

## Maritime Heritage of Orissa

*Dr. Balaram Tripathy*

Orissa with her kaleidoscopic cultural heritage possesses a long stretch of splendid seacoast comprising of undivided districts of Ganjam, Puri, Cuttack and Balasore. Besides, the lake Chilka also adds more splendour to the rich cache of cultural heritage. Numerous literary records, Puranas, Epics, the Vedas, early secular literature, medieval literature, Colonial and post-Colonial literature speak about the glory of the sea coast as also the marine heritage of ancient Orissa. In epigraphic and palm-leaf records also there is vivid mention of the sea coast and the seafaring activity. These literary records clearly speak about the thriving trade network (both inland and overseas) of the coast with Southeast Asia, China and the Roman World. But on the contrary, there are very few archaeological evidences as the entire coast has not yet been surveyed with scientific archaeological methods. Whatever data has been recovered gives a cloudy glimpse of the maritime history of Orissa. Although some archaeological and ethnoarchaeological (mainly on seafaring boats at some pockets of coastal Ganjam and Puri) survey were conducted on the coast as also around the Chilka Lake but the work carried out were not sufficient and do not give any clear picture about the overall archaeological and ethnoarchaeological aspect of the coast. Even

they do not portray any clear picture about the development of events like initiation of seafaring as also establishment of commercial contact with different parts of the world. This has been corroborated with the sporadic presence of ceramic and numismatic remnants. But if we will observe the elaborate description about the seafaring activity of the people of the coast of Orissa in literature, it seems to be an exaggeration. This may be due to lack of proper and systematic exploration and selected excavation at some of potential port sites.

The recent archaeological exploration conducted by the Orissan Institute of Maritime and South East Asian Studies under the instructions of Shri Gopinath Mohanty, Commissioner-cum-Secretary, Department of Culture, Govt. of Orissa, resulted in the discovery of ten port sites belonging to the Gupta period. The most spectacular discovery is that of a submerged township with archaeological material datable to the Early Historic period which is very extensive in nature and at present the foundation of mud houses along with pottery and other antiquities are traced just along the shoreline. A multi-disciplinary approach was applied while conducting the fieldwork by incorporating ethnographic, sculptural and ecological

parameters to interpret the sites and their relationship with trading and overseas activities and deforestation due to increase in settlements and wood and timber used extensively for purpose of fuel, construction and also building watercrafts. This survey, conducted in the Kantiachara river catchments, which receives ample breakwater, also solved the problem of identifying ports datable to the Gupta period which was in fact not present in the south Orissan port sites. Most probably the major ports of south Orissa became defunct owing to several natural as well as man made problems like heavy siltation and bifurcation of channels due to irregular flood activities. In this situation, the seafaring activities were concentrated in the north Orissan coast, especially in Balasore district. Small rivers and break-water receiving channels were selected for establishment of ports as evident from the recent survey conducted along river Kantiachara. The finding of Gold coins of Kumaragupta I with having a horse rider on the obverse and a deity offering flowers to a peacock on the reverse clearly suggest the flourishing of ports in the area during the Imperial Guptas. Cultural material found from both explorations and excavations at South Orissan port sites do not represent Gupta antiquities and surprisingly they are absent at Manikapatana-Palur Harbour complex, the most flourishing port sites in Eastern India which has a long history of being an international terminal for more than 2000 years (The author has extensively analyzed the excavated material from Manikapatna-Palur Harbour Complex stored in the Orissan Institute of Maritime and South East Asian Studies, Bhubaneswar).

### **Ecological Background**

The coastal plains are one of the five geomorphological parts of Orissa (Sinha 1971).

Orissa lying on the eastern coast of India, has a coast line of about 480 km. Sinha (1971:5) summarized the important features of the coastal plains of Orissa which extend from Suvarnarekha in the north to the Rishikulya in the south. Orissan coastal plains are known as a land of six deltas- the Suvarnarekha, the Burhabalang, the Baitarani, the Brahmani, the Mahanadi and the Rishikulya. According to their locations, the coastal plains can be termed as the north coastal plain (the deltas of Suvarnarekha and Burhabalang), the middle coastal plains (the combined deltas of the Baitarani, the Brahmani and the Mahanadi), and south Coastal Plains (the Rishikulya plains). Orissan coastal plains are narrow in the north, widest in the middle and narrowest in the lake Chilka coast. There are parallel belts in the coastal plains also.

The Chilka lake which is situated along Orissa coast at the southwest corner of the Mahanadi delta and is the largest coastal lagoon in Asia with a length of 64 km and tapers towards south. The western and southern margins of the lake are fringed by the Eastern Ghat hill ranges. The lake is separated from the Bay of Bengal by a belt of about 4 km wide sandy beach ridges and barrier spits lying to the eastern side of the Lake (Mahalik 2000: 1-15).

### **Ancient Port Sites of Orissa**

In recent years a number of port sites have been brought to light on the coast as also in catchment areas of river mouths. These port sites have yielded a handsome amount of ceramic assemblage, antiquities, coins, inscriptions etc. but unfortunately they have not been subjected for analysis or any interpretation. Similarly, so far, there is no expedition to search for ancient shipwrecks and anchors. Hence, a large portion

of the maritime history of Orissa is in mystery. If the description in literatures is to be believed, there must be a chance of the discovery of ancient shipwrecks and anchors. Stone anchors picked from port sites are being used as lintels and doorjambs in several villages of Karnataka, Goa and coastal Maharashtra (Gaur et al. 2000: 67-74; Tripathi and Gaur 1997: 51-57; Tripathi et al. 2004: 28-41). Similar ethnographic parallels can also be implied in Orissan context too. There is every possibility of finding stone anchors and other associated material either *in situ* or being used by the local village communities for construction purposes.

There is elaborate discussion in several texts about the existence of a number of port sites and port towns in ancient Orissa. They are as follows:

The Greek classical text "The Periplus of the Erythraean sea (1st century A.D.) by an anonymous author mentions several ports and coastal towns such as Broach, Uzane (Ujjain), Sopara, Kalyana, Muziris, Mosalia (Muslipatna), Dosarene (Coastal Orissa), etc. Periplus further says "Dosarene" was famous for ivory". Ptolemy's Geography (2nd century A.D.) mentions several ports in the coastal Orissa like Kambysion near Hoogly, Manda, Munde or Mandu river mouth (possibly mouth of Mahanadi), Kannagara (near Konark), Kati Kardama (near Cuttack) and Palura (Poloura of Ptolemy). He says Palura as a major port of eastern India for sea-voyages to South-East-Asian countries/Islands. It was the point of departure (apheterion) for ships bound for Khryse (South-East Asian). The Periplus Tex Exo Thalasses compiled by Marcian of Haraklea (between 250-500 A.D.) also agrees with the point of departure (apheterion) as Palura. According to Ceylonese chronicles Datha-Dhatu-Vamsa, Dipavamsa, Chullavamsa and Buddhist

text Mahagovinda Sutta, Kurudhama Jataka and Mahavastu refer to Kalinga's Capital as "Dantapura" a port town, from where the "Tooth relic" was transferred to Ceylon. Chinese Pilgrims Fa-Hein and Hiuen-Tsang who visited Odra in 639 A.D. mention a famous port "Che-li-ta-lo" near the shore of the Ocean (Waters 1988).

In the last three decades exploration of ancient, medieval and late port towns in coastal Orissa were undertaken and as a result a number of port towns were brought to light. The only problem was to correlate and identify them with the descriptions in literature. The port sites explored so far are Kalingapatanam, Barua, Sonapur, Mantridih, Ganja, Kantiagarh, Palur, Prayagi, Manikpatna, Sanapatna, Badapatna, Arakhkuda, Banjiapatna, Boitkud, Astranga, Harishpur, Marichpur, Chandbali, Narendrapur, Dhamra, Chudamani, Balasore, Talchua, mouth of Survarnarekha (old Pipili), Shah Bandar, Kansabansa, Panchubisa, Chandipur, Kasaphala, Kirtania, Talsari and Tamluk. Kalingapatnam, the mouth of river Vamsadhara was, once upon a time, the capital of Kalinga. Its maritime link has already been established and the Archaeological Survey of India has excavated a site near Kalingapatanam and unearthed the materials datable to 3rd century B.C. Barua Bandar on the mouth of Mahendra Tanaya river has been described by various authors and even in the "Gangavamsanucharitam" of 18th century. It was also a famous port directly linked with Puri. It is also clear that the ports of India, during the Early Historic period were connected with each other as revealed from the archaeological material found on them.

### **Chilka as Natural Harbour**

Chilka Lake was considered to be a natural harbour and thousands of ships were floating on

it. The Bramhanda Purana (10th century A.D.) mentioned the maritime activities of Chilka Lake where thousand of ships were floating for trade to Java, Malaya, Singhala and China and other island countries. Extensive and intensive explorations in the lake area has resulted in the discovery of a number of port sites which were very much active during the Early Historic period as evident from the archaeological remains at several sites (Mohanty and Tripathy 1998: 69-98).

### **Overseas association of Orissa**

The sailors of Kalinga reached South-East Asia in very early times but unlike Tamil texts of Sangam period, they have not left any record of their trading voyages. It is to be mentioned here that the Tamil Text "Silapaddikaram, Manimekhalai, Nakkirar, Mullaipattu" and others provide mines of information of the sea-trade between South India and Southeast Asia as also the Roman world. In the absence of any direct evidences to Orissa we will have to depend upon the scattered references of other regions. The available evidences indicate that, from the beginning of Christian area, monks, merchants and adventures continued to visit South-East Asia and generally they voyaged from the Orissan port sites.

### **Archaeological Evidence**

Archaeological evidence of Orissa's maritime heritage has been emphasized by various scholars (Basa 1993: 351-365, 1997: 730-741; Behera 1977: 115-121; 1994: 55-70; 1995: 4-6; Pattnaik 1997: 697-717). These include various potteries, beads, medallions, clay bullae and caltrop unearthed in Orissa and other countries. But the amount of archaeological material available so far does not give a clear

picture of the overall aspect of material culture pertaining to the seacoast and this lacuna is completely due to the lack of systematic archaeological fieldwork along the coast by following foot-to-foot survey.

Quite a few archaeological artifacts help us ascertain maritime trade network of Orissa from the Early Historic times to the late 18th century A.D. Important among these are imperishable materials such as Northern Black Polished Ware (NBPW), Rouletted Ware, Knobbed Ware, Stamped Ware, Footed Ware, Amphorae, Glass and Semiprecious Stone beads and seals and sealings, tablets with inscriptions in Brahmi and Khorasthi. The archaeological evidence so far obtained from coastal archaeological sites and their importance in terms of trade and exchange network as also the local patterns are given below:

### **Northern Black Polished Ware**

The Northern Black Polished Ware is usually made of superfine Ganga Clay. It is well-fired, thin in section and has a striking lustrous surface. It was a precious deluxe ware and was used by the elite class of the society. This ware has mostly been found as bowls, dishes with carinated handles and spouted jars. The chronology of NBPW in the middle Ganga plains ranges between c. 700 B.C. to 100 B.C. (Makkhan Lal 1984: 94). Several sites in South Asia which were outside the orbit of Mauryan empire also yielded this type of ceramics which included even some hinterland sites. The sites include Mahasthan and Wari Bateswar (S. Husne-Jehan 2002:127-138) in Bangladesh, Chandraketurah-Tamluk complex, Radhanagar, Langudi, Narla-Asurgarh and Budhigarh, Sisupalgarh and Manikapatana in Orissa, Nasik,

Ter, Brahmapuri in Maharashtra, Amaravati and Dharanikota in Andhra Pradesh, Chebrolu and Alagankulam in Tamilnadu, Korkai, Rajgir, Sravasti, Vaisali, Pataliputra, Kausambi, Ujjaini, Vidisha, Sanchi and Saranath (in the core areas of Mauryan empire). Even some neighbouring countries of India such as Udegram, Charsada and Taxila in Pakistan, Tilaurkot in Nepal and Anuradhapura-Gedige in Sri Lanka yielded this ware. Out of the above sites most of the sites were related to Buddhism but evidence of finding them in port sites and from inland sites like Sisupalgarh, Manikapatana which were originally not related to Buddhism but served as a major centre and port, respectively. It is also mention worthy that in most of the sites NBP has been found in association with punch-marked coins.

The chronology and distribution pattern of the NBP clearly indicates interaction among South Asian countries between 700 B.C. and 100 B.C. and with Orissa from at least 3rd/4th century B.C. The findings of two sets of Asokan Edicts as also the finding of NBPW in coastal as also in western part of Orissa is significant.

### **Rouletted Ware**

Rouletted Ware found only in the shape of a dish is so called because of Rouletted decorations of a variety of forms including triangles, diamonds, parallelograms, wedges and dots. This type of pottery is usually wheel thrown and slipped with unusually smooth surface. Its usual colour is grey and has a ring, which sounds metallic. It was first discovered at Arikamedu in the east coast of south India. Later on several sites like Chandraketugarh-Tamluk in West Bengal, Alagankulam and Karaikadu in the east coast of south India, Kantarodai, Manthai and Tissamaharama in Sri Lanka, Bukit Tengku

Lembu, Kobak Kendal and Cibutak and Sembiran in Indonesia, Tra Kiu in Vietnam and Berenike in the Red Sea Coast also yielded this pottery. In Orissan context this ware has been recovered from the Early Historic sites at Sisupalgarh, Manikapatana and Radhanagara. The finding of this ware in Orissa is significant as this pottery is uniform in nature wherever they are found. There are evidences of local made Rouletted ware also but their appearance is very scan. The XRD pattern of Rouletted Ware was carried out by V.D. Gogte of Deccan College (1997: 69-85) and as per the analysis it was found that the soil for Rouletted Ware was quarried from Chandraketugarh-Tamluk region of West Bengal. The finding of this ware is significant in terms of Early Buddhism and trade of India and Southeast Asia. As per Ever's criteria, there can be no doubt that Rouletted Ware featured in a "typical inventory of trading goods". Furthermore, because most of these sites were centers of Buddhism (except Sisupalgarh) and trade was originally connected. It could be assumed that Buddhist religious establishments provided religious homogeneity to traders, very much like the NBPW.

### **Knobbed Ware:**

Knobbed vessels are so called because at the centre of the inner surface of the base sherd, a conical knob which is circumscribed by a number of concentric groves (generally three to four engraved spiral motifs). This ware has been found both in earthen and high tin bronze forms. The Knobbed Ware, which is made of terracotta, has been discovered in various sites in South Asia. This variety of ceramic type was earlier named as Grooved Ware (Tripathy 2007 in press) as it was not provided with the present terminology "Knobbed Ware". This ware has been found in

several sites of Bangladesh (Wari-Bateswar and Mahasthan), Harinarayanpur, Sisupalgarh, Marjakud, Manamunda-Aurgarh, Radhanagara and the Early Historic sites Kalahandi district of Orissa and Anuradhapura in Sri Lanka.

The distribution pattern of the ware indicates that the ware was produced in the Early Historic period (c. 3rd century B.C. to 3rd century A.D.). The function of Knobbed vessel has been in uncertainty. According to researchers the ware was used for identical purpose, which was not secular or utilitarian such as cooking and serving food. As Glover (1990: 139-184) rightly observes "they possibly served some special purpose for ritual and funerary use only. He interprets the motif of the base knob and concentric circles as a mandala, a schematic cosmological symbol representing perhaps mount Meru and the surrounding oceans. He further points out that the vessels are 'witness to the adaptation in Thailand by some groups of Indian moral, philosophical and political concepts'. Although there exists no definite proof of exclusive Buddhist connection a possibility. The chronology and distribution of Knobbed Ware is another definite indicator of contact among south and Southeast Asian countries from 3rd-4th century B.C. to 3rd century A.D. nevertheless, the ware also demonstrates close proximity to Buddhism and trade guilds. The finding of this ware in plenty from Orissan coast as also in the hinterland is very significant.

### **Amphorae**

Elongated jars with tapered bottom and handles attached to the sides, amphorae were used in ancient times as containers for transportation and preservation of edible material, both liquid and solid like wine, oil, vinegar, honey,

olives, fruit, fish (preserved in salt or in oil) (Colazingari 1994: 154). Fragments of imitation of amphorae have been reported from the early historical period at Manikapatna, a fine piece of amphorae is reportedly found from Karanji village, very far from Jayarampur on the border of Orissa and West Bengal (Basa & Behera 2000: 566-600). Out of 27 sites in India where Amphorae sherds have been found in Orissa the site of Manikapatna yielded a piece of fine amphorae (Pradhan et al. 1996: 20-23). Amphorae are often cited as the most important evidence of maritime trade with the Mediterranean world. The recent analysis of pottery and antiquities of Manikapatna, stored in the Orissan Institute of Maritime and South East Asian Studies, revealed several fragments of amphorae sherds of Mediterranean origin as also Dressel IV varieties with incrustation marks. Residue analysis of these sherds would throw light on the material carried in it.

### **Moulded Ware**

Innovation of using a mould for ceramics was first encountered in the Deccan at the site of Nevasa, Ter, Kolhapur and Kandarpur (Excavation Reports by H.D. Sankalia, Deccan College, Pune). The port site of Manikapatna and Radhanagar yielded a good number of Moulded Wares which shows cultural and trade contact of the people of Orissa with that of sites in the Deccan.

### **Stamped Ware**

The Stamped Ware with having floral motifs have been reported from several Early Historic trade centers in India and from Orissa the evidence comes from the excavations at Manikapatna. The recent explorations and excavations conducted at and around Radhanagara revealed several pot sherds with

lotus-wheel stamps, rather a symbol pertaining to Buddhism. Similar types of pot sherds have also been recovered from the excavations at Manikapatna which speaks of some sort of relationship between Radhanagar and Manikapatna during the Early Historic period.

### **Chinese Pottery**

Chinese ceramics have also been obtained from coastal Orissa through both excavation and exploration (Behera 1995: 4-6). Manikapatna and Khalakatatana in Puri district have yielded Chinese ceramics from excavations. These have also been collected from port towns of colonial periods such as Ganjam and Balasore through surface exploration and excavation. Chinese ceramics included celadon, white porcelain, blue and white and brown glazed porcelain sherds. Thus, the recovery of Chinese pottery on Orissan coast in medieval time was part of the trade network between China and Persian Gulf and east Africa region during 13th-14th centuries A.D.

Besides this, evidence of the ceramic types from Java and other Southeast Asian countries comes from the site of Manikapatana which no doubt served as the prominent port establishment for more than 2000 years. Hence, it is imperative to take up a systematic horizontal excavation at the site to have a clear understanding about the ancient navigation, material culture as also the socio-economic pattern of ancient coastal Orissa.

### **Semiprecious Stone**

Orissa proved to be the best source for precious and semi-precious stones as more than 28 extensive gem belts have been identified in the upland Orissa and are found in all most all Early historic sites in the State. As evident from Ptolemy's Geographia (Majumdar 1927) precious and semiprecious stones were transported as the

principal commodity even to the Roman World. These gemstones were generally exploited from the river valleys of the Mahanadi and Tel and were traded from Early Historic sites in western Orissa such as Marjakud, Kardi, Manamunda-Asurgarh of Boudh District as also from Narla-Asurgarh, Budhigarh, Kharligarh, Nehena in Kalahandi and Nuapara Districts, respectively and were subsequently traded to the coastal port sites through the river Mahanadi only (Tripathy 2000:60-67; 2002; 2005: 69-79; 2007). The traders, especially gem traders never followed the land route following the river Mahanadi as it was risky for robbery. This ethnographic observation (Tripathy 2005: 69-79) has also been corroborated in the literary as also in the travel accounts of the British merchants (Acharya 1955). The coastal part of Orissa is devoid of gem deposits and hence the hinterland Orissa was connected for the purpose. About 120 beads of carnelian, agate, and chalcedony have been found from the excavations at Sisupalgarh (Lal 1949: 62-105). Evidence of manufacturing of beads have been reported from Jaugada in Ganjam district (IAR 1956-57:30-31), Narla-Asurgarh (Sahu 1982: 1-8) and Marjakud (Tripathy 2002). Besides this, semiprecious stone beads have been found associated with each most of the Early Historic sites of coastal Orissa like Radhanagar.

### **Manikapatana Excavation**

Manikapatna is approached via Puri and is situated on the left bank of a channel on Chilka (locally known as Tanda) which connects with sea near Arakhakuda. The site was excavated in a limited scale by the Orissan Institute of Maritime and South East Asian Studies which proved Manikapatna to be one of the most active and flourishing port establishments on the east coast of India.

The excavation revealed cultural deposits of two periods Period-I and Period-II. The deposits of Period-I yielded two Neolithic celts, shreds of Rouletted Ware, fragments of Amphorae, two Puri-Kushana copper coins, a sherd with Kharoshti script with legend "Dasatradeva" and "Khida", stamping design on pottery, sprinklers, spouts, Kaolin pottery, terracotta miniature figurines of bird, horse, terracotta smoking pipes, game pieces, areca-nut beads, lamps with human figure and Black and Red Ware, Northern Black Polished Ware, Red Polished Ware, Black Slipped Ware, Knobbed Ware, etc. This period can be dated from 3rd-4th centuries B.C. up to 4th century A.D. with the end of the Period-I the site was probably abandoned and a long time gap is marked by the sand deposit of two meters and was again functional during the 9th/10th centuries A.D. and continued till the British period.

The discovery of Rouletted Ware and Amphora pieces of Mediterranean origin speak of trade link with the Roman World, if not directly. The discovery of Kharoshti inscription with legend is first of its kind in whole of Orissa. Archaeological excavation in Sembiran in North-Eastern Bali has also yielded Rouletted Ware, shreds with Kharosti character and hundreds of glass beads (Ardika 2007-forthcomming). Scientific Analysis (X-Ray Diffraction) of Rouletted Ware from Sembiran (Bali), Arikamedu (India) and Anuradhapura (Ceylon) are very similar and Rouletted Ware found in Kobak Kendal and Cibutak in North-West Java. Rouletted Ware of Manikapatna is also similar to the Rouletted Ware of the above places. The discovery of Roman amphorae at Manikapatna leads us to support the view that probably the Romans had direct trade contact with ancient

Kalinga/Utkala (Gogte 2000: 681-689). The finding of numerous iron nails used especially in ships and boats as also hundreds of ring-wells clearly suggest that Manikapatna was an international terminal for repairing ships as also to fill drinking water. The site also revealed a number of antiquities in terracotta, stone and glass. Several brick and stone structures were also exposed during the excavation. The site also revealed a wide array of pottery from foreign countries including Moulded Ware, Stamped Ware, Chinese Celadon and Porcelain Wares, Egg-White and Chocolate Glazed Arabian Ware, Brown Glazed Burmese Pottery, etc. (Tripathy 2006: Personal Observation).

#### **Art - Historic Evidence**

In several temples of Orissa, the maritime activities have been depicted in the form of sculptures, inscriptions and relief drawings. The earliest representation of a ship comes from a sculpture stored in the Orissa State Museum, Bhubaneswar, actually found near the Brahmeswar temple complex. The panel depicts two ships, one fully intact and the other partly broken with standing elephants at the frontal end. Two persons are seen seated and two sailors are shown steering the ship with oars in the rear end. The second one depicts a standing elephant on its frontal portion. Below the ships, graphic depiction of waves with aquatic and amphibious animals can be observed. However, it may also suggest that probably the sculptural panel depicts the transportation of elephants from ancient Kalinga by ship to other countries. The panel may be dated according to its sculptural representation to the Early Medieval period.

A scene is also located with an oar at Deokund in Mayurbhanj district where goddess



Ambika is shown seated on a boat which is very significant and shows the association of the deity with seafaring and navigation activities. At Sun temple located at Konark also there are Bhairava images which are depicted in dancing form performed on boats. A stone medallion depicting a boat was also recovered at Konark and at the front end of the boat is a figure of an attendant holding a parasol while next to him are seen one standing and one squatting figure; the latter is without his head. At the rear end of the boat are the helmsmen holding the rudder. Four men are seen rowing the boat. There is also the representation of a cabin inside which a man is sitting with bow and arrow. However, this scene can be corroborated with some epic scenes of the Ramayana. A Mahishamardini image, found near Brahmeswar temple shows the goddess engaged in a fierce sea-battle with the demon coming out of the trunk of a buffalo which is in fact a rare depiction.

### Epigraphic

There are several epigraphic related evidences on the sea-faring activities of the coast. The locations of Asoka's Minor Edicts at Dhauli (Near Bhubaneswar) and Jaugada (ancient Somapa and present Pandia village in Purushottampur NAC of Ganjam District, suggest that existence of a coastal route from Tamralipta to the Andhra coast as evident from several sites located at a distance from the seashore like Sisupalgarh and Jaugada and even Radhanagar. The Hathigumpha inscription (c.1st century B.C.) mentions that king Kharavela defeated the southern confederacy and earned a lot of wealth in the form of precious stones, pearls and jewellery. There are also several Javanese and Bali epigraphs which record about the people of Kling (Kalinga) as also their overseas trading

activity. Some of the inscriptions of the Bhauma dynasty also speaks about the tax system prevailed in the port sites of ancient Orissa (Samudra kara Bandha).

### Numismatic

Roman coins are found in the entire coast as also in the hinterland which speaks about the trade activity of the people with the Roman Empire. But, very less number of ancient coins have been found so far from both explorations, especially at Radhanagar (Misra 2000: 507-550) and excavations carried out at Manikapatana (Pradhan et al. 1996: 120-23) Khalkhatapatana (Nigam 2000: 495-506) and they have been dated to the 11th to 14th centuries A.D., respectively. On the contrary the adjoining states of Andhra Pradesh and West Bengal have revealed several Roman Coins in both excavations and explorations (Warmington 1974). This may be due to lack of explorations and systematic excavations conducted in the Orissan coast.

### Literary

Literary references to the maritime tradition of Orissa are found from four types of sources Western Classical, Indian, Sri Lankan and Chinese (Behera 1994: 55-70). Kalinga's commercial importance and association with the Bay of Bengal is evident from western classical texts such as the Periplus. Ptolemy's Geographia and Pliny's Natural History. Among the Indian literature, the most well known account about Orissan maritime tradition is from Raghuvamsa as it mentions dwipantaras from where breezes filled with the fragrance of cloves blew. This implies trade in cloves.

Besides, several other works like Parimala, Prastava Sindhu, Rasa Kallola and Lavanyavati mention about sea faring activity of the people of

Orissa. Maritime heritage of Orissa is also attested by Sri Lankan literary and epigraphic sources. The Datha Dhatu Vamsa records that the sacred tooth relic was taken from Dantapura of Kalinga to Sri Lanka.

The Chinese sources also reveal the Orissan maritime heritage. Hiuen Tsang mentions about Che-li-Talo "near the shore of the ocean" which was a thoroughfare and resting place for sea-going traders and strangers from distant land. Several Oriya Buddhist scholars like Sudhakara Simha and Prajna also visited China as there was plying of large vessels between the two countries which had hundred other passengers. Besides, there are also several epigraphic and folkloristic evidences pertaining to the maritime activity of Orissa.

### Ports of Orissa

Among the ancient ports which find mention in several literary and epigraphic records are Tamralipti, Che-Li-Ta-Lo, Manikapatana, Khalkatapatana, Gaurangapatana, Palura, Pithunda and Kalingapattinam, etc. Besides, the most spectacular remains of Rambha Bay are the two massive breakwater-like stone alignments located at the foothill of Ghantasila and Nandighar on the bank of Chilka. This breakwater alignment was specifically meant for ships to protect them from strong waves as well as the southwesterly and northwesterly winds (Mohanty and Tripathy 1998: 69-98). There is actually no archaeological remains of boat found from Orissa except at Olondaz Shahi, Balasore.

The port of Tamralipta finds mention in the Mahabharata, Indian and Colonial Literature and in the Chinese and Greeco-Roman accounts. Tamralipti now exists in the state of West Bengal. The port site of Che-Li-Ta-Lo mentioned by the

famous Chinese traveller Wuang Chwuang (Hiuen Tsang) in the 7th century has not yet been satisfactorily identified. The excavations at Khalkatapatana by the ASI under the direction of Late B.K. Sinha gives some clue for the identification of this site with that of Che-Li-Ta-Lo but it is not adequate as the site did not reveal any material dating back to the pre-Christian era and the early part of the Christian eras. Palur was a famous port site which has been corroborated in the famous Geographia of Ptolemy and in which he refers Palur or Poloura as a reference point in preparing his map. According to him Palur was the only port to have a voyage to the Coromandel Coast. Kalingapattinam was another important port of Kalinga in the mouth of river Nagavali in the Srikakulam District of Andhra Pradesh. The name itself means the city of Kalingans. Besides being a famous port throughout the ancient period was also the capital city of Kalinga. The archaeological excavations conducted here suggest that it was a fortified city since 3rd century B.C. The port city of Pithunda as a metropolis has been mentioned in the Hathigumpha inscription of Kharavela which was occupied by Kharavela in his 11th regnal year. Ptolemy too refers to a metropolis called Pitundra and locates it in the country of Moissolia between the mouth of the Godavari and the Mahanadi. The Periplus of the Erythrean Sea describes that the sailor proceeded eastward from Masalia and reached the Bay to reach Dosarene which had a good breed of elephants called Bosare (McCrandle 1973:145). Khalkhatapatana, 11 km from the Sun temple Konark, located on the banks of Kushabhadra river was excavated and established it as a port city of the 14th century A.D. Some important Chinese pottery and coins have been revealed from the excavation.

The available sources such as the epics, Jataka stories, epigraphic, numismatic, ethnographic and archaeological artifacts focus the light on the trade and cultural contacts of Orissa with distant overseas countries through the ages. In spite of several hazards and problem of piracy the Orissan seafarers undertook maritime trade for the sake of wealth. The archaeological findings at Sisupalgarh, Manikapatana, Palur, Radhanagar, Jaugada, Khalkatapatana show that trade was flourishing up to the Gupta period. As archaeological evidences do not show any continuation of the activity, it is generally understood that overseas trade was collapsed partly during the period between the Guptas and the Bhaumakaras. This could be due to lack of thorough survey. The excavations at Manikapatana provides us an unbroken cultural succession right from 3rd century B.C. to the late 19th Century in the form of ceramic and numismatic (especially Chinese) evidences with a limited gap of almost 500 years. During this period, maritime and overseas transactions were carried out in North Orissan ports especially in Balasore district following small break-water receiving channels like Kantiachara and others.

The trial excavations at Manikapatana brought to light pottery of both indigenous and foreign origin. Along the east-coast of India, Manikapatana is the only site from where varieties of pottery have so far been reported. The presence of pottery, coins and art evidence indicate the impact of early sea trade and voyage between Orissa and the Mediterranean world, South and Southeast Asia. The discovery of Rouletted Ware all along the east coast and semiprecious stone beads demonstrates the evidence of seafaring activities of the Oriya people. The evidence from Manikapatana proves

the east and west maritime trade relations. With the increase of Roman influence along the Indian coast, the Indian traders left for Southeast Asian countries in search of spices and sandalwood. Based on the available references and archaeological findings in Orissa, Southeast Asian countries and other localities it is clear that the sailors knew about these lands and the products. It is worth mentioning here that historians have believed the weak successors, economy under the feudatories, attack by neighbouring kingdoms, imposition of taxes and unskilled navigation contributed to the decline of maritime activities of Orissa. In addition to this, it is noticed that the geological processes such as the coastal erosion, sea-level changes, tectonic activities, natural hazards, sedimentation and formation of sea bars and dunes in the navigational channels are equally responsible for the decline of ports in Orissa (Tripathi 1992-93: 50-53).

It is known that Balasore (Olondaz Sahi) and Konark were the ancient ports, which are presently 15 and 4.8 km away from the seashore, respectively. This indicates that there were heavy sea-receding processes and as a result the sites are located at a distance from the present seashore. Hence, it is imperative to take steps while conducting systematic explorations on the coast with site catchment method in the background. Ahmed (1972) states that this change has happened due to the uplift of land from the shoreline. Chilka was a busy port in the historical times and sedimentation caused the disuse of ports. The diversion of river course due to the formation of sand dunes made the Palur port non-operational. To understand in detail the geological processes from archaeological point of view no systematic studies have been carried out along the coast of Orissa. The coastal survey

and offshore explorations at strategic locations and excavations at new sites as also already excavated sites, comparative study, scientific dating of objects will no doubt yield valuable data on the history of sea-voyage activities of the Oriyas.

Hence, it is also clearly evident that the coast of Orissa played a significant role in the maritime history of eastern India due to its suitability for establishments of ports. Besides, several perennial rivers have their meeting point in Orissa. These points also gave ample facility for building of ports. Thus, it is clear that if surveyed systematically by following scientific methods hundreds of archaeological sites will come to light and a complete history of maritime heritage of Orissa will be represented which is rather neglected by scholars and archaeologists for years together.

In recent years there is a lot of disturbance in the sea level due to several natural (for example recent Tsunami) and man-made factors such as large-scale deforestation of coastal mangrove and savanna type of vegetation. Hence, there is a great danger for the existing archaeological heritage and early maritime centers. There is an urgent need to document, retrieve, salvage and study the maritime heritage before they are lost for ever.

Hence it is imperative to take up foot to foot survey of the entire coast in a planned and scientific manner to collect and salvage archaeological material and to establish a chronology of events and cultural periods in a diachronic fashion which can be depicted in the Marine Archaeological Heritage Gallery in a story-telling way. It is unfortunate to mention here that despite a large and extensive stretch of shoreline and the lake Chilka in Orissa, the Orissa State

Museum does not have a Maritime Archaeology Gallery which is indeed an urgent necessity for the State.

The main purpose behind this research is to establish a gallery on maritime history with various activities related to it in the precinct of the Orissa State Museum. This is also an attempt to be a part of the New Museum Movement which will depict a chronological human history with all types of human activities in an elaborate manner.

The following objectives and methodology is imperative to be taken up for the retrieval and documentation of the maritime heritage of Orissa by implying archaeological, ethno-archaeological, ethno historic with sufficient scientific input like absolute dates, satellite imagery of sites and their environment, in the background:

- To locate, document and retrieve archaeological material from sites with appropriate contextual approach.
- To locate and salvage shipwrecks, anchors and other remnants of the navigation heritage of Orissa.
- To develop a data base for coastal archaeological sites, port sites as also pilgrimage sites associated with traditions and legends on sea-faring, boat making, navigation, trade and trading material.
- To establish Orissa's ancient trade (overseas) in a global perspective. Besides, an emphasis will be laid on the contacts of the coast with the hinterland for various raw material and finished products, forest produces as also gemstones.
- To prepare a database or various antiquities, both indigenous and alien to

- have a clear understanding on the material culture of the people.
  - To emphasize the role of Orissan coast in diffusion of trade, culture, religion and ideology through the ages.
  - To emphasize eco-tourism and aqua-tourism by providing historical background to some of the potential places of tourist interest.
  - To discuss various processes of sea action which affects the existence of archaeological sites due to sea-level change, over high-tidal pressure, uneven ocean current in the post-Tsunami east coast.
  - To discuss the importance of the area in terms of overseas trade and its cultural relations with China and southeast Asia and the Roman World through archaeological and linguistic material.
  - To collect ethnographic data related to ship/boat making, trade and exchange pattern, communities associated with boat making, rituals, festivals associated with trade and boat building.
  - To identify ancient places mentioned in literature systematic data will be collected by ethno-historic and folkloristic evidences.
  - To attempt a holistic archaeological perspective on coastal archaeological sites based on the principles of Post-processual approach.
  - To establish absolute chronology of coastal archaeological sites based on relative and absolute methods.
  - To salvage archaeological and archival material from endangered sites located at a close proximity from the coast.
  - To establish galleries on overall aspects such as cultural, material, navigation pattern and demonstration of ancient shipwrecks and anchors.
  - To publish the work in several volumes on specific themes in collaboration with the Orissa State Museum.
- Methodology :**
- To draw a holistic picture of the coastal archaeological heritage the following multi-disciplinary methodology will be implied during the field survey:
- Intensive and extensive field survey of the entire coast from Andhra Coast to Bengal Coast which will be based on both foot to foot survey as also village to village.
- (Topo-Sheet 1:50,000 Scale) Satellite Imagery Photographs of some of the important pockets of the coast especially of false points and confluences.
- Systematic plotting of archaeological sites will be made at each and every archaeological site.
  - Section scrapping will be conducted to determine the geo-stratigraphy and cultural stratigraphy.
  - Archaeological material will be collected systematically and possible trial pits will be laid at some of the excavated sites like Manikapatana, Palur, Khalkatapatana etc. to represent a sequence of cultures in the Museum demonstration gallery.
  - Trial trenches will be taken at some of the potential sites to obtain the cultural sequence.

- Ethnographic, ethno historic and folkloristic information will be collected to supplement the archaeological data.
- Relevant archival material will be collected to support the archaeological potential of the coast.
- Analysis of the ceramic assemblage on the basis of thin section analysis and X-Ray Diffraction analysis to understand trading pattern.
- Botanical remains from stratified context will be subjected for palynological studies to understand exotic pollens.
- Faunal material will be subjected for fluorine phosphate analysis to obtain relative dating. Identification of rare aquatic as also terrestrial creatures will be done in the Archaeo-zoology Lab. of Deccan College. This will give an idea about some of the extinct species.
- Organic remains such as bone, charcoal, wood, etc will be subjected for both C14 and TL dating methods.
- A thorough scan of the literature encompassing religious, secular, historic, colonial, post colonial and traveller's accounts will be taken into consideration to interpret the archaeological data.
- References will also be collected from existing folklores, legends, customs, traditions and beliefs.

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Dr. Balaram Tripathy is working at Orissan Institute of Maritime and South East Asian Studies, Museum Building, Bhubaneswar- 751 014