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HÂRNMASTER

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# MARITIME HISTORY OF NORTHWESTERN LYTHIA

A SHIPS AND SHIPPING PRODUCT



ROY DENTON, 2007

# MARITIME HISTORY OF NORTHWEST LYTHIA 2

## INTRODUCTION

I started this project years ago out of a passion for historical research and a desire to develop some rational for how ships and shipping developed within Northwestern Lythia. Part of this stemmed from a number of conversations with Hårn Forum members over the development of the Karune and the Dak as well as the existence of the longship at the same time.

This work is the first full piece to come out of this work thus far. There are a number of other pieces I have published thus far in draft or as a separate work. These include Hårnic Navies and Shipwrights.

In the future I plan on adding to this work as I develop other topic that at one time were planned to be included into a single piece called Hårnic Ships and Shipping.

Although this is not something a GM could use or helps in game play I hope you still find it informational and entertaining.

## TECHNOLOGICAL ADVANCEMENT (INNOVATION VS NEED)

One of the key points in the discussion about why the Karune (Caravel in our own time) and the Longship exist at the same time. Of course the game system is not our world and the situation that drove technological advancement is quite different. Even so, the advancement of technology is not based solely on innovative ideas but on the expressed need of society at the time.

Within our own history the Scandinavians many were working with and fighting against the Byzantines who possessed many ship building technologies that the Scandinavians did not have. Even with a prolonged contact spanning hundreds of years they never introduced skeletal construction or the lanteen sail into their own shipbuilding traditions. In fact, it was the growth of the bulk trade in grain, furs, salt, fish, etc in the Baltic Sea that finally drove shipbuilders to design a bulk carrier in the form of the Kogge. As it turned out, the Kogge would supersede the long ship in all distance trade of bulk goods whereas the Knarr (Scandinavian merchant longship) and its derivatives would be relegated to coastal trade only.

Another example would be the Roman super grain carriers of the early first millennium. These vessels were huge and needed to provide Rome and its other large cities with grain from Egypt and Sicily. However, with the fall of the Western Roman Empire these huge ships disappeared but their smaller cousins continued in use in the Eastern Roman Empire (Byzantium). Why did they not build the larger ships, after all they did have the technology? The main reason was that the need for large amounts of grain was absent and so the need for the super ship would not come about for another 800 years when Venice and Genoa began building the large crusade ships.

Finally, the Caravel came about as Prince Henry of Portugal was looking for a way around Africa to the riches of the east. The current vessels were unable to fight the contrary winds off the west coast of Africa and were too slow for any reasonable exploration of the route. The Portuguese shipwrights answered with the Caravel, a small fast vessel based on a Portuguese fishing vessel that sailed in the region.

## RESEARCH RESOURCES

Pilots' Almanac  
By: Columbia Games  
The Archaeology of Boats and Ships  
By: Dr. Basil Greenhill and Prof. John Morrison  
Ships  
By: Enzo Angelucci and Attilio Cucari  
The Good Ship  
By: Ian Friel  
Medieval Ships and Shipping  
By: Gillian Hutchinson

## CONTRIBUTORS

Members of the Hårn Forum  
Ilkka Leskelä

# MARITIME HISTORY OF NORTHWEST LYTHIA 3

## MARITIME HISTORY AND DEVELOPMENT

### The Lythian Paleolithic Age (Pre 10,000 BT):

Since humans first walked on the face of Kethira they have constantly found water to be a barrier to their movements; as a result they looked for any means to bypass these watery barriers. At first they fell upon the idea of using floating logs that they had seen floating in rain swollen rivers in regions where timber was abundant. Other humans noticed that when some of the internal organs of the game they were cleaning in water would float when full of air and started using air filled bladders and skins as floatation devices. In regions where reeds were abundant they noticed the clumps of reeds floating upon the waters and started using bundles of them as floatation devices. These three basic floatation devices would lead to the first vessels constructed by the humans of Kethira.

The following six vessel types were the root of all current vessel types on Kelestia. Even within the current age versions of these vessels can be found in use by tribal groups, rural societies and non-human races.

### The Raft

Humans soon learned that they could lash a number of smaller logs together forming a flat-bottomed structure with no sides. These crude rafts were not very watertight; however, the raft's buoyancy is its main attribute. Around the same time those who used inflated bladders also hit on the idea of adding them to the raft to increase its buoyancy and lift its load out of the water even more. Thus they could now carry items across the water and keep them dry. Since rafts are partially submerged when afloat and susceptible to having their decks washed over they are widely used in warmer climates. Rafts were a key element during early tribal migrations and were used to carry goods as primitive societies became civilized. The descendant vessel types of the raft tend to be flat-bottomed.

### The Log Boat

Some time after learning that a log could be used to cross water man either found a split hollow log it's like and found that he could cross without getting wet and carry goods with him also. It was only a matter of time till he figured out that hollowing out a log, and rounding off its ends in some cases, requiring noting more than a fire and stone handaxes. As better tools and skills were developed builders began adding planks to the sides to give them greater depth and capacity and extensions to the ends to for length; these being sewn into place and sealed using moss, grass and/or pitch. The clinkered hulled construction technique would be developed from this method of adding planks to the log.

### The Bundle Boat

Along the reed chocked river beds, lakes, and marshes men began taking the bundles of reeds they used to float across water barriers and tying them into reed rafts. Within Western Lythia they were commonly found along the large river deltas emptying into the Venarian Sea, the Gulf of Mafan and the Melurian Sea.

### The Basket Boat

Once man learned how to construct baskets he began to use the same technology to build boats in a like manner. These boats have a basket-like structure and were covered in skin, fabric, or plastered over with clay and/or tar to make them watertight. The materials used depending on the region in which they were constructed.

LOG RAFT



LOG BOAT CONSTRUCTION



FINISHED LOG BOAT



REED RAFT



BASKET BOAT



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## The Skin Boat

A basket boat can be a skin boat; however, not all skin boats are basket boats. In most cases a skin boat is long and narrow and made covering a wood or bone frame with sewn animal skins. Skin boats are used by peoples who have ready access to skins and light timber; cool arid regions being the most likely due to the lack of large timber. The dominant use of these vessels was and is as an all around utility transport. Many of the tribal groups in Ivinia and the upper reaches of Altland reached these areas in such vessels. Although there is no clear evidence, it is believed the longship design may be descended in some part from skin boats; its lattice construction and long length to beam ratio having had some influence on the ancient clinkered hull's development.

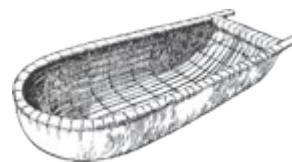
## The Bark Boat

Bark boats are very similar to the elongated skin boats mentioned above; however, instead of skin they are covered by skin of bark. The bark comes from trees that can have a continuous cylinder of bark removed from the tree. The shape is maintained by a wood framework like a skin boat. These vessels are only found where suitable trees, like birch, can be found. Vessels of this type have been seen within the jungles of Molkuria and may also be found in other parts of Kethira.

## The Lythian Neolithic Age (10,000 BT):

As the humans of Kethira moved into the Neolithic age they learned to adapt and modify these basic vessel types, sometimes combining elements of one or more types, into a new vessel peculiar to their culture, materials available, and/or region. It is through these adaptations that vessels continued to change and evolve with the needs of the people using them. Some examples of these changes are listed in the sidebar.

### SKIN BOAT



### BARK BOAT



### RAFTS

Rafts in the warmer climates were becoming enclosed flat-bottomed riverine craft and their use began to expand into the cooler northern regions.

### LOG BOATS

Log boats were being expanded by the addition of strakes sewn onto the upper edges and widened by joining one or more log boats together to form a larger vessel.

### BUNDLE BOATS

Bundle boats were becoming more developed and were a major means of transport along the major rivers of the southeastern Venarian Sea, throughout the Gulf of Mafan and the Molkurian region.

### SKIN BOATS

Skin boats were also getting larger during this time and were a key factor in the settlement of the far northern regions.

### BASKET BOATS

Even basket boats were further developed by the peoples inhabiting the islands and eastern coast of the Venarian Sea.

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## The Mafanese Influence (5,300 – 1,550 BT)

The Mafanese were one of the first ancient peoples to organize themselves into one of the dominant civilizations of ancient Lythia. Although they were on the periphery of Western Lythia they had a profound impact upon its future development culturally and technologically; shipbuilding being a prime example.

I see the Mafanese civilization being a cross between the Indus River and the early Nile River civilizations. Technologically they evolved much along the same lines as far as ship building goes and in many other aspects as far as technology is concerned.

### Reed Boats

The areas settled by the early Mafani civilization were predominantly along river deltas and lowland flood plains where reed beds were in abundance throughout much of the year. As a result, the one of the primary means of transportation at the beginning of this period was the reed boat. In the beginning the reed boat was no more than 20-feet in length and about six feet in width. The ends of the boat were curved upwards and tied into position to form a crescent shape hull. The depth of a boat was about one foot for every two and a half feet of width; correspondingly the draft would be half the depth when unloaded. Early reed boats were steered using the paddles of its operators; much like a large canoe would be today. At most, these vessels could carry limited amounts of goods or passengers. A key drawback to the early reed boat's usability was that its only propulsion was through paddles, sails not being available in the beginning. Therefore, their use was confined to civilization's rivers, deltas and sheltered coastal regions.

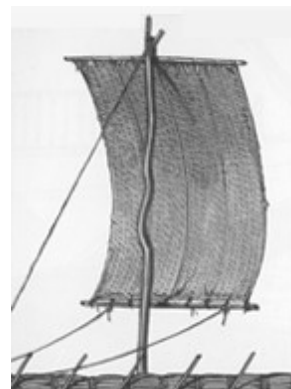
Sometime around 4,500 BT the Mafanese began constructing larger vessels (up to 50 feet) that could navigate the Gulf of Mafan's coastal waters. Although construction techniques had changed little, three innovations/additions increased their usability.

- First, the sail was introduced. The first sails were rectangular mats woven from reeds with the long side going up the mast. The masts were A-frames secured by ropes fore and aft. The sail was attached to a yard that was raised up the mast; and another yard at the bottom that assisted in relieving the sail's load/stress. When the sail was not in use the vessel was still propelled by paddles; oars were not feasible due to the inability of the vessel's construction to provide a suitable fulcrum.
- Bitumen is a thick tar-like petroleum product found to the east and west of Mafani lands. It was most likely introduced through various trade networks and would enable the Mafanese to expand their own trade network because of it. A simple fact of the basic reed boat is that they absorb water and must be hauled out of the water and dried from time to time. Bitumen was the answer to the water absorption problem. Mafanese boat builders started applying bitumen to reed boats as a waterproofing material; just as their ancestors had to the basket boat of their time. This adaptation allowed the Mafanese to sail further along the waters of the Gulf in order to trade with and/or colonize more distant regions.
- The last addition was a light wooden deck placed over the center section of the vessel to provide a stable platform for goods and personnel. The larger vessels would have a shelter or two built on them for the crew or prominent passengers.

### MAFAN REED BOAT C. 4000 BT



### MAFAN REED MAT SAIL



### MAFAN DECK SHELTER



# MARITIME HISTORY OF NORTHWEST LYTHIA 6

## Log Boats:

The northern regions of the Mafanese home territories are bordered by heavily wooded terrain as are regions along its early southern borders; as a result the log boat was another dominant vessel used by the Mafanese. By this time individuals were already joining planks to the sides of their log boats to provide additional draft and storage capacity; the planks were sewn into place using ropes or sinew. At most, these vessels could reach up to 30-feet in length. The seams of these log boats were caulked with bitumen and plant fiber or animal hair to make them watertight. In areas where bitumen could not be obtained they used moss, grass, and/or pitch. Most of these vessels were very narrow, about one foot of width per five feet of length; however, there were a number of wider vessels using two logs joined together of a single log that was split and a filler panel inserted in between the two halves. These wider vessels were used predominantly for trade and exploration throughout The Gulf of Mafan's coastal waters.

## Rafts

Just as the log boat above was evolving, the raft was also evolving into flat-bottomed craft that looked more like floating boxes. The bottom being constructed of sewn planks or lashed logs with planks being sewn to the sides to form an enclosed structure. These vessels were waterproof just like the log boats above.

## Advances on Primitive Wooden Vessels

Being made of wood, rafts and log boats provided the necessary strength to support the stresses induced when using oars. Therefore, one could find them being propelled in one of four manners. The first and oldest method was to use long poles to push the raft along a river's banks. Second was the adoption of oars to propel the raft in deeper waters. The oars would be placed in forked branches tied to the raft or, in more advanced forms, carved oar locks lashed to the sides. Third, a pole mast or bipod mast could be mounted on larger rafts to take advantage of favorable winds. Finally, the vessel could be pulled by men or beasts from the shore. Like the previous vessels, steering was accomplished with a stern mounted steering oar.

## A SEA GOING LOG BOAT

Around 4,000 BT, along the southern borders adjacent to the jungles of Homora and the Melurian Sea, the Mafanese began constructing sea going vessels made from huge softwood trees. The Mafanese learned the technique from the ingenious peoples of Homora and traders coming from regions further to the east. At first the construction was similar to that of an ordinary log boat; however, after shaping the edges and hollowing out the trunk they would heat the interior of the trunk in order to spread out the sides. The resulting vessel could reach up to 50-feet in length and 15-feet in breadth at its widest point. The largest had a small shelter for the crew and a mast for a square sail. When sails were not present oars would be used. Like the reed boat above, steerage was accomplished using large paddles off the rear of the vessel.

## THE PUNT; AN ADVANCED RAFT

As with log and reed boats above, another form of raft, the punt, began to appear around 4,500 BT. This flat-bottomed raft had a flat broad stern, usually as wide as the vessel's beam, and a narrow bow, usually up to half the width of the beam, that curved up out of the water. Punts of eight feet were used as fishing vessels; while larger ones, up to 20-feet, were used to ferry cargo and/or passengers. The main means of propulsion for this new vessel type was a long pole used to push against the bottom of the body of water being crossed. If the water were too deep, then a long oar would be suspended over the stern of the craft to act as both a rudder and a means of propulsion.

## NOTE ON PRIMITIVE VESSELS

While the Mafanese were developing these new forms of vessels, other tribal groups throughout Kethira were also going through the same process. With few exceptions many of these innovations could also be found in other areas of Kethira.



# MARITIME HISTORY OF NORTHWEST LYTHIA 7

## Wooden Ships

Some time between 4,000 and 3,500 BT Mafanese boat builders, soon to be known as shipwrights, began developing the first true wooden ships. These early ships were developed from the extensive knowledge they had gathered from working with the above vessel types.

- One of the first true ship designs was a shell-first vessel ranging between 20-30 feet in length. The timbers were flushed laid and lashed together forming a pointed bow and stern; these vessels originally had no keel. Internal ribs lashed to the hull allowed it to maintain its shape. Initially they were rowed and later had a step mast adapted to them. Steering was accomplished with steering oars over the sides of the stern of the vessel.
- The other design was based on the punts above and ranged between 30-40 feet in length. Their overall design was very similar to the smaller punts; however, instead of the sides curving up they were either vertical or at an angle. Propulsion methods were the same as the vessel described above.
- Neither of the above vessels had decking and their internal framing timbers were lashed into place after the hull was formed.

Sometime before 3,000 BT Mafanese shipwrights introduced a new construction method called "Mortise and Tenon." The process involved laying a shell-first hull with the plank's edges abutted to each other. The edges of the planks had mortises cut into them. Each plank had square tenons placed into each mortise and then adjoining plank's mortises was slid over the tenons. The tenons were held in place by treenails hammered through pre-bored holes.

- This new vessel was more rounded and could range up to 60 feet in length, the average being 40 feet. Since they lacked a strong central support system, like a keel, the vessel's primary support was obtained by a cable running from bow to stern to prevent hogging. Its internal frames were lashed into place like the vessels above. However, the new design also had cross-beams that provide lateral support and pierced the hull where they met. Removable decking is laid over the cross-beams and connecting timbers. Propulsion came from oars and/or a single A-framed mast carrying a square sail. The rigging is very similar to the reed boats above. By 3,000 BT the A-frame was replaced by a single post mast; this resulted in a more complex rigging system designed to support the mast and the associated sail and yards. The vessel was controlled by multiple steering oars attached to the stern.

Over time Mafanese ship design would continue to evolve. However, it's around this time that our focus moves eastward along the Mafanese commercial route into the Targa River Valley.

MAFAN SHIP C. 3500BT



MAFAN MERCHANTMAN C. 3000 BT



# MARITIME HISTORY OF NORTHWEST LYTHIA 8

## The Eastern Venarian Sea (3,100 – 1 BT)

### The Targans

The Targans were a riverine culture that grew into a powerful empire along the south-eastern coast of the Venarian Sea; due to the waterways and fertility of their region the empire was able to increase its wealth and technological superiority over other cultures within the region.

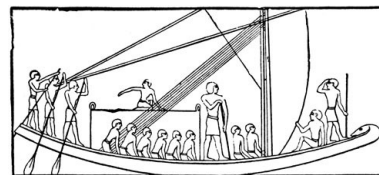
Due to the region's climate, terrain and contact with the Mafanese to the east the dominant vessel types used during this time were reed bundle and log boats along with some rafts. Even before the date given for its inception (3,100 BT) the region had been settled by various indigenous peoples who made a living off of the rivers and the sea. Even so, the coming of Mafanese traders and maybe even settlers would change the way the peoples of this region looked at the waters surrounding them; the result being an empire based on their ability to move about on these bodies of water.

By 3,000 BT the Targans had improved upon the reed bundle boat's design by converting them into large reed galleys of up to 60 feet in length. Even though these vessels were larger and more stable, they were still more suited to river traffic than the open sea due to their main propulsion being predominantly paddles and/or a sail which were adopted from the Mafanese; the A-frame mast also being borrowed from the Mafanese.

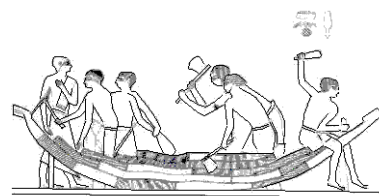
By 3,000 BT the Targans were also constructing vessels of small timbers which came in two forms, galleys and round ships; both types having been derived from elements found in the construction of their reed and log boats. There is no doubt that the Mafanese Empire had a significant part to play in the advancement of building wooden ships. At first the vessel's hull was constructed in the Mafanese manner described above; however, by 2,500 BT Targan ships were being constructed using mortises and pennons to fasten the hulls together using more substantial internal frames treenailed and lashed into place instead of the old method using cross-beams and light framing material.

- The Targan round ships took in the shape of spoon's bowl, and were often referred to as round ships. The round ship was the principle cargo vessel of the ancient Venarian Sea, having a large beam to length ratio that provided a more stable platform for carrying cargo. These vessels were primarily sailing vessels although most still carried a number of oars for use in calm winds, ports and rivers. They were steered by multiple steering oars or a single steering oar suspended over the rear of the vessel.
- The first galleys were nothing more than large pleasure boats for the rulers of individual city-states and ceremonial craft for religious groups. The shape of the galley was to take on the form of the reed boats they supplanted. Like all early wooden vessels they were constructed of short timbers and had to have additional support in the form of a cable running from stem to stern to keep it from hogging. As Targan power grew the galley came to be used as a purely military vessel used to project Targan power and authority throughout its sphere of influence. These early galleys were more troop carrier and fighting platform than actual combat vessels since they lacked a ram. The construction methods employed were very similar to the round ship described above.

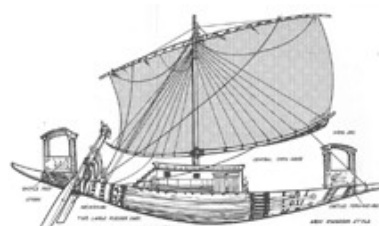
TARGAN REED BOAT C. 3000 BT



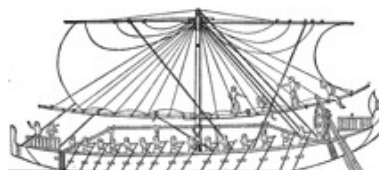
TARGAN SHIPWRIGHTS C. 3000 BT



TARGAN MERCHANTMAN C. 2500 BT



TARGAN GALLEY C. 2500 BT





# MARITIME HISTORY OF NORTHWEST LYTHIA 9

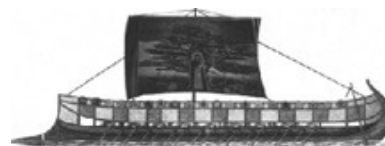
Around 2,000 BT the Targans began incorporating a keel into their vessel designs in place of the central plank. This allowed them to build larger, and more seaworthy, ships. In addition, it allowed the implementation of the ram on their galleys; thus giving them the first true naval weapon within the region. Even so, their vessels were still caravel planked and of shell-first construction. Because of this it is assumed by many that the ram was more of a decorative device instead of an actual weapon. This would not change for another millennium when a more improved internal support system was devised by Venic shipwrights.

- With the adoption of the keel Targan merchantmen could be built up to 90 feet with a breadth of 30 feet. The hull itself was rounded or semi-papyriiformed and a substantial amount of its stem and stern hanging above the water. To counter distortion these overhangs could cause to the hull a large hogging-truss cable was run from the bow to the stern. These ships carried two small platforms, one in the bow and one aft, for lookouts and helmsmen. The ship was controlled by two large steering oars, one per each side in the stern. Propulsion was accomplished either by oars or a large sail. The mast was a single pole and was rigged with a yard, but no boom, for the sail. When not in use the sail would be raised and tied off to the yard. These vessels could only use their sail when the wind was from behind or no more than 30 degrees off the stern; otherwise, the ship must be rowed. Oars were usually provided one for every five to six feet per side.
- In addition to the larger merchantmen, the Targan also built smaller coastal and riverine craft used to move goods, people and to act as fishing vessels. These vessels rarely exceeded 30 feet in length and were usually shaped like the bowl of a spoon. The horizontal section being a long ovoid shape and the vertical being either round or flat bottomed. It was also common for these working vessels to have blunt bows and sterns. Like the merchantmen above these smaller vessels were propelled by oar and/or sail. Examples of these ancient boats still ply the coastal waters and rivers of Dalkesh and neighboring regions.
- Targan galleys also acquire a keel allowing them to be built up to 80 feet in length and 13 feet in breadth. The hull is very similar to the merchantman above; however, the bow extends out in front of the vessel forming a ram that is usually decorated with an animal head. Since the galley's hull is not as rounded as the merchantman it does not have the hogging-truss installed. The galley still has the fore and aft platforms as the merchantman and the same steering oars to both sides of the stern platform. Propulsion is provided by oars and/or a sail. The main difference between the mast and rigging of the galley from that of the merchantman is that the sail was not attached to a lower boom and was raised and tied to the yard when not in use. In addition, the Targans introduced a crow's nest at the top of the mast. Oars were provided in the same ratio as the merchantman. In order to protect the oarsmen during a battle the gunwale was built up to provide a protective wall for them, the oars being placed through a slot left open between the gunwale and the hulls side. Down the middle of the vessel between the two platforms was a raised platform from which archers and spearmen could attack other ships. Since the ship did not have a hogging-truss it is possible the platform aided in this area. Although it has a ram, the internal structure of these galleys would have precluded their regular use. However, as new building methods were developed its use would become a common place thing.

TARGAN MERCHANTMAN C. 1300 BT



TARGAN GALLEY C. 1300 BT



# MARITIME HISTORY OF NORTHWEST LYTHIA 10

- These would be the dominant ship designs for the Targans till the first century TR when they would begin adopting Venic technologies.

## The Venic Peoples

The Venic peoples were Azeri tribesmen living on the islands and coastal fringe of the eastern Venarian Sea, which was named after them. The Venic had a strong maritime culture that thrived and grew on trade, fishing and piracy. As their seamanship and shipbuilding abilities grew the Venic also grew stronger, establishing colonies throughout the Venarian basin. Some of these colonies blossomed and became kingdoms in their own right, the Azeryani Empire being the jewel of them all. The Karejian islands, which were originally inhabited by the Venic, are still the dominant trading power throughout the Venarian Sea.

The vessels used by the Venic are descended from basket and log boats used by the ancient Azeri and boat designs adapted from their Targan neighbors to the south. From the basket boat emerged a round-hulled vessel with a deep draft. At first they were no more than oversized basket boats, but as the Venic peoples adopted some of the Targan and Mafanese wood building techniques these vessels would become the dominant trading ships within the Venarian Sea. From the beginning their log boats were used in raiding and war and it was only natural that they too would develop into formidable fighting galleys using Targan technology.

By 2,900 BT the Venic were eagerly copying Targan merchantmen and galleys. The Venic were also using mortises and tenons to construct their vessels and had also adopted the use of the square sail, single pole mast and associated rigging. For the next millennium they would emulate Targan shipbuilding techniques and design.

Around 1,900 BT the Venic began building a merchantman of their own with many similarities to a Targan merchantman. It had a deep rounded hull and a length to width ratio of three to one. It was built upon a central keel that terminated in vertical stern and stem posts. Like the older Targan vessels it had a single mast mounting a square sail. To assist in ascending the mast ladders were placed against each on each beam side. Finally, a light wooden fence was placed around the cargo area to help contain cargo stowed on the deck. Internally, new structural features were being employed to provide more strength and stability to the vessel's hull. It was this vessel and numerous smaller coastal traders that the Venic would gain control of most trading activities throughout the Venarian Sea.

By 1,000 BT the Venic were developing new merchantmen and galleys of their own design. By this time they had established numerous colonies throughout the Venarian basin and assisted their Azeri cousins in relocating to the Azeryan Peninsula in the face of Ketari inroads to old Azeri tribal ranges along the northern and central areas of the Eastern Venarian coastal zone. At first the Venic would pull back from the mainland to their islands, but after regaining strength and arms pushed back into their former lands to take control of the coastal plains just north of the Targans.

VENIC MERCHANTMAN C. 500 BT



# MARITIME HISTORY OF NORTHWEST LYTHIA 11

- During this time the merchantman began to take on the shape that would persist into the modern era. They were true round ships with well rounded and deep hulls, a central keel, caravel-straked hull fastened with mortises and pennons, a single mast with no oars and a square sail, and double steering oars. Most importantly was the new method for framing the hull after its shell was built. The frames were now formed to the hull and then attached to by copper/bronze nails being driven through the hull into the frame timbers. In addition to the deck timbers that still pierced the hull, longitudinal timbers were also laid to provide additional strength to the hull. The length to width ratio would still be to the order of three to one. These building techniques would be well protected by the Venic for the next millennium, preferring to sink a ship than have it taken and the secrets learned.
- The new Venic galleys adopted the same building techniques as the merchantmen; thus providing them with the superior strength to endure repeated ramming in a naval battle as opposed to the older galleys. These new naval weapons could range in size from about 70 feet to well over 100 feet later on. At first they had one or two rows of oars per side; in time they would acquire up to five levels of oars. The length to width ratio was around five to one producing a very narrow profile and a shape meant for speed. On the earlier galleys the ram and bow formed a slopping beak that also assisted the vessel when moving through the water. Later models would have a prominent ram out front of the rounded bow. Like the older galleys above a fighting deck was placed above the rowers to provide protection and an elevated platform from which to fight. Sails and steering were similar to the new merchantmen above. With few exceptions, this would be the basic design for the next millennium.

By the end of the first millennium BT the building techniques had not changed very much, but the designs continued to evolve; round ships were getting longer and multi-decked and masted and the galleys were also getting larger and acquiring more banks of oars. It was these vessels that would be the precursors of all maritime vessels in the next age. Although the basic designs were still prominent throughout this period each city state would have a style of its own to set its vessels apart from the others. Most of the primary designs seen in the modern era are holdovers from the more dominant shipping communities of the past.

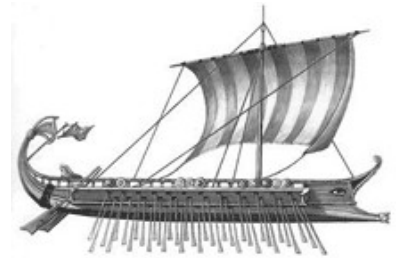
## Northwestern Lythia (1300 BT – 1 BT)

### The Jarind

Jarind culture, located on the shores of the Sea of Ivae, has a long maritime tradition that has fallen off within the millennium. This is partly due to their sedentary lives on Hârn and their eventual domination by the Pharic peoples who displaced them from much of mainland Lythia and Hârn. A true descendant of this maritime past is the Kingdom of Emelrene.

The Yarili, are a nomadic people, developed advanced forms of skin boats to migrate to the northern islands and ice packs of Lythia. Their vessels are of two types. The first is an enclosed watertight vessel that was suitable for the coldest regions of the inhabitable north; the largest of these vessels being capable of holding a small family within its shell while one or two of the passengers paddled. The other vessel is an open framed vessel used to carry large loads along rivers and coastal areas of Altland and Ivinia.

VENIC GALLEY C. 500 BT



# MARITIME HISTORY OF NORTHWEST LYTHIA 12

The Jarind and Pharic peoples used a wide variety of ancient vessel types: skin boats, log boats and to a lesser extent rafts. By the time the Jarin began migrating to Hârn they had already developed the log boat into a functional sea going canoe by sewing additional planking to the sides to add depth; sometimes they also joined two logs together to form a wider vessel or added a transom to seal off one end.

The sewn-planked boat was developed using the skills learned in developing the log and skin boats used by the Jarin. It usually consisted of a central dugout log, vary narrow and indistinguishable as a boat now, with planks being added in clinker style by sewing them together. The internal support for these vessels was adopted from the skin boat in that they had light timber framing lashed to the planks to support the shape and provide some strength to the vessel.

Contact with the Elder races of Hârn had a significant effect on the Jarin's shipbuilding skills. From the Sindarin, and the early Jarin who came into contact with them, they learned how to use iron nails to fasten the planks together and how to construct a plank keel. The plank keel being a plank similar to those used on the sides but it was thicker and ran along the centerline of the vessel and replaced the traditional dugout core.

All the vessels of this period were oar powered and classed as Longships. During this period trade was to prosper between the Hârnic Jarin and those in Melderyn. If not for continuing pressure from the Pharic peoples Jarin culture could have become a significant power within northwestern Lythia.

The exception to the above trends being the Kingdom of Emelrene which has continued to maintain its own maritime traditions; to a lesser degree the same can also be said for the descendants of the Jarin on Hârn. Although their vessels are not as sleek or as fast as the Pharic examples, the Emelrene developed a reverse pattern clinker technique based on the plank-keel. These vessels were rowed at first and adopted a single mast with a simple rectangular sail in regions closer to the Venarian Sea; some believing the sail was adapted by the Jarin in these parts from other Venic merchantmen venturing into the coastal waters of present day Trierzon and the southern coast of Emelrene.

## The Pharic

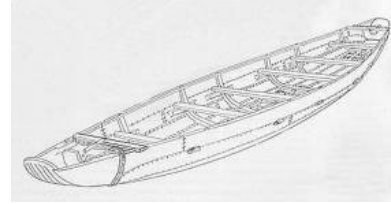
The Pharic peoples readily assimilated the shipbuilding skills of the Jarin who were only too willing to share their knowledge with them in the beginning. As more and more territory on the mainland was lost to Pharic incursions the Jarin pulled back and shared less. With the invasion of Hârn, and the Battle of Sorrow later on, the Pharic peoples soon came to dominate the northern seas as first-class seaman and shipwrights. By this time they too had acquired the ability to build in the clinker style and became very adapt at designing extremely seaworthy vessels from which all the northern designs would descend. One key innovation the Pharic peoples brought with them from the Venarian Sea was the use of a true keel instead of the keel-plank used by the Jarin. Up until about 200 TR sails were not commonly used by any of the human cultures around the Sea of Ivae.

## The Sindarin

Traditional Sindarin shipbuilding focuses on using specially grown timbers for the vessels. A true Sindarin vessel takes years to build, the Sindarin being interested in the aesthetics and workmanship more than the functional design. Most of their vessels will never be seen or used by humans; their main function being to transport Sindarin on their continuing voyage to the Blessed Realm. Sindarin ship designs have changed little over the millennia; the Sindarin seeing no reason to change something that has served them so well.

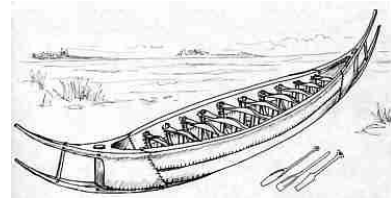
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SEWN PLANK BOAT C. 1300 BT



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SEWN PLANK BOAT C. 1000 BT



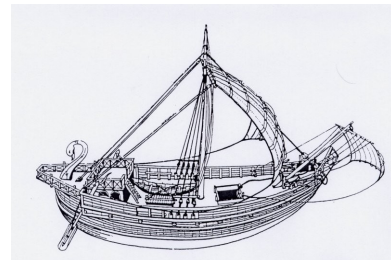
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JARIN/PHARIC LONGSHIP C. 300 BT



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SINDAR MERCHANTMAN





# MARITIME HISTORY OF NORTHWEST LYTHIA 13

Key features of any Sindarin vessel are its sharp clean lines, a prow that consists of a sharp raise beak, a stern that is more rounded with the stern post curving around and forming some kind of animalistic motif, and their hulls are caravel straked. Their vessels usually have a length to beam ration of 5:1 and a shallow draft allowing them to navigate shallow waterways. All of these vessels rely on sails as their primary means of propulsions.

Most Lythian scholars assumed that the northwestern clinker construction is a direct result of contact between the Sindarin and humans; a major difference being that many Sindarin vessels, although of shell first construction, use caravel style planking.

## Modern advances (1 TR – 700 TR)

Ship design during the modern era is focused into three specific spheres of influence. This section will look at how vessels in those areas were developed and how design characteristics from one region flowed into another resulting in new composite designs.

### The Venarian Sea

As mentioned above, the Venarian Sea is surrounded by Western Lythia's most advanced civilizations. By 200 TR the Azeri were the dominant force in the region and would inherit and continue to develop the vessels that would come to be the dominant types within the precincts of the sea itself. With the decline of the empire since the late 5<sup>th</sup> century TR the descendants of the Venic peoples, the Karejians, became the foremost shipwrights within the Venarian Sea. As of 720 TR there are four basic ship types whose origins extend back to the ancient vessels of the Targan and Venic peoples. In addition, two other vessels types are generic to this area as well as the others listed below.

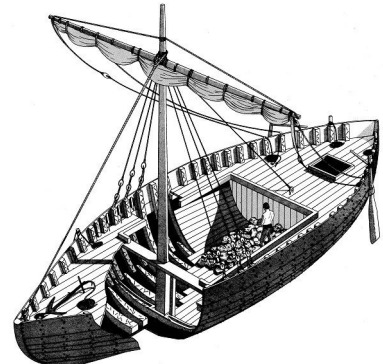
Characteristic features of all vessels made within the Venarian Sea are:

- Frame (skeleton) first construction is used
- The hulls are caravel straked (flush laid planks)
- Steering oars are still used
- Many of the larger vessels have multiple masts
- Sometime around the 1st century TR shipwrights and masters adopted the venyn-rigged sail. It is believed the design was brought to the Venarian Sea from eastern Lythia via the Gulf of Mafan.
- The use of skeletal first construction has allowed larger cargo vessels to have multiple decks.

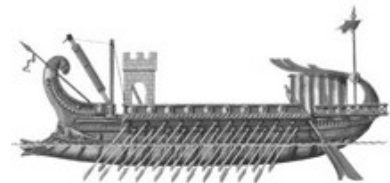
The galley, the longship of the Venarian Sea, is the principle naval weapon within the region. The Laru and Laru Mar being the principal design used by the Karejians and copied by most every other political entity owning a galley. Even so, there are cultural differences that do show up in the specific designs of each culture's own vessels.

The round ship, the basic transport of the Venarian Sea, can be found in two basic designs. The first being the smaller coastal vessels used to move small cargoes over short distances or as fishing vessels. The second is the large merchantmen that carry goods throughout the Venarian Sea. Again, each culture has its own specific design characteristics; however, there are two basic vessel types that dominate the region, the Venar and the Raem.

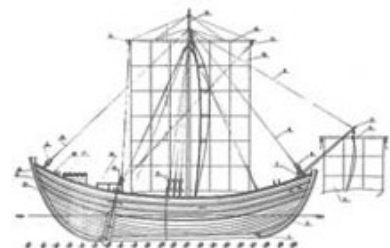
VENIC MERCHANTMAN C. 1 TR



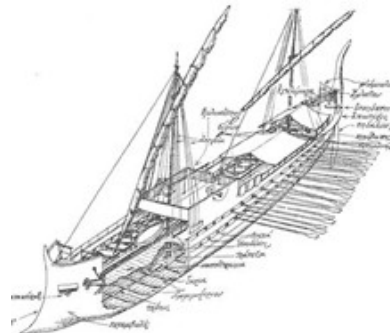
VENIC GALLEY C. 1 TR



AZERYANI MERCHANTMAN C. 200 TR



AZERYANI GALLEY C 200 TR





# MARITIME HISTORY OF NORTHWEST LYTHIA 14

## The Gulf of Ederwyn

While the southern shores of the gulf followed a shipbuilding tradition like that of the Venarian Sea; those of the north are more of a transitional zone between the ship building techniques of the Sea of Ivae and those of the Venarian Sea. At the beginning of the modern age the Trierzi and other cultural groups of this area were building caravel hulled, shell-first, flat-bottomed vessels. The design of these early vessels was based on the traditional Jarind vessels of the north and the caravel vessels of the Venarian merchantmen coming to their ports. As Azeri influence spread over the region so did the vessels designs used by the seamen of the Venarian Sea. By 500 TR the region had adopted the vessels of the Venarian Sea as their models for future ship designs; although cultural influence still altered the designs to a small degree.

A major change in ship design came around 690 TR when Trierzi shipwrights began looking for a vessel that could sail voyages of exploration along the Anzelorian coast in an attempt to find a route to the riches of Eastern Lythia. Towards this end they experimented in ways to improve on the design of the northern Dak while using their own southern shipbuilding skills and technology. The end result was the Karune, an adaptation of a fishing vessel found in Trierzi waters. Although a bit smaller than the Dak, it was faster and adopted many features from both ship building traditions.

From the southern ship building tradition it has these features:

- Skeleton first construction
- Caravel planked hull
- Venyn-rigged mizzen mast

From the northern ship building tradition it has these features:

- Stern post rudder
- Square-rigged main mast
- Bow spirit
- Shape similar to that of the Dak

## The Sea of Ivae

Ship building in this northern sea followed the patterns established by the Pharic peoples who settled the islands within and lands to the east of this sea. Their ship designs continued to be longships in general with sewn planks shells and lashed down skeletal frameworks. At first these vessels were strictly oar powered. Sometime around 1 TR they began incorporating a keel instead of the old log boat core into the design. At the same time they also started to use iron nail to secure the strakes to one another. During this time the skeletal framework was still lashed to cleats that were formed on each strake as it was being shaped; however, the use of treenails was also becoming a dominant means of fastening the frames to the strakes.

IVINIAN WARBOAT C. 100 TR



# MARITIME HISTORY OF NORTHWEST LYTHIA 15

By 200 TR the Ivinians developed the keelson that would allow a mast to be added to their vessels. In addition they began using large square woolen sail. However, it was the design of their ship's hulls that would revolutionize ship design within the region; not to mention the overall political, social, and economic conditions for the next 300 years. It was during this period that the classic lines of the Ivinian longship came into being and would give birth to the Warboats that would terrorize all of Northwestern Lythia and the cargo vessels that would be the dominant merchantmen until more recent times. These vessels were able to sail the open waters of the ocean as well as up the major rivers of the region. The design itself allowed it to be modified to suit whatever purpose the vessel was needed for. Eventually the vessels would be the predecessors to other vessels like the Dak.

Key features of the Ivinian longship were:

- Pointed bow and stern
- Steering Board on the right side
- Keelson for mounting a mast
- Flexible hull strakes secured with iron nails
- Skeletal members lashed and/or treenailed into place
- Flexible design to facilitate diverse needs

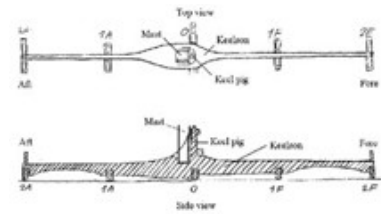
## The Gulfs of Shorkyne and Modan and Quandas Bay

The smaller vessels of these waters are for the most part still of ancient Jarind design. The majority of these smaller craft are flat bottomed and constructed in the traditional clinker method or use a reverse clinker method; most of the larger vessels of this region are based on designs from the Sea of Ivae. However, over the last 100 years the region has produced two distinct vessels.

Sometime around the middle of the last century Shorkyne shipwrights began producing the first Daks. The Dak is a flat-bottomed vessel that borrowed some aspects of the ancient Jarind coastal vessels and the modern Ivinian vessels. However the Dak also has some very new technologies not found on other vessels at the time of its introduction.

- From the Jarind vessels it has a flat bottom hull formed with flush laid planks
- From the Ivinian vessels it has the traditional clinker built sides and inserted framing and a single square-rigged mast
- New technologies include:
  - A stern mounted rudder
  - A keel in more than one piece
  - Fairly straight stern and bow posts
  - Integrated stern and bow castles (after 700)
  - Bow spirit

## KEELSON



## SHORKYNE COASTER C. 500 TR



# MARITIME HISTORY OF NORTHWEST LYTHIA 16

Around the same time that Shorkyne shipwrights were developing the Dak Emelrene shipwrights developed a bulk cargo carrier of their own. The Hulc was developed from a common coastal vessel used in its own waters. Characteristic features of the Hulc are:

- A thick central keel plank instead of a normal keel
- Reverse clinker construction
- Steering oars
- A single square-rigged mast
- No bow or stern posts
- The strakes come together at the bow and the stern and are held together by a collar

## Current Era (700 TR – 720 TR)

### The Venarian Sea

The Venarian Sea has been the economic hub of Northwestern Lythia since the Targan Empire and most likely well before that time. As a result it has a long shipbuilding history. The technologies in this area are well defined and some of the more advanced within the region. Even so, they have been slow to adopt the stern rudder. Within the Venarian Sea there are four dominant vessel types. That said, there are numerous variation to these four vessel types and numerous lesser known vessel types associated with local customs and traditions.

- **Venar:** A one masted, carvel-straked venyn-rigged vessel with a single steering oar has been in use for about 400 years. The sail design was adopted from eastern Lythia and the rig is now named after this vessel, which in turn is named after the sea on which it is most common. Smaller Venars serve as fishing boats and light river transport; larger Venars are employed as coastal traders. The Venar generally has an orlop deck, but no main deck; it is not very sea worthy in stormy seas.
- **Raem:** A merchant vessel used extensively by Azeryani and Karejian traders for nearly 200 years in one form or another. She is carvel straked, with two masts and twin steering oars. Both masts are venyn-rigged. The twin steering oars, one each quarter, provide better steering when the vessel heels to one side or the other. The Raem has a high freeboard, full length orlop and main decks, and a poop deck. The Raem is very seaworthy and capable of ocean travel. Some shipyards have begun designing a larger variant of the Raem that will have multiple decks and may even incorporate the stern rudder.
- **Laru:** The war galley of the central and eastern Venarian Sea that has maintained its current appearance over the last 100 years. The Laru has a low, sleek profile, a ram, and is propelled by a large Venyn sail bent on a single mast and by oar. She has a full orlop deck, partial main decks at the bow and stern, linked by a narrow deck (called a catwalk). Most also have quarterdecks and focsles, and carry a20-30 bowmen. Oarsmen are positioned two or three to a bench, pulling a single 24-36 feet oar in unison. Depending on the vessel size there can be 12-36 pars per side.

EMELRENE HULC C. 600 TR



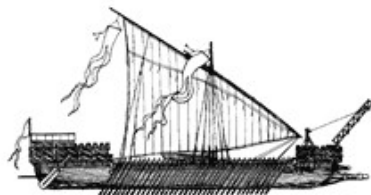
VENAR



RAEM



LARU



# MARITIME HISTORY OF NORTHWEST LYTHIA 17

Cruising speed under oar is four knots, although twice this speed is possible for 15-20 minute bursts. The vessel can make eight knots with a good following wind, but is vulnerable in rough seas. The Laru is mainly employed to protect merchant convoys and to patrol the se-lanes and coastal waters, usually in flotillas of 2-6 vessels.

- **Larumar:** A merchant galley used by wealthy Karejian and Azeryani merchants, generally only for valuable cargoes; it first appeared only within the last 100 years. The Larumar is fast and relatively seaworthy for a galley. Her hull may have carvel or kamba straking. She has an orlop deck, main deck, and (usually) a deck house atop the quarterdeck. Such vessels may have two or three venyn-rigged masts. They carry large crews which are more for defense than rowing because they only use oars when becalmed or entering/leaving a part.

These elite merchant ships rarely travel alone, convoys of 2-8 vessels comprising a Larun being more common. Most Larun originate in Livelis, the major port/city of the Karejian League, and are named after their principal destination such as the Larun of Hebos, the Larun of Janora, or the Larun of Cherafir.

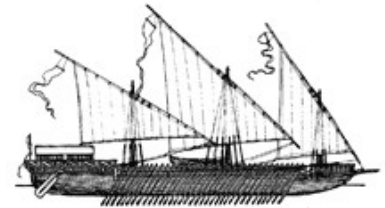
## The Gulf of Ederwyn

With the gulf being on the margins of the Venarian Sea and northern shipbuilding traditions, it is not unusual to see ships of both regions working these waters. However, the waters around southern Trierzon tend to use Venarian Sea vessel types and those to the west around Palithane tend to use northern vessel types. As a result of this crossing of vessel types someone wanting a ship built can find a shipwright specializing in either clinker or caravel construction. In addition, the region is known for its innovative designs incorporating both shipbuilding techniques; an example being the Karune.

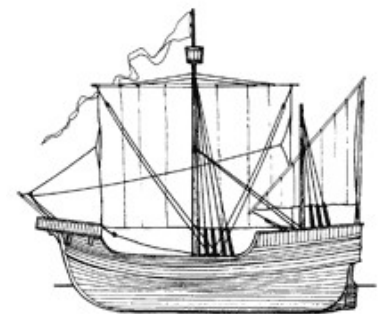
- **Karune:** A revolutionary design which first appeared in Trierzon and Palithane less than thirty years ago. The Karune is an all-purpose vessel intended for long voyages and capable of handling all but the roughest seas. Ranging in length from 60-96 feet, the Karune may have carvel or kamba straking, an orlop deck, one or two tween decks, a main deck, and a focsles and quarterdeck. The Karune has two or three masts, with square, venyn, or most often mixed rigging. Compared to a Dak of similar size, the Karune has less cargo capacity due to her slimmer lines, but is faster. There are only about sixty of these vessels afloat, partly because shipwrights elsewhere have been slow to adopt the design.

Due to Trierzon being midway between the rich goods of eastern Lythia and bulk and textile goods of the north, Trierzon's leadership and merchants started questioning the possibility of rounding Anzeloria in the search for a passage to the Gulf of Mafan and regions further to the east. They knew most vessel already at hand were either too slow for such a journey or not seaworthy enough. The Karune was the answer to this dream. It is fast, seaworthy, and can sail with or against the wind.

LARUMAR



KARUNE



# MARITIME HISTORY OF NORTHWEST LYTHIA 18

## The Sea of Ivae

This region is home to the clinker straked shipbuilding technique. Although the longships of this region are readily associated with the Ivinians and their ravaging of northwestern Lythia over the last 300 years or so, most civilizations north and west of Trierzon have adopted the techniques for their own purposes. However, the Ivinian designs are still the most technologically advanced of all the verities built. Even so, the design has reached its limits and its utility is waning in favor of other vessel types that can meet the same needs more efficiently. Although any vessel with a high length to beam ration is considered a longship, they can be classed into two distinct vessel types.

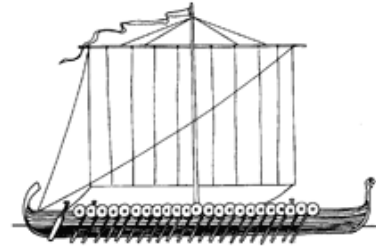
- **Dragonship:** A collective name for all types of the traditional Ivinian warship, although the name is sometimes reserved for the largest of them. The first true longships began to make their appearance about 300 years ago. The smallest type is called a warboat (60-80 feet), and is followed by a longship (81-96 feet). Dragonships have evolved from a long and violent maritime tradition, and depend on their large crews for seaworthiness. They are built with shallow draft clinker hulls, and orlop decks. They never have more than one square-rigged mast, but are capable of making up to twelve knots with a good following wind, and six knots under oar. Crews are large; all bear arms and help sail, row, and fight. Cargo capacity is minimal, restricted to small valuable items such as might be acquired by raiding. These vessels rarely have benches for their oarsmen, the tradition being that each oarsman sits on his personal sea-chest when rowing.
- **Nivik:** A one-masted, square-rigged vessel which is the most common merchant ship found in the waters of Hårn and Ivinia; it has been around for almost as long as the Dragonship above. The Nivik has a clinker hull, a full orlop, but no main deck. Cargo and men are protected from the elements by tarpaulins and canopies. A single square sail is the only source of propulsion, and there is a single steering oar on the starboard quarter. A coastal trader would typically have a length of 30-42 feet; a sea-going trader might vary between 42-60 feet in length. Niviks of 24-30 feet are the most common fishing boats in northwestern Lythia. When employed for military use, small raised platforms called castles may be added at the bow and stern.

## The Gulfs of Shorkyne and Modan and Quandas Bay

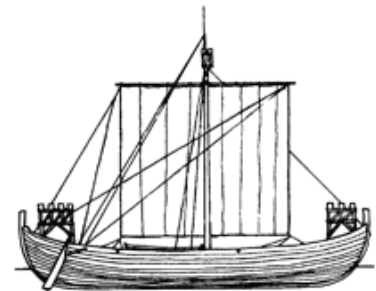
The Gulf of Shorkyne is the major trade route of bulk goods out of Hurisea and grain and wine from Shorkyne. The Gulf of Modan and Quandas Bay are significant sources of linen and other textiles. The hub of all this activity is centered on Celembly Island and the city of Chelembly. With the increased demand for these bulk goods and the decline of Ivinian raids, Shorkyne shipwrights developed the Dak.

- **Dak:** The Dak has replaced the Nivik as the most popular merchant vessel in Shorkyne, Emelrene, and the western regions of Trierzon. Built from a clinker straked hull, this vessel has a full length orlop and main deck, and may have a tween deck depending on size. The Dak also has a quarterdeck and forecastle, although recent designs now have an enclosed focsles. Most have a single square-rigged mast. The vessel is slow and unwieldy but very seaworthy because of its high freeboard. An important feature of the Dak is her stern post rudder which is far superior to a steering oar, particularly in rough seas. Invented by Shorkyne shipwrights in the middle of the last century, the rudder is slowly being adopted by other builders, most notably in Trierzon, Emelrene, and Palithane.

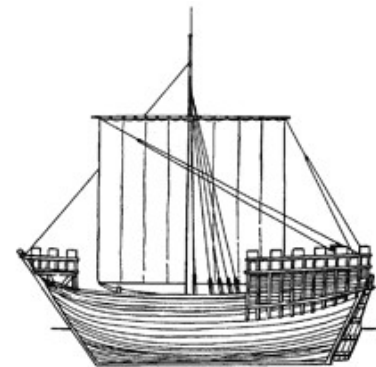
DRAGONSHIP



NIVIK



DAK





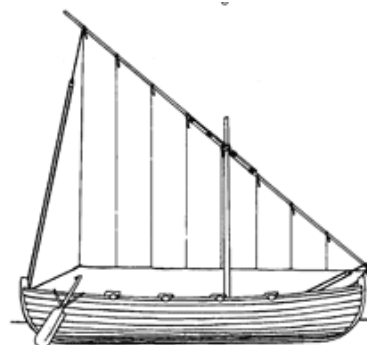
# MARITIME HISTORY OF NORTHWEST LYTHIA 19

## Generic Vessels

There are two vessel types that can be found throughout all these regions with either clinker or carvel straking and a numerous variations on the standard design shown here. The Pinda is primarily a ships boat or small fishing vessel and the Talbar is the most dominant riverine vessel in all of these regions.

- **Pinda:** Small, deckles boats, equipped with oars and carried by ships as ship's boats. A Pinda will have 1-4 oars per side depending on its length and most have a single stepped mast that is square or venyn rigged. Most large vessels carry at least one Pinda, stowed on the main deck or slung over the side, In terms of human capacity; a Pinda can carry one man per quarter tun Gross Burthen. Hence, a Pinda of 2 tuns can hold about 8 individuals with provisions for about two days, assuming that it carries no other cargo.
- **Talbar:** A beamy but shallow draft trading vessel designed to operate on rivers or in shallow coastal waters. The Talbar dominates water transport on most navigable rivers and lakes. The overwhelming majority of Talbars are a few inches less than thirty feet to circumvent piloting restrictions. The Talbar hull may have clinker or carvel straking. They are both oar and sail powered. The oars are used primarily for upriver travel and when docking. The small sail is bent on a stepped mast that can be easily lowered to pass beneath bridges, and may be square or venyn rigged according to local custom.

PINDA



TALBAR

