edge measuring the chanks. Value of length and width were recorded by merchants.

OBSERVATIONS

Catch

A total of 56,593 chanks were landed during 20 months of observation. All of them were landed by nets only and no diving operation was done at this centre during the entire period of observation. Major catches came from trawl nets operated from mechanised boats and a limited quantity from the trawlers at Portonovo operate normally in the south east direction between Portonovo and Pazhaiyarai at 10 to 25m depth. Normally chanks were available only in the shallow waters operated close to the shore, known as "Karai madi" locally (shore net), at a depth of 10 to 15m. The bottom set gill nets operated only in depths varying from 5 to 10m. Therefore, it can be inferred that the distribution of the chanks at Portonovo area was more between 6 to 15m depth.

Month-wise landings of *X. pyrum* with the number of trawlers operated during the period of observation is given in Table 1. During 1976, the landings of chanks was observed to be high in July. In May, August and September the landings were moderate. In October, due to the stoppage of operation of mechanized boats, on the advent of monsoon, the catch dwindled to 725 and there was no catch in subsequent month. In 1977 also, the catch showed similar trend. The above observation indicates that maximum catch of the chanks was obtained during May-July, probably due to operation of more number of fishing units during these months Pillai and Devadoss (1974) observed a similar trend in 1971-72 also.

TABLE 1, *Chanks landed at Portonovo during 1976-77.*

Month	Number of chanks	Number of trawlers
May 1976	1356	581
Jun	No landings	750
Jul	2129	1133
Aug	1790	2596
Sep	1290	638
Oct	725	969
Nov	No fishing	
Dec	No fishing	
Jan 1977	2015	504
Feb	2473	607
March	2740	465
Apr	1050	1388
May	24025	2325
Jun	7230	1653
Jul	1870	1275
Aug	2465	1473
Sep	3210	800
Oct	2302	465
Nov	No fishing	
Dec	No fishing	

Fishery value

The variety of *X. pyrum* landed at Portonovo is *X. pyrum vat. obtusa* (commercially known as

'Patti') and is of inferior quality. In the chank industry, it is referred to as "Gharbaki" (Nayar and Mahadevan 1974), which is not much suitable for cutting bangles. Therefore, they do not fetch high price. A chank in commercial size is called as 'Piece'. A piece was sold at Rs 2 to 5 depending on the size, but this rate was highly fluctuating from week to week. Undersized and worm-infested chanks were normally rejected by the merchants, but, at times, two or three of them were counted as one piece and purchased. Therefore, the number of chanks landed and amount realised did not show any correlation. The value of chanks landed in each month is given in Table 2. A total of Rs 64,128 was the cost of chanks landed in 1977 alone, paid at the fishermen level by the merchants. There was no monopoly procurement by Tamil Nadu government during the above years.

TABLE 2. *Value of chanks landed at Portonovo during 1977.*

Month	Value in rupees
Jan 1977	3879
Feb	4293
Mar	6664
Apr	1398
May	19375
Jun	10815
Jul	3069
Aug	4534
Sep	5680
Oct	4425
Nov	
Dec	

Four chank merchants, who were the agents of larger companies based at Kilakarai and Cuddalore were monopolising the chank trade. They made arrangements with local fishermen to collect chanks netted in the mechanised and non-mechanised boats. These

fishermen used to purchase the chanks from the boat crews and then sold them to the merchants with a gain of 50 paise per piece. The chanks, so collected, were allowed to purify for a week before cleaning and transporting. The shell and the operculum only were recovered, while the flesh was rejected totally.

Though the chanks were landed regularly year after year there was no proper licensing till 1977. During that year, the Assistant Director of Fisheries, Government of Tamil Nadu at Cuddalore, imposed a license fee of Rs. 10 per motor boat and also for every fisherman and merchant, considering them as divers. By this system, the government could realise about Rs. 600 in that year. Subsequently, from 1980 onwards, the Tamil Nadu Government introduced monopoly procurement of chanks from fishermen, thus forbidding totally the private trade.

Length distribution

To study the major length groups of chanks in the catches, they were assorted into 10 mm groups (eg., 50-59 mm, 60-69 m) and their percentage composition was found out. The data is presented in Fig. 1.

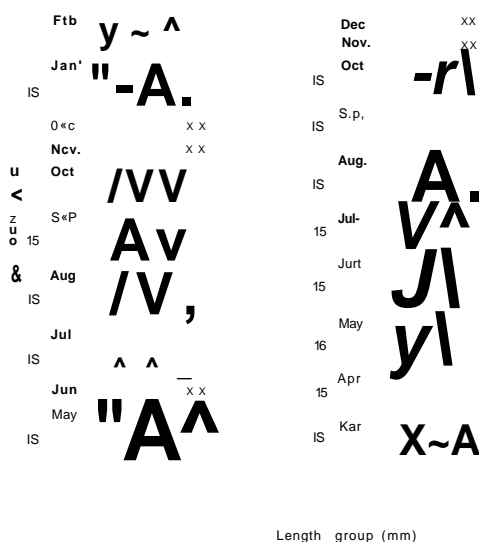


FIG 1> Length composition of *X. pyrum*

Total size range in the fishery was from 51 mm to 270 mm. The modal size groups were: 120-129 mm and 170-179 mm in May 1976; 110-119 mm and 170-179 mm in June; 120-129 mm and 170-179 mm in August; 110-119 mm and 140-149 mm in September; 120-129 mm and 140-149 mm in October; 120-129 mm and 150-159 mm in January 1977; 110-119 mm and 130-139 mm in February; 120-129 mm, 130-139 mm and 140-149 mm in March; 90-99 mm, 110-119 mm and 180-189 mm in April; 120-129 mm and 140-149 mm in May; 70-79 mm and 120-129 mm in June; 120-129 mm and 190-199 mm in July and August; 90-99 mm and 120-129 mm in September and 120-129 mm and 140-149 mm in October. A length group of 270-279 mm was found only once in September 1976. From the above data, no definite conclusion can be drawn on the progression of the modal groups in the population. This might be due to the limitation of sample, which was mainly dependent on the fishery sample.

Diameter distribution

For estimating the landings of undersized and commercial sized chanks and also to have an idea of the diameter range and major groups in the fishery, the chanks were grouped into 10 mm diameter groups. Monthly percentage composition of various diameter groups are presented in Fig. 2. The major diameter groups found in different months were: 60-69 mm in July, August and October of 1976 and also in January 1977, February and April; 70-79 mm in May and September of 1976 and May, June, July and August of '77; and 80-89 mm in October of both the years and also in March and September '77.

Chank below 60 mm in diameter, were considered as undersized in the trade. Such chanks were normally returned to the sea. But some greedy fishermen used to bring them and utilize in lime burning also. The under-sized chanks were absent in the months of August and October '77. However, in the same year, in April 24% of the chanks landed were under-sized. Details of landings of the under-sized chanks

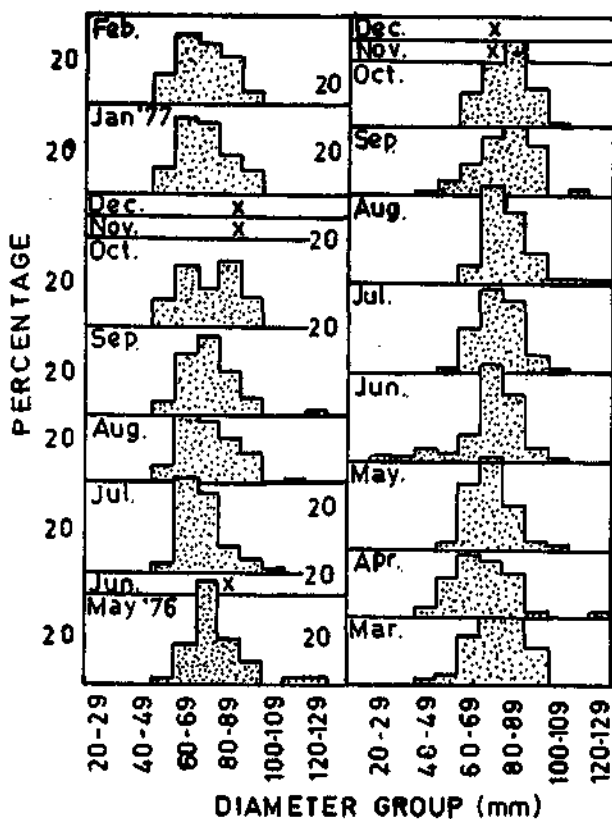


Fig. 2. Diameter frequency of *X. pyrum*

TABLE 3. Percentage of undersized chanks landed at Portonovo.

Month	Undersized chanks landed (%)
May 1976	2
Jun	—
Jul	4
Aug	8
Sep	6
Oct	11
Nov	—
Dec	—
Jan 1977	11
Feb	14
Mar	4
Apr	24
May	3
Jun	12
Jul	1
Aug	0
Sep	8
Oct	0
Nov	—
Dec	—

are given in Table 3. The present situation, however, was not as alarming as observed by Pillai and Devadoss (1974), when a normal range of 20 to 38% of the chanks landed were under-sized.

Worm infestation

Being gregarious in nature and large sized, the chank attracts a large number of fouling and boring organisms particularly polychaetes and sponges. Worm-infested chanks are unfit for cutting into bangles and therefore rejected. To estimate the extent of damage caused by worm-infestation, observations were made on the sampling day. Monthly variation in the percentage of infested chanks is given in Fig. 3. Except in October '76, in all other months, the infestation was common. A maximum of 24% was noted in September '77 and it was observed that no definite pattern could be recognised in the incidences of infestation.

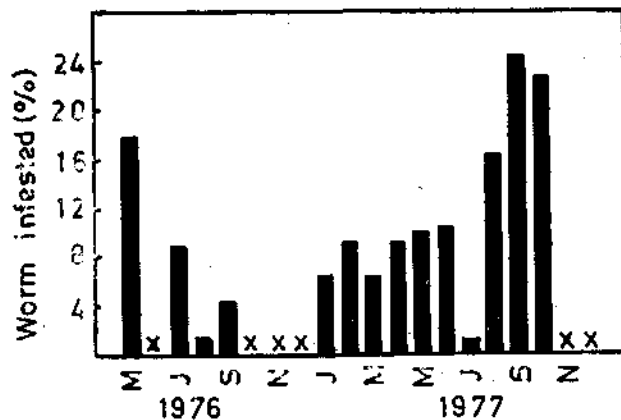


Fig. 3. Percentage of worm infested chanks

GENERAL REMARKS

From the foregoing account it can be seen that the chank landings at Portonovo cannot be considered as a minor fishery. The catch figures showed a declining trend, when compared to that of 1971-72, when more than 1 lakh chanks were reported as having been landed in one year (Pillai and Devadoss 1974) the present figures mark a decline. Indiscriminate

landing of both under-sized and normal-sized in the earlier observation might have boosted the figure, while, reduction in the number of under-sized chanks might have resulted in the decline in the catches during the present study.

Nayar and Mahadevan (1974), while giving an exhaustive account on the distribution, fishery from various regions, methods of fishing, commercial uses of chanks, exploitation and also the future prospects, suggested for a survey on the occurrence of chanks along both the coasts of India. They have also advocated for improving the present skin diving by adapting SCUBA. Jonklaas (1973), on the otherhand, feels that instead of SCUBA diving, introducing grabs would be of more useful in exploiting the resource. At present, there is no diving for chanks, beyond north of Rameswaram, since there is totally no knowledge about the extent and nature of chank beds. Therefore, there is an immediate need for surveying these areas for exploiting the chank resources. The present observation also indicates that a lucrative fishery can be established in this area, by acquiring more knowledge on the chank and chank beds.

ACKNOWLEDGEMENTS

I gratefully acknowledge Dr. P. S. B. R. James, Director, Central Marine Fisheries Research Institute, Cochin for his kind encouragement. I thank Dr. K. Alagarwami, Head of the Molluscan Fisheries Division of the Institute for review of the paper.

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