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## The Ship in the Cave: The Greek and Nautical Origin of Buddhist Architecture

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### ABSTRACT

Buddhist architecture rose during the time of the Greek influence in western India, but until today no relationship has been proved between both facts. If we accept that the Greeks stored their galleys overturning and placing them upon stanchions, as the Lycian tombs suggest, we will realize that Buddhist rock-cut temples are inspired by this habit, and that the stupa represents the “heap” of rich objects that Ulysses brings to Ithaca and hides in the bottom of a cave. Another characteristic feature of Buddhist and Indian architecture, the piling up of simple temples in order to form more complex ones, is inspired by the funeral memorial ordered to be built by Alexander the Great in order to honor Hephaestion, which included the prows of 240 quinqueremes. In short, Asian and European religious architectures can have the same and unexpected origin.

### ARTICLE HISTORY

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The history of Indian architecture, if we set aside the initial but isolated episodes of Mohenjo Daro and Harappa, begins with the rock-cut Buddhist temples from Barabar hill, and the following and more elaborated ones from Maharashtra (Bhaja, Kanheri, Ajanta, Bedsa, Karla and so on). These temples were built between the third century BCE and the second century CE, during the Greek influence in India, which followed Alexander the Great's campaigns in the region. The influence of Greek culture in India is not only due to the populations that settled there in the time of Alexander the Great; it was also extended throughout the following centuries thanks to land trade with the Hellenistic empire of the Seleucids, and by sea with the Hellenistic Egypt of the Ptolemies, which later inherited the Romans (Wulff 2008, 49–53). The discovery at the end of the second century BCE of the monsoon mechanism stimulated direct maritime trade and the creation of Greek, and then Roman, colonies and trading posts all through the east coast of India.

The temple of Lomas Rishi, on the hill of Barabar, was built circa 250 BCE under the reign of Ashoka, the Mauryan king who ruled over regions inhabited by Greeks at the headwaters of the Indus and the Ganges. The later temples of the Maharashtra region are for the most part contemporary to the Indo-Greek reign started by Menander I, which was extended through the Indus valley to its mouth and to a significant part of western India, possibly including the north of the Maharashtra state. In this region, that would receive Indo-Greek population from the northwest and would trade by sea with the Greeks from Egypt, are situated practically all of the Buddhist rock-cut temples, in settlements located on the trade routes that connect the coast

with the plain of the Deccan. The presence of Buddhist Greeks in the area is documented from very early: King Ashoka entrusted the Buddhist monk Dharmakṣita, who is said to be a *yavana* (i.e. Greek; from *laones*, Greeks from Asia Minor), to spread Buddhism across Aparanta, the coastal region of Maharashtra (Vasant 1988, 332). Later, the inscriptions show numerous *yavanas* as benefactors for the construction of rock-cut temples and monasteries there, in Nasik, Junnar and Karla. As for the *chaitya* in Karla, up to seven donors out of a total of 17 present themselves as *yavanas*. Next to those inscriptions, there are also images of sphinxes, griffins and triskelions that are of unequivocal Greek origin (333–336).

Both Ashoka and the Indo-Greek kings were protectors of Buddhism, and they promoted the syncretism of the indigenous and Greek cultures, which gave way to the Greco-Buddhist art. Buddhism existed before the arrival of the Greeks to India, but the mixture of Greek and Indian populations under the same faith led inevitably to syncretism, in which Indians contributed the story and Greeks their skill in sculpting the stone. An obvious example of what we are saying is the Gandharan frieze from the second century CE in which the image of a Greek Herakles was adopted to represent the Indian Vajrapani, the protector of Buddha (Figure 1).

The Greek origin of the Buddhist sculpture is well documented. Nevertheless, up to now, nothing allows stating that the first Buddhist architecture is the result of the Greek cultural influence; at most it is admitted that this inspired the shape of some rudimentary Corinthian capitals. And this is so due to the fact that, with all the logic, we compare the first rock-cut Buddhist temples with the contemporary Greek Corinthian temples typical

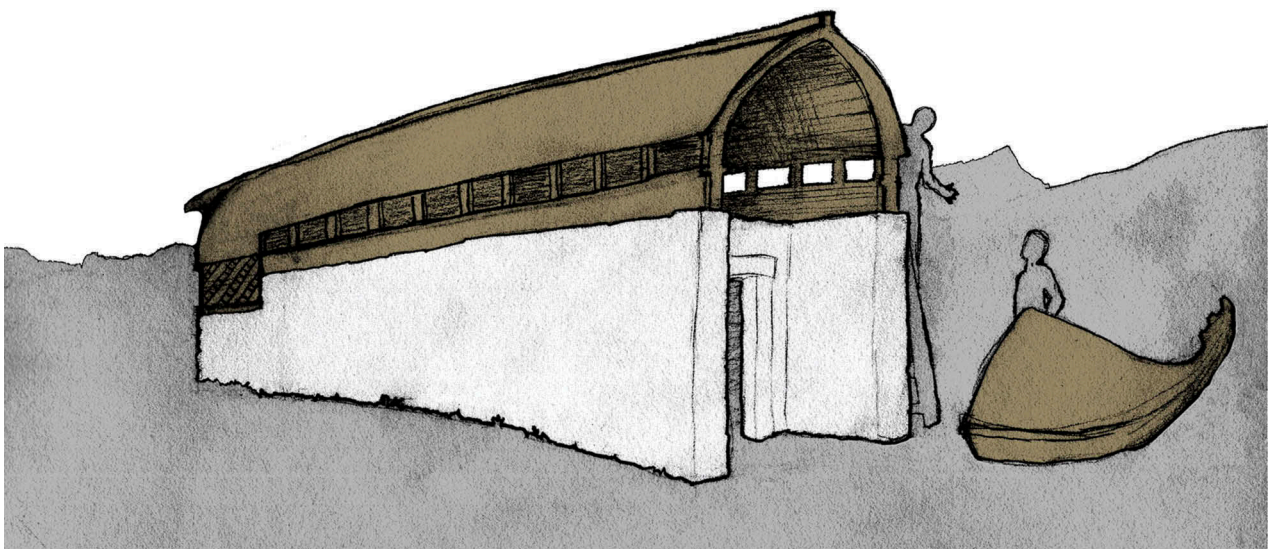


**Figure 1.** Gandharan frieze with Herakles as Vajrapani (British Museum). Author: World Imaging. <<https://commons.wikimedia.org/wiki/File:Buddha-Vajrapani-Herakles.JPG>>. Creative Commons BY-SA 3.0 license.

of the Hellenistic age, and it is obvious that they are not alike at all. But maybe we have not looked in the right direction.

The hypothesis I propose in this article is a derivation of a broader hypothesis that upholds the naval origin of the Greek architecture and sculpture that I have elaborated theoretically, but I barely put in writing and it had no echo (Ciordia 2007). I will present a brief abstract of it. In my opinion the Greek seamen, already from the second millennium BCE, when they were travelling in their penteconters (deckless ships for 50 oarsmen and two officials), they used to run them aground by turning them over – in a navy expression, putting their “keel to the sun” – and

they were taking advantage of the covered space created under it to camp out. Surely refers to this practice the expression *shiqalaya* “those who live inside ships”, which the king of Hati used in a letter to the king of Ugarit to make reference to one of the sea people, among whom we know that there were Aegeans (Dietrich and Loretz 1978). Back in Greece, some of these ships grounded over stone masonry walls must have been used to celebrate religious, political or commercial meetings (Figure 2). The sustaining building would receive the name of *naos oikos* “naval building”, and from there terms such as *naos* and *oikos* would designate the closed space of the classical Greek temple. These mixed composition buildings would



**Figure 2.** Hypothetical penteconter agrounded over stone masonry walls, with its stern cut off. Author's drawing.





**Figure 3.** The tomb of Payava, from ancient Lycia (British Museum). Author: Carole Raddato. <<https://www.flickr.com/photos/carolemage/9502129675/>>. Creative Commons BY-SA 2.0 Generic license.

start to be put up completely from stone in the seventh century BCE, leading to the so characteristic Greek public buildings: temples, stoas, basilicas, palaestras, theatre scenes and similar.

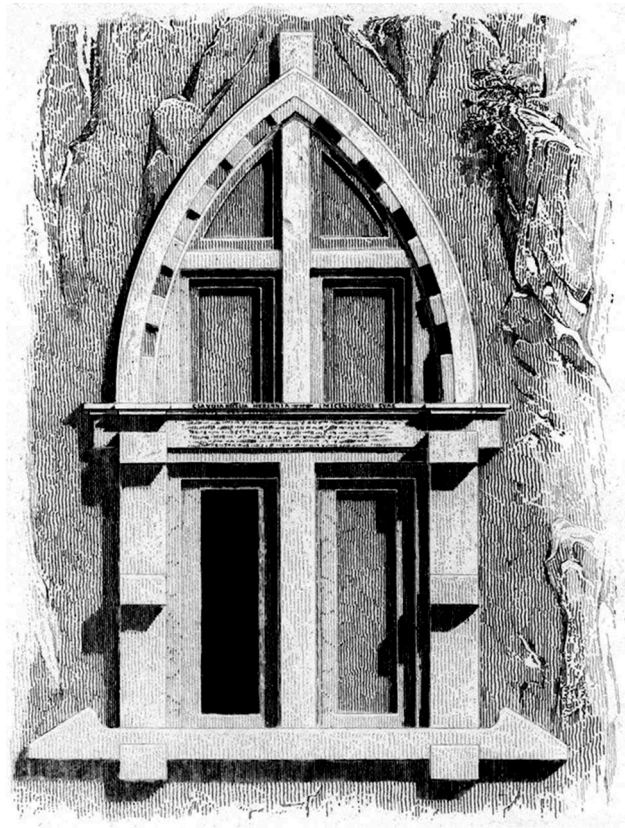
Among the evidence supporting this hypothesis, one is particularly relevant for the present investigation. In Lycia, a strongly Hellenized region situated on the southern coast of Asia Minor in the middle of the maritime trade route between the Aegean Sea and the Levant, numerous stone tombs in the shape of a sarcophagus were built between the fourth and second centuries BCE (Figure 3). Most of them are exempt constructions, but a few were carved in bas-relief at the entrance of caves that were used as tombs (Figure 4). Fergusson already pointed out in 1849 the great formal resemblance existing between these constructions and cave temples in eastern India (1849, 316–320), and concluded: “These appear to me very strong grounds for assuming that we have here the two extreme ends of a great chain of facts, the intermediate links of which must exist somewhere” (319–320). Other scholars have been of the same opinion, and nowadays it is acknowledged that “it is quite likely that the technique travelled there [to India] along the trade routes” (Ching, Jarzombek, and Prakash 2017, 189).

Fergusson and the scholars who agree with him are partially right. However, it is hard to believe Lycian sarcophagi to be the direct source on which the builders of Buddhist temples were inspired; Fergusson himself feels

that an intermediate link is missing. In the first place, Lycia is a very small region of little relevance in the eastern Mediterranean, and that is why few Lycians had to be part of the process that led Mediterranean soldiers, settlers and traders to India. In addition, Lycian caves are tombs and small, whereas Indian caves are temples and larger in size. Finally, an inconsistency that affects the Indian temples remains unexplained: although there is agreement that they are the continuation in stone of a previous wooden architecture, their roofs do not show any sign of horizontal union crossbars.

In my opinion, Lycian sarcophagi and rock-cut Buddhist temples are so similar because they both have the same origin: just like Greek temples, these constructions also represent a turned over ship, used in one case as a tomb and in another as a temple. Lycia is a coastal region located on the main trade route that connects the east of the Mediterranean with the Aegean Sea, the Black Sea and the West, and its inhabitants, like their Carian, Pamphilian and Cilician neighbors, were experienced sailors. The covers of the supposed sarcophagi would represent the sectioned hull of a ship, the place under which a seaman would prefer to be buried; hence its ogive shape, the upper longitudinal beam, which must correspond to a keel, and the appendices of the interior of the arch, which correspond to reinforcements of the hull. Another revealing detail: rock-cut Lycian tombs are often shaped like Greek temples, as in Myra (Figure 5), or in Kaunos in



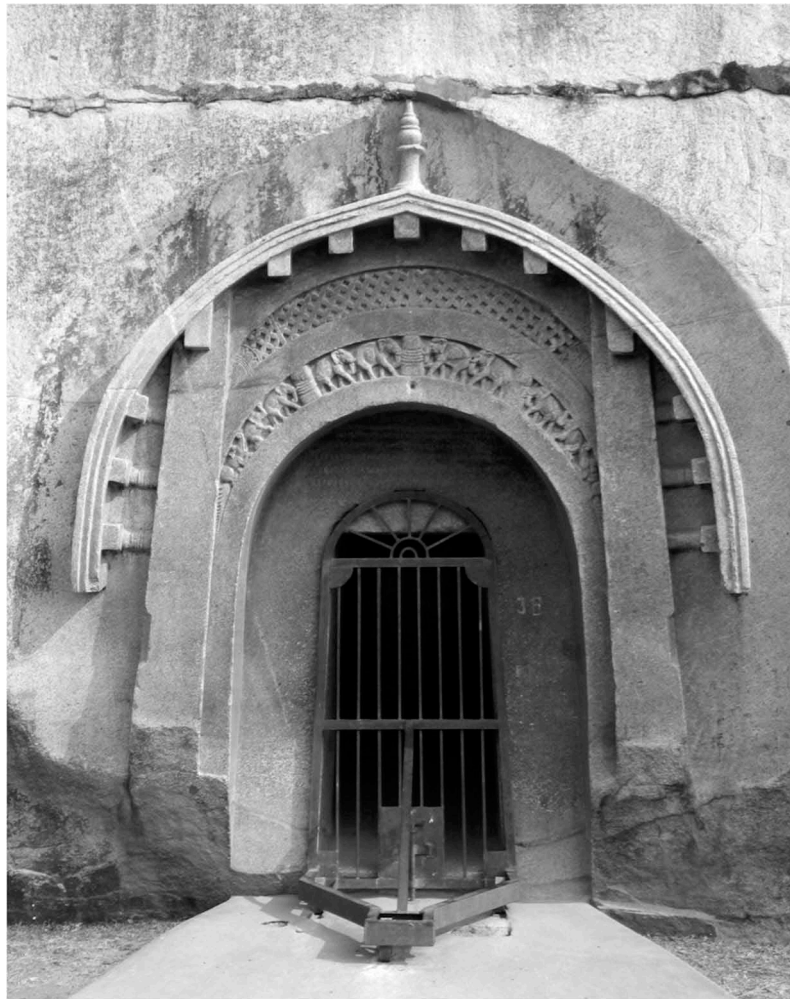


**Figure 4.** Lycian rock-cut tomb in Antiphellos (Kaş, Turkey). Author: Texier (1862, 26). Public domain.



**Figure 5.** Myra rock-cut tombs, Ancient Lycia (Turkey). Author: Saffron Blaze. <[https://commons.wikimedia.org/wiki/File:Myra\\_Rock\\_Tombs.jpg](https://commons.wikimedia.org/wiki/File:Myra_Rock_Tombs.jpg)>. Creative Commons BY-SA 3.0 license.





**Figure 6.** Entry to the Lomas Rishi cave in Barabar (India). Author: Neilshatian. <[http://commons.wikimedia.org/wiki/File:Entrance\\_Gate.JPG](http://commons.wikimedia.org/wiki/File:Entrance_Gate.JPG)>. Creative Commons BY-SA 3.0 license.

neighboring Caria. As I view it, this does not imply a change in the represented object, that is, that some tombs stand for a sarcophagus and others a temple, but a change in the way of representing the same object, which in both cases is a turned over ship: the first they do it in the Lycian way, with a more realistic ogival covering, and the latter in the Greek way, with a flattened triangular roof, which was the solution adopted by the Greek temple builders facing the impossibility of creating large rib vaults.

### 1. *Chaytia* halls as turned over ships

If we go back to India and to the first Buddhist rock-cut temples, and we compare them with the model of archaic Greek pentaconter turned over and mounted on stands, it is impossible not to see the extraordinary similarity there is between both of them. At the entry of the Lomas Rishi cave, there is a bas-relief sculpted *gavaksha* arch that, according to common opinion, represents a cross section of a hermit's cabin (Figure 6). In my opinion, this one and all the other following *gavaksha* arches represent, on the contrary, a cross section of the hull of a turned over ship: they have the ogive arch form

characteristic of a hull, and inside it several annexes corresponding to longitudinal reinforcements in the inside of the wooden hulls. In the hull represented by the *gavaksha* arch from Lomas Rishi (Figure 7) the five lower reinforcements have the upper side cut horizontally, so as not to damage the crew's feet; the fourth reinforcement on both sides, has the adequate form in order to support the boards that would form the floor of a watercraft; and the last three upper reinforcements on both sides have the outer side cut vertically so as not to damage the crew's thighs. Finally, the facade arch of later rock-cut temples in Maharashtra presents an annex on the vertex that would correspond to a keel.

In order to describe the inside of these temples, we will look at one of the most ancient: cave 12 in Bhaja, dated back to 175 BCE. It has a basilica floor plan, as it corresponds to the projection on the floor of a turned over ship. The round apse of the back of the cave corresponds to the stern, while the prow's end would stand out to the outside of the cave as an entry porch; on the facade of these temples, there are manufacture remains which confirm that there has been a wooden structure attached to the outside. To establish a parallelism with the more primitive Greek

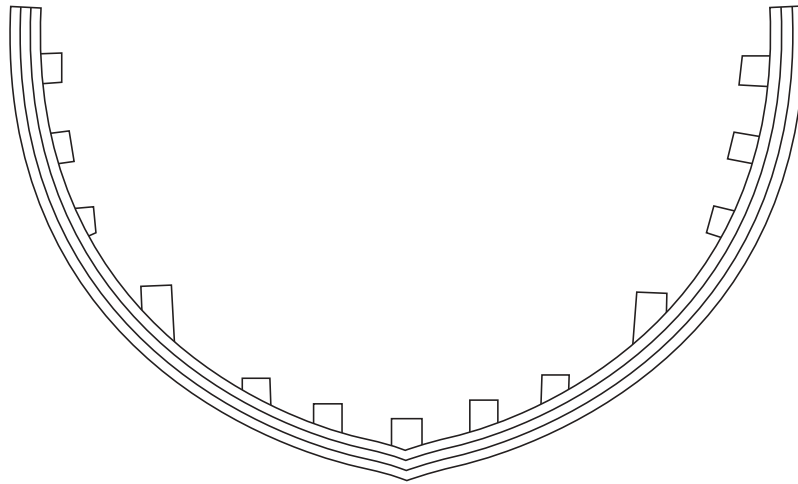


Figure 7. Entry to the Lomas Rishi cave arch (inverted). Author's line drawing.

temples, the Heroon in Lefkandi and the Megaron A in Thermon also have an apse in one end; the other end, as in the Buddhist temples, left no remain on the floor plan.

The ceiling of the Bhaja cave speaks for itself of its naval origin: it has the equivalent of cross-wise wooden ribs, which are put on top of other longitudinal underlying wooden reinforcements. In the following temples, the ribs are already made of stone, as the rest of the ceiling, but the stonemasons were careful about reproducing on its surface the grain and steak of the original wood pieces.

The *chaitya* in Bhaja and Bedse are simple, in the meaning that the ceiling is supported directly by exempt octagonal plain columns. It is usually said that the *chaitya* has three naves, but in reality, there is only a central nave – term used at the same time in its nautical and architectural meaning – surrounded by an aisle. Without this perimeter aisle, we would see only the inside of the hull of the ship and the columns would emerge in relief from the wall; the surrounding aisle allows the columns to be exempt, and us to see the outside of the ship until the height of the gunwale, although not the superior part. Later *chaitya* have more complex columns decorated with sculpted capitals. And the cave 26 in Ajanta (Figure 8), from the first centuries of the Christian era, has sculpted friezes in the part which corresponds to the gunwale, exactly where the Greek Doric friezes have triglyphs and metopes and the Ionic ones have a shifted frieze.

If we accept the relationship between the primitive Buddhist temples with the predecessors of the Greek temples, it still remains to explain, in the first place, how the Indian architects imitated a process – the one

of the creation of the ancient Doric and Ionic temples – which had taken place thousands kilometers away from India some five hundred years before, and, in the second place, from where they withdrew the idea of shaping their stone ships inside artificial caves.

We know from Diodorus Siculus<sup>1</sup> that Alexander the Great ordered the building of deckless triaconters (galleys for thirty oarsmen) in order to sail the Indus River. Probably, the Greeks, according to what I suppose was a secular custom, agrounded these ships turned over keel to the sun also on Indian ground. Two hundred years after that, a reminiscence of these facts could still remain. Surely there were some Lycians in Alexander's army and among the settlers who colonized northwestern India, and possibly their descendants, converted to Buddhism, decided to build tombs like the ones in Lycia and use them as temples.

But in reality, and to our surprise, the most probable source of inspiration for the Buddhist builders of temples "à la grecque" is found in literature, precisely in two passages of the *Odyssey*. Homer's works – the *Iliad*, the *Odyssey* or both – were translated to India's languages during the years of Greek cultural influence, according to Dio Chrysostom.<sup>2</sup> At the same years in the West, the poet Livius Andronicus translated also the *Odyssey* into Latin. Well then, the first passage that must have inspired the primitive Buddhist architects is the clearest one and corresponds to the moment when Ulysses and his mates went ashore on the island of Helios:

And as soon as early Dawn appeared, the rosy-fingered,  
we dragged our ship, and made her fast in a hollow cave,  
where were the fair dancing-floors and seats of the nymphs.<sup>3</sup>

<sup>1</sup>Diodorus Siculus (*Library of History* 17.95.5). Arrian says that, according to Ptolemy's statement, 80 triaconters and about 2 000 auxiliary ships were crafted (*The Anabasis of Alexander* 6.2.4).

<sup>2</sup>Dio Chrysostom (*About Homer* 53.6): "It is said that the poetry of Homer is sung even in India, where they have translated it into their own language and speech". Also Aelian (*Various History* 12.48).

<sup>3</sup>All passages of Homer's *Odyssey* are cited from the translation of Murray (1919), except *Od.* 13.122, cited from the translation of Butler (1900).





**Figure 8.** Inside of the cave 26 in Ajanta. Author: Dey Sandip. <[http://commons.wikimedia.org/wiki/File:Cave\\_26,\\_Ajanta.jpg](http://commons.wikimedia.org/wiki/File:Cave_26,_Ajanta.jpg)>. Creative Commons BY-SA 3.0 license.

#### *Odyssey* 12.316–318

The poet does not state explicitly that Ulysses and his mates turned over the ship to run it aground, but from the silence, we cannot draw the conclusion that it was not made like this. It is perfectly plausible that Homer did not explain it because he and his readers knew perfectly how to run aground a lightweight ship. About the mention of the nymphs, in Greece caves were usually considered to be sanctuaries of the nymphs, especially if they had water inside.

## 2. Ulysses and symbolism of the stupa

At the end of the *chaitya*, there is usually a stupa, which is a representation of Buddha's relics. In Sanskrit *stūpa* means "heap", and in pre-Greek times stupas were made of ashes. Up to now many interpretations of the stupa were proposed; without reaching an agreement about its meaning, everything points to the fact that originally the stupa was a worship form of *chakravartin* or "universal and fair governor", a Buddhist idealization of the governor's figure, that ended up being applied to Buddha's cult and memory (Fussman 1986).

But to understand the stone stupas of the rock-cave temples, we should turn again to one of Homer's passages. The nymph cave from book 12 is not the only nymph cave by the seashore mentioned in the *Odyssey*. In the book 13 the Phaeacians disembark Ulysses in the

port of Phorcys, a beach of the island of Ithaca, where there is a cave dedicated to the aquatic nymphs:

At the head of the harbour is a long-leaved olive tree,  
and near it a pleasant, shadowy cave  
sacred to the nymphs that are called Naiads.  
Therein are mixing bowls and jars  
of stone, and there too the bees store honey.  
And in the cave are long looms of stone, at which the  
nymphs  
weave webs of purple dye, a wonder to behold;  
and therein are also ever-flowing springs. Two doors  
there are to the cave,  
one toward the Nord Wind, by which men go down,  
but that toward the South Wind is sacred, nor do men  
enter thereby; it is the way of the immortals.

#### *Odyssey* 13.102–112

Homer does not say that in this cave there is a ship. But there are reasons to believe that this cave of the nymphs, too, as the one mentioned in the book 12, could hold a ship in its interior. First, there is the logic: no seamen would miss a natural resource like this. In addition, it is not casual to mention, in a direct or indirect way, products that were objects of priority sea commerce for the Greeks: wine ("mixing bowls and jars"), oil and fabrics; the cave, as it is in a port, could be used as factory and storehouse for the products to be shipped. Anyway, the importance of this passage is in the use that Ulysses makes of the cave.



When the Phaeacians arrive to the port of Phorcys, Ulysses is sleeping. They carry him carefully to the beach where he would continue sleeping a while, and they leave his riches piled by an olive tree: "they put these all together by the root of the olive tree" (*Od.* 13.122). Some verses later the goddess Athena wakes him up and makes him see that he is on the island of Ithaca, his homeland. She describes the place, shows him the cave and suggested him to put his riches inside it.

So saying, the goddess entered the shadowy cave and searched out its hiding-places. And Odysseus brought all the treasure thither, the gold and the stubborn bronze and the finely-wrought raiment, which the Phaeacians gave him. These things he carefully laid away, and Pallas Athene, daughter of Zeus, who bears the aegis, set a stone at the door.

#### *Odyssey* 13.366–371

We will turn our sight back to the primitive Buddhist temples: not only the location of the stupa at the end of the cave where they kept the ship, but also the shape of the stupa and, in the last place, the name *stūpa* "heap" coincide with the pile of riches that Ulysses kept in the nymphs' cave. In addition, the Greek oar galley, when they were dragged to the inside of a covered arsenal, such as the arsenal of Zea's navy in Athens, or a cave in this case, they were introduced with the stern first, so that the prow was pointing at the exit to the sea. As the seat of the captain is on the stern, the place that the captain occupies in the *chaitya* is the rear of the cave. The Buddhist stupa represents, thus, the treasure of a captain that, besides, is situated in the place that the captain would take.

Apparently, the stupa is a characteristic element of the Indian temples which does not exist in the Greek ones. Nevertheless, when we interpret it as a treasure a new parallelism becomes obvious: the *opisthodomos* is the back room of the Greek temple, and in it valuable objects are kept and exhibited, such as stone or metal sculptures, bronze... which constitutes the treasure of the temple.

But if the stupa is, for the Buddhist, a memorial of Buddha in which his relics are somehow represented, how is it that this memorial adopts the iconography of Ulysses, a Greek king and ship captain? Was there some kind of identification of both figures, both being adult men, noble and wise? The answer, logically, stands in the cultural syncretism environment of the Maurya and Indo-Greek kingdom.

Beside this generic resemblance, the identification of Ulysses and prince Siddharta would be provided by the presence of a common element in the narrative of both of them. Prince Siddharta reached the title of *Buddha* or "awaken" after meditating under the tree

*bodhi* "of the awakening". The *Odyssey* was written two centuries before Buddha's life, and it is unlikely that one narrative has inspired the other. But the coincidence wanted it this way that, in the passage of the book 13 of the *Odyssey* in which Ulysses' arrival to Ithaca is narrated, a sacred tree, an awakening and a meeting with the deity are included. Let's see them.

When they arrive in Ithaca, the Phaeacians leave Ulysses sleeping on one side of the beach, in the port of Phorcys (*Od.* 13.95–125), and his riches at the feet of an olive tree, next to the nymphs' cave (v. 122). A little while after that Ulysses wakes up (v. 183) and Athena gets close to him. After she helps him keep his riches in the cave of the nymphs (vv. 363–371), they sit, hand in hand, the mortal Ulysses and the goddess, under the same tree, which this time is explicitly called "sacred": "then the two sat them down by the trunk of the sacred olive tree" (v. 372).

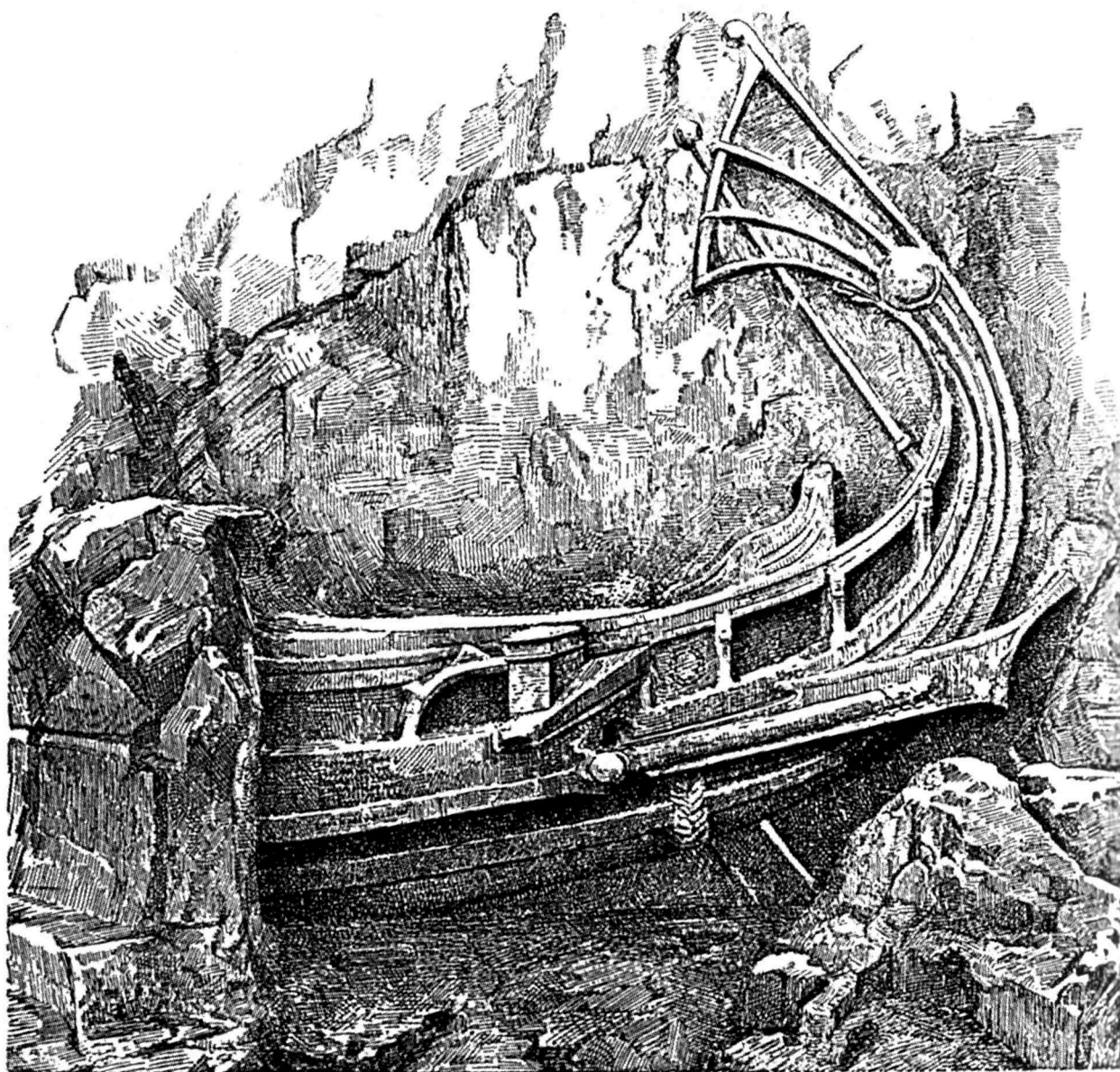
The meeting of Ulysses with the deity is not relevant from the spiritual point of view, but yes, it is the entire episode in which they are framed. In fact, Ulysses' dream on his way back to Ithaca divides the *Odyssey* approximately in the middle in two very different parts. Before the dream, Ulysses travels through a fantastic geography, with equally fantastic characters and events. After sleeping on the ship of the Phaeacians, Ulysses wakes up in the blink of an eye in his homeland, rich and safe, like someone who returns not from a voyage, but from another world. Given this coincidence in the narrative of both characters, it must have been easy for the Indo-Greeks to identify the king and captain of the ship Ulysses with prince Siddharta.

### 3. Parts of the stupa

In an actual size bas-relief which represents the stern of a Rhodes galley from the second century BCE (Figure 9) we can see two gears belonging to the captain and in this way they are open to representing him in his absence: the throne on which he sits and a sort of naval sceptre of several meters high, that in Greek they receive the name of *stylos* "column", sometimes *stylis* "small column".

If we pay attention now to the stupa and its parts (*medhi* "base", *anda* "egg", *yasti* "shaft", *harmika* and *chattravali* "parasol") (Figure 10), we will see that the *medhi*, the inferior part, is a square or round platform. In the Tibetan stupas (Figure 11) the square base receives the name of "throne of the lion", and believers consider the stupa to be, as a whole, a reproduction of a Buddha sitting on that throne. Well, it turns out to be very noteworthy that the Greek noun *basileus* "king", to which the Hellenism scholars have not proposed yet a widely accepted etymology,<sup>4</sup> can be split up in two morphemes: *basi-*, root of the noun *basis* "base", and *-leus* which could come from a variety, with full vowel,

<sup>4</sup>Chantraine (1968, s.u. *basileus*) is categorical when saying that "it is useless to search for an etymology for *basileus*".



**Figure 9.** Stern of a trireme sculpted in rock, Lindos (Greece). Author: Marden (1907, 327). Public domain.

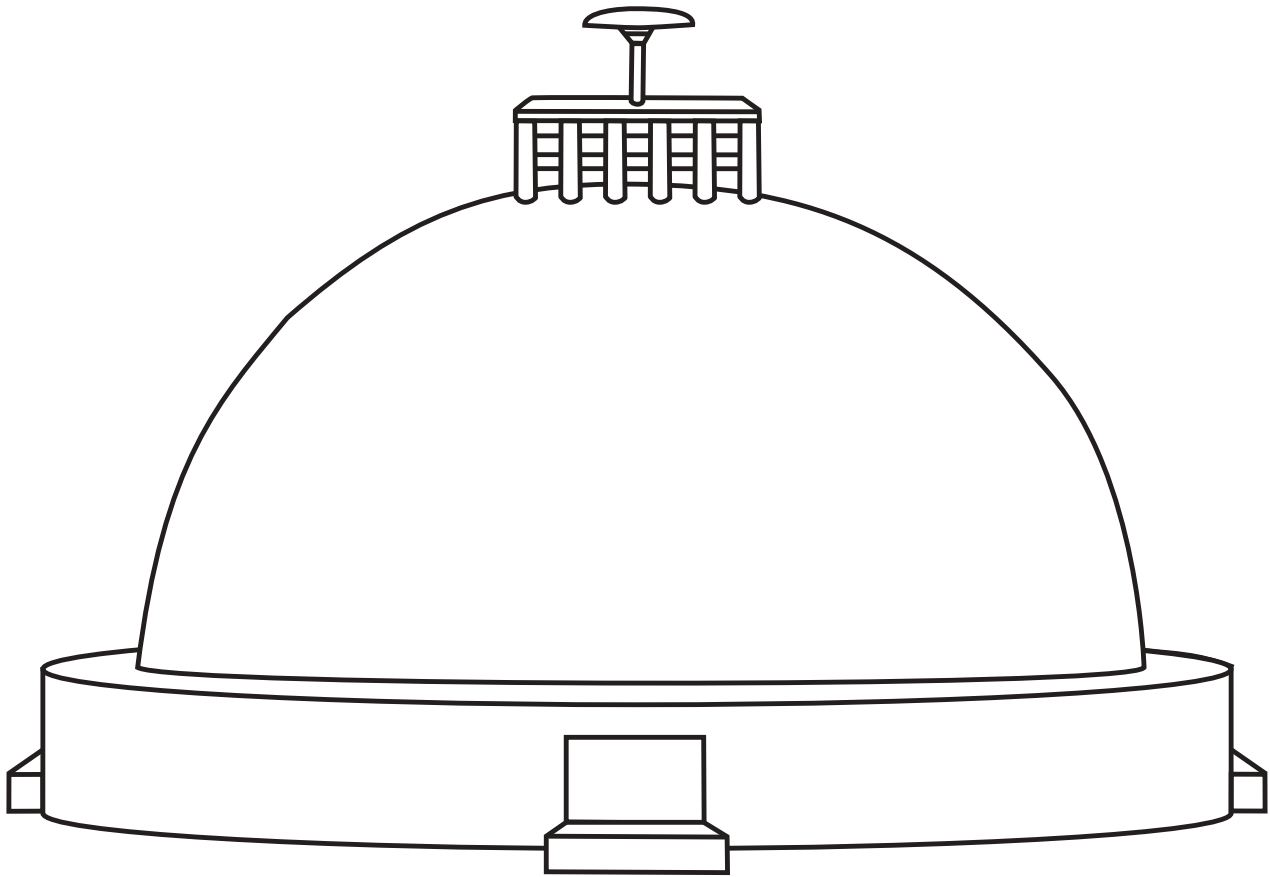
of the root of the noun *lis* "lion". Is it true this etymology, the Greek word for "king" would originally mean "the lion on the base" or "on the throne", and the Tibetan tradition would keep the memory that in the beginning, the stupa was the memorial of a ship captain or a king sitting on his throne. I am clarifying that in this case, it is not essential what is the true etymology of the Greek word *basileus*, but what the Greek speakers of India believed about it. In this way, we will conclude that the *medhi* of the stupa represents the captain's throne, and that something is piled up on it, in the place of the absent, and likely deceased, captain.

The *anda* or "egg" of the stupa must represent the treasure, the heap of Ulysses' "gold, stubborn bronze and raiment", which we have identified earlier. The treasure is represented in the simplest way, i.e. hidden from sight and covered with fabrics, ideally the same that were part of the treasure itself.

In the stupa, the treasure is being piled up around the *yasti*, the central "stick". The *yasti* corresponds exactly with the Greek *stylos*, the captain's long naval sceptre that we identified in the stern of the trireme of Lindos. Scholars agree that the *stylos* was used to identify from far away the ship or its origin homeland, and that this was done by exhibiting in the highest point the totemic animal under whose protection that ship was (Svoronos 1914, 100–101), and that it is on the origin of the *vexilla*, flags that identified the Roman troops. We cannot forget either about the importance that astronomy has for navigation; so that we cannot dismiss the fact that the captain might have used the *stylos* as an astronomic tool, like a *gnomon*, in order to know the inclination of the North Star and other celestial elements, or the hour of the day.

Well now, the Tibetan stupa of illumination has on the top of the *yasti* a waxing moon and a sun; there is a





**Figure 10.** Great stupa of Butkara I, second century BCE (Swat, Pakistan). Author's line drawing, based on Faccenna (1980–1981). GNU license.

piece of cloth holding it, and underneath there is a series of golden disks or *chakras*. These astronomic symbols crowding around the *stylos* can come from the nautical and military usages of the Hellenistic Mediterranean. The waxing moon is raised on top of the *stylos* of Phoenician ships, and a waxing moon and a sun were parts of the symbol of Tanit, the guardian goddess of Carthage, as we can see in the prow of a galley represented on a stele in the Tophet of Carthage (Moscato 1988, 558). The piece of cloth, predecessor of our modern flags, originally hangs by the Greek *stylos* and later on by the *vexilla* of the Roman legions. The waxing moon also appears in the inferior part of the *signa*, the “flags”, of the Roman legions, and above it a group of golden disks are lined up vertically (Figure 12); they are the same disks that in the stupa are horizontally piled up and that, in my opinion, represent planets or stars.

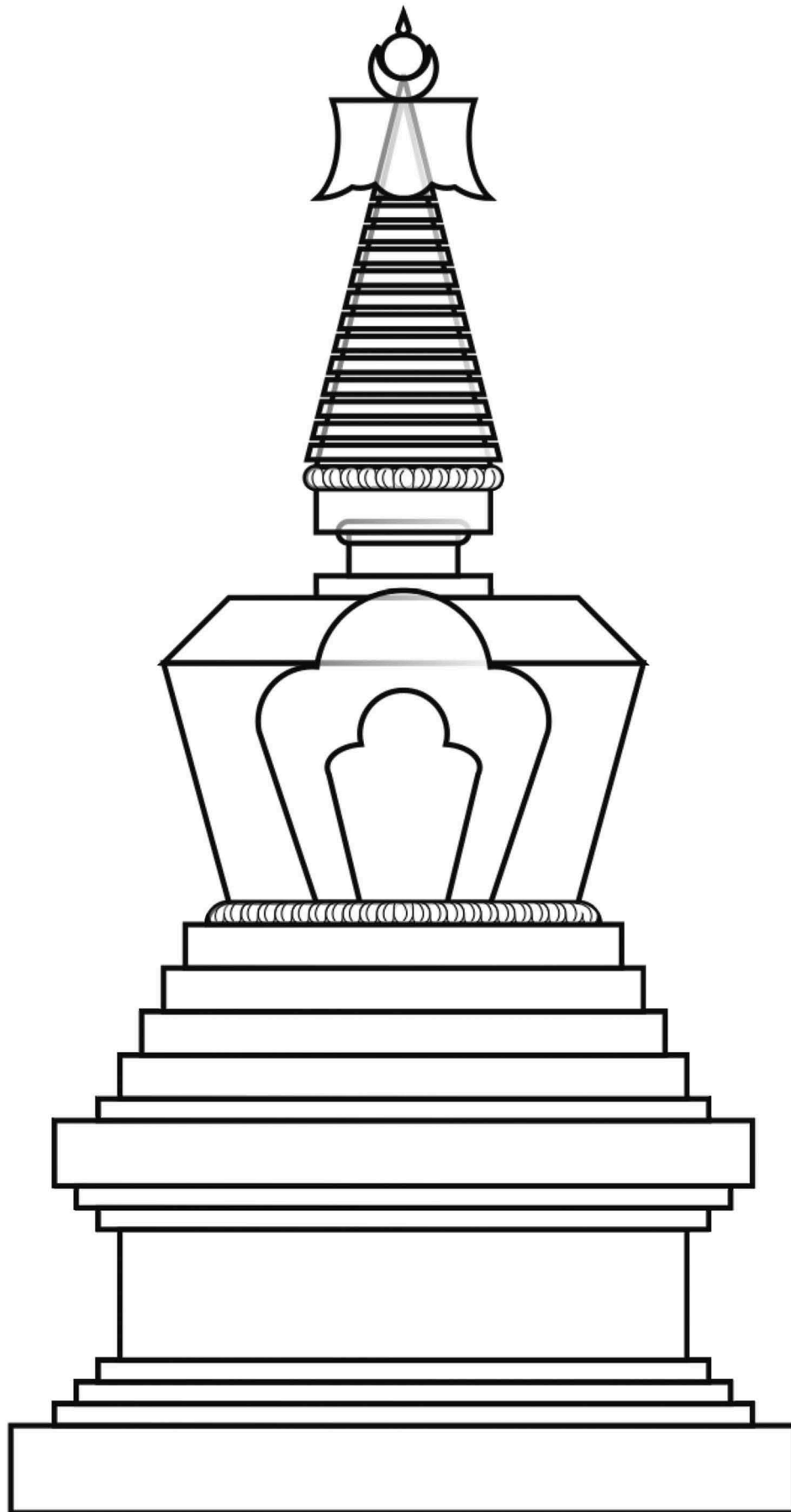
The *yasti* of the first stupas of the Indo-Greek era, such as the one in Butkara I, is simpler and due to its simplicity, more difficult to interpret. On the top of the stick, under the parasol, they ended up adding an acanthus leaf decoration, as if it were a Corinthian capital. This allows us to identify the stick as a Greek *stylos*, term that had two meanings: “naval sceptre” and “column”.

The *chattravali* “parasol”, which in Butkara I leans directly on the stick, in other stupas is suspended in the

air, at a certain distance over it; in other cases, there are two and three superposed parasols with the same separation between them. Most certainly this element is not useful for making shadow; for that purpose, one would be enough. Besides, making shadow to what or to whom? In my opinion, the parasols are in reality covers that are in direct contact with an invisible element that is not represented because it is sacred, and Buddhism in these first centuries is aniconic.

Finally, the *harmika* could be simply a stand piece. Among the first rock-cut Buddhist temples, the *chaitya* in Karla and in Bedse have sculpted capitals representing men and women riding horses and elephants. At its base there is a *harmika*, which does not look like a very stable foundation for a statue. We can suppose that it is a foundation designed to link the statue to the wooden floor of the deck of a watercraft.

Finally, Buddhists consider that every stupa is a representation of the mythical mount Meru. If the interpretation of the stupa that I propose is true, the name of the mount Meru might come from the Greek term *meros* “loot” or “part of a loot”. It is true that Ulysses’ riches are not a proper loot, they are the gifts that the Phaeacians offer him, but these gifts make up for the loot he had obtained in Troy and had lost on his way back to Ithaca. Ulysses’ loot



**Figure 11.** Tibetan stupa of the illumination. Author: Woodega. <[http://commons.wikimedia.org/wiki/File:Eight\\_great\\_stupas.svg](http://commons.wikimedia.org/wiki/File:Eight_great_stupas.svg)>. Creative Commons BY-SA 3.0 license.



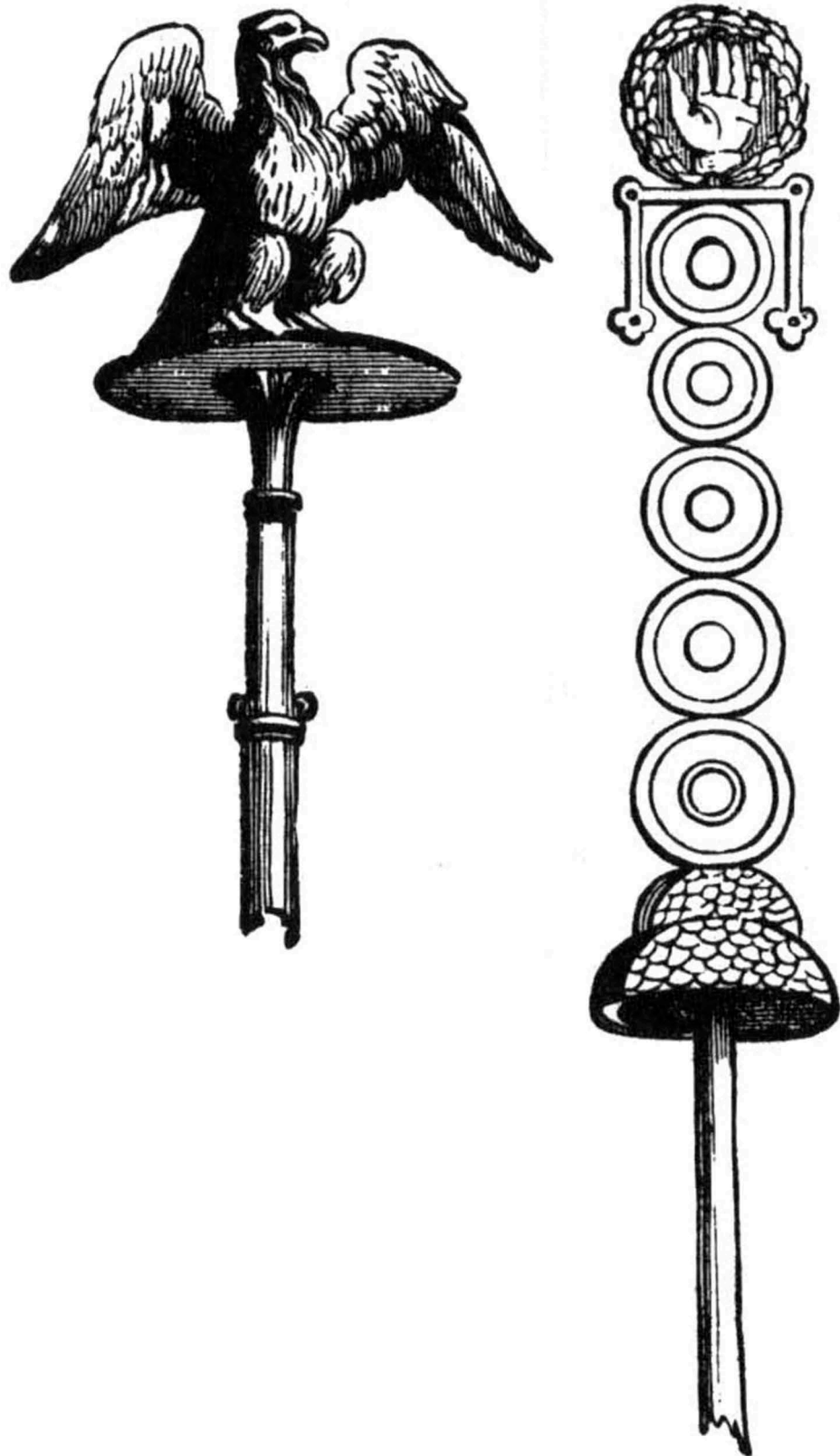


Figure 12. *Aquila* and *signum* of Roman legions. Author: Preble (1880, 58). Public domain.

riches are, in Homer's words, *hathroa* "piled up" (Od. 13.122) or, which is the same, creating a miniature mount. As if he were Ulysses, every deceased *chakravartin* could be revered representing the treasure he left behind at his death.

#### 4. Piled up temples and Hephaestion's pyre

On the exterior wall of some rock-cut Buddhist temples, there are bas-reliefs, with motifs that are repeated from one temple to the other: numerous *gavaksha*

arches together with naturalistic sculptures, mainly of men and women. The *gavaksha* arches of the superior levels have other arches engraved in their interior. These other arches give the impression of representing in bas-relief the same rib structure of the ceiling of the main *chaitya*, but seen in a low angle from downside up, the same way the spectator would see it standing. This would mean that the *gavaksha* arches of the superior levels represent a superposition of *chaitya*, i. e. of several ships one on top of the other. This decoration will give us the second key to explain the origin and the shape of these temples and their relationship with the Greek culture.

In the autumn of the year 324 BCE Hephaestion, one of Alexander's generals and likely his lover, dies in the city of Ecbatana. According to the sources, Alexander's grief for this loss was enormous, so much that he ordered the celebration of funeral games in his honor, and the construction of a burial monument, usually referred as a pyre, in Babylon. He spent in its making between 10 000 and 12 000 talents, a colossal amount in that time,<sup>5</sup> although it was not finished because meanwhile Alexander himself had died and his generals interrupted the works (Diodorus Siculus *Library of History* 18.4.2). The architect in charge of designing Hephaestion's pyre was Dinocrates of Rhodes, an artist who, was he or not a megalomaniac himself, had the ability to conceive projects according to Alexander's enormous ego. Diodorus Siculus includes in his work a description of the pyre:

[2] He divided up the area into thirty compartments and laying out the roofs upon the trunks of palm trees wrought the whole structure into a square shape. Then he decorated all the exterior walls. Upon the foundation course were golden prows of quinqueremes in close order, two hundred and forty in all. Upon the catheads each carried two kneeling archers four cubits in height, and (on the deck) armed male figures five cubits high, while the intervening spaces were occupied by red banners fashioned out of felt. [3] Above these, on the second level, stood torches fifteen cubits high with golden wreaths about their handles. At their flaming ends perched eagles with outspread wings looking downward, while about their bases were serpents looking up at the eagles. On the third level were carved a multitude of wild animals being pursued by hunters. [4] The fourth level carried a centauromachy rendered in gold, while the fifth showed lions and bulls alternating, also in gold. The next higher level was covered with Macedonian and Persian arms, testifying to the prowess of the people and to the defeats of the others. On top of it all stood Sirens, hollowed out and able to conceal within them persons who sang a lament in mourning for the dead.<sup>6</sup>

Diodorus Siculus, *Library of History* 17.115.2-4.

The interpretation of this passage presents some difficulties. Detailed literary descriptions of complex objects often leave some obscure points, and it is then when we miss an image that would complement them; on this occasion, we don't have it. Besides, it is also possible that Diodorus, who lived 300 years after these facts, did not interpret correctly the source he based his work on.

The construction is often called a ziggurat, just because it was built in Babylon and was a multi-storey building; I will avoid this interpretation that has no greater foundation. If we adjust to Diodorus' description, to start with, it is not clear what the thirty *domoi* "rooms", in which the terrain is divided, could be. In my opinion the Greek term *domos* "house", which is never used to refer to a normal house but to the one of a god or a hero, here refers to the palace of a captain: this palace would be a construction, provisional or permanent, made by turning over a ship. The fact that the pyre also contained 240 prows of quinqueremes, the galleys common in the Greek navies at the time, sustains this interpretation.

In the second place, up to now there was no reason to ask ourselves whether the 240 prows of the facade are set according to their normal orientation, with the keel down and the bridge up, or not; neither was there any reason to wonder whether the warrior sculptures are supported by the bridge of those prows or not. But now we may conclude that the prows would be turned over, and the sculptures of warriors would stand on the taffrail of the hull which, in this turned over layout, is not the bridge anymore, but the keel (Figure 13).

It should not be forgotten that Dinocrates, the architect who conceived the building, was a native from Rhodes, a Greek island located only 100 km far from the coast of Lycia, the region where at that time the aristocrats were buried in sarcophagi and rock-cut caves that, as we have seen before, simulated turned over ships. Indeed, this arrangement of the sculptures is the same we observe above the pediment of classical Greek temples: three sculptures standing on three acroteria, two minor sculptures in the lateral corners and a bigger one centers at the peak of the pediment. In some Greek temples, beside these, in front of the central sculpture there is a sculptural ornament called *kyma*, which has been translated to modern languages as "summit" because it was not understood that in this occasion *kyma* means what it always means in Greek: "wave", that is the wave that arises with the advance of the ship.

When speaking about the superior levels, Diodorus does not mention any room, only the prows and sculptures that are standing on them. We can deduce that

<sup>5</sup>Plutarch (*Alexander* 72.2) and Arrian (*The Anabasis of Alexander* 7.14.8) state that they were 10 000 talents, while Diodorus Siculus (*Library of History* 12.115.5) and Justin (*Philippic Histories* 12.12.12) state that they were 12 000.

<sup>6</sup>Translated by Welles (1963).



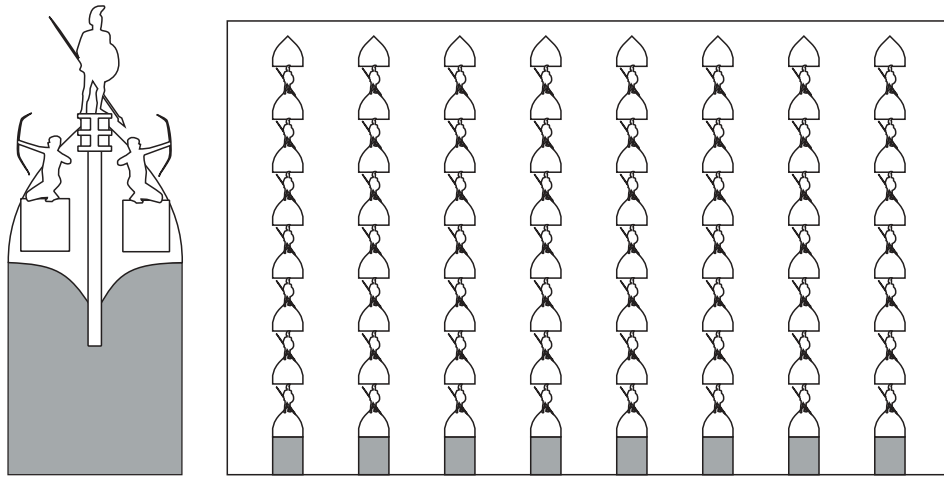


Figure 13. Schematic reconstruction of Hephaestion's pyre (non-realistic proportions). Author's drawing.



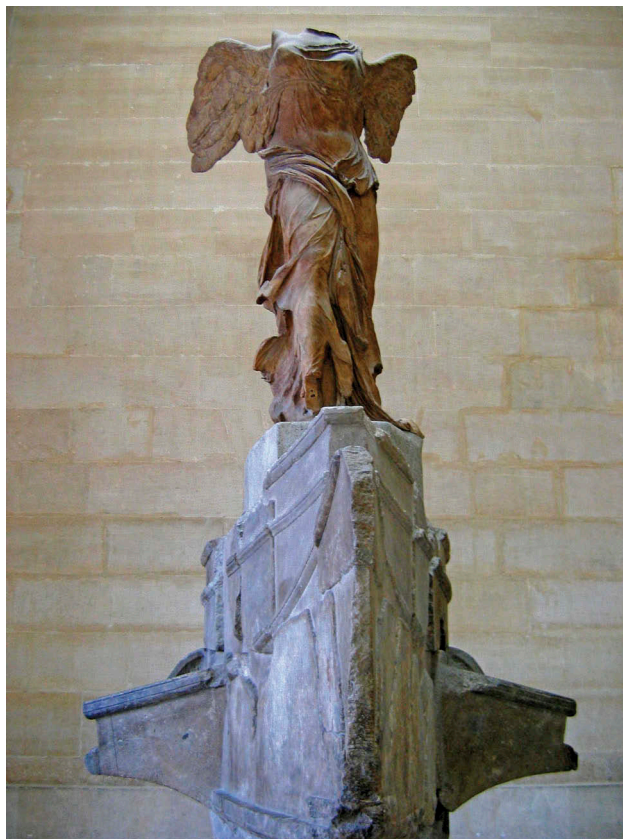
Figure 14. Entrance arch to the *chaitya* hall, Bedse. Author: Amitmahadik100. <[https://commons.wikimedia.org/wiki/File:BEDSE\\_CAVES\\_\(6\).jpg](https://commons.wikimedia.org/wiki/File:BEDSE_CAVES_(6).jpg)>. Creative Commons BY-SA 3.0.

the intention of the architect Dinocrates was only to represent the other 210 rooms piled up on several levels, yet there would be no need to build them entirely. To simplify, their existence would be simulated by making the prows stand out on the facade and by creating a *trompe-l'oeil* with painting or carpentry: a perspective look to the inside of the turned over hull, that probably stands at the origin of the *gavaksha*, arch (Figure 14). The space between prows would be enclosed either with purple color cloth or, according to a very plausible alternative interpretation (Miller 1986, 410–411), with *phoinikides* “palm tree columns”.

In the third place, because of the order in which the construction is described – first the rooms, then the prows and finally the sculptures –, it is taken for granted that the 240 prows are all together in the same level, set on top of the rooms from the ground floor and under the superior rooms which contain the sculptures. But the order of the description does not have to be the same as the order of the construction. If we stick strictly with

Diodorus' words, there are two different ways to interpret the expression: “the decoration, whose foundation was made of golden prows of quinqueremes”. It can, indeed, mean that the 240 prows are all together and under the level that contains the sculptures; this would be the *conjunctive* sense, to say it somehow, of the expression. But it can also mean that every one of the 240 prows is the foundation of a sculpture; this would be the *distributive* sense of the expression “whose foundation”; this is how I represented them in the illustration. This interpretation is coherent with some well-known Hellenistic monuments, such as the Winged Victory of Samothrace (Figure 15) and the Naval Monument in the agora of Cyrene, in which anthropomorphic sculptures appear mounted on the prows of warships.

Coinciding with this last possibility, if we interpret that the *domoi* of the ground floor are naval buildings, the logical thing to believe is that there is a prow that stands out in front of every *domos*. This gives way to a first exterior level of 30 quinquereme prows distributed



**Figure 15.** Winged Victory of Samothrace (Musée du Louvre). Author: Kiko León (Chosovi). <[https://commons.wikimedia.org/wiki/File:Niki\\_tis\\_Samothrakis.jpg](https://commons.wikimedia.org/wiki/File:Niki_tis_Samothrakis.jpg)>. Creative Commons BY-SA 2.5 license.

along the entire perimeter of the building; as the building has a square layout, there would be seven or eight *domoi* on the ground floor of northern and southern facades, and eight or seven on the eastern and western facades. With 30 prows on every level, and as there is a total amount of 240 prows, the construction would have eight prow levels: ground floor plus seven other levels. The sculptural decoration, for its part, would be distributed in seven levels, which matches with Diodorus' description.

For the object of this article, the reasons that lead Dinocrates to give this shape to Hephaestion's pyre are secondary, but, once we have just got here, I cannot resist the temptation of guessing them. It is obvious that Dinocrates and Alexander wanted to bid farewell to Hephaestion with the proper honors, not that of a captain that is incinerated with the wood of his own ship, but in the megalomaniac way in which an admiral would be incinerated: with the ships of an entire fleet. But the numbers that are being dealt with in this construction (30 prows x 8 levels = 240 prows) surely have a specific meaning. The antiquity seamen avoided sailing in winter, between the months of November and February or March, a period which the Romans called *mare clausum* "closed sea",<sup>7</sup> and used to sail during 8 or 9

months. If we follow the Roman writer Vegetius, and we consider a period of navigation of 8 months, each one of 30 days, we would, for sure, obtain the number of 240 sailing days per year. Then, it seems that Dinocrates designed Hephaestion's pyre setting a turned over ship for each day of the naval year, and distributed them in eight levels of thirty ships, the same way days are grouped in the naval year, in eight months of thirty days. When a ship captain, such as Ulysses, spent a year far away from home, he would sleep in his turned over ship, which he considered his provisional palace. Dinocrates, on the other hand, presents Hephaestion as the captain that has a palace not of a room, but of 240 rooms/ships, for him to sleep every night of the naval year in a different room/ship.

About the specific meaning of the sculptures of the pyre, it is not difficult either to propose a hypothesis. The sirens of the top, who in the *Odyssey* cause the death of the seamen and will intone a funeral song for the deceased, represented likely Hephaestion's death. On the immediately following inferior floor, weapons of Greeks and Barbarians represented the conquest of the Persian Empire, in which Hephaestion participated immediately before his death. If we extend this interpretation to the inferior levels, probably the

<sup>7</sup>It starts on 11<sup>th</sup> November and lasts for 4 months according to Vegetius (*De re militari* 4.38), and only three according to Plinius (*Natural History* 3.122).



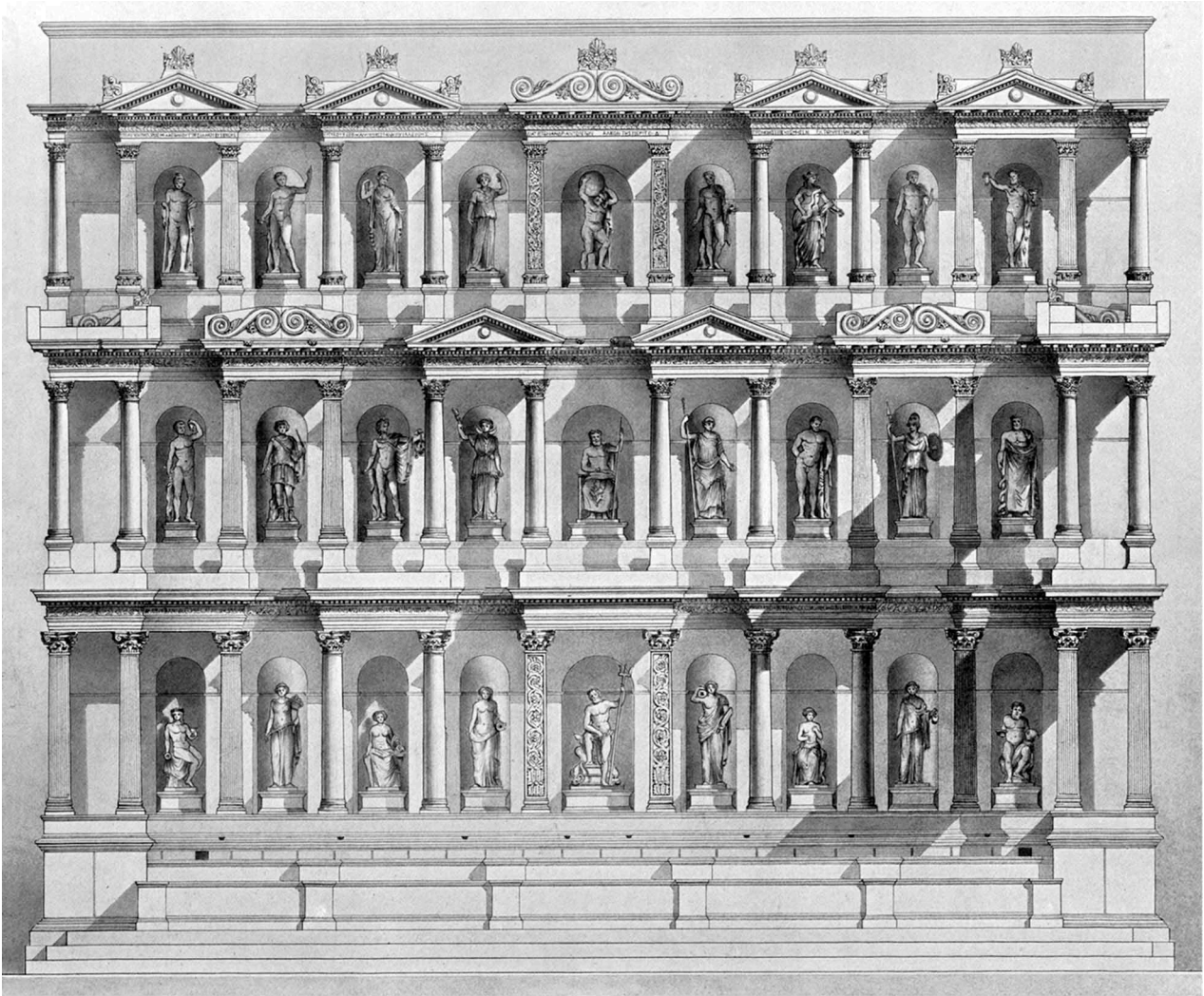


Figure 16. Facade of the Nymphaeum in Miletus (Turkey). Author: Hülsen (1919, 58). Public domain.

sculptural sequence represented, following a chronological order from down to up, Hephaestion's most outstanding deeds, that is to say, his *aristeia* "excellence".

The reconstruction of Hephaestion's pyre that I propose is confirmed if we compare it to the following buildings that might have been inspired by it, and which we know well. In the Western world, the stage of the Hellenistic theatres, like the one in Ephesus, becomes full of sculptures and canopies on various levels; now we can explain this change as an imitation of Hephaestion's funeral palace. The Nymphaeum in Miletus (end of first century CE) (Figure 16) and the facade of the Library of Celsus (beginning of the second century CE) in Ephesus follow the same pattern.

In what the Eastern world concerns, we can state now, too, that the rock-cut Buddhist temples from the second and third centuries BCE followed the same model. In many of these temples, the turned over ship that constitutes the main cave (normally only one) work as foundation of a pile of more turned over ships, represented on the facade by means of overlapped *gavaksha*

arches on several levels (Figure 17), in some cases with anthropomorphic sculptures here and there between the arches. Farther north, in the Indo-Greek region of Gandhara, the Guldara stupa (second century CE) has a three-story base reminiscent of our reconstruction of the pyre: the ground-floor false entrances are crowned with simple arches very similar to that of Lomas Risi (Figure 6), and the first and second floors are false galleries of columns and arches. Finally, in spite of its late date (twelfth century CE), the Satmahal Prasada in Polonnaruwa, Sri Lanka, seems to be a reduced but amazingly faithful version of the Hephaestion's pyre.

We can as well compare the funerary function of Hephaestion's pyre and the one of the stupas and rock-cut Buddhist temples. In the *Digha Nikaya*, his disciples ask Buddha about how they should bury him after his death, and he answers: "As you must treat a king of kings" remains, the same way you must treat the remains of the Tathagata' (16.5). Ashoka the Great and Buddhists who in the third century BCE promoted the building of *chaitya* and stupas, probably had in mind this prescription. When they were thinking of a



**Figure 17.** Facade with *gavaksha* arches in a cave in Bedse. Author: Himanshu Sarpotdar. <[http://www.flickr.com/photos/himanshu\\_sarpotdar/519934737/](http://www.flickr.com/photos/himanshu_sarpotdar/519934737/)>. Creative Commons BY-NC-ND 2.0 license.

“king of kings”, it was inevitable thinking of Alexander the Great, and of his favorite Hephaestion, whose pyre has been one of the most sumptuous funerary monuments in human history.

## 5. Flying *vimana*

The *Samarangana Sutradhara*, the architecture Indian treatise written in the eleventh century CE, informs that the type of Buddhist temple known as *prasada* is derived from the first Buddhist temples, known in the literary tradition as *vimana*. There are also numerous sources that inform us that the *vimana* were, beside temples, some legendary flying vehicles that gods used in order to go by air. Lexicographers pretty soon interpreted it as *ratha* “carriages”, which explains the presence of carriage wheels in some temples from the first millennium. All that allowed Havell (1918, 181 *et seq.*) to draw up the *car theory*: the theory of the war carriage as the origin of the Buddhist temple.

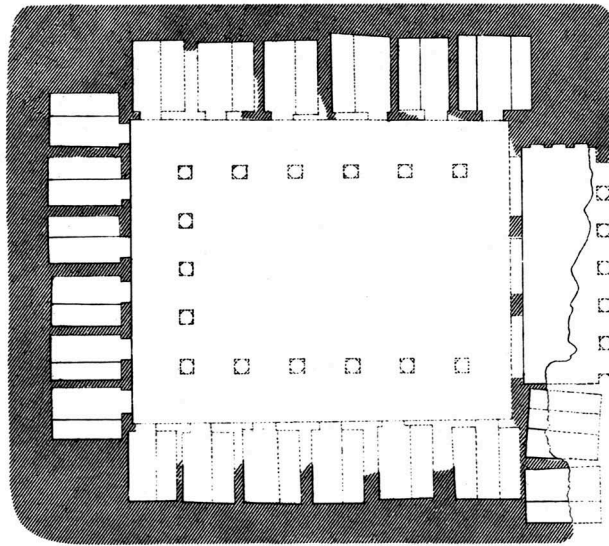
However, sources state that the *vimana*, besides transporting gods by air, worked as a palace, and that some *vimana* got to be up to seven levels high. These two last facts contradict the interpretation of the *vimana* as carriages. On the other side, they will fit perfectly if we interpret the *vimana* as ships which, once turned over keel to the sun, turned into palaces;

in addition, the reference to supposedly seven levels ships could perfectly be a distorted memory of the eight floors of ships piled up in Hephaestion’s pyre. It is true that ships do not fly, neither fly carriages. But Greek literature counts on a prose story of Lucian of Samosata, *A True Story*, from the second century CE, in which a ship leaves the ground, starts to fly and visits the moon, where its crew members face all sorts of fantastic creatures. And in an Indian epic poem from the sixth century CE (*Raghuvamsha* 16.68), there is a *nauvimana*, this is, a flying *vimana* whose compound noun clearly indicates that it has a *nau*- “ship” shape. Lastly the passages from the *Samarangana Sutradhara*, which in Shukla’s words (1960, 412) say that “the temple, the *Prasada*, is the stationary form, the chariot [‘ship’ in our interpretation] is the moveable form of the seat and house of God” start to make sense.

## 6. The surroundings of the cave temples

Associated with the temples were rock-cut monasteries called *vihara*. Its open court surrounded by open cells and its entrance porch recall the plan and structure of characteristic public buildings of the Hellenistic cities, such as stoas (the North Agora of Miletus or the one of Priene, for example) and palaestras (Figure 18).





**Figure 18.** Vihara (cave 2) of Kondana, first century BCE. Author: J. Burgess (Fergusson and Burgess 1880, plate VIII). Public domain.

Outside the *chaitya* of Karla, there is an Ashoka pillar with seated lions on top of it. The freestanding columns topped with statues were very frequent in archaic and classical Greece, such as the Sphinx of the Naxians in Delphi erected in 560 BCE (Figure 19). It has already been mentioned indeed that Ashoka's lions have Greek origin: the statue of a seated lion that was raised in Chaeronea to commemorate the Sacred Band of Thebes (Pal 2006, 93).

## 7. Other Buddhist symbols of probable naval origin

At this point, we can easily extend the interpretation of naval gear to other Buddhist symbols that are not architectural elements. Among the eight auspicious signs of Buddhism stands out the *dharmachakra*, the "wheel of the *dharm*" or "wheel of the law". It has the shape of a rudder wheel, but this mechanism is a recent invention, from the beginning of the eighteenth century CE. The *dharmachakra* would rather correspond to the capstan. This mechanism allows marines to roll the ropes or the chains of the anchors and hoist them, and it is handled with a horizontal knob wheel that makes a drum turn round vertically, around which the rope ends or chains are wound. In my hypothesis of the naval origin of Greek architecture, the anchors represented the divinity for the Greek marines. In case of storm, when it is bigger the risk of the boat being dragged by wind and waves until the coast and destroyed, the anchors represent salvation and life, especially the last resort anchor, the one that weights double the others and which the Greeks called *hierá ankyra* "sacred anchor". The representation of the divinity in the primitive aniconic Buddhism was taboo, and maybe this is why they prefer to represent, instead of the sacred anchor, the capstan with which it is

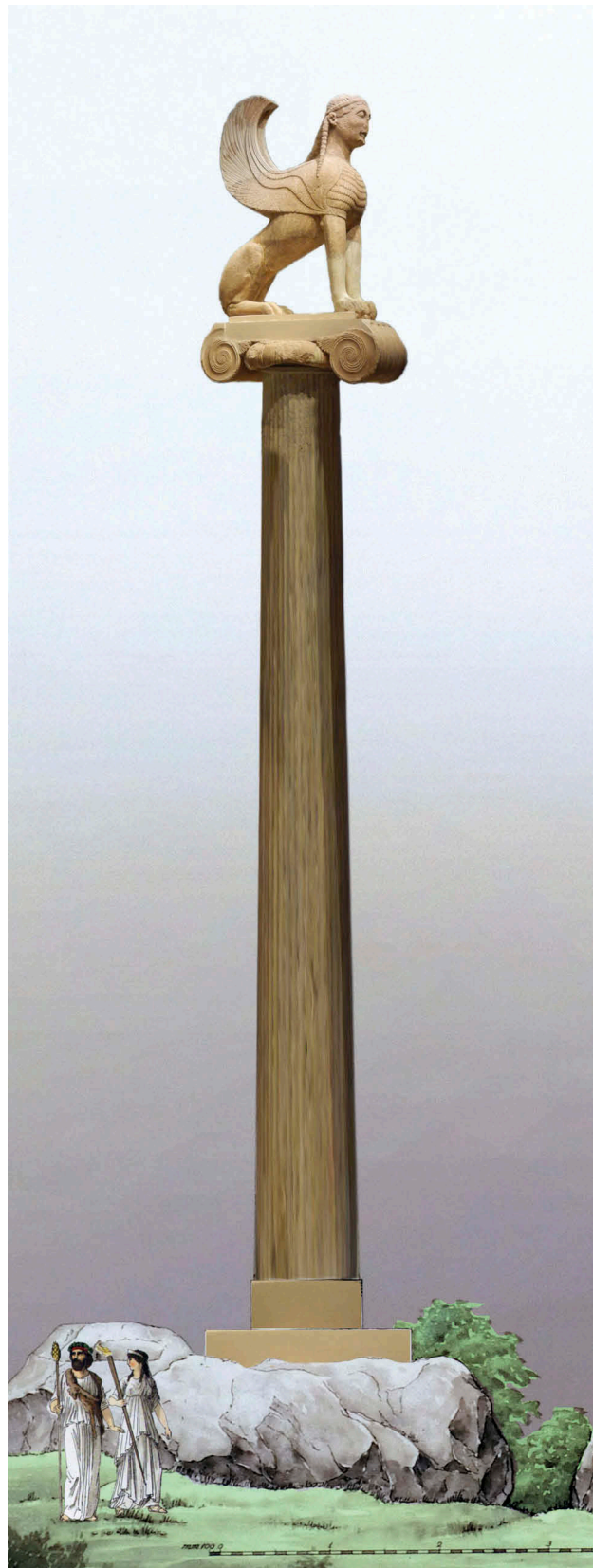
weighed and dropped. In the term *dharmachakra* the first element *dharm* comes from the root *dhr-* that means "to hold", which is why the "*dharm* wheel" may well be understood as "the holding wheel" referred to the capstan.

The term *chakravartin*, which designated the ideal governor in whose memory the first stupas were probably raised, etymologically means "the one that steers the wheel", and would follow that only the captain would be qualified to handle the capstan and the sacred anchor. The *dharm* wheel was sometimes represented flanked by two deer, referring to the Park of the Deer in Sarnath where Buddha got his first disciples, as a sacred anchor is flanked by the two normal anchors. Ignoring the precise shape of those animals, we are in front of the same triangular disposition of statues as we mentioned previously.

Regarding to other Buddhist and Hindu auspicious symbols, the shell can be used to send acoustic signals from ship to ship, by night or in case of foggy conditions. The infinite knot seems a braided ropes carpet that is so usual on boats. The parasol, on the stern, would protect the captain against the sun and rain. The victory flag is a flag like the ones that ships usually hoist. The treasure cup could represent the aboard safe. It would take us too far away to propose here a nautical meaning for the lotus flower and the two golden fishes (the sacred anchor and the two normal ones, respectively?).

Finally, it turns out to be noteworthy that the title of the maximum authority of the Tibetan Buddhism takes the name of *Dalai Lama*, which etymologically means "master of the ocean", from the Mongolian *dalai* "ocean" and the Tibetan *blama* "master". The expression is normally interpreted as "master of oceanic wisdom", in the sense of "immense", but in the light of our interpretation the expression can mean exactly what it seems.



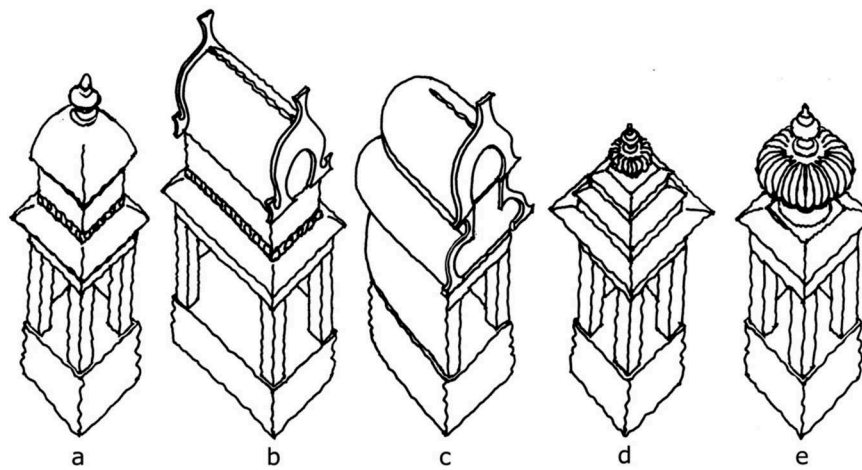


**Figure 19.** The Naxian Sphinx at Delphi (Greece). Authors: Pataliputra, Herr Adams and Davide Mauro. <[https://commons.wikimedia.org/wiki/File:Naxos\\_Sphinx\\_with\\_humans\\_for\\_size.jpg](https://commons.wikimedia.org/wiki/File:Naxos_Sphinx_with_humans_for_size.jpg)>. Creative Commons BY-SA 4.0 license.

## 8. Fruitfulness of an architectural model

The architectural tradition in India and the southeast of Asia of the last two millennia distances itself very little

from the principles that shaped the primitive rock-cut temples. Four features of the primitive temples last in the following ones: (a) the funerary nature of the building, (b) the basilical layout, with or without stupa in its



**Figure 20.** Wooden prototypes proposed by Hardy (2012, 115; Figure 3). © Adam Hardy (with permission of the author).

apse, (c) the piling up of several ships/temples on multiple levels, and (d) the presence of figurative sculptures, mainly human, on the facades of the overlapped floors. The persistence of these features can be explained by the conservatism usual in religious practices.

Now we could review different types of Indian religious buildings (*prasada*, *sikhara* and *gopura*) and non-Indian (pagoda) to verify that they present three or four of the mentioned features, but in some way this work has already been done. Hardy (2012, 101–125) has elaborated a typology of the Indian temples that matches what I am proposing here. He states that the great variety of temple shapes of the religious Indian architecture can be explained by appealing to two principles: the existence of some few *alpa vimana* “simple temples” (Figure 20), and the piling up of these simple temples in order to form more and more complex settings (Figure 21): “Images of established shrine types become the architectural components, the representational building blocks, of composite temple forms” (108).

Out of the five simple wooden temples that Hardy proposes, the “b” and “c” types are the closest to the authentic prototype, the basilical layout, which is the hull of a turned over ship with a cut off end. The other three types correspond to another type of layout, the one that has two symmetry axes that cross in a right angle. It is an innovation not of a boat builder, but of a true architect who imagines and designs on a plan two ship’s hulls that intersect at right angle forming a transept.

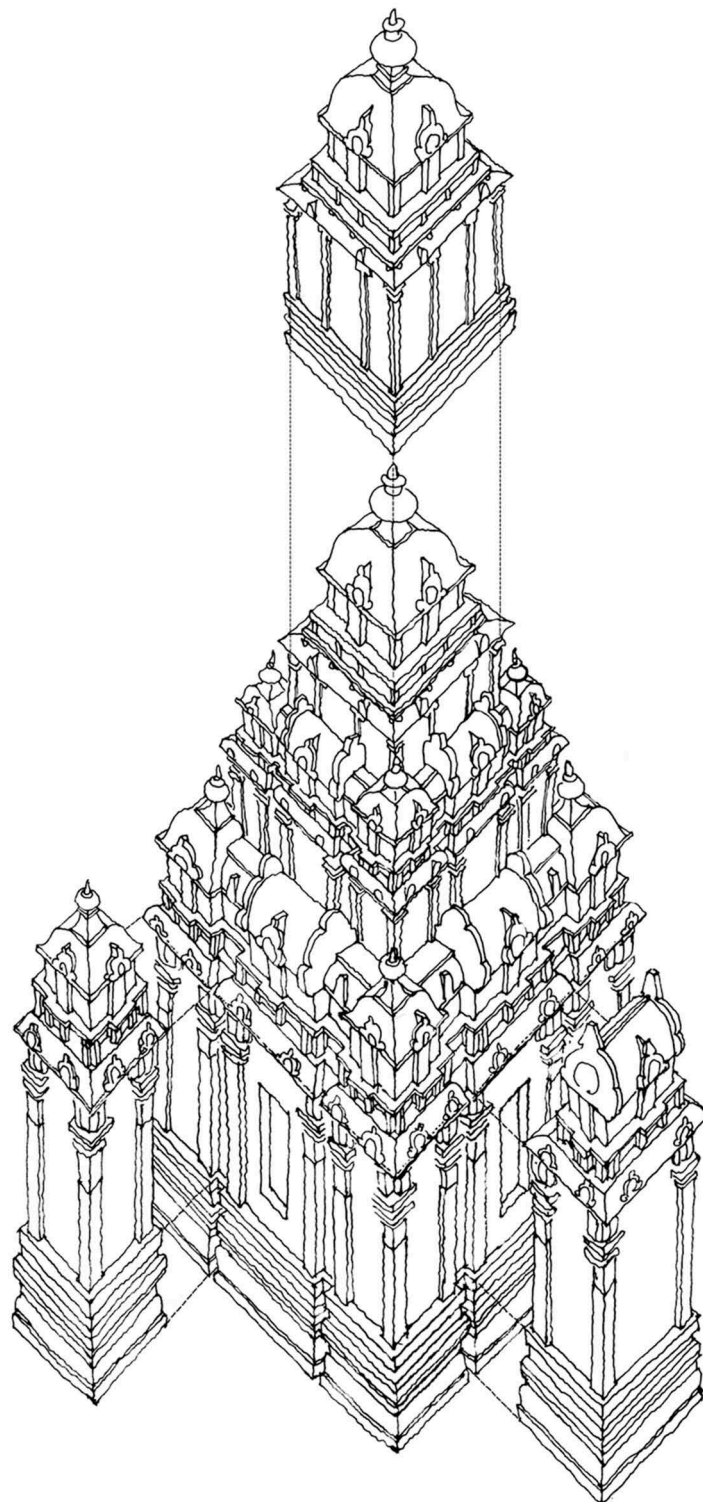
## 9. East as West

According to what we have seen in this article, the religious architecture of ancient India, that in turn

was the origin of the religious architecture of the greatest part of Asia, is the development on Indian ground of some cultural elements that came from the Greek culture. It originated, in particular, in the transformation of a turned over ship into a building that at first was the palace of a ship captain and a king, and then it turned into a temple. This development supposed the repetition of a similar process that had taken place centuries before in Greece and had resulted in the creation of the Greek temples of the archaic and classic periods.

The Hellenistic Greece was the hinge that linked the East with the West, or what is the same, the two great masses of navigable waters that are, respectively, the Indian Ocean and the Mediterranean Sea. It turns out to be surprising that the same artistic process that we have seen occurs in the East happens too in the West, and at the same time. In my opinion, the Greek basilica is a building that is created by turning over the royal ship of the fleet (*basilike* means “royal” in Greek) and, as all scholars agree, the Greek basilica is the origin of the late Roman and medieval Christian temple.

Contemplated under this prism, the traditions of the European and Asian religious architectures of the last two millennia have the same origin, Greece and the sea, and more similarities than we have been capable of observing up to now. In fact, just to give an example, we would only understand the bell-shaped Buddhist stupas, such as the ones of the temple of Borobudur on the island of Java, after we understand the origin of the bronze bells of the Christian churches. But this is another story and it should be told some other day.



**Figure 21.** *Aediculae* integrated in a Dravidian temple, according to Hardy (2012, 116; Figure 4). © Adam Hardy (with permission of the author).

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## Disclosure statement

No potential conflict of interest was reported by the author.

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