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21. ORNAMENTAL SHELL INDUSTRY OF RAMANATHAPURAM COAST

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ABSTRACT

As many as twelve shell craft industries established at KeelaVaral and Ramaswaram cater to the demand of the internal and external market of ornamental shells in India and abroad. Several species of molluscan shells which occur in the Gulf of Mannar and Palk Bay constitute the raw materials for these industries. Apart from very rare species, 15 important species are regularly exploited for this purpose. The Genus LAMBIS commonly known as 'Spider conch' is very important among them by virtue of its abundance. Of the 9 species of LAMBIS known from India, only 3 species are abundant in this coast. Exploitation of these shells are mostly by skin diving and to a limited extent by trawl, gill and drag nets employed mainly to catch finfishes, lobsters and crabs.

This paper mainly deals on the ornamental, curious and religious values of molluscan shells, their industry, types of shells and species used by the industry, varied products, marketing, employment opportunities and certain aspects of costs and earning of the industry.

INTRODUCTION

Eye catching, striking contrast colour pattern and varied shapes are the features which have aroused the curiosity of man towards the molluscan shells. The initial curiosity lead to finding out many ways of usefulness of these shells starting from using them initially as vessels for keeping food and water to using them as ornaments of high value. The Ramanathapuram coast is a rich area inhabited by just common species of molluscs as well as hard to get species of high rarity. Majority of the molluscan species that have been reported all along the south east coast of India are known to occur in Ramanathapuram coast. The availability of a variety of shells in good abundance has led to the development of a typical ornamental shell industry at KeelaVaral and Rameswaram. It is realised that documenting various aspects of this industry is highly essential for the proper development of the industry.

MATERIAL AND METHODS

Periodical visits were made to important shell industry centres to collect data on different species of molluscs used in industry, places of collection, specieswise cost, total number of manpower engaged in the industry, details of marketing through retail and wholesale outlets. Important molluscan shell landing centres were visited once in a week to collect data on the collections, fishing methods, fishing Enquiries data were collected both from shell industry and Tamil Nadu State Fisheries Department.

SHELL INDUSTRY

The entire shell industry may be divided into 1) the raw material production 2) product-

Raw material production The raw materials include the shells of different shapes and sizes belonging to the following genera OLIVA, CYPRAEA, NATICA, CERITHIDEA, PTEROCERA, GAETRARIA, STROMBUS, BABYLONIA, CONUS, MUREX, CYMATIUM, TURCO, MERITA, MARPA, TURBINELLA LAMBIS, PYRENE, UMBONIUM, DENTALIUM, AREA, VELATA, LITTORINA, FISTULARIA, TRAPEZIUM, FUSINUS, CYMBIUM, CANCELLARIA, FACIOLARIA, TURBINELLA, CASSIS, BURSA, PHALIUM, TONNA, DRUPA, BUTTIA, THAIS etc. Among these shells it is estimated that 1,75,000 shells of 3 species of LAMBIS are fished annually and each shell fetches Rs 1 to 3/- for the fisher-
men. The fishing for the chanks is the monopoly of the State Government and the merchants get the chanks when the catches are auctioned by the Government every year.

The methods of exploitation of these shells depend on the size, behaviour and habitats in which they occur and maybe divided into 1) hand picking in shallow waters 2) skin diving in deeper waters 3) hand dredging and 4) by different types of nets. Moderately small shells like *Oliva* and *Cypraea* are usually collected by hand picking in the intertidal rocky zone during low tides. Exposed coastal muddy flats and near-by islands are the habitat wherein a variety of colourful dead shells and live specimens are collected during low tides. Chanks, *Turbinella pyrum* are usually landed by skin diving done upto 20 m depth range in Palk Bay and Gulf of Mannar. Hand dredging with a common type of triangular net fastened with a long pole called ‘Arachal’ or ‘Kachan’ is done in areas like Devipatnam, Sundaramadayan, Vedaial, Marakkayarpatnam, Mandapam and Pamban to collect small sized gastropods like *Pyrene* during October to April every year. These nets are set at the bottom at 2 to 3 m depth and dragged with the connected pole for a distance of about 10 m by hand. Then the net is lifted out of water and emptied of its contents. The main aim of operating this net is to exploitiny molluscan shells, whereas other nets like gill nets such as bottom set gill net, nanduvalai and singivalai which are employed to catch finfish, crabs and lobsters, ignd gastropods like *Pterocera, Trochus* etc. in good numbers as they are caught incidentally, A wide variety of shells like chanks, species of *Gafrarium, Strombus, Babylonia, Conus, Murex, Cymbium, Harpa* etc. form a portion of the by catch in trawl nets operated for shrimps and fish.

### TABLE 1. Procurement and sales-rate of commercially important shells by shell industries of Keelakaral & Rameswaram

<table>
<thead>
<tr>
<th>Species</th>
<th>Vernacular name</th>
<th>Purchase rate</th>
<th>Sales rate</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Turbinella pyrum</em></td>
<td>Sanku</td>
<td>There are 11 sizes viz. Fo: 0; 1,2,3,4, 5,6,7, AR and 8 (Re 1/- to Rs. 3/- depending upon the size)</td>
<td>Rs 3/- to Rs. 50/- per piece</td>
<td></td>
</tr>
<tr>
<td><em>Pterocera lambis</em></td>
<td>Aiviral Sanky</td>
<td>Rs 1/- to Rs. 3/- depending upon the size</td>
<td>Rs 2.50 to Rs. 5.00/- depending upon the size</td>
<td></td>
</tr>
<tr>
<td><em>Umbonium vestiarium</em></td>
<td>Poochi Koodu</td>
<td>Rs 1/-</td>
<td>Rs 2/-</td>
<td>Per litre</td>
</tr>
<tr>
<td><em>Oliva spp</em></td>
<td>Kovanchu</td>
<td>Rs 5/-</td>
<td>Rs 15/-</td>
<td></td>
</tr>
<tr>
<td><em>Dentalium sp</em></td>
<td>Vellai Mooku</td>
<td>Rs 6/-</td>
<td>Rs 8/-</td>
<td></td>
</tr>
<tr>
<td><em>Arca spp</em></td>
<td>Sippi/Kilinjal</td>
<td>Rs 1.50/-</td>
<td>Rs 2/-</td>
<td></td>
</tr>
<tr>
<td><em>Cymatium pileare</em></td>
<td>Pillayar Sanku</td>
<td>Rs 2/-</td>
<td>Rs 3/-</td>
<td>per piece</td>
</tr>
<tr>
<td><em>Tibia spp</em></td>
<td>Ezuthani</td>
<td>Rs 0.40/-</td>
<td>Rs 0.75/-</td>
<td></td>
</tr>
<tr>
<td><em>Babylonia spp</em></td>
<td>Puramuttai</td>
<td>Rs 2.00/-</td>
<td>Rs 4.00/-</td>
<td>per litre</td>
</tr>
<tr>
<td><em>Conus spp</em></td>
<td>Vazhvi Poo</td>
<td>Rs 0-10/-to Rs 0.25/-to</td>
<td>Rs 0.15/-</td>
<td></td>
</tr>
<tr>
<td><em>Cypraea spp</em></td>
<td>Sozhi/Mani Mowri</td>
<td>Rs 0.05/-to Rs 0.12/-to</td>
<td>Rs 0.15/-</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Vernacular name</td>
<td>Purchase rate</td>
<td>Sales rate</td>
<td>Quantity</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>--------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>C07US spp (Glory of India)</td>
<td>Vazhzi Poo</td>
<td>Rs 100/- (This shell is not polished; polished shell does not fetch good price)</td>
<td>Rs 400/-</td>
<td></td>
</tr>
<tr>
<td>Strombus spp</td>
<td>Veranjan</td>
<td>Rs 0.40/-</td>
<td>Rs 0.75/-</td>
<td></td>
</tr>
<tr>
<td>Fistularia sp&gt;</td>
<td>Sihappu Mulli</td>
<td>Rs 0.15/-</td>
<td>Rs 0.30/-</td>
<td></td>
</tr>
<tr>
<td>Trapzium sp</td>
<td>Kuthurai IVulli</td>
<td>Rs 1.50/-</td>
<td>Rs 2.00/-</td>
<td></td>
</tr>
<tr>
<td>Fusinus sp</td>
<td>Vellai Chaval</td>
<td>Rs 0.30/-</td>
<td>Rs 0.40/-</td>
<td></td>
</tr>
<tr>
<td>Harpa sp</td>
<td>Sarpa Koodu</td>
<td>Rs 2.00/-</td>
<td>Rs 2.50/-</td>
<td></td>
</tr>
<tr>
<td>Cymbium melo</td>
<td>Suvappu pathiram</td>
<td>Rs 3.00 to Rs 5.00/-</td>
<td>depending upon the size</td>
<td></td>
</tr>
<tr>
<td>Cancel/oraia spp</td>
<td>—</td>
<td>Rs 4.00</td>
<td>Rs 6.00 per litre</td>
<td></td>
</tr>
<tr>
<td>Fascio/ar/a spp</td>
<td>—</td>
<td>Rs 0.15</td>
<td>Rs 0.25/- per piece</td>
<td></td>
</tr>
<tr>
<td>Mures ramosus</td>
<td>Yanai IVulli</td>
<td>Rs 3 to Rs 10/-</td>
<td>Rs 5/- to 25-00</td>
<td></td>
</tr>
<tr>
<td>M. florifer</td>
<td>Karuppu Kullai</td>
<td>Rs 1/- to Rs 2/-</td>
<td>Rs 3/- to Rs 5.00</td>
<td></td>
</tr>
<tr>
<td>M. muteramos/s</td>
<td>Katta Sanku</td>
<td>Rs 0.10/-</td>
<td>Rs 0.25</td>
<td></td>
</tr>
<tr>
<td>M. triremis</td>
<td>&quot;</td>
<td>Rs 0.50 to Rs 1.00</td>
<td>Rs 1.00 to Rs 3.00</td>
<td></td>
</tr>
<tr>
<td>M. haustelium</td>
<td>Vellai Poodu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. adj'ustus</td>
<td>Karupplu Mulli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pterocera Chiragra</td>
<td>Aru viral Sanku</td>
<td>Rs 1/- to Rs 4/-</td>
<td>Rs 5/- to Rs 15/-</td>
<td></td>
</tr>
<tr>
<td>P. aurantia</td>
<td>Silanthi Sanku</td>
<td>Rs 1/- to Rs 2/-</td>
<td>Rs 2/- to Rs 5/-</td>
<td></td>
</tr>
<tr>
<td>Cassis madagascarensis</td>
<td>Mattu Thalai</td>
<td>Rs 10/- to Rs 30/-</td>
<td>Rs 30/- to Rs 50.00</td>
<td></td>
</tr>
<tr>
<td>Cypraea reticulata</td>
<td>Sozhi</td>
<td>Rs 1/- to Rs 1.50</td>
<td>Rs 2/- to Rs 4/-</td>
<td></td>
</tr>
<tr>
<td>C. talpa</td>
<td>Anil sozhi</td>
<td>Rs 2.00/- to Rs 4.00/-</td>
<td>Rs 6.00 to Rs 3.00</td>
<td></td>
</tr>
<tr>
<td>Operculum of Turbo</td>
<td>Ravanavan Vizhin</td>
<td>Rs 3-00/- to Rs 5/.-</td>
<td>Rs 6/- to per liter</td>
<td></td>
</tr>
</tbody>
</table>

Shell divers, shell collectors, beach combers and those who collect shells from boats and launches sell their collections either to shell procurers who act as agents of shell industry or directly to the shell processors in the industry. Different species of molluscan shells, their procurement rate and market rate of finished product by the shell industry are given in Table 1. The important centres where the shells are processed are Pamban, Manda-pam, Vedalai, Periapattinam, Devippattinam, Thirupalakkudi, Mullimunai, Karankadu, Thondi and Sethubavachathiram. Shell are also being procured from Tuticorin, Cuddalore, Andaman and Nicobar Islands. On an average Rs 4,00,000 of raw materials are used in the industry.

After drying the shells in the open for 3 to 5 days, they are soaked in fresh water for 2 to 5 days in cement tanks, depending on the size and quantity of the shells. This enables removal of dirt and decayed soft parts of the animals. Then the shells, whether big or small are placed in bleaching powder solution or bleaching liquid for 24 h in cement tanks.
constructed for this purpose, followed by 
immerseing the shells in caustic soda solution in 
another tank for one h. Depending on the 
thickness, colour and quantity of the shells, 
they are polished by allowing them to remain 
in 5% Hydrochloric acid from 10 seconds to 
4 minutes.

**Ornamental products**

In view of the increase in demand for 
ornamental molluscan shells there has been a 
wide diversification, producing novel items 
such as table lamps, lamp shades and domes, 
balls, garlands, pendants for chains, necklaces, 
ears, beads for the neck, hair pins, fantasy 
flowers, sculptures of Gods and Goddesses, 
agarbathi stands, bangles, flower vases, shell 
screens for windows and door curtains etc.

**Marketing.**

There are as many as 12 shell industry 
units of which 3 are at Keelakarai and 9 at Rameswaran which manufacture the 
ornamental shells and market them throughout 
India. The market outlets in India are Bombay, 
Calcutta, Delhi, Mathura, Haridwar, Lucknow, 
Puri, Ayodhya, Kanyakumari, Madras, Dwarka, 
Hyderabad, Bangalore and Agra. The shell 
and shell products are exported to countries 
like USA, U K., Australia and Austria. The 
annual turn over of the shell industry amounts 
to Rs 10,00,000.

**GENERAL REMARKS**

A ecological habitat surrounding Mandapam-Rameswaram coastal belt is ideally 
suited for the settlement and growth of a variety 
of gastropod and bivalve shell species. The island 
system m the Gulf of Mannar provides suitable 
areas serving as breeding ground for many of 
gastropod shells which form the important 
components supporting the shells industry at 
Keelakarai and Rameswaram area.

TU The craftsmanship m the shell industry is 
age old and dates back to the historic time when 
recorded to nurture the then craftsmen of shell 
people in the society, some of these are still 
available in some national museums and 
temples. The causative factors which prompted 
the development of the shell industry into a 
well established one are manifold such as mere 
whimsical curiosity to religious sentiments, 
Curiosity tempted man to collect the gorgeously 
multicoloured shells and then he found some 
uses of the shells, initially as utensils for keep- 
ing food and water. Even now beggars use the 
shells of Cymbium melo as 'beggar's bowl'. Later the aesthetic sense prevailed to find ways 
and means of using them as ornaments. The 
use of sinistral chanks and dextral chanks in 
temples testifies to the religious sentiments 
attached to chanks.

Keelakarai is purely a shell processing and 
shell ornamental manufacturing centre and 
there are no retail or wholesale outlets for the 
public. On the other hand Rameswaram thrives 
not only with the shell and shell ornamental 
production but there are as many sevemty shell 
shops located in and around the Rameswaram 
temple. Being a very important religious place, 
Rameswaram attracts pilgrims and tourists from 
all over India and abroad and these shops cater 
to the need of these pilgrims and tourists. The 
shells and shell ornaments vary in cost from as 
low as Rs 1.50 to as costly as Rs 400 and a 
sinistral sacred chank costs anywhere around
Each craftsman earns around Rs. 15 to 20 a day. Some of the craftsmen work as shell collectors and procurers also and the shell crafting work is seasonal during May to September. Exploitation of the shells is not regulated and there is no organised fishery exists except for chanks. Therefore, it is suggested that systematic studies on the biology and population dynamics of these species are suggested for rational exploitation of these resources. This industry thrives mostly as a cottage industry along this coast. Further training in the craftsman ship and financial support to certain extent for the procurement of advanced machineries may improve the standard of the products which may attract a wider market in India and abroad. This may be achieved through organising a co-operative societies in the industry and the financial assistance may be extended by the Government or through banks. This may improve the economy of the industry in addition to increase the employment opportunity in the coastal area of Ramnad district.

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