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BOAT BUILDING TRADITION OF ANCIENT ORISSA

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ABSTRACT

This study delves into the rich maritime history of Odisha, tracing its roots back to the ancient kingdom of Kalinga. Famed for its maritime prowess, Kalinga's legacy continues to thrive through the exceptional boat building techniques practiced in the region. This research unravels the intricate craftsmanship behind the construction of diverse ancient boat types such as Bhela, Chapa, Padhua, Pota, and Nauka. By examining these boats, this study provides a vivid representation of Odisha's maritime glory, shedding light on the socio-economic conditions and cultural dimensions that influenced this thriving tradition. Through a meticulous exploration of historical records and contemporary accounts, this research offers a comprehensive glimpse into a heritage that has not only stood the test of time but continues to shape Odisha's cultural identity today.

KEYWORDS – Boat Building, Maritime History, Bhela , Chapa, Padhua, Pota, Nauka.

INTRODUCTION -

From antiquity, the inhabitants of India garnered recognition for their adeptness in maritime pursuits, embarking on trading expeditions to far-flung shores across the seas and, notably, establishing outposts and colonies in numerous foreign lands and islands. Within ancient India, owing to distinct geographical influences, maritime proficiency and venturesome endeavors appear to have attained zeniths of development in three geographically distant regions of the subcontinent. These focal areas encompassed Bengal, the expanse comprising the valley and delta of the Indus, and the southernmost extremity of the Deccan peninsula, denominated as Tamilagam. Evidently, the industries pertaining to boat crafting and ship construction have been integral to India's historical landscape since time immemorial. The Vedic epoch, in particular, bears witness to the recurrent utilization of the sea as a conduit for trade endeavors.

Ethnographic inquiries into the coastal region of Orissa illuminate a rich tapestry of diverse boat typologies. The distinctive structural configurations of these boats serve as tangible indicators of nuanced disparities in geographical, economic, and cultural paradigms between the northern and southern shores of Orissa. The presence of tidal fluctuations and an extensive continental shelf in the northern expanse of Orissa facilitates the effective utilization of displacement vessels. Within this domain, both flush ladi and clinker-designed boats are in evidence. Notably, these designs are fashioned through a sequential construction process, wherein the planks themselves contribute to the defining contours of the boat. In contrast, larger vessels in the same region follow a different paradigm, where the frame assumes precedence in determining the vessel's final form.

Moreover, within the realm of displacement craft in northern Orissa, a further categorization can be made based on their designated functions. While the more conventional vessels, characterized by their considerable size, venture as far as 25 kilometers offshore, the smaller counterparts are primarily engaged in estuarine fishing endeavors and serve utilitarian roles in the loading and unloading processes. Contemporary literary sources pertaining to Kalinga offer substantial references to a diverse array of traditional boats and vessels that were integral to maritime pursuits. The ensuing enumeration encapsulates the various classifications of boats that found application in these activities.

- **Bhela**

Within the realm of Oriya literature, the term "Bhela" conveys an oblique signification pertaining to a particular variety of commonplace watercraft. Various iterations of Bhelas were prevalent in the region of Orissa, constructed from materials such as banana trees, bamboo, pith, and buoyant wood logs. Bhelas were primarily employed in coastal environs, shallow waters, and confined water bodies. Comprising interlinked lightweight logs, these vessels were meticulously fastened so as to permit the egress of infiltrated seawater through interstices between the logs, thereby averting any deleterious effects on the integrity of the Bhela. The central log, fixed in the lower section, was flanked by the remaining logs, which were typically situated slightly above it. This configuration conferred a gentle incline to the craft along its longitudinal axis, consequently facilitating a smooth traversal of waves both fore and aft. Propelled by oars, the Bhela's buoyancy ensured its resilience against submersion. Analogous nautical conveyances of this nature were likewise in vogue along the coastal expanses of Tamil Nadu..

- **Pota**

The maritime domain witnessed the instrumental deployment of the "Pota" in the facilitation of sea trade. Its longevity is attributed to its direct extraction from a solid log. Referred to by various regional monikers such as Kathua, Nauka, Sapeidanga, and Dengi, the Pota assumes a tubular configuration reminiscent of a feeding trough employed for livestock. Its optimal functionality is observed in tranquil and shallow aquatic environs, characterized by a lower section bearing a semi-circular contour. Predominantly prevalent in the Anusupa and Chilka lake vicinities, the Pota attains prominence in these locales.

- **Nauka**

The "Nauka" is characterized by its absence of keel, stem, rib, and cabin components. Its dimensions are defined by a maximum length, width, and depth of 14.30 meters, 2 meters, and 50 to 60 centimeters, respectively. The planking possesses a thickness of 1 and 1/4 inches. The specifications of distinct segments of the Naukia adhere to the length of the lowest plank. Construction entails the utilization of iron and wooden nails for joints, eschewing the use of sewing. Nails are strategically positioned at

intervals of 5 to 6 inches, with some joints necessitating placement at 3-inch intervals. Indigenous craftsmen employ hand, finger, and foot measurements as units of assessment.

The horizontal planks of the Nauka assume an arched contour, with a shaping process characterized by simplicity and ease. This involves heating the designated section of the plank for a specific duration, ensuring it does not incur damage. Once sufficiently heated, the plank is molded to the requisite form employing wooden supports and metal bars, rendering it suitable for planking. The planking technique itself is straightforward, with planks aligned edge to edge, occasionally featuring overlapping configurations. Cotton is employed to bolster the water-tightness of the Nauka during the nailing process. The lateral planks of the Nauka are externally secured, with the lowermost plank referred to as "tali," while the two lower side planks are denoted as "dasi." The "dasi" extends beyond "tali" on both sides. The terminations of "tali" and "dasi" are subjected to baking and upward bending, spanning a length of 5 handbreadths on each side, a process known as "seka." "Bedha" constitutes the lower side plank, juxtaposed with "hahuti," the upper side plank of the Nauka. These are conjoined by "khera," a slender, diminutive plank. Additionally, six horizontal planks, collectively termed "polanda," are affixed within "hahuti" to augment structural integrity. Wooden nails securing "polandas" on the outer surface of "bahuti" are denoted as "khila." The uppermost encircling planks of the Nauka are referred to as "chapundi," intended for traversing, while a sizable triangular plank situated at the fore is identified as "muhala," designated for seating. The fore section is designated as "agamanga," while the aft is recognized as "pachhamanga." The tapered termini of the Nauka are denoted as "jata."

- **Padhua and Kosaladanga**

The ancient maritime activities of Orissa included the utilization of Padhua and Kosaladanga vessels for trade. It is posited that the latter nomenclature, "Kosaladanga," may have been derived from its association with the denizens of Kosala, residing in the upper reaches of the Mahanadi river valley, who purportedly employed this craft. Presently, these vessels continue to find application in the Mahanadi, Brahmani, and Baitarani rivers. In subsequent epochs, masts were affixed to these vessels, leading to their classification as "sulupa." Notably, in the Samar Taranga, Brajnath Badajena makes reference to this

craft as "solapa." The planks constituting the Padhua or Kosaladanga were affixed through stitching, a technique reminiscent of the carvel built method employed in England. In antiquity, the joining of Kosaladanga was executed through small wooden pegs, a practice known as "fish joinery." Additionally, coir ropes and palm leaf ropes occasionally served as supplementary means of fastening. Long shafts or bamboo elements were incorporated along both sides of the Padhua and Kosaladanga to augment structural integrity, denoted as "pakhi." In southern Orissa, these vessels were principally deployed for the conveyance of cargo. While in shallow waters, bamboo shafts were instrumental, deeper waters necessitated the use of oars for navigation.

- **Chapa**

The sizable watercrafts referred to as "chapa" served dual roles in Orissa, primarily facilitating the transportation of cargo and enabling sea voyages. These vessels found analogous application in the Chandan Yatra festival of Orissa during the month of Baisakha. Historical records in the Madala Panji indicate that Lord Jagannath was conveyed to Chilka via a vessel of similar make to safeguard against potential incursions by Muslim forces. In northern Orissa, this type of vessel is denominated as "Duaidulia." In antiquity, Duaidulia eschewed the use of sail and mast. However, the construction of the Chapa offers indirect insights into Orissa's boatbuilding technology.

The lower section of the boat exhibits a configuration akin to the English letter 'T.' Wooden ribs, or "pankhi," were affixed at intervals on both sides of the lower portion. Stitching techniques were employed in the joining of planks. In Tamil Nadu Coast, crafts of this nature were identified as "Masula boats." The "Chhoat" is a relatively larger vessel, exceeding 10 meters in length, and is encountered in the estuarine and coastal waters of Balsore. Crafted from Sal timber, it is characterized as a flush-laid construction, comprised of 12 planks on each side of the keel. The keel, stem, and stem post possess distinctive features, with the stem exhibiting an obtuse, rather than vertical, intersection with the keel. Transverse stability is achieved through an array of thwarts and ribs (frames), combining both sheer and bilge sets. Additionally, floor timbers extend from bilge to bilge. Stringers reinforce transverse stability, redistributing the forces exerted by the mast at crossbeam levels and thereby mitigating axial torsion and

compressive pressures. Fenders located on both the port and starboard sides prevent friction between adjacent vessels. The propulsion of the boat is facilitated by oars and sails. The mast is slender and comparatively elongated, denoting the vessel's seaworthiness, as a leaner mast exhibits greater resilience and imparts reduced loading on the hull. The "dhingy," a smaller counterpart to the chhoat, exhibits structural distinctions, including extended and vertical stem and stem posts, along with the incorporation of a gunwale, a feature absent in the chhoat.

The "Patia" stands as a distinctive vessel indigenous to the coastal expanse of Orissa. Its operational range spans from the mouth of Pancapara to the mouth of the Subamarekha, where it is chiefly employed for fishing ventures extending up to 20 kilometers offshore. Crafted from Sal wood, the construction of the Patia boat is characterized by a rare and distinctive planking method, globally unique in its shell sequene configuration featuring clinker design. Notably, the Patia boat holds a significant cultural resonance, finding representation in the iconography of boats within the Jagannath Temple of Puri. The Jagamohana of the Jagannath Temple, in particular, houses a ceremonial barge hewn from black granite, which embodies a reverse clinker design.

Institutional repositories such as the Indian Museum in Calcutta and the Victoria and Albert Museum in London possess miniature sculptural renditions of the same boat type, procured from Orissa, though their precise provenance remains unverified. It is important to emphasize that the Patia boat does not adhere strictly to a reverse clinker construction; rather, it amalgamates elements of both ordinary and reverse clinker designs. This hybridization imparts the vessel its distinctive form and appearance. Specifically, from keel to the eighth strake, the planks exhibit a reverse overlap, wherein the upper edge of the inner strake extends beyond the lower edge of the outer strake. Subsequently, the ninth through sheer strakes comprise broad, straight timbers arranged in the conventional clinker style.

CONCLUSION -

In conclusion, the presence of numerous boat-associated castes in ancient times can be elucidated through the lens of social stratification arising from economic disparities, exemplified by the fishermen of southern Orissa. This interpretation finds corroboration in early medieval records, Orissan mythology, census data, and the various castes affiliated with maritime activities. Their social status spans from the marginalized, typified by the Kabibarta majhi, to intermediary castes, exemplified by the Mangaraja. In essence, the ethnographic investigation, when considered in conjunction with historical research, serves to substantiate our understanding of the salient facets of maritime history in ancient Orissa.

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