3.0 Introduction

The main raw material for shell craft industry is shells of land animals and water animals. The shells are the calcareous protective coverings of the various land and water animals called Mollusks. After the death of the water animal the shell gets removed and washed ashore by waves. Shells exhibit a wide variety of pattern and colouring that often match the animals that build them.

Oliver has discussed the shape and sizes of a variety of shells and their scientific names and has pointed out that a particular variety of shell is available in particular Ocean alone. He pointed out that many varieties of the shells are found in Indo Pacific Ocean. The Indian sub-continent is surrounded on three sides by sea and as such the sea-shell potential is in great abundance.

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2 Oliversmith - Shells of the World.
In recent years to meet the growing demand for raw shells by the shell craft industry fishermen collect the living shells by diving into the sea. Some pieces of flesh remain inside the living shells.

3.1 Processing of Raw Shells

In order to remove the flesh from the shells, first shells are kept buried under clean dry sand for few days. The process is made easier by ants which could use off the flesh for their food. Then the shells are taken out of sand and put into hot water. Washing soda is mixed and shells are washed again and again for a number of times to get them cleaned. Finally shells are put into diluted hydrochloric acid to remove the smell and to give shinning. After that shells are used as input in the shell craft industry. Shells are not varnished or polished. If they look dull wiping them with fine oil could restore the original colour. If shells exposed to direct sunlight the colour fades. Processed shells are stored in light proof cabinets.

3.2 Local Names of Shells Used in Shell Craft Industry

The local names of various varieties of shells in Kanyakumari district are the following: (i) kanam (button shell) (available in four different colours namely rose,
dark cement, white and brown), (ii) burmashells, (iii) vattachippi, (iv) kunduchippi, (v) thattu chippi or glass shells, (vi) paulchippi (pure white in colour) (vii) oothy, (viii) kovanchi, (ix) puramuttai (Babylonia) used to make key chains, (x) poochippi (flower shell), (xi) Kondachippi, (xii) pettai varanjan and (xiii) moorai.

The products produced in the shell craft industry in Kanyakumari district include the following: (i) door curtains, (ii) ash trays, (iii) paper weights, (iv) aroma stick stands, (v) costume jewellery, (vi) table lamps, (vii) kumkum box, (viii) decorative mirror, (ix) shell mats, (x) wall hangings (decorative pieces made up of shells) (xi) dolls and toys, (xii) pot hangers, (xiii) flower stands and (xiv) shell ornaments (bangles, necklace and bracelets).

In India shell craft is popular in West Bengal, Kerala, Tamil Nadu and Andamans.

3.3 Shell Craft Industry in Other States
3.3.1 Shell Craft Industry in West Bengal

West Bengal is at the forefront in shell crafts production. The industry as other handicrafts in India, has an interesting history and dates back to the time of Akbar. About four hundred years ago Akbar invited a band of
artisans from Persia to decorate the tomb of Salim Chisti, his precepter at Fatehpursikri near Agra. The hand work of those Persian artisans decorating the shrine with small bits of polished mother of pearl and shells can be admired even today.

To trace out the recent history we have to start from Calcutta. Some 40 years ago Hiralal Mehta founded in Calcutta the first modern manufacturing shell unit with machines imported from Germany. He derived inspirations from similar crafts of Burma and his ambition was to capture the thriving foreign markets in shell handicrafts. His dream did come true and Inter Island Trading Company soon became a pioneer and leader in the field of shell jewellery and buttons. Soon the lead was followed by others and 12 more manufacturing units appeared in the field. At present there are 16 concerns in Calcutta, Howrah and 24 Parganas. Recently Sudarshan Sanka Bhandar has taken over the historic unit of Hiralal Mehta. The unit has been employing more than 20 persons. At present they command a major market both in India and abroad.

The Industry is organised on modern lines using electric power and machines. Formerly machines were imported. Now they are manufactured locally. They include motors, cutters, grinders, polishing machines and
small hand tools. The industry excludes female employees in favour of tough male workers who can handle the fast moving machines. In West Bengal, the process of manufacture includes curing of the shells in boiling water, removal of the upperskin by abrasion bleaching, cutting, shaping, fitting, engraving, enamelling and finally polishing by means of photographic method. Such operations are done with machines for quicker and better execution of work. It has become a modern handicraft industry using more capital.

The number of persons engaged in sea shell and conch shell industry in West Bengal, according to a recent survey done by the Cottage and Small Industries Directorate is nearly 10,000. Separate statistics are not available for the sea-shell industry alone. The industry has an annual installed capacity of Rs.30 million with an approximate capital investment of Rs. 6 million.

Later the conch shell industry has further been mechanised by adding power driven circular saws and buffing machines. The average annual production of the industry is valued Rs.15 million. Along with conch shell units the industry is concentrated in and around Calcutta, Midnapur, Bankara, Hoogly and 24 Parganas.
Usually raw conch shell yields 25 per cent of finished products. The prices of various finished products, after allowing for wastage in processing, cost of labour, power, transport and the like can be catalogued, at current prices, as follows: Necklaces Rs.70 to Rs.120; ear-rings Rs.30 to Rs.50; finger-rings Rs.10 to Rs.20; wristlet Rs.50 to Rs.60; buttons Rs.15 a set; cufflinks Rs.16 to Rs.30 a pair and table lamps Rs.36 to Rs.110. The estimated profit of the industry is approximately 25 per cent.

The products are sold widely in the home market and are also exported. The ornaments and novelties have extensive markets in U.S.A. Semi finished Trochus shells are exported to meet the need of the fashion designers. As the market is fast growing, the existing units have been expanding their capacity over the years.

Shell work and shell carving have been an art industry in Dacca and many parts of East Bengal. Fancy boxes covered with cowrie and other small shells and lined inside with coloured cloth are made in Bengal and in the South. Cowrie shells are widely used in the making of galubans, ornamental trappings for hanging around the necks of camels and other animals in Rajasthan. Now-a-days articles like lampshades, ash-trays, pin-trays, small
dishes, quaint animal and human figure toys are made using large shells or small ones of different shapes and sizes.

3.3.2 Kerala Shell Craft Industry

In Kerala, conch shell work has been started recently at Neyyatingara near Trivandram. Small items of daily use have been made. As the place is a coastal area it has every chance for further development in future.

3.3.3 Andaman Shell Crafts

The sea around Andaman islands is a rich breeding ground for a variety of commercially important shells. Mainly they are of three varieties namely Turbo, Trochus and Nautilus. These shells have distinctive characteristics. The costliest and the most sought out variety for industrial uses is the turbo. It is a heavy and nearly round shaped shell. After processing, it reveals a delicate range of rainbow colours against a uniform pearly shiny base. The shell is fairly thick and it is most suitable for making costume jewellery. The Trochus is triangalar in shape, heavy at the bottom and displays a single colour of uniform pearly silver. The shell is very thick and is used in the manufacture of buttons.

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Nautilus, although most fascinating from scientific point of view (it is supposed to be the only surviving member of an order which thrived several million years ago), has very limited use in the industry because of its fragility. It is used in handicrafts in combination with other shells as a decorative centre piece. Whereas the turbos are the costliest, trochus are the cheapest in the market. There have been seven licenced collectors who employ divers who go deep under water and collect the shells. It is a round the year occupation and each diver raises about a hundred or more shells a day.

Once the creatures are taken out of water, they die instantly. The shells are then separated and dried. Sometimes they are also cured by putting them in boiling water before despatch to destination. A major portion of raw shells find a ready market in Calcutta and South India. The rest is exported to countries like Japan, Italy, Australia, France and Germany.

Japan and the western countries have developed modern industrial facilities for processing the Andaman shells into fine costume jewellery, buttons etc.
3.4 Shell Craft Industry in Tamil Nadu

In Tamil Nadu shell articles and artware making industry has been flourishing in places like Rameswaram, Kilakkarai, Tirupullani, Nagercoil and Kanyakumari.

Rameswaram is one of the richest conch fisheries in Tamil Nadu and an important place for conch products. Archaeological excavations at Korkai, and Kayal and references in ancient Tamil literature bear ample testimony to the existence of famous conch cutting industry in ancient Pandya Kingdom and to the common practice of wearing conch bangles.

At present conch is used for many purposes in the State. It is used for religious and ceremonial purposes and conch is a symbol associated with Lord Vishnu. It is used in all Hindu temples during pujas and ceremonies. In certain parts of Tamil Nadu bits of conches are tied in Mangalsudra, in the door lintels, around the neck of cattle and children as talisman to bring prosperity or ward off evil. Conch rings are worn in the regions bordering the Gulf of Mannar. Women of South Arcot use necklaces of conch beads. Conch is also used as a spoon for giving milk to children. It is also used in the preparation of medicines. Lime made out of it is used for producing incense sticks and for white washing buildings.
The conch shell industry is established in four centres - Kilakkarai, Periapatnam, Rameswaram and Tirupullani. In Kilakkarai, Periapatnam and Rameswaram the units are engaged in cleaning, carving and polishing the conches, while at Tirupullani garlands are made using broken conch shells.

The right of conch fishing in Ramanathapuram coast has been leased out through auction to a private party. All divers must deliver the conches picked up by them to the lessee. Merchants and manufacturers buy conches from him. However the lessee is more interested in sending the best raw conches to Bengal for sale because it fetches him higher price. The local crafts men have to be content with the second best left or pay high price for the best. Big merchants at Kilakkarai dealing in conches get their stock by bidding at auctions held by the Government Fisheries Department at Tuticorin. They too prefer to send the first quality in West Bengal. Thus the local cottage industry is deprived of quality raw-material in required quantity. Hence the development of local industry is handicapped even at the out set. At the bottom of the industry remain large number of hereditary workers mainly muslim women. They work in their own homes with simple tools. Due to their ignorance and poverty they are unable to buy the raw material or market the
finished goods directly. They remain as wage earners. Such situation has led to the emergence of intermediaries who are small scale business men. They purchase the raw conches from lessee or other big merchants at Kilakkarai and distribute them to the workers. After they are cleaned and polished they sell them to merchants coming from Rameswaram, Madurai and Tiruchi.

3.4.1 Types of Article Produced in Rameswaram

Conches found in the coasts of Ramanathapuram and Tirunelveli are mostly milk white in colour, bright and shining like ivory. They are specially suited for cutting, carving, lacquering and painting. Three varieties of conches are locally designated as patti, jathi and special. Conches having a diameter of more than 3 1/4 inches are considered to be the special variety. All conches below 3 1/4 inches are grouped under 2 classes, patti (small) and jathi (medium). Whereas such varieties are available in plenty, special variety is rare. The conches picked up from the sea have to undergo certain processes before they become milk white in colour or before they can be used in the bangle industry.
Merchants from Rameswaram and Ramanathapuram usually visit production centres and purchase the conches. Sometimes manufactures themselves go to far off places to dispose their stock. A certain quantity is also sent to Bombay, Calcutta and Delhi. Rameswaram is the biggest centre for selling the goods. Large crowds of pilgrims visit the place throughout the year.

In Tirupallani a subsidiary industry has sprung up. Broken conches and the conch shells available at Kilakkarai and Periapatnam are used for making beads, garlands and malas. Each garland is made up of two strings. Each string has 75 beads, two such garlands are tied together to form a mala. The tools required for the purpose are hammers, scissors, grinding stones and drilling machines. The families have employment for 150 days in a year. The garlands and malas are sent to Bombay and Goa.

Diving into the sea to fish for pearl oysters is ultimately a case of sheer luck is an old story but now any shell picked up from the sea is worth a fortune as its market potential has expanded to international level.

In and around Rameswaram there are fifteen such cottage units dealing with shells and providing employment.
for over 3000 people of the area apart from fishermen who make their money by supplying the shells.

With the latest development in interior decorations (the shells which were once used mainly for religious purposes) the shell craft industry has more scope to develop. Either in the form of paper-weight or key-chain or women's ornaments, the originality and kaleidoscopic colours could invite the attention of the people.

Curtains, decorative mirrors, lamp shades, chandeliers, penstands and etched name boards are some of the products made of shells. Its derivative list crosses 200 mark and is ever increasing as the human imagination expands and human mind has the ability to convert shells into objects of utility and decoration.

The modus operandi of these units is to purchase lorry loads of shells from Kerala, Andamans, Andra, Tamil Nadu, Gujarat and Bombay. After being sorted out into various categories they would be given a chemical treatment to remove the unpleasant smell. The cleared shells are once again treated with hydrochloric acid mixed in hot water and then polished according to requirements.

3.4.2 Shell Craft Industry in Kanyakumari

Handicrafts utilise locally available materials and human resources on a large scale. Hence they play an important role in providing employment opportunities in rural areas. Kanyakumari has been described as a land of handicrafts. Among the 34 handicrafts industries listed by the Handicrafts Marketing Service Extension Centre, Nagercoil shell craft industry is an important one in Kanyakumari district producing annually 5 crores worth of crafts.

The shell craft units are generally found in Agasteeswaram, Vilavancode, Kalkulam and Thovalai Taluks. In Agasteeswaram taluk, the shell units are more concentrated. The main reason being the availability of cheap women labour. According to 1991 Census in Agasteeswaram taluk women population outnumber men population; male population is 2,24,274 and female population is 2,25,548.

Raw materials are available in plenty and big entrepreneurs buy raw-materials in lorry loads, process and clean and distribute them to the needy persons. Any one can easily buy them and manufacture shell articles without much difficulty. Moreover Kanyakumrai is a tourist centre having local market. Small manufacturers
sell shell products in head load vending. Big manufacturers also collect the finished products from small manufacturers and send to commercial cities like Bombay and Bangalore. Generally the price of shell craft articles is lesser compared to other handicraft articles of the area.

The industry requires no machinery. Special work yard is also not necessary since it can be managed at home. With small investment any one can run the industry. All India handicrafts exhibition is being conducted every year by Kumari Mavatta Kainudpha Kalaignedarkal Sangam in collaboration with the Handicrafts Marketing and Service Extension Centre, Nagercoil. It is sponsored by the Government of India to help the artisans. Usually it is held during the busy season of Ayyappa Pilgrimage which commences from 17th November and continues up to January 20th. Some sea shell manufactures have put up stalls and display their own shell products as well as others.

The manufacturers have to pay 20 per cent of their sales as commission to the Kumari Mavattam Kainudpha Kalaignarkal Sangam for enjoying facilities like power and advertisement. In the exhibition stalls the sea shell

Handicrafts Marketing and Service Extension Centre, Government of India, Nagercoil.
articles are sold at fixed prices. However the prices of shell articles vary from manufacturer to manufacturer. The head vendors sell the articles in the platform and pavement stalls.

An association called South Tamil Nadu Sea Shell Artisans Welfare Association has been formed to protect the interests of the artisans. However, except a few units, all other shell units are non-members of the association.

Apprenticeship Training Schemes are provided to crafts persons. Ten trainees are admitted in one course which lasts for 6 months. Trainees have been paid Rs.250 per month and master crafts men have been paid Rs.1500 per month in 1995-96. After the course is over, tool Kit is given free of cost to trainees. Besides raw material wastage compensation is also provided. A lump sum grant of Rs.4000/- has been given for infrastructure facilities for the training centre.

This industry had been phenomenal growth in the early 1980's. However, it has registered a sharp decline in the growth of number of shell units during early

* Source: Director, Handicrafts Marketing and Service Extension Centre, Nagercoil.
1990's. The period of recession in the industry has been attributed to non-availability of raw materials in the locality. Besides due to lack of inventory there has been a fall in the demand for the products. Since 1995, there has been a revival in the shell units due to product diversification.