

STABLE-SHIPS OF TIRUPPUDAIMARUDUR AND TIRUKKURUNKUDI (SOUTH INDIA)*

JEAN DELOCHE**

(Received 13 October 2008)

In the district of Tirunelveli, South India, two works of art provide some significant information bearing on Indian nautical technology. The first one is found in the *gopura* of boat anchored in a harbour; the second one decorates the gateway of the Tirukkurunkudi temple with a relief which shows a ship disembarking horses and elephants.

Though not strictly accurate, both the painting and carving are of an exceptional importance since they are the unique representations of the stable-ships which, for centuries, plied in the western part of the Indian Ocean, the first one coming from the Persian Gulf, the other, from the Red Sea.

It is certain that these documents will be used by scholars to illustrate the fascinating history of horse trade from the Near East to India during the Medieval period.

Key words: Boat, Persian Gulf, , Red Sea, Ship, Technology.

INTRODUCTION

The representations of ancient boats and ships in India are not numerous: some images on seals from the Harappan period, engravings on bas-reliefs and coins, from the 2nd century BC to the 7th century AD, Ajanta paintings (6th century) (Deloche 1996, pp. 199-224), carvings on memorial stones from the 11th-15th century (Deloche 1987, pp. 164-184), a few Rajput or Mughal miniatures (Verma 1978, pp. 109-11, pl. LXXI); finally, the Maratha drawings in the Prince

* Revised version of two of my articles published in *Bulletin de l'Ecole française d'Extrême-Orient*, 72 (1983) 1-11 and 76 (1987), 170, 182-84. Drawings and photographs: Courtesy-French Institute of Pondicherry and Ecole française d'Extrême-Orient.

** ECOLE Francaise D'Extreme-Orient, 19, Dumas Street, Puducherry - 605 001. Email: jeandeloche@gmail.com

of Wales Museum, Bombay (Apte 1973, Figs. 16-21 and pls. 4-13). That's the reason why the Tirupudaimarudur fresco of a ship carrying horses and the Tirukkurunkudi carving representing a ship disembarking horses and elephants, both places situated in the Tirunelveli district in South India (Fig. 1), are of an exceptional importance. We will describe them, show their main characteristics and identify the ship-building tradition to which they belong.

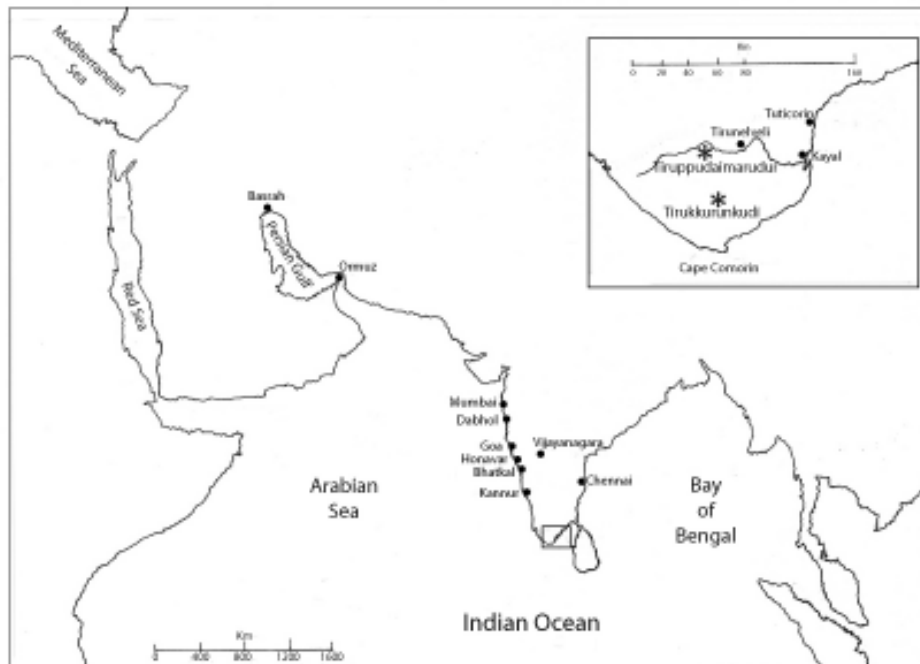


Fig. 1. Map of the Indian Ocean.

I. TIRUPPUDAIMARUDUR

The painted panel

The painted panel, found in the second tier of the Narumpunatasāmi temple of Tirupudaimarudur (Ambasamudram *tāluk*) (Fig. 2), represents a ship carrying horses with a boat anchored in a harbour along a quay where horses are disembarked. It is obviously an illustration of the ancient import trade in horses from Arabia and the Persian Gulf to India. Under the Cola and Pandya rulers and later, under the Vijayanagara and Bāhmani kings, cavalry formed an important wing of the army and therefore thousands of horses were required every year. The importation of horses was a monopoly of the Muslims until the 16th century; then



Fig. 2. Tiruppudaimarudur, Narumpunatasāmi temple, painted panel.

it made the fortune of the Portuguese who were the exclusive suppliers of the southern kingdoms. Nuniz states that the Vijayanagara king purchased each year 13,000 horses from Ormuz for his own use and that of his captains. We know that, in the 16th century, horses were disembarked at the seaports of the west coast, such as Dabhol, Goa, Honavar, Bhaṭṭakal and Kannur (Aubin 1973, pp.117-118,169-170; Bouchon 1973, pp. 29-30, 43-44). It is also probable that, at that time, in the Pandyan kingdom, Kayal, a considerable harbour having rich Mahomedan merchants, was also importing horses (Appadorai 1936, pp. 552-559, 590-597, 608-609).

In the fresco (Fig. 2), the crew of the ship and the grooms walking or riding bareback the horses on the quay, wear a tight-fitting long-sleeved upper garment with, at the waist, a band whose two ends hung from a looped knot in the middle; they also wear close-fitting trousers and are barefoot; they have a turban made of a cloth folded lengthwise and twisted in the form of a rope and wrapped round a *kulak* (a sort of pointed skull-cap): this costume is evidently Muslim. From this we can infer that these people are Arab or Persian sailors.

Inside the boat (Fig. 3) are two turbaned men with the same headgear, discussing with three other persons wearing a hat. We have the impression that they are having an argument regarding the disembarkation of the horses.



Fig. 3. Detail of the painted panel: the boat.

All these men are bare-breasted. The first two have the same headgear as the sailors; they therefore must have a connection with the people of the ship; the three others wear a hat similar to that worn by the Portuguese represented in other paintings and wood carvings; they are thus probably Indians in the service of representatives of this nation.

Interpretation

Apparently, the boat is an Indian craft and the ship, a vessel of a different building tradition. The painting is worth a closer examination.

The Boat (Fig. 3): The stem and stern of the Boat (Fig. 3) are both raked considerably; the bow is of the same level as the stern; the freeboard may be heightened by a bamboo or mat weather screen; lines of holes are found throughout showing that sewing binds the strake ends to the posts; on the top strake the sewing is probably done over numerous strands of coir rope outboard since it produces a criss-cross pattern; as regard propulsion and steering, three rowers are seen having an oar with a blade, oval and rectangular in shape, which means that that the boat was rowed and not paddled.

At first sight, this painting can be considered to be a purely decorative work in which the Indian artist, to represent a foreign vessel, has combined various component parts of European or Arab ship designs, a composite image

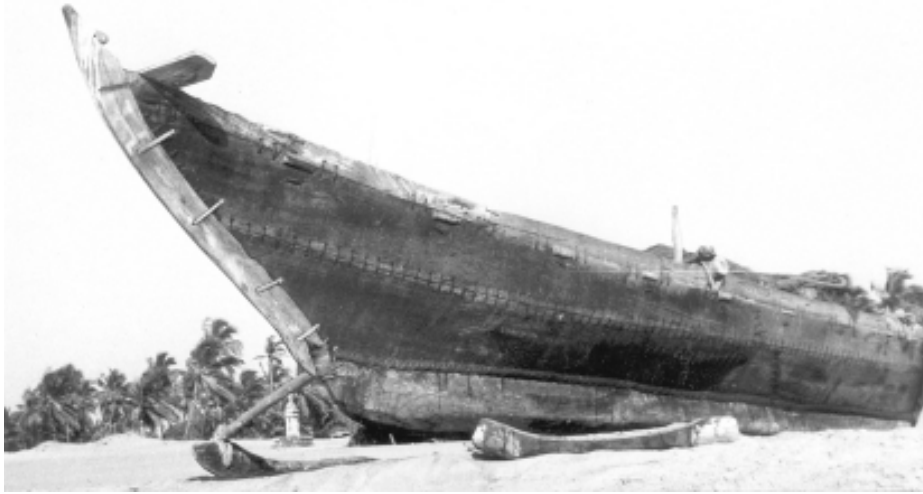


Fig. 4. Fishing boat of Goa (photo J. Deloche).

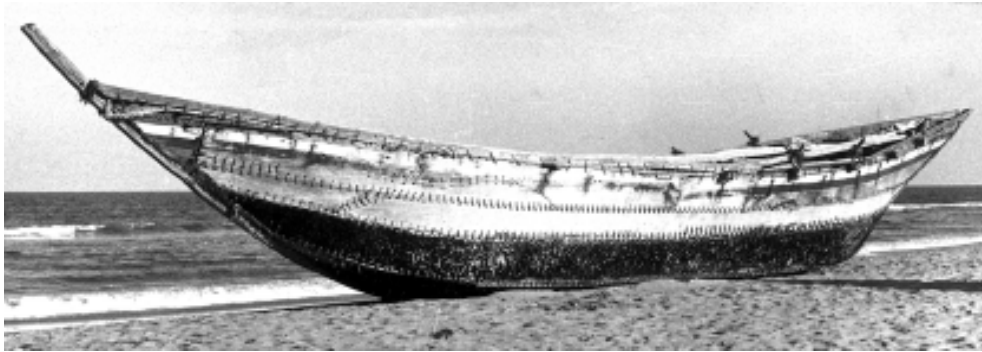


Fig. 5. *Masula* boat of the Coromandel coast (photo J. Deloche).

which should be regarded by historians of technology as suspicious. A closer examination of the picture, however, shows that boat and ships could be real vessels and that they could be identified. By making a comparison between this representation and the vessels plying the Indian Ocean (Paris 1943, p. 43), (Hawkin 1977, Witson 1909), it is possible to determine which technical traditions are followed in their construction.

Obviously the representation of the boat (Fig. 3) is characteristic of Indian coast building tradition. There is a strangely close resemblance in hull form and structure between this craft and some present Indian planked vessels. It evokes the double-ended canoe-shaped fishing boat flying along the Konkan coast with

a series of sewn strakes (Fig. 4) or, more likely, the *masula* boat of the Coromandel coast (Fig. 5), a deep-sided craft with strakes sewn together with coir and the seams covered by caulking bands of fibre, laced on, having a high freeboard because it has to pass through heavy breakers.

The Ships (Fig. 6): The hull is of a peculiar shape, having a large beam in proportion to the length. Both stem and sternpost slant outward with a considerable angle from the keel, the former straight and the latter slightly curved. The stem has a peculiar projecting piece of wood, high and pointed; the high castellated decked poop is broadened by the addition of substantial quarter galleries. From the stem head to the stern a wash or weather board is fitted along the gunwale, forming

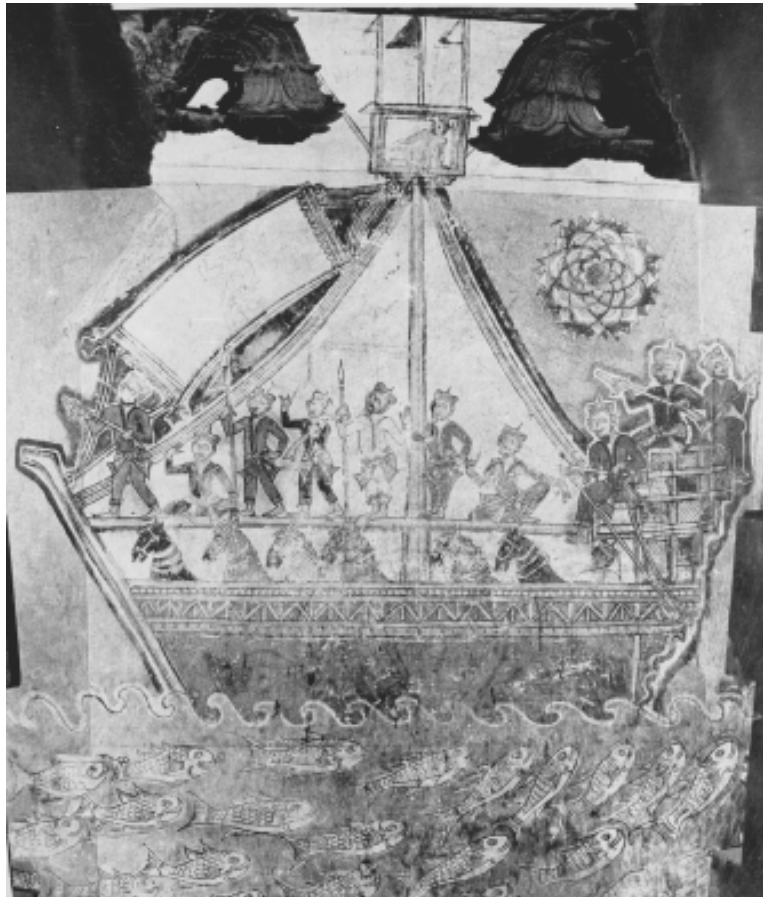


Fig. 6. Detail: of the painted panel: the horse stable ship.

a geometric pattern with vertical, horizontal and oblique lines connected by horizontal bands.

The steering gear is not clearly represented: the rudder trunk is not seen; vessel control is through a system of ropes.

The rig is simple. The mast consists of a stout heavy spar stepped nearly amidships; the strong ropes from the upper end of the mast to stem and stern are probably stays used to steady the mast against wind and pitching.

The main sail is not seen; there is only a small quadrangular sail set forward between two short yards fixed by means of ropes, on the one hand to the upper end of the bow and on the other to the top of the mast.

What represents the horizontal wooden piece on which the crews are standing. It cannot be a deck or floorlike surface occupying the upper level of the hull, because it is too narrow, as shown by the ears of the horses or the toes of the men overhanging the sides of the structure. It is more probably the yard to which the head of the main sail is bent, a stout pole which is lowered, as seen in native craft on the west coast when lying out of the open sea (Figs. 10 & 12).

At the masthead is a platform or a kind of cage containing a man, used as a fighting top for observation.

1. The large sailing vessel (Fig. 6) evokes the craft with planks sewn together and stern-post rudder found in the Arab manuscript of al-Hariri (Maqabat), dated 1237 AD (Bibliothèque nationale, Paris, Arab Ms. 5847, fol. 119 v; Hourani, 1951) (Fig. 7). Similar are the appearance and composition, the decorative elements, but their structure differs. The first one has a poop-deck, the second, a cabin occupying the space available amidships; the sails and rig are not the same and the steering gear is entirely different.

2. A clumsy Maratha drawing of a *batela* dating from the Angre period (2nd half of the 18th century) (Apte 1973) is reminiscent of the painting (Fig. 8); it has a matting bulwark and a triangular jib at the upper end of the spar forming a continuation of the bowsprit.

But here are more similarities between the vessel represented and modern coasters of the Arabian Sea.

3. The *batela* of the Konkan coast also has a long bow, a weatherboarding in the waists and a jib (Figs. 9 & 10).



Fig. 7. A 13th century miniature representing a ship (Arab ms., Bibliothèque nationale, Paris).

The rectangular sail of the painted ship could be an erroneous representation of a jib, but its hull has apparently a high and pointed stern whereas the *batela* has a square stern and the steering gear is evidently entirely different. Therefore, the ship represented is not alike.

4. It could be a kind of *bum*, still common in the Persian Gulf, sharp at each end, with a straight stem that slants outward with a considerable angle from the keel, and a yard usually shorter than that of most of the other ships, which, when lowered, looks like the horizontal wooden piece of the painted vessel (Figs. 11 & 12). This would signify that the craft represented carries the same type of sail, i.e. the large lateen sail, seen in all the ships plying in the Arabian Sea and the Persian Gulf. But, in that case also, the control of the vessel is not the same.

5. Regarding the steering gear, in the fresco, the rudder is not seen; instead, there is a device made of sticks and ropes. This representation is rather peculiar but it is easy to recognize the steering gear of a type of craft formerly in general use in the Persian Gulf, the *garook-kuh* or *beden safar*, *beden sayad*

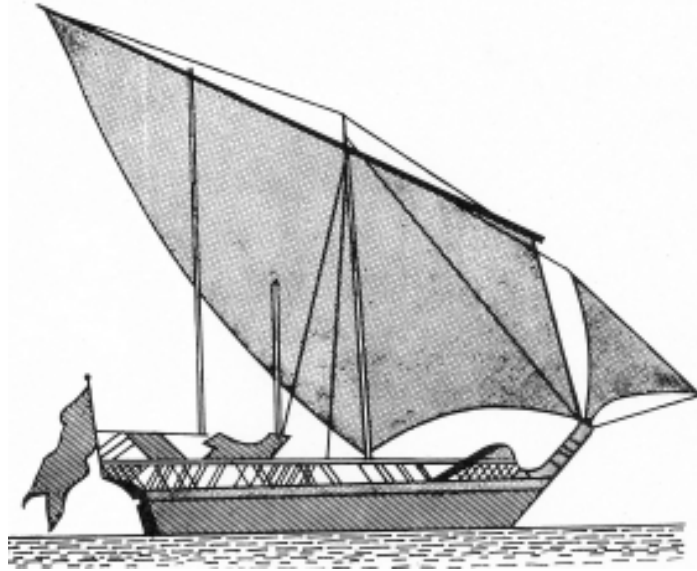


Fig. 8. A Maratha drawing representing a *batela* (2nd half of the 18th century (rep. in B.K. Apte, *op.cit.*, p. 142).



Fig. 9. A *batela* of the Konkan coast (photo C.W. Hawkins, *op. cit.*, p. 70).



Fig. 10. A *batela* of the Konkan coast (photo C.W. Hawkins, *op. cit.*, p. 18).



Fig. 11. A *bum* of the Persian Gulf (photo C.W. Hawkins, *op.cit.*, p. 13).



Fig. 12. A *bum* of the Persian Gulf (photo C.W. Hawkins, *op.cit.*, p. 48).

from Muscat, drawn by admiral Paris in the first half of the 19th century (pp. 13-15, pls. 5, 1, 2, 3-7, 8, 1-4): i.e. a rudder attached by gudgeons and pintles slung from the sternpost controlled by a complicated system of tackles (Figs. 13). This type of mechanism has almost disappeared. According to Hawkins (pp. 82, 83) today it is found only in the *bedan*, “a survival of the primitive past of Arabia” (Fig. 14).

Thus, because of the presence of this old steering gear of the Persian Gulf there is no doubt that the Tirupputaimarudur ship was built according to Persian practice, with pointed prow and stern, a mast held firm in the deck and secured in place by shrouds running from the masthead to deck level on the ship sides,

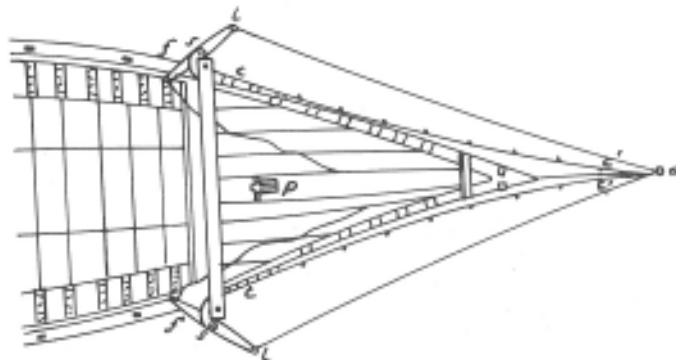


Fig. 13. Plan of the sternpost of a *beden safar* (drawing by admiral Paris, *op.cit.*, pl. 5, 4).



Fig. 14. A *bedan* (photo C.W. Hawkins, *op.cit.*, p. 83).

and with a false sternpost controlled by ropes, as the three ships from Muscat mentioned above.

II. TIRUKKURUNKUDI

Another stable ship, represented in a bas-relief, has also been found in the southern end of the peninsula, to the south of Tirupudaimarudur.

In the gateway of the Sri Alamkiyanampirayar temple of Tirukkurunkudi (Nanguneri taluk), a carving depicts the arrival of a ship bringing to a king or to a local chief various precious commodities in boxes, two horses, one camel and an elephant (Deloche 1987, pp. 165-184). The people portrayed - sailors, soldiers, merchants and musicians - are all bearded men, wearing full long sleeve jackets and elaborated pleated *dhotis*, looking like South Indian Muslims.

The craft represented (Fig. 15) is a sewn plank ship with an exceptionally long and deep stem-head built up with several planks. The upper strake is decorated



Fig. 15. Tirukkurunkudi, Sri Alakiyanampirayar temple, gateway, relief representing the arrival of ship.

with a ribbon of vertical lines; the planking extends right from stem to stern; the sewing pattern outboard is quite visible: it is a criss-cross line over the wadding. The vessel looks open-hulled with a platform in the bows and a well elevated poop deck to afford the helmsman a good clear view forward.

Apparently, the stern is flat or square, the steering gear is not seen; only the lower portion of the mast is shown: it is massive vertical spar. Noteworthy, outboard of the gunwale, are the crew's round shields, perhaps placed on a rack (as on the Vikings' galleys!) for a harbour display; the anchor, hanging from the prow, is a grapnel which is even today commonly used by the Arabian Sea; at the stem a decorative banner is fixed to a short mast lowered in its tabernacle.

The identification of the ship is apparently simple: it could be a kind of *sambuq*, a craft of the Red Sea and Gulf of Aden, known as *sakouna*, recognized by its broad-planked stem-head (but today gone out of existence). The comparison between the ship carving and the photo of a *sakouna* taken in 1939 at Aden (Fig. 16) leaves little doubt about it.



Fig. 16. A *sakouna*, propped up on Ma'alla shore, with a *bum* in the background, Aden, 1939 (photo C.W. Hawkins, *op.cit.*, p. 56).

CONCLUSION

The date of the fresco and particularly of the bas-relief is not easy to determine.

In the painting of Tirupudaimarudur, the crews are equipped with spears, but two of them, at the stem and stern, are provided with matchlocks. It means that this representation cannot be earlier than the middle of the 16th century since matchlocks were introduced in India by the Portuguese in 1512.

In the carving of Tirukkurunkudi no firearms are seen, the only other weapons depicted being bows and swords. We may therefore assume that the relief dates from an earlier period, say the 15th or first half of the 16th century.

In any case, the Tirupudaimarudur and Tirukkurunkudi ships, though not strictly accurate, are the unique representations of the stable ships which, for centuries, plied in the western part of the Indian Ocean, the first one from the Persian Gulf, the other from the Red Sea. They are characteristic of the *Dhows* (a generic term used by European sailors to designate the various types of lateen-rigged sailing vessels used in this part of the Ocean).

It is certain that these art pieces will be used by scholars to illustrate the fascinating history of horse trade from the Near East to India during the Medieval period.

Appendix**Importation of horses from Basrah to India at the beginning of the 19th Century**

This extract from V. Fontanier (1844, pp. 252-256) is reproduced here because, as far as known, it is the only available description of the transport of horses from the Persian Gulf to India, giving details on the different categories of horses, the fitting-out of the ship, the way the animals were taken on board and disembarked.

« ... After dates and wheat, the most considerable export is that of horses. Around the month of September, we see Arabs coming from Bagdad and Zobeir to sell them; in Bassora, some speculators, but few in number, go themselves and bring them. Huge stables are built at one end of the town to receive them. Almost all of them are intended for India and they are divided into three categories: the first one consists of those which are kept for the best equipped cavalry in the world, that of the Company; they must be of a greater height than the average Arab horse; the second one is made of luxury horses whose price, even at Bassora, is very high; finally, the last one is intended for the numerous horse carriages in India.

Yearly, horses are transported to Bombay for about one million; a good number of them are sent directly to Calcutta. As they are also exported from Persia, I feel that, assuming that the figure of one million supplied by the Bombay customs to Bassora is quite plausible, what is sent from Bassora to Calcutta corresponds to the export from Persia. In India, the average price for a horse being evaluated at one hundred and fifty rupees, the number of horses imported yearly from Arabia would be about two thousand five hundred. It should not be granted, indeed, that all of them are shipped from the same town; on the contrary, people are trying, on that subject as on others, to avoid customs dues which are very high. Therefore they are taken on board in all the places alongside the River.

This is the very peculiar way to put them on board Arab sailing vessels, known as *baglo* when they are large and *batila* when they are smaller.

Inside, wheat and dates are put; on the deck and forward, a mat, one and half foot wide, is nailed on which rest the forelegs of the horses; their breast leans against a wooden bar and their croup can touch the side of the ship; thus, they

cannot be thrown neither forward nor backward; they are placed as close as possible to each other, so that they can support each other. That does not prevent them to do the necessary movements to keep their balance when the ship is rolling; then, if needs be, they change the position of their feet and, if the motion is too strong, all these hoofs striking the deck make a very unpleasant noise. The mat put below is intended to prevent them from sliding, and care is taken, for the same reason, to unshoe them. A groom looks after five horses and gives them food at fixed times; he also keeps the medicines in case of need. It is noteworthy that these animals get used to the sea; they suffer when the sea is rough and foam coming from their mouth can be seen, but, unlike men, seasickness does not remove their appetite. When midday draws on, they yield to their instincts and, as it is lunch time, they neigh, they stamp their foot on the ground and they make such violent efforts that it is difficult to prevent them from breaking the ropes to which they are tied. They are never allowed to lie down and thus some of them remain three or four months without moving and apparently they are well. Sometimes, however, their feet are engorged, but this disease disappears as soon as they walk. It is also an interesting spectacle to see them disembarking.

Just as they are lifted off the ground with ropes when they are put on board, as long as one of his feet finds a support, the horse is getting restless, but he does not move as soon as he is hanging. When he is on the ground and untied, he remains motionless for a moment, then he sniffs at the floor, neighs and tries to regain his freedom. Several grooms should be ready to hold him back, and still accidents happen often. Then, it is at that time, in Bombay, that the dexterity of the Arabs can be admired, when we see them, with a bad rope and without a saddle, control fiery horses frightened by the unusual aspect of the carriages. It is noteworthy, however, that the best horses are not disturbed by anything, even by the presence of elephants..."

REFERENCES

- A. Appadorai, *Economic Conditions in Southern India (1000 to 1500 A.D.)*, Madras, 1936.
 B.K. Apte, *A History of the Maratha Navy and Merchantship*, Bombay, 1973.
 J. Aubin, 'Le royaume d'Ormuz au début du XVIe siècle', *Mare Luso-Indicum*, vol. II, 1973, pp. 117-118, 169-170.
 G. Bouchon, 'Les Musulmans du Kerala à l'époque de la découverte portugaise', *Mare Luso-Indicum*, vol. II, 1973, pp. 29-30, 43-44.

- J. Deloche, 'Etudes sur la circulation en Inde, III, Le bateau de Tirupudaimarudur', *Bulletin de l'Ecole française d'Extrême-Orient*, 1983, pp. 1-11.
- J. Deloche, 'Etudes sur la circulation en Inde, VII, Konkan Warships of the 11th-15th centuries as represented on Memorial Stones', *Bulletin de l'Ecole française d'Extrême-Orient*, 1987, pp. 165-184.
- J. Deloche, 'Iconographic evidence on the Development of Boat and Ship Structures in India, 2nd c. B.C.- 15th c. A.D. a New Approach', in H.P. Ray & J.F. Sales, *Tradition and Archaeology, Early Maritime Contacts in the Indian Ocean*, New Delhi-Lyon, 1996, pp. 199-224.
- J. Eyde, 'Description of the Various Classes of Vessels constructed and employed by the Natives of the Coasts of Coromandel, Malabar and the Island of Ceylon for their Coasting Navigation', *Journal of the Royal Asiatic Society*, vol. I, 1834, pls. I-XIV.
- V. Fontanier, *Voyage dans l'Inde et le golfe Persique*, Vol. I, Paris, 1844.
- C.W. Hawkins, *The Dhow, an Illustrated History of the Dhow and its World*, Hampshire, 1977.
- J. Hornell, The Sailing Craft of Western India, *Mariner's Mirror*, vol. XXXII, 1943, pp.195-217.
- J. Hornell, *Water Transport, Origins and Early Evolution*, Cambridge, 1946.
- G.F. Hourani, *Arab Seafaring in the Indian Ocean in Ancient and Early Mediaeval Times*, Princeton, 1951.
- F.E. Paris, *Essai sur la construction naval des peuples extra-européens*, Paris, 1841-43.
- S.P. Verma, *Art and Material Culture in the Paintings of Akbar's Court*, New Delhi, 1978.
- R.S. Whiteway, *The Rise of Portuguese Power in India, 1497-1550*, (1899), reprint, New York, 1967.
- N.F.J. Wilson, *The Native Craft*, Bombay, 1909.