

The *ptoion hellenikon* of Roman Egypt: What was Greek about it?

Emad Khalil

British Museum Studies in Ancient Egypt and Sudan 19 (2012): 71–82

The *ploion hellenikon* of Roman Egypt: What was Greek about it?

Emad Khalil

The *ploion hellenikon*, πλοῖον ἑλληνικόν or ‘Greek boat,’ was a distinctive, Greek-style vessel which sailed the Nile from the 2nd and 3rd centuries AD. Its significance, its uses, and the origin and rationale for its name, can only be related through an understanding of the history and forms of the vessels which sailed the Nile in antiquity.

Riverine transport in Egypt

The importance of riverine transport within Egypt needs no emphasis. The Nile was the spine of the transport system in Egypt until the early 20th century. It was the principal and cheapest means of carrying goods and people from one part of the country to another, with reasonable speed and convenience (Kemp and O’Connor 1974, 101–102, Petitpa 2009, 56–60).

The Nile was navigable from south of Aswan to the Mediterranean, a distance of about 1200km. Traveling downstream was aided by the current flowing from the south to the north, while sailing upstream was aided by the prevailing northerly and the north-westerly winds (Mohamed 2001, 107–18). The river flowed with an average speed of about 7.4km/h during the annual flood season in summer; however, the speed of current decreased to about 1.8km/h during the drought season (Hassan 1997, 62). Therefore, northwards sailing was faster during inundation time. Sailing upstream was against the current, but it was aided by the prevailing northerly and north-westerly winds; however, the further south from the coast one travelled, the more the effect of these winds decreased. A laden cargo-boat sailing south under favourable wind could make 40km a day (Lewis 1983, 143; Bagnall 1993, 19).

Accordingly, in Roman Egypt, as in earlier periods, internal movement was mostly carried out by river as there was no part of the valley more than about 15km from the Nile and many towns were within a half-day’s sailing of the next town (Bagnall 1993, 18–19). Moreover, many papyri refer to requests for certain items or people to travel or to be dispatched ‘immediately’ by riverboats to other places (Lindsay 1968, 141) implying an abundance and regularity of boats travelling up and down the Nile. Accordingly, for millennia, Nile boats played a major role in the country’s economic integrity and its social and political unity (Hassan 1997, 62–63).

There is ample evidence for ancient Egyptian riverboats from as early as the Old Kingdom. Consequently, plenty of information is available about the design and structure of boats that were used in ancient Egypt (Ward 2000). However, unlike the case with ancient Egyptian sea-going vessels, there is a complete absence of any material evidence for riverboats from Hellenistic and Roman Egypt; therefore, for information about Graeco-Roman Nile boats, we rely on textual and iconographic evidence in addition to material remains from other periods.

Ancient documents attest that various articles were transported up and down the Nile in Roman Egypt: personal letters, parcels, foodstuffs, amphorae, timber, quarried stone, furniture, clothing and other textiles, even beasts of burden, like camels and horses, were carried on boats. Additionally, boats were used for processions, religious festivals, fishing and hunting as well as for

the official postal service operated by the government. Even more significantly, riverboats were used by passengers to travel up and down the Nile (Lindsay 1968, 110–43, 220–31, 250, 408 n. 9; Bagnall 1993, 37; Casson 1995, 340, n. 6). However, the most vital article riverboats carried in Roman Egypt was Egyptian grain, namely barley and wheat, which acquired a special value under the Roman administration due to the importance of this resource to the capital city of the Empire. Under Augustus, Egypt provided Rome with one third of its annual grain requirement to feed its population. Every year, between 135,000–150,000 tons of grain tax travelled up the Nile to Alexandria to be shipped to Rome (Rickman 1980a, 231–35; Lewis 1983, 165; Casson 1984, 70–86). In other words, grain exported from Egypt went through two phases of water transport before it arrived at its destination. First it was carried by river vessels from the villages of the Nile Valley and Delta to Alexandria, and then was transhipped to sea-going grain carriers, which transported it from Alexandria to the ports of Rome.

Additionally, among the Egyptian resources that were exploited by the Roman administration were the quarries of the Eastern Desert, which were the source of some of the most valued decorative stones used in the Imperial period, such as grey granodiorite and imperial porphyry (Peacock 1992, 5–7; 2000, 426–27). After being transported on land from the quarries to the river, the stones were carried by Nile vessels to Alexandria to be shipped to other Roman cities.

Nile vessels in Greek and Roman Egypt

Like all other types of boats and ships all over the world, Nile vessels were conditioned by the local environment in which they operated (Casson 1995, 338–40; Greenhill 1995, 20). In Egypt, this parameter was considerably different from many other regions, due to the special character of the Nile. Therefore, river vessels in Graeco-Roman Egypt are not necessarily analogous to river vessels in other Mediterranean regions. Instead, they are more easily comparable with Nile vessels from earlier or later periods.

For example, iconographic representations of Nile vessels from different periods show that those vessels carried their cargo above their decks rather than below it (Figs 1 and 2). This is mainly related to the relative calmness and steady flow of the Nile's water, which aided the stability of vessels moving up and down the river. On the other hand, during the Nile's drought season, when the river's branches and channels became shallower and narrower, vessels with particularly shallow drafts would have had a better chance of travelling on the Nile while avoiding the risk of running aground (Said 1993, 45; Hassan 1997, 62; Mohamed 2001, 107–18). Additionally, although it is generally accepted that most Nile vessels in Roman Egypt would have carried a single square sail (Casson 1995, 329; Wild and Wild 2001, 216), towing from the riverbanks was the main means of moving a laden vessel against the wind. Therefore, it is reasonable to assume that many riverboats in Roman Egypt were equipped for towing. In fact, until the introduction of power engines in Nile vessels in the middle of the 20th century, cargo boats were usually towed by teams of men on the banks as they moved in narrow Nile branches and canals.

As far as the construction technique is concerned, from looking at surviving ship remains from ancient Egypt it would be reasonable to suggest that riverboats in Hellenistic and Roman Egypt were generally constructed of flush-laid planks using mortise and tenon joints (Steffy 1994, 23–36; Ward 2000). However, there were always smaller vessels constructed in other simpler methods, such as coracles, simple rafts or reed boats.

Various types of Nile boats are mentioned in ancient documents of the Hellenistic and Roman periods. They were identified either according to their specific function and the types of cargoes they were carrying, or according to their distinct physical characteristics. They were also categorised based on their burden or their means of propulsion. Nonetheless, ancient documents indicate that most boats in Roman Egypt were not typologically described but were simply called 'boats,' *πλοῖον* (*plōion*) (Bagnall 1993, 35).

Amongst the most specialised Nile vessels were the grain carriers and the stone carriers. Such bulky cargoes required special arrangements for handling and, possibly, certain features in the vessels themselves.

Various types of Nile vessels of different capacities were employed in carrying grain. Ancient documents mention boats, barges and oared vessels used for such purpose (Lindsay 1968, 167–68, 259). The capacities of grain carriers ranged from 70 artabas up to 18,000 artabas (2–500 tons) (Lewis 1983, 142). The method by which grain was physically carried onboard Nile vessels is debatable. The main consideration was that the grain had to stay dry. If it got wet, not only the whole cargo would be spoiled, but also the grain would swell dramatically and double in size, which could have destructive effects on the boat's hull (Rickman 1980b, 132–34, 265). Therefore, if the cargo was carried inside the vessel's hold, special attention would have been paid to caulking and sealing the hull to make it as watertight as possible. Alternatively, grain could have been carried above the vessel's deck, in which case it would not have been affected by the bilge water. Depictions of grain transport from the New Kingdom show that grain was carried loose in riverboats; it is possible that such a tradition persisted throughout the Graeco-Roman period. A method adopted in the Nile cargo boats and barges of ancient Egypt, and which was still used in Nile cargo vessels until the early 20th century, was creating a box-like compartment on top of the vessel's deck to be used as its main container. The sides of the container could be raised above the sheer strake of the vessel to accommodate as much cargo as the vessel could safely handle. Ancient Egyptian representations of Nile vessels show that this method was used for carrying various types of cargoes, including live cattle (Fig. 3). The use of this method was primarily influenced by the sailing conditions of the Nile, which enabled Nile boats to utilise their deck as their main storage area without affecting their stability. At the same time, this method eliminated the need for building vessels with deep drafts and hence enabled Nile boats to navigate through shallow canals and branches of the river.

Another type of specialised Nile cargo vessels was the stone carrier. However, stone carriers were probably barges that would have been towed by other boats rather than being self-propelled (Fig. 4). The ancient Egyptians had a long history of moving large stone blocks over waterways. Textual and iconographic evidence from ancient Egypt attest to Egyptian dexterity in this particular matter (Jones 1995, 64–65). However, the construction of these vessels and the method by which they carried the stones are controversial issues (Ward 2000, 108; Wirsching 2000). Nevertheless, it is certain that the Egyptian expertise in that field persisted during the Hellenistic and Roman periods, and that the Romans utilised Egyptian know-how in building river stone carriers and moving large monoliths over the waterways.

River vessels with distinctive features

In addition to riverboats distinguished by their cargoes, other types were characterised based on their physical features. Ancient documents indicate that many of these types originated in the Hellenistic period and were still in use during the Roman period. Among the most common types of riverboats in Roman Egypt were:

- The *polykoron*, πολύκωπον or ‘multi-oared’ (*P.Oxy.* XXIV 2415), which was known as a general carrier and army supply vessel from the 3rd to the 6th century AD, with a capacity of 15–30 tons (Bagnall 1993, 35; Casson 1995, 334).
- The *zeugmatikon*, ζευγματικόν or ‘yoked boat’ (*P.Oxy.* XXIV 2415), which could be a boat with two keels, like a catamaran (Bagnall 1993, 35; Casson 1995, 334) or a vessel with some kind of an outrigger (Fig. 5).
- The *thalamegoi*, θαλαμηγοί, also called *thalamega ploia*, θαλαμηγά πλοία or ‘cabin boats,’ which were mentioned by Strabo (17.1.16) as being used by government officials for touring the Nile. Among the nine vessels depicted in the Palestrina Mosaic of the late 2nd century BC (Whitehouse 1979; Walker 2003), there is an elaborate boat engaged in a hunting scene. It has a cabin that occupies a relatively large proportion of the deck, which does not seem to leave enough space for a mast to be stepped amidships (Fig. 6). It is quite possible that this vessel is a *thalamegos* (Casson 1995, 341, n. 66). However, *thalamegoi* were also mentioned in association with grain transport. A document of the 2nd century AD mentions a grain-carrying *thalamegos* of about 16 tons burden (Lindsay 1968, 219–20); however, it is not clear how the grain would be carried on a *thalamegos* unless the cabin was utilised as a container for carrying the cargo.
- The *platypegia*, πλατυπηγία or ‘wide-built’ (*P.Oxy.* XIV 1652, XXXIV 2715), which was possibly a barge for general-purpose use (Lindsay 1968, 219; Bagnall 1993, 35; Casson 1995, 334).
- The *kontoton*, κοντοτόν, also called *kontarion* or κοντάριον, which is a poled vessel for short distance travelling over shallow water (Bagnall 1993, 35 n. 139; Casson 1995, 334).
- The *bodega ploia*, όδεγά πλοία or ‘pilot boats,’ which were probably used for hauling or towing barges or other boats (Lindsay 1968, 221).
- The *pakton*, πάκτων, which is described by Strabo (17.1.50) as ‘a small boat constructed of withies,’ which he used for crossing the Nile at Aswan. It was a kind of bundle reed vessel like those depicted in the Palestrina Mosaic. However, in the 2nd and 3rd centuries AD the *pakton* (*P.Oxy.* XIV.1650) was involved in the transport of grain and wine amphorae. It was then made of planks and carried up to 16 tons (Lindsay 1968, 219, 222). Clearly, two different types of boats carried the name *pakton* in subsequent periods.

The *ploion hellenikon* (Greek boat)

The *ploion hellenikon* (Greek boat) was a common general-purpose transport vessel which is mentioned in papyri from the 2nd and 3rd centuries AD (Casson 1995, 340). Its name must have had some obvious significance which made it different from other types of Nile vessels. The *ploion hellenikon* ranged in capacity from 2–60 tons, (Lindsay 1968, 218–31, 226–27; Casson

1995, 340–41). Clearly, the name was not in any sense related to the size or the capacity of the vessel, but more likely it was related to some distinctive feature that was recognised by ordinary Egyptians and not only by specialised shipbuilders.

A long-term lease from AD 212 describes a *ploion hellenikon* with a burden of 400 artabas (12 tons). It mentions that the vessel was, 'floored and decked through, complete with mast, yard, linen sail, ropes, containers, rings, pulleys, two steering oars with tiller bars and brackets, four oars and five punting poles with iron tips, companionway ladder, landing plank, winch, two iron anchors with iron flukes and one single-armed anchor, fibre ropes, tow line, mooring lines, three lading chutes, one measure, a balance, sailcloth, a round-bottomed, two-oared skiff and provided with the usual fittings and an iron spike' (Casson 1942; Lewis 1983, 143). This is the best description we have for a vessel of this type. The main features mentioned in the description that suggest the difference between the *ploion hellenikon* and other cargo vessels on the Nile are the facts that the boat was fully decked and that it had a companionway ladder to provide access to its hold. Thus, the hold of a *ploion hellenikon* was deep enough to require a companionway ladder. The vessel was also floored, meaning that it had its bilge covered so its hold would stay relatively dry. Therefore, it seems reasonable to suggest that, unlike ancient Egyptian cargo vessels, the Greek-type vessel would have carried its cargo inside its hold below the deck. This was probably the major difference that the Egyptians recognised between the *ploion hellenikon* and other Nile vessels (Fig. 7).

The *ploion hellenikon* would have been constructed according to the prevailing Mediterranean shipbuilding tradition, which was primarily suitable for sea conditions. In other words, the builders of the *ploion hellenikon* would have adopted the conventional Mediterranean method, which conceived of a cargo boat as a floating closed container in which the cargo could be stored below deck in isolation from the surrounding environment. They then applied this concept to building Nile cargo vessels. On the other hand, as demonstrated by ancient and modern representations, the traditional concept of an Egyptian Nile cargo vessel considered the boat a floating surface, where the cargo was mainly stored on top of of the vessel rather than inside.

The introduction of the Mediterranean tradition of building cargo vessels that carry their loads primarily in their holds was probably associated with the establishment of Greek settlements in the Nile Valley. As early as the 7th century BC, the Greek settlement of Naukratis (present Kom Gi'eif) was established on the Canopic Branch of the Nile (Boardman 2000, 111–32), and by the Roman period there were two other Greek cities on the Nile, namely Ptolemais Hormos (present El-Lahun) and Antinoupolis (present Sheikh Ibada), from which the above-mentioned lease document comes (Bowman and Rathbone 1992). Therefore, it is possible that Greek shipbuilders in Egypt continued to build riverboats according to their own tradition. However, the difference between the two means by which cargo could be stored on Nile vessels probably meant that certain types of vessels were more suitable than others for carrying specific cargoes. For example, the *ploion hellenikon* would not have been suitable for transporting live cattle, while it would have been more than adequate for transporting amphorae containing liquids and foodstuffs, which could be arranged in the vessel's hold in staggered layers similar to any sea-going vessel of that period (Sciallano and Sibella 1994, 16). As for carrying grain, the existence of floor timbers, which would help keep the cargo free of the bilge water, was probably an inevitable feature in a *ploion hellenikon* if it was to be involved in transporting grain.

Despite the advantages afforded by the *ploion hellenikon*, it seems that the traditional design of river cargo vessels as floating surfaces proved to be the most economic and practical when considering the special character of navigation on the Nile. This approach persisted through the

ages and was adopted in building Nile vessels until the present time. The *ploion hellenikon*, however, has still earned a notable place in the history of the navigation of the Nile.

Bibliography

- Bagnall, R. 1993. *Egypt in Late Antiquity*. Princeton, NJ.
- Boardman, J. 2000. *The Greeks overseas*. London.
- Bowman, A. and D. Rathbone. 1992. Cities and administration in Roman Egypt. *Journal of Roman Studies* 82: 107–27.
- Casson, L. 1942. Note on a Nile boat. *The American Journal of Philology* 63.3: 333–34.
- . 1984. *Ancient trade and society*. Detroit, MI.
- . 1995. *Ships and seamanship in the ancient world*. Baltimore, MD.
- Davies, N. and A. Gardiner. 1926. *The Tomb of Huy, Viceroy of Nubia in the reign of Tut'ankhamun (No. 40)*. The Theban Tomb Series. London.
- Greenhill, B. 1995. *The archaeology of boats and ships*. London.
- Hassan, F. A. 1997. The dynamics of riverine civilization: A geoarchaeological perspective on the Nile Valley, Egypt. *World Archaeology* 29.1: 51–74.
- Jones, D. 1995. *Boats*. London.
- Kemp, B. and D. O'Connor. 1974. An ancient Nile harbour: University Museum excavation at the 'Birket Habu.' *International Journal of Nautical Archaeology* 3.1: 101–36.
- Lewis, N. 1983. *Life in Egypt under Roman rule*. Oxford.
- Lindsay, J. 1968. *Men and gods on the Roman Nile*. New York.
- Mohamed, M. A. 2001. *River Nile* [In Arabic]. Cairo.
- P. Oxy. The Oxyrhynchus papyri*. London.
- Peacock, D. 1992. *Rome in the desert: A symbol of power*. Inaugural lecture presented at the University of Southampton.
- . 2000. The Roman period. In *The Oxford history of ancient Egypt*, I. Shaw (ed.), 422–45. Oxford.
- Petitpa, M.-C. 2009. L'eau dans l'Égypte pharaonique. In *Du Nil à Alexandrie: Histoires d'eaux*, E. Hairy (ed.), 44–69. Alexandria.
- Rickman, G. 1980a. *The corn supply of ancient Rome*. Oxford.
- . 1980b. The grain trade under the Roman Empire. In *The seaborne commerce of ancient Rome: Studies in archaeology and history*, J. H. D'Arms and E. C. Kopff (eds), 261–75. American Academy in Rome 36. Rome.
- Said, R. 1993. *The River Nile: Its origin and utilization in the past and future* [In Arabic]. Cairo.
- Sciallano, M. and P. Sibella. 1994. *Amphores: Comment les identifier?* Aix-en-Provence.
- Steffy, J. R. 1994. *Wooden shipbuilding and the interpretation of shipwrecks*. College Station, TX.
- Strabo. 2001. *Geography*. Trans. H. L. Jones. London.
- Walker, S. 2003. Carry-on at Canopus: The Nilotic mosaic from Palestrina and Roman attitudes to Egypt. In *Ancient perspectives on Egypt*, R. Matthews and C. Roemer (eds), 191–202. London.
- Ward, C. 2000. *Sacred and secular: Ancient Egyptian ships and boats*. Boston.
- Whitehouse, H. 1979. *The Dal Pozzo copies of the Palestrina mosaic*. British Archaeological Reports Supplementary Series 12. Oxford.

- Wild, F. C. and J. P. Wild. 2001. Sails from the Roman port at Berenike, Egypt. *International Journal of Nautical Archaeology* 30.2: 211–20.
- Wirsching, A. 2000. How the obelisks reached Rome: Evidence of Roman double-ships. *International Journal of Nautical Archaeology* 29.2: 273–83.

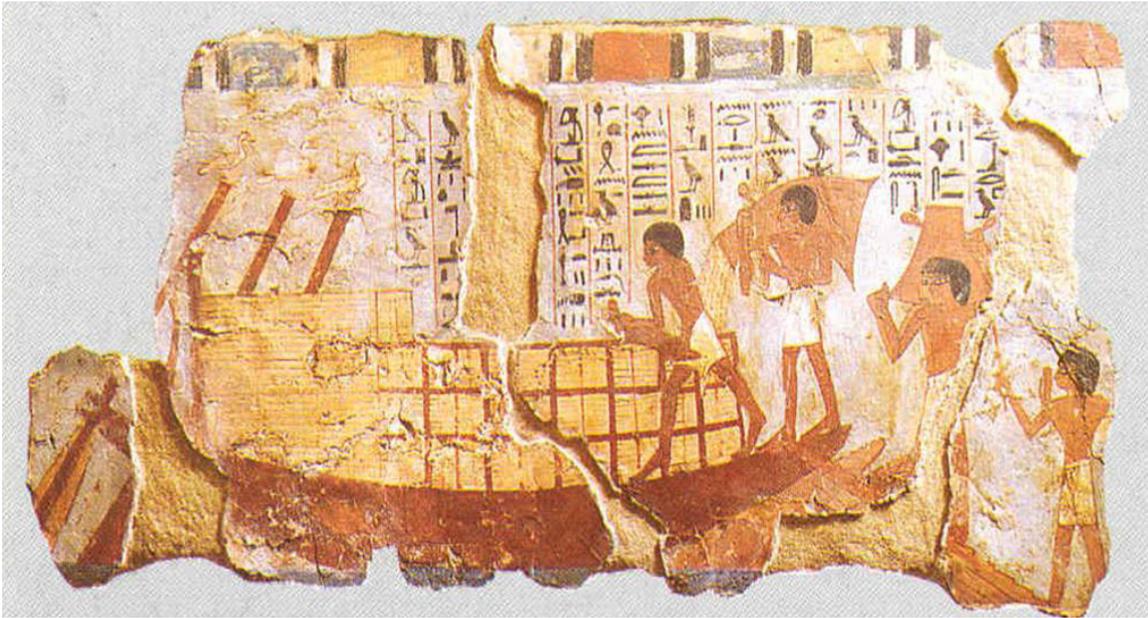


Fig. 1: A scene from a Dynasty 18 tomb in Thebes showing a grain boat being loaded. The grain is transported loose onboard the vessel in a box-like container (courtesy of the Supreme Council for Antiquities).



Fig. 2: A Nile boat transporting a cargo of fodder (courtesy of the Archaeological Society of Alexandria).

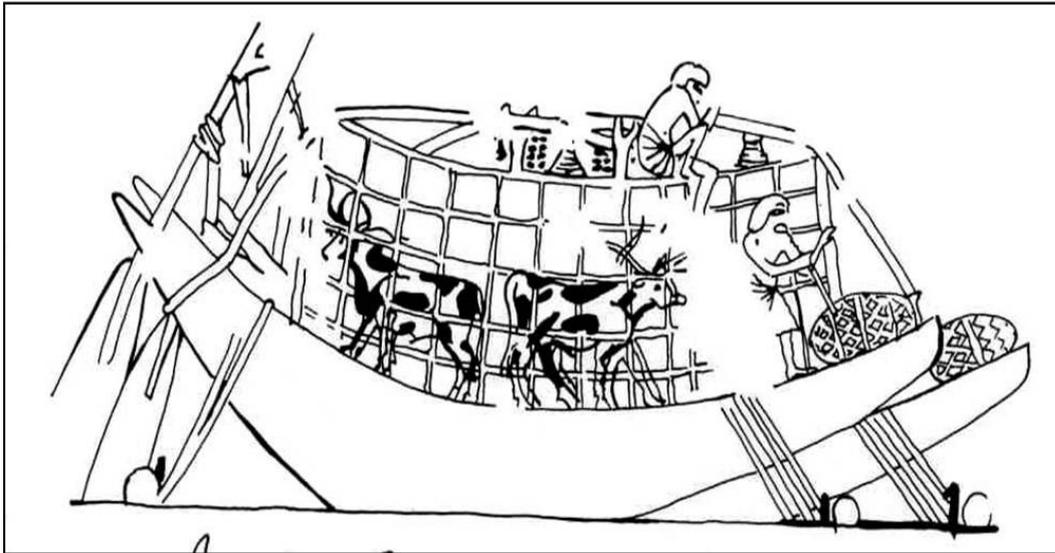


Fig. 3: Scenes from the tomb of Viceroy Huy, Dynasty 18, depicting cattle transport vessels. Note the fenced cargo space (after Davies and Gardiner 1926, no. 40, courtesy of the Egypt Exploration Society).

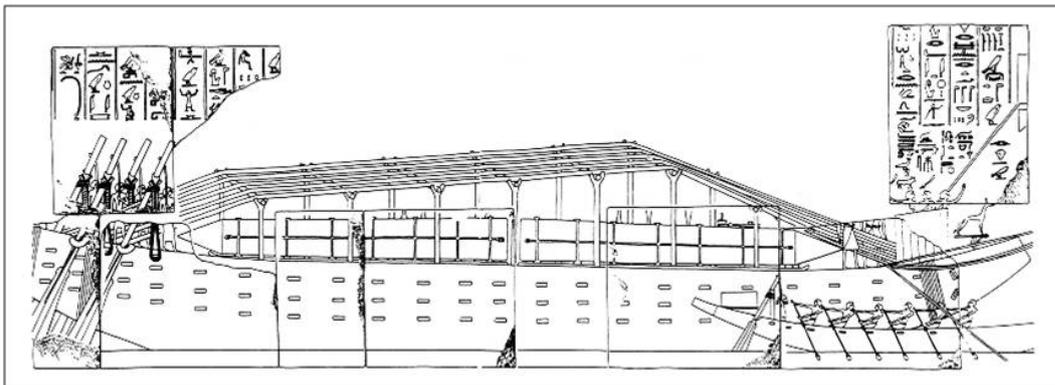


Fig. 4: The obelisk barge of Queen Hatshepsut was towed by 30 boats arranged in three files and propelled by 864 oarsmen (courtesy of the Supreme Council for Antiquities).



Fig. 5: Rock art from El- Fawakhir, located in the desert between Myos Hormos and Coptos, apparently depicting an Egyptian boat with a single outrigger (photo: Emad Khalil).



Fig. 6: Hunters on a boat with an elaborate cabin (possibly a *thalamegos*) depicted in the Palestrina mosaic (courtesy of Centre d'Études Alexandrines).

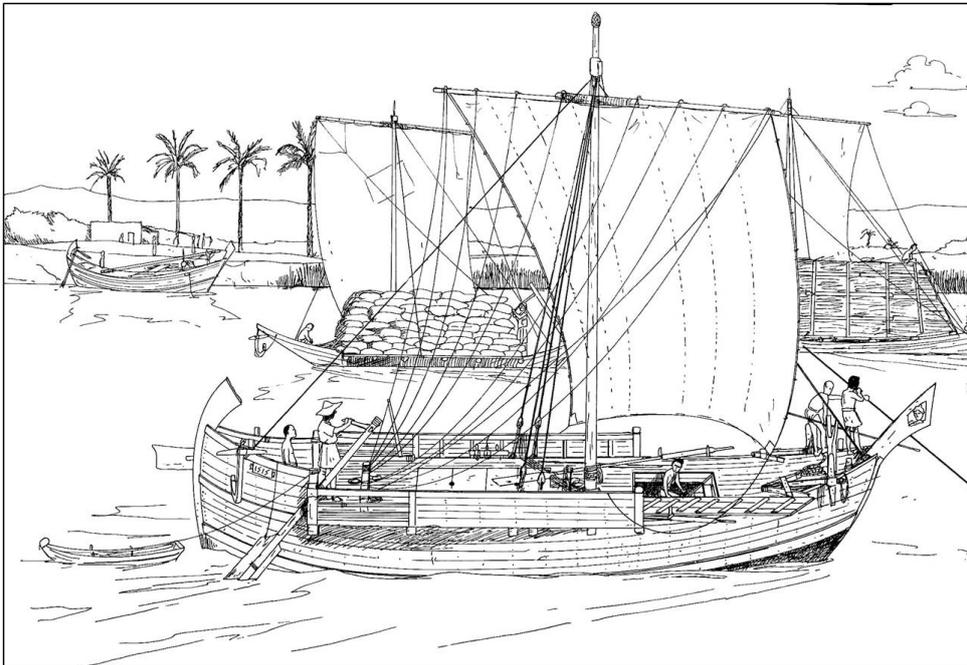


Fig. 7: An artistic impression of the *plōion hellenikon* (by Yannis Nakas).