
REVIEW

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PEARL FISHERY INDUSTRY IN SRI LANKA

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ABSTRACT : Geographically, the Gulf of Mannar was one of the most abundant sources of natural pearls in the world for more than two millennia. Pearls were the most valuable aquatic resource in Sri Lanka and were exploited since ancient times, more than 3500 years time. Under the right conditions, millions upon millions of pearl-producing bi-valve molluscs *Pinctada* genus of saltwater oysters (mainly *Pinctada radiata* and *Pinctada fucata*) populated the low-lying shoals and rock and coral formations of the Gulf of Mannar (Ostroff 2016). But some historical and archaeological evidences extend more than two millennia, because Sri Lanka known as the pearl of the Indian Ocean. Owing to that, Sri Lanka is a wondrous island, because it's endowed plethora of resources such as an abundant biodiversity, gemstone, rich culture, great history, varied landscapes and many more. The pearl beds of South India and Sri Lanka constituted one of the two major sources of pearls in the world, rivalled in size only by that of Hainan. The pearls fished from the Gulf of Mannar were also considered among the best in the world and fetched a high price in Europe. The exploitation of pearl fisheries continued during the Dutch and the British colonial rule. The British earned considerable revenue from pearls of Ceylon, e.g from March 1828 to May 1837 alone Sterling Pounds 227,131 were credited as revenue into the Ceylon Treasury on account of the pearl fisheries. The pearling industry is all extinct today.

KEY WORDS : Pearl fishery, Gulf of Mannar, colonial rule, Ceylon Treasury, extinct.

INTRODUCTION

Pearl oysters are saltwater clams, marine bivalve molluscs of the genus *Pinctada* in the family Pteriidae. They have a strong inner shell layer composed of nacre, also known as "mother of pearl". It is a hard, glistening object produced within the soft tissue (specifically the mantle) of a living shelled mollusca *Pinctada fucata* (Ostroff, 2016), Pearl oysters are not closely related to either the edible oysters of family Ostreidae, or the freshwater pearl mussels of the families Unionidae and Margaritiferidae.

Pearl oysters that produce pearls comes under the genus *Pinctada* and the most

important species under this genus are *Pinctada maxima*, *P. margaritifera*, *P. mazatlanica*, *P. fucata* and *P. radiata*. These oysters produce finest pearls and there are several other species such as *P. chemnitzii*, *P. sugill/afa*, *P. atropurpurea* and *P. anomioides* which are not available in fishable quantity with less commercial value in respect of pearl and pearl production (Velayudan 2003). Winged pearl oyster *Pter/a penguin*, *P. formosa*, *P. sterna* and *P. columbus* produce pearls very rarely while window pane oyster *Placuna placenta* produces seed pearls of very small size (Shirai, 1994).

Pinctada margaritifera or the Black-lipped pearl oyster is a mollusc that belongs to the

class Bivalvia. Bivalvia is also known as Pelecypoda or “hatchet-footed” animals, as their name implies. Like most bivalves, *Pinctada margaritifera* is a sedentary filter feeder that depends on currents, produced by cilia on their gills, to gather food particles. They have no head, no radula and very little cephalization as is seen in other molluscs. This species is a widely distributed Indo-Pacific, includes the Red Sea, the Arabian Sea, the Persian Gulf, India including Sri Lanka. All shelled mollusks can form by natural processes, produce some kind of "pearl" when a grating microscopic object becomes trapped within its mantle folds, but the great majority of these "pearls" are not valued as gemstones (Figures 1 and 2). Natural pearls are nearly 100% calcium

carbonate and conchiolin. It is thought that natural pearls form under a set of accidental conditions when a microscopic intruder or parasite enters a bivalve mollusk and settles inside the shell.

Pearl Fishery Industry in Sri Lanka

Several species of pearl oysters of the genus *Pinctada* occur in Indian waters, of which *P. fucata* supports the pearl fisheries of the Gulf of Mannar (Figure 3), the Palk Bay and the Gulf of Kutch. In the Gulf of Mannar these oysters are found on ridges or rock or coral known as *paars* or pearl banks (Figure 4) with the most productive areas (Prasad and Ramachandran 1973).



FIGURE 01 : Oysters aren't the only type of mollusk that can produce pearls; clams and mussels can as well (<https://animals.howstuffworks.com/marine-life/question630.htm>, MACIEJ TOPOROWICZ, NYC/GETTY IMAGES).



FIGURE 02 : A natural pearl is a pearl that forms in nature with no human intervention (Source: : <https://www.google.com/search?q=real+shoppee+pearls&tbm=isch&source, Real Shoppee>)



FIGURE 03 : The Gulf of Mannar was one of the most abundant sources of natural pearls in the world for more than two millennia (IUCN, 2012)

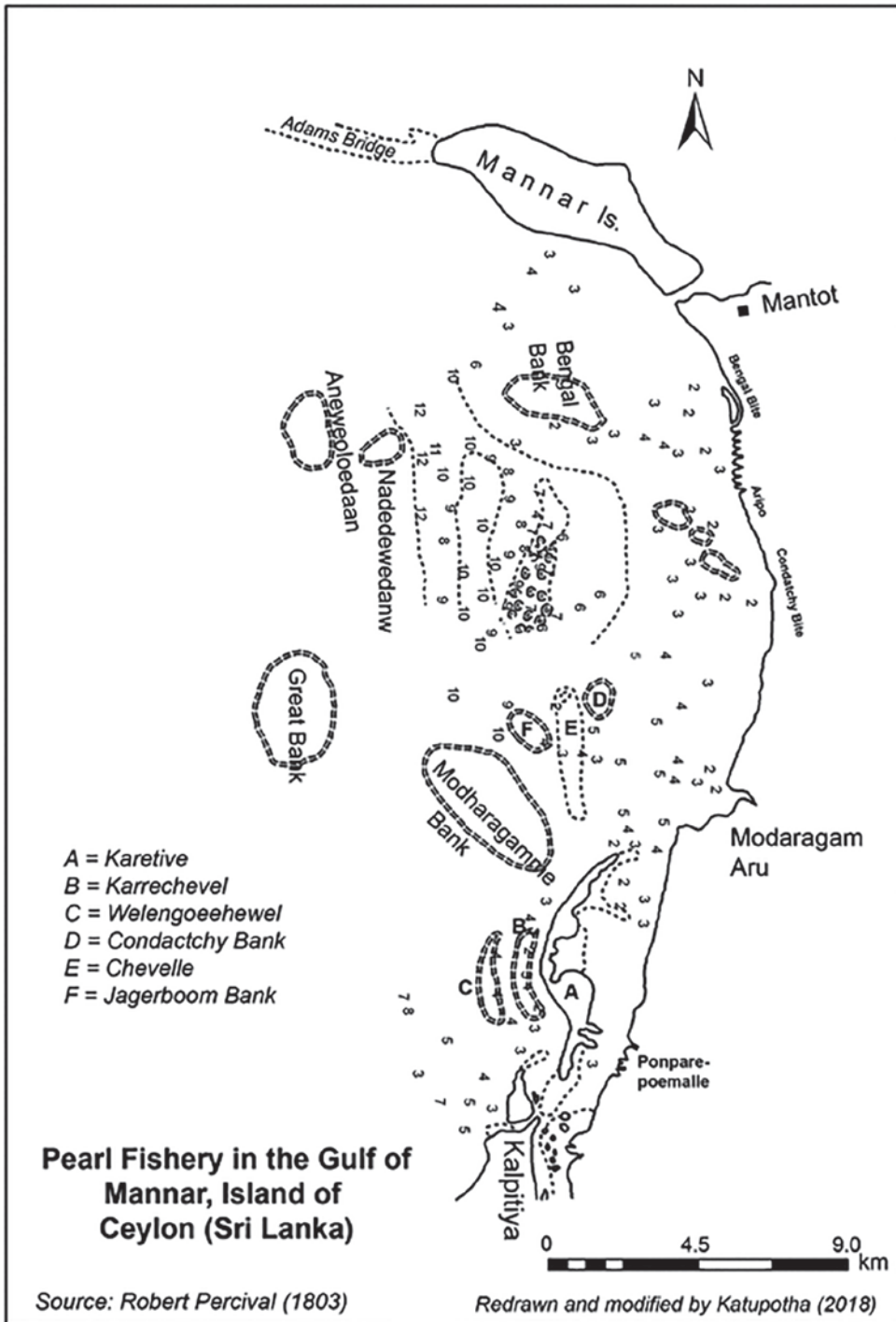


FIGURE 04 : Distribution of pearl fishery between Kalpitiya Peninsula and Mannar Island in the Gulf of Mannar.

The Gulf of Mannar was one of the most abundant sources of natural pearls in the world for more than two millennia. The pearling industry is all but extinct today, nevertheless under the right conditions, millions upon millions of pearl-producing bi-valve molluscs populated the low-lying shoals and rock and coral formations of the Gulf of Mannar (Figure 4). Based on others findings, Ostroff (2016) reports that *Margaritifera vulgaris* was more related to the Mussels (*Mytilus*) than to the Oysters (*Ostrea*) of British seas. On the western littoral of the Gulf of Mannar, the richest beds were located off the coast of Thoothukudi in

India. Fertile pearl banks were found short distances from the land between Negombo and Muthu Halawatha (Chilaw) in the south and Karaitivu to the north. The pearl banks off Aripipo and Condatchy lay at a considerable distance from the low land, with few remarkable objects in view; the banks are extensive, the masses or beds of oysters are of various ages, according to the season in which they may have settled (Steuart 1834). Along the northwestern coastal belt, from Kalpitiya to Aripipu discarded pearl shell mounds, clearly represent that the well being of the natural pearl fishery industry (Figures 5- 10).



FIGURE 05 & 06 : Discarded pearl shells around Doric Bungalow area, Kondachchi Bay site, Puttalam - Mannar road, Northwestern Coast (Photos dated 15, Sept. 2015, Field observation).



FIGURE 07 & 08 : Discarded pearl shells after removing of pearls from molluscs at Kal Aru coastal area, Northwestern Coast (Photos dated 16, June 2018, Field observation).

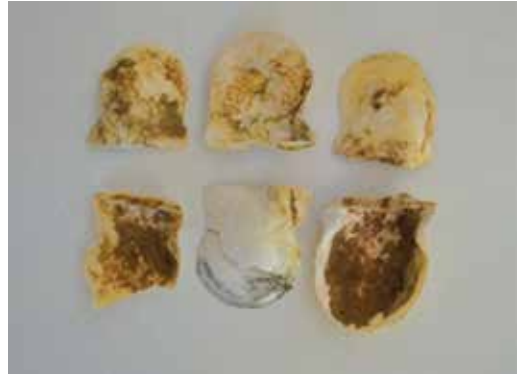


FIGURE 09 & 10 : Pearl shells at Kal Aru coastal area, Northwestern Coast (Photos dated 16, June 2018, Field observation).

European writings on pearling in the Gulf of Mannar area used the local term *paar* to describe the banks of rock and coral upon which clusters of pearl oysters grew. The association between the region and pearling was so close-knit that the Portuguese and Dutch both referred to the southeastern coast of India as the Fishery Coast. The pearl banks closer to the Sri Lankan coast were more extensive and worthwhile than the pearl banks near the South Indian coast. Prehistoric peoples living closer to the coastal areas in the northwestern Sri Lanka and southern India may have weakened upon the first pearls discovered in this region, during their quest for food, just as much as it happened in the Persian Gulf in pre-historic times, but pearl oysters were not edible.

Unlike in the Persian Gulf and the Red Sea region where extensive archaeological excavations had taken place of both historic and pre-historic sites. In Sri Lanka and India, most of the excavations had been mostly limited to historic sites, of which information has already available from ancient written records, but whose existence had been obliterated by the ravages of time, buried by mounds of earth and forest growth. Most of the ancient sites mentioned in the two written historical chronicles of the Island nation, the *Mahawamsa* (Great Chronicle) and the *Chulawamsa* (Lesser Chronicle) have now been excavated. Archaeologists have now diverted their

attention to pre-historic sites that are not mentioned in the two chronicles, extending to pre-Vijayan times, the period before King Vijaya, the north Indian prince who settled in the Island with his followers in the 6th-century B.C., and from whom the Sinhalese claims their descent. However, a shell midden is an underground mound of shells covering a large area, that was formed when pre-historic stone age man, discarded the shells of molluscs, mainly oysters that he had consumed over a long period of time. Over the years such mounds reached enormous proportions, and formed a solid base of calcareous material that encouraged human settlements. It appeared that primitive men collected the molluscs from the nearby lagoon or bay that had presently dried up. Most of the shells in the midden had been broken up by opening the bivalve shells with some crude stone implement. Many scientists have dated the Udumala, Nabadewa, Pallemalala, Miniethiliya, Hatagala, Bogahagodella emerged a shell bed complex belong to shell midden, in situ deposits and storm surge sometimes by tsunamis. In those deposits, there were many artifacts and different types of materials, e.g. fired quartzite pebbles, *Meretrix* shells in living position, elk bones and a piece of pottery found from Hungama - Ovitigodayaya paddy field and from about 1.0m thick shell beds at Hungama-Bogahagodella. Likewise, debris of human bones, other animal

bones, e.g pieces of elk bones, a serpent's head found from the shell beds at Hatagala-Temple land (Katupotha 19881, 1988b, Katupotha 1995, Katupotha and Fujiwara 1988, Katupotha and Wijayananda 1989. However, it was very difficult to find out that the use of pearl or pearl trade in those areas before, 3,000 yr P.B.

METHODOLOGY

Geographically, the pearl fishing industry in Sri Lanka was limited to the Gulf of Mannar, Some data and information collected from published articles, reports and historical documents and information on discarded shells collected from the field. But, there are no radiometric dating facilities to determine the evolution of the pearl fishery industry in Sri Lanka. However, the foreign trade relationship with Roman, Arab and Chinese travelers, navigators and explorers. Between Sixteenth Century and mid-Twenty-First Century, Europeans invaders, e.g. Dutch, Portugese and British reports and records used for this article to reveal the pearl fisheries in Sri Lanka (Herdman 1903, Percival 1803, Steuart 1834, Fisheries Research Station (Department of Fisheries, Ceylon) 1958, Sivalingam 1961. Ostroff. 2016). The present writer paid full effort to collect the information through these means to examine the pearl industry of Sri Lanka.

Pearl Fishery in Sri Lanka

The continental shelf between the three and twelve fathom lines, off the Ceylon (Sri Lanka) coast in the Nineteenth Century from Chilaw *Paar* to northward completely covering with the Gulf of Mannar and Palk Bay; Tambalagam lagoon and Coddiar bay area; Arugam Bay to Little Basses; Weligam bay and Gall Bay areas, Herdman (1903) investigated the general biology of the seas around Sri Lanka, and especially of those places where pearl oysters were existing. Further, Herdman mentions that the distance from the coastline to offshore, bottom relief and constituents, depth in fathoms, the temperature of the sea etc. using the cruise of the Lady Havelock. Though the area of this plateau is extensive the pearl oysters

are concentrated on restricted areas known as "paars". According to Sivalingam (1961), more productive of these are the Cheval Group of paars and the Moderagam (Paar Table 1). The Peria Paar and Twynam's Paar though covering larger areas are not dependable as oyster beds. The True Vankalai, Peria Paar Karai and Muthuvarathu Paars are small in extent, but have yielded oysters on a commercial scale.

Although, Ostroff (2016) stated that the Gulf of Mannar was one of the most abundant source of natural pearls in the world for more than two millennia, its history extends about another millennia. Evidence from the early historical period of Sri Lanka shows that the antiquity of the natural pearl industry and its trade or exchange. According to Mahawamsa (the first extract from Chapter 7), pearls refer to the Prince Vijaya's refusal to be consecrated as king, unless he married a maiden from a noble house, who would be consecrated as queen at the same time. Prince Vijaya's ministers and closest advisers immediately set about the task of finding a princess of a noble family to fulfill his wishes. Realizing that the closest kingdom from where they could find a princess of noble birth, was the Dravidian Pandu kingdom of South India, the ministers sent a delegation to the city of Madurai in southern India, carrying the proposal to the Pandu King, to ask for his daughter's hand for the Prince. As was the tradition at that time, the delegation carried several valuable gifts for the Pandu King, that included among others jewels, precious stones (sapphires, rubies, beryls etc.) and pearls, for which Sri Lanka was renowned at that time.

Likewise, during the Consecration of King Devanampiyatissa (Ca 306 B.C.) eight kinds of pearls, namely: *horse-pearl*, *elephant-pearl*, *waggon-pearl*, *myrobalan-pearl*, *bracelet-pearl*, *ring-pearl*, *kakudha fruit-pearl*, and *common (pearls)* came forth out of the ocean and lay upon the shore in heaps (The Mahawamsa, Chapter 11). Mahawamsa further reveals that grand miracles occurred during the consecration of King Devanampiya Tissa. Jewels buried in earth rose to the surface, pearls in deep oceans came to the shore and piled up in

Table 1. Results of the surveys

Year	Total area surveyed in sq. miles	Area of oyster beds	Total estimated population in millions	Year Class of oysters
1955 (Nov.)	Entire area	24	158.5	1954 (July-Aug.)
1956	58	34	13	?
1957 (Nov.)	Not properly surveyed			
True Vankalai Paar				
1955	Entire area	2	5.5	1954 (June-July)
1956	Not properly surveyed			
1957	Not surveyed			
Periya paar Karal				
1955	Entire area	Nil	Nil	
1956	Not surveyed			
1957	Not surveyed			
Chavel and Modaragam Paar				
1955	Northwest Cheval only	3	48.75	1954 (Febuary and 1954 July- Aug.))
1956	74	9.6	76	?
1957*	35	21	258	Mixed
Karathiv Group				
1955	Not surveye			
1956	37	49	25	
1957	Not properly surveyed			
*North Cheval and east Cheval not properly surveyed				

Source: Sivalingam, 1961.

the shore and bamboo trees started to look like they were made out of silver. King Devanampiya Tissa thought that these pearls and gems should be sent to his great friend, King Dharmashoka from India. King Dharmashoka and King Devanampiya Tissa have been great friends for many years, but had never seen each other. King Devanampiya Tissa sent a mission to India with many jewels and pearls and other gifts for his friend, King Dharmashoka.

Many historians, travelers, geographers and philosophers have emphasized that Sri Lankan pearls. Ptolemy, the Second-century A.D. Alexandrian-Roman astronomer and geographer, referred to Sri Lanka as the Island of Taprobane and wrote of the rich pearl fishing grounds near the Island of Epidorus (Mannar), and also about the variety of gemstones found in abundance in the Island, of which the most famous were the beryls, rubies and sapphires. The pearl fishery in Sri Lanka flourished during the ancient Roman period during, which pearls became very popular among the aristocracy of Rome, from around 100 B.C. (2100 Yr B.P.) to around 100 A.D (1900 Yr P.B.). Pearls from the Gulf of Mannar were highly valued in Rome, and reached Rome, either by Greek and Roman ships that chartered the Indian Ocean or by caravans that took 1-2 years for the long journey (Larif, Internet Stone.Com Network, Page 3). Pliny, the Elder, in the first-century A.D. refers to the Gulf of Mannar pearl fishery as the most productive of all fisheries from different parts of the world, in his famous book "Historia Naturali" A.D. Pearls from the Gulf of Mannar were highly valued in Rome, and reached Rome, either by Greek and Roman ships that chartered the Indian Ocean or by caravans that took 1-2 years for the long journey. Pliny, the Elder, in the first-century A.D. refers to the Gulf of Mannar pearl fishery as the most productive of all fisheries from different parts of the world, in his famous book "Historia Naturalis".

Pearls were the most valuable aquatic resource in Sri Lanka and were exploited from pre-Christian times (Siriweera (2011). Megasthenes, the Greek Ambassador to the Mauryan Royal court in India in the fourth

century B.C; the Roman writers Pliny and Solinus Polyhistor as well as the author of the Periplus of the Erythrian Sea, state that large and precious pearls were found in the island of Taprobane (Sri Lanka). The Chinese travellers Fa-Hsien, Wang-Ta-Yuan, Hieun-Tsang, Mahuan and Fehsin; Suleiman, the ninth century Arab geographer; Al-Beruni, the Persian historian who served in the court of Sultan Ghazni Mahmud of Delhi in the 11th century; the 12th century Arab traveller Al Idrisi; the 13th century Arab geographer Kazwini and the historian Al-Maqrisi; the 14th century Bishop Jordanus as well as the Italian Friar Odoric; the famous Arab traveller Ibn Batuta who arrived in the island in 1344; have all alike emphasized the importance of the pearl banks and pearl fisheries in Sri Lanka. Polyhistor (born *c.* 105 BC and died *ca* 35 BC)states that the value of pearls depended on feeding patterns of the oysters. Fa-Hsien records that three out of every five pearls belonged to the king while Hieun-Tsang mentions that a share of the pearls was taken by the king as tax (Siriweera 2005 and 2011).

Strabo, the Greek traveler, and geographer reported in his book "Geographica" written in the early 1st-century A.D. that there was a thriving trans-Indian Ocean trade between the ports of the Roman empire in the Red Sea and the South Indian Pandyan kingdom ruled by king Porus (Pandyan), in which around 120 vessels were employed in 25 B.C., that made use of the seasonal monsoon winds to navigate the Indian Ocean. The items traded included spices, pepper, ivory, ebony, sandalwood, muslin, precious stones and pearls. The trans-Indian Ocean trade according to Pliny accounted for 50% of the annual trade of the Empire, and a significant portion of this trade was on pearls, a commodity highly valued both in India and the Roman Empire, and considered to be more valuable than gold.

According to Wang-Ta-Yuan three out of every ten pearls were given to the king (Siriweera 2011). These discrepancies indicate the fact that the king's share was not static and uniform and that it varied from time to time. Ibn Batuta stated that the king of Jaffna or

Aryacakravarti possessed many valuable pearls and that when he visited the court of Jaffna, he saw the king's employees sorting out pearls. Bishop Jordanus (1280 – 1330 A.D) has written on pearl fisheries conducted in the sea between India and Sri Lanka, (most probably off Mannar) by utilizing about 8,000 crafts. Wang-Ta-Yuan too provides a graphic description of the pearl fisheries and pearl divers off the coast of Sri Lanka.

The Portuguese, the island's first colonial rulers, took control of the pearl fishery in 1524. When the Dutch expelled the Portuguese in 1658, they set out with characteristic thoroughness to develop the fishery under the auspices of the Dutch East India Company. From 1746 the fishery was rented out, a system that proved most successful. Yet the British did not adopt it after they annexed the island from the Dutch in 1796. The Portuguese chronicles and documents of the Sixteenth and Seventeenth centuries have preserved detailed evidence on pearl fishing off the coast of Mannar. During this era, the best known and the largest of the pearl banks were located off Hainan in the South China sea, off the island of Bahrein in the Persian Gulf and in the Gulf of Mannar. The pearl beds off South India and Sri Lanka constituted one of the two major sources of pearls in the world, rivalled in size only by that of Hainan. The pearls fished from the Gulf of Mannar were also considered among the best in the world and fetched a high price in Europe (Siriweera 2011). During the Portuguese period a total of 50,000 to 60,000 persons, including divers, merchants and others were occupied in the pearl fishery at Mannar when it was held. The decision whether or not to hold the fishing was taken on the basis of a pilot survey carried out in the previous year. In the month before the actual harvesting took place, a series of temporary buildings were constructed on the seashore near the oyster beds. These buildings served as store houses, shops and dwellings. The captain of Mannar, who supervised the construction, allotted different areas to different castes. Then the participating vessels and divers were registered. The number of such vessels varied between two hundred and four hundred

with a maximum of eight divers to a boat.

The exploitation of pearl fisheries continued during the Dutch and the British colonial rule. The British earned considerable revenue from pearls of Ceylon. For example, from March 1828 to May 1837 alone Sterling Pounds 227,131 were credited as revenue into the Ceylon Treasury on account of the pearl fisheries. Bastianipillai (1980) reveals many facts and figures as well as events in relation to the The Pearl Fishery of Ceylon (Sri Lanka) under British Administration in the 19th Century. Based on different literature, Bastianipillai states that the Agent Dyke's direct involvement in the management of the pearl fishery commenced in November 1834 by which time, on the recommendations of the Colebrooke-Cameron Commission, "the Collectorate of Jaffna was abolished, and the Government Agency of the Northern Province had been assigned to him. With characteristic efficiency and an eye for economy, Dyke sets out to erect permanent buildings at the site of the fishery rather than spend time and again on buildings of a temporary nature". By the end of the nineteenth century the pearl fishery industry had success and recession due to the rules and regulations of the Agent's of the British administration (Bastianipilla 1980). Further, two Ordinances passed by the Ceylon Government under the British rule (*2 of 1925, 3 of 1946*) relating to the pearl fisheries of Sri Lanka.

Pearl fishing in large scale was ended in 1925, however, the small scale fishery existed even since then and oysters were sold in provincial markets almost up to 1961. Its latest survey had been by Munasinghe (1970) that showed very poor pearl oysters in *periya paar* and *cheval paar*. According to Munasinghe, depletion of the oyster population had caused by following reasons: (1) The absence of a breeding stock; (2) The failure of the pelagic larvae to settle down as spat on paar ground; (3) Pelagic larvae being swept by tidal drifts into areas too shallow or too deep for survival; (4) The absence of floating or rooted algae for attachment; (5) Oysters being covered by silting sand; (6) Destruction of oyster beds by predators, and generally (7) Unfavourable

natural conditions. The most productive fishery survey and exploitation had been in 1958, about 10 years after independence. The most recent one had been in 1996, was for offshore large pelagic fish resource and some oceanographic factors like temperature and depth of thermocline had been found.

DISCUSSION

Pearl fishery industry in Sri Lanka has a long history, but its flourished from time to time from Second century to up to the Nineteenth century. Gathering of pearl shell from the sea, removing of pearl from the shell, and trading mainly undertaking by Tamils and Muslims. The divers were mostly Indian Tamils or Arabs (Figures 11-14). Some plunged head first from a springboard, but the majority descended to the bottom in an upright position, carried down rapidly by a weight. They operated in pairs, one of whom was always on the surface, and each diver was attended by a *manduck*. His duty was to take care of the ropes attached to the weight and the basket in which the oysters were collected underwater (Serendib 2011).

The divers were predominantly Tamils or Arabs. Some plunged headfirst from springboards; some descended in an upright position, carried down rapidly by a stone or lead weight. They worked in pairs; one diver remained on the surface, along with an assistant or *manduck* who watched over the ropes attached to the weight and the basket in which the oysters were collected. When ready to descend, the Tamil diver pinched his nostrils shut, while the Arab diver used a horn clip. Pearl divers at sea would be forced to descend sometimes over a 100 feet in a single breath. Possibilities of drowning and being attacked by sharks, stingray and jellyfish ran high. Physical damage occurred, such as loss of vision due to salty seawater diving without goggles Bursting of eardrums due to the various levels of pressure they had to endure, and other damage due to the varying temperature of the water in different seasons. The 'free' divers were faced in constant debt. Upon their death a family member was expected to take their place in an attempt to settle it and on it continued.



FIGURE 11 : to Dive at the pearl fishery, 1906
(Source: Woolf in Ceylon. Christopher Ondaatje)



FIGURE 12 : Pearl fisheries in ceylon 1920-1930.

Sources: LANKAPURA Historic Images of Sri Lanka; Woolf in Ceylon. Christopher Ondaatje).

The underwater pearl banks (paars) that stretch from Mannar Island south to the coastal town of Chilaw are located in depths ranging from five to ten fathoms. Under the British administration in this area was examined twice a year. If pearl oysters were sufficiently numerous, a fishery was called for the following year. Advertisements were published throughout the East to attract divers and pearl merchants as the indigenous population was rarely involved in the industry. A temporary town to house the cosmopolitan population - often numbering 50,000 - arose from the windswept coastal sands at Silavatturai (the port of the pearl fishery) and included a court, police station, customs post, prison and hospital. Entertainers, such as snake-charmers and dancers flocked to the location, and even some primitive fairground equipment was installed.

Larif mentions in his "Internet Stones.Com Network", the Moors of Sri Lanka were involved in the business of pearl fishery and pearl exports during the British Rule. Even though this industry was a government monopoly until 1833, the manner in which it was operated provided ample opportunities for

the Moors to engage in the enterprise in various capacities. The Government usually rented the fishing rights to speculators on condition that they fish within a predetermined area, for a specified number of days and with a stipulated number of boats. Even after 1833 this system remained largely intact with the difference that instead of renting the right to fish, the government now hired the divers to work for it under official supervision and sold the oysters to pearl merchants through public auction.

A more important branch of this industry from the point of view of employment was diving for pearls. Hundreds of Moors, both indigenous and foreign were involved in this. In 1856 for instance, of the 323 boats which arrived at the fishing site with 678 merchants, 1926 divers and 4698 coolies, 19 came from Kalpitiya and 3 from Mannar, all carrying Sri Lankan Moors, while another 72 came from Keelakarai,²⁴ from Tondy and 5 from Kayalpattanam, carrying South Indian Moors. Four years later there were 200 boats from Keelakarai alone. In 1890, of a total of about 1300 to 1400 divers Moors from Keelakarai, Paumben, and Tondy together counted



FIGURE 13 : Pearl fishing. Arab divers, equipped with nose clips. *Source:* Woolf in Ceylon. Christopher Ondaatje.



FIGURE 14 : As the divers rushed out of the koddu with their share of oysters, they besieged by dealers. *Source:* Woolf in Ceylon. Christopher Ondaatje.

800, while another 200 Indian Moors, mostly of Arab stock, came from Bombay. In that year there were also 300 Sri Lankan Moor divers, mostly from Erukkalampitty and Mannar. Again in 1903 out of a total 242 boats and 7408 divers, 150 of the first and 3732 of the second arrived from Keelakarai alone. In the following year the Moors from that place so dominated the diving, they were described as the "backbone of the fishery." Finally, in 1905 and 1906 there was a marked increase in the number of Arabs to 923 and 4090 respectively, out of a total 4991 in the first and 8368 in the second year.

Culturally and historically Moors have an ancient connection with pearl fishing. According to the Quran, "He it is who has made the sea subservient that you may eat fresh fish from it, and bring forth from it ornaments which you wear. "Perhaps in keeping with the spirit of

this verse Muslims took to pearl fishing from very early times. Tennent cites the Arab Geographer Masudi's description of the habits of Arab Muslim pearl divers in the Persian Gulf in the 9th century. As Islam spread Muslims in other areas also took to pearl fishing and in Sri Lanka it became a vocation practiced by members of that community. The expertise, thus developed appears to have enabled Muslim divers to dive to greater depths and stay under water for longer periods. Of the four groups that participated in diving, viz. the Malayalees, Christian Tamils, Moors and Arabs, the last were rated as the best, the Moors ranked second, the Tamils and Malayalees third and fourth respectively.

Larif explains that even though the Muslims shared widely in pearl fishery a large proportion of them were not Sri Lankans. Except for a small number of Mannar and Kalpitiya Muslims and a few from the Vannarponnai area in Jaffna, the rest came from either India or Persian Gulf. There were two reasons for this foreign dominance. Firstly the Dutch discriminatory policies against the Moors between 1650 and 1750 and the absence of frequent pearl fisheries during the Dutch regime made the local Moors lose much of their skills in pearl fishing over a period of time; and secondly, the British practice of advertising contracts for pearl fishing in India helped wealthy traders there to submit tenders and recruit divers locally before setting out for Sri Lanka by the East India Company. What the local moors gained mostly from the fishery was the opportunity to trade with foreigners who arrived at the fishing site. Sometimes a crowd of 30000 to 40000 gathered at the place and remained there for a month or so until the season was over. A sandy desolated spot along the Mannar Coast became a crowded town of merchants, divers, coolies and officers living in temporary huts and palm leaf sheds trying to maximize their earnings within a short space of time.

Declining of pearl fishery in Sri Lanka

Pearl oyster fisheries take place at very irregular intervals as shown by the fact that only 61 fisheries were held over the past 280 years.

In 1905 the pearl banks were leased to a private company, but the supply of oysters apparently failed after 1907 and the company went into liquidation in 1912 (Fisheries Research Station, Ceylon 1958). The apparent damage to the oyster population was ascribed to sand silting up the beds, attacks by predacious fish and other enemies, over fishing, overcrowding of beds by the oysters and disease. However, no definite proof regarding any of these factors was obtained (Fisheries Research Station, Ceylon 1958). Inspections of the pearl banks are carried out almost every year during October and November to decide on the feasibility of holding a fishery between February and April, the season of calm weather on the banks. The traditional method of fishing for oysters was by diving for them. Few of these divers were available in Ceylon (Sri Lanka), large numbers coming into a fishery from India or countries round the Arabian sea. The divers worked off anchored boats and made use of sinking stones which were hung over the side of the boat. These stones aided the diver to sink to the sea bed where he worked at gathering oysters for as long as he could hold his breath. A small experimental fishery was conducted in 1958 which did not employ any divers, but used specially constructed dredges worked off two 45-foot Canadian fishing vessels. The dredge consisted of an iron frame, 6 feet by 1 foot to which was attached a bag made of iron mesh. The ship dragged the dredge along the sea bed for about 15 minutes at a time before hauling it up with the help of a winch. When fishing was good, a dredge could bring up as many as 5,000 oysters. The danger that a dredge would damage beds by scraping everything off it, including young oysters, becomes an insignificant one when it is realized that the 1957 survey covered only 3 square miles and the 1958 fishery less than one square mile while the total area of the banks is in the region of 300 square miles.

Even in the area dredged, the bumping of the towed dredge would have left untouched spots which could contain sufficient stock for future colonization. The use of the dredge was so successfully demonstrated at the 1958

fishery that it is most unlikely that divers will ever be employed again at a Ceylon pearl oyster fishery. Considering that only about 41 million oysters were fished, the revenue obtained by their sale was high. Towards the end of the fishery there was a decline in both the demand and the prices obtained for the oysters. The main reason for this was the dearth of foreign buyers, but it may also be that cultured and artificial pearls had captured the market. Thus, it is apparent that although mature oysters may be present in the beds, it will not be possible to hold a fishery unless a demand is created for natural pearls. Marketing may emerge as a new factor contributing to the uncertainty of the Ceylon Pearl Fisheries.

However, the present writer contends that the main reason for the declining of pearl fishery in Sri Lanka is a result of a little ice age started ca 1850 (Fairbridge 1961). Figure 15 indicates a changing global climate system last 170 year period (CBD Technical Series No. 89' 2017), and reveals: (a) Annually and globally averaged combined land and ocean surface temperature anomalies relative to the average over the period 1986 to 2005. Colours indicate different data sets. (b) Annually and globally averaged sea level change relative to the average over the period 1986 to 2005 in the long-running dataset. Colours indicate different data sets. All data sets are aligned to have the same value in 1993, the first year of satellite altimetry data (red). Where assessed, uncertainties are indicated by coloured shading. (c) Atmospheric concentrations of the greenhouse gases carbon dioxide (CO₂, green), methane (CH₄, orange) and nitrous oxide (N₂O, red) determined from ice core data (dots) and from direct atmospheric measurements (lines). Indicators: (d) Global anthropogenic CO₂ emissions from forestry and other land use as well as from burning of fossil fuel, cement production and flaring. Cumulative emissions of CO₂ from these sources and their uncertainties are shown as bars and whiskers, respectively, on the right hand side.

The Figure 15 clearly shows global climate change since 1850 and affecting even today for

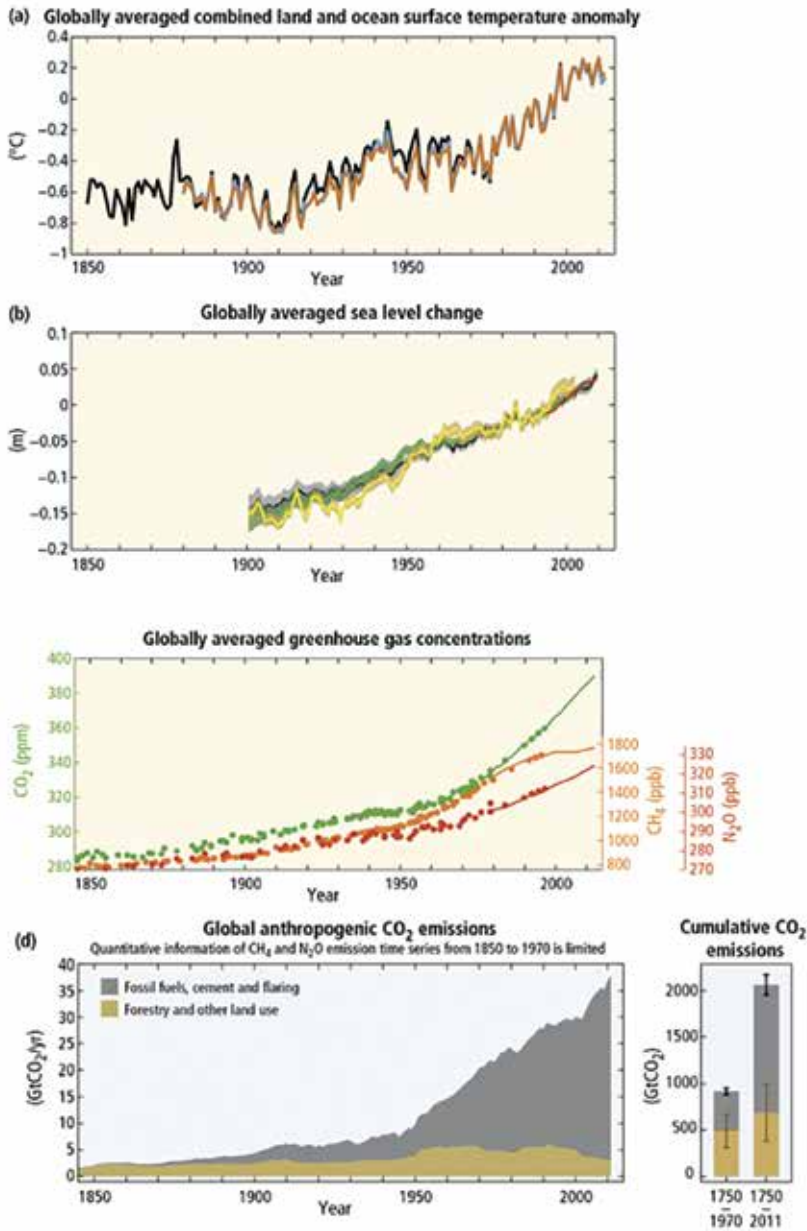


FIGURE 15: The complex relationship between the Annually and globally averaged combined land and ocean surface temperature anomalies (b) Annually and globally averaged sea level change. All data sets are aligned to have the same value in 1993, the first year of satellite altimetry data (red). (c) Atmospheric concentrations of the greenhouse gases carbon dioxide (CO₂, green), methane (CH₄, orange) and nitrous oxide (N₂O, red) determined from ice core data (dots) and from direct atmospheric measurements (lines). Indicators: (d) Global anthropogenic CO₂ emissions from forestry and other land use as well as from burning of fossil fuel, cement production and flaring (*Source:* CBD Technical Series No. 89, 2017).

damage the agriculture, fishery, forestry and creating of desertification (land degradation). Further, this climate change affected to the existing monsoon wind pattern, and changes of ElNino and LaNina processes. Such changes evidently influence to the declining and damage to the pearl fishing industry in the Gulf of Mannar. With this incident other factors such as sand silting up the beds, attacks by predacious fish and other enemies, overfishing, overcrowding of beds by the oysters and disease directly responsible for the damage the industry. Bring up to date the pearl fishery, the British Rulers made an Ordinance (chapter 243) to amend and Consolidate the law relating to the pearl fisheries of Sri Lanka nos. 2 of 1925 3 of 1946. This Ordinance promulgates some regulations for the pearl fishery in Sri Lanka. They are:

- (1) No person shall fish, or dive for, or collect, pearl oysters on, or from any pearl bank, or use a vessel for any such purpose, unless he holds a licence (in this Ordinance referred to as a pearl fishery licence) authorizing him so to do.
- (2) A pearl fishery licence shall be issued in the discretion of and by a Government Agent authorized to issue such licences, and shall be in the appropriate form in the Second Schedule. The said Second Schedule may be altered by regulation.
- (3) Any penalty imposed by a pearl fishery licence may be recovered on summary conviction before a Magistrate as well as by any means provided by the licence. Every person, to whom a pearl fishery licence is issued under this section, shall produce it on the demand of and for the perusal by any pearl fishery guard, and shall observe the terms and conditions contained in the licence.
- (4) A licence to collect pearl oysters issued by any Government Agent before the commencement of this Ordinance shall be deemed to be a pearl fishery licence issued under this Ordinance.
- (5) All pearl oysters or pearls collected

otherwise than under the authority of and in accordance with the terms and conditions contained in a duly issued pearl fishery licence are the property of the State.

Later the Government of Ceylon (Sri Lanka) revised the regulation in 1956 to promote the Pearl fishery industry. Although, the government made an effort to continue pearl fishery industry in Sri Lanka, natural reasons and cultural and social factors have been responsible for the declining the industry.

CONCLUSION

The pearl banks in the Gulf of Mannar region are situated both closer to the Sri Lankan coast as well as the South Indian coast is the most ancient source of pearls in the world, and have more than 3,000 yr history. Prehistoric peoples living closer to the coastal areas in the northwestern Sri Lanka and southern India may have stumbled upon the first pearls discovered in this region, during their quest for food, just as much as it happened in the Persian Gulf in prehistoric times. Archeological evidence in the form of cuneiform inscriptions from Nineveh in ancient Assyria, writings of ancient Greek and Roman philosophers, geographers and travelers, such as Theophrastus (371-287 B.C.), Megasthenes (350-290 B.C.), Androsthenes (300-400 B.C.), Nearchus (360-300 B.C.), Pliny (23-79 A.D.), Isidore of Charax (1st-century A.D.), Ptolemy (90-168 A.D.), and the unknown Alexandrian Greek author (1st-century A.D.) of the "Periplus of the Erythrian Sea," were considered in detail, authenticating the antiquity of the Persian Gulf pearl fishery. Most of these philosophers, travelers, geographers have continued the pearl business with Sri Lankan Kings and Queens, e.g. Prince Wijaya, King Dewanampiyathissa, King Dutugemunu and so on.

According to the historical and mythological legend, the palace of the Kudremalai was ruled by the Princes Allirani whom is the queen of beauty. As she was an interested pearl so she got horses by giving pearls. The Princes Allirani was from the Yakka

clan and the village where her palace was situated around Vankalai area.

During the Portuguese, Dutch and British periods, the northwestern coastal stretch was well famous for pearl fishing industry. For the duration of the Portuguese period, a total of 50000 to 60000 persons, including divers, merchants and others were occupied in the pearl fishery at Mannar when it was held. Even in Dutch and British periods, a considerable amount of labours work in this industry, mostly Tamils, Moors and Arabs. At the beginning of the 20th century, the pearl fishing industry was declined due to the number of reasons, e.g. exploration and extraction of oil as industrial level in Middle East countries and sand silting up the beds, attacks by predacious fish and other enemies, overfishing, overcrowding of beds by the oysters and disease. All these factors aggravated by global climate change since 1850 and affecting even today to the existing monsoon wind pattern, and changes of ElNino and LaNina processes.

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