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# 28

# WATER CRAFTS PLYING ON THE EASTERN SEA BOARD: THROUGH THE NUMISMATIC LENSES

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Three oceans situating at three directions and countless numbers of perennial and non-perennial rivers, have given India one of her unique geographical characters. This maritime space and riverine connections has been utilized to the fullest from the immense past. This typical geographical feature had helped Indians to develop their skills in water craft making. The principal objective of this paper is to explore and analyse the water craft motifs in the Indian numismatic specimens within the early historic time frame.

It is needless to say that coins are used as the main medium of economic transactions as well as the advertising media. So symbols and scenes depicted on them were chosen very carefully. Each motif or scene bears a unique significance. The depictions of different types of water crafts on the coins, seals and sealings of an authority is a clear indication of communication and the trading relations with different areas inland or abroad. Except that, it will also give us a clear picture of how the water crafts looked like, and their building technologies. The find spots of these numismatic specimens will indicate the area where those crafts were in use, and more over, it will give us valuable information about the functions and contribution of those crafts in ancient trade and communication of a certain area. Within the time frame of our study, only some local punch marked coins of both copper and billon metal (dated around 3$^{rd}$ century BCE to 2$^{nd}$ century CE), some terracotta seals and sealings (dated around 3$^{rd}$ to 4$^{th}$ century CE) found from Chandraketugarh (North 24 Parganas), some silver punch marked coins of local type found from Wari-Bateshwar (Narsingdi, Bangladesh) and also some Satavahana and Pallava lead coins found from Andhra coast and Deccan have the depictions of water crafts on them. The find spots of these specimens draw our attention to the Bengal coast, because, maximum numbers of coins with water craft motif have been yielded from the areas under the boundary of southern Bengal.

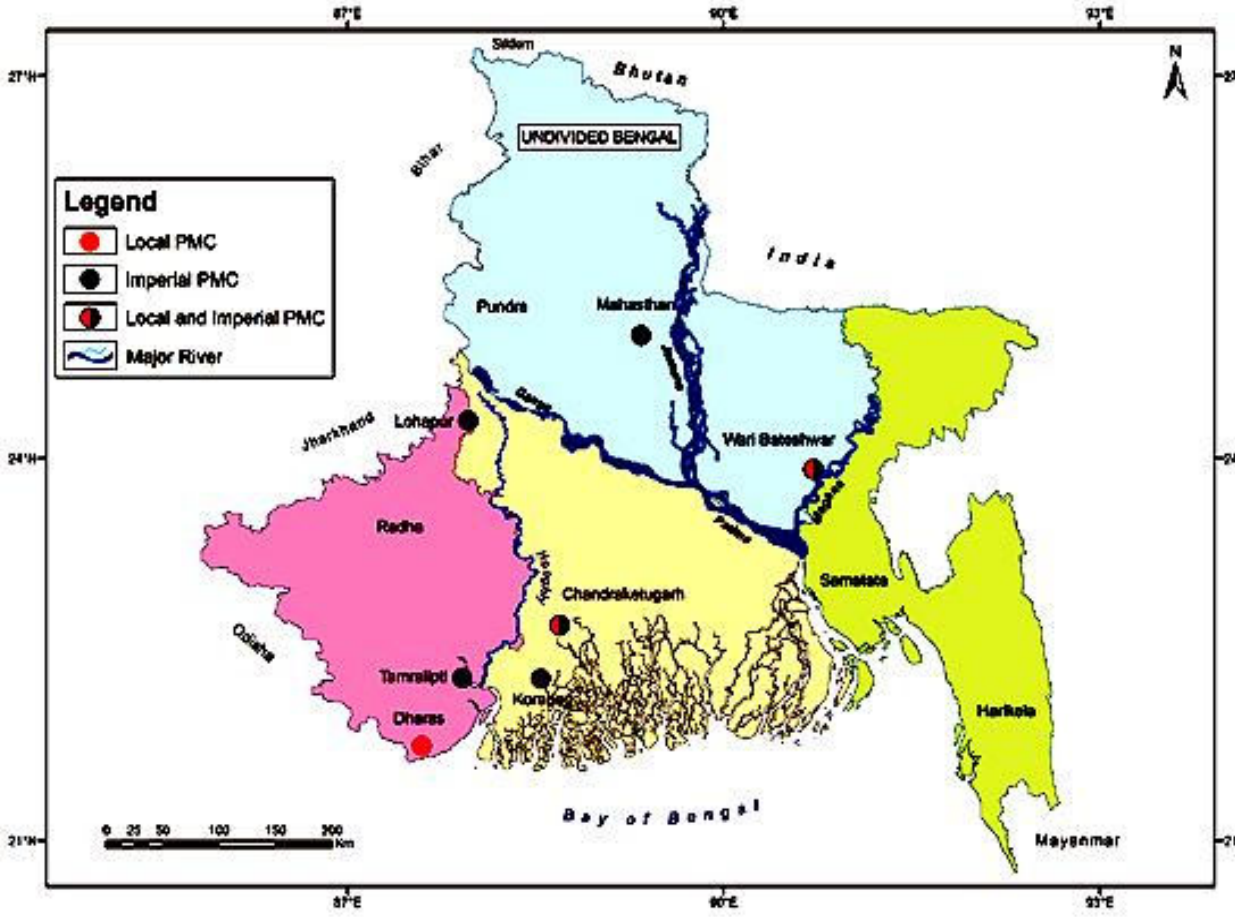
First of all, let us look at the territory of Bengal. Here Bengal means united Bengal, consisting West Bengal and Bangladesh but Bengal was never a united territory throughout the early historic phase. According to B.N. Mukherjee it was divided into four major geographical as well as administrative units or sub-regions and hydrography of that area was the main factor in determining the limits of these units. These four sub-regions are- 1) The area to the west of Bhagirathi, 2) The area lying to the north of Padma, 3) The area between the Bhagirathi and Padma, 4) The area to the east of Meghna. These units were further divided into some smaller

administrative cum geographic sub-divisions. The area to the west of the Bhagirathi was divided into Rāḍha, Sumha, and Gauḍa territories, the area to the north of Padma was divided into Puṇḍravardhana and Varendra regions, the area between Bhagirathi and Padma was divided into Vanga and Vangala regions, and the area to the east of Meghna was divided into Samataṭa, Hrikela and Paṭṭikera regions.[1] Earliest coins of Bengal were of punch marked type and had clear and strong Mauryan or Magadhan influence. These coins are dated around 4th - 3rd century BCE. Maximum of these coins have five symbols which make them fall into the category of imperial type but some hoards have yielded yet another type of punch marked coins with four symbols which have local influence. These local punch marked coins were contemporary with the imperial ones and on these local type of coins only we can find the water craft motifs. Depending on the three different local coin types found from the Bengal region, there appears to be at least three different economical zones in Bengal issuing coinage of their own in this early phase. These areas are 1) Wari-Bateshwar village area, (the coin of which area is attributed to Vanga sub-division by Susmita Basu Majumdar and Sandip Pan[2]), 2) Tamralipta region (Midnapore), and 3) Chandraketugarh region. The rest of Bengal used only imperial silver Magadhan punch marked coins with 5 symbols. The local type coins of Chandraketugarh and Wari Bateshwar also has sun and six arms sign which were prime symbols of imperial silver punch marked coins of Magadha Mauryan series. So it seems to Basu Majumdar and Pan that these local coins also have Magadhan influence. These local coins also followed the weight standard of karshapana, but these are a little less than the weight of actual karshapana (57.6 grains). According to Basu Majumdar penalty given to the government for the permission of minting coins in local mints is the reason for lesser weight.[3] Basu Majumdar also believes that the symbols like boat, fish, bird, lobster etc. which were closely associated with the daily life if the local people got a chance to be stamped on the coins because the coins were minted locally.[4] It is necessary to mention here that despite being the most popular and active port (during the time period of our study) and a separate economic zone, we don't get a single coin with boat motif on it from Tamralipta area. The actual fact is the whole hoard of punch marked coins of this time period found from Dharas (which is in Tamralipta economic zone) is lost except only one coin (which don't have a boat motif). So it will never be known until the discovery of another hoard of this period whether there was any boat motif used in the coins of this area or not. Due to the lack of proper evidences, the political picture of Bengal in early historic phase is not very clear but the existence of three different types of local coins denotes that the total area of Bengal was divided into different political areas ruled by different authorities. But it's not clear if those areas can be called *janapadas* or not.[5]

Chandraketugarh is an archaeological site in West Bengal, with an expansion of 38 square kilometers, located in the district of North 24 Paragana about 35 kilometer north-east of Kolkata. River Vidyadhari is in its immidiate vicinity. According to some historians Chandraketugarh is identical with the port city of 'Gange' mentioned in various foreign

literary sources including *Periplus of the Erythraean Sea* and Ptolemy's *Geography*. Though this theory is not accepted by all, but it is undeniable that it was the oldest and one of the most popular ports on the bank of river Ganga.[6] Some punch marked coins with 4 symbols on the obverse made of billon metal had been found from this site, which have depictions of water crafts on them. The reverses are either blank or with one or two unclear symbols. These coins have been dated approximately around 300 B.C.E. Beside that we also get plenty of terracotta seals and sealings from this site having the pictures of water crafts dated approximately 300-400 C.E. Some of these punch marked coins and terracotta seals and sealings are preserved in State Archaeological Museum, Kolkata. The coins prove that this place had a money based economy and prosperous community.

Wari and Bateshwar are two adjacent villages under Belabo police station in Narasingdi district, some 4 km South-west of Belabo town in Bangladesh. These two villages are on high land and surrounded by low marshlands. The confluence of Brahmaputra and Arial kha river is 5 km North-east of Wari. From the bank of those marsh lands (which is now believed to be the dry bed of old Brahmaputra) innumerable numbers of silver punch marked coins in earthen pots have been yielded. These coins also have 4 symbols on the obverse. The reverses are either blank or with some unclear symbols. As Dilip Chakravarti believes that Wari-Bateshwar gained prosperity around 3rd century B.C.E and it lasted for a few centuries.[7] The silver punch marked coins can't be dated before 3rd century B.C.E,[8] thus the punch marked coins of Chandraketugarh and Wari-Bateshwar are contemporary. It is striking that the number of Wari-Bateshwar coins (few thousand)[9] is greater than that obtained from other areas in Bangladesh which yielded similar coins. The National Museum of Dhaka has the largest collection of Wari Bateshwar punch marked coins but proper cataloguing of these coins are still left undone. Md. Rezaul Karim has classified the local silver punch marked coins into three groups depending on their shapes, sizes, weights and reverse mark.[10] The first group includes coins having round, roundish, oval or rectangular shapes and weighing from 1.7- 1.9 gms. Reverse of these coins are mostly blank, though some unclear symbols are seen in one or two cases. The second group includes coins having round shape and weighing between 1.7-1.9 gms. Reverse of these coins are mostly stamped with one or more symbols but some reverses are blank. The coins of the third group have oval shape, and weigh from 1.8-1.9 gms. Reverse of these coins are also blank. Except sun and six arms (these two symbol were very common in the imperial punch marked coins of Magadha-Maurya series), the main symbols of these coins are – boat, bird, fish, hooked fish, lobster, etc. Sometimes these signs are also seen as countermark on the reverse of these coins. These symbols alone clearly denote strong maritime connections. It has been proven undoubtedly that Wari-Bateshwar was a maritime city or a riverine port[11] with a prosperous community and money based economy.




**Map 28.1:** Find spots of PMC from Undivided Bengal (600BCE-1300CE) Courtesy: Basu Majumdar & Pan, *JBA,* 21, 2016: 68.

In reconstructing maritime history, the study of water crafts and its technology plays a key role, but in the case of early Bengal as well as ancient India, paucity of data makes this task a challenging one. Any archaeological remains of ancient Indian ships or boats have not been found till now and depictions of water crafts on coins, paintings, sculptures and even descriptions of water crafts in literary sources are very scarce. In this scenario the numismatic specimens with water craft motifs became more valuable because these are the earliest visual depictions of water crafts especially for the Bengal boats. Though we always should keep in mind that these representations may not be actual or accurate- since the artist, if himself not a sailor, may not depict the vessel accurately. Now let us analyse the water craft motifs on the coins.

Punch marked coins of billon metal found from Chandraketugarh shows a vessel represented by two parallel horizontal lines, atop a long vertical line. The stern is raised high but it is bent at the end, giving the vessel a shape of a crescent. On the top right of the stern may be seen portion of a pole to steer the vessel. According to Ranabir Chakravarti, absence of an oar on these vessels may suggest that they were not used in sea voyages but on riverine routes.[12]

A structure on the middle of the boat seems to be a cabin to many historians including Ranabir Cahakravarti.[13] If these structures can be proven as cabins then these depictions would be the earliest depictions of boats with cabins in the Bengal area, and it would also prove that these boats were used for ferrying and not for transferring cargoes but, Swarup Bhattacharya, an anthropologist and a boat specialist (presently the curator of Maulana Azad Museum, Kolkata) thinks otherwise. According to Bhattacharya, the central structures of these boats are very disproportionate to be explained as cabins. If cabins were made in this proportion then the craft will loose its balance and will sink. He points out specially to the type of boat which has a central structure with criss-cross lines (see the first line drawing) and says that this structure cannot be a cabin but it can be explained as a two masted vessel, the ropes of which makes this criss-cross line in the centre.

**Plate 28.1:** PMC with boat motif from Chandraketugarh, Courtesy: Rajgor & Bhandare, *Punch-Marked Coins in Early Historic India*, 2017.

**Plate 28.2:** Line Drawing of water crafts found on PMC from Chandraketugarh.

Interestingly enough in an article John Guy[14] described a boat model of early medieval period which looks like the boats depicted on the Chandraketugarh PMC. Even still today in

Bangladesh similar looking crescent shaped boats are used for fishing. These boats ply specially in Cox's-Bazar area.

Contemporary silver punch marked coins of Wari-Bateshwar has depiction of another type of water crafts on them. These water crafts also have a large structure at the centre, which seemed to be a cabin to many historians. Its prow and stern are curved upwards and bifurcated at both ends. Mr. Bhattacharya believes that this is a depiction of two water crafts standing side by side and each one of these boats has a mast, ropes attached to the masts creates this criss-cross design. In modern times only one type of boat has bifurcation but only on one end (at the stern). This type of boat is called Sampān and it is in use only in Bangladesh (Chittagong). This is used for ferrying.[15] All the water crafts depicted in the punch marked coins of Bengal are of small size which made historians (including Ranabir Chakravarti) take them as riverine boats but the high curvature of each of the depictions caught a specialist's eye and he (Mr. Bhattacharya) undoubtedly believes that these Bengal boats had sea going tendency, because the high the curvature is the more ability of breaking strong tide it adds to the craft; but these water crafts are not large vessels, their shape is like small riverine dingis but their uniqueness is they can ply into the sea.

**Plate 28.3:** Silver PMC with boat motif (Wari-Bateshwar), Courtesy: Bose & Nasir, *Early Coinage of Bengal*, 2016.

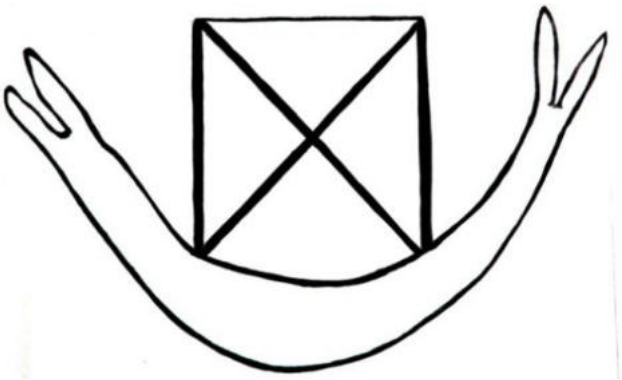


**Plate 28.4**: Line Drawing of the Water craft, Courtesy: Bose & Nasir, *Early Coinage of Bengal*, 2016.

A round shaped terracotta seal impression found from Chandraketugarh (now in the State Archaeological Museum, Kolkata, No. D.A. W.B. CKG. 180) catch our attention on this note. Here a masted water craft is clearly depicted, the left half of the hull of which is raised high and pointed at the end. At the centre of the vessel stands a man wearing a tall fat toped cap. This Scythian style cap makes historians believe that the man depicted was of central Asian origin, but this statement cannot be supported fully because the picture is not that clear. B. N. Mukherjee also noticed a *swastika* on the same side of the sealing.[16] On the right hand field of the seal impression a clear depiction of a horse with its head towards the mast was discovered by

Ranabir Chakravarti for the first time.[17] The horse is shown in profile, his elongated neck, eyes, ears, mouth, his torso, hind legs and tail is very prominent. Interestingly the motif of the horse is larger than the ship or the total scene. The artist seems to have deliberately enlarged the figure of the horse to draw an attention to the animal. This seal impression also has a legend in Bramhi-Kharosti script which says (according to B. N. Mukherjee) "Tasvodajana Hovaji(no) na Trapyagasa".[18] Which means – "The ship of the class of Trappaga is belonging to or owned by the powerful Tasvodaja family. The seal impression from Chandraketugarh is one and only numismatic as well as archaeological evidence of Bengal taking part in horse trade.[19] Swarup Bhattacharya differs with the description of the water craft. To him, it is simply a single masted boat and the ropes attached to the mast create the illusion of a human figure. This water craft also have a dingi like shape but the curvature of the craft is again very high. He also says that in Bengal cargos are always kept in the shell of a boat and not on the deck but in this case, the depiction of the horse on the deck is proving the depiction to be symbolic. It is important to state here that the existence of a script called Brahmi-Kharoṣṭī (*vimiśrita lipi*) is not accepted world wide but the existence of a horse trade is beyond any doubt. The script should be re-examined, but even if we keep aside the legend, then also the importance of the seal impression and the message it conveys doesn't get diminished.

**Plate 28.5:** Sealing with boat motif with horse on board (Chandraketugarh), Courtesy: Mukherjee, *Indian Museum Bulletin*, Vol. xxv,1990.

**Plate 28.6:** Line Drawing of the boat with horse, Courtesy: Mukherjee, *Indian Museum Bulletin*, Vol. xxv,1990**.**

So, a ship (named Trappaga?) is clearly identifiable from the sealing, and it is doubtless that these kinds of ships were used in transporting horses. It is well known that horse is not an indigenous animal. These horses probably came from Central Asia and were brought to Gandhara first by Kushana traders then were trained in India and then were brought to the ports of Bengal through inland routes. Then it was traded first to south India via coastal sea routes and then was supplied to South East Asian countries via long sea voyages.[20] Depiction of a horse on

the coins of the Malayamans is an unavoidable proof of the horse trade in south India. In Periplus Maris Erythraei the anonymous writer mentions about water crafts named Trappaga and Kottymba which were employed by king Nambanus (Saka ksatrapa ruler Nahapana that is) to guide foreign cargo ships to Barygaza (Broach) and Trappagas used to go to Syrastrene (Saurastra, the Southern part of Kathiawad peninsula) to do their job.[21] Periplus gives vivid description of how these ships used to understand the wind direction, tide of the water bodies and also gives information about how they guide those foreign ships through a difficult path to the port of Barygaza. These ships used to sail through the coast line of India and were able to go some extent into the sea. Angavijja, a 4th century jain text clearly classifies Trappaka, Kottimba, Samghada as middle category ship which are higher than smaller crafts like Kattha and different from 'Pota' or large ships. It seems that these vessels named Trappaga or Trapyaga were medium sized vessels which were able to do coastal voyages but not appropriate for long sea voyages. These informations can be taken into consideration only if the legend on the seal impression truly reads the name 'Trappaga'. Depending on the find spots of Rouletted wares in the eastern coast Ranabir Chakravarti and Asok Datta have shown that there was a strong coastal network during our chosen time frame,[22] which was definitely possible because of these kinds of vessels.

**Plate 28.7:** Sealing with a boat motif (Chandraketugarh), Courtesy: Mukherjee, *Indian Museum Bulletin,* Vol. XXV, 1990.

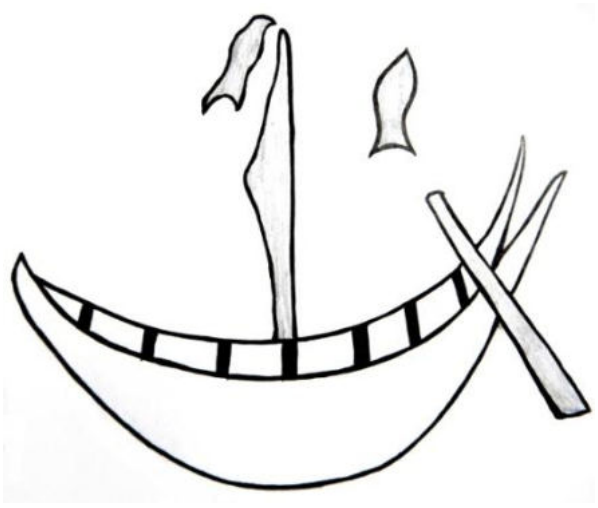


**Plate 28.8:** Line Drawing of the bifurcated boat, Courtesy: Mukherjee, *Indian Museum Bulletin,* Vol. XXV, 1990.

Another rounded terracotta seal impression[23] from the same site shows a water craft with a single mast in the foredeck, a flag is attached to the mast, the bow and stern both are curved upwards. Beams are shown crudely. An oar is fitted to the stern. There could have been another oar which is not seen clearly. B. N. Mukherjee notices an auspicious sign in the right side of the mast but he did not identify the symbol. According to him the legend says 'jemdhas juyusya' which means '(ship) of Juja, the conquering king'. Identity of the king named Juja cannot be

established historically but this ship is obviously a royal one. This sealing gives the earliest definite picture of an Indian Royal Ship (if we consider the reading of the legend by B. N. Mukherjee as correct reading).[24] Here is a small contradiction to this statement i.e., the craft depicted in this sealing is not at all looking like a lavishly decorated royal ship. It is looking more like a small boat or 'Dinga' with one or two oar which has a high curvature. This water craft has a bifurcation at one side which looks quite similar with the modern day boats named Sampān used in Bangladesh.

There is another round shaped terracotta seal impression which shows a water craft with a bow and stern curved upwards. The stern is fitted with an oar, beams are clearly shown. A tripod mast with a banner atop is erected at the foredeck. About a three quarter height of the mast there is a rectangular object with four holes, two on each side of the mast. It's difficult to identify this object but Schlingloff thinks that it is actually a folded sail. He also finds these kinds of things on the ship of Satavahana coins. Though the ship on Satavahana coins and Chandraketugarh coins, seals and sealing's are not identical. This seal impression has a stylized sheaf of paddy at the right hand field with (according to B. N. Mukherjee) a Brahmi-Kharosti legend, reads 'jidhatradhana jusatrasa Tridesojatra', which means the journey to three directions by Yasoda, who was earned food wealth (i.e., whose wealth is earned by selling food).[25] This water craft is looking like a big ship or vessel, at least bigger than the previously discussed boat or the boats depicted on the punch marked coins. The depiction of the sheaf of paddy on the sealing is definitely telling about the cargo transported by this particular ship. It has been well known by now that paddy was exported to the South-East Asian countries from the Bengal ports and Bengal imported conch (cowries) shells from those countries (especially from Maldivs) in return.[26] Some other seal impressions found from Bengal (especially from Chandraketugarh) also have sheaf of paddy depicted on them which shows a strong possibility of a maritime trade in this product by the time of 3rd or 4th century C.E. Since Bengal is a major paddy producing area from the very earlier times it is not impossible that paddy was a major export item of Bengal since then. South India also had a high demand of paddy from the very past because in the southern peninsula the rice producing lands (*mārutam*) are very limited.

Very interestingly, a closer look to the motif shows that it is wrongly depicted on this sealing. The direction in which the flag on the top of the mast is flowing, proves that the vessel is going to the left hand side of the sealing. If the flag is depicted in the right direction then the oar should be drawn at the back side or at the stern of the vessel but here it is seen on the front of the vessel. Attaching the oar to the stern of the boat is a typical feature of our Bengal boats. This whole incident clearly means that the artist or craftsman of this sealing was not well conversant with the actual vessel. He curved the design depending on his imagination. This phenomenon is not very rare. It happens even today. All the logos, or puja pandals or cartoonish depictions of boats or water crafts are not always made with precision or proper measurement.

**Plate 28.9:** Sealing with a vessel and a sheaf of paddy, Courtesy: Mukherjee, *Indian Museum Bulletin*, Vol. XXV, 1990.

**Plate 28.10:** Line Drawing of the Vessel, Courtesy: Mukherjee, *Indian Museum Bulletin*, Vol. XXV, 1990.

Another nearly rounded seal impression from that same site shows a ship with a single mast on the foredeck and clear representation of beams are seen (now in the collection of Indian Museum, Kolkata, IM. 90/181). B. N. Mukherjee noticed a flag is fitted to the mast but it is very unclear. The stern is fitted with a steering mechanism which is represented by a vertical & horizontal line crossed at the centre though it is not clear whether it is a oar fitted with a horizontal handle or not. At the centre of this ship there is a disproportionately large basket from which a living plant is seen standing straight. The plant is still unidentified. Here again the enlargement of the basket of grain is intentionally done to draw people's attention to the goods. B. N. Mukherjee noticed a symbol of conch shell on the right field of the sealing. This sealing also has a legend in Brahmi-Kharosthi (according to him) which reads – 'Soridhajasa Dijammsa jaladhisakla', which means 'the ship Jaladhisakra (Indra of the ocean) belonging to the Dvijamma who is as famous wealthy'.[27] Though B. N. Mukherjee described this vessel as a sea going one but this water craft also looks like a small boat rather than a large vessel. If we take Mukherjee's reading as a correct one then the vessel which is called 'The Indra' of the ocean and which is going to three abroad countries is expected to be a large vessel. This boat also has the typical shape of a 'dingi' with a high curvature at both ends. It is relevant here to say a few words about the plant depicted on the boat. If this plant is a trading good then most probably it is a medicinal herb. Ranabir Chakravarti[28] has shown that Bengal ports were famous for transporting herbs like Gangetic nard. Nard is not grown in Gangetic region, it is a plant of Himalayan region but because it was transported through Bengal ports it was named as Gangetic nard. Anonymous writer of the Periplus mentions about the Gangetic nard and its trade. The problem is this plant doesn't look like the plant of nard or any other herbs already known to historians as export goods from India or Bengal coast. This plant and its careful depiction also made us think that it might have a symbolic significance. It can be a Bodhi tree.[29] As we all

know that emperor Asoka is said to have visited Tamralipta (which is a port of Bengal) on the occasion of sending a branch of Bodhi tree to Sri Lanka.[30] This kind of tree in railing is depicted in some other terracotta sealings found from Chandraketugarh.

**Plate 28.11:** sealing from Chandraketugarh, Courtesy: Mukherjee, *Indian Museum Bulletin* Vol.XXV, 1990.

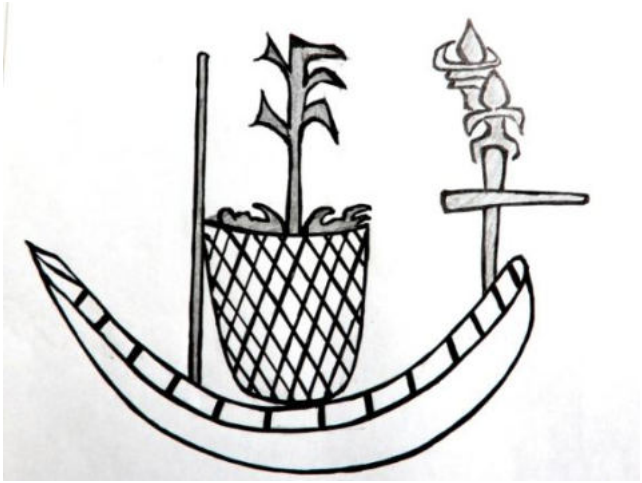


**Plate 28.12:** line drawing of the boat with a basket and living plant, Courtesy: Mukherjee, *Indian Museum Bulletin* Vol.XXV, 1990.

Except the numismatic specimens found from the Bengal area we also have some other dynasties issuing coins using water craft motifs as their major symbol. The Satavahanas were one of the most powerful rulers of ancient India within the time frame of 1st - 2nd century C.E. Among the later Satavahana rulers, only in the coins issued by Vasisti Putra Pulumavi and Yajnasri Satakarni have the depictions of ships on the obverse.[31] This ship type coins were introduced for the first time in the history of Indian Numismatics by the Satavahanas. They used lead for minting this type of coins. A two masted ship is depicted on the obverse and an Ujjaini symbol on the reverse. The ship type coins have been found at different points between Madras and Cuddalore and some of the coins of Yajnasri Satakarni have been discovered from Maharastra also. Rear and poops are different in shape, some has fan shaped projection. One or two ore towards the rear and a buoy between the bows can be noticed in some coins. Sometimes traces of the legend like 'yana Satakanisa' or 'Ra (no) Gotamipu(ta)...(na) Sata(ka)nisa' are seen. Ship with three masts, a tree near the ship and a wavy line beneath the ship are rare occurrence. On some coins of Yajnasri Satakarni a fish and a conch shell is seen beneath the ship with double mast. In one coin of Yajnasri Satakarni, three ships are shown anchored at a dock; which is really very interesting. Another interesting thing is only two Satavahana ruler had ship motifs on their coins which is a clear indication of the increase of trade in their reign. The fish and the conch shell may indicate trading goods. These ships are definitely large sea going ships which is an indicator of maritime trade of that time.

**Plate 28.13:** Three ships on a Satavahana coin, Courtesy: Mukherjee, *Numismatic Art of India*, Vol. II, 2007.

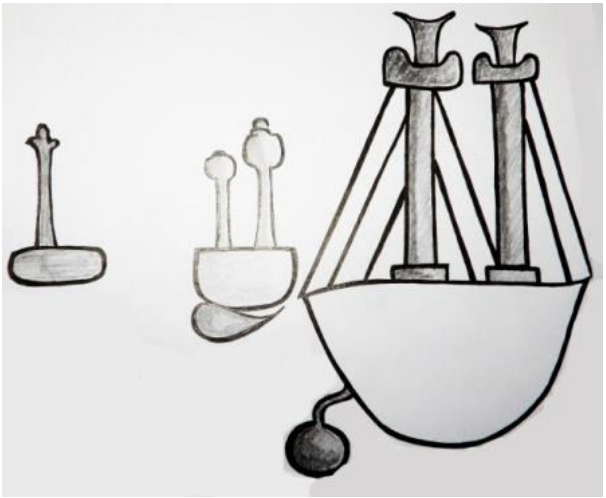


**Plate 28.14:** line drawing of the Satavahana coin with three ships, Courtesy: Mukherjee, *Numismatic Art of India*, Vol. II, 2007.

**Plate 28.15:** Satavahana coins with ship motif, Courtesy: R. Krishnamurthy, *The Pallava Coins,* 2004.

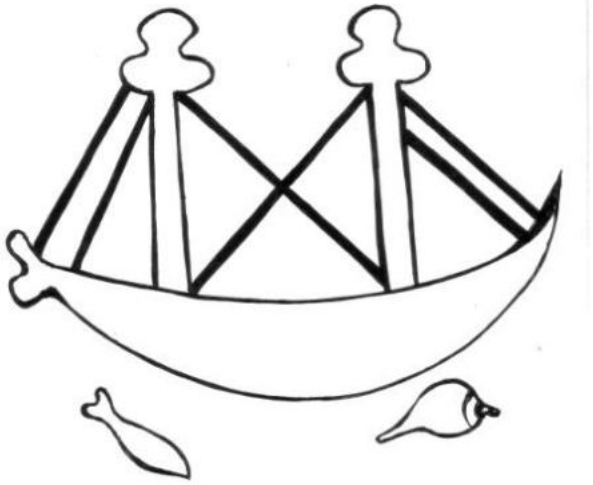


**Plate 28.16:** Ship motif depicted on Satavahana coin, Courtesy: R. Krishnamurthy, *The Pallava Coins,* 2004.

Pallavas ruled in a portion of South India (Karnataka and Northern part of Tamil Region). They get prominence after the eclipse of Satavahana dynasty, of whom the Pallavas served as feudatories. They ruled from 275 C.E. to 897 C.E. but became a major power during the reign of Mahendravarman I (571-630 C.E.) and Narasimhavarman I (630-668 C.E.). Coins of Pallavas with ship motifs were also made of lead. In these coins a standing bull is seen on the obverse and a ship on the reverse. Most commonly ships with double mast are seen but some rare depictions of ship with single mast are also there. Swarup Bhattacharya believes that in some

Pallava coins where a ship with double mast and double mast is seen are actually two individual single masted ship standing side by side and for this reason two mast of two different ship creates an illusion of a double mast. If we look closely, a clear bifurcation at both the ends of the craft is visible which supports Bhattacharya strongly. The depiction in which two masts are seen, can definitely be the depiction of two individual ship because two separate oars are also seen which generally fitted to one single boat. All the lead coins of Pallavas with ship motif can be dated 3rd century C.E. just after the eclipse of the Satavahanas. Pallava coins with ship motif are found from different points of Andhra coast. Interestingly, the ship type coins of Satavahans were circulated in that very area. So the ship motif of Pallava coins shows a continuity of motifs of the preceding authority as well as it proves that trade was one of the important sources of their wealth. Explicit temples made by Pallavas support this theory. These ships are crudely depicted but are surely different in appearance than the water crafts depicted on the numismatic specimens found from Bengal. These were obviously sea going large vessels, often decorated.

**Plate 28.17:** Ship motif on a Pallava coin, Courtesy: R. Krishnamurthy, *The Pallava Coins,* 2004.

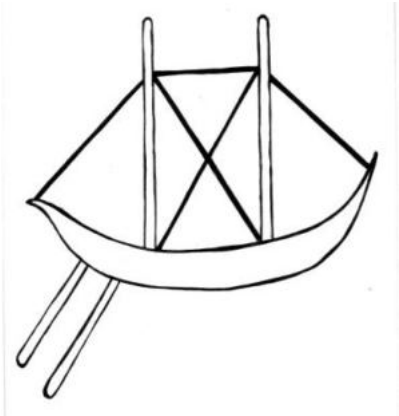


**Plate 28.18:** Line drawing of the ship in Pallava coin, Courtesy: R. Krishnamurthy, *The Pallava Coins,* 2004.

All the specimens discussed above are from the eastern sea board or east coast but all water crafts are not of the same type. Specially the boats of Bengal are very different from the rest. All the boats depicted in the numismatic specimens found from Bengal are small sized and has a typical dingi like shape with a high curvature which gives them ability to ply into the sea. Interestingly enough these specimens also have depictions of export goods like horse and paddy on these small water crafts which may have the ability to ply into the sea but may not be appropriate for taking long sea voyages and the amount of the cargos imported from or exported to our country from abroad is huge which cannot be taken by boats of smaller size. Here the question arises how could then those goods be transported to abroad. It seems that there must be larger ships waiting at the coastal ports of Bengal which used to undertake the actual long distance sea voyages to the abroad countries. These ships could not come deep inside the country because the riverine channels were not navigable for those large ships and Small boats

used to sail deep inside the hinterland, collect goods and load the larger ships which used to anchor at the coastal port. Periplus Mari Erythrai gives us very interesting information about a very large ship named 'Kolandiophonta'[32] which used to sail through Khruse and Ganges. There is description of another large ship named 'Sangara'[33] which is built by tying up big logs of large trees. These ships used to undertake long sea voyages. There was frequent use of small boats also. Periplus mentioned, more than one time that big ships had to anchor at the sea port or coast because of the thick sediment on the riverbed. They couldn't come further inside the country. Goods were transported to more inland areas by small boats via rivers or various water channels. These small water crafts used to play a major role in long distance trade and communication by bringing trading commodities from far away hinterlands to the sea ports via rivers and from the ports take the goods to the large ships anchored at the actual coast line or vise versa. Small boats were also used for ferrying passengers, fishing etc. Chandraketugarh and Wari-Bateshwar were feeder ports or important trading centers situated far inland from the coast line. That is why small boats and vessels became so important to the issuing authorities that they decided to depict them on the coins and seals. Only this way a justified explanation can be given to the water crafts depicted on the coins seals and sealings of the early historic time. Unfortunately there is not a single remain of ship wreck found from eastern coast which will of course obstruct our understanding of ancient Indian ship building technology.

Bengal is blessed with various water channels from immense past. So it will not be very surprising if a craft of ship building had developed here. Relocating the water craft construction centers in Bengal and finding the quarry sites of the timber used for making those crafts will be fascinating work, but this agenda will be hugely obstructed by the absence of primary sources. Bengal boats must have been made of wood and without the application of iron nails. Wooden planks must be raised first to form the hull then the planks were fastened together by stitching them with ropes made of coconut coir. Bhattacharya informs us that in present time, only in Orissa one single type of boat named Māsulā is made by this sewn-plank technique and used in fishing.

Bengal has the largest variety of water crafts still today. The geography of this area gave the boat builders the widest possible opportunities as well as challenges to develop their skills and they have utilized it to the fullest from the immense past. Only by the analysis of numismatic specimens alone a unique feature of Bengal boats is discovered. These boats were specially designed to ply in rivers as well as in the delta region and into the open sea to some extent. Their small size made them very flexible so that they could easily ply into the muddy narrow water channels of the Khāḍi area of southern Bengal and the high curvature made them able to ply into the deep sea and the coastal areas as well. Besides all these we should also think about the people who were using these boats. When boats or vessels are being depicted on the coins and seals then this thing must have been very important to the people of those areas. People of costal area are still depended heavily on boats. Boats become part of their social and

cultural life. They worship boats as their mother, they write songs about boats, they write stories of them. In ancient time the scenario may not be very different.

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