

ARCHAEOLOGICAL EVIDENCE FOR SHIP EYES:  
AN ANALYSIS OF THEIR FORM AND FUNCTION

A Thesis

by

TROY JOSEPH NOWAK

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of  
MASTER OF ARTS

May 2006

Major Subject: Anthropology

ARCHAEOLOGICAL EVIDENCE FOR SHIP EYES:  
AN ANALYSIS OF THEIR FORM AND FUNCTION

A Thesis

by

TROY JOSEPH NOWAK

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

Approved by:

Co-Chairs of Committee,	George F. Bass Shelley Wachsmann
Committee Members,	Cemal Pulak Christoph Konrad
Head of Department,	David Carlson

May 2006

Major Subject: Anthropology

## ABSTRACT

Archaeological Evidence for Ship Eyes: An Analysis  
of Their Form and Function. (May 2006)

Troy Joseph Nowak, B.A., Salisbury State University

Co-Chairs of Advisory Committee: Dr. George F. Bass  
Dr. Shelley Wachsmann

During the late 19<sup>th</sup> century, a number of large marble eyes were discovered near the Athenian naval facilities at Zea. Although initially published as the eyes of ancient Greek warships, many scholars have doubted the validity of this attribution. A range of hypotheses have been presented in attempts both to discredit the notion that they are ship eyes, and to re-classify these objects.

Recent excavations of a Classical Period merchantman at Tektaş Burnu uncovered a pair of marble discs that again raise questions relating to the identity of the marble eyes from Zea. A review of alternative hypotheses relating to the identity of these objects based on textual, archaeological, and representational evidence, coupled with technical analyses of their construction, form, and decoration, leads to the conclusion that the marble eyes discovered at Zea, as well as the objects from Tektaş Burnu, adorned the bows of ancient Greek ships between the 5<sup>th</sup> and the 3<sup>rd</sup> centuries BC. Evidence for the function of these objects is found in the works of Greek authors who show that the eyes of ancient ships marked the presence of a supernatural consciousness that guided the ship and helped to avoid hazards.

Studies of eye representations on Archaic and Classical Greek domestic articles and parallels in architectural decoration suggest that ship eyes may have also worked as apotropaions to counter forces such as envy.

As early as the 5<sup>th</sup> century BC Greek and Latin authors attest to a fear and understanding of envy's destructive power, which was believed to attack through the actions of both gods and mortals. Theories related to the use of eyes as apotropaions that could counter envy are presented based on analysis of material from the Archaic and Classical Periods. Links are made between Hellenistic and Roman mariners and their fear of this force, which was expressed in their use of devices that functioned to protect them from its ill effects. It is possible that ship eyes in ancient Greece served as both epiphanies and apotropaions used to counter envy.

## ACKNOWLEDGEMENTS

My gratitude is extended to George F. Bass and Deborah Carlson, director and assistant director of the Tektaş Burnu shipwreck excavation, for inviting me to both take part in the excavations at Tektaş Burnu and to conduct a preliminary study of the Tektaş Burnu marble eyes; Oğuz Alpözen, former director of the Bodrum Museum of Underwater Archaeology; Selma Açar for her drawing of TK7; Kathy Hall, Laura Pretsell, Asaf Oron, and Meghan Ryan for preparing the Tektaş Burnu marble eyes for study; William Murray for his translation of Pollux *Onomasticon*, 1.86; Vassilis Kostovassilis for his much appreciated translations of modern Greek source material; the staff of the Texas A&M University interlibrary loan department for their help in acquiring many of the sources used in this study; Donny Hamilton, David Woodcock, Aaron Brody, Nick Cramer, Shawn Hillen, Mike Jones, Mary Laanela, Justin Leidwanger, Bjoern Loven, Wilson West, Sean Williams and Elaine Wyatt for their support and encouragement.

I am especially grateful to my graduate committee: George F. Bass for his guidance, support, and patience; Shelley Wachsmann for his encouragement and insight; Cemal Pulak and Christoph Konrad for their patience and advice; Karen Taylor, Cynthia Hurt and the faculty and staff of the Department of Anthropology.

Finally, I would like to thank my family: Joseph and Marie Nowak, Tory Nowak and Erika Laanela, without whose patience, encouragement and support this thesis would have never been completed.

## TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES.....	viii
LIST OF TABLES.....	xi
CHAPTER	
I INTRODUCTION.....	1
II ARCHAEOLOGICAL EVIDENCE FOR SHIP EYES .....	4
Introduction.....	4
Discoveries of Marble Objects Identified as Ship Eyes.....	4
Catalog of Marble Objects Identified as Ship Eyes.....	8
Technical Aspects.....	36
III THE IDENTIFICATION AND DATE OF THE MARBLE EYES....	48
Introduction.....	48
The Marble Eyes as Architectural Decorations.....	48
The Marble Eyes as Ship-Chariot Eyes.....	49
The Marble Eyes as Models Constructed for Offering.....	52
The Marble Eyes as Ship Eyes.....	81
Conclusion.....	112
IV THE FUNCTION OF SHIP EYES IN THE GRAECO-ROMAN WORLD.....	116
Introduction.....	116
Evidence for the Function of Ship Eyes in Greek Literature...	117
The Mechanics of Envy.....	119
The Thasian Wall Decoration: A Reinterpretation.....	137

CHAPTER	Page
The Torlonia Harbor Relief.....	146
Archaeological Evidence for Apotropaic Ship Decorations...	156
Conclusion.....	167
V CONCLUSION.....	169
NOTES.....	171
REFERENCES.....	176
VITA.....	191

## LIST OF FIGURES

FIGURE		Page
2.1	Nomenclature for parts of the eye .....	7
2.2	Z1. Archaeological Museum of Piraeus [3465-2674].....	10
2.3	Z2. Archaeological Museum of Piraeus [3468-2675].....	13
2.4	Z3. Archaeological Museum of Piraeus [3467-2676].....	16
2.5	Z4. Archaeological Museum of Piraeus [3466-2677].....	19
2.6	Z5. Archaeological Museum of Piraeus [3470-2679].....	22
2.7	Z6. Staatliche Museen zu Berlin, Antikensammlung [1039].....	25
2.8	Z7. Archaeological Museum of Piraeus [3469-2678].....	28
2.9	T1. Bodrum Museum of Underwater Archaeology [TK 7].....	31
2.10	T1. Bodrum Museum of Underwater Archaeology [TK 7], profile...	32
2.11	T2. Bodrum Museum of Underwater Archaeology [TK 222].....	35
2.12	Shape, Z1-Z7.....	37
2.13	Decoration.....	39
2.14	Archaic-Classical Period ship model from the acropolis at Lipari.....	45
3.1	Attic black-figure <i>skyphos</i> fragments depicting Dionysos seated in a ship-chariot.....	51
3.2	Plan of the Sanctuary of Hera on Samos c. 650 BC.....	67
3.3	(A) Plan of the Monument of the Bulls on Delos; Red indicates position of the ship in the <i>cella</i> ; (B) Stone supports designed to cradle a ship's hull discovered in situ on Samothrace. ....	69



FIGURE	Page	
3.4	Examples of extant rams: (A) A <i>proembolos</i> discovered in Genoa harbor in 1597 commonly referred as ‘the Turin Ram,’ tentatively dated to between the 3 <sup>rd</sup> century BC and the 1 <sup>st</sup> century AD, whether it was functional or decorative remains unclear; (B) An <i>embolos</i> of uncertain provenance in the Archaeological Museum of Piraeus tentatively dated to between the 5 <sup>th</sup> century BC and the 1 <sup>st</sup> century AD.....	74
3.5	(A) A form for molding model anchors from Crimea; (B) Lead model of a similarly shaped anchor from Rome; (C) Lead model anchors from Crimea tentatively dated to between the 1 <sup>st</sup> and 9 <sup>th</sup> centuries AD; (D) Lead model anchors from Delos.....	78
3.6	Illustration of the proportional relationship between the marble eyes discovered at Zea and Tektaş Burnu.....	85
3.7	Late Archaic warship (A-B) and merchant ship (C-D) bows.....	86
3.8	A Bronze Age boat model with eyes from Phylakopi, Melos.....	88
3.9	(A) Forms of stylized ship eyes depicted on Late Geometric I & II ceramics; (B) A representation of a Late Geometric I ship from the Dipylon Group.....	89
3.10	Examples of Late Geometric II ships with circular eyes.....	91
3.11	Examples of 7 <sup>th</sup> - and early 6 <sup>th</sup> -century warships with eyes set in association with their <i>emboloi</i> to impart stylized zoomorphic forms.	96
3.12	Archaic warship bows.....	98
3.13	The Athlit ram, (A) bronze sheath, and (B) internal wooden structure.....	100
3.14	Samian tetradrachms and the bow of Odysseus’s ship.....	102
3.15	Late Archaic merchant ship bows .....	104
3.16	(A-B) Dolphin-shaped ship eyes of the 3 <sup>rd</sup> and 4 <sup>th</sup> centuries BC; (C-D) Bows of 4 <sup>th</sup> and late 5 <sup>th</sup> century BC warships.....	107

FIGURE		Page
3.17	Bows of boats with eyes associated with Charon.....	108
3.18	Bow of a 3 <sup>rd</sup> -century BC warship with an elongated eye set on its upperworks, and an ovoid eye set near its <i>embolos</i> .....	110
3.19	Composite drawing showing the marble eyes from Zea and Tektaş Burnu.....	114
4.1	The decorated marble ashlar block from Thasos.....	138
4.2	Examples of eye cup decorations similar to the marble ashlar block from Thasos dated to the 6 <sup>th</sup> and 5 <sup>th</sup> centuries BC.....	139
4.3	The decorated Rhodian <i>epinetron</i> from the Ashmolean Museum.....	143
4.4	Samian wall decorations.....	147
4.5	A section of the Torlonia harbor relief depicting the unloading of a merchantman with an apotropaic eye hovering above it.....	148
4.6	Relief from Woburn Abbey depicting the ‘much-suffering eye.’.....	153
4.7	(A) Bronze decorative <i>proembolos</i> discovered in the Rhine near Cologne-Deutz.; (B) Bronze decorations from the Musée de Mariemont.....	159
4.8	A lead filling-piece discovered off Isle Grosa near the Bay of Campania.....	161

## LIST OF TABLES

TABLE		Page
2.1	Technical aspects of the marble eyes.....	47

## CHAPTER I

### INTRODUCTION

Much of our knowledge of ancient seafaring is based on textual and representational evidence. These sources provide a staggering amount of data relating to the ancient Greeks and their interactions with the sea, but often cannot answer questions without the additional evidence provided by the archaeological record. Many clues to the construction and operation of ancient ships can be gleaned from ancient art and literature, but without the testimony of extant examples of ancient ships and their gear, scholars are often faced with uncertainty.

The rituals and beliefs of mariners are equally difficult to ascertain. A range of evidence is preserved in the texts of ancient Greek and Latin authors that shed light on the customs of Greek seafarers, but a number of questions remain. How pervasive were the practices described in these sources? What is lacking from these records? Many details concerning the spiritual life of ancient mariners have been lost in the centuries since the Greeks plied the Aegean, the Mediterranean, and the Black Seas. However, our knowledge of such issues is constantly expanding as archaeologists record vestiges of ancient Greek maritime culture on land and under water.

For decades, scholars have argued that the eyes adorning representations of ancient ships were either fantastic artistic interpretations of functional features, or simple painted

---

This thesis follows the style and format of the *International Journal of Nautical Archaeology*.

decorations (Assmann, 1889: 1613; Torr, 1964: 69; Morrison & Williams, 1968: 283-284). Personal biases and interpretations based on stylized representational evidence have led scholars to present a number of hypotheses relating to the identification of a series of marble eyes, originally published as ship eyes, discovered during late 19<sup>th</sup> century excavations at Zea (Assmann, 1889: 1613; Saatsoglou-Paliadeli, 1980; Steinhart, 1995: 100). It has been proposed that these objects were ship-chariot eyes, architectural decorations, or plastic representations of painted ship eyes constructed for offering. Recent archaeological finds uncovered during the excavation of a Classical Period shipwreck at Tektaş Burnu have sparked new inquiries into the identification of marble objects as possible ship eyes, as well as the function of the eyes that adorn the bows of many representations of ancient Greek ships.

The following chapters analyze a number of hypotheses that have been presented to explain the marble eyes from Zea. The weight of evidence suggests that the original attribution of these objects as ship eyes was correct, and provides dates for these objects that range from the 5<sup>th</sup> to the 3<sup>rd</sup> centuries BC.

These discussions precede an investigation into the function of ship eyes during the Archaic, Classical, and Hellenistic Periods. Evidence for the function of ship eyes in Greek literature shows that the eyes of ships primarily served to mark the presence of a supernatural consciousness that guided the ship and helped it to avoid hazards.

Theories related to the use of eyes as apotropaions that could counter envy are presented through analysis of material from the Archaic and Classical Periods in Greece. This should not be surprising considering that Greek and Latin authors attest to

an understanding and fear of envy, and a belief that it can cause harm through supernatural means, as early as the 5<sup>th</sup> century BC. Although little evidence exists for the use of apotropaic devices by mariners to counter envy during the Archaic and Classical Periods, evidence from the Hellenistic and Roman Periods shows not only that mariners feared envy, but also that they decorated their ships in response to their fears. These facts suggest that similar practices could have been followed during earlier periods. The paucity of evidence for the use of apotropaic devices by Archaic and Classical Greek mariners may relate more to preservation than a reflection of their traditions. The marble eyes from Zea and Tektaş Burnu may have been used not only as epiphanies that indicate the presence of a divine consciousness, but also as apotropaions to counter the malevolence of envy.

## CHAPTER II

### ARCHAEOLOGICAL EVIDENCE FOR SHIP EYES

#### INTRODUCTION

The following chapter traces the discoveries of marble objects identified as ship eyes and presents detailed descriptions of each of these finds followed by analyses of their technical attributes relating to their construction and form. The data presented here will provide a foundation for later discussions relating to the identity and function of these objects.

#### DISCOVERIES OF MARBLE OBJECTS IDENTIFIED AS SHIP EYES

In 1880, Lolling published a note concerning eleven fragments of marble eyes from a private collection of antiquities that he identified as eyes from the bows of ancient Greek warships (Lolling, 1880). According to Lolling (1880: 384) this assemblage was discovered in the dockyard at Zea among many other similar, but minor, fragments. Nine marble eyes from this collection were purchased by the Greek Archaeological Service in 1880 and accessioned as part of the Barbakeio collection. Ten years later, sculptures from the Barbakeio collection, including the nine marble eyes, were transferred to the National Archaeological Museum of Athens. In 1971, a total of six marble eyes were transferred from the National Archaeological Museum's storage rooms to the Archaeological Museum of Piraeus where they remain today. The whereabouts of the remaining three are unknown (Saatsoglou-Paliadeli, 1980: 119). An explanation for their

disappearance, as well as the location of the other two fragments that are unaccounted for, may relate to the possibility that the six eyes that were transferred to the Piraeus museum in 1971 originally comprised a larger group of fragments prior to conservation and reconstruction. Interestingly, the six eyes that are today in the Archaeological Museum of Piraeus are the same six eyes that were on display at the National Archaeological Museum in 1907 (Saatsoglou-Paliadeli, 1980: 119). These six objects are comprised of eleven fragments. Therefore, it seems probable that the eleven fragments published by Lolling in 1880 may be the same eleven fragments that comprise the six marble eyes that are part of the Archaeological Museum of Piraeus's present collection. The location of the minor fragments merely noted by Lolling remains a mystery (Lolling, 1880: 384).

Another marble eye from Zea was donated to the antiquities collection of the National Museum in Berlin by Lolling in 1881 and remains part of that museum's collection today (Blümel, 1964: 19). Although its precise relationship to the other eleven examples is unknown, it was likely discovered in the same vicinity under similar circumstances. It is possible that it originated from the same collection as the examples published by Lolling in 1880 (Blümel, 1964: 19).

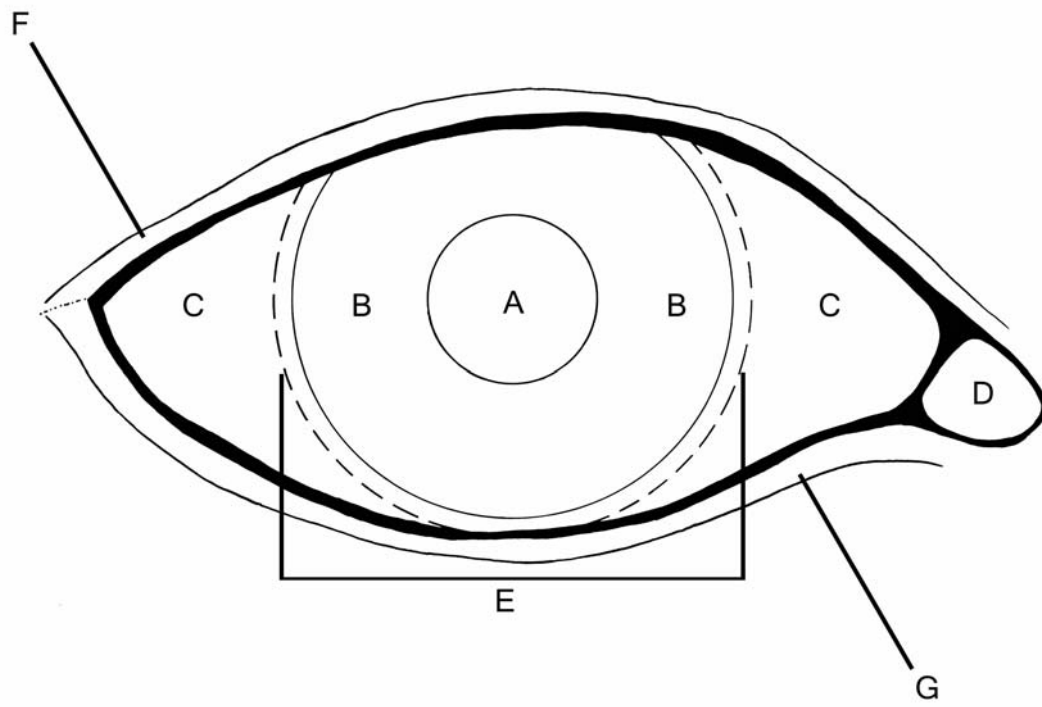
In addition to these examples, at least one other marble eye is known to have been discovered during the 19<sup>th</sup> century at Zea. A fragment of a marble eye discovered in 1898 was described by Dragatsis (1900: 39) as "a marble piece from an ancient ship's eye." No other information concerning this eye is known. It was not until more than 100



years after Dragatsis's discovery that another object believed to be a ship eye was uncovered.

In 1999 and 2000, marble ship eyes were discovered during the Institute of Nautical Archaeology's excavations of a Classical Period shipwreck at Tektaş Burnu. This marked not only the first discovery of marble eyes that could be associated with the remains of an actual ancient ship, but also the first discovery of marble eyes with features similar to those discovered at Zea from a datable context. These finds have proven that the ancient Greeks affixed marble eyes to the bows of their ships during the Classical Period and strongly suggest that Lolling's often criticized identification of the Zea eyes as the *ophthalmoi* mentioned in the *tabulae curatorum navalium* (IG II<sup>2</sup>: 1604-1632), the 4<sup>th</sup>-century BC records of the curators of the Attic dockyards commonly known as the Athenian naval inventories, was correct.

The following section is a catalog of these marble eyes, with the exception of Dragatsis's find which is unpublished and its location unknown. This is followed by discussions of their technical attributes and hypotheses relating to their date. The figure below shows the nomenclature used in the catalog and discussions of the marble eyes (Fig. 2.1).



A. Pupil  
B. Iris  
C. Sclera  
D. Caruncula lacrimalis

E. Cornea  
F. Upper eyelid  
G. Lower eyelid

*Figure 2.1.* Nomenclature for parts of the eye. (Drawing: author)

## CATALOG OF MARBLE OBJECTS IDENTIFIED AS SHIP EYES

*Z1. Marble Eye from Zea*

Date: Late Archaic to Classical

Material: Parian Marble (Saatsoglou-Paliadeli, 1980: 120)

Shape: Naturalistic; Left eye

Length: 53.0 cm

Height: 24.5 cm

Location: Archaeological Museum of Piraeus [3465-2674]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 120, pl. 40, A1

Description:

Z1 is the only intact marble eye known from Zea (Fig. 2.2). Damage to this piece is limited to a shallow bruise near its carefully rendered *caruncula lacrimalis*, the red fleshy element at the inner corner of the eye, and a number of minor chips along the edges of its eyelids. It has a naturalistic shape with a smooth outer face that consists of a convex cornea, a cambered sclera and protruding eyelids. The cornea has a diameter of approximately 24.0 cm and a thickness that varies from 2.7 cm just above the lower eyelid, to 4.5 cm at its center, and to 3.0 cm just below the upper eyelid. It is decorated with a painted concentric design that is composed of three rings representing the iris. The width of the inner ring measures approximately 2.5 cm. It is filled with a pale yellow pigment and is followed by an undecorated 2.7 cm-wide ring. This ring is bordered by a roughly defined 3.2 cm-wide ring that is filled with a red pigment.

These rings surround a cupular recess that is cut to a depth of 0.7 cm and has a diameter that tapers from 2.5 cm to 1.2 cm. The bottom of this recess terminates in a hole with diameter of 1.2 cm that once held a fastener. This fastener secured the eye to a red painted surface as indicated by traces of pigment that survive on its inner face. The head of the fastener appears to have represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Both eyelids slope at a  $27^\circ$  angle inward toward the sclera and cover a fraction of the cornea. The widths of the eyelids measure approximately 2.5 cm both above and below the center of the cornea. From this point, the width of each eyelid diminishes outward to 1.3 cm. Each has a varying outer thickness that changes from approximately 2.5 cm near the inner corner to 3.5 cm above the pupil and then diminishes to 2.5 cm at the outer corner of the eye. A polished and slightly beveled uneven band measuring 0.5 cm to 1.5 cm runs along the outer perimeter of the upper eyelid leaving an unpolished 2.0 cm strip along its inner perimeter.

The inner face is flat and rough. Tool marks are visible on this surface.

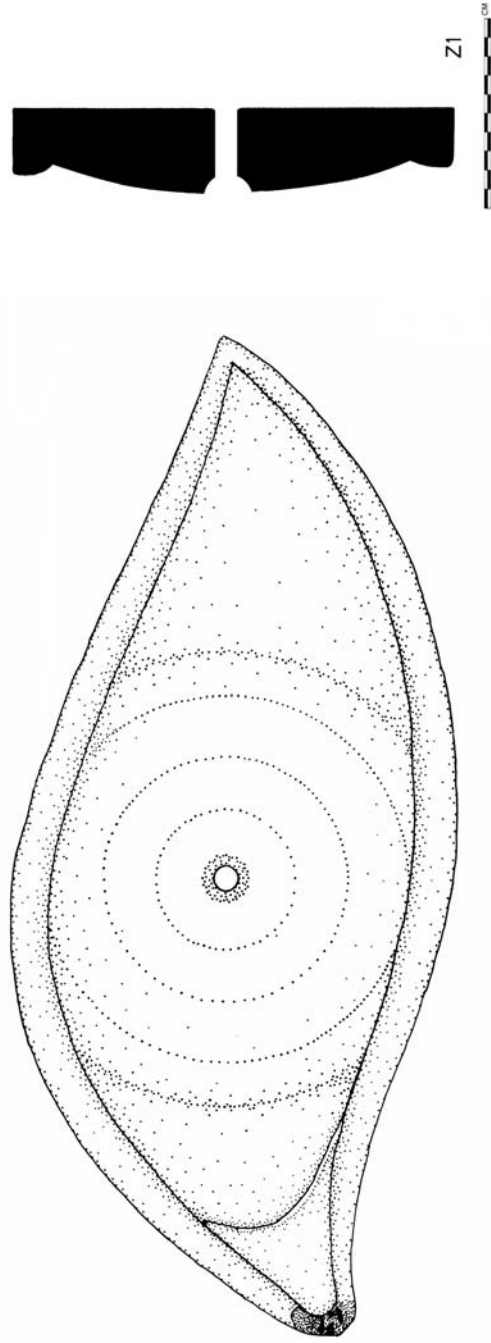


Figure 2.2. Z1. Archaeological Museum of Piraeus [3465-2674]. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 40)

*Z2. Marble Eye from Zea*

Date: Late Archaic to Classical

Material: Parian Marble (Saatsoglou-Paliadeli, 1980: 123)

Shape: Naturalistic; Right eye

Length (preserved): 37.5 cm

Height: 21.5 cm

Location: Archaeological Museum of Piraeus [3468-2675]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 123, pl. 41, Δ4

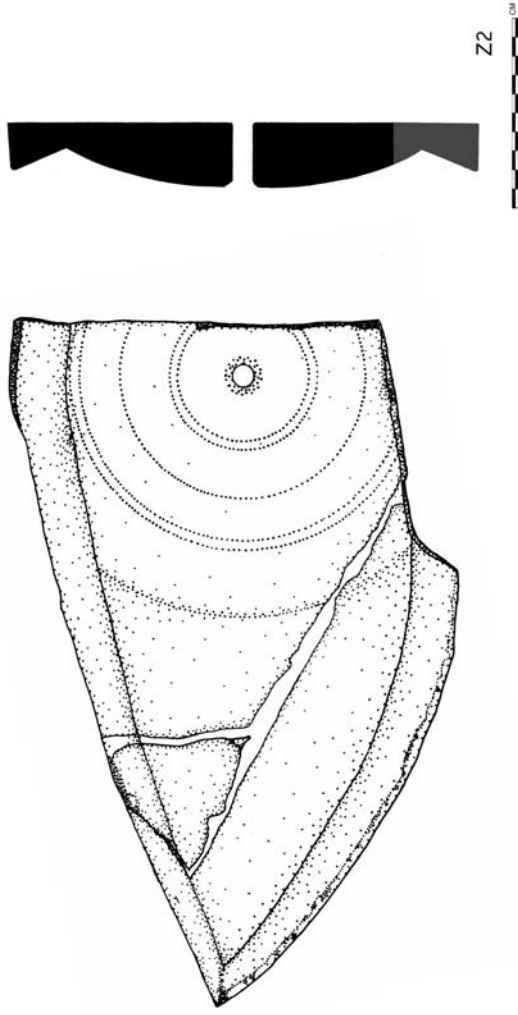
Description:

Only the outer half of Z2 survives (Fig. 2.3). It is comprised of four fragments. This eye appears to have had a naturalistic shape similar to Z1 based on the curvature of its eyelids, its height to length proportion, and the location of its cornea. Its smooth outer face consists of a convex cornea, a cambered sclera, and protruding eyelids. The cornea has a diameter of approximately 25.4 cm and a thickness that varies from roughly 1.9 cm at a broken edge approximately 1.0 cm above the position of the missing lower eyelid, to 3.5 cm at its center, and to 1.4 cm just below the upper eyelid. It is decorated with a concentric design composed of five incised rings representing the iris. The width of the inner ring measures approximately 2.5 cm. It is bound by a series of rings with widths that measure 0.4 cm, 2.6 cm, 2.2 cm, and 0.5 cm respectively. None of the original painted decoration that undoubtedly filled these rings survives.

This design surrounds a conical recess cut to a depth of 0.3 cm with a diameter that tapers from 2.0 cm to 1.1 cm. The bottom of this recess terminates in a hole with a diameter of 1.1 cm that pierces the eye. This hole once held a fastener, the head of which represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. The upper and lower eyelids have thicknesses of 2.3 cm and 2.6 cm respectively. The lower eyelid slopes inward at an angle of approximately  $23^\circ$  and has a width of approximately 3.0 cm that diminishes to roughly 2.4 cm at its outer corner and survives only from this point to where it meets the cornea. The upper eyelid slopes inward at a  $23^\circ$  angle and has a width of approximately 3.0 cm that diminishes to 1.8 cm at its outer corner. This eyelid covers a fraction of the cornea. Both eyelids are rough along their outer edges.

The inner face is flat and rough. Tool marks are visible on this surface.



*Figure 2.3. Z2. Archaeological Museum of Piraeus [3468-2675]. Grey coloration denotes hypothetical reconstruction. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 41)*



*Z3. Marble Eye from Zea*

Date: Classical to Hellenistic

Material: Parian Marble (Saatsoglou-Paliadeli, 1980: 120)

Shape: Elongated; Left eye

Length (preserved): 40.5 cm

Height: 21.2 cm

Location: Archaeological Museum of Piraeus [3467-2676]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 120-121, pl. 40, A2

Description:

Only two fragments of Z3 survive (Fig. 2.4). When joined, these represent more than half of its original form, from its outer corner to the center of its cornea. This eye has an elongated shape as indicated by the concave curvature of its upper eyelid, its height to length proportion, and the location of its cornea. Its smooth outer face consists of a convex cornea, a cambered sclera, and protruding eyelids. The cornea has a diameter of approximately 21.5 cm and a thickness that varies from roughly 1.9 cm just above the lower eyelid, to 3.5 cm at its center, and to 2.0 cm just below the upper eyelid. Any incised or painted decoration that existed on the outer face of this piece cannot be discerned due to surface abrasion and dark staining that Saatsoglou-Paliadeli (1980: 121) identified as rust.

A now-abraded cupular recess is cut into the center of the cornea to a depth of 0.4 cm, with a diameter that tapers from 2.2 cm to 0.8 cm. The bottom of this recess

terminates in a hole with a diameter of 0.8 cm that once held a fastener. This fastener secured the eye to a red-painted surface as indicated by traces of pigment that survive on its inner face. The head of the fastener appears to have represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Both are slightly chipped along their edges and cover a fraction of the cornea. Each has a thickness of approximately 2.0 cm, but they have different widths and inward sloping angles. The lower eyelid slopes  $10^\circ$  inward toward the sclera and has a width that tapers from approximately 1.8 cm below the center of the cornea to 1.3 cm at the outer corner of the eye. The upper eyelid slopes  $8^\circ$  inward toward the sclera and has a width that tapers from approximately 2.2 cm below the center of the cornea to 1.7 cm at the outer corner of the eye.

The inner face is flat and rough. Tool marks are visible on this surface.

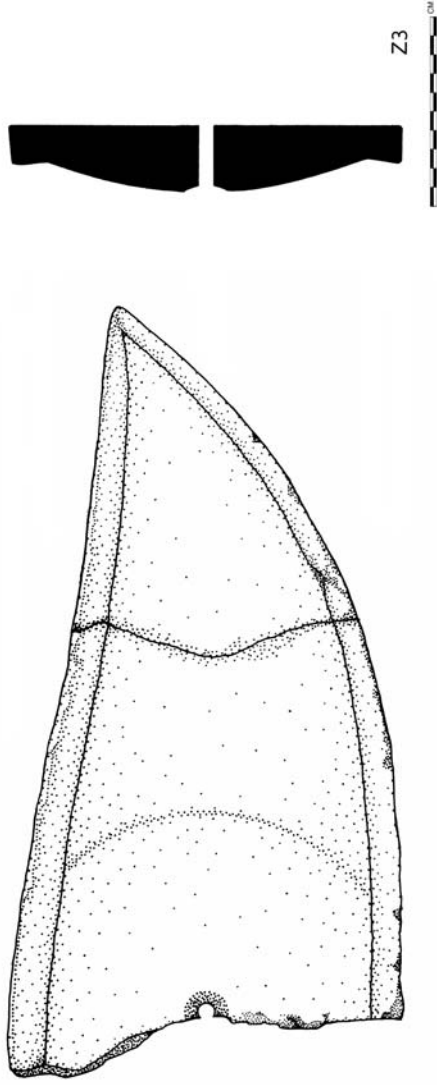


Figure 2.4. Z3. Archaeological Museum of Piraeus [3467-2676]. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 40)

*Z4. Marble Eye from Zea*

Date: Classical to Hellenistic

Material: Possibly Parian Marble (Saatsoglou-Paliadeli, 1980: 121)

Shape: Elongated; Right eye

Length (preserved): 47.0 cm

Height: 15.15 cm

Location: Archaeological Museum of Piraeus [3466-2677]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 121-122, pl. 40, Δ1

Description:

Z4 is missing only its inner corner (Fig. 2.5). This eye has an elongated shape as indicated by the concave curvature of its upper eyelid, its height to length proportion, and the location of its cornea. Its smooth outer face consists of a convex cornea, a cambered sclera, and protruding eyelids. The cornea has a diameter of approximately 17.0 cm and a thickness that varies from roughly 2.2 cm just above the lower eyelid, to 3.5 cm at its center, and to 2.8 cm just below the upper eyelid. Any incised or painted decoration that existed on the outer face of this piece cannot be discerned because of surface abrasion. In addition, a deep scratch scars both the sclera and the cornea.

A now-abraded conical recess is cut into the center of the cornea to a depth of 0.4 cm with a diameter that tapers from 1.5 cm to 1.2 cm. The bottom of this recess terminates in a hole with a diameter of 1.2 cm. This hole pierces the eye and once held a fastener. Saatsoglou-Paliadeli (1980: 122) has noted traces of rust on both the inner and the outer

faces of this fastening hole. The head of the fastener that occupied this hole appears to have represented the pupil. Evidence that suggests this eye was affixed to a painted surface includes traces of red pigment that survive both on its flat, roughly worked inner face and on the outer edges of both the upper and the lower eyelids. Tool marks are visible on these surfaces.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Each eyelid covers a fraction of the cornea. The upper and lower eyelids have thicknesses of 3.5 cm and 2.7 cm respectively. The upper eyelid slopes inward at a  $26^\circ$  angle and has a width that tapers from 1.3 cm above the center of the cornea to 0.9 cm at the outer corner of the eye. It is rough and broken along its outer edge.

The lower eyelid slopes inward at a  $14^\circ$  angle and has a width that tapers from 1.0 cm below the center of the cornea to 0.7 cm at the outer corner of the eye. This eyelid is rough and slightly chipped along its outer edge.

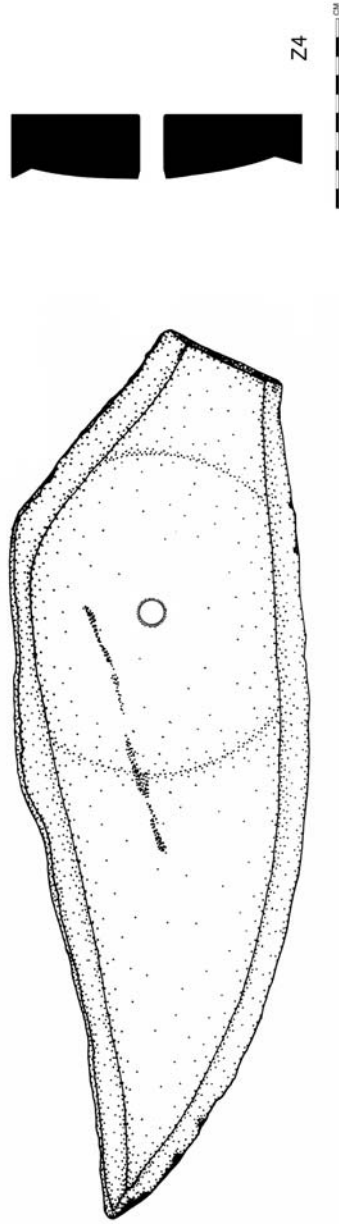


Figure 2.5. Z4. Archaeological Museum of Piraeus [3466-2677]. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 40)

*Z5. Marble Eye from Zea*

Date: Classical to Hellenistic

Material: Parian Marble (Saatsoglou-Paliadeli, 1980: 122)

Shape: Elongated; Right eye

Length (preserved): 30.5 cm

Height: 20.5 cm

Location: Archaeological Museum of Piraeus [3470-2679]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 122, pl. 41, Δ3

Description:

Z5 is missing its inner corner and the majority of its outer half (Fig. 2.6). It appears to have had an elongated shape. This is indicated by the slight concave curvature of the upper eyelid from the center of the cornea to the inner corner and the location of the cornea. Its smooth outer face consists of a convex cornea, a cambered sclera and protruding eyelids. The cornea has a diameter of approximately 20.0 cm and a thickness that varies from 1.9 cm just above the lower eyelid, to 3.0 cm at its center, and to 1.9 cm just below the upper eyelid. It is decorated with a concentric design composed of five incised rings representing the iris. The width of the inner ring measures approximately

3.5 cm. Saatsoglou-Paliadeli (1980: 122) has noted that it bears traces of either rust or a pale yellow pigment. This ring is bound by two undecorated rings that measure 0.3 cm and 1.5 cm wide respectively. These rings are followed by a 1.8 cm-wide ring that is filled with red paint. A final 0.3-cm wide undecorated ring completes the design.

These rings surround a conical recess cut to a depth of 0.8 cm with a diameter that tapers from 1.8 cm to 1.0 cm. This recess terminates in a hole with a diameter of 1.0 cm. This hole pierces the eye and once held a fastener, the head of which appears to have represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Each eyelid covers a fraction of the cornea. The lower eyelid has a thickness of 2.2 cm. It slopes inward at a 20° angle and has a width of approximately 1.8 cm. The upper eyelid has a thickness of 2.2 cm. It slopes inward at a 15° angle and has a width of approximately 2.0 cm. Both eyelids are rough along their outer edges.

The inner face is flat and rough. Tool marks are visible on this surface.



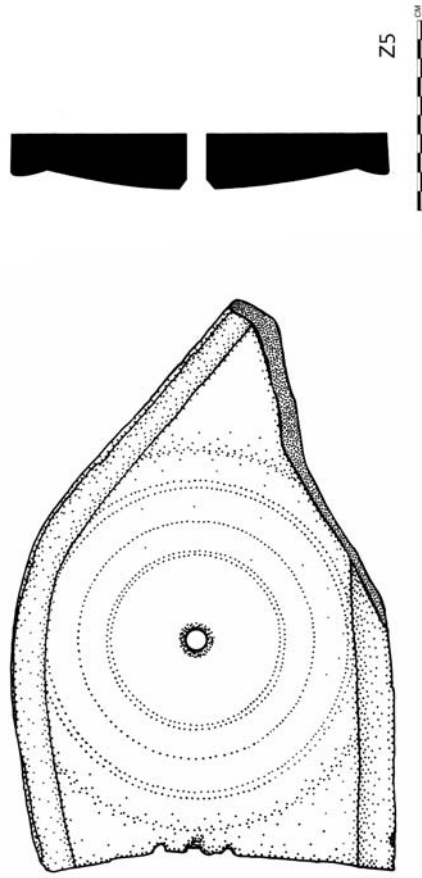


Figure 2.6. Z5. Archaeological Museum of Piraeus [3470-2679]. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 41)

*Z6. Marble Eye from Zea*

Date: Classical to Hellenistic; 6<sup>th</sup> century BC (Blümel, 1964: 19)

Material: Parian Marble (Blümel, 1964: 19)

Shape: Elongated; Left eye

Length (preserved): 18.8 cm

Height (preserved): 18.0 cm

Location: Staatliche Museen zu Berlin, Antikensammlung [1039]

References: Lolling, 1880; Blümel, 1964: 19, pl. 23

Description:

Only one fragment of Z6 survives (Fig. 2.7). It comprises less than half of its original form, from the center of its cornea to the beginning of its inner corner. This example appears to have had an elongated shape, as indicated by the concave curvature of the upper eyelid from the center of the cornea to the inner corner and the curvature of its lower eyelid. Its smooth outer face consists of a convex cornea, a cambered sclera that bulges toward its inner corner, possibly to denote the *caruncula lacrimalis*, and protruding eyelids. The cornea has a diameter of approximately 17.0 cm. It is decorated with a concentric design composed of five incised rings representing the iris. The width

of the inner ring measures approximately 2.2 cm. It was probably filled with a yellow pigment and is followed by a red 0.3 cm-wide ring. This ring is bordered by a pair of 1.6 cm-wide rings. The first was either left undecorated, appearing white, or it was filled with a blue color. The second is filled with red paint. A final yellow ring measuring 0.6 cm wide completes the design.

These rings surround a hole with a diameter of 1.8 cm that pierces the center of the cornea. This hole undoubtedly once held a fastener, the head of which appears to have represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Each eyelid covers a fraction of the cornea. The lower eyelid has a width of approximately 1.6 cm and is broken along its outer edge. The upper eyelid has a width of approximately 1.8 cm and is only slightly chipped along its outer edge.

The inner face is flat and rough. Tool marks are visible on this surface.

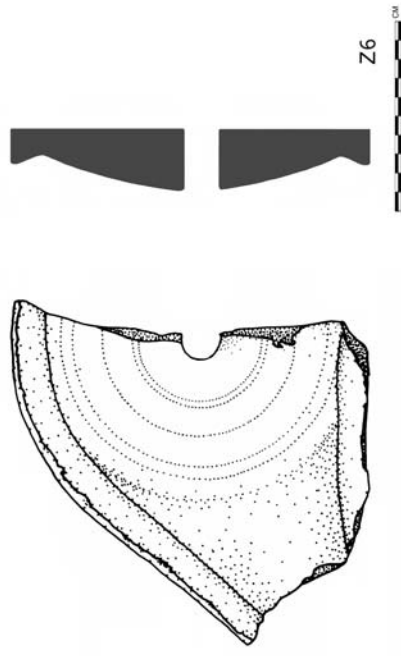


Figure 2.7. Z6. Staatliche Museen zu Berlin, Antikensammlung [1039]. Grey coloration denotes hypothetical reconstruction. Scale 1:4. (Drawing: author, based on Blümel 1964: 19, pl. 23)

*Z7. Marble Eye from Zea*

Date: Classical to Hellenistic

Material: Pentelic Marble (Saatsoglou-Paliadeli, 1980: 122)

Shape: Elongated; Right eye

Length (preserved): 35.5 cm

Height: 20.0 cm

Location: Archaeological Museum of Piraeus [3469-2678]

References: Lolling, 1880; Saatsoglou-Paliadeli, 1980: 122, pl. 41, Δ2

Description:

Only two fragments of Z7 survive (Fig. 2.8). These fragments join along the central axis of the cornea and represent roughly two-thirds of the original piece. It appears to have had an elongated shape. This is indicated by the concave curvature of the upper eyelid from the center of the cornea to the inner corner, by its flattened eyelids, and by the location of its cornea. The outer face is smooth consisting of a convex cornea, a cambered sclera that bulges toward its inner corner, possibly to denote the *caruncula lacrimalis*, and protruding eyelids. The cornea has a diameter of approximately 19.5 cm and a thickness that varies from roughly 1.8 cm just above the lower eyelid, to 3.0 cm at its center, and to 1.9 cm just below the upper eyelid. It is decorated with a concentric design composed of three incised rings representing the iris. The width of the inner ring measures 3.2 cm. It is filled with a pale yellow pigment and is followed by an

undecorated 1.5 cm-wide ring. A final roughly defined 1.8 cm-wide ring is filled with a dark pigment that may indicate that this ring was once red.

These rings surround a conical recess cut to a depth of 0.5 cm with a diameter that tapers from 1.8 cm to 1.0 cm. The bottom of this recess terminates in a hole with a diameter of 1.0 cm that pierces the eye. This hole is broken and abraded along the perimeter of both its inner and outer faces. It once held a fastener, the head of which appears to have represented the pupil.

The eyelids are rendered as protruding elements that follow the perimeter of the eye. Each eyelid covers a fraction of the cornea. The upper and lower eyelids have thicknesses of 2.2 cm and 2.1 cm respectively. The upper eyelid slopes inward at a  $10^\circ$  angle and has a width of approximately 2.0 cm. It is rough and broken along its outer edge. The lower eyelid slopes inward at a  $12^\circ$  angle and has a width of approximately 1.8 cm and is rough and slightly chipped along its outer edge.

The inner face is flat and rough. Tool marks are visible on this surface.

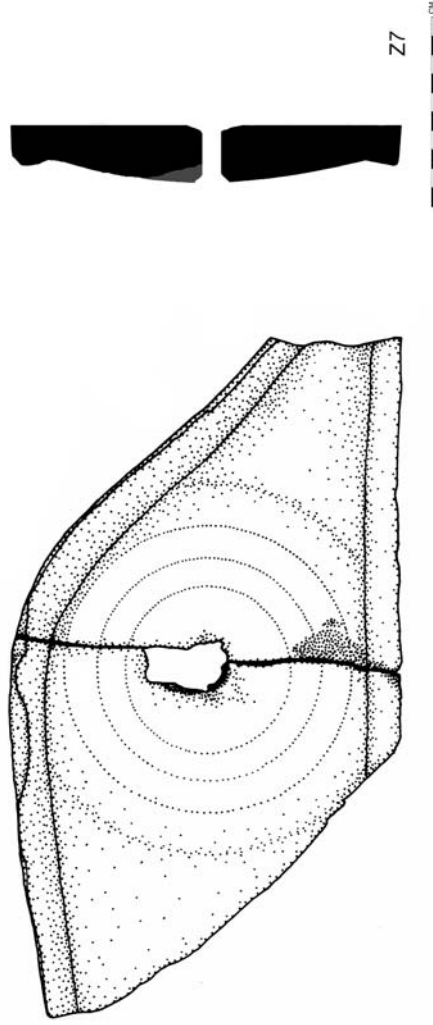


Figure 2.8. Z7. Archaeological Museum of Piraeus [3469-2678]. Grey coloration denotes hypothetical reconstruction. Scale 1:4. (Drawing: author, based on Saatsoglou-Paliadeli, 1980: 121, fig. 1, pl. 41)

*T1 Marble Eye from Tektaş Burnu*

Date: Classical, 440 to 425 BC

Material: Unknown Marble

Shape: Circular

Diameter: 13.8 cm

Location: Bodrum Museum of Underwater Archaeology [TK 7]

References: Nowak, 2001: 86-88, figs. 1-6, 13; Bass, 2002: 116; Carlson, 2003: 595-596, figs. 23-24

Description:

This example primarily represents a cornea, an iris, and a pupil because of its convex circular form (Fig. 2.9). Its entire outer face is smooth and convex. It has a diameter of 13.8 cm and a thickness of 2.1 cm at its center that diminishes to between 1.1 cm and 1.3 cm along its outer edge.

The iris and pupil are represented by a concentric design. The pupil is indicated by a slightly offset painted circle with a diameter of 2.4 cm that was filled with a dark pigment. The iris is composed of a series of rings that surround the pupil and are only slightly offset from the center of the disc. These rings are defined by incised lines. The



inner ring retains no traces of pigment and measures approximately 1.6 cm wide. The second ring measures 0.4 cm in width and retains remnants of a pigment that today appears only slightly darker than the marble; this may indicate that this ring was once red. The third and fourth rings both measure 0.8 cm in width. The former retains no traces of pigment while the latter retains remnants of a dark, possibly red, pigment.

A hole measuring 1.3 cm in diameter in the inner face holds a lead nail that measures approximately 1.0 cm square in section (Fig. 2.10).<sup>[1]</sup> The nail has a trapezoidal head that was possibly formed while being hammered into place. The total length of this nail is 8.6 cm and it is bent at a 45° angle to the disc's flat inner face. The tip of the nail was fashioned into a simple rough point. Its shank was covered with a thick layer of marine growth leaving a length of only 2.4 cm, beginning at the disc's inner face, free of encrustation, a measurement that may indicate the thickness of the wood through which the nail was driven.

The inner face of this example is flat and rough. Tool marks are visible on this surface.

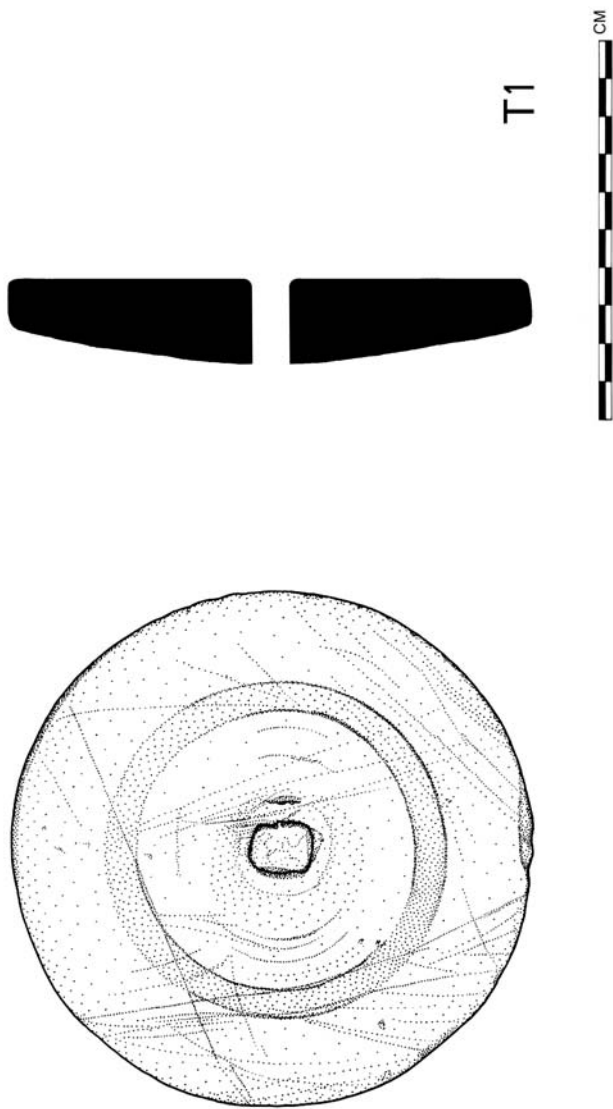
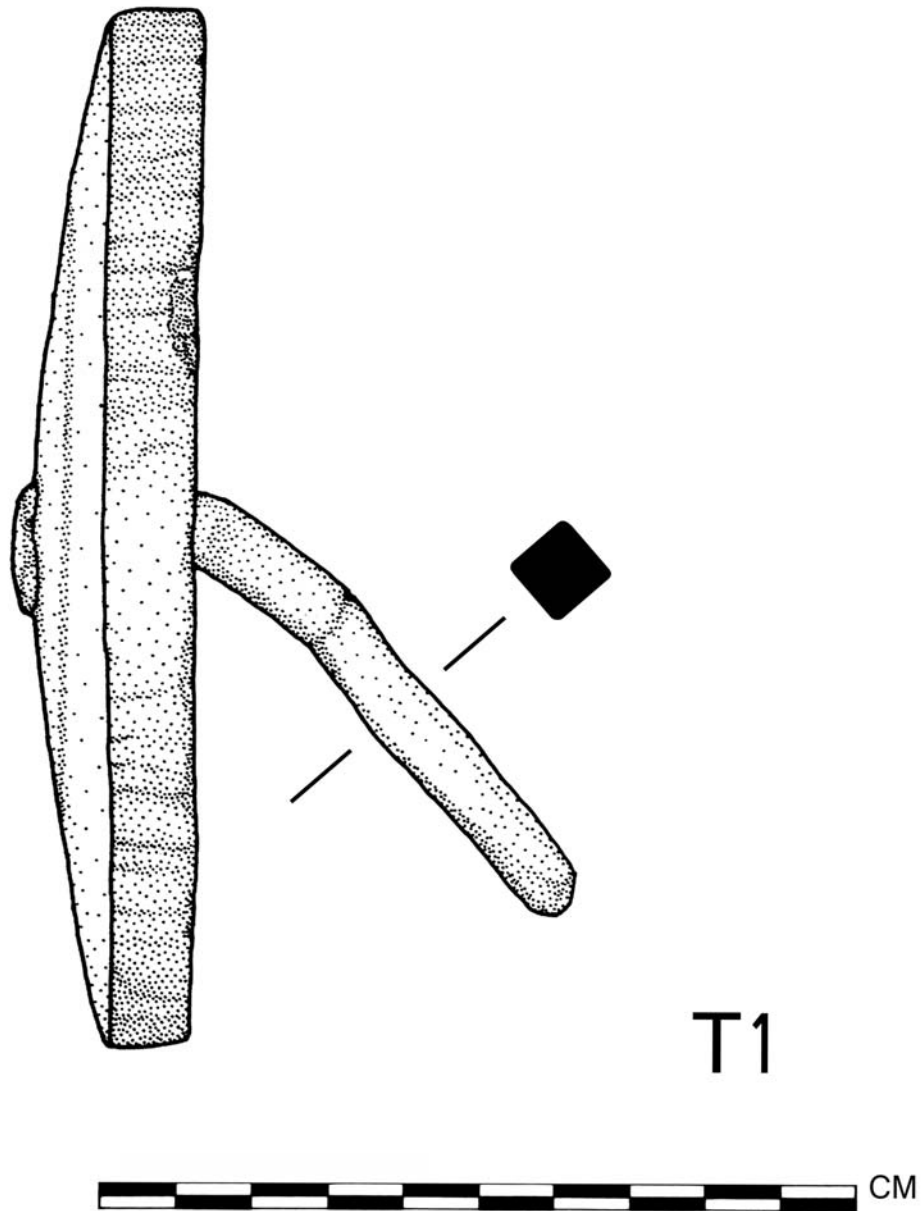


Figure 2.9. T1. Bodrum Museum of Underwater Archaeology [TK 7]. Scale 1:2. The fastener is not depicted in the sectional view in order to clearly reveal the cross-sectional shape of the marble disc. (Drawing: outer face, Selma Ađar; section, author)



*Figure 2.10.* T1. Bodrum Museum of Underwater Archaeology [TK 7], profile. Scale 1:1. (Drawing: side view, Selma Aġar; section, author)

*T2. Marble Eye from Tektaş Burnu*

Date: Classical, 440 to 425 BC

Material: Unknown Marble

Shape: Circular

Diameter: 13.5 cm

Location: Bodrum Museum of Underwater Archaeology [TK 222]

References: Nowak, 2001: 86-88, figs. 7-12; Bass, 2002: 117; Carlson, 2003: 596, fig.

23

Description:

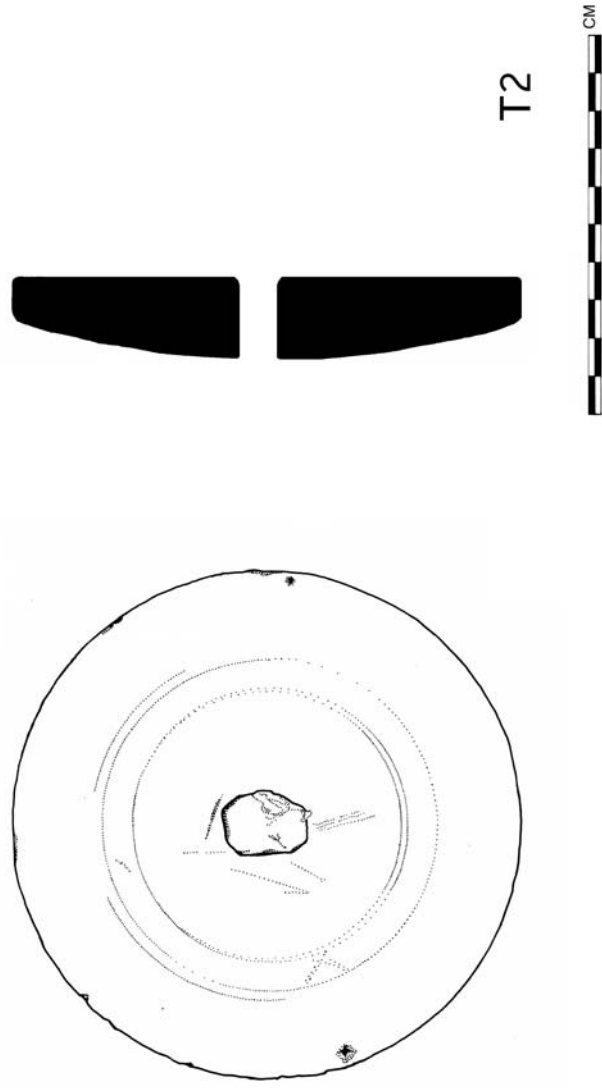
Similar to T1, the circular form of this example primarily represents a cornea, an iris, and a pupil (Fig. 2.11). Its entire outer face is smooth and convex. It has a diameter of 13.5 cm and a thickness of 2.1 cm at its center that diminishes to between 1.1 cm and 1.3 cm along its outer edge.

The elements of the eye are represented by a concentric design. Unfortunately, a detailed description and analysis of the decoration that occurs on this example cannot be presented here because it was studied prior to conservation and its decoration was obscured by marine growth. Nevertheless, examination prior to conservation has

revealed that the decoration of this example closely parallels the design on T1. Although the precise composition of the decoration on this example could not be gleaned at the time of its examination, a slightly offset incised ring with a width of 0.8 cm could be seen beginning 3.5 cm to 3.7 cm from the center of the disc. Portions of other incised lines could also be discerned prior to cleaning, but no reliable conclusions concerning their nature could be determined.

A hole measuring 1.3 cm in diameter in the inner face holds part of a lead nail that measures approximately 1.0 cm square in section. Its trapezoidal head survives along with a mere stub of its shank. The size of the remnants of this fastener in relation to the size of the fastening hole and the size of the disc itself suggests that its length was likely similar to that of the preserved fastener from T1.

Unlike T1, the inner face of this example is flat and rough, but preserves few tool marks.



*Figure 2.11. T2. Bodrum Museum of Underwater Archaeology [TK 222]. Scale 1:2. The fastener is not depicted in the sectional view in order to clearly reveal the cross-sectional shape of the marble disc. (Drawing: author)*

## TECHNICAL ASPECTS

### *Shape*

The overall shapes of marble eyes Z1-Z7 appear to follow a pattern of gradual lengthening from a naturalistic to an elongated shape that is paralleled by the depiction of ship eyes in Greek vase painting and the plastic arts. The complex curvature of the top and bottom eyelids, that resembles representations of late 6<sup>th</sup> and early 5<sup>th</sup> century BC ship eyes, diminishes and the overall length of the eye expands. As these changes occur, the curvature of the upper eyelid transforms from a convex to a hollow curve near the eye's inner corner which itself opens as the cornea moves inward (Fig. 2.12). This transformation appears to have been completed by the end of the 4<sup>th</sup> century BC when ship eyes are consistently represented with an elongated shape (Basch, 1987: 275, figs. 583-584). Such ship eyes have been compared by Saatsoglou-Paliadeli (1980: 129) to the abstract dolphin-like zoomorphic eye that appears on the Apulian rhyton that is dated to the end of the 4<sup>th</sup> century BC (Johnston, 1985: 82-83).

All of the eyes discovered at Zea have a flat inner face and an outer face comprised of protruding eyelids, a cambered sclera, and a convex cornea. The camber of the sclera and the bulging convexity of the cornea impart a form that parallels nature.

The shape of the marble eyes from Tektaş Burnu greatly differs from those discovered at Zea: they are marble discs. Each has a convex outer face and a flat inner face. Because of their form, they cannot be placed within the same sequence as the eyes from Zea.

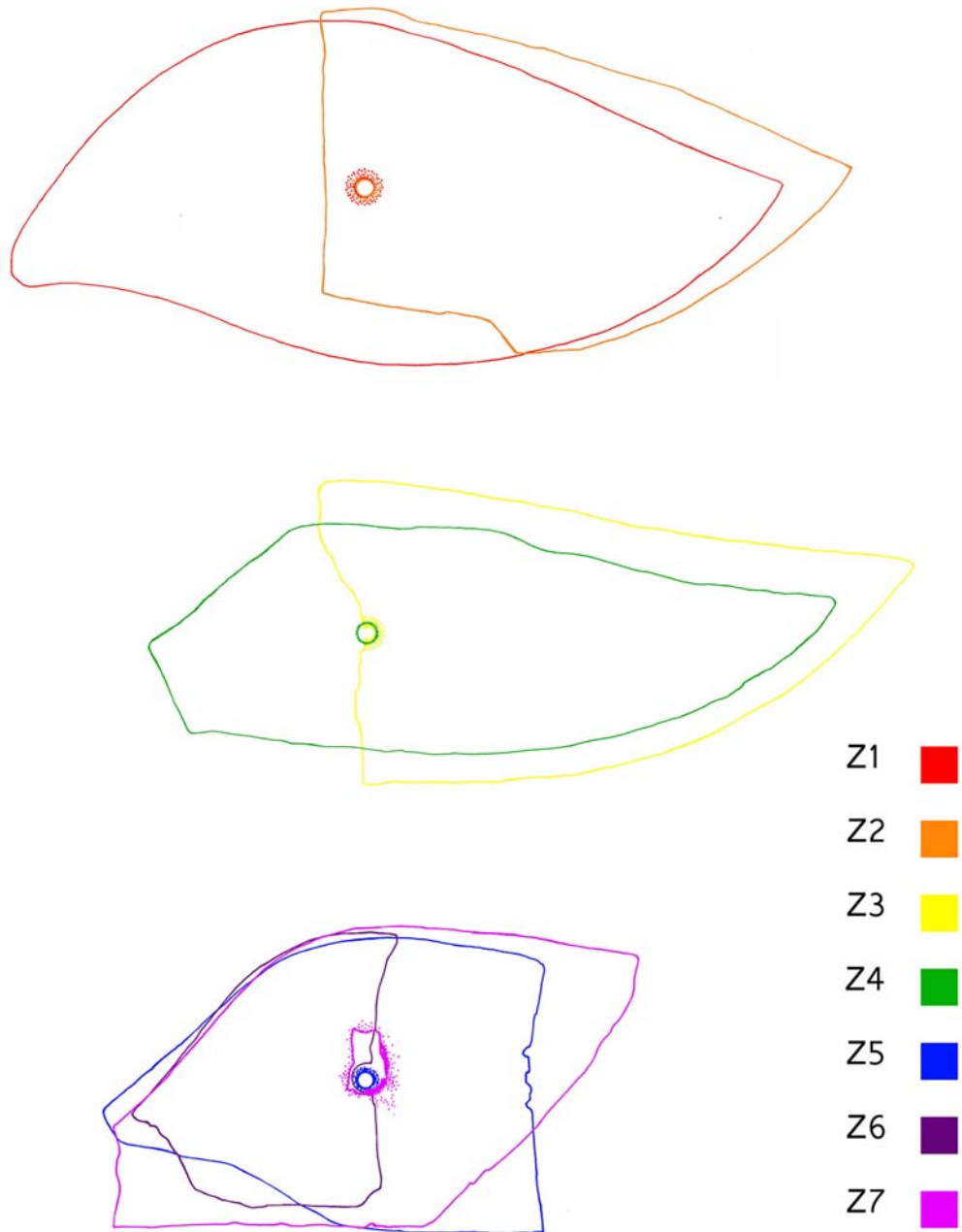


Figure 2.12. Shape, Z1-Z7. Scale 1:5. (Drawing: author)

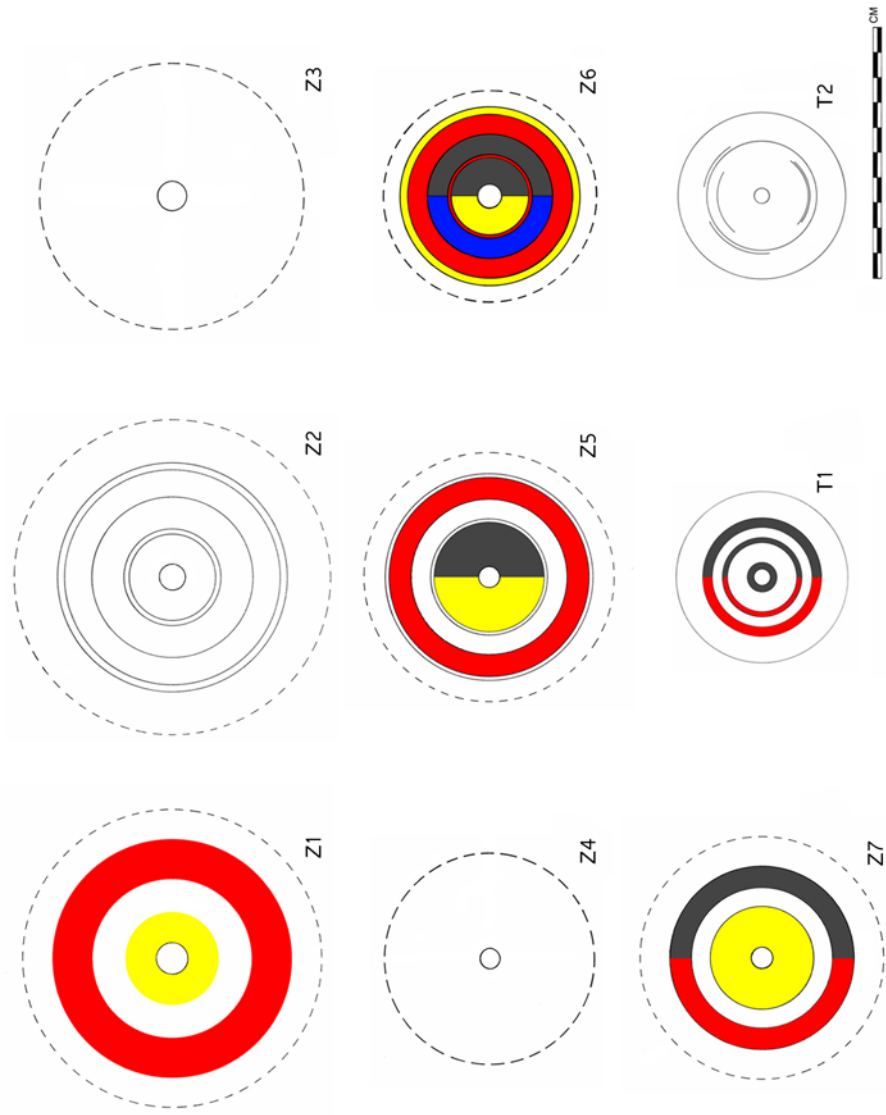


### *Decoration*

Four of the marble eyes from Zea, Z2, Z5, Z6, and Z7, preserve evidence of their decoration and show that the concentric designs on their outer faces were often both incised and painted (Fig. 2.13). The incised lines functioned as guidelines to aid the artisan while applying color, as incised lines often defined the limits of painted decoration on marble sculpture (Adams, 1966: 83). Although the number and size of the rings on each eye differ, all of these designs represent irises. Two distinct styles of irises are depicted on the Zea eyes: irises composed of three rings and irises composed of five rings. The difference between them is simply the presence of two additional 0.3 cm to 0.7 cm-wide rings that mark the boundaries between the inner ring and the central ring, and the outer ring and the sclera.

In addition, four of the marble eyes from Zea, Z1, Z5, Z6, and Z7, preserve remnants of the paint that once filled these incised designs. The presence of two colors has been noted with certainty: red and yellow. Yellow fills the inner rings of Z1 and Z7, and the ring that marks the boundary between the iris and the sclera on Z6. It seems likely that yellow once filled the inner rings of Z5 and Z6, but this is not known with certainty.

Red fills the large outer rings on Z1, Z5, and Z6. In addition, the outer rings on both T1 and Z7 may have also been red. Interestingly, Blümel (1964: 19) has suggested that the central ring on Z6 may have been filled with a blue color. The lack of color within the corresponding central rings of Z1, Z5, and Z7, and the sterile corneas of Z2, Z3, Z4, and T2 is likely related to preservation rather than design.



*Figure 2.13.* Decoration. Solid lines denote incision. Split gray rings denote hypothetical coloration. Dotted lines denote the limit of the convex curvature of the iris. Scale 1:3. (Drawing: author)

Lolling (1880: 385) suggests that the pupil of the eyes from Zea was indicated by the head of a fastener that pierced the center of the iris. Saatsoglou-Paliadeli (1980: 124) adds that the heads of these fasteners may have been bosses that matched the convex curvature of the cornea and that their diameters probably matched that of the inner ring. Considering the presence of both the incised line that defines the limit of the inner ring and the traces of yellow pigment that appear to have filled this region, it seems unlikely that the bosses would have entirely covered this portion of the painted design. Examples of copper, bronze, and iron bosses of varied date with diameters ranging from roughly 3.5 cm to 5.5 cm that could adequately represent pupils for the Zea eyes without completely covering their painted inner rings have been discovered at Olynthus, Corinth, and Isthmia (Robinson, 1941: 260-269, 276-278, pls. 70-71, 75-76; Davidson, 1952: 140-141, pl. 71; Raubitschek, 1997: 134, 138, 175, pls. 76, 96).

The depiction of the iris and the pupil on the Tektaş Burnu examples differs from the decoration on the marble eyes from Zea. The iris on T1 appears to have been constructed of four rings that were defined by incised lines. Its second and outermost rings appear to have been filled with a pigment that may have been red. The first and the third rings do not bear any remnants of their original coloration, but the inner ring may have been filled with yellow, based on evidence gleaned from the Zea examples. The pupil on this example is simply a slightly offset painted circle filled with a dark pigment. Its boundary does not appear to have been defined by an incised line.

The iris on T2 may have been composed of three or four incised rings. Unfortunately, a precise description of its decoration cannot be presented here because

marine encrustation covered the outer face of this eye at the time of study. Nevertheless, examination prior to conservation revealed that the depiction of the iris and pupil on this example closely parallels the design on T1.

### *Tool Marks*

All of the marble eyes exhibit tool marks. Evidence for the use of a cutting compass appears on the outer faces of many of the marble eyes (Casson, 1970: 82, 83, 215, fig. 85). It was used to incise guidelines for the painted concentric designs on both the eyes discovered at Tektaş Burnu and on those discovered at Zea. The inner faces of the eyes from Zea, as well as the outer surfaces of the eyelids on Z1, appear to have been worked with both claw and flat chisels. In addition, the inner face of T1 appears to preserve marks from both a point and a claw chisel, although the inner face of T2 exhibits few tool marks. The paucity of tool marks on T2 may be the result of a craftsman's work with abrasives or the result of degradation due to its time on the sea floor. The outer faces of the marble eyes from both Zea and Tektaş Burnu appear to have been smoothed with abrasives.<sup>[2]</sup>

### *Mounting and Fastening*

Each marble eye has a fastening hole that pierces the center of its pupil. These average roughly 1.0 cm in diameter for the Zea eyes, with the exception of Z6 which has a hole with a diameter of 1.8 cm. The fastening holes on each of the Zea eyes [with the

exception of Z6] have recesses that surround the perimeter of their outer faces. The majority of these measure 2.0 cm in diameter and are cut to a depth of between 0.4 cm and 0.7 cm. These recesses were undoubtedly fashioned to accept the increasing dimension of a fastener's shank near its head. Saatsoglou-Paliadeli (1980: 122, 124) notes traces of corrosion that she identifies as rust on the inner and outer faces of the holes on each eye, and follows Lolling (1880: 385) in suggesting that the fasteners that once filled these holes may have been iron.

The fastening holes that pierce the Tektaş Burnu examples measure roughly 1.3 cm in diameter at the inner face of each marble disc and contain lead fasteners with shanks that measure 1.0 cm square in section. Their heads are poorly shaped as a result of the force of being hammered into place. The head of the fastener preserved in T1 measures roughly 1.5 cm by 1.6 cm, and the head of the fastener preserved in T2 measures roughly 1.7 cm by 2.0 cm. Both are trapezoidal in shape.

Lead was a common fastening material used in ancient Greek marble sculpture, but it was usually poured into cavities to secure joins in multi-piece compositions and not used in the form of nails or spikes (Claridge, 1990). The lead nails discovered at Tektaş Burnu are unique, as lead fasteners are absent from other excavated ancient Greek shipwrecks. In addition to the lead nails from Tektaş Burnu, others are known from excavations at Olynthus and Corinth, although these examples are either unprovenanced or were discovered in a later context (Robinson, 1941: 328, pl. 96, Davidson, 1952: 143, pl. 72). It seems likely that lead fasteners were used to secure these eyes because of the corrosion resistance properties of lead, and the marble craftsman's general familiarity

with lead as a fastening material. Cemal Pulak (2006) has pointed out that the use of lead as a fastening material could also be related to a fear that the force of driving a nail fashioned from a harder metal could scar or break the marble eyes as well as the fact that lead corrosion products expand less than those of iron, thereby preventing the marble eyes from fracturing.

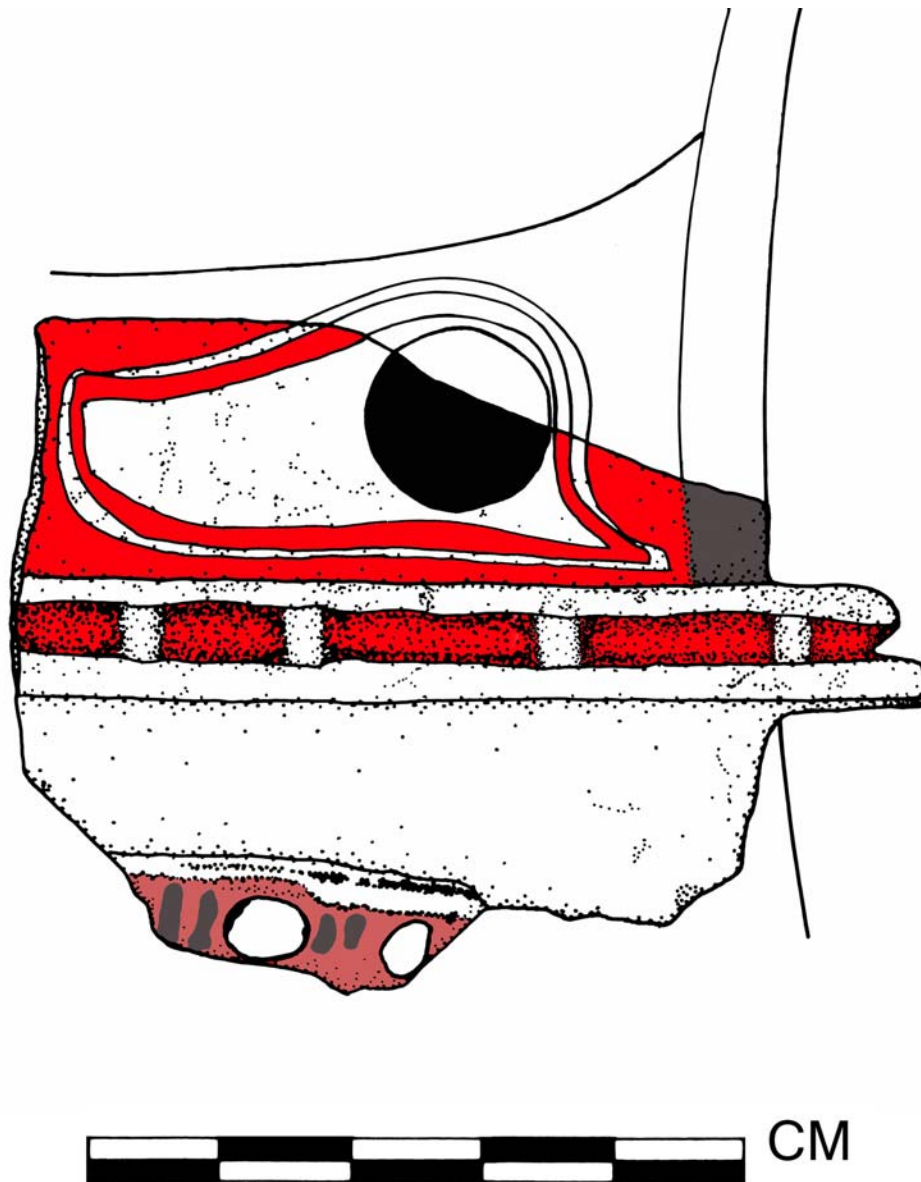
The fasteners driven through the holes in the center of the marble eyes served to affix them to a flat surface. T1 appears to have been attached to a flat plank with an approximate thickness of 2.4 cm using a clenched lead nail (Nowak, 2001: 87). It is unlikely that this plank was a separate wooden plaque that facilitated the attachment of T1 onto another surface, because of the manner in which the lead nail was clenched. The nail was not hammered flat and would have hindered the attachment of a plaque onto another surface (Fig. 2.10). Therefore, it seems likely that T1 was directly attached to its final mounting surface. Neither of the marble eyes discovered at Tektaş Burnu bears evidence of pigment on their inner faces, but both Lolling (1880: 386) and Saatsoglou-Paliadeli (1980: 120, 122, 123) note traces of red pigment on the inner face of many of the marble eyes from Zea. This pigment likely originates from the surface to which they were attached, so it seems likely that this surface was painted red before the attachment of the eyes. Lolling (1880: 386) identifies this pigment as minium, red-lead oxide, but Saatsoglou-Paliadeli (1980: 123) suggests that it is more likely red ochre, which was used for painting wood in antiquity. In addition, she stresses that the inner face of the eyes lack tenons and it is therefore unlikely that the eyes were joined to a surface constructed from stone (Saatsoglou-Paliadeli, 1980: 123; Claridge, 1990). As a result,

she concludes that the mounting surface was wooden and proposes that the majority of the eyes discovered at Zea were set into wooden planks.

This conclusion is based on her reading of the tool marks preserved on the outer surfaces of their eyelids. She notes that the outer surfaces of the eyelids on each example she studied were left unpolished with the exception of Z1. A polished and slightly beveled uneven band runs along the outer perimeter of the upper eyelid on Z1 that measures 0.5 cm to 1.5 cm in width, leaving an unpolished 2.0 cm strip along its inner perimeter. Based on this variability in workmanship, she believes that Z1 was inset 2.0 cm and the polished portion of its upper eyelid was left exposed, while its lower eyelid and the eyelids of every other marble eye were inlaid flush to their mounting surfaces (Saatsoglou-Paliadeli, 1980: 123).

Although her hypothesis cannot be proven, this method of attachment would solve one problem that was undoubtedly encountered when the eyes were affixed to wooden planks: rotation. Because a single fastener appears to have been used to attach the eyes to their mounting surface, a method was needed to prevent them from rotating. Insetting the eyes into planks would effectively solve this problem as well as help to protect them during collisions if they were to be mounted on ships or other vehicles.

An alternative solution to this problem would be to mount each eye above a protrusion in a manner similar to the way ship eyes seem to have been mounted above wales on many ancient galleys (Morrison & Williams, 1968: 111, 178, pl. 20d, 26c-27a; Johnston, 1985: 78-79; Basch, 1987: 274-275, figs. 582-585) (Fig. 2.14).



*Figure 2.14.* Archaic-Classical Period ship model from the acropolis at Lipari. Lipari, Museo Archeologico Eoliano A15 (room 10). Scale 2:1. (Drawing: author, based on Johnston, 1985: 79)



Although this same problem would have been encountered with the marble eyes discovered at Tektaş Burnu, it would not have been as severe because of their circular shape. It is possible that the action of driving a lead fastener through a fastening hole with a slightly smaller diameter could result in a tight fit and prevent rotation. At present, it is not known whether any measures were taken to restrict the rotation of the eyes from Tektaş Burnu.

To aid in the comparison of the data discussed throughout this chapter, a summary of the technical aspects of the marble eyes is provided below in Table 2.1.

Table 2.1. Technical aspects of the marble eyes. All measurements in cm.

	Type	Preserved: Length	Recess: Diameter Shape	Hole: Diameter	Pupil: Diameter Color	Iris: Diameter	1 <sup>st</sup> Band: Width Color	2 <sup>nd</sup> Band: Width Color	3 <sup>rd</sup> Band: Width Color	4 <sup>th</sup> Band: Width Color	5 <sup>th</sup> Band: Width Color
Z1	Naturalistic Left	53.0	2.5 cupular	1.2	--	24.0	2.5 yellow	2.7 --	3.2 red	--	--
Z2	Naturalistic Right	37.5	2.0 conical	1.1	--	25.4	2.5 --	0.4 --	2.6 --	2.2 --	0.5 --
Z3	Elongated Left	40.5	2.2 cupular	0.8	--	21.5	--	--	--	--	--
Z4	Elongated Right	47.0	1.5 conical	1.2	--	17.0	--	--	--	--	--
Z5	Elongated Right	30.5	1.8 conical	1.0	--	20.0	3.5 yellow?	0.3 --	1.5 --	1.8 red	0.3 --
Z6	Elongated Left	18.0	--	1.8	--	17.0	2.2 yellow	0.3 red	1.6 blue?	1.6 red	0.6 yellow
Z7	Elongated Right	35.5	1.8 conical	1.0	--	19.5	3.2 yellow	1.5 --	1.8 red?	--	--
T1	Circular	13.8	--	1.3	2.4 dark	13.8	1.6 --	0.4 dark	0.8 --	0.8 red?	--
T2	Circular	13.5	--	1.3	--	13.5	--	--	0.8 --	--	--

## CHAPTER III

### THE IDENTIFICATION AND DATE OF THE MARBLE EYES

#### INTRODUCTION

Much debate has arisen regarding the identification of the marble eyes from both Zea and Tektaş Burnu. Although they were all initially catalogued as ship eyes, various scholars have classified them as architectural decorations, models constructed as offerings, and ship-chariot eyes. The following chapter reviews and analyses these hypotheses, and both presents additional evidence that they all served as ship eyes and proposes tentative dates for these enigmatic objects.

#### THE MARBLE EYES AS ARCHITECTURAL DECORATIONS

Assmann (1889: 1613) was the first scholar to argue that the marble eyes discovered at Zea could not have served as the eyes of ancient Greek warships. He believes marble eyes could not have served as ship eyes because of two major technical deficiencies: their size and their material. Assmann deems the eyes much too small in relation to the length of an Athenian *trieres* and considers marble an unsuitable material for shipboard use. Instead, he suggests that eyes were merely painted on the bows of ancient ships and that the marble eyes discovered at Zea were architectural decorations that decorated the moles or walls of the Athenian naval facility at Zea. To support this theory he cites their provenance, as well as the appearance of an eye on the Torlonia harbor relief, dated to the early 3<sup>rd</sup> century AD, and a pair of eyes depicted on an ashlar block discovered near

the Gate of Parmenon on Thasos, which may date to the Late Archaic or the Classical Period (Assmann, 1889: 1613; Kähler, 1960: 328-331; École française d'Athènes, 1967: 58; Steinhart, 1995: 104-106; Meiggs, 1997: pl. 20). Little evidence exists for the use of eyes as a decorative motif in Greek architecture. The possibility that the Greeks could have used eyes in architectural decoration should not be completely dismissed, based on the common use of other decorations that appear to have functioned in a manner similar to eyes in Greek art and the existence of the Thasian wall decoration, as discussed in chapter IV. However, the identification of the marble eyes from Zea as architectural decorations should not be accepted unless comparable finds are discovered that show that the present paucity of evidence for the use of eyes in Greek architectural decoration is related more to preservation than to the actual rarity of this motif.

#### THE MARBLE EYES AS SHIP-CHARIOT EYES

Steinhart (1995: 100) also argues that the marble eyes from Zea could not have been ship eyes because of their size and construction. He believes that marble eyes would quickly corrode when exposed to saltwater and sea-air and that these pieces are much too small and thin to have adorned the bows of Athenian warships. Furthermore, he considers the marble eyes too elaborate to have adorned ancient warships. Instead he suggests that they originated from ship-chariots used during the Anthesteria festival at Athens (Burkert, 1985: 237-242). He deems both their size and construction appropriate for ship-chariots, arguing that ship-chariots were much smaller than warships and were more elaborately decorated. Thus, small painted marble eyes would comprise

appropriate additions to these vehicles. He also believes that this hypothesis offers solutions to both the problem of their provenance, by suggesting that the epiphany and procession of Dionysos on the first day of the Anthesteria festival commenced at Zea, and the attributes of the color, material, and form of the mounting surface as deduced from the marble eyes (Steinhart, 1995: 100). Christoph Konrad (2006) has pointed out that since ship-chariots were used in processions at major festivals, it seems likely that they would have been kept in Athens itself, not at the naval base at Zea.

Moreover, Steinhart theorizes that the size of the eyes on ship-chariots depicted on decorated ceramics matches those of the marbles eyes discovered at Zea. This contention cannot be supported and appears to be based on a single ship-chariot representation, as only one of the few surviving representations of ship-chariots preserve the representation of a ship-chariot eye (Morrison & Williams, 1968: 116; Boardman, 1974: 155; Johnston, 1985: 141) (Fig. 3.1).

Steinhart correctly argues that the discovery of both right and left marble eyes at Zea suggests that they were used in pairs and asserts that the red pigment on their inner faces indicates that they may have been attached to a painted wooden surface (Steinhart, 1995: 100). These contentions add little weight to his theory, for the use of marble eyes in pairs and their possible attachment to a wooden surface in no way limits the identification of their mounting surface to ship-chariots.

Although Steinhart is troubled by the paucity of textual evidence presented by other authors who have studied these objects, none exists to support his theory. It is

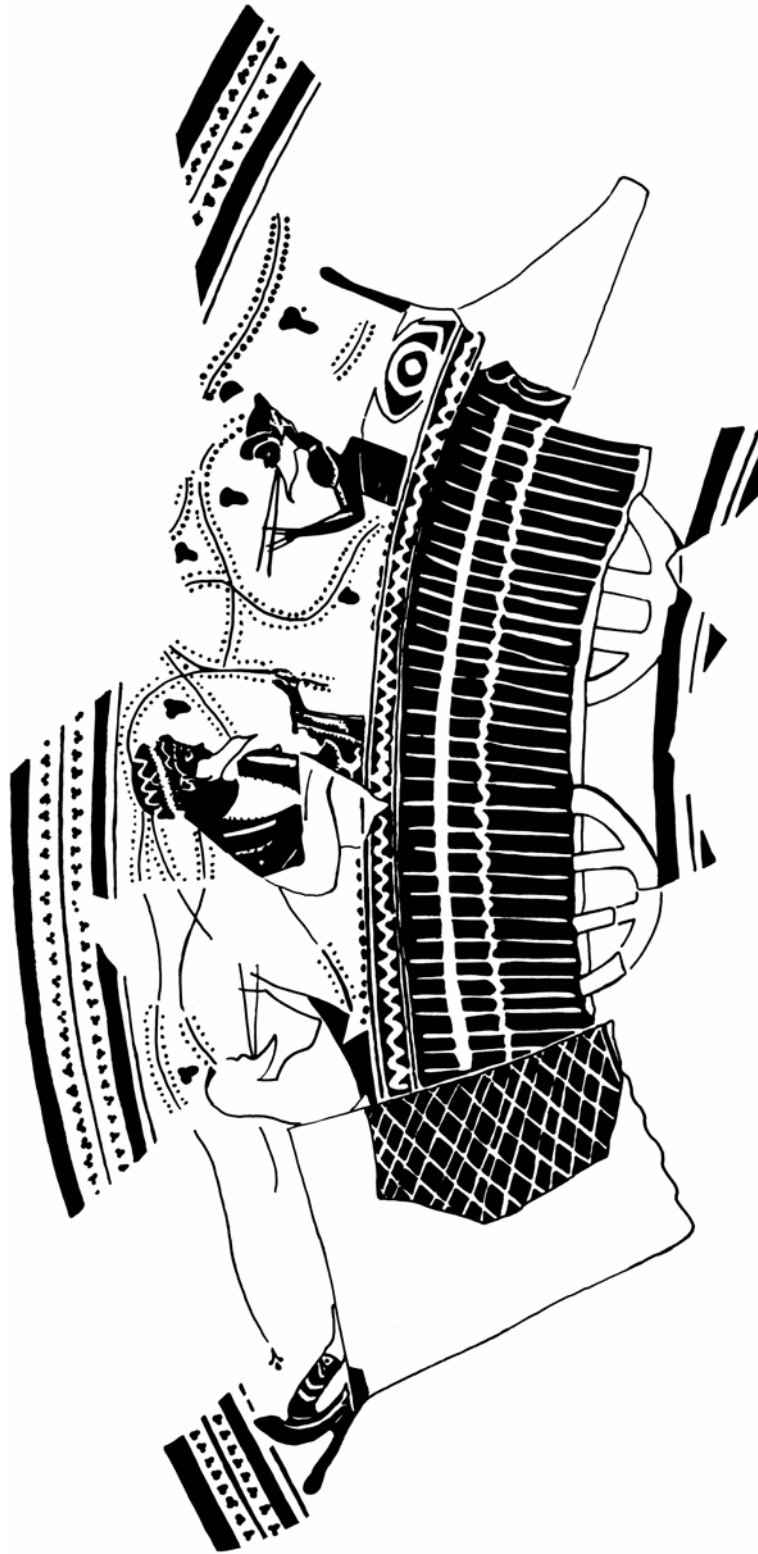


Figure 3.1. Attic black-figure *skyphos* fragments depicting Dionysos seated in a ship-chariot. (Drawing: author, after Boardman, 1974: 155, fig. 247)

clear that insufficient evidence exists to support the claim that the marble eyes from Zea served as the eyes of ship-chariots used during the Anthesteria festival in Athens.

#### THE MARBLE EYES AS MODELS CONSTRUCTED FOR OFFERING

Other scholars believe that the marble eyes are objects that were fashioned to imitate painted ship eyes. This belief undoubtedly stems from Saatsoglou-Paliadeli's (1980) study of the six marble eyes discovered at Zea that are today in the Archaeological Museum of Piraeus. She proposes that each eye was created as the marble representation of a painted ship eye and mounted on a red wooden plaque that displayed the name of a ship. She considers this sufficient to resemble the *ptychis*, which she identifies as the place where the eye was mounted and the name of a ship was inscribed, and to act as a surrogate that could be offered or dedicated in place of an actual vessel (Saatsoglou-Paliadeli, 1980: 135). Her desire to propose a new theory to explain the function of these objects is related to both her beliefs that the size and construction of the marble eyes render them unsuitable to serve as ornaments on ancient ships, and her concern that the marble eyes discovered at Zea cannot be assigned to identifiable pairs (Saatsoglou-Paliadeli, 1980: 133-135). She believes that the absence of extant pairs shows that the marble eyes from Zea were not used in pairs, and thus could not have adorned the bows of ancient ships; therefore, her theory is plausible because it effectively addresses these concerns. It proposes a situation in which the plastic representation of a single ship eye would have comprised an appropriate offering (Saatsoglou-Paliadeli, 1980: 134-35).

This hypothesis is based on both a morphological study of the occurrence of eyes in Greek art, which includes representations of eyes and finds of plastic eyes constructed from ivory and marble, and reliefs and dedicatory inscriptions to Asclepius and Zeus discovered by Dragatsis (1885: 90) at Zea (Saatsoglou-Paliadeli, 1980: 133). Saatsoglou-Paliadeli (1980: 134) believes her explanation is supported by the notion that most known plastic eyes constructed from ivory or marble are *ex-votos*. Not only are the majority of the eyes that she considers much smaller and of a completely different form than those discovered at Zea, but their identification as *ex-votos* is also questionable. Many are the eyes of composite statues and are of uncertain date, while the function of others cannot be conclusively determined.<sup>[3]</sup> Even if some of these eyes were used as offerings given to deities associated with health and healing, as she hypothesizes, this does not justify her claim that the Greeks dedicated a composite wooden model that included a large marble ship eye intended to represent the *ptychis* in place of the dedication of an actual ship. These traditions embrace two conceptually different scenarios.

The offering of small plastic eyes to deities associated with health is related to the tradition of dedicating models of a diseased or injured part of the body as a thank-offering following the healing of a wound or deliverance from sickness.<sup>[4]</sup> Model eyes constructed from gold, silver, stone, and terracotta were common offerings in Athens during the 4<sup>th</sup> century BC. In fact, Rouse (1902: 212) points out that 40% of the model body parts dedicated during this century comprised small models of eyes that occur both singly and in pairs. This tradition is well attested in temple inventories, in the works of



ancient authors, and in the archaeological record (Rouse, 1902: 208-216, 397, 398; Van Straten, 1981: 98-102, 105-151). The existence of this practice does not in any way suggest a relationship between the offering of model eyes to deities protecting health and the dedication of a marble eye as an image meant to represent a ship.

The provenance of the dedicatory inscriptions that she cites in relation to the find-spot of the marble eyes is not known with certainty. Therefore, although it is possible that both the inscriptions and the marble eyes originated from the same site and were later transported to and discarded near the naval facilities at Zea, the association suggested by Saatsoglou-Paliadeli (1980: 133) between these objects must be treated with caution. She does not support her theory that the marble eyes were fashioned as offerings with the testimony of any other relevant monument or with literary or epigraphical data.

To evaluate the plausibility of Saatsoglou-Paliadeli's hypothesis, it is necessary both to review the motives and mechanics of the Greek tradition of offering and dedication, and to consider evidence relating to the substance of the offerings dedicated by mariners during the Archaic, Classical, and Hellenistic Periods.

### *Offering and Dedication in Ancient Greece: Motives and Mechanics*

The Greek concept of offering and dedication aimed to solicit supernatural aid and protection in all endeavors and can be considered in the broadest sense to relate to either gratitude or fear. These general motives were related to two corresponding

classifications of offering: thank-offerings and gifts of propitiation. These categories were the basis for the formal system of exchange between gods and mortals.

Thank-offerings could be made following the successful outcome of any venture. One of the most common thank-offerings was the first-fruit offering. It often took the form of a tithe, or an offering of the fixed proportion of a tenth, of the profit resulting from agriculture, hunting, fishing, war, or trade, or an outstanding or initial work of an author, potter, or craftsman (Athenaeus, 7.297 e; *Anthologia Palatina*, 6.89, 6.196, 6.214; Pritchett, 1979: 241). The practice of both first-fruit offering and the use of the tithe is known to have existed throughout Greek lands and appears in the epic poetry of Homer (*Iliad*, 9.534), in the histories of Herodotus (1.89, 3.57, 4.152) and Xenophon (*Anabasis*, 5.3.4-6; *Hellenica*, 3.5.5), as well as in the works of many other ancient authors and in the surviving epigraphic record (Rouse, 1902: 39-70; Van Straten, 1981: 73).

The dedication of a tool or weapon as a thank-offering either at the end of its working life or upon the retirement of its user was also a common Greek practice (Rouse, 1902: 70-75; Pritchett, 1979: 251, 252; Burkert, 1985: 70). These can be considered offerings of means. The *Anthologia Palatina* (6.2, 6.204-5) attests that this custom can be dated as early as the late 4<sup>th</sup> century BC and Plutarch (*Cimon*, 5.2) believed it was practiced in Greece during the early 5<sup>th</sup> century BC. Rouse (1902: 74) suggests that it may have been practiced even earlier. He cites the tale of King Pheidon of Argos, said to have been the first to mint coins in Aegina, who dedicated his former currency of metal rods at the Temple of Hera in Argos. This tale supposes that the

practice of dedicating objects at the end of their usefulness dates back to at least the 7<sup>th</sup> century BC in Greece.

Thank-offerings were also prompted by initiation rituals and rites of passage. They were meant to display the reverence of worshippers and their thanks for aid during the trials that they had endured, or to strengthen their relationship with the gods to ensure a prosperous future.

The second major classification of offerings, gifts of propitiation, was likely as widespread and as common as thank-offerings throughout antiquity. These were gifts granted to the gods either because of a fear that some offense had been committed that might incite divine anger, or to appease an already-irritated deity who might be the cause of a present misfortune. These could range from any minor personal ill such as poor performance in athletics, to catastrophic events that affected entire communities such as natural disaster, plague, or famine (Rouse, 1902: 29, 310-321, 339; Burkert, 1996: 152-153). The gift of propitiation was a clear display of good will and reverence as well as a plea for salvation. An example of this practice is described by Homer in the *Iliad* (1.1-120; 1.442-445) when the Greeks accompanied the return of Chryses's daughter with appropriate sacrifices to appease Apollo.

Rouse (1902: 41, 118, 310) points out first-fruit offerings could also function as gifts of propitiation in addition to thank-offerings because they were often prompted as much by a fear that the gods might discontinue their favor as they were intended to show gratitude. In addition, gifts of propitiation could be accompanied by vows promising

more offerings in return for the resolution of the crisis at hand. These further gifts would have been considered both thank-offerings and votive offerings.

The term ‘votive offering’ is often used to describe tangible permanent offerings, or *anathemata*, given to supernatural entities, as opposed to the term ‘sacrifice,’ which is used to specifically denote consumable offerings (Burkert, 1985: 69). For the purposes of this discussion the definition of ‘votive offering’ is limited to gifts given to supernatural entities in response to vows. Votive offerings could function as thank-offerings and as gifts of propitiation. The vows that prompted these offerings were made in public ceremonies, before as many witnesses as possible (Burkert, 1985: 69). They typically involved the proposal of a bargain that outlined conditions for both the deity and the supplicant. The basic formula for such vows was commonly, “If you deliver us from ‘X’ then we will sacrifice ‘Y’.” A vow could be private, meant to protect one’s personal wealth, status, or health, or it could be public, meant to deliver a community from plague, enable it to survive a natural disaster, ensure a successful harvest, or achieve success at war.

Any event that involved significant risk and danger could prompt a vow. Seafaring and warfare, two of the most dangerous endeavors undertaken in antiquity, often involved the declaration of both public and private vows. The following dedicatory epigram attributed to Diodorus Sardianus and dated to the 1<sup>st</sup> century BC attests to the mechanics of this practice:

Diogenes, when he saw his yard-arm broken by the blast of Boreas, as the tempest lashed the Carpathian Sea by night, vowed, if he escaped death, to hang me, his little cloak, in thy holy porch, Boeotian Cabirus, in memory of that stormy voyage; and I

pray thee keep poverty too from his door (*Greek Anthology*, 6.245 [W.R. Paton, trans., Cambridge, Mass., 1993]).

As shown in the final line of this epigram, the offering of a gift in response to a vow was often transformed into a continuous cycle of exchange between the worshipper and his protector (Van Straten, 1981: 72-73; Burkert, 1996: 137). The supplicant in this epigram, Diogenes, would have been expected to make another dedication to Boeotian Cabirus for keeping him from need to show his reverence and gratitude.

Offerings could be given prior to the acquisition of a god's assistance, but "as a rule, this kind of faith did not appeal to the Greek: he waited to let the god fulfill his part of the bargain first" (Pritchett, 1979: 230, 236, 238). This is illustrated by Cicero who tells us:

Diagoras, [a 5<sup>th</sup>-century BC poet from Melos] named the Atheist, once came to Samothrace, and a certain friend said to him, "You think that the gods disregard men's affairs, do you not remark all the votive pictures that prove how many persons have escaped the violence of the storm, and come safe to port, by dint of vows to the gods?" "That is so," replied Diagoras; "it is because there are nowhere any pictures of those who have been shipwrecked and drowned at sea." (Cicero, *De Natura Deorum*, 3.89, [H. Rackman, trans., New York, 1933]).

#### *Offering and Dedication in Ancient Greece: The Substance of Offerings*

Gifts given by the Greeks to their gods as both thank-offerings and as gifts of propitiation took a variety of forms. Their nature is attested by a diverse collection of textual and archaeological evidence. In Greece, no one was excluded from this practice as long as they possessed the desire and the means to present an offering (Burkert, 1985: 95).

These gifts often involved the sacrifice of foodstuffs, such as grain, fruit, or livestock which included, but were not limited to, ground and unground barley, cakes, oxen, sheep, goats, swine, fish, and fowl (Rouse, 1902: 297; Burkert, 1985: 55-59, 95-98; Durand, 1989; Recio, 2000: 94-109). Such consumable offerings reached the gods both through the smoke that resulted from their burning and roasting and through the priest or priestess who consumed a portion on behalf of the god (Detienne, 1989: 13; Durand, 1989: 104-105).

Although generally accepted as fantasy, human sacrifice and ritual killing may have also been conducted during times of extreme stress and ill-fortune (Hughes, 1991). This has been attested by Greek historians and tragedians including Herodotus (2.119; 7.197) and Euripides (*Iphigenia Taurica*, 1458-61), and was suggested by Strabo (10.2.9, 14.6.3) and Pausanias (4.9.4, 9.8.2). The belief that such sacrifices were practiced during the Persian Wars appears in Plutarch's *Themistocles*:

But Themistocles was sacrificing alongside the admiral's trireme. There three prisoners of war were brought to him, of visage most beautiful to behold, conspicuously adorned with raiment and with gold. They were said to be the sons of Sandauce, the King's sister, and Artayctus. When Euphrantides the seer caught sight of them, since at one and that same moment a great and glaring flame shot up from the sacrificial victim and a sneeze gave forth its good omen on the right, he clasped Themistocles by the hand and bade him consecrate the youths, and sacrifice them all to Dionysus Carnivorous, with prayers of supplication; for on this wise would the Hellenes have a saving victory (Plutarch, *Themistocles*, 13.2 [B. Perrin, trans., Harvard, 1916]).

More relevant to the present study are *anathemata*, gifts dedicated to be displayed in sanctuaries that attested to the piety of the worshipper and provided a lasting remembrance of a specific act (Burkert, 1985: 92-95). These gifts often accompanied sacrifices and in such cases included equipment used during the sacrificial ceremony,

such as basins and tripods; models of sacrificial victims or foodstuffs constructed from metal or terracotta; decorated tablets that were often constructed from terracotta or wood; and stone reliefs depicting cult scenes (Boardman, 1954; Lorber, 1979: 93-94, pl. 46a, d; Van Straten, 1981; Day, 1994: 43-46; Van Straten, 2000). The importance of dedicating a permanent gift following a sacrifice is related to both fear and personal prestige. A lasting offering ensured that both the deity and the community would not forget the piety of the worshipper, who hoped to be viewed favorably by both gods and mortals. Some of these gifts were not merely dedicated and displayed, but constructed to allow offerings to be renewed by the supplicant during each visit to the sanctuary (Van Straten, 1981: 74). Some of these gifts were fashioned for the deposit of coins or for holding lamps. Both of these actions represent a consumable sacrifice of sorts and the latter recalls the common practice of lighting votive candles in modern sanctuaries.

Similar to the *anathemata* dedicated in remembrance of sacrifices, the substance of both thank-offerings and gifts of propitiation were often directly related to the occasion of their dedication. These gifts frequently comprised tools or weapons either as offerings of means or as first-fruits from spoils of war, and tablets, reliefs and models that related the dangers and the process of deliverance that the worshipper endured (*Anthologia Palatina*, 6.9, 6.178, 6.215, 6.264; Greenwell, 1881; Rouse, 1902: 95-118; Pritchett, 1979: 241-295). In addition, *anathemata* could comprise images of a protecting deity or the worshipper, elaborate monuments, rare and extraordinary objects, or items dedicated for their intrinsic value (*Anthologia Palatina*, 6.197, 6.222-223; Segrè, 1936; Raubitschek, 1949: 261-262, no. 229; Fraser, 1960: 59, no. 19). These were often

constructed from a tithe of first-fruits acquired from a particularly profitable harvest, trading venture, or battle (Herodotus, 7.132; Rouse, 1902: 118-129). The practice of recognizing the outstanding civic service of exceptional private citizens by granting them public monies to dedicate as personal offerings is also known to have been practiced in Athens (Franklin, 1901).

Generally, the importance of a particular gift was related more to the piety of the worshipper than to its cost. Theophrastus (*On Piety*, fr. 7, 52-5 [Van Straten, trans., Leiden, 1981: 68]) tells us “the gods like what is cheap and the deity attaches more importance to the disposition of the sacrificers than to the quantity of what is sacrificed.” This is also attested by Hesiod (*Opera et Dies*, 336) and Xenophon (*Memorabilia*, 1.3.3) who believed that one must sacrifice according to one’s means (Burkert 1996: 143). For example, offerings of hair and clothing were common in antiquity because they allowed even the poorest to show their reverence through the presentation of such intimate gifts:

To Glaucus, Nereus, and Melicertes, Ino’s son, to the Lord of the Depths, the son of Cronos, and to the Samothracian gods, do I, Lucillius, saved from the deep, offer these locks clipped from my head, for I have nothing else (*Greek Anthology*, 6.164 [W.R. Paton, trans., Cambridge, Mass., 1993]).

It must be noted that offerings of hair and clothing could also act as surrogates for human life during times of extreme stress and functioned to appease the wrath of the deity for the purpose of delivering the supplicant from danger (Recio, 2000: 109-112). In addition, offerings of hair and clothing were common during rites of passage both to give thanks and to ensure future success (Rouse, 1902: 240-245; Van Straten, 1981: 89-90, 97-98). The dedication of meager offerings was in no way the rule, as supplicants



who could afford to give lavishly often did, and those who could not often felt shame as a result of their inability to produce impressive gifts (Van Straten, 1981: 68).

At times, both thank-offerings and gifts of propitiation were used to perform the additional function of enhancing personal or public prestige and were used as tools of political propaganda (Van Straten, 1981: 76). For example, the dedication and extravagant public display of victory monuments was used to show the might of the victorious state, the favor the gods had bestowed on it, its piety, and its access to wealth and resources (Rice, 1993).

Extant examples of *anathemata* survive primarily because of the methods temple officials used to dispose of them. They often buried old or broken offerings in trenches or pits within the temple precinct to rid both storage and display areas of clutter and to clear space for newer gifts. This method was used primarily for objects constructed from wood, terracotta, and stone. Some of these were accompanied by inscriptions that either described the reason for the offering or simply contained the name of the dedicator. Unfortunately, a myriad of objects have survived in deposits that reveal little information regarding the purpose and occasion of their dedication.

Some information concerning gifts constructed from metal survives because temple officials kept inventories that recorded their material, weight, and form, as well as the name of their dedicator. Few of these objects survive because they were often melted down to consolidate space in temple treasuries and used to produce larger objects, or sold for their inherent value to raise money to beautify the temple precinct or to fund public works (Rouse, 1902: 345). Fortunately, fragments of these inventories survive as

well as inscribed bases that preserve information relating to the act that inspired the dedications that they had once displayed.

Both types of dedications, thank-offerings and gifts of propitiation, were made by Greeks throughout the Mediterranean. Merchant sailors, fishermen, and the crews of naval ships all dedicated offerings that at times embraced a distinctive maritime character. The motives and mechanics of Greek offering and the substance of these gifts have direct implications regarding the validity of Saatsoglou-Paliadeli's theory that the marble eyes discovered at Zea were specifically fashioned for dedication as the marble interpretation of ship eyes. The forms of maritime offerings are presented here in two major categories to better evaluate her hypothesis:

1. The Ship
2. Ship Parts and Gear

Other forms of maritime offerings will be considered when they can be used to complement and explain the practice of dedicating gifts that relate to the ship and its gear.

#### *Maritime Offerings: The Ship*

The dedication and commemorative display of ships and boats in both Greek mythology and Greek history are known from a variety of textual and archaeological sources (Recio, 2000: 3-4). In Graeco-Roman mythology, ships were often dedicated to commemorate extraordinary feats and expeditions. Apollodorus (*Bibliotheca*, 1.9.27 [J.G. Frazer, trans., Cambridge, Mass., 1921]) tells us that after "Jason surrendered the

fleece. . . he sailed with the chiefs to the Isthmus and dedicated the ship [Argo] to Poseidon.” Dio Chrysostomus (*Orationes*, 37.15) also records that Jason dedicated the *Argo* to Poseidon, but he relates a slightly different story. In his version, the *Argo* was dedicated after Jason won a boat race in a mythical version of the Isthmian Games. The dedication of the *Argo* in both versions can be considered a thank-offering to Poseidon. Similarly, the ship that Theseus sailed to Crete to kill the Minotaur was believed by Plutarch (*Theseus*, 23.1) to have been on display in Athens until the late 4<sup>th</sup> century BC. In Rome, Procopius (*History of the Wars*, 8.22.7-8 [H.B. Dewing, trans., Cambridge, Mass., 1978]) attests that Aeneas’s ship was displayed in a “ship-house in the middle of the city on the bank of the Tiber, and depositing it there, they have preserved it from that time.”

Greek historians also record the practice of dedicating prize ships as thank-offerings as early as the Persian Wars. Herodotus (*Persian Wars*, 8.121 [A.D. Godley, trans., Harvard, 1946]) tells us that after their victory at Salamis in 480 BC the Greeks dedicated “three Phoenician triremes, one dedicated at the Isthmus, where it was till my lifetime, the second at Sunium, and the third for Aias at Salamis.” Similar dedications are known from the writings of Thucydides (2.84, 2.92) and Diodorus Siculus (12.48.1) to have been conducted by both the Athenians and the Peloponnesians during the Peloponnesian Wars. Later, Strabo (7.7.6) tells us that Augustus dedicated ten captured ships after his decisive naval victory at Actium.

The dedication of one’s own warship is also known in Greek history. Athenaeus (5.209e) records that Moschion indicated Antigonus Gonatas vowed his ship to Apollo

for victory over Ptolemy II during the mid 3<sup>rd</sup> century BC (Tarn, 1910: 212). Another type of ship dedication is described by Catullus (4) who wrote of the dedication of a ship to the Dioskouroi at the end of its usefulness during the first half of the 1<sup>st</sup> century BC. Much later, the *Anthologia Palatina* (6.69-70) preserves a pair of epigrams attributed to Macedonius Thessalonicensis dated to the 6<sup>th</sup> century AD that record the offering of ships by sailors as thank-offerings on the occasion of their retirement in Greece.

An interesting, but slightly different, sort of ship dedication is preserved by the 2<sup>nd</sup>-century AD Roman writer Apuleius in his novel *Metamorphoses* (11.16). He describes the *navigium Isidis*, an annual festival in Roman Egypt that celebrated the start of the spring sailing season and involved the launching of an actual ship as an offering to Isis for a successful sailing season:

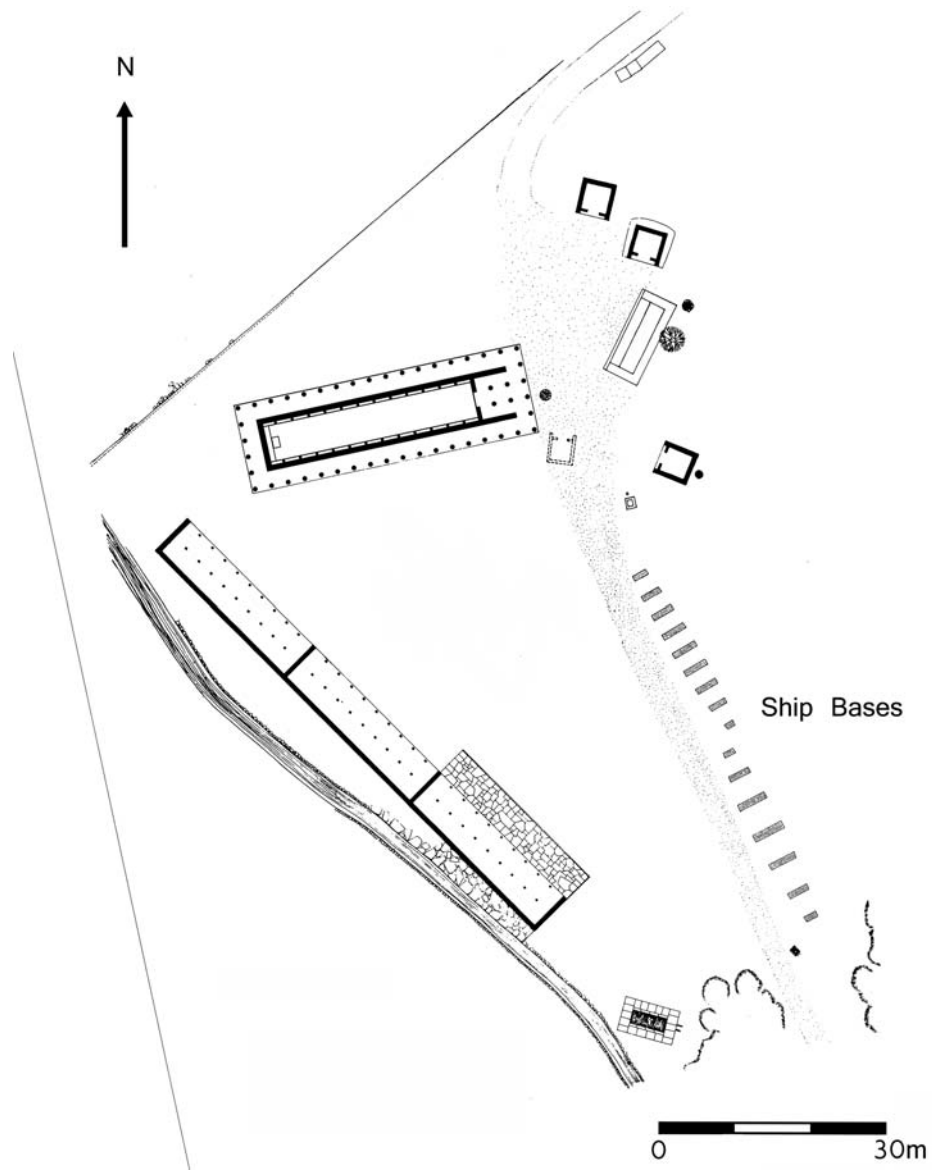
There, after the images of the gods had been set in their proper places, the chief priest consecrated a ship, which was constructed with fine craftsmanship and decorated all over with marvelous Egyptian pictures. He took a lighted torch, an egg, and sulphur, uttered prayers of great solemnity with reverent lips, and purified the ship thoroughly, naming it and dedicating it to the goddess. The gleaming sail of this holy barque bore an inscription woven in letters of gold, whose text renewed the prayer for prosperous navigation during the new sailing season. Now rose the mast, a round pine, high and resplendent, visible from far off with its conspicuous masthead. The stern curved in a goose-neck and flashed light from its coating of gold-leaf, and the entire hull bloomed with highly polished, pale citron-wood. Then all the people, worshippers and uninitiated alike outdid one another in loading the ship with baskets heaped with spices and similar offerings, and on the waves they poured libations of grain-mash made with milk. When the ship was laden with generous gifts and auspicious sacrifices, it was untied from its anchor-ropes and offered to the sea, as a mild breeze arose especially for it (Apuleius, *Metamorphoses*, 11.16 [J.A. Hanson, trans., Cambridge, Mass., 1989]).

Although late, this passage is particularly important because it not only attests to the dedication of actual ships, but also provides a rare detailed description of a ritual that accompanied such offerings. This ritual likely shares some general similarities with

those conducted during the launching of ships and boats earlier in antiquity. These aspects likely include the purification of the ship, the evocation of a protective deity, the naming of the ship, the pouring of libations, and the offering of sacrifices and gifts. It has been suggested by some scholars, including Rouge (1981: 198) and Johnston (1985:138) that such festivals also involved the launching of ship models in place of actual ships.

Archaeological evidence suggests that the dedication and display of ships may have been practiced during the Archaic Period on Samos. Excavations at the Temple of Hera have uncovered two sets of large stone bases dated to the 7<sup>th</sup> century BC that appear to have been the foundations for blocks that once supported the hulls of ancient ships (Kyrieleis, 1981: 88-90; Walter, 1990: 83, 89, figs. 92, 98; Recio, 2000: 3-4) (Fig. 3.2). These foundations are comprised of seven and nine transverse rectangular units and measure a total of 25 m and 30 m in length respectively. Little information is available relating to the events that prompted these dedications, but evidence exists to suggest that these may not have been the only ship dedications on Samos. A fragmentary inscription also discovered at the Temple of Hera alludes to the offering of at least six other ships to Hera and one to Poseidon by a certain Amphidemos during the 6<sup>th</sup> century BC (Ohly, 1953: 111-112). Unfortunately, little else is known about these offerings and it is possible that they took the form of models rather than actual ships.

Monuments have also been uncovered on Delos and Samothrace that dramatically attest the dedication and permanent display of ships. The excavation of the Monument of the Bulls on Delos was the first archaeological discovery of a building that once housed



*Figure 3.2.* Plan of the Sanctuary of Hera on Samos c. 650 BC. Note the arrangement of the stone foundations that once likely supported the hulls of dedicated ships. (Drawing: author, based on Walter, 1990: 83, fig. 92; Kyrieleis, 1981: 89, fig. 65)

an ancient galley for public display (Fig. 3.3A). This building, which was named after elements of its decoration, consists primarily of a *cella* measuring 45.80 m long by 4.84 m wide. A series of transverse foundations, as well as a stone structure that may have functioned to support a ship's upward curving stern, have been uncovered in this room. Scholars have offered conflicting opinions relating to the identity of the ship that was displayed in this building, but most agree that it was an ancient galley (Pausanias, 1.29.1; Couchoud & Svoronos, 1921; Basch, 1987, 347-349; 1995; Morrison & Coates, 1996: 36; Guillerm, 1999; Recio, 2000: 4).

A recent discovery of a similar building dated to the first half of the 3<sup>rd</sup> century BC at the Sanctuary of the Great Gods on Samothrace is also believed to have once displayed a ship (McCredie, 1987, Rice, 1993: 247; Recio, 2000: 4). This structure has a *cella* measuring 27.25 m long by 12.18 m wide and preserves transverse stone foundations similar to those discovered on Delos and Samos. More importantly, a pair of large stone blocks that were undoubtedly cut to conform to the cross-sectional shape of a ship's hull have been discovered in situ, resting on their original stone foundations (Catling, 1986-1987: 50-51) (Fig. 3.3B). This discovery may shed light on the arrangement of the supports that once existed as part of the monuments on Delos and Samos.

Unfortunately, insufficient evidence is available to determine the circumstances surrounding the construction of any of these monuments with certainty. It is possible that they were constructed to display dedicated ships as thank-offerings, either to commemorate a particular commercial or military success, or to display enemy ships that were captured as spoils of war. Regardless of the identity of the ships, these monuments

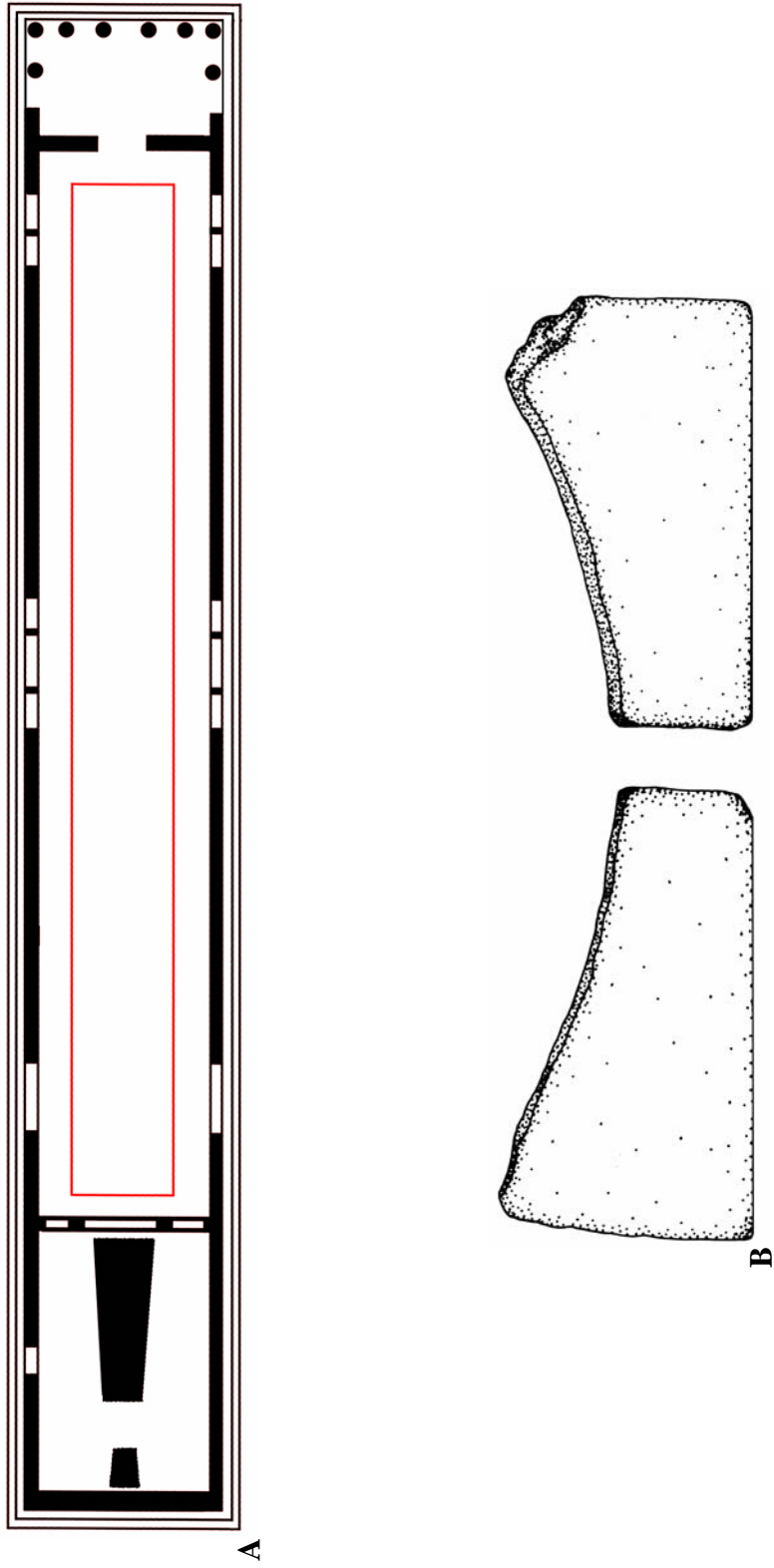


Figure 3.3. (A) Plan of the Monument of the Bulls on Delos; Red indicates position of the ship in the *cella* (Drawing: author, after Couchoud & Svoronos, 1921: 283, fig. 1); (B) Stone supports designed to cradle a ship's hull discovered in situ on Samothrace. (Drawing: author, based on Catling, 1986-1987: 51, fig. 90)



comprised extraordinary displays of wealth and resources that undoubtedly served as much as tools of propaganda as they showed the gratitude of their dedicators. Other impressive monuments, including a number of interesting statue bases in the form of ship bows, survive from Epidauros, Rhodes, Samothrace, Thasos, and Cyrene; these surely served a similar function (Göttlicher, 1978: 67-69; Ermeti, 1981; Johnston, 1985: 99-105, 116-17). References exist in the work of the 6<sup>th</sup>-century AD writer Procopius (*De Bello Gothico*, 8.22.23-29) to similar monuments that were presumably dedicated as thank-offerings following successful voyages and naval battles (Johnston, 1985: 134-135).

The dedication of ship models and tablets depicting ships was much more common than the dedication of actual ships or monumental sculptures in antiquity. Evidence for the dedication of ship models is well attested in the archaeological record. Metal and terracotta ship models dating to the Archaic and Classical Periods have been discovered in deposits at Corinth, Isthmia, Athens, Perachora, and Lipari (Morgan, 1935: 196-97; Payne, 1940: 97, pl. 29.4; Stillwell, 1952: 195-197, pl. 43; Broneer, 1959: 301-303, 338, pl. 73c; Johnston, 1985: 64-65, 67, 78-81; Raubitschek, 1997: 10, pl. 7). In addition, excavations at the Heraion on Samos have yielded an impressive collection of wooden ship models (Ohly, 1953: 110-120, 125, pls. 34-35; Kopcke, 1967: 145-148; Kyrieleis, 1980: 89-94, pls. 18-20).

Interestingly, the majority of extant ship models appear to represent warships. Unfortunately, very few reveal any indication of the occasion that prompted their dedication. Were they dedicated in place of actual ships that were vowed to the gods

when their crews encountered great peril at sea? Alternatively, might they have been simple thank-offerings made on the withdrawal of a ship from service or on the retirement of its captain when the dedication of an actual ship was impractical? Could they have been dedicated as part of a ceremony that endeavored to gain the favor of a particular deity and to ask for protection on a specific voyage, or could they have simply functioned to commemorate a successful trading venture or naval engagement? Such questions can rarely be answered without accompanying textual records.

Fortunately, a number of textual references survive that attest to a variety of reasons for ship model dedications. Plutarch tells us:

Out of the spoils, Lysander set up at Delphi bronze statues of himself and each of his admirals, as well as golden stars of the Dioskouroi, which disappeared before the battle of Leutra. And in the treasury of Brasidas and the Acanthians there was stored a trireme two cubits long, made of gold and ivory which Cyrus sent Lysander as a prize for his victory (Plutarch, *Lysander*, 18.1 [B. Perrin, trans., Cambridge, Mass., 1914]; 12.1).

The dedication by Lysander of this model to Apollo was likely made as a thank-offering for his crushing defeat of the Athenian navy at Aegospotami in 405 BC (Johnston, 1985: 135-136). Another reference survives in an anonymous epigram that records the dedication of a ship model to Apollo at Delphi, given in remembrance of a successful voyage that brought gifts of golden ingots to the sanctuary (*Anthologia Palatina*, 6.342). Furthermore, Johnston (1985: 138) notes that many of the ship models discovered in the waters off Greece and Cyprus may attest to a tradition similar to the *navigium Isidis* that dates back to at least the Archaic Period.

Dedications of other ship models constructed from precious metals dating to the Classical and Hellenistic Periods are known from temple inventories from the

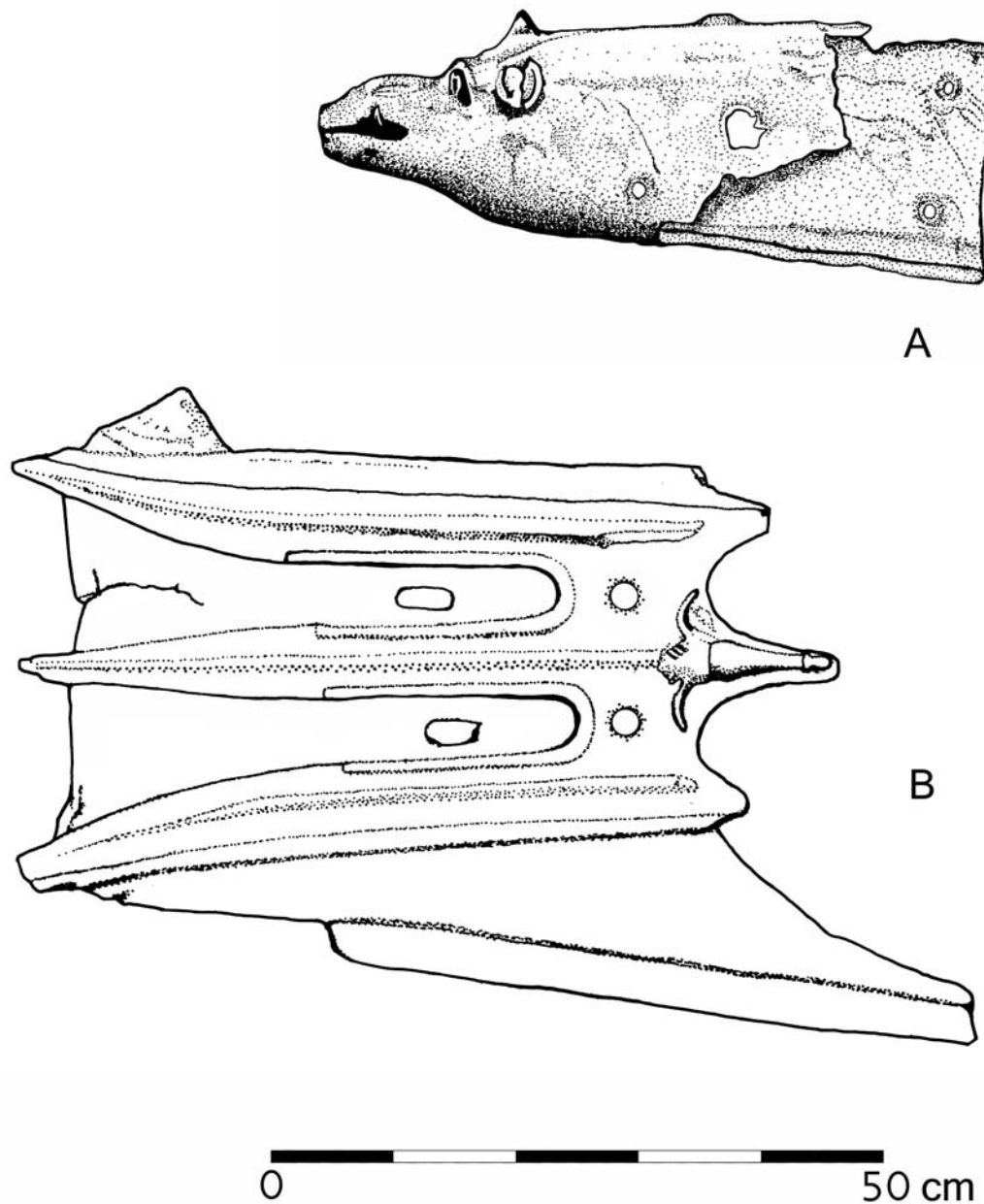
Artemision and the Temple of Apollo on Delos. An inventory from the Artemision dated to 364 BC records the dedication of an unspecified number of *trieres*-like *kraters* and several inventories from the Temple of Apollo record the dedication of at least one silver ship model by Seleukos I (Rouse, 1902: 116, 230; Pritchett, 1979: 285; Johnston, 1985: 133-134). Neither the list from the Artemision nor the lists from the Temple of Apollo record the events that prompted these dedications. It seems likely that they were constructed from spoils gained from naval victories, in a manner similar to the bronze statues that Lysander constructed from war spoils and dedicated at Delphi (Plutarch, *Lysander*, 18.1).

The offering of tablets depicting ships is known from Athens, Corinth, Sparta, Sunium, and Penteskouphia (Rouse, 1902: 230; Morrison & Williams, 1968: 73, 74, 83, 87-89, pls. 8b, 10d, 12c-e; Basch, 1987: 235-237, figs. 486-494). In addition, Grandjouan (1989: 32-33) has proposed that some of the relief molds discovered during excavations at the Athenian Agora may have been used to produce dedicatory terracotta tablets. Four fragments of these molds preserve elements of an oared warship. These have been reconstructed to form a single mold that depicts a ship, possibly a *trieres*, being rowed among Tritons (Grandjouan, 1989: 7, 47, 48, pls. 7, 28). These tablets were likely dedicated following deliverance from the dangers of naval combat or foul weather at sea. Marble reliefs were similarly dedicated. An especially interesting example from Piraeus dated to between the 4<sup>th</sup> and the 3<sup>rd</sup> centuries BC, depicts the Dioskouroi, one on horseback and the other on foot, before a supplicant standing on the bow of his ship and raising a hand in reverence (Van Straten, 1981: 97; Kaltsas, 2002: 277).

*Maritime Offerings: Ship Parts and Gear*

The offering of ship parts as symbols of entire ships is found in the dedication of captured naval gear, primarily *emboloi* (Fig. 3.4). The naval rams of ancient galleys, *emboloi*, were the most common ship parts dedicated as spoils of war. This is not surprising considering that the naval ram was the most recognizable weapon of Classical Greek naval warfare, and represented a considerable investment of both labor and capital. Ancient galleys would be practically useless in traditional Classical Greek naval engagements without their rams, thus the dedication of a captured *embolos* was a clear symbol of naval supremacy. Herodotus records that in the early 6<sup>th</sup> century BC the Aeginetans and the Cretans defeated the Samians who had settled at Cydonia on Crete and “cut off the ships’ prows, that were shaped like boar’s heads [the *emboloi* of Samian warships], and dedicated them in the Temple of Athena in Aegina” (Herodotus, *Persian Wars*, 3.59 [A.D. Goldey trans., Cambridge, Mass., 1920]). Pausanias (1.40.5) attests to a similar dedication at the Olympieum in Megara that also took place during the early 6<sup>th</sup> century BC (Rouse, 1902: 103). Other examples of the offering of captured Classical and Hellenistic *emboloi* are known from inscriptions that record dedications of *emboloi* at Delos and at the shrine of Hero Iatrus at Athens (Rouse, 1902: 110, 230, 400-401; Wachsmuth, 1967: 136; Murray & Petsas, 1989: 115).

The *embolos* was also used as a symbol of power and military might in the Graeco-Roman world. Diodorus Siculus (17.115.1-2) describes the so-called Pyre of Hephaestion, a pyramidal structure built for the funeral of Hephaestion, a renowned friend and general of Alexander. This monument is said to have been decorated with 240



*Figure 3.4.* Examples of extant rams: (A) A *proembolos* discovered in Genoa harbor in 1597 commonly referred as ‘the Turin Ram,’ tentatively dated to between the 3<sup>rd</sup> century BC and the 1<sup>st</sup> century AD, whether it was functional or decorative remains unclear; (B) An *embolos* of uncertain provenance in the Archaeological Museum of Piraeus tentatively dated to between the 5<sup>th</sup> century BC and the 1<sup>st</sup> century AD. (Drawing: author, based on (A) Torr, 1964: 152, pl. 8.43; (B) Steinhauer, 1998: 30-31, pl. 1)

golden bows of *quinqueremes* along its foundation course. These bows were used as symbols of military power even though Hephaistion cannot be considered a celebrated admiral. Thus, the Pyre of Hephaistion is a dramatic testament to the use of the ship bow and its *embolos* as symbols of military might (Rice, 1993: 243). This usage recalls the later Roman tradition of decorating the speaker's platform with the rams of captured naval vessels, a tradition from which this platform, the *rostra*, derives its name.

The dedication of other ship parts as spoils of war is also known from the Classical and Hellenistic Periods. Plutarch (*Themistocles*, 15.2 [B. Perrin., trans., Harvard, 1914]) remarks that “the first man to capture an enemy's ship [at Salamis] was Lycomedes, an Athenian captain, who cut off its figure-head [or name-device, its *parasêma*] and dedicated it to Apollo the Laurel-Bearer at Phlya.” In addition, the dedication and display of *akroteria*, *akrostolia*, and *aphlasta*, decorative elements at the extremities of ancient ships, as well as other parts of ships in temples, sanctuaries, and *stoai* during the Classical and Hellenistic Periods are known from both ancient authors and the epigraphic record (Homer, *Iliad*, 9.240-243; Pausanias, 10.11.6; Plutarch, *Alcibiades* 32.1; Xenophon, *Hellenica*, 2.3.8, 6.2.36; Rouse, 1902: 105, 110; Wachsmuth, 1967: 137; Meiggs & Lewis 1969: 53-54, no. 25; Pritchett, 1979: 266; Murray & Petsas, 1989: 115; Recio, 2000: 25, 28).<sup>[5]</sup> Interestingly, Pausanias (*Description of Greece*, 9.16.3 [W.H.S. Jones., trans., Cambridge, Mass., 1918]) reports that there were three wooden statues of Aphrodite at Thebes that were “said to be votive offerings of Harmonia, and the story is that they were made out of the wooden figure-heads [*akrostolion*] on the ships of Cadmus,” the legendary founder of Thebes.

The dedication of these elements often served a function similar to the dedication of *emboloi*. They clearly represented defeated naval forces and the might of the victor.

Plutarch recorded a version of the return of Alcibiades to Athens from exile and war in 408 BC that illustrates this notion:

But Alcibiades, yearning at last to see his home, and still more desirous of being seen by his fellow citizens, now that he had conquered their enemies so many times, set sail. His Attic triremes were adorned all round with many shields and spoils of war; many that he captured in battle were towed along in his wake; and still more numerous were the figure-heads [*akrostolia*] he carried of triremes which had been overwhelmed and destroyed by him. There were not less than two hundred of these all together (*Alcibiades*, 32.1 [B. Perrin., trans., Cambridge, Mass., 1914]).

The symbolic function of these elements is also attested by Herodotus (8.121) who recorded that after the Greeks defeated the Persians at Salamis, “they divided the spoil and sent first-fruits to Delphi; whereof was made a man’s image twelve cubits high, holding in his hand the figure-head [*akroterion*] of a ship.” Even though instances involving the dedication and commemorative display of the *ophthalmos* or the *ptychis* are absent from the textual record, it is possible that they could have served functions similar to that of a ship’s ram, its figurehead, or its bow and stern ornaments. Although this is possible, the dedication of an *ophthalmos* or a *ptychis* would not comprise as dramatic a display as a ship’s ram or figurehead, nor would they be as likely to communicate the origin of the defeated.

In addition to ship parts, prize arms are also known to have been dedicated during the 5<sup>th</sup> century BC as spoils of naval warfare (*Anthologia Palatina*, 6.215; Plutarch, *Moralia*, 870F; Rouse, 1902: 106; Pritchett, 1979: 266). Offerings of some ship-parts and gear were related to thanks-offerings concerning safe passage and protection from

the many dangers associated with seafaring. Examples of how these were dedicated include both the dedication of quarter-rudders as symbols of successful navigation and the offering of part of a ship's deck that may have saved its dedicator from a shipwreck (Callimachus, *Hymnus in Dianam*, 228-230; Rouse: 1902, 228, 230; Recio, 2000: 25).

The best-known elements of ship gear dedicated as thank-offerings are undoubtedly anchors. The dedication of anchors is well-attested in both the archaeological and the textual records (Recio, 2000: 29-54). Deposits of inscribed stone anchor stocks are known from both the Archaic and Classical Periods. These include dedications to Aphrodite of the Good Anchorage, Benevolent Zeus, and Apollo (Gianfrotta, 1977: 287-289; Shapovalov, 1994: 267, 269). The setting of anchors was often a last resort when a ship encountered foul weather, and could be directly related to deliverance from catastrophe. Thus, the anchor evolved as a common symbol of salvation. In addition to actual anchors, model anchors were later also dedicated at temples and sanctuaries and may have been used as protective amulets by ancient mariners (Rouse, 1902: 230; Deonna, 1938: 198-199, pls. 28, 29, 35; Mingazzini, 1938: 913, pl. 42.10; Gianfrotta, 1977: 285-286; Pritchett, 1979: 247, 267-268; Shapovalov, 1990; 1994: 264-267; Galili & Sharvit, 1999a) (Fig. 3.5).

Other types of ship's gear and equipment were also dedicated to deities of the sea. The *Anthologia Palatina* (6.4-5, 6.24-30, 6.38, 6.90, 6.192-93) records offerings of oars, nets, and anchors by fishermen upon retirement. The dedication of these elements is clearly related to their utility, not to their use as symbols to replace the offering of boats and ships. Although rare, models of ship-parts were also used as thank-offerings to the



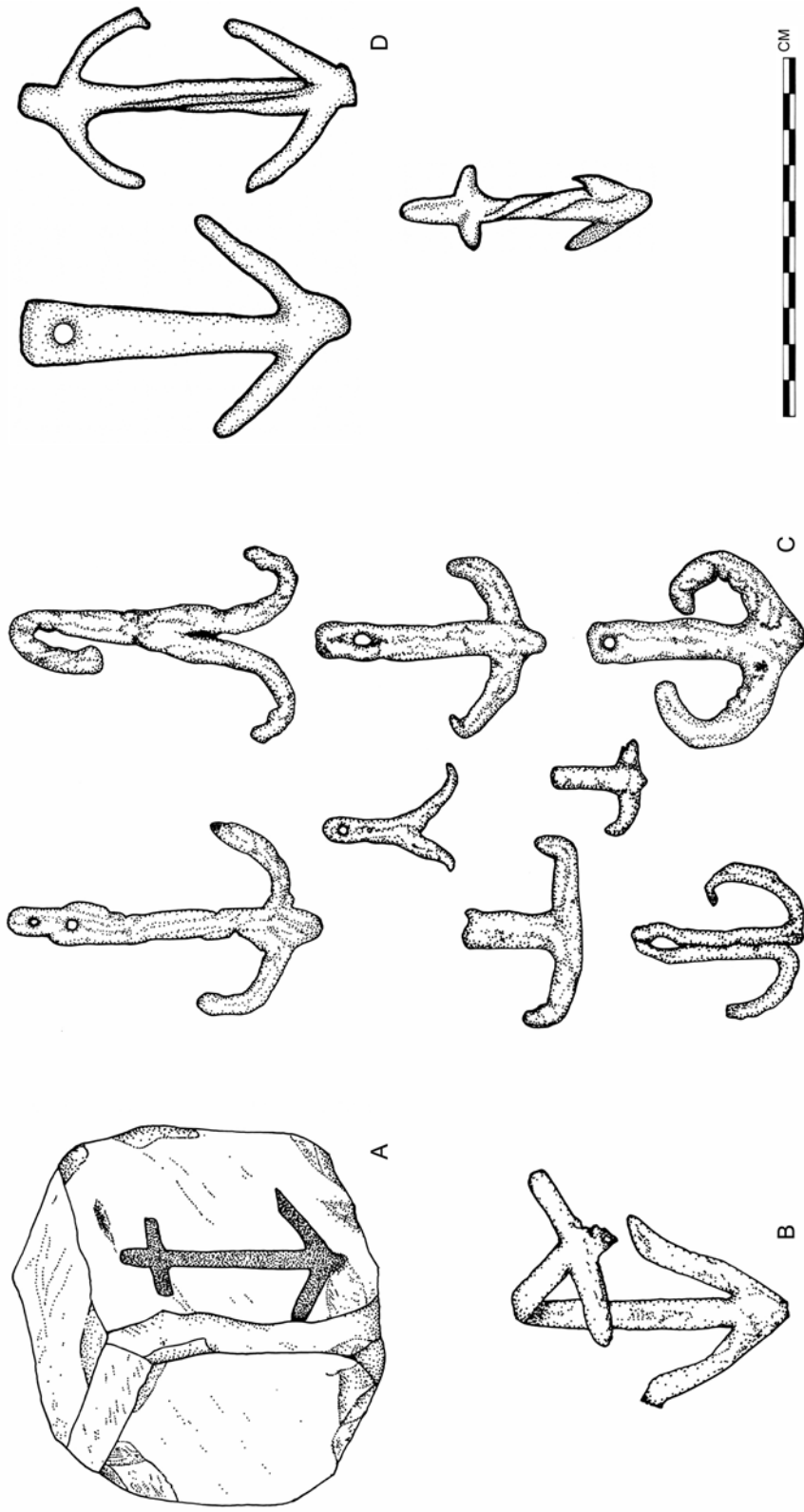


Figure 3.5. (A) A form for molding model anchors from Crimea (Drawing: author, after Shapovalov, 1994: 268, fig. 9); (B) Lead model of a similarly shaped anchor from Rome (Drawing: author, after Gianfrotta, 1977: 286, fig.1); (C) Lead model anchors from Crimea tentatively dated to between the 1<sup>st</sup> and 9<sup>th</sup> centuries AD (Drawing: author, after Shapovalov, 1994: 266, fig.7); (D) Lead model anchors from Delos. (Drawing: author, after Deonna, 1938: 199, figs. 236-237)

gods. These were dedicated under extraordinary circumstances. For example, Herodotus (*Persian Wars*, 8.122 [A.D. Godley, trans., Harvard, 1946]) tells us that the Aeginetans “dedicated three golden stars that are set on a bronze mast” at Delphi as part of the first-fruits for victory at Salamis. The nature of this offering suggests that they witnessed what is now known as St. Elmo’s Fire, a good omen and an epiphany of the Dioskouroi. Only one object has been identified as a model of an individual ship part (Diels, 1915; Johnston, 1985: 122). It is a small bronze *aphlaston*. The provenance, purpose, and present location of this object is unknown. Furthermore, it is possible that it once merely served as an ornament on a piece of furniture or a bronze vessel. Therefore, it cannot be considered a model ship part created specifically for dedication.

### *Discussion*

In light of the evidence for Greek maritime offerings and dedications, a number of comments can be made relating to Saatsoglou-Paliadeli’s hypothesis that the marble eyes from Zea were fashioned as models of painted ship eyes that could serve as surrogates for the dedication of entire ships. The dedication of individual model ship-parts was rare and generally related to either the utility of the represented element or its ability to communicate military and political power. The majority of these offerings can be considered thank-offerings rather than gifts of propitiation. If the purpose of a particular gift was to give thanks for the protective properties of the eye, either a model ship eye or an actual ship eye would comprise an appropriate offering. This would likely have been an offering made by the crew of a ship, a captain, a steersman, or a bow officer and not a

mere sailor or oarsman. It seems unlikely that a model of a ship eye or a composite model composed of an *ophthalmos* and a *ptychis* would have been considered a general thank-offering for deliverance from danger, or an especially profitable voyage, or a successful career at sea. A gift of a tablet depicting a scene related to the occasion of the offering, a model ship, or a sacrifice seems more appropriate.

If the occasion of the offering related to captured enemy ships as spoils of war a model *ophthalmos* and *ptychis* would again not necessarily have been considered an appropriate offering. Evidence exists from both temple inventories and surviving literature that attests to the dedication of actual *emboloi*, *aphlasta*, *akroteria*, *akrostolia*, and *parasema* when the dedication of an entire enemy ship was impractical, either because it needed to be refitted and reused, or because of the difficulty involved in the transport and preparation of an entire ship for dedication. The form of these elements likely revealed the origin of the defeated and clearly showed the might of the victor. A large collection of such parts would comprise an impressive display with great propaganda value. Models simply would not have had the same effect unless they took the form of elaborate large scale monuments similar to the Victory of Samothrace, the naval monument at Cyrene, or the reliefs at Lindos and Tiberine, or objects constructed from precious metals, funded by the sale of war spoils (Herodotus, 8.121-122; Ermeti, 1981; Basch, 1987: 354-371). Therefore, it is possible that the actual *ophthalmos* or *ptychis* of a ship could be dedicated alone, but it is unlikely that models of individual elements in stone, wood, or terracotta would be dedicated as spoils of war.

Furthermore, there is no reason to consider the marble eyes from Zea to be the marble interpretation of painted ship eyes given the weight of evidence that suggests that they were the actual eyes of ancient ships coupled with the present state of knowledge relating to the ancient Greek practice of offering and dedication. No evidence exists to suggest that they could not have been both the eyes of ancient ships and offerings that were dedicated to show the gratitude of a ship's captain either for the protection an eye granted to his ship and its crew, or part of a collection of actual ship parts taken from captured enemy ships, or surrogates given in place of actual ships. As a result, even if there was a relationship between the votive reliefs uncovered at Zea and the marble eyes, this fact alone would not prove that the marble eyes were not once the eyes of ancient ships. Therefore, unless new finds prove otherwise, the marble eyes from Zea should not be considered models of ship eyes.

#### THE MARBLE EYES AS SHIP EYES

Lolling (1880: 384) was the first scholar to suggest that the marble eyes discovered at Zea had once adorned the bows of Athenian warships. He cites their find-spot, near the ship sheds at Zea, as evidence that they may have served a naval function.<sup>[6]</sup> Their association with the ship-sheds indeed suggests a connection with the naval facilities at Zea, but not necessarily that they once belonged to ships. Although many scholars suggest alternative functions for the marble eyes from Zea, others consider them the eyes of ancient warships, including Dragatsis (1900: 39), Svoronos (1914: 132), Blümel (1964: 19), DeVries & Katzev (1972: 45), and Morrison, Coates & Rankov (2000: 149).

Evidence gleaned from the eyes from both Zea and Tektaş Burnu, coupled with the testimony of both ancient texts and representations of ships with eyes in vase painting and the plastic arts, strongly suggests such an attribution.

### *Material, Size, and Decoration*

The majority of arguments raised against the use of marble eyes on ancient Greek ships are easily resolved. The most common criticisms relate to their material and their size. Many consider marble an unsuitable material for shipboard use, arguing that exposure to saltwater and sea-air would quickly cause its destruction and that a decoration constructed of marble could easily fracture (Assmann, 1889: 1613; Saatsoglou-Paliadeli, 1980: 133; Steinhart, 1995: 100).<sup>[7]</sup> Archaeological evidence for the use of marble on Archaic, Classical, and Hellenistic ships certainly disproves the argument that marble was not used aboard ancient ships. Marble anchor stocks, freeing-rings, and decorations were used on ancient ships (Gianfrotta, 1977: 286, 287, 291; Pulak & Townsend, 1987: 39-41; Nowak, 2001). Although a marble eye would break more easily than a painted eye or one constructed from a more durable material, the placement of eyes on the upperworks of ancient warship bows would offer some protection during naval action. Admittedly, the location of ship eyes would not eliminate the potential of damage during combat; in fact, this possibility is reflected in the Athenian naval inventories that list *ophthalmoi* as missing or broken.

Pollux (*Onomasticon*, 1.86) lists the *ophthalmos*, or eye, among other ‘parts of a ship’: “The part above the prow is named the *akrostolion*, the *ptychis*, and the

*ophthalmos*; it is where they inscribe the name of the ship” (Nowak, 2001: 93 [W.M. Murray trans.]). Although dated to the 2<sup>nd</sup> century AD, this passage suggests that the term *ophthalmos* was used here to refer to a ship eye. Considering Pollux’s testimony it seems that if the term *ophthalmos* also refers to ship eyes in the Athenian naval inventories, the eyes on the bows of ships used by the Athenian navy could not have been merely painted (Lolling, 1880: 385; Svoronos, 1914: 132; Morrison & Williams, 1968: 283, 288 [J. Morrison trans.]; *IG II<sup>2</sup>*: 1604.41, 1604.68, 1604.75, 1607.24):

1604.41: [οφθαλμ]ος κατεαγε[ν].  
“Her eye is broken”

1604.68: οφθαλμος κατεαγεν.  
“Her eye is broken”

1604.75: οφθαλμοι κατεα[γασιν].  
“Her eyes are broken”

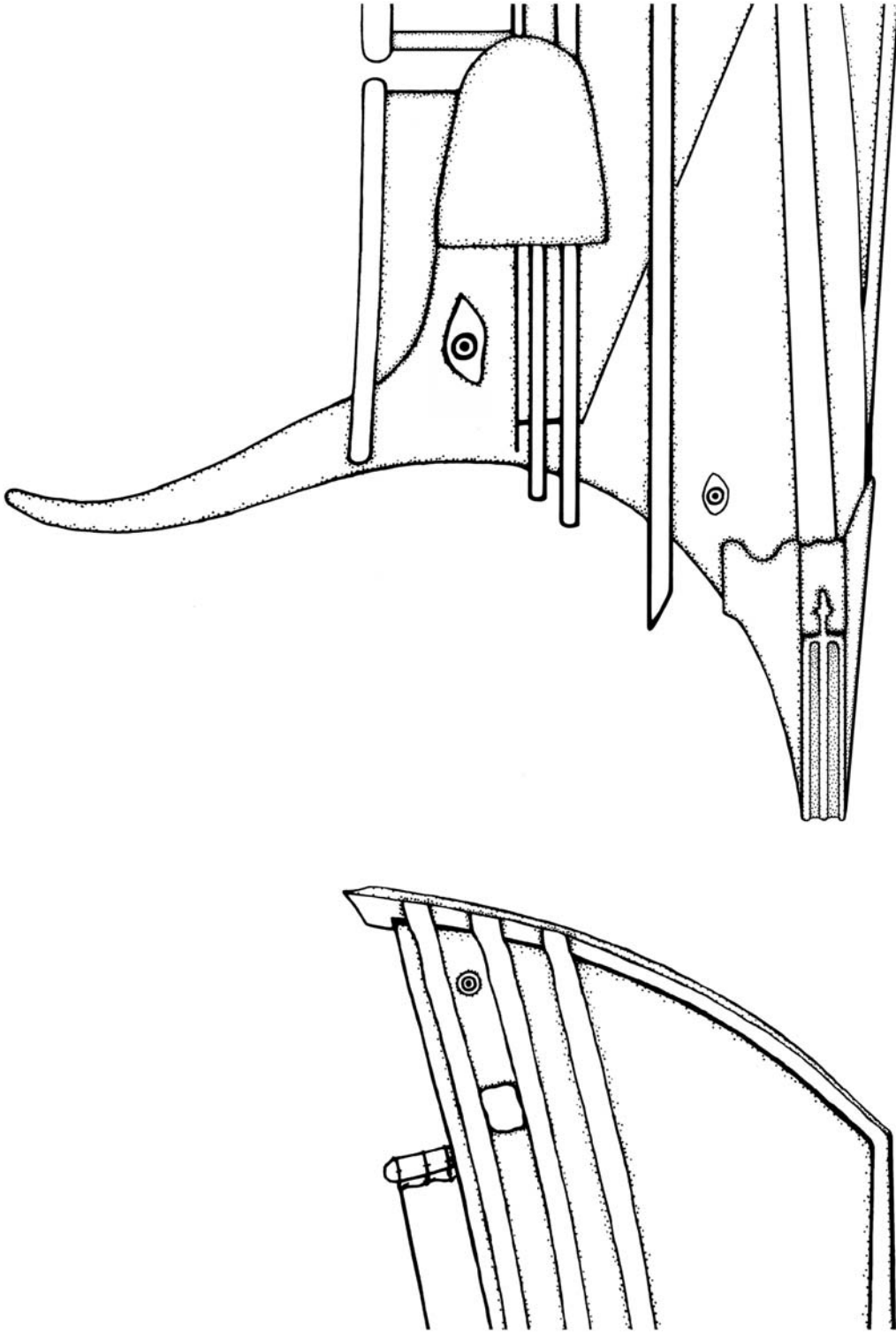
1607.24: [α]υτη σκευος εχει ουθεν, ουθ οι οφθαλμοι ενεισιν.  
“This ship has no gear and does not even have eyes”.

These entries prove that ship eyes could be separate elements constructed from a material that could break: this material may have been marble.<sup>[8]</sup>

Many scholars also believe that the marble eyes from Zea are too small to have adorned the bows of ancient warships. This hypothesis is based almost entirely on the depiction of ancient warships in Greek art. Steinhart (1995: 100) has even calculated that *triereis* eyes would have measured approximately 150 cm in length. Researchers consistently fail to recognize that one cannot draw such conclusions from representational evidence alone. The significance of the eye as well as the vision of the artist could easily account for its exaggerated size in these representations. Moreover,

the eyes on representations of Greek warships vary in proportion from considerably smaller than those represented by the marble eyes from Zea to gigantic elements that dominate the bows of ships (Fig. 3.12E-F). A clear proportional relationship exist between the marble eyes from Zea and the marble eyes from Tektaş Burnu if one takes into account the estimated size of Athenian *triereis* at 35 m, and the estimated size of the ship at Tektaş Burnu at 15 m (Fig. 3.6). In addition, the marble eyes from Zea are proportional to the space available on the bows of an Athenian *trieres* if one considers that according to Pollux (*Onomasticon*, 1.86) the available space was divided between the *ophthalmos* and the *ptychis*.<sup>[9]</sup> Therefore, these marble eyes should not be considered too small to have adorned the bows of ancient ships. In addition, traces of red paint surviving on the inner faces of the eyes may have originated from the bows of Athenian warships (Lolling, 1880: 387). This contention is based solely on Archaic and Classical Period Greek warship representations that show ship eyes set on a red background. Admittedly, this does not prove that they were attached to ships, but considering the range of evidence available that supports the possibility that the marble eyes from Zea once adorned ancient Greek warships, such an association is reasonable.

Moreover, the decorations on the outer faces of the marble eyes from Zea parallel those seen on representations of Greek warships and those on the outer-faces of the marble eyes from Tektaş Burnu, which are believed to be the eyes of a Classical Greek merchantman (Fig. 3.7 A-B). The marble decorations from Tektaş Burnu are believed to be ship eyes based on their provenance, construction, and form. They were discovered in close proximity to one another amid the hull remains of a Classical Greek merchantman



*Figure 3.6.* Illustration of the proportional relationship between the marble eyes discovered at Zea and Tektaş Burnu. Note the Zea marble eye is the eye placed on the upperworks of the galley, and the Tektaş Burnu eye is placed on the bow of the merchantman, both near its stem, and between its upper wales. (Drawing: author, based on Steffy, 1985; Morrison, Coates & Rankov, 2000: 270, fig. 80)



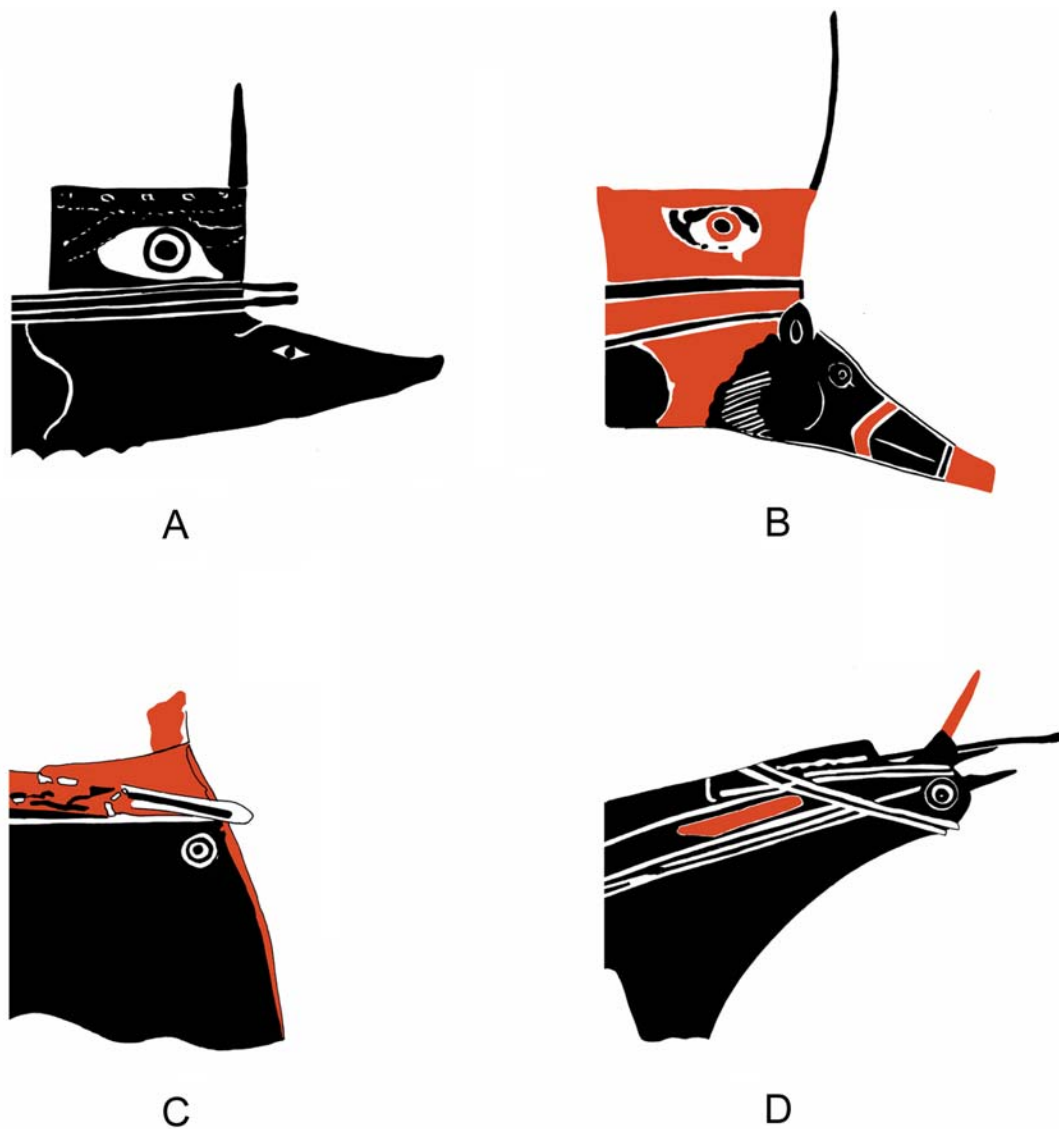


Figure 3.7. Late Archaic warship (A-B) and merchant ship (C-D) bows. (Drawing: author, based on (A) Morrison & Williams, 1968: 111, pl. 20d; (B) Morrison & Williams, 1968: 98, pl. 15b; (C) Casson, 1995: fig. 82; (D) Casson, 1995: fig. 91)

in an area believed to be the final resting place of the ship's bow (Carlson, 2003: 585, fig. 4). Their construction suggests that they were affixed to a flat wooden surface with a thickness of approximately 24 mm. This measurement corresponds well to known planking thicknesses from a number of 6<sup>th</sup>-century BC shipwrecks including: Bon Porté I - 2.4 cm to 2.6 cm (Joncheray, 1976: 28); Place Jules-Verne VII - 2.5 cm to 3.0 cm (Pomey, 1995: 476); and Place Jules-Verne IX - 2.7 cm (Pomey, 1995: 471). Their form closely parallels the representation of eyes on Archaic Greek merchantmen depicted on black-figure ceramics (Morrison & Williams, 1968: 109, pl. 19; Basch, 1987: 222, 223, 227, figs. 462-464, 474) (Fig. 3.7 C-D). The range of available evidence suggests that all of the marble eyes described above likely served as the eyes of ancient Greek ships. To understand where these eyes fit chronologically within the history of ancient Greek seafaring, it is necessary to review the depiction of eyes on ancient ships in Greek art.

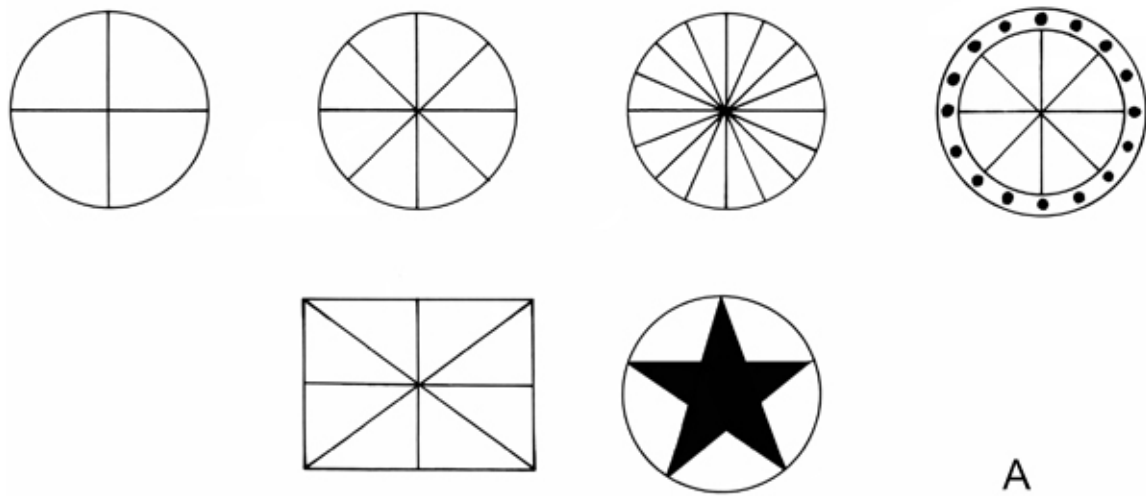
*Ship Eyes in Ancient Greece: An Iconographic Voyage from the Bronze Age to the 3<sup>rd</sup> Century BC*

In Greece, the earliest clear depiction of a ship with eyes dates to the Late Bronze Age.<sup>[10]</sup> It is a Late Helladic clay ship model decorated with circular eyes discovered at Phylakopi, Melos (Fig. 3.8). Another possible instance of a ship eye exists on a ship model from Mycenae, but at present the Phylakopi model is the only definitive example of a ship decorated with eyes from Bronze Age Greece (Johnston, 1985: 28-29).<sup>[11]</sup> Few ship representations survive that can be dated to the horizons between the end of the Bronze Age and the start of the Late Geometric Period in Greece. Of these few, none

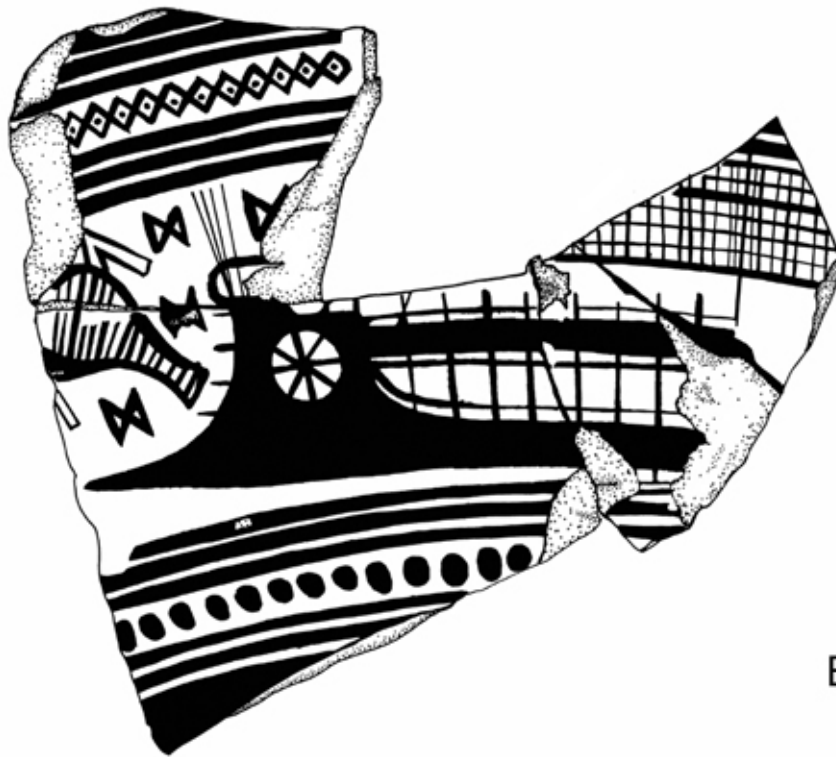
clearly exhibit eyes.<sup>[12]</sup> It is not until the Late Geometric Period that ship representations with eyes reappear in the archaeological record. Excavations in the Dipylon cemetery at Athens have yielded an impressive collection of Late Geometric I [c. 760 to 735 BC] ceramics decorated with ships (Morrison & Williams, 1968: 12-28, pls. 2-4). All of these are galleys. Eyes adorn the bows of these ships and typically take the form of 8- or 16-point stars enclosed in circles, although other related types are known (Fig. 3.9 A-B). The forms of these eyes likely relate more to conventions of Greek Geometric art than to reflections of the eyes that actually adorned these vessels.<sup>[13]</sup> Slightly later examples dating to Late Geometric II [c. 735-710 BC] show a greater variety of abstract forms used to indicate the presence of eyes. These include a 5-point star enclosed in a circle, 8-point stars enclosed in rectangles, simple circles, and concentric designs (Basch, 1987: 177, 178, 181, 184, 188, figs. 373bis, 374, 381, 388, 395) (Figs. 3.9 A, 3.10 A-E).<sup>[14]</sup>



*Figure 3.8.* A Bronze Age boat model with eyes from Phylakopi, Melos. (Drawing: author, based on Johnston, 1985: 28)



A



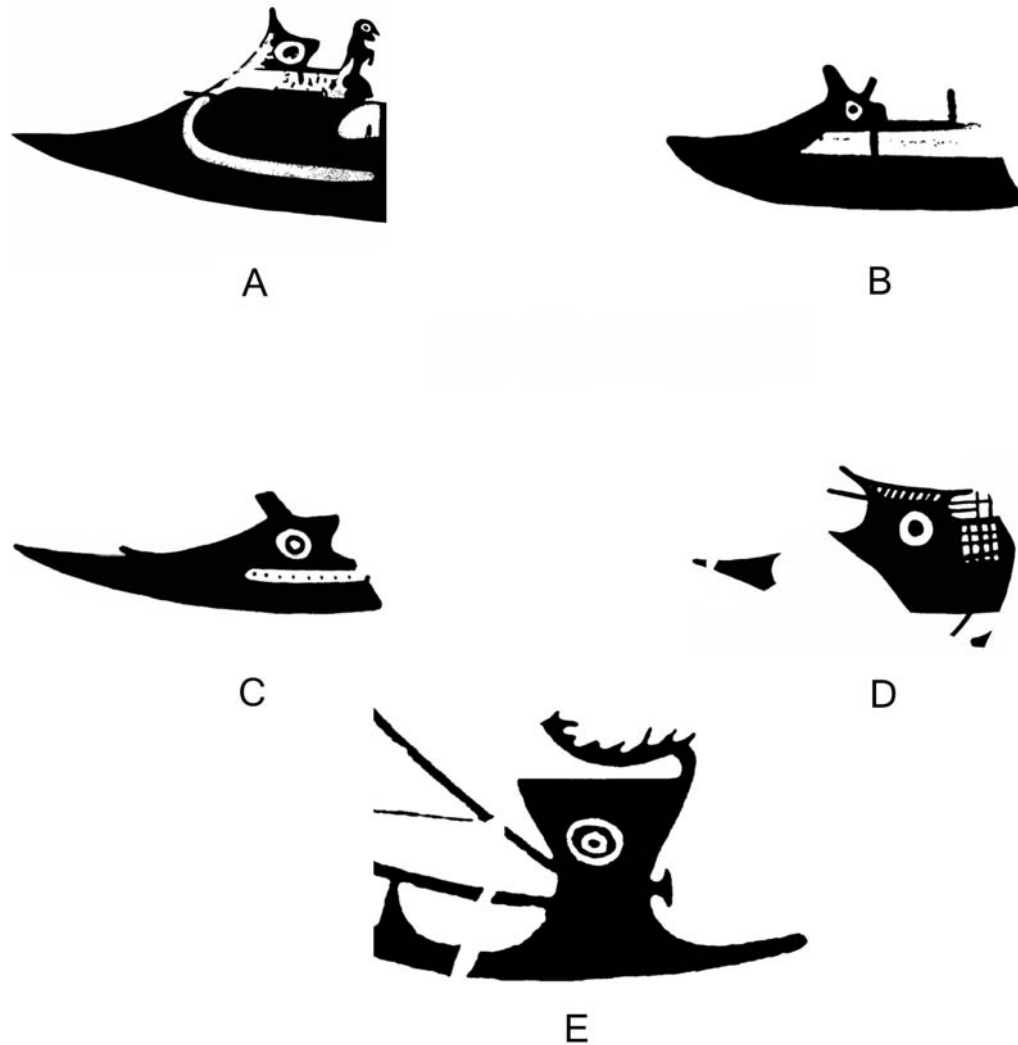
B

*Figure 3.9.* (A) Forms of stylized ship eyes depicted on Late Geometric I & II ceramics (Drawing: author); (B) A representation of a Late Geometric I ship from the Dipylon Group. (Drawing: author, based on Morrison & Williams, 1968: 22, pl. 2c)

A galley of comparable form to many ship representations from the Late Geometric Period is depicted on a later, Archaic Period, ivory plaque that was discovered at the Temple of Artemis Orthia at Sparta and is dated to the 7<sup>th</sup> century BC. This anachronistic ship representation appears to have both a circular eye decorating the upperworks of its bow in a manner reminiscent of earlier Late Geometric Period warships and an ovoid eye set in relation to its forefoot (Dawkins, 1929: 214-215, 370, pls. 109-110; Basch, 1987: 241: figs. 506-507) (Fig. 3.11E).<sup>[15]</sup>

During the 7<sup>th</sup> and 6<sup>th</sup> centuries BC, many representations of Greek galleys fail to include eyes on the upperworks of their bows. Instead, the eyes on these vessels are typically placed in association with the forefoot, which now takes on a stylized zoomorphic form that often resembles the head of a boar (Richter, 1956: pl. 3.14; Morrison & Williams, 1968: 81-83, pls. 10a-10c) (Fig. 3.11 A-E). The clearest early representation of an Archaic Greek galley with a zoomorphic forefoot is found on a West Greek *krater* signed by Aristonothos, dated to 660 BC (Morrison & Williams, 1968: 74-75, pl. 9) (Fig. 3.11 A).<sup>[16]</sup>

The development of naval tactics involving the ramming and the subsequent disabling of enemy ships may coincide with introduction of eyes set in relation to the forefeet of warship bows. Such representations often show heavier or blunt-ended forefeet which are distinguishable from their thin, pointed ancestors. This would place the introduction of the naval ram in Greece at least 125 years prior to the earliest recorded account of a naval battle on record to use *emboloi*, naval rams, the Phocaeen defeat at Alalia in 535 BC (Herodotus, 1.166).



*Figure 3.10.* Examples of Late Geometric II ships with circular eyes. (Drawing: author, (A) based on Basch, 1987: 184, fig. 388; (B) after Casson, 1995: fig. 64; (C) after Basch, 1987: 181, fig. 381; (D) after Basch, 1987: 177, fig. 373bis; (E) after Basch, 1987: 188, fig. 395)

Scholars have attempted to establish the date of the introduction of the naval ram by studying the many waterline projections that appear on Late Bronze Age and Iron Age ship representations. Although the majority of scholars place its debut between 1000 and 850 BC, little evidence other than the basic shape of these projections can be cited to suggest that they are naval rams (Mark, 2005: 104-114). Furthermore, there is no textual evidence that suggests the existence of the naval ram before or during Homer's time, roughly the mid-8<sup>th</sup> century BC (Mark, 2005: 114).

It seems likely that the construction of the naval ram was a result of a gradual series of coincidental structural improvements that produced a bow that could withstand the force of a ramming blow:

It is possible that the forefoot began as a knee to reinforce the keel and stem post. As larger ships were built, bigger structures were required to protect and reinforce this joint. At some point it was discovered that this structure was strong enough to be used as a latrine and to board or disembark from a ship. However repeated use probably dictated that this structure be built larger and heavier, resulting in even less wave drag and a faster and more maneuverable ship (Mark, 2005: 112-113).

The first naval actions involving the use of a forefoot as a ram were likely both unplanned and remarkably successful. As a result, the forefoot likely evolved from a simple structural feature into a naval weapon by the 7<sup>th</sup> century BC.

It should not be surprising that many warship representations dated to the 7<sup>th</sup> and 6<sup>th</sup> centuries BC include zoomorphic rams decorated to resemble boar heads (Fig. 3.11 A-E). The association between the boar and the *embolos* undoubtedly began because of the coincidental resemblance of the forward ends of broad-beamed galleys with blunt *emboloi* to the head and snout of a boar (Plutarch, *Pericles*, 3-4). Composite construction features on the bows of these vessels imparted a general zoomorphic appearance that

was likely refined through the addition of simple painted and applied elements. This form may have later culminated in the casting of predecorated *emboloi*, although the detailed representation of boar-headed *emboloi* in Greek art may relate more to artistic convention than to reflections of the actual form of these elements. Moreover, a relationship between the way a boar charges his prey and uses his tusks to tear open its underbelly, and the way an ancient warship races toward its enemy and uses its *embolos* to crack its shell may further explain the appearance of boar-headed *emboloi* (Frost & Basch, 1975: 227).<sup>[17]</sup> Interestingly, a ram head is depicted on each side of a bronze battering ram from Olympia dated to the second quarter of the 5<sup>th</sup> century BC (Rolley, 1986: 244, pl. 273). This parallels the symbolic association between the boar and the *embolos*.

Further support for the boar's head as an ornament suitable to adorn the bows of warships relates to the fact that boars were common in both Greece and Asia Minor, and renowned for their ferocity and strength (Aelianus, *De natura animalium*, 12.3; Aristotle, *Historia Animalium*, 1.1; Herodotus, 1.36-43; Pausanias, 1.32.1, 3.20.4, 5.6.6, 7.26.10, 8.23.9, 9.23.7). Xenophon's treatise *Cynegeticus* describes the wild boar as possessing "strength [that] is so great that he has some peculiar properties which one would never imagine him to possess" (Xenophon, *Cynegeticus*, 10.17-18 [E.C. Marchant trans., Harvard, 1946]).

The strength and ferocity of boars is also described in legends that involve them ravaging crops and attacking villagers, as in the labor of Herakles that involved the capture of a savage boar on Mount Erymanthus in Arcadia (Apollodorus, *Bibliotheca*,



2.5.4). Pausanias (3.18.16 [W.H.S. Jones, trans., Harvard, 1918]) tells us that the Amyclaeon throne built by Bathycles of Magnesia during the mid 6<sup>th</sup> century BC was decorated with reliefs that included “Admetus yoking a boar and a lion to his chariot” from the legend of the courting of Alcestis. In this story, Alcestis’s father Pelias refused to give her to any man, except one that could yoke wild beasts to a chariot. Aided by Apollo, Admetus drove a chariot pulled by both a lion and a boar to win Alcestis’s hand. This shows that boars and lions were thought by Apollodorus (*Bibliotheca*, 1.9.15) to have been equals in strength and ferocity in Greece during the mid 6<sup>th</sup> century BC.

Boars were also occasionally used as instruments of the gods. The most famous example of this is found in the story of the Calydonian boar, which describes the hunt for a beast sent by Artemis to punish Oeneus, ruler of Calydonia, for neglecting to recognize her divinity (Apollodorus, *Bibliotheca*, 1.8.2). A similar legend involving Zeus and Attis is told by Hermesianax and relayed by Pausanias:

The account of Hermesianax goes on to say that, on growing up, Attis migrated to Lydia and celebrated for the Lydians the orgies of the Mother; that he rose to such honour with her that Zeus, being wroth at it, sent a boar to destroy the tillage of the Lydians. Then certain Lydians, with Attis himself, were killed by the boar. . . . (Pausanias, 7.17.9-10 [W.H.S. Jones, trans., Harvard, 1977]).

Herodotus told a similar tale. He recounts the death of Atys, son of Croesus King of Lydia, who was accidentally killed while on a hunt for a monstrous boar that destroyed crops and injured Mysian hunters near Mount Olympus (Herodotus, 1.36-43). Other stories attribute the death of Adonis to either a boar or to Ares disguised as a boar (Apollodorus, *Bibliotheca*, 3.14.4). These well-known tales coupled with the distribution

and behavior of boars make them easily recognizable symbols that were certainly fit to adorn a warship.<sup>[18]</sup>

One of the clearest early representations of a boar-headed *embolos* appears on the famous Attic black-figure *krater* painted by Kleitias known as the François vase, dated to 570 BC (Morrison & Williams, 1968: 84, pl. 11b) (Fig. 3.12A). The distinction between the eye of the boar and the eye of the ship is shown in this representation. A separate eye decorates the upperworks of the bow in a similar position to those of the Late Geometric Period, but it is now represented more realistically with a slight almond shape and a clearly delineated pupil. A ship that appears on fragments from a Corinthian *krater* dated to 560 BC shows the same distinction between the eye of the boar and the eye of the ship (Basch, 1987: 238, fig. 499). This suggests that the eyes on the upperworks, the ship eyes, did not have the same function as the boar heads that decorated these vessels. Similar boar-headed *emboloi* are known from contemporary ship representations from Corinth, Athens, and Boeotia until 550 BC, when the *embolos* again takes on a more abstract zoomorphic form (Morrison & Williams, 1968: 86-90, pls. 11d, 12b-d, 12f; Johnston, 1985: 67-68; Basch, 1987: 238, figs. 497, 498).<sup>[19]</sup>

Representations of Archaic Greek galleys similar to those attributed to Exekias form a coherent group. These representations appear on a number of Attic black-figure vases dated to between 550 and 530 BC and on an engraved gem from Epidauros-Limera tentatively dated to the 7<sup>th</sup> or the 6<sup>th</sup> century BC (Richter, 1956: 4, pl. 3.14; Morrison & Williams, 1968: 83, 91-95, pls. 13-14). The gem is particularly interesting because it not only depicts the *embolos* in a manner similar to the representations painted by Exekias,

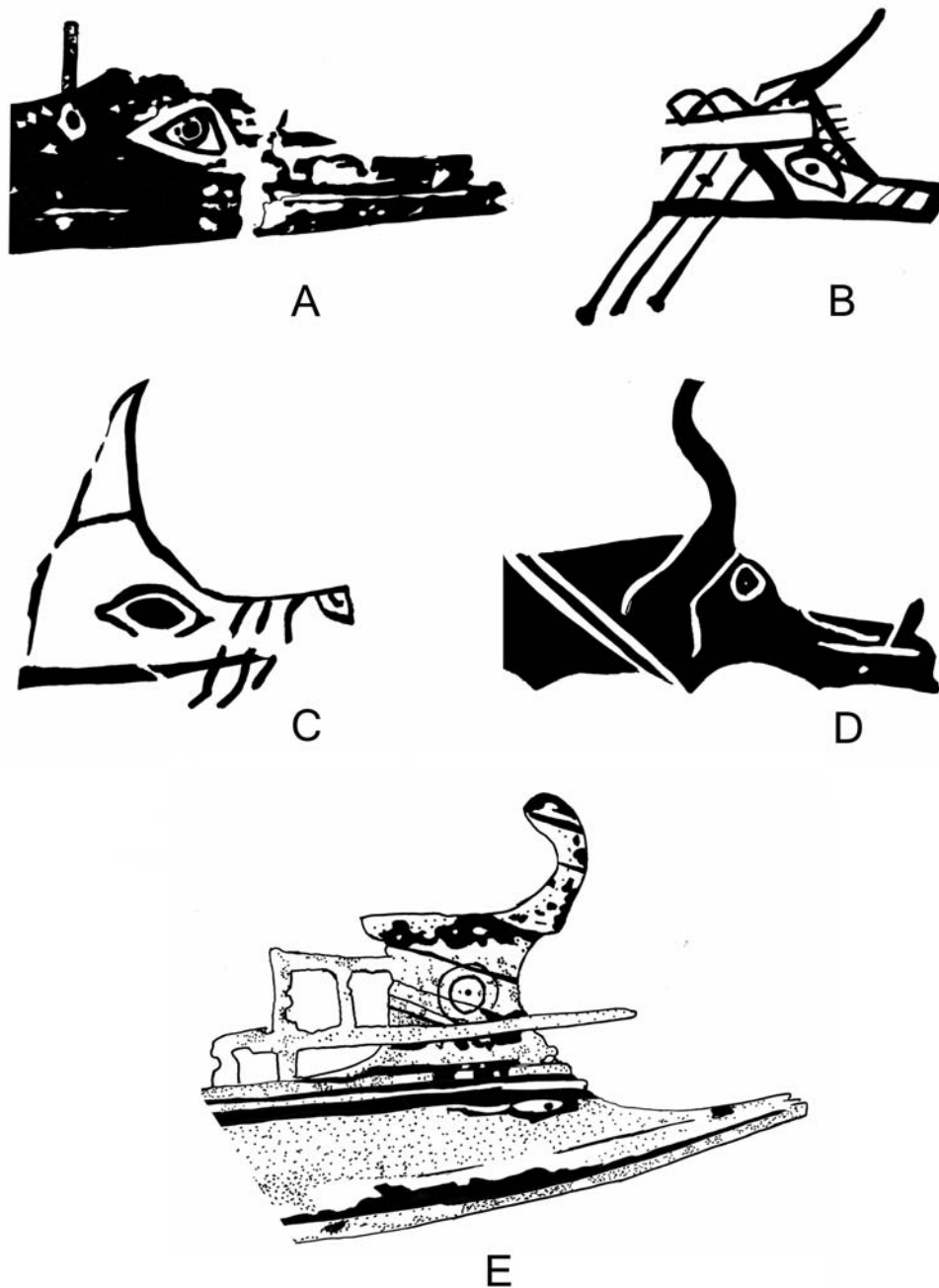
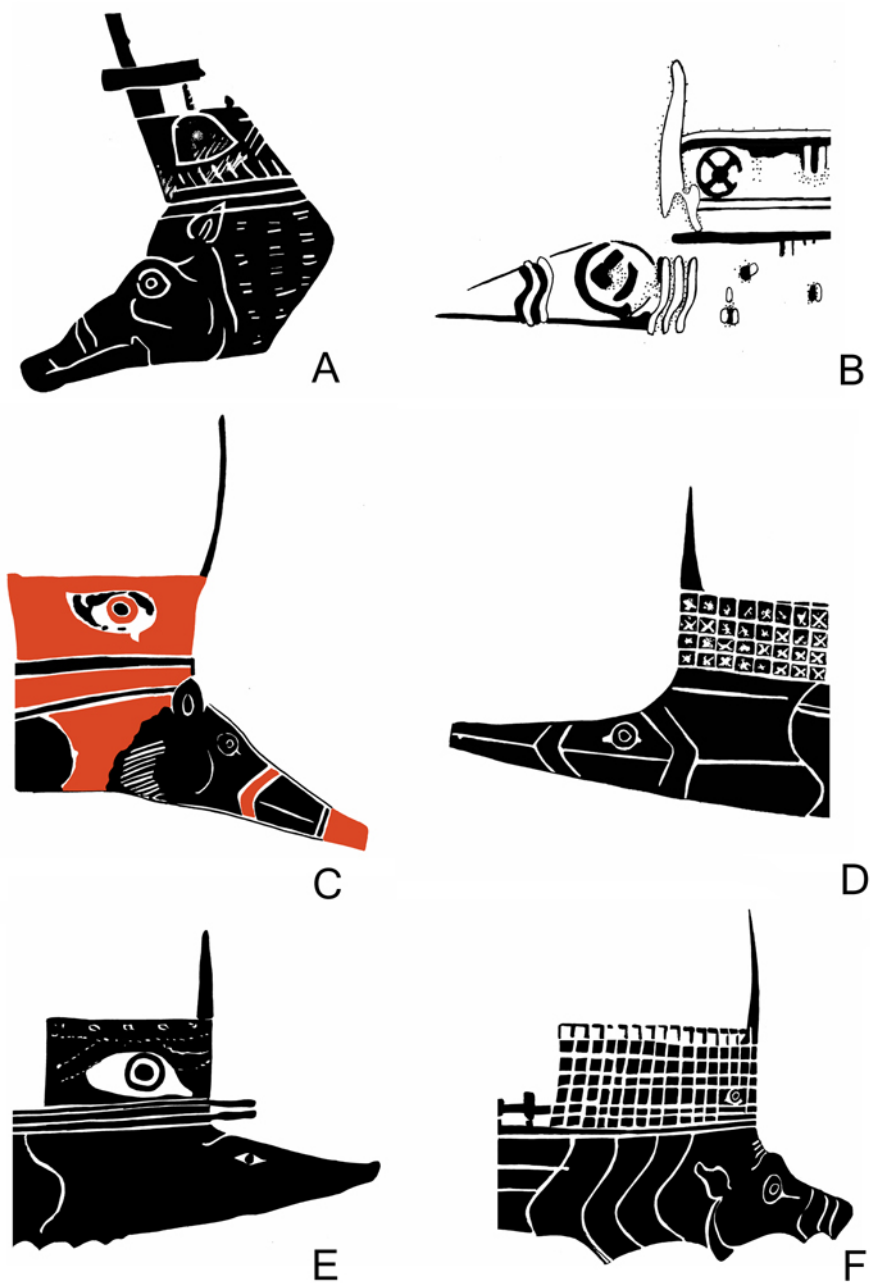


Figure 3.11. Examples of 7<sup>th</sup>- and early 6<sup>th</sup>-century warships with eyes set in association with their *emboloi* to impart stylized zoomorphic forms. (Drawing: author, after (A) Morrison & Williams, 1968: 74-75, pl. 9a; (B) Morrison & Williams, 1968: 81, pl. 10a; (C) Morrison & Williams, 1968: 88, pl. 12d; (D) Morrison & Williams, 1968: 87, pl. 12b; (E) Basch, 1987: 241, fig. 506)

but it also has an eye decorating the upperworks of its bow in a manner reminiscent of earlier Late Geometric ship representations, a feature that the representations attributed to Exekias lack (Fig. 3.12B). The most famous depiction of the group is part of a scene found on an Attic black-figure cup signed by Exekias that shows the outcome of Dionysos's kidnapping by pirates from the Homeric Hymns (Hymnus Homericus, *ad Bacchum*, 7.1-59; Morrison & Williams, 1968: 93, pl. 13). At first glance the *emboloi* on these depictions differ from their Geometric predecessors' forefeet almost solely by the introduction of an eye surrounded by a double chevron pattern (Fig.3.12D). The after chevrons appear to represent the juncture between each ship and its *embolos*, while those forward of the eye may have served a practical function that is thus far unknown. Williams (1968: 96) identifies the forward chevrons as strengthening bands that served to bind the *embolos* to the ship's hull. It is possible that this feature was considered to resemble tusks or the contours of a boar's snout. Furthermore, Williams (1968: 96) identifies the short longitudinal line which is usually seen dividing the ram into two equal parts as a representation of the juncture between the upper and lower portions of the ram because "it is very unlikely that the ram was cast in one piece." Little evidence is available to support this claim. Moreover, Oron (2001: 91) notes that "the use of a ram as an impact weapon could not be fulfilled by a structure cast in multiple units." It seems more likely that this longitudinal line represents a waterline wale or another timber that helped distribute the force of a ramming blow, similar to the function of the massive wales preserved within the Athlit Ram (Steffy, 1991) (Fig. 3.13 A-B). When viewed



*Figure 3.12.* Archaic warship bows. (Drawing: author, based on (A) Morrison & Williams, 1968: 84, pl. 11b; (B) Richter, 1956: pl. 3.14; (C) Morrison & Williams, 1968: 98, pl. 15b; (D) Morrison & Williams, 1968: 93, pl. 13; (E) Morrison & Williams, 1968: 111, pl. 20d; (F) Casson, 1995: fig. 85)

from afar this feature may have been thought to resemble the mouth of a boar. Many other Attic black-figure depictions of galleys dating to between 530 and 510 BC by the groups surrounding Antimenes, Lysippides, and Leagros, as well as a wall-painting from Elmalı in northern Lycia dated to 525 BC, show Greek galleys with similar details, but with slight differences in the representation of their *emboloi*. These show that the *embolos* was decorated to resemble a boar's head by fully transforming its tip into a snout and by adding ears behind its eyes (Walters, 1931: III.H.e, 5-6, pl. 79.4; Morrison & Williams, 1968: 98-105, 107-109, pls. 16a-c, 17, 18, 19, 20a; Toby, 1979; Basch, 1987: 209, 212, 213, 214, 219 figs. 431, 432, 440a-c, 445a-b, 447, 457).

When compared to other Archaic representations, these details suggest that Exekias was depicting ships with boar-headed *emboloi*, not simply ships with eyes. In particular an Attic black-figure cup in the Louvre, signed by the potter Nikosthenes and dated to between 530 and 510 BC, shows a blunt waterline ram shaped to resemble a boar's head (Morrison & Williams, 1968: 97-98, pls. 15a-b) (Fig. 3.12C). The placement of the eye, the chevrons, and the line that defines the mouth match the placement of these features by Exekias, but the examples attributed to Nikosthenes add hair, ears, and snouts, and are clearly shaped to resemble boar heads. Furthermore, the Nikosthenes cup displays ships with separate sets of naturalistic eyes, one with a dark sclera and a red iris and the other with both a dark sclera and a dark iris, on the red upperworks of their bows. These are similar in their placement to the ship that appears on the François vase, but different in shape and decoration.<sup>[20]</sup> The eyes on the Nikosthenes cup are even more realistically

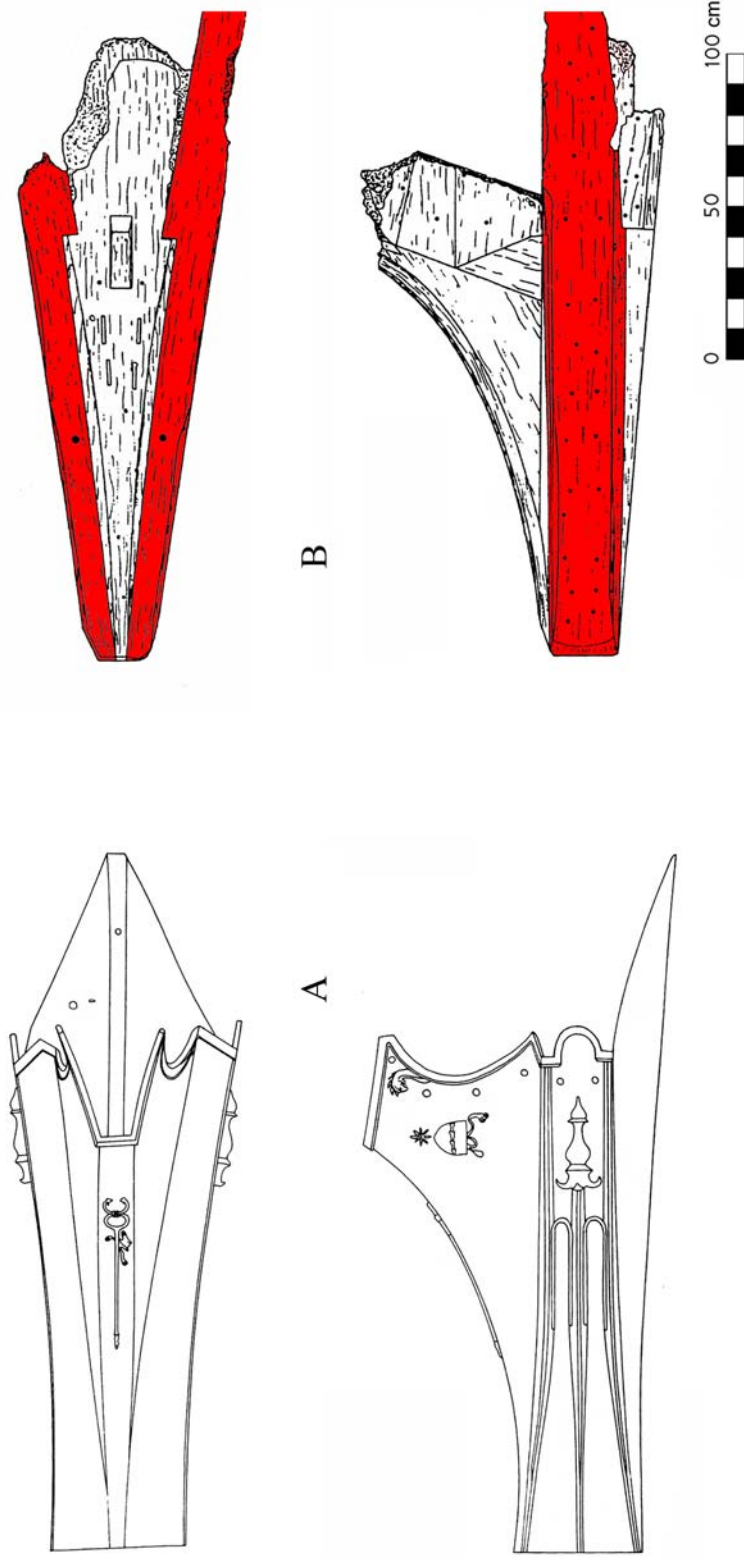
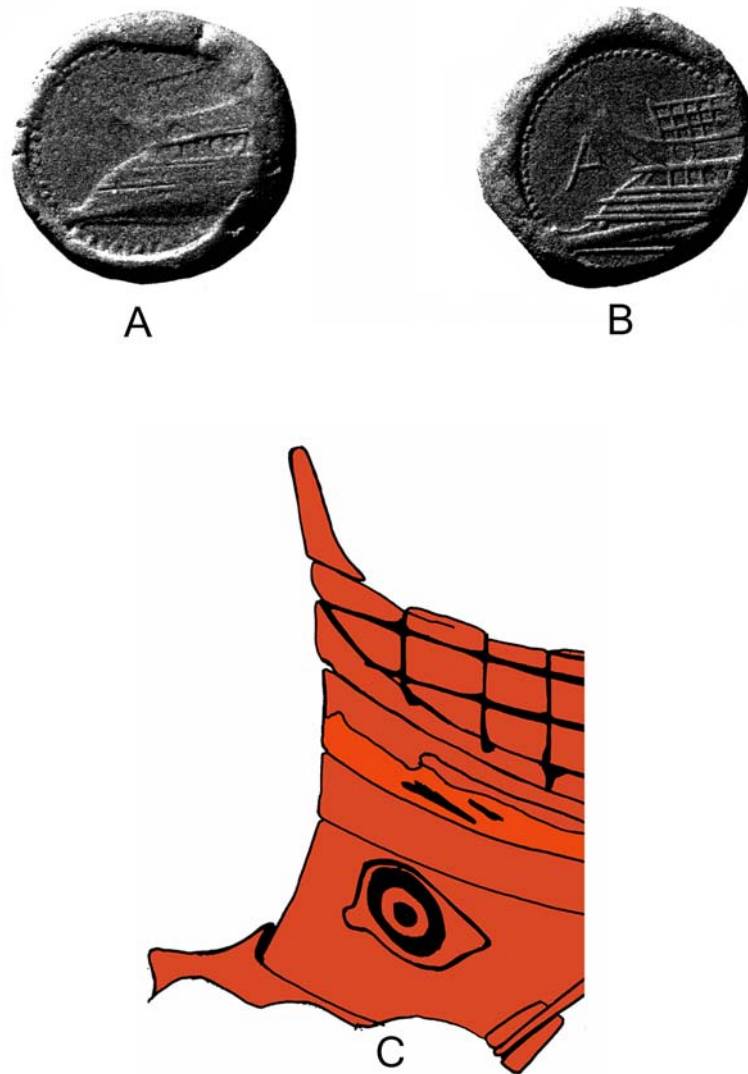


Figure 3.13. The Athlit ram, (A) bronze sheath, and (B) internal wooden structure. Red coloration denotes wales. (Drawing: author, after (A) Oron, 2001: 125; (B) Steffy, 1991: fig. 2.13)

depicted than the squat-ovoid eyes on the François vase, and are similar in both their placement and their form to many other ships represented on contemporary Attic black-figure ceramics, and on an engraved gem discovered at the Archaic Athenian harbor at Phaleron dated to 500 BC (Morrison & Williams, 1968: 110, 111, 115, pls. 20b, 20d; Basch, 1987: 206, 227, figs. 427, 473). These representations again show a clear distinction between the ship eye and the boar's eye as well as the range of sizes that a ship eye could have relative to the upperworks of the bow during the 6<sup>th</sup> century BC (Fig. 3.12E-F). Interestingly, it appears that the form of ship eyes varied on warships of the late Archaic Period. They were likely either naturalistically shaped or circular. Samian tetradrachms issued at Zankle and dated to the early 5<sup>th</sup> century BC depict galleys with circular eyes above their *emboloi* and either naturalistic or circular eyes on the upperworks of their bows (Barron, 1966: 40-45, pl. 7.4, 7.8) (Fig. 3.14A-B). The absence of a clear boar-headed *embolos* in these representations suggests that the artist may have meant to represent the actual form of a warship's bow, not an elaborate artistic representation. Moreover, these depictions may show the bow of a *samaina*, the Samian warship known for its boar-headed *embolos* (Herodotus, 3.59; Plutarch, *Pericles*, 3-4, Barron, 1966: 6). Possibly the most famous and often cited representation of a late 6<sup>th</sup>-century BC warship with eyes is found on an Attic red-figure *stamnos* by the Siren painter (Morrison & Williams, 1968: 114, pl. 21e) (Fig. 3.14C). It is decorated with a scene depicting Odysseus tied to the mast of his ship as it passes the Sirens. The ship has an undecorated *embolos* and a large naturalistic eye that is set below the level of its oar ports, aft of its *embolos*. It seems likely that the painter meant to represent an

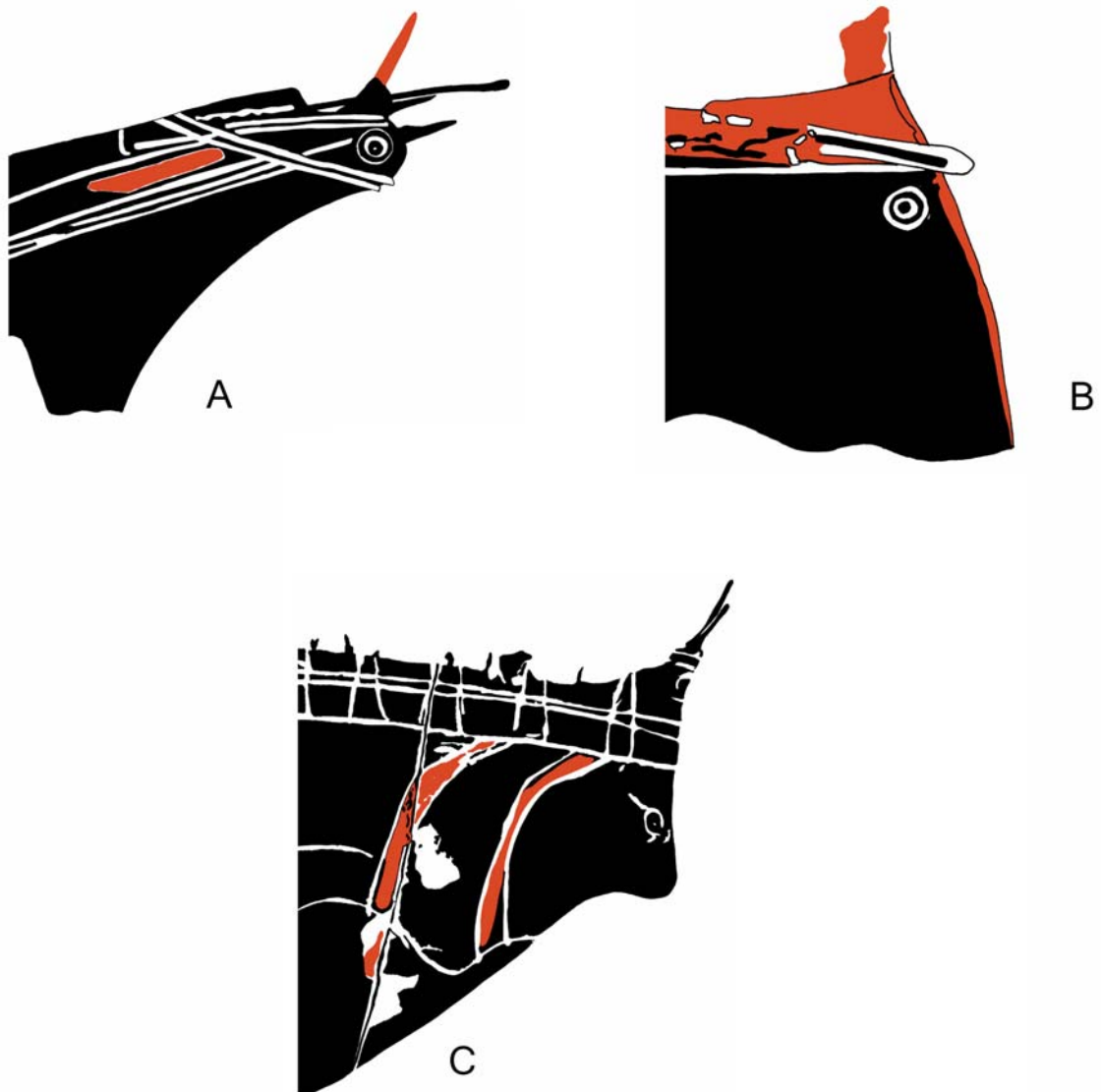




*Figure 3.14.* (A-B) Samian tetradrachms and the bow of Odysseus's ship. (after, Barron, 1966: pls. 7.4, 7.8); (C) (Drawing: author, based on Morrison & Williams, 1968: 114, pl. 21)

extraordinary ancient vessel using elements he was familiar with from both ancient and contemporary craft to produce a ship suitable for Odysseus. The form of the eye was likely taken from the eyes that adorned the upperworks of contemporary vessels, and the *embolos* is likely a realistic approximation of the *emboloi* that adorned their bows (Barron, 1966: 40-45, pl. 7.4, 7.8). Rather than represent a warship with two sets of eyes, which appears to have been common during the late Archaic, Classical, and Hellenistic Periods, the artist opted for a more primitive look similar to many 7<sup>th</sup>-century BC ship representations (Dawkins, 1929: 214-215, 370, pls. 109-110; Richter, 1956: pl. 3.14; Morrison & Williams, 1968: 81-83, pls. 10a-10c; Basch, 1987: 241: figs. 506-507).<sup>[21]</sup>

Representations of Archaic Greek merchant ships of the 7<sup>th</sup> and 6<sup>th</sup> centuries BC are much less common than depictions of galleys in both Greek vase painting and the plastic arts.<sup>[22]</sup> Three Attic black-figure representations of merchantmen with eyes are known. Two of these have similar eyes in the form of two concentric circles adorning their bows high above their waterlines. One is a late 6<sup>th</sup>-century BC merchant galley with its sail set and its crew working oars (Casson, 1995: xx, fig. 91) (Fig. 3.15B). The other is a late 6<sup>th</sup>-century BC merchantman under sail (Fig. 3.15A). Its eye is set on a protruding feature forward of its stem (Morrison & Williams, 1968: 109, pl. 19). The third example is a late 6<sup>th</sup>-century BC merchantman with its crew engaged in the furling of its sail (Casson, 1996; Bass, 1997) (Fig. 3.15C). Its eye is also set on a protruding feature forward of its stem, but it is of a slightly different form. Casson (1996: 262) considers this to be part of a figurehead meant to represent a bull head. It seems more likely that the bow of this ship is merely decorated with eyes. The protruding feature Casson seems



*Figure 3.15.* Late Archaic merchant ship bows. (Drawing: author, based on (A) Casson, 1995: fig. 91; (B) Casson, 1995: fig. 82; (C) Bass, 1997: 26)

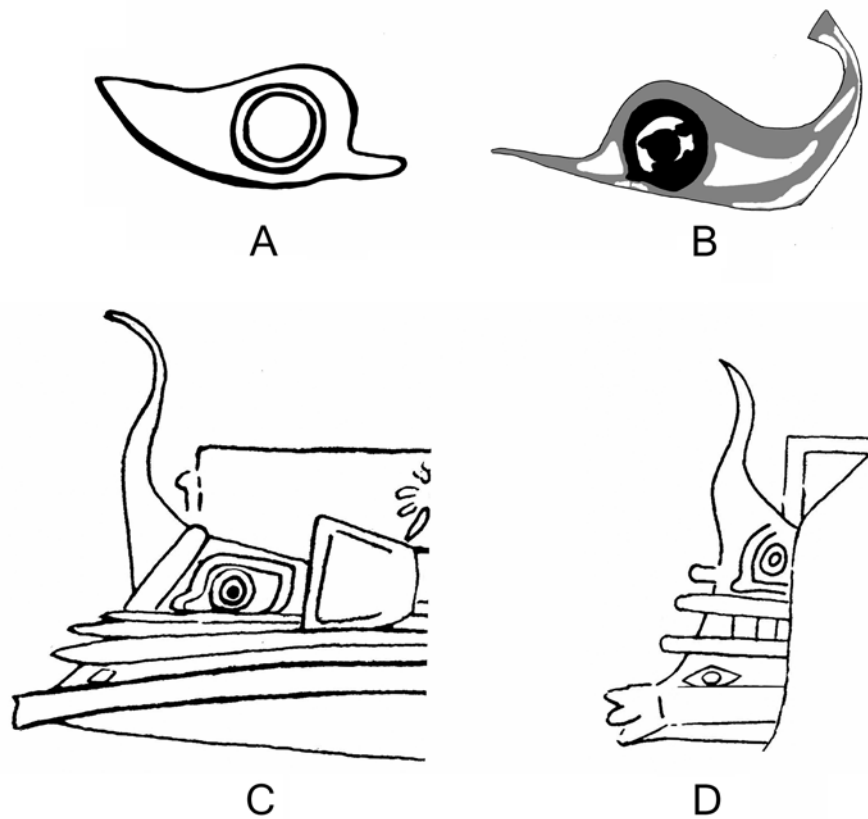
to interpret as a bull's snout is more likely the same enigmatic construction seen forward of the stems on the other black-figure representation of a late 6<sup>th</sup>-century BC merchantman under sail, as well as on both the early 5<sup>th</sup>-century BC wall-painting from *la tomba della nave* at Tarquinia, and on a clay model from Amathus dated to the Cypro-Archaic Period, between 750 and 500 BC (Moretti, 1961: 51; Shuey, 1978: 25, fig. 6; Basch, 1987: 252-253, figs. 536-539).<sup>[23]</sup> Considering the attributes it shares with late Archaic Greek merchantmen, this Cypriot model may be contemporary with these representations, and thus date to the late 6<sup>th</sup> century BC.<sup>[24]</sup> Therefore, differences between the representations of these forward protrusions are likely more related to artistic convention than to features meant to evoke images of specific animals or deities.<sup>[25]</sup>

Few detailed representations survive of Greek warships dating to the Classical Period, roughly 480 to 323 BC. A fragment of a clay ship model from Lipari dated to the 6<sup>th</sup> or the 5<sup>th</sup> century BC has a naturalistic eye mounted on the red upperworks of a warship's bow, similar to the late 6<sup>th</sup>-century BC representations on the Nikosthenes cup and on a late 6<sup>th</sup>-century BC Attic black-figure representation of a ship chariot (Johnston, 1985: 78-79) (Fig. 2.14).<sup>[26]</sup> Other representations of Classical warships with eyes include late 5<sup>th</sup>-century BC coins from Cyprus and Cyzicus, as well as 4<sup>th</sup>-century BC coins from Kios that show elongated eyes set on the upperworks of the bows, as well as small diamond-shaped eyes low on their bows aft of their *emboloi* (British Museum, 1965: 16, pl. 8.15; Basch, 1987: 274-275, 299, figs. 582-583, 634) (Fig. 3.16C-D). This

configuration is similar to the representation of Archaic warships with decorated board-headed *emboloi* and separate ship eyes adorning the upperworks of their bows.

A decorated rhyton dated to the late 5<sup>th</sup> century BC in the form of a warship bow clearly shows that the elongated form of the eyes set on the upperworks of Classical warships could have been embellished to resemble dolphins (Johnston, 1985: 82-83). The outer corner of the eye forms a tail and the *caruncula lacrimalis* forms a snout (Fig. 3.16B). Other features of this ship, including the *embolos* are schematically represented in this example, but another, possibly contemporary, *rhyton* exists with more clearly defined features. It is from Vulci and shows a similar dolphin-like eye adorning the upperworks of its bow, and a three-finned *embolos* with its own eye positioned aft of its *embolos*, above the waterline wale (Johnston, 1985: 96-97) (Fig. 3.16A). The general position of the eyes on the upperworks of Classical Greek warships is similar to those that appear on Phoenician warships depicted on the coins of Sidon, Arados, and Byblos, as well as on an engraved gem from Amathus (Betlyon, 1982: 3-38, 77-142, pls. 1-4, 6-9; Basch, 1987: 328, fig. 702).

No extant examples of merchant ships from the Classical Period survive, but a number of 5<sup>th</sup>-century BC red-figure white-ground *lekythoi* depict Charon in boats with simple circular eyes set high on their bows (Beazley 1963: 1168.127, 1168.128, 1688.4) (Fig. 3.17A-B).<sup>[27]</sup> Another red-figure white-ground *lekythos* shows Charon in a boat that has an ovoid eye with a clearly defined iris adorning its bow (Beazley, 1963: 1228.11) (Fig. 3.17C).<sup>[28]</sup>



*Figure 3.16.* (A-B) Dolphin-shaped ship eyes of the 3<sup>rd</sup> and 4<sup>th</sup> centuries BC (Drawing: author, based on Johnston, 1985: 83, 96); (C-D) Bows of 4<sup>th</sup> and late 5<sup>th</sup> century BC warships. Note the eyes in their upperworks, and the eyes set in relation to their *emboloi*. (Drawing: author, after Basch, 1987: 274, 275, figs. 582, 583)

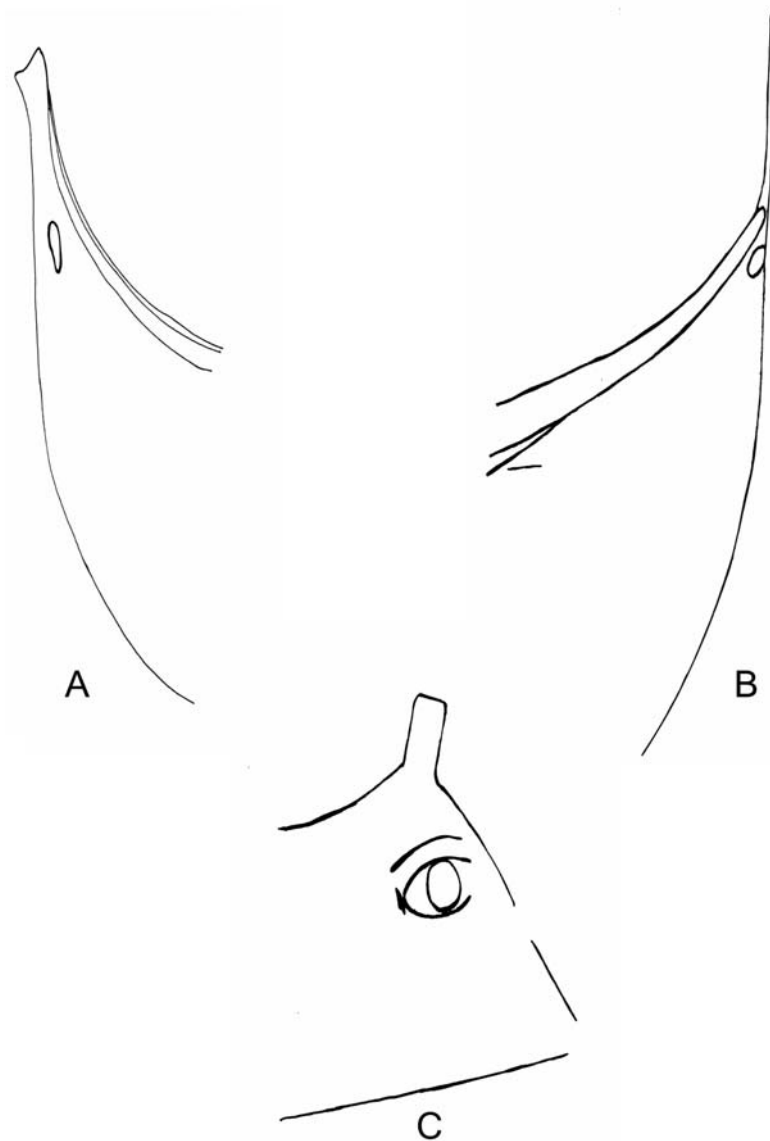


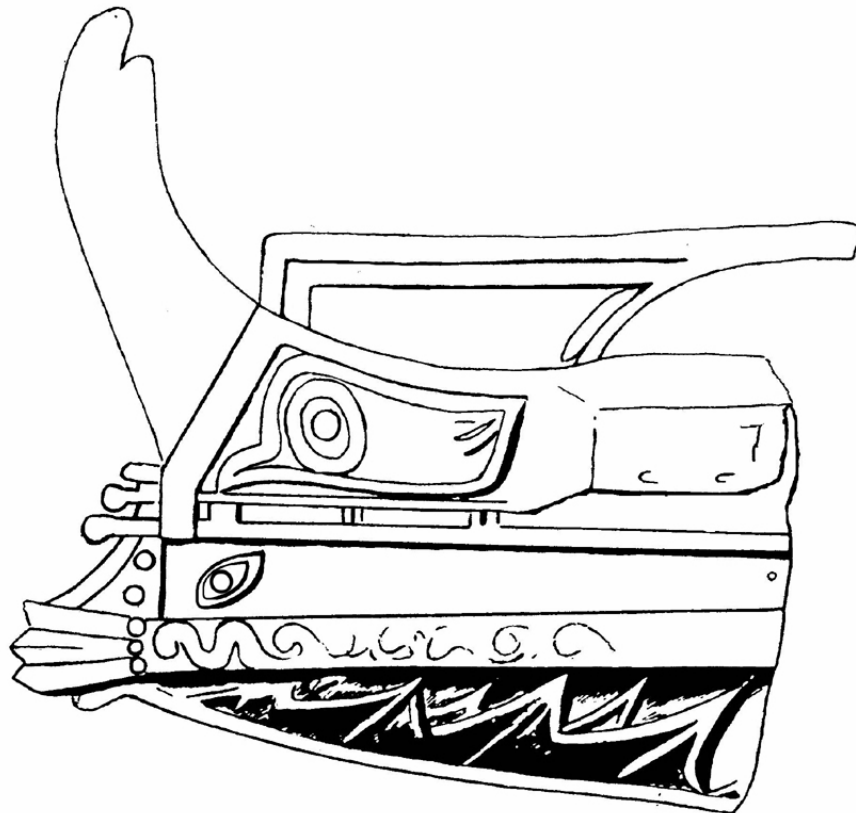
Figure 3.17. Bows of boats with eyes associated with Charon. (Drawing: author, based on (A) Beazley, 1963: 1168.128; (B) Beazley, 1963: 1688.4; (C) Beazley, 1963: 1228.11)

Many examples of Hellenistic ship representations survive. The majority of these are warships that show a continuation of the pattern, established in the late Archaic Period, of decorating the upperworks with an eye in addition to the eye associated with the *embolos* (Basch, 1987: 342-43, 355, 387, 396-98, 415, 419, figs. 726-728, 743-745, 808, 823, 827, 898, 899a) (Fig. 3.18). Evidence gleaned from the Athlit Ram suggests that the eye set in relation to the *emboloi* on Archaic, Classical and earlier Hellenistic galleys began to be replaced by devices such as the *pilai* that appear on either side of its cowl by at least the late 3<sup>rd</sup> or the early 2<sup>nd</sup> century BC (Oron, 2001: 3, fig.2). This practice is also depicted on l'Arc d'Orange that dates from the 1<sup>st</sup> century BC. Here dolphins decorate the cowls of Hellenistic *emboloi* (Basch, 1987: 426-429, figs. 919-916).

The form of the ship eye remains elongated until the 2<sup>nd</sup> century BC when it appears to take on other forms. Ship representations generally begin to take on a more Roman appearance during the 2<sup>nd</sup> century BC and ship eyes now begin to appear both elongated, and naturalistic as well as, round, almond-shaped, and *wadjet*-eye-shaped (Basch, 1987: 419, 437, fig. 900-901, 949).<sup>[29]</sup> Moreover, ship eyes are no longer exclusively set in the upperworks of galleys beginning during the 2<sup>nd</sup> century BC (Morrison & Coates, 1996: 224, figs. 24Ii, 24Iii).

As for earlier periods, relatively few representations of merchant vessels survive. Of these, the majority of extant representations of merchantmen with eyes are Punic vessels depicted on funerary *stelai* dating to the 3<sup>rd</sup> century BC. Each of these eyes is represented between the waterline and the upper wale. Their form varies from simple





*Figure 3.16.* Bow of a 3<sup>rd</sup>-century BC warship with an elongated eye set on its upperworks, and an ovoid eye set near its *embolos*. (Drawing: author, after Basch, 1987: 343, fig. 727)

circular elements to naturalistically-shaped elements embellished with pupils and eyebrows (Basch, 1987: 399, 400, figs. 830-834, 836).<sup>[30]</sup>

### *Discussion*

The extant iconographic evidence for the decoration of ancient Greek ships with eyes shows that, between the Bronze Age and the 3<sup>rd</sup> century BC, all types of watercraft from small boats to large galleys were commonly adorned with eyes on their bows.

Representations of ancient Greek warships dated to the 6<sup>th</sup> century BC show that they were commonly decorated with two pairs of eyes. One was set low on the bow to impart a zoomorphic form to the *embolos* that has been identified for the late 6<sup>th</sup> and early 5<sup>th</sup> centuries BC as the head of a boar. Another was set on the upperworks of the bow and decorated with a concentric design that was meant to represent the iris. The distinction between these elements shows that the eyes on the upperworks served a different function than the eyes set in relation to the *embolos*. Representations of Greek warships between the late 6<sup>th</sup> and the 3<sup>rd</sup> centuries BC show that their upperworks were commonly adorned with eyes that match the examples of marble eyes discovered at Zea in both their form and the apparent execution of their design. Furthermore, the traces of red paint preserved on the Zea eyes recall the upperworks of late 6<sup>th</sup>- and early 5<sup>th</sup>-century BC galleys. Therefore, it seems likely that the marble eyes from Zea adorned the upperworks of ancient Greek warships.

The iconographic record shows that the eyes of late 6<sup>th</sup>- and early 5<sup>th</sup>-century BC Greek merchantmen were simple circular elements embellished with concentric designs

representing the iris. These decorations were set far above the waterline on the bows of ancient merchantmen near the stem and appear to closely parallel the eyes discovered at Tektaş Burnu in both their form and the execution of their irises. This shows that the marble eyes from Tektaş Burnu may have decorated the bows of a ship in a similar manner and that merchant ships may have been adorned with similar circular eyes as early as the late 6<sup>th</sup> century BC.

## CONCLUSION

### *Identification of the Marble Eyes*

Analysis of the marble eyes from Zea and Tektaş Burnu suggests that these objects are the actual eyes of ancient Greek warships and merchantmen. Insufficient textual, iconographic, and archaeological evidence exists to suggest the marble eyes are architectural decorations, ship-chariot eyes, or models of painted ship eyes fashioned for dedication. Moreover, none of the commonly cited problems with the interpretation that the marble eyes are actual ship eyes can be considered valid when carefully examined.

### *Dates of the Marble Eyes*

Dating the marble eyes from Zea is difficult, because no precise information is available relating to their provenance. The expansion and fortification of Piraeus provides a *terminus post quem* of approximately 493 BC for many finds uncovered at Zea. This date reflects Themistocles' transfer of the Athenian naval yard from Phaleron

Bay to Piraeus (Pausanias, 1.1.2; Diodorus Siculus, 11.41.2-3; Jordan, 1975: 16-20; Saatsoglou-Paliadeli, 1980: 130).

Saatsoglou-Paliadeli (1980: 129) has suggested an evolutionary sequence that provides relative dates for six of the eyes discovered at Zea. Considering her research on the marble eyes in the Archaeological Museum of Piraeus, and the form of the marble eye from the National Museum in Berlin, as well as representational evidence, the following temporal sequence has been constructed for the marble eyes from Zea: Z1-Z2-Z3-Z4-Z5-Z6-Z7 (Fig. 3.19). This series represents a gradual transformation from a naturalistic to an elongated shape. Parallels to the form of these eyes can be found in vase painting and the plastic arts dating from roughly the late 6<sup>th</sup> to the 3<sup>rd</sup> century BC. Saatsoglou-Paliadeli (1980: 130) dates Z1 and Z2 between 494/3 and 470 BC, and Z3, Z4, and Z5 as post-470 BC, based on both the naval reforms of Themistocles and on Richter's (1970: 25) discussion of the depiction of eyes and perspective in Greek art. Richter notes that in Greek art, the iris gradually moves closer to the inner corner of the eye causing this area to open, similar to the progression seen in the marble eyes from Zea. These facts, combined with a study of both the form of the marble eyes from Zea and the representational evidence, suggest that Z1 and Z2 date to the 5<sup>th</sup> century BC, while Z3, Z4, Z5, Z6, and Z7 can be dated to between 5<sup>th</sup> and the 3<sup>rd</sup> centuries BC.

The marble eyes from Tektaş Burnu are the only examples of marble eyes that are believed to be ship eyes from a datable context. The shipwreck at Tektaş Burnu contained a cargo of over 200 transport amphoras and an assortment of black and plain wares. Studies of these finds by both Mark Lawall (1997) and Deborah Carlson (2003:

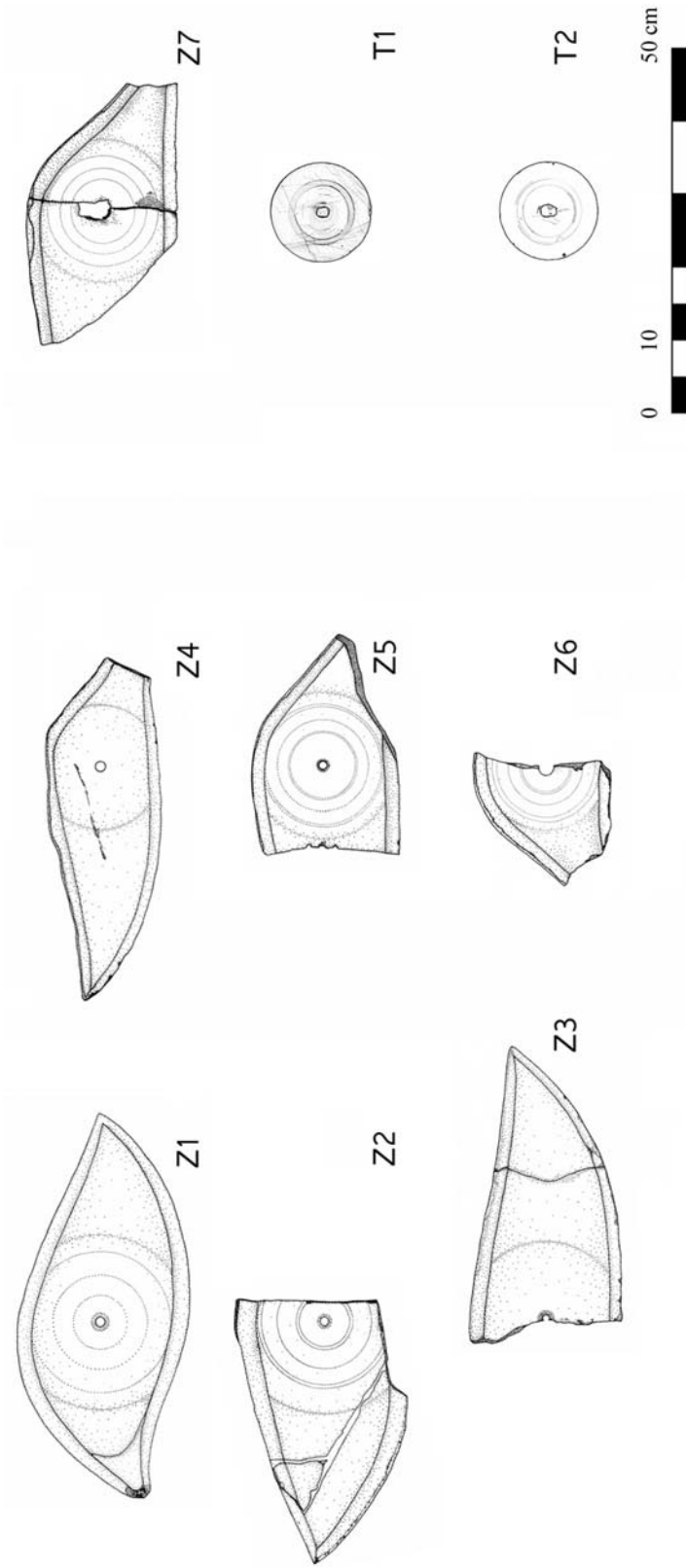


Figure 3.19. Composite drawing showing the marble eyes from Zea and Tektaş Burnu. (Drawing: author, based on (Z1-Z5) Saatsoğlu-Paliadeli, 1980: pls. 40-41; (Z6) Blümel, 1964: pl. 23; (Z7) Saatsoğlu-Paliadeli, 1980: pl. 41; (T1) Selma Açar; (T2) author )

590) suggest that this ship sank during the third-quarter of the 5<sup>th</sup> century BC, between 440 and 425 BC, providing an approximate date for the marble eyes from Tektaş Burnu. Considering this date and the representational evidence, it appears that the bows of Greek merchantmen were decorated in a similar manner between the late 6<sup>th</sup> and the late 5<sup>th</sup> centuries BC.

## CHAPTER IV

### THE FUNCTION OF SHIP EYES IN THE GRAECO-ROMAN WORLD

#### INTRODUCTION

This chapter presents evidence that ship eyes could function as epiphanies in concert with other devices or as apotropaions. Epiphanies are defined for the purposes of this study as instruments through which supernatural beings can be called upon and as portals through which they can materialize (Holloway, 1988; Faraone, 1992).

Decorations of this class include representations of deities, mythological scenes, and divine symbols. Primarily, ship eyes showed the presence of a supernatural entity that helped guide the ship and protected it from environmental hazards, thus in part acting as an epiphany, but the identification of the specific being can only be identified using associated complementary evidence. In contrast to epiphanies, apotropaions do not necessarily have direct associations with particular entities.

Apotropaions are openly displayed phylacteries that ward off harmful powers. The mechanics and reasoning behind their operation varies according to their form, but all are employed to protect the objects that they adorn (Holloway, 1988; Faraone, 1992). Although scholars such as Eisman (1972: 210) do not accept the notion that eyes functioned as apotropaions during the Archaic and Classical Periods, the frequency and diverse nature of their appearance, as well as their association with other divine symbols and known apotropaions, suggest such a usage.

One of the most pervasive and harmful forces apotropaions are used to counter is envy. Recognition of the malevolence of envy, as well as its ability to cause harm through both mortal and supernatural beings, is attested by Greek and Latin authors as early as the 5<sup>th</sup> century BC. Evidence presented in this chapter suggests that decorative eyes not only marked the presence of a supernatural consciousness, but also could have been used as apotropaions to counter envy during the Archaic and Classical Periods in Greece. Further evidence suggests that Hellenistic and Roman mariners not only feared envy, but also decorated their ships with apotropaions that were considered as particularly effective against this force. These examples suggest the possibility that the eyes of Archaic, Classical, and Hellenistic Period ships could have functioned as both epiphanies and apotropaions.

#### EVIDENCE FOR THE FUNCTION OF SHIP EYES IN GREEK LITERATURE

The eyes of ancient ships are seldom referenced in Greek literature. When they are mentioned, writers typically fail to distinguish between the eyes set near the *emboloi* of warships and those set on their upperworks. The eyes on the upperworks of these vessels adorned the bulwarks of the forward platform used by the *prorates*, the bow officer, who kept lookout for the helmsman (Morrison & Williams, 1968: 195, 266). This may be significant considering that references to eyes on the bows of ancient ships suggest that they all may have functioned like the *prorates* to help guide the ship across the sea (Aeschylus, *Persae*, 558-561). Philostratus (*Imagines*, 1.19.23-24 [A. Fairbanks, trans.,



New York, 1931]) describes a ship that “seems to see with grim eyes set into its prow.”

Aeschylus clearly attests to this idea during the 5<sup>th</sup> century BC:

From my post of look-out here on the sanctuary of suppliants I descry their barque;  
for ‘tis well-marked and escapes me not: the trimming of its sail, its side-guards, and  
the prow that with its eyes scans its onward course, obeying-all too well for those  
whom it is unfriendly - the guiding rudder at the stern (Aeschylus, *Supplikes*, 713-  
716 [E.H. Warmington, trans., Cambridge, Mass., 1973])

These passages suggest that the ornamentation of a ship with eyes showed that it was imbued with a supernatural consciousness that helped guide the ship safely from port to port, ensuring that it both stayed on course and avoided hazards. This idea is further attested by the description of Phaeacian ships from the *Odyssey*:

For the Phaeacians have no pilots, nor steering oars such as other ships have, but the ships themselves understand the thoughts and minds of men, and they know the cities and rich fields of all peoples, and the gulf of the sea they cross most quickly, hidden in mist and cloud, nor ever have they fear of damage or shipwreck (Homer, *Odyssey*, 8.557-563 [A.T. Murray, trans., Cambridge, 1995]).

Thus ship eyes could act as epiphanies, but the identity of the presence represented by them cannot be determined without identifiable associated iconography such as the images or devices associated with specific deities that often adorned their bows, or texts such as the inscriptions that often adorned the *styliis* and marked it with the name of a protecting deity (Svoronos, 1914: 84-120, 130-142; Basch, 1987: 276-77, 327, 366-370, 426-429, 495, figs. 587-92, 698, 796-800, 802, 1129; Casson, 1995: 346).

Complementary evidence that could help to determine the identity of the beings associated with the marble eyes from Zea and Tektaş Burnu is lacking. A few possible identities of these deities include Athena, Aphrodite, Artemis, Zeus, Poseidon, Dionysos, the Nereids and the Dioskouroi, who are all attested as protectors of seafarers in Greek

art and literature (Homer, *Odyssey*, 2.413-434; Pindar, *Pythian Odes*, 4.193-205; Demosthenes, 21.53; Plutarch, *Lysander*, 12.1; Gianfrotta, 1977; Queyrel, 1990; Casson, 1995: 351-352; Kaltsas, 2002: 277).

In addition, the eyes may have not only marked the presence of a supernatural consciousness that helped to guide the ship and watch for hazards, but they may have also helped to protect the ship, its captain, and its crew from envy. In order to demonstrate that the eyes on ancient Greek ships also functioned as apotropaions to counter the malevolence of envy, known today as a belief in the ‘evil eye,’ it is first necessary to establish that the ancient Greeks understood and feared envy through a review of the works of Greek and Latin authors that show a clear understanding and fear of this phenomenon.

#### THE MECHANICS OF ENVY

Envy was known as *phthonos* to the Greeks, and as *invidia* and *livor* to the Romans. The perceived power of this force and the discord it caused are attested as early as the 8<sup>th</sup> century BC in Greece. Hesiod showed the nature of envy by including it in a list of signs that he believed would mark the imminent destruction of humankind by Zeus (*Opera et Dies*, 195-196). Hesiod used the term *zelos*, not *phthonos*, to describe envy. The context of his usage of this term justifies its translation as envy, not merely emulation, rivalry, or jealousy, to which *zelos* later commonly referred. The works of Lattimore (1959: 41), Evelyn-White (1914: 16-17), Walcot (1978: 13), Athanassakis (1991: 72), and Tandy and Neale (1996: 73-75) follow this supposition. The concepts of jealousy and envy are

distinct in ways that Hesiod seemingly understood, even if he did not directly express them (Dickie, 1975: 386). He believed that benevolent Strife, or jealousy, caused tension between men that drove them to hard work and success, thus bettering themselves and their communities, but malevolent Strife, or envy, caused self destruction and societal degradation (Hesiod, *Opera et Dies*, 11-36, 308-313). Jealousy was considered a pain that surfaced when one recognized that a peer possessed some attainable social or economic advantage that oneself did not. This pain, mixed with feelings of shame, infused the depressed with a desire to emulate the fortunate and embark on quests to better their lot (Hesiod, *Opera et Dies*, 11-36, 308-313; Aristotle, *Rhetorica*, 2.11.1). The pain of jealousy was based in shame caused by the fact that one had not achieved, rather than spite for another who had.

On the other hand, although envy was also a pain felt when one was confronted with the prosperity of one's peers, it was a more vicious force (Pindar, *Pythian Odes*, 2.90-94; Plato, *Menexenus*, 242a; Aristotle, *Rhetorica*, 2.9.3). Instead of spawning a desire to achieve a similar fortune, envy was believed to cause idleness, paranoia, hatred, and malice (Aeschylus, *Agamemnon*, 832-837; Xenophon, *Memorabilia*, 3.9.8; Aristotle, *Rhetorica*, 2.9.3, 2.9.5; 2.10.2; Plutarch, *Moralia*, 39d-e, 92b; 537a; Dickie, 1975: 385-390). Those who were filled with envy desired to be without peers, and preserved their status by destroying the means of their rival's success (Aristotle, *Rhetorica*, 2.10.5). Envy caused the less fortunate to both strive to prevent the success of others and to feel great joy when the misfortune of others became known (Plato, *Philebus*, 48b; 50a; Aristotle, *Rhetorica*, 2.10.11; Plutarch, *Moralia*, 1046c). Plutarch (*Moralia*, 1046 b-c [H.

Cherniss., trans., Cambridge, Mass., 1976]) tells us that Chrysippus, a 3<sup>rd</sup>-century BC philosopher, believed that the envious are “people who desire their neighbours’ abasement in order to be superior themselves.” Plutarch (*Moralia*, 538e [P.H. De Lacey., trans., Cambridge, Mass., 1984]) himself believed that the envious do not often endeavour to wholly destroy their peers, for “as with a house towering above their own, [they] are content to pull down the part that casts them in the shade.”

This malicious vice was considered both natural and common in antiquity, as expressly stated by a number of authors, including Herodotus (3.80), Demosthenes (18.315), Aristotle (*Rhetorica*, 2.10.4), Plutarch (*Moralia*, 86c, 91e), and Cicero (*De Oratore*, 2.52), and implied by countless others (Hubbard, 1990). Aristotle relates that:

Nearly all the actions or possessions which make men desire glory or honor and long for fame, and the favors of fortune, create envy, especially when men long for them themselves, or think that they have a right to them, or the possession of which makes them slightly superior or slightly inferior (*Art of Rhetoric*, 2.10.4 [J.H. Freese., trans., Cambridge, Mass., 1926]).

This passage presents two important attributes of envy: its occurrence between peers and its relation to honor and personal prestige.

The idea that envy functioned primarily between peers is well-attested by ancient writers (Aristotle, *Rhetorica*, 2.4.21, 2.9.3; Plutarch, *Moralia*, 92a; Cicero, *De Oratore*, 2.51-52, 2.209). The most famous as well as the earliest surviving account of this concept was written by Hesiod:

Potter is furious with potter and craftsman with craftsman, and beggar is envious of beggar and singer of singer. Perses, treasure this thought deep down in your heart, do not let malicious Strife curb your zeal for work so you can see and hear the brawls of the market place (Hesiod, *Works and Days*, 25-29 [A.N. Athanassakis, trans., Baltimore, 1991]).

The core of this belief concerns the idea that the theoretically attainable gains of others with similar occupations, interests, or socioeconomic status could easily be imagined to have been secured by the envier, but vast differences in rank and prosperity often seemed so far beyond reach that their recognition did not provoke envy (Thucydides, 2.35; Callimachus, *Hymnus in Apollinem*, 105-114). These ideas were likely related to the fact that the good fortune of one's peers was often threatening because it immediately lowered one's own accomplishments, status, power, and personal prestige in one's own mind as well as those of one's intimates, peers, and other members of the community (Pindar, *Pythian Odes*, 1.84-86). Vast differences in fortune and rank did not have this effect, as they were considered to be unrealistic comparisons by all. Aristotle clearly explained this phenomenon:

They envy those who are near them in time, place, age, and reputation . . . for no man tries to rival those who lived ten thousand years ago, or are about to be born, or are already dead; nor those who live near the Pillars of Hercules; nor those who, in his own opinion or in that of others, are either far inferior or superior to him; and the people and things which one envies are on the same footing (*Art of Rhetoric*, 2.10.5 [J.H. Freese., trans., Cambridge, Mass., 1926]).

Plutarch eloquently expanded on this notion. He explained that the greatest fortunes often fail to incite envy and could even extinguish it:

For it is hardly likely that anyone envied Alexander or Cyrus when they had prevailed and become masters of the world. But just as the sun, when it stands directly over a man's head, pouring down its light, either quite obliterates his shadow or makes it small, so when good fortune attains great elevation and comes to stand high over envy, then envy diminishes and withdraws, being overcome by the blaze of glory (Plutarch, *Moralia*, 538a-b [P. H. De Lacy., trans., Cambridge, Mass., 1984]).

The prevalence of envy between kin was recognized by many ancient writers. For example, Plutarch (*Moralia*, 485d-487e) offers advice intended to reduce rivalry and

envy between brothers (Herodotus, 3.30, 3.39; Aristotle, *Rhetorica*, 2.10.5).

Furthermore, envy was widely known to have worked between political and military leaders and often prompted slanderous remarks between orators and politicians in ancient Greece, as it continues to do today (Demosthenes, 3.6, 3.10, 3.20; Xenophon, *Anabasis*, 4.7; Aeschines, 2.22, 2.54, 2.139, 3.81; Cicero, *De Oratore*, 3.3; Mair & Mair, 1960: 22; Schoeck, 1969: 193-209; Walcot, 1978: 52-76).

Many examples can be cited, but an especially interesting case from ancient Greece is the ostracism law in Athens, which clearly alleviated envy (Plutarch, *Alcibiades*, 13.4; *Aristeides*, 1.3, 7.2-6; Schoeck, 1969: 205-207; Walcot, 1978: 53-55, 69; Lang, 1990: 1-5; Murray, 1993: 283-287). The assuagement of envy was not the reason for this law, but was often its consequence. Plutarch (*Themistocles*, 22.3 [B. Perrin., trans., Cambridge, Mass., 1916]) wrote: “for ostracism was not a penalty, but a way of pacifying and alleviating that jealousy [*phthonos*, envy] which delights to humble the eminent, breathing out its malice into this disfranchisement.” Walcot (1978: 62-66) even suggests that the success of democracy partially relates to its ability to ease such tensions between peers.

Another striking example of envy was the treatment of Themistocles after the naval battle at Salamis. Herodotus (8.123) recorded that when the Greek admirals voted to determine who among them was worthy of a prize, each voted for himself first, and most voted for Themistocles second. This outcome caused the Greeks to be “too jealous [*phthono*, envious] to adjudge the prize, and sailed away each to his own place, leaving the matter doubtful; nevertheless, Themistocles was cried up, and all Hellas glorified

him for the wisest man by far of the Greeks” (Herodotus, 8.124 [A.D. Godley., trans., Cambridge, Mass., 1946]). Shortly thereafter, on his return to Athens from Lacedaemon where he was given appropriate honors, he again received ill-treatment from his Athenian rivals (Herodotus, 8.125; Walcot, 1978: 11-12). Such incidents were often related to the pursuit of honor.

Plutarch (*Moralia*, 537b [P.H. De Lacy., trans., Cambridge, Mass., 1964]) considered glory and disgrace the “things by which envy is most exasperated.” Honor, an amalgam of courage, strength, power, excellence of character, and high moral worth, can only be measured relative to the merit of others. As such, it depends on others having lesser claims of distinction, and provokes those in pursuit of honor and renown to invite envy into their affairs (Walcot, 1978: 16-17). The destruction of another’s means, whether related to political or economic status, could have served to enhance the honor of the aggressor if he was vigilant and cunning, but if his attacks were recognized, he would suffer disgrace. The virtuous were often both targets and agents of envy. They were both tormented and angered by the noble deeds of others and disliked by their peers because of their good intentions, prestige, and power (Plutarch, *Moralia*, 537f, 538d). In societies where honor and virtue were of the utmost importance, anything that exposed one to the ridicule of one’s peers was considered unbearable. This often explained not only moral transgressions, but also rash decisions and losses of self control (Dodds, 1951: 18).

Pursuit of honor and renown not only tempted envy, but also often provoked self-praise that could incite hubris, arrogance, and an over-emphasis of virtue (Pindar,

*Pythian Odes*, 11.54-58). Like envy, hubris was considered one of the most destructive natural vices of men (Herodotus, 3.30; 3.80). As noted by Herodotus (3.80), envy and hubris were often linked. Those infected by hubris often feel that they are entitled to honors far greater than those suitable to their rank. Such transgressions often incited the envy of not only their peers and superiors, but also the gods (Xenophon, *Cyropaedia*, 4.6.3-4; Cicero, *De Oratore*, 2.209; Canter, 1937: 132-141; Clauss, 1989).

Dodds (1951: 29) has eloquently described the mechanics of divine envy, which were similar to those demonstrated by the interaction between Agamemnon and Achilles in Homer's *Iliad* (1.185-187, 9.96): "Gods resent any success, any happiness, which might for a moment lift our mortality above its mortal status, and so encroach on their prerogative." In the *Iliad*, Agamemnon took Briseis from Achilles as a result of the insolent manner in which Achilles addressed him before the Greeks, so that Achilles "mayest know full well how far mightier am I than thou, and another too may shrink from declaring himself my peer and likening himself to me to my face" (Homer, *Iliad*, 1.185-187 [A.T. Murray., trans., Cambridge, Mass., 1946]). Although Agamemnon and Achilles were mortal, their interaction parallels the hierarchical workings of envy and hubris between gods and men.

Divine envy does not markedly appear in Greek literature until the 5<sup>th</sup> century BC (Dodds, 1951: 31; Walcot, 1979: 26). Pindar, Aeschylus and Euripides are among the earliest writers to attest such a belief. Pindar (*Pythian Odes*, 8.71-72; 10.20-21; *Isthmian Odes*, 7.39-40; Moreau, 1976-1977) merely mentions his hope that the success and fortune of his patrons do not incite the envy of gods. Euripides (*Iphigeneia Aulidensis*,



1097; *Orestes*, 974; *Supplikes*, 348) warns against divine envy, but the chorus in Aeschylus's *Agamemnon* (468-471 [H.W. Smyth., trans., Cambridge, Mass., 1952]) explained that "Glory in excess is fraught with peril; 'tis the lofty peak that is smitten by heaven's thunderbolt. Prosperity unassailed by envy is my choice." In another of Aeschylus's plays, *Persae* (354-63; 454-57; 472-73), the Greek naval victory at Salamis was partially attributed to divine envy. Herodotus recorded that this same idea was expressed by Themistocles:

For it is not we that have won this victory, but the gods and the heroes, who deemed Asia and Europe too great a realm for one man to rule, and that a wicked man and an impious; one that dwelt alike with temples and homes, and burnt and overthrew the images of the gods,-yea, that scourged the sea and threw fetters thereinto (Herodotus, *Persian Wars*, 8.109 [A.D. Godley., trans., Cambridge, Mass., 1981]).

Elsewhere, Herodotus (1.32, 1.34, 3.40, 7.10) attested to these same ideas in the counsel that Solon gave to Croesus, that Amasis gave to Polycrates, and that Artabanus gave to Xerxes (Walcot, 1978: 32-33). Each of these advisers understood and feared the envy of the gods, for the ambition and prosperity of each ruler could be seen to have led to the provocation of envy and their misfortune. Similarly, Thucydides (7.77) demonstrated that such beliefs were still prevalent at the end of the 5<sup>th</sup> century BC. Walcot (1978: 46-47) argued that when Plato (*Phaedrus*, 247a; *Timaeus*, 29e) and Aristotle (*Metaphysica*, 982b-983a) rejected divine envy, their remarks likely related more to intellectual ideas than to reflections of common belief. He suggested that a belief in divine envy existed among common folk during the Archaic and Classical Periods. The writings of Pindar, Aeschylus, and Herodotus show that divine envy was a popular belief because it is referred to without naming specific deities. Such references to indeterminate gods likely

reflected popular thought and expression (Dodds, 1951: 11-12). An example of this, and the relationship between envy and its connection with eyes was made by Agamemnon in Aeschylus's play of his namesake. He did not want to risk inciting divine envy on his homecoming:

For the rest, pamper me not after woman's wise, nor, like some barbarian, grovel to me with wide-mouthed acclaim; and draw not down envy upon my path by strewing it with tapestries. 'Tis the gods we must honour thus; but for a mortal to tread upon brodered fineries is, to my judgment, not without ground for dread. I bid thee revere me not as a god, but as a man . . . As I tread upon these purple vestments may I not be smitten from afar by any glance of Heaven's jealous (*phthonos*, envious) eye (Aeschylus, *Agamemnon*, 918-925; 946-947 [H.W. Smyth., trans., Cambridge, Mass., 1952]).

### *Envy and Eyes*

Many examples from Greek and Latin literature indicate direct connections between the malevolent power of envy and the belief that it can be projected through the eyes of both mortals and supernatural beings. This belief is widely known today as the 'evil eye.' The foundation of this belief is the idea that natural disaster, disease, and ill-fortune often result from the supernatural powers humankind has attributed to envy. Although belief in the evil eye varies both regionally and temporally, it commonly, but not universally, involves the notion that ill-fortune can be caused by a glance.

The term evil eye was not used by Greek and Latin writers. Individuals that possessed the ability to project the harmful power of envy through their eyes were called *baskanos* in Greek, and *fascinus* in Latin. Many Greek and Latin writers attest to connections between envy, ill-will, and eyes that shows the existence of a belief similar to the common modern conception of the evil eye belief (Aeschylus, *Agamemnon*, 946-

947; Alciphron, *Epistulae*, 1.18; Euripides, *Phoenissae*, 540-545; Plato, *Charmides*, 156e-157a; Ovid, *Metamorphoses*, 2.768-770). Hypotheses involving the mechanics of the projection of envy and the harm it causes through the eyes were described by both Plutarch (*Moralia*, 680f-683b) and Heliodorus (*Aethiopica*, 3.7-9). Plutarch tells us that:

Envy which naturally roots itself more deeply in the mind than any other passion, contaminates the body too with evil. . . .when those possessed by envy to this degree let their glance fall upon a person, their eyes, which are close to the mind and draw from it the evil influence of the passion, then assail that person as if with poisoned arrows. . . . (Plutarch, *Moralia*, 681e [P.A. Clement., trans., Cambridge, Mass., 1969]).

Similarly, Plato (*Charmides*, 156e-157f) wrote that good and evil were sprung from the soul and flowed from the head into the eyes. These descriptions recall Pliny's (*Naturalis Historia*, 11.54.145-146) discussion of eyes:

No other part of the body supplies greater indications of the mind – this is so with all animals alike, but specially with man – that is, indications of self-restraint, mercy, pity, hatred, love, sorrow, joy. The eyes are also very varied in their look – fierce, stern, sparkling, sedate, leering, askance, downcast, kindly: in fact the eyes are the abode of the mind. They glow, stare, moisten, wink; from them flows the tear of compassion, when we kiss them we seem to reach the mind itself, they are the source of tears and of the stream that bedews the cheek. What is the nature of this moisture that at a moment of sorrow flows so copiously and so promptly? Or where is it in the remaining time? In point of fact it is the mind that is the real instrument of sight and of observation; the eyes act as a sort of vessel receiving and transmitting the visible portion of the consciousness (Pliny, *Naturalis Historia*, 11.54.145-146 [H. Rackman trans. Cambridge, Mass., 1947]).

Another theory relating to the mechanics of the evil eye belief is told by Gaius, a symposiast who was in attendance during Plutarch's discussion of the evil eye:

Democritus says that these simulacra are emanations emitted not all together unconsciously or unintentionally by the malevolent, and are charged with their wickedness and envy. According to him, these simulacra with their burden of evil, adhering to their victims and in fact permanently lodged in them, confound and injure both their bodies and their minds (Plutarch, *Moralia*, 683a [P.A. Clement., trans., Cambridge, Mass., 1969]).

Heliodorus (*Aethiopica*, 3.7-9) offers a different theory. He explains that envy is a disease that can be transmitted through the eyes to corrupt what ever it encounters. The idea that envy is a disease is attested as early as the 5<sup>th</sup> century BC (Dickie, 1975: 379). Like the theories of Plutarch (*Moralia*, 681e) and Democritus (*Moralia*, 683a), Heliodorus's explanation involves the idea that the envious cannot necessarily control the harm they inflict. Questions involving the sources these authors drew upon in preparation of their theories have been studied extensively by Dickie (1991).

Characters from well-known Greek and Roman tales link this ability with sorcery and the supernatural. For example, the Telchines were mythological beings that were known for being the first to work iron and bronze and for being envious in the teaching of their craft (Diodorus Siculus, 5.55; Strabo, 14.2.7; Ogden, 2002: 25). Strabo tells us:

. . . they are evil-eye-ers [*baskanoi*] and sorcerers [*goêtes*], who pour the waters of the Styx with sulphur [or: with envy] to destroy the plants and animals. Others say, to the contrary, that, because they excelled in their crafts, they were evil-eye-ed [*baskanthênai*] by competing craftsman and were consequently branded with this ill repute. (Strabo, 14.2.7 [D. Ogden., trans., In: Ogden, 2002: 25]).

Furthermore, Ovid (*Metamorphoses*, 7.365-367), in his explanation of their demise, relates that their eyes injured everything they saw. The comments of Strabo (14.2.7) and Ovid (*Metamorphoses*, 7.365-367), if considered together, show a relationship between envy and the ability to injure with a look. Apollonius Rhodius's *Argonautica* also showed an association between magic, envy and the 'evil eye.'

In this tale, Medea used her knowledge of magic and potions to aid Jason on his quest for the Golden Fleece. She concocted potions to enhance Jason's weapons, she charmed the snake guarding the fleece, and she destroyed Talos (Apollonius Rhodius,

*Argonautica*, 3.1026-1062, 3.1246-1264, 4.145-166, 4.1638-1688). Medea's destruction of Talos is the only extant description from antiquity of the evil eye being cast. It is presented as a deliberate act, and as Dickie (1990: 267) has noted, it joins two common beliefs of the evil eye tradition: that it is a supernatural manifestation of envy and that certain individuals are endowed with the ability to willfully cause harm with a gaze:

[Medea] . . . holding the fold of her purple robe over her cheeks on each side, mounted on the deck; and Aeson's son took her hand in his and guided her way along the thwarts. And with songs she did propitiate and invoke the Death-spirits, devourers of life, the swift hounds of Hades, who, hovering through all the air, swoop down on the living. Kneeling in supplication, thrice she called on them with songs, and thrice with prayers; and, shaping her soul to mischief, with her hostile glance she bewitched the eyes of Talos, the man of bronze; and her teeth gnashed bitter wrath against him, and she sent forth baneful phantoms in the frenzy of her rage (Apollonius Rhodius, *Argonautica*, 4.1661-1672 [R.C. Seaton trans., Cambridge, Mass., 1961]).

Medea's attack was a deliberate assault on Talos instigated by his attacks on the *Argo*, which he initiated to keep the Argonauts from landing on Crete. In Apollonius's description of this incident, Medea covered her cheeks to protect the Argonauts from her harmful eyes and invoked the Keres three times with songs and three times with prayers. As Dickie (1990: 269-270) points out, the Keres were commonly identified with the Erinyes and were regularly summoned during magical rites. Interestingly, they are three in number: Allecto, anger; Tisiphone, the avenger; and Megaera, the envier. Medea specifically summons them to help her bewitch Talos. These deities helped her to rouse anger to project the malevolent power of envy by way of her hostile gaze to avenge the Argonauts. The invocation of these deities is similar to the way that envy fills one with hate and anger when confronted with the prosperity of one's peers and the wish to

destroy the means of their fortune. Apollonius's description of the destruction of Talos, shows how the malevolent power of envy can be deliberately conjured and projected.

Medea, like many others who are endowed with the power to harm with a glance, has remarkable eyes. She is a descendent of Helios and as such her eyes "shot in front of them a gleam as of gold" (Apollonius Rhodius, *Argonautica*, 4.727-729 [R.C. Seaton trans., Cambridge, Mas., 1971]). Extraordinary eyes were considered attributes that marked their possessors as supernatural beings, or mortals endowed with supernatural powers, often including the ability to cast the evil eye (Moreau, 1976-1977).

Theocritus, writing during the first-half of the 3<sup>rd</sup> century BC, provides another example of the connection between such eye abnormalities, envy, and the 'evil eye.' In Theocritus's 6<sup>th</sup> Idyll, the cyclopes Polyphemus tells us:

For truly I am not ill-favoured, as they say; for of late I looked into the sea, and there was a calm, and fair, as my judgement goes, showed my beard and my one eye, and it reflected the gleam of my teeth whiter than Parian marble. But to cheat the evil eye, thrice I spat into my bosom as the hag Cotyttaris taught me (Theocritus, *Idylls*, 6.35-40 [A.S.F. Gow trans., Cambridge, England., 1950]).

Polyphemus's one large eye places him in the category of those with extraordinary eyes. Envy plays a part in this episode, lurking behind the scenes as the force that places Polyphemus in danger as he gazes at his reflection in the sea. The image that he beholds, that of a fair creature with gleaming white teeth, prompts a recognition of his own physical beauty. In this scene, the power of envy may work through his own eye, as he gazes at and admires his comely reflection, or through the eyes of spectators, mortal or divine, who recognize his beauty, or through the eyes of a supernatural being who is offended by his self-praise. To preempt the attack of envy, Polyphemus spits three times

onto his bosom to deface himself and his reflected image, thus making them both undesirable.

Those accredited with supernatural powers and knowledge of magic, like Cotyttaris and Medea clearly understood the mechanics of envy and the evil eye (Apollonius Rhodius, *Argonautica*, 4.1661-1672; Theocritus, *Idylls*, 6.35-40; Ovid, *Amores*, 1.8; Pliny, *Naturalis Historia*, 7.2.16-18). The advice Cotyttaris gave Polyphemus recalls the common practice of using spit and saliva to bring luck, cure illness, ward off harm, reduce envy, and counter the ‘evil eye.’ This custom has been practiced from at least the 4<sup>th</sup> century BC to present (Theophrastus, *Characteres*, 16.14; Theocritus, *Idylls*, 6.35-40, 7.127, 20.11; Pliny, *Naturalis Historia*, 28.7; Persius, 2.32-34; Elworthy, 1895: 417-422; Nicolson, 1897; Yoffie, 1925: 377, 382; Roberts, 1927: 164; Lee, 1951: 308; Gifford, 1958: 62-66; Maloney, 1976: 119, 121, 132-133; Reminick, 1976: 91; Spooner, 1976: 81; Stein, 1976: 209; Murgoci, 1981: 124-125; Pitrè, 1981: 136). The number of times Polyphemus spit onto his breast is also significant. Associations between the number three and the supernatural are well-known and widespread (Tavener, 1916; Lease, 1919; Hardie, 1923: 166-168). It is interesting to note that Aristotle associates this number with the worship of the gods (Aristotle, *De Caelo*, 1.1, Lease, 1919: 69).

Theocritus’s (*Idylls*, 6) story of Polyphemus also recalls the later stories of Narcissus and Eutelidas who both met their demise wasting away with envy, enamored by their own reflections (Ovid, *Metamorphoses*, 3.339-510; Pausanias, 9.31.7-8; Plutarch, *Moralia*, 682B). Parallels to the mechanics of their ruin can be found in both images and written descriptions of ‘evil-eyers’ from Graeco-Roman antiquity, possibly as early as

the 5<sup>th</sup> century BC (Dickie, 1975: 379-81; Dunbabin & Dickie, 1983: 13, 15, 20, 22, 23; Garland, 1995, 118).

The best-known character from Greek mythology with extraordinary eyes that can harm with a glance is undoubtedly Medusa. At first glance, her legend seems to diverge from the prominent belief that the power of those who can cause destruction with a look is associated with envy. However, envy appears to play an important role in the Medusa mythos. The ruin of Medusa's famed beauty by Athena, through the transformation of Medusa's lovely locks into hissing serpents, may relate to Athena's envy of Medusa in a manner similar to the mechanics of the conflict between Agamemnon and Achilles in Homer's *Iliad* (1.185-187) or that of Agamemnon's fear of divine envy upon his homecoming (Aeschylus, *Agamemnon*, 918-925; 946-947). The late writings of Apollodorus (*Library*, 2.4.3 [J.G. Frazer trans., Cambridge, Mass., 1921]) tell us "it is alleged by some that Medusa was beheaded for Athena's sake; and they say that the Gorgon was fain to match herself with the goddess even in beauty," thus recalling a remark made by Socrates to Cebes (Plato, *Phaedo*, 95b [H.N. Fowler trans., Cambridge, Mass., 1966]): "do not be boastful, lest some evil eye [*baskania*] put to rout the argument that is to come." Moreover, such displays of arrogance and their subsequent punishment by envious deities was well known in Graeco-Roman mythology, for example in the stories of Arachne and Athena, and Marsyas and Apollo (Ovid, *Metamorphoses*, 6.1-145, 6.382-400; Clauss, 1989: 306-309).

Even though Ovid (*Metamorphoses*, 4.794-804) interprets this tale differently, explaining that the direct reason for Athena's initial attack on Medusa stemmed from the



desecration of her temple, the substance of this attack is telling when considered with Apollodorus' comment. Envy may lurk behind Ovid's explanation as well, for the virgin goddess may have been envious of Medusa's affair.<sup>[31]</sup>

Any direct relationship between envy and Medusa's paralyzing gaze is difficult to confirm, because such a connection is not expressly stated in any surviving ancient source. Regardless, the use of the *gorgoneion*, the severed head of Medusa, as an apotropaion in Greece is widely accepted. These ideas are not necessarily related, but the notion that this device could have been used to counter envy and the evil eye makes sense if one considers the mechanics behind Medusa's deadly stare.

Medusa did not allow herself to be the subject of another's gaze (Mack, 2002: 575-576). When her eyes met an onlooker's he was turned to stone, thus enabling Medusa to hide her hideous appearance. The power that she projected from her eyes could have been born from envy, as she may have been prone to possession by envy after her metamorphosis. Her envy may have related to a desire to regain status as extraordinarily fair and beautiful and her aggression kept anyone from realizing how grotesque she had actually become. Medusa's severed head, the *gorgoneion*, could thus be used to hide any object it adorned from the gaze of an envious onlooker. It can also be seen as a threat, similar to the function of both phallic representations and the much-suffering eye (Slane & Dickie, 1993: 488-494). This hypothesis regarding the mechanics of the *gorgoneion* helps to illustrate the logic of the relationship between the concept of envy and eyes that is one of the common characteristics of the evil eye belief.

Envy could not direct its power without distinguishing a target. Staring or looking at an object clearly displayed interest, which could incite fear and paranoia if the onlooker's intentions were unknown. Because awareness could be directly related to sight, it was common to protect wealth from envy by keeping it hidden. Wealth comprised any positive attribute that made one stand out among one's peers. The most vulnerable to attack by envy and the evil eye were those things that were most prized within society. Greek and Latin authors attest that in Greece and Rome social status and economic well-being were factors that most aggravated envy between men, and fame and hubris were conditions that most often provoked the envy of gods (Clauss, 1989). The well-being of both communities and individuals could provoke attacks by both the less fortunate, and competitors of similar status. Many specific examples of possessions attacked by envy are known from ancient Greek and Latin authors. Pliny (*Naturalis Historia*, 28.7) and Plutarch (*Moralia*, 680d) tell us that children were especially prone to attack by mortals, but fail to explain why. It seems likely that the old, the childless, and the unloved could all potentially harm the young. Siblings and even a child's own father could destroy it, because of the envy that surfaced when they saw the love it received from its mother. The relationship between love and envy was a common motif in ancient literature (Catullus, 5, 7.11-12, Heliodoros, *Aethiopica*, 3.7-9; Tavenner, 1966: 35). Stores and commodities were also in danger of attack, ranging from healthy livestock and crops to the works of potters, bakers, and smiths (Pliny, *Naturalis Historia*, 17.24; Virgil, *Eclogues*: 3.102-103, 8.99; Lowe, 1929: 33, 47; Jashemski, 1977: 220; Dickie, 1995: 241, 243). Fame and honor also ignited envy and caused slanderous

remarks between politicians and artists (Clauss, 1989: 301). It seems likely that references to envy attacking through one's breath were related to this fact (Plutarch, *Moralia*, 680e).

The effects of envy were combated by both incantations and apotropaions. Attic curse tablets recorded both instances of attacks caused by envy, and the retaliation of its victims as early as the 4<sup>th</sup> century BC (Jordan, 1999: 117; Ogden, 2002: 21). A single description of a ritual that may have been used to alleviate the ills produced by envy survives in Heliodorus's *Aethiopica*:

Someone bring me a tripod, laurel, fire, and frankincense, and let no one disturb me until I call. . . .I burned the incense and mumbled some prayers in a whisper and stroked Charicleia from head to foot with the laurel branch several times, and at long last when I had drenched myself in a plethora of foolishness I stopped and yawned like a man, or rather like an old hag, falling asleep. . . . (Heliodorus, *Aethiopica*, 4.5.2-3 [M. Hadas trans., Philadelphia, 1999: 88-89]).

Although this ritual was deemed "foolishness," this does not mean that similar rituals were not practiced as cures for the effects of envy during Heliodorus's time, the mid-3<sup>rd</sup> century AD.

Apotropaions used to counter envy comprised architectural decorations, symbols depicted on domestic and military objects, and amulets. Plutarch (*Moralia* 681f -682a) terms apotropaic amulets *probaskanien* and suggests that they function by attracting the gaze of the envious, thus helping to hide the objects they adorned (Garland, 1995: 109). These took on a variety of forms, the majority of which parallel those that appear as architectural decorations. *Gorgoneia*, phalli, the 'much-suffering eye,' images depicting the suffering of the envious, and an assortment of grotesques comprise the majority of these decorations. Evidence for these types appears in both the extant textual and

archaeological records (Jashemski, 1977: 218-221; Slane & Dickie, 1993: 486-494; Garland, 1995: 109). In addition to these well-attested apotropaic decorations, the eyes that decorated an assortment of articles during the Archaic and Classical Periods in Greece may have functioned in a similar manner. Eyes may have both marked the presence of a protecting divine consciousness, similar to one of the functions of the eyes that adorned ancient ships, and served to protect the objects they adorned from envy. The following case study, a reinterpretation of a wall-decoration from Thasos, clearly illustrates this idea.

#### THE THASIAN WALL DECORATION: A REINTERPRETATION

The only definitive example of the use of eyes in Greek architectural decoration is tentatively dated to the late Archaic Period. It is a 2.65 m x 1.40 m marble block from the city wall of Thasos that is incised with a pair of eyes and a nose (Baker-Penoyre, 1909: 219, pl. 28e; École française d'Athènes, 1967: 58) (Fig. 4.1). This block was discovered near the Gate of Parmenon, which is named for an inscription engraved between 510 and 490 BC that reads, "Parmenon made me" (Baker-Penoyre, 1909: 219, pl. 28e; École française d'Athènes, 1967: 58). The form of this decoration has a series of close contemporary parallels in the eye cups, the best-known examples of eye decorations from Archaic and Classical Greece. Many of the eye cups attributed to Attic and Chalcidian painters are contemporary with the engraved device from Thasos and are similar in form and composition (Fig. 4.2). The overall shape of the eyes, the position

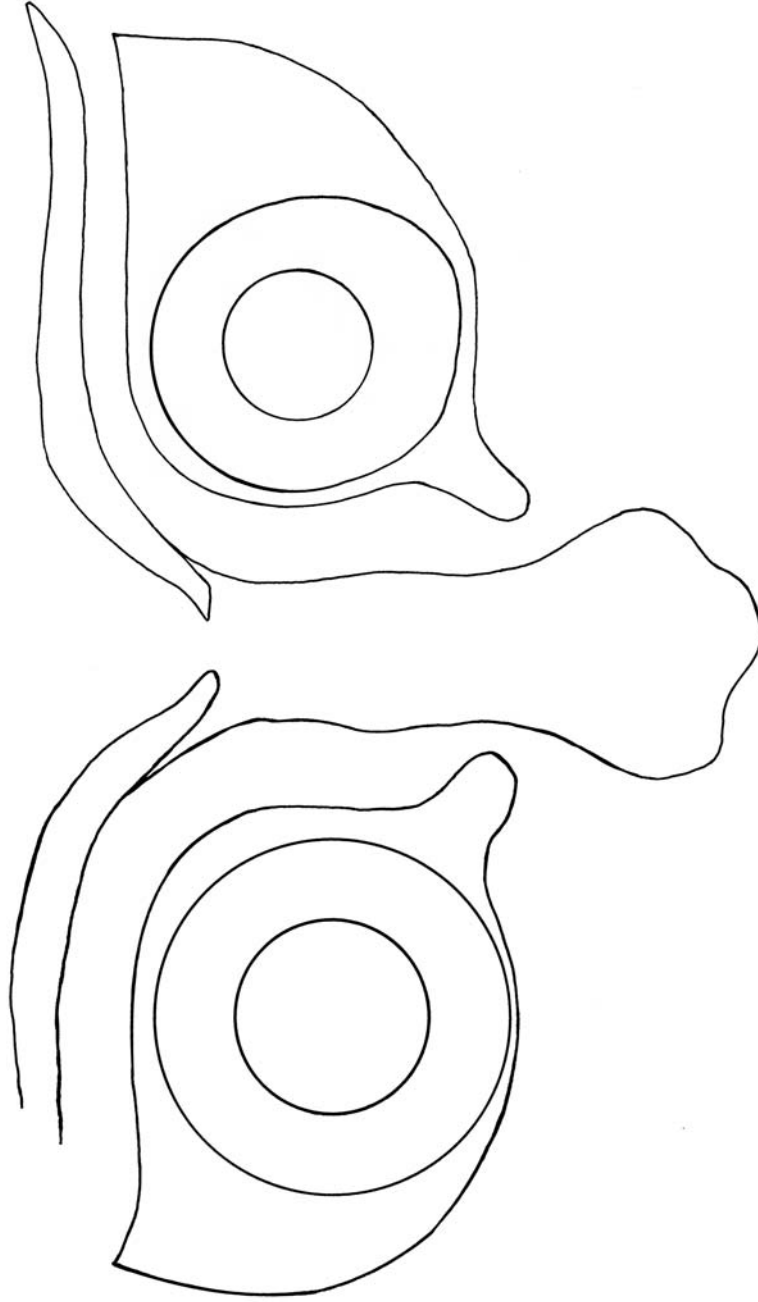


Figure 4.1. The decorated marble ashlar block from Thasos. (Drawing: author, based on Steinhart, 1995: pls. 39.1-2)

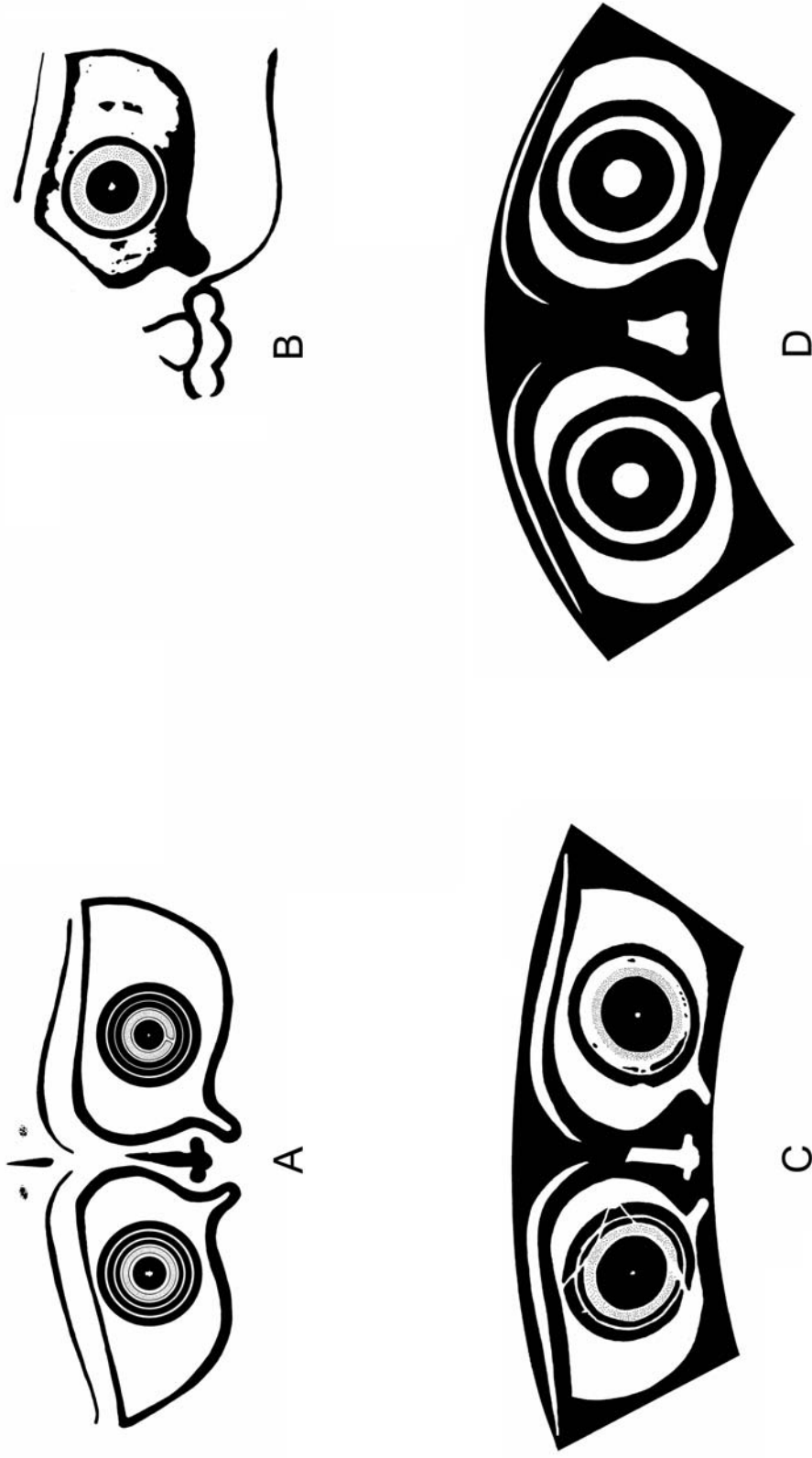


Figure 4.2. Examples of eye cup decorations similar to the marble ashlar block from Thasos dated to the 6<sup>th</sup> and 5<sup>th</sup> centuries BC. (Drawing: author, based on (A) Beazley, 1971: 109.15BIS; Beazley, 1963: 122, 1627; (B) Gropengiesser, 1970: pl. 161.2; (C) Lamb, 1936: pl. 5.1B; (D) Bielefeld, E., 1959: pl. 65.4)

and relative size of the iris and pupil, the contour and thickness of the eyebrows, and the trefoil depiction of the nose are all similar. Scholars have linked these decorations with both the *gorgoneion* and the cult of Dionysos (Bell, 1970; Steinhart, 1995: 55-68; Mack, 2002). Such interpretations are based primarily on the iconographic milieu of each work. This approach has been followed to discern the meaning of eyes on many other objects (Steinhart, 1995). Although it has resulted in a number of well-founded hypotheses, it is possible that the eye motif had other complementary meanings. A review of the use of eye cups during Archaic and Classical Period symposia and a reinterpretation of the iconography of a Rhodian *epinetron* show how the eyes could act as both epiphanies that showed the presence of a supernatural entity and as apotropaions that were used to protect their users from envy.

### *Symposia and Eye-cups*

Symposia were private evening social gatherings of the Greek male aristocracy. These were well choreographed events with a ritual flair that involved the pouring of libations, the recital of hymns, and the mixing and drinking of wine (Plato, *Symposium*, 176a; Xenophon, *Symposium*, 2.1). Guests wore garlands and reclined on couches while drinking wine that was mixed in three *kraters*: one dedicated to Zeus and the Olympians, one to the heroes, and one to Zeus Soter. (Bowie, 1997: 2). Participants were attended by young boys and maids who both served and entertained (Plato, *Symposium*, 176e; Xenophon, *Symposium*, 2.1-3.1). The focus of the evening was the discussion of politics, philosophy, intimate relations, and personal successes (Henderson, 2000: 6, 11).

Poetic and rhetorical contests were also common at these gatherings (Murray, 1993: 207-213; Plato, *Symposium*; Xenophon, *Symposium*, 5.1-2). Such pastimes had the potential to degrade into intoxicated sessions of unbridled gossip, mockery, boasting, or even physical violence: classic effects of envy. The primary function of the eyes depicted on cups used at symposia may have been to protect the symposiast from envy, the dangers of which were well known in Archaic and Classical Greece.

When the symposiast drank from his cup, its eyes stared outward and aided him by retaining visual contact with his peers as he took his drink (Boardman, 1974: 107; Mack, 2002: 576-577). The fact that red often filled the irises or pupils of these eyes suggests that this color may have been used to denote a divine presence. Burkert (1985: 161-162) notes that intoxication was interpreted by the Greeks as an “irruption of something divine.” Drunkenness often results in both red, bloodshot eyes and a reddish flush in the face. Therefore, it is possible that the color red was used in eye representations to show that the object possessed a supernatural consciousness. Such a presence could have helped to protect the symposiast from the attacks of his peers as well as the wrath of any supernatural being that may have been offended by the symposiast’s boasting and self praise (Plato, *Symposium*, 193b, 213d).

Regardless of the precise identification of this presence, it kept watch for the symposiast while he drank. It was well known that the envious are cunning and that the unaware are vulnerable to attack (Xenophon, *Cyropaedia*, 4.6.4). Furthermore, the eye motif could have served as a reminder of the effects of envy, so that the onlooker remained mindful of his thoughts and controlled his behavior whether or not he actually



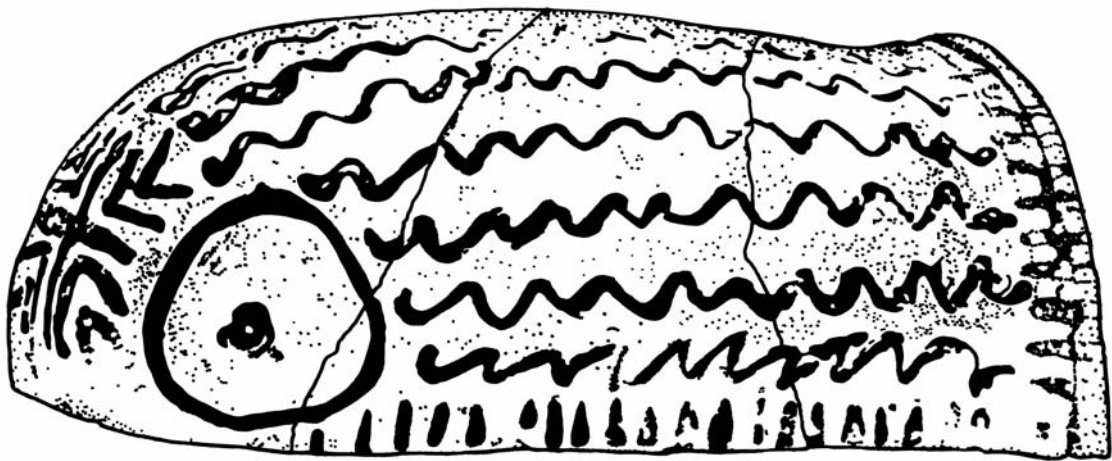
believed that envy could cause harm by both earthly and supernatural means. This is supported by a correlation between the form of the eyebrows on many of the eye cups and Aristotle's (*Historia Animalium*, 491b) remark that eyebrows drawn in towards one another was considered a sign of envy. Traditions of representing the envious in this manner during the Roman Imperial Period have been studied by Dunbabin and Dickie (1983: 17).

The identification of the specific protective force or deity represented by the eyes on these cups depends on both associated iconography and the circumstances of their use. However, the eye motif seems to primarily, and almost universally, denote the presence of a protective supernatural consciousness that aids its user by keeping watch for invisible threats: one of these threats may be envy.

#### *The Case of a Rhodian Epinetron*

A similar hypothesis may explain the appearance of a pair of eyes on a decorated Rhodian *epinetron* in the Ashmolean Museum (Robinson, 1945: 490; Steinhart, 1995: 102-103) (Fig. 4.3). It may have been decorated as an apotropaion in response to a fear of envy and as an epiphany to show the presence of a specific guardian deity. A review of the use of *epinetra* and the decoration of the Ashmolean example reveals the meaning of this object's ornamentation.

*Epinetra* were ceramic knee coverings used by women while preparing wool for spinning (Haley, 1890: 179-183; Robinson, 1945: 480-482). The working of wool was often conducted in groups by women during the Archaic and Classical Periods. This is



*Figure 4.3.* The decorated Rhodian *epinetron* from the Ashmolean Museum. (Drawing: author, based on Steinhart, 1995: pl. 24.2)

attested on a number of black- and red-figure representations that show women conversing and working wool from preparation to weaving (Richter, 1907: 417-419; Greifenhagen, 1962: 31, pl. 81.2; Petersen, 1997: 38-40, figs. 1a-c). Wool working in groups offered an opportunity for women to leave their homes and socialize (Petersen, 1997: 37-38). Evidence suggests that women of all classes engaged in similar activities (Milne, 1945: 531-533). Such meetings undoubtedly sparked discussion and gossip. Formal competition between women engaged in wool working is also known in history and mythology. Ovid (*Metamorphoses*, 6.1-145) tells us of the legendary contest between Minerva and Arachne. An Attic eye cup dated to between 540 and 530 BC was discovered at Tarentum that is inscribed: "I am Melosa's prize. She won the girls' carding contest." (Milne, 1945: 528-529). The pride Melosa felt after winning this honor is attested by the fact that she preserved her prize until death and was then buried with it (Milne, 1945: 531).

Competitions that tested domestic prowess, as well as gossip and the discussion of personal and familial achievements while working wool, could have potentially provoked envy between women. Similar to the manner in which the eye cups kept watch for the symposiast while he was enjoying his drink, the eyes that decorate the forward end of the *epinetron* from the Ashmolean Museum could have kept watch for a woman engaged in the carding of wool. In the case of this specific Rhodian *epinetron*, the guardian deity represented by the eyes may have been Athena. Numerous examples of *epinetra* have plastic or painted female heads at their forward ends that have been identified as Athena Ergane (the worker), Demeter or Kore, and Aphrodite (Robinson,

1945: 485, 488-490). Robinson (1945) has suggested that the incised scale-like pattern seen on many *epinetra* was meant to resemble snake skin or owl feathers: two animals intimately associated with Athena. If employed to resemble snake skin, the design may be related to Athena's *aegis*; if meant to resemble owl feathers, the design may relate to Athena's common connection with this bird (Robinson, 1945: 485). Athena's association with weaving and the domestic arts adds further weight to this theory (Hymnus Homericus, *ad Venerem*, 5.14-15; Plato, *Symposium*, 197b). The wavy painted design on the Ashmolean *epinetron* may have been meant to imitate the scale-like patterns seen on more elaborate examples. Considering these facts, it seems likely that the Ashmolean *epinetron* was decorated both to act as an apotropaion to ward off the envious, and as an epiphany to evoke Athena Ergane, as protectress and patron of domestic arts.

*Discussion: The Thasian Wall Decoration as an Epiphany and an Apotropaion*

The eyes on the wall at Thasos likely functioned in a similar manner to the eye cups and the Rhodian *epinetron*. As an apotropaion, this carving may have functioned to repel the ill will and envy of rival communities and supernatural beings. The form of the eye brows and parallels with the eyes on the eye cups seem to support this notion. As an epiphany, correlations between the mask-like appearance of this carving and the well-known association between Dionysos and both ritual and theatrical masks, as well as the popularity of Thasian wine, and the importance of wine to the cult of Dionysos, suggest that the entity evoked by this carving may have been Dionysos (Bell, 1970: 9-11). This supposition is supported by the fact that other examples of Dionysiac imagery on the

walls of Thasos are known, including a relief of Silenus near the Silenus Gate and a now-missing relief of Dionysos near the Gate of Dionysos and Heracles (*École française d'Athènes*, 1967: 58, 60). To add further weight to this theory, Dionysaic imagery that appears to have functioned in a similar manner appears on the 6<sup>th</sup>-century BC city walls of Itanos on Crete in the form of a phallus, and on the late 4<sup>th</sup>-century BC walls of Samos in the form of a mask and a phallus, showing that Dionysaic imagery was used in this manner in other locales as well (Kienast, 1978: 26, pl. 22; Dickie, 1995: 244) (Fig. 4.4).

This example shows how eyes could be used as epiphanies and as apotropaions to counter envy during the Archaic and Classical Periods, but neglects to link both a fear of envy, and the employment of eyes or other similar devices used to counter envy to ancient mariners. A later relief from Ostia may show both a fear of envy and the evil eye among mariners and that the depiction of a single eye could be used as an apotropaion meant to specifically counter envy and the 'evil eye.'

#### THE TORLONIA HARBOR RELIEF

The Torlonia harbor relief was discovered between 1862 and 1864 by Alexander Torlonia during his excavations near Trajan's Harbor in Ostia (Fig. 4.5). The relief is marble and measures approximately 122 cm x 75 cm. It is dated to the Severan Dynasty, between AD 193 and 235, and shows a framed scene depicting two ships flanking Neptune near its center. The ships are surrounded by a number of images associated with the voyage. The ship to the right is tied to a mooring block and is being unloaded by

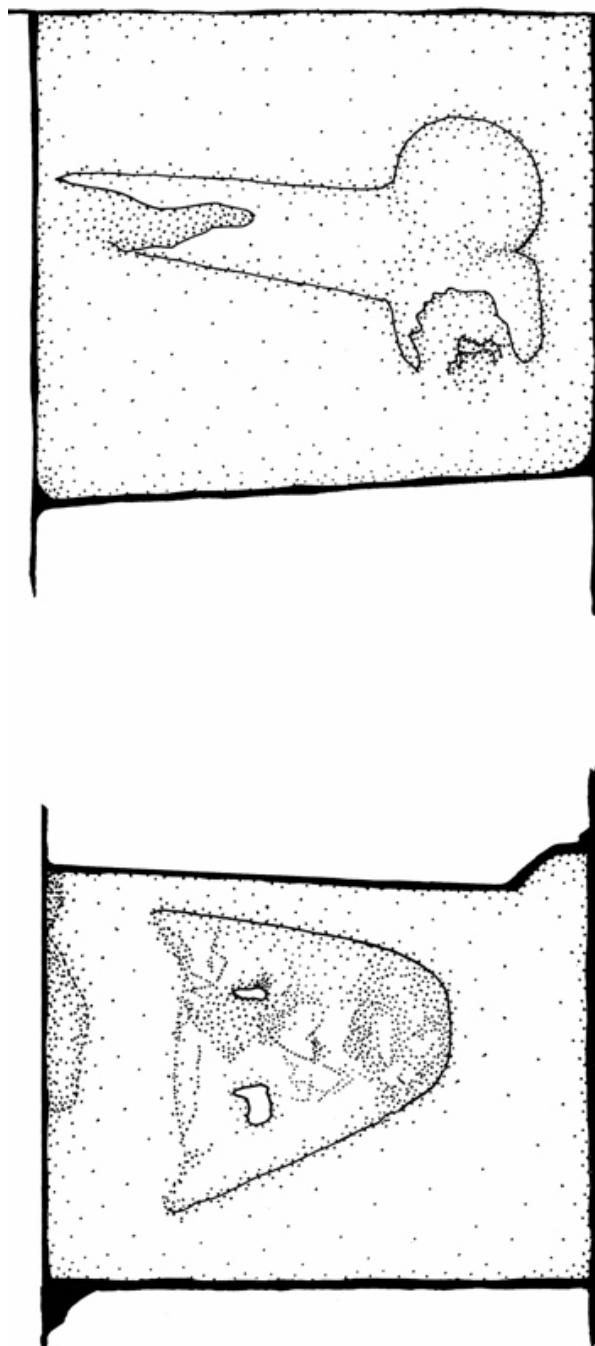


Figure 4.4. Samian wall decorations. (Drawing: author, after Kienast, 1978: pls. 22.2-22.3)



*Figure 4.5.* A section of the Torlonia harbor relief depicting the unloading of a merchantman with an apotropaic eye hovering above it. (After Meiggs, 1997: pl. 20)

stevedores, while the ship to the left is just entering the port with members of its crew celebrating their arrival with appropriate sacrifices at its stern.

Meiggs and Fasciato have suggested that this relief is a surviving dedication from a temple of Dionysos that has yet to be discovered in Ostia (Meiggs, 1997: pl. 20). This supposition is based both on Fasciato's reading of a series of Ostian inscriptions and a number of elements that appear in the Torlonia relief itself, including a stevedore carrying an amphora and a representation of Dionysos with his staff, the *thyrsos*, and panther depicted directly above the moored ship. Furthermore, Meiggs interprets the letters "V L" that appear on the main sail of the ship entering the harbor to refer to the phrase "Votum Libens Solvit," supporting the notion that the relief is a thank-offering from a wine merchant made to Dionysos following a successful venture. A significant aspect of this relief is the depiction of a large eye hovering above the moored ship. The depiction of this eye may indicate a fear of envy and the evil eye among mariners and that the depiction of a single eye could be used as an apotropaic device. At first glance, the eye on the Torlonia harbor relief appears to exhibit one of the best-known characteristics of those who are possessed by envy and have the ability to cast the evil eye: the double pupil.

Pliny (*Naturalis Historia*, 7.2.16-18) provides the most extensive discussion of the evil eye to survive from antiquity, which addresses this identifying attribute:

Isigonus and Nymphodorus report that in the same part of Africa there are certain families of evil-eye-ers, at whose praise meadows perish, trees dry up, and children die. Isigonus adds that there are people of a similar kind among the Triballians and the Illyrians, who evil-eye also with looking and kill those they direct their gaze toward for a longer time, particularly when they have anger in their eyes. Adults are more prone to experiencing this evil. It is somewhat



noteworthy that they have two pupils in each individual eye. Apollonites adverts women of this sort too in Scythia, who are called the Bitiae, and Phylarchus also the race of the Thibians and many others of a similar nature in Pontus. These, he reports, are distinguished by having a double pupil in one eye and the shape of a horse in the other. Moreover, these same people cannot be drowned, not even when weighed down by clothes. Damon speaks of the not dissimilar race of the Pharnaces in Ethiopia, whose sweat draws corruption out of bodies to which it is applied. Our own Cicero too guarantees that all women everywhere blight by looking if they have double pupils. Indeed when nature had produced in men the wild practice of eating human innards, she also decided to produce poisons throughout the body and actually in the eyes of some people, lest there should be some evil somewhere that was not in man (Pliny, *Naturalis Historia*, 7.2.16-18 [D. Ogden trans. In: Ogden, 2002: 224-225]; Aulus Gellius, *Noctes Atticae*, 9.4.7-9).

Written during the 1<sup>st</sup> century AD, this passage draws upon Greek and Latin authorities that lived as early as the mid-4<sup>th</sup> century BC. Pliny's citation of Phylarchus, a mid 3<sup>rd</sup>-century BC historian from Athens, may provide an early date for the association between eye abnormalities, witchcraft, and the evil eye among the Greeks. Reiss (1895: 50-51) believes the association between the double pupil and the evil eye was originally an aboriginal Greek belief that was later ascribed to the Triballi, the Illyrii, the Bitiae, and the Thibii. According to Pliny, the earliest Latin author to link the occurrence of double pupils with the ability to cast the evil eye is Cicero. Thus Pliny's testimony attests to the belief in a connection between the double pupil and the evil eye among the Romans at least as early as the 1<sup>st</sup> century BC.

Pliny is not the only author whose surviving work records the unusual phenomenon of the double pupil. Ovid's *Amores* (1.8.15-16) describes the witch Dipsas as having double pupils. Although this passage does not explicitly proclaim that she has the ability to cast the 'evil eye,' Ovid's description includes a number of attributes commonly associated with this belief, including double pupils, flashing eyes, and use of magic.

These attributes, when considered along with both Cicero's remark that "all women everywhere blight by looking if they have double pupils" and Pliny's (*Naturalis Historia*, 11.52.142) telling comment that "we have already said enough about double pupils, or persons who have the evil eye," suggests that Ovid's use of the phrase *pupula duplex* was intended to identify Dipsas as being capable of casting the 'evil eye.'

The only other eye abnormality explicitly associated with the evil eye is also mentioned by Pliny. This feature, the horse-shaped image, is attributed to Phylarchus who directly connects it with the ability to cast the 'evil eye.' This suggests that the association between a horse-shaped image and the evil eye was known in Greece by the mid 3<sup>rd</sup> century BC, and in Rome by at least the 1<sup>st</sup> century AD.

Many scholars have attempted to define the precise form and meaning of these eye abnormalities (Jahn, 1855: 35; Reiss, 1897: 195-196; Smith, 1902; McDaniel, 1918; Tupet, 1976: 390-394). The most comprehensive studies of these phenomena were conducted by the early 20<sup>th</sup>-century philologists Kirby Flower Smith and Walton Brooks McDaniel. Smith (1902) proposed that Pliny, Cicero, and Ovid all misread earlier Greek works, resulting in the fabrication of the idea that the double pupil and the horse-shaped image marked possessors of the 'evil eye.' This has been successfully refuted by McDaniel (1918), who also presents an interesting theory that relates documented congenital deformities to the abnormalities mentioned by ancient authors. It seems unlikely that Pliny's references to double pupils: *pupillas binas in singulis habeant oculis*, "they have two pupils in each eye," *geminam pupillam*, "twin pupils," and

*duplices pupillas* “double pupils,” as well as Ovid’s *pupula duplex* “double pupils” resulted from their misunderstanding of earlier Greek texts.

Although the Torlonia harbor relief appears to depict this phenomenon as the convergence of two pupils in a single eye, the representation of the pupil in this relief more likely relates to conventions in Roman art rather than an artists desire to communicate a belief in envy and the evil eye through a representation of an eye with double pupils. Nevertheless, the manner in which the eye is depicted, as one of the dominating elements of this relief, suggests that it functioned as more than just a mere decorative element. Clues to its function may be found on a contemporary relief now in Woburn Abbey.

#### *The Woburn Abbey Relief and the Much-Suffering Eye*

The Woburn Abbey relief depicts the much-suffering eye, a well-attested apotropaic device used to ward off envy and the evil eye during the Roman Imperial Period that appears on seals, mosaics, wall-paintings, and bas-reliefs (Jahn, 1855: 30, pl. 3.1; Bienkowski, 1893; Levi, 1941; Slane & Dickie, 1993: 490) (Fig. 4.6). The standard representation of the much-suffering eye is comprised of a single large eye that is attacked, often from all directions, by beasts and weapons. These typically include swords, daggers, spears, tridents, phalli, thunderbolts, lions, panthers, scorpions, owls, and other fowl (Bienkowski, 1893: 287, 291-294; Levi, 1941: 220-225). Some of these symbols may evoke specific dieties and heroes, for example, phalli and panthers evoking Dionysos, thunderbolts evoking Zeus, owls evoking Athena, and lions evoking Heracles.



*Figure 4.6.* Relief from Woburn Abbey depicting the 'much-suffering eye.' Note the double pupil. (Drawing: author, after Elworthy, 1895: 137, fig. 24)

Regardless of such attributions, the meaning of these decorations was always the same: they were meant to counter envy and the ‘evil eye.’ They functioned by both threatening the envious and reminding them of the pain that they had already suffered (Dunbabin & Dickie, 1983: 9; Slane & Dickie, 1993: 488-492).

An inscription on a mosaic floor from Themetra in Africa Proconularis that depicts an eye being attacked by a phallus illustrates that these symbols functioned as threats. It reads, “What you see is for the envious, may it go well for the good and ill for the evil” (Slane & Dickie, 1993: 488). A common inscription that accompanies both representations of the much-suffering eye and phalli appears on a mosaic floor from Antioch showing an eye being attacked by a cat, a bird, a sword, a scorpion, a snake, a dog, a centipede, and a dwarf with an enormous phallus. The inscription reads: *kai su*, “and you too” (Levi, 1941: 228, pl. 56.121). The association between variations of this phrase and images of both the much-suffering eye and depictions of phalli, shows that these motifs were meant to threaten envious onlookers with images of the violence that they would endure for the harm that they might cause (Slane & Dickie, 1993: 488-492). The pain suffered by the envious is well-known from Greek and Latin art and literature. It was considered a disease that caused emaciation and rot (Dickie, 1975: 379-381). Interestingly, Garland (1995: 118, pls. 50-51) has suggested that images of Geras that appear in 5<sup>th</sup>-century BC Attic vase paintings show the physical effect of envy on men. The effects of envy were so severe that it drove men to self-mutilation and self-strangulation (Dunbabin & Dickie, 1983: 10-27; Slane & Dickie, 1993: 494-497).

The Woburn relief functioned in the same manner. It shows a large eye being attacked from below by a lion, a snake, a scorpion, a crane, and a raven. To the right, a *retiarius* prepares to attack with his trident and dagger, and directly above an old man prepares to defecate onto it. The left portion of the relief is missing. This region was likely filled by a *secutor* opposite the *retiarius*, given that the *retiarius* typically challenged the *secutor* or the *myrmillo* in the arena. Both a *retiarius* and a *secutor* appear on a similar representation studied by Michaelis (1885: 313; Bienkowski, 1893: 288; Grant, 1995: 59-61; Auguet, 1998: 47, 56-58, figs. 5a, 6a, 7).

The eye on the Woburn Abbey relief, and the eyes that appear in other representations of the much-suffering eye, act as the focal point of each composition. Its commanding presence in these depictions is similar to that of the large hovering eye on the Torlonia harbor relief. As a result, it is possible that the eye on the Torlonia relief served a similar purpose and functioned to ward off the destructive power of envy. If this is the case, the Torlonia relief attests to a fear of envy and the evil eye among Roman mariners. This would not be surprising considering the vast range of evidence for a fear of envy and the evil eye throughout the Graeco-Roman world. More importantly, the Torlonia relief suggests the possibility that decorations in the form of eyes without the additional iconography associated with the much-suffering eye could have been used as apotropaic devices during the Roman Imperial Period. Although this may not seem surprising at first glance, little other evidence exists to link the depiction of lone eyes with a fear of envy and the evil eye from Greece or Rome. The Torlonia relief may be the best extant example from antiquity showing such a link.

Although the Torlonia relief is admittedly much later than the marble eyes, it may not be unreasonable to suggest that a similar fear of envy existed among earlier Greek mariners considering the testimony of Greek authors that shows an early understanding and fear of this force. The possibility that mariners decorated their ships' with eyes to both mark them as endowed with a protecting supernatural presence, and alleviate their fear of envy and counter its ills can be shown through a review of the archaeological evidence for the use of similar functioning devices that once decorated ancient watercraft.

#### ARCHAEOLOGICAL EVIDENCE FOR APOTROPAIC SHIP DECORATIONS

Many decorations from ancient ships have been uncovered both as chance finds and during the investigation of ancient shipwrecks. A number of these appear to have functioned as epiphanies, as they comprise representations of specific deities (Bruckner, 1963; Torr, 1964: 66, pl. 8.41; Frondeville, 1966: 41, pl. 5; Horn, 1974). Others appear to have functioned as apotropaions, many of which may have at least partially functioned as protection against envy and the 'evil eye.' These comprise *gorgoneia*, phalli, and animal horns, and range in date from approximately the 3<sup>rd</sup> century BC to the 3<sup>rd</sup> century AD.

The most recent examples are chance finds of bronze decorations that were likely once affixed to late Roman riverine vessels and represent three decorative motifs: the *gorgoneion*, the phallus, and the winged phallus. A winged phallus adorns the forward face of a decorative *proembolos* discovered in the Rhine near Cologne-Deutz during the

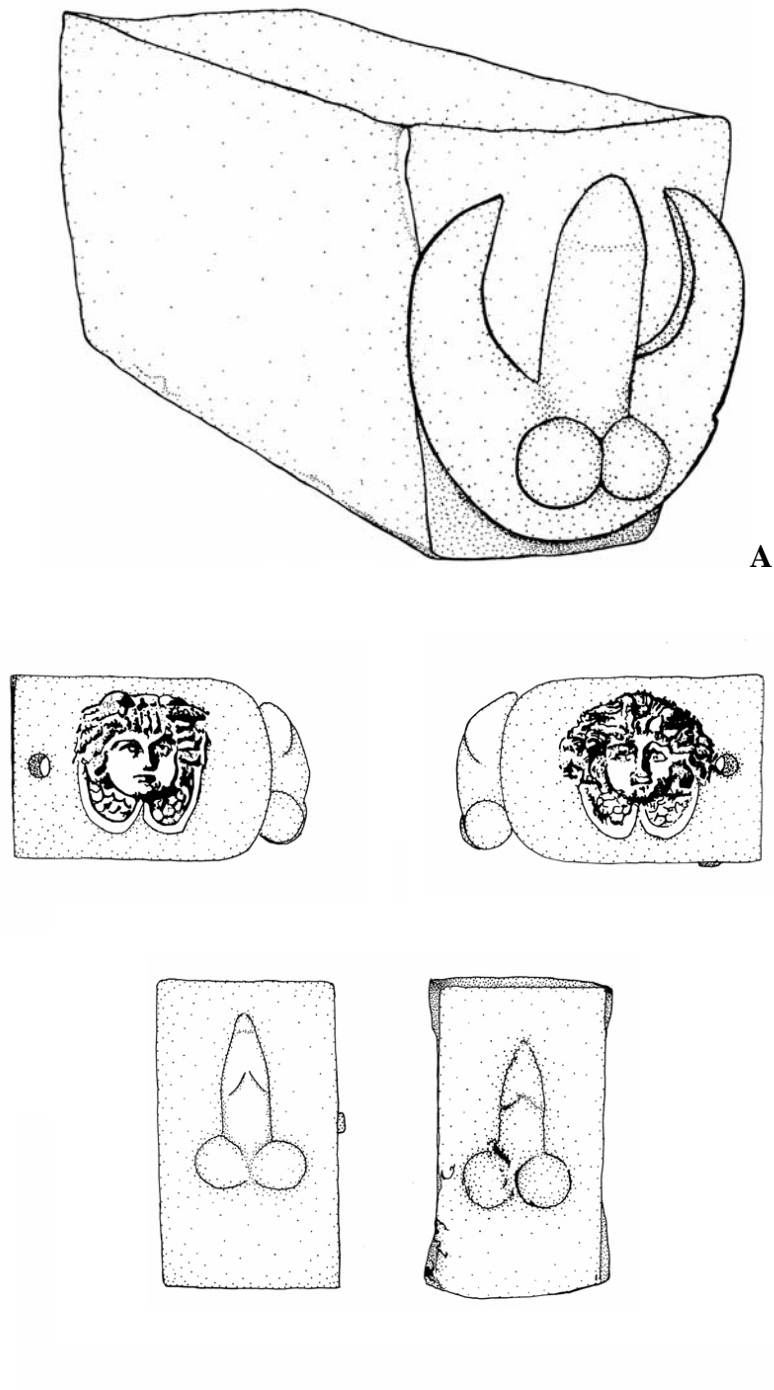
19<sup>th</sup> century (Cavazzuti, 1997: 85) (Fig. 4.7).<sup>[32]</sup> Phalli were often depicted with wings, eyes, and legs in Graeco-Roman art, possibly to either show that the lone phallus was considered a powerful sentient threat, or that it was acting as an epiphany of Dionysos or Priapus. This decoration likely functioned as both an apotropaion and as an epiphany that evokes Priapus in his guise as both defender against envy and the evil eye, and as a deity specifically linked to navigation. Neilson (2002) believes that the Greeks and Romans primarily viewed Priapus as a garden fertility god and a patron of navigation. This hypothesis neglects a vast range of evidence. Both Roman art and textual evidence specifically indicate that Priapus was the protector *par excellence* against envy and the evil eye (Slane & Dickie, 1993: 486-494). His image or the phallus appear, often along with accompanying texts, at critical positions in landscape and built architecture (Jashemski, 1977: 218-221).<sup>[33]</sup> This arrangement closely parallels the placement of the Cologne-Deutz decoration on its vessel. It likely adorned the bow of a boat as a decorative *proembolos*, thus leading its ship into the unknown. Like many of the other gods in the Graeco-Roman world, Priapus served a range of functions. The presence of Priapic imagery on ancient ships is certainly not surprising, especially those of the Late Roman and Imperial Periods, from which the majority of evidence relating to his cult survives.

Two other pairs of smaller bronze ornaments are also known. They are today in the Musée de Mariemont. These are similar in ornamentation to the Cologne-Deutz decoration. One pair is decorated with both a phallus and a *gorgoneion*, while the other is merely decorated with a phallus (Bruckner, 1963). These ornaments appear to have



adorned the exposed ends of transverse beams and are likely from either small riverine craft or wheeled vehicles. This hypothesis is based on both the position of the *gorgoneia* and on the size of these ornaments (Fig. 4.7). All of the symbols on these decorations were used as apotropaions used against envy and the evil eye (Jashemski, 1977: 218-221). It is noteworthy to recall the ancient belief that those who possessed the power to project envy through their eyes were from the limits of the Graeco-Roman world in relation to the provenance of these finds (Pliny, *Naturalis Historia* 7.2.16-18).

A new ship decoration that has been tentatively dated as Hellenistic or Roman was discovered in the harbor at Antioch during the 2004 Cilicia Maritime Survey (Ward, 2004). This object could have functioned to ward off envy and the 'evil eye.' It is a bronze sheath generally similar in form to examples discovered in the Rhine, but its decoration is different: the anterior quarter of a winged horse adorns its forward face. This figure likely represents a *hippocampus*, or a seahorse. *Hippocampi* were often depicted with wings in Greek, Roman, and Near Eastern art as early as the 5<sup>th</sup> century BC. Holloway (1988: 448-449) suggests that *hippocampi* were used as apotropaions to counter envy and the evil eye during the 6<sup>th</sup> century BC in Etruria based on his study of the iconography of tombs at Tarquinia. Although it is possible that the Antioch decoration was also used in this manner, there is little evidence to support the notion that *hippocampi* were used to repel envy and the evil eye in Greece and the Eastern Mediterranean. However, representations of a variety of gods riding *hippocampi* are known from Greece, Asia Minor, and the Levant. This suggests that the *hippocampus* could have functioned as an epiphany of a maritime deity such as Poseidon, the

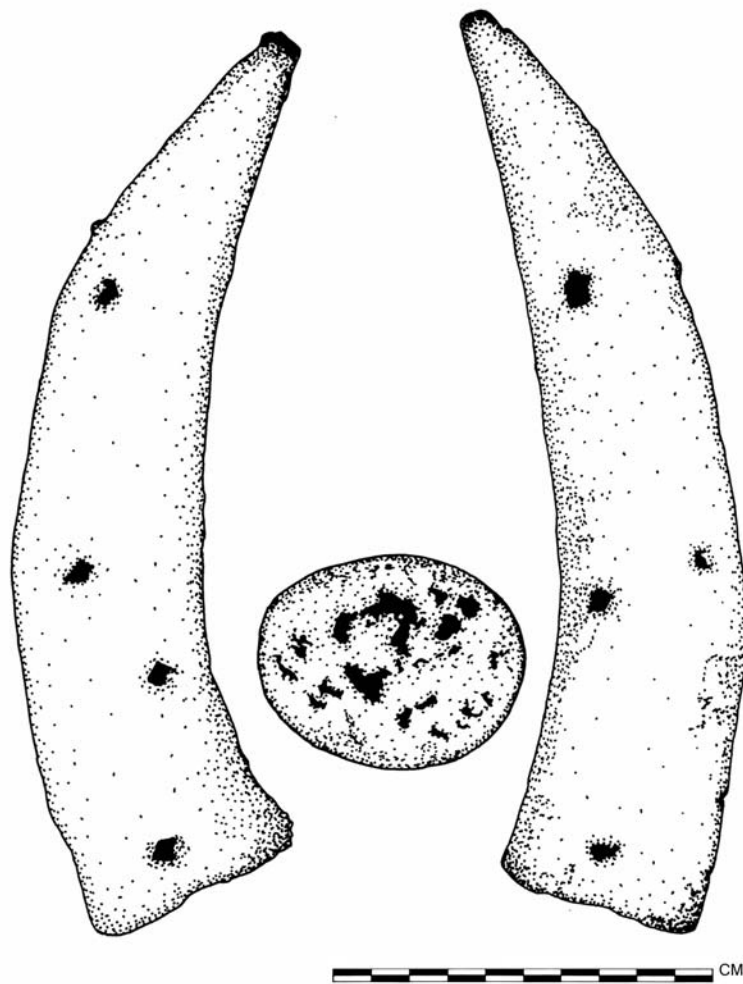


*Figure 4.7. (A) Bronze decorative proembolos discovered in the Rhine near Cologne-Deutz. (Drawing: author, based on Neilson, 2002: 251, fig. 3); (B) Bronze decorations from the Musée de Mariemont. (Drawing: author, after Bruckner, 1963: 14, fig. 2)*

Nereides, the Semitic “Poseidon,” or the enigmatic “Phoenician seahorse-riding god” (Brody, 1998: 22-26).

A series of earlier examples of ship decorations exist that also have been suggested to be both apotropaions used to counter envy and the evil eye and epiphanies. Eight horn-shaped lead objects have been discovered in the Mediterranean that once likely decorated Hellenistic and Roman ships (Lamboglia, 1952: 187-189; Lamboglia, 1964: 252; Granier, 1965: 287; Mouchot, 1970; Benoit, 1971: 409, fig.11; Kapitän, 1973: 186; Mas, 1985: 165; Kapitän, 1996: 215) (Fig. 4.8). Only two of these can be dated with certainty: those associated with the Albenga and the Punta Scaletta shipwrecks. They have been dated to 140 to 130 BC and 100 to 80 BC respectively, based on their association with datable ceramics uncovered during the investigation of these shipwrecks (Lamboglia, 1952; 1964). A third example from Savelletri has been dated to 280 to 250 BC based on its possible association with a cargo of Corinthian and Corcyran amphoras, but this association must be taken with caution due to the scattered nature of this site (Kapitän, 1973; Koehler, 1978: 237). Similarities between these datable examples and five similar undated chance finds suggests that a tradition of mounting horn-shaped objects on Greek and Roman ships may have existed between the 3<sup>rd</sup> and the 1<sup>st</sup> centuries BC.

Evidence gleaned from these objects proves that they are the lead filling-pieces of decorative horns. Lamboglia (1964: 252) recorded remnants of horn adhering to the example from the shipwreck at Punta Scaletta, and Mouchot (1970: 314) recorded marks



*Figure 4.8.* A lead filling-piece discovered off Isle Grosa near the Bay of Campania.  
(Drawing: author, after Mas, 1985: 165, fig. 6.4)

on a chance-find from the sea at Monaco that show these objects once filled actual horns. Lead may have been used as a filling material instead of copper or bronze because of its lower melting point. Through experimentation, Mouchot (1970: 314) has proven that horn is strong enough to withstand the pouring of molten lead into its central cavity.

Kapitän (1996: 211) suggested that only eight lead-filling pieces have been uncovered from ancient shipwrecks because lead may not have been the only substance used to fill the central cavities of horns in preparation for mounting. He suggests that wood or another perishable material may have been fashioned to fill these spaces. The filling of horns was not necessarily practiced to simply provide a better grip for fasteners, but was more likely conducted to increase their strength, as pressure on an unfilled horn could cause irreparable damage.

Mas (1985: 165) and Granier (1965: 287) both identify these objects with bovine horns, while Lamboglia (1952: 187-189) suggests that the lead filling-piece from the shipwreck at Albenga once filled either a bovine or a ram horn. All of the extant lead filling-pieces resemble bovine horns.

The fastening holes recorded on these objects show that lead-filled horns were mounted using nails with square cross-sections ranging from approximately 0.6 cm to 1.0 cm (Lamboglia, 1952: 188; Granier, 1965: 187; Mas, 1985: 185). Mouchot (1970: 314) suggests that these fastening holes were produced during casting and are not the results of nails being driven through the horns. His belief stems from their alignment with preserved horn on the example from Monaco and the fact that driving a nail through the horn would have deformed the lead filling. His experiments suggest that such holes

could be produced during casting by either affixing the nails in place or by positioning wooden dowels prior to the pouring of the lead. In addition, he records that all of the fastening holes were set obliquely to the axis of the horn on the specimens from both Monaco and Albenga, and that the Monaco example preserves imprints of nail heads on the exterior portion of its curvature, thus showing that the nails were inserted from the convex side.

Every scholar that has studied these objects has suggested that they are remnants of ship decorations that functioned as either epiphanies or apotropaions (Lamboglia, 1964: 252; Granier, 1965: 287; Mas, 1965: 165). Mouchot (1970: 315-318) has recorded ethnographic parallels that show the decoration of ships with horns at Sète and Marseilles. The vessels he studied show that horns were mounted either at the top of masts or on the roofs of cabins on many modern trawlers and small fishing boats (Mouchot, 1970: 315). The owners of these vessels attested to their belief in the apotropaic power of this ornament by remarking that it would protect them in bad weather and from the evil eye (Mouchot, 1970: 317). Furthermore, they believed that horns have similar powers to those commonly attributed to ship eyes and images of saints that are also often used to decorate and protect their vessels (Mouchot, 1970: 317).

Mouchot (1970: 318) remarks that the symbolic character of horns coupled with the conductive property of lead, albeit weak, supports his theory that lead-filled horns were not only considered apotropaic devices, but also functioned as epiphanies during the Hellenistic and Roman Periods. He notes that lead-filled horns may have been mounted on the top of a ship's mast or at the tips of its yard to attract St. Elmo's fire, the lights by

which the Dioskouroi, well-known protectors of seafarers, materialize (Plutarch, *Lysander*, 12.1). This phenomenon occurred as a result of static electricity, spawned at least in part by the laboring of a vessel, that caused lights to appear in the rigging (Beck, 1973: 92). Both the strategic mounting and material of these horns may have helped to attract this phenomenon. His technical analysis of the horn from Monaco also supports this hypothesis. It suggests that this horn was affixed to a cylindrical object, possibly a mast or a yard, because it could not have been attached to a flat surface considering the arrangement of surviving nails and fastening holes (Mouchot 1970: 315). Mouchot (1970: 318) further supports this contention by noting that a relief in the Museum of Beirut may depict a ship with horns attached to the ends of its yard, but provides no citation or illustration of this object.

Mouchot's (1970: 317-318) suggestion that these horns were mounted on the ends of yards is supported by both Greek and Latin authors. The yard arm is called *keraiia* in Greek, and *cornu* in Latin. Both of these words literally mean "horn" (Thucydides, 2.76; 4.100; 7.42; Tertullian, *Adversus Marcionem* 3.18; Morrison & Williams, 1968: 294, 304; Rougè, 1981: 56; Casson, 1995: 232, 273, 274, 276, 277, 315). Moreover, the connection Mouchot (1970: 318) suggested between the lead-filled horns and the Dioskouroi is supported by Statius, who wrote: "Bring forth your favoring stars, Oebalian bretheren [the Dioskouroi], and sit upon the twin horns of the yard-arm; let your light illuminate sea and sky," (Statius, *Silvae* 3.2.8-11 [J.H. Mozley trans., Cambridge, Mass., 1928]).

Lamboglia (1952: 187) offers a different hypothesis. He believes that the horn discovered on the shipwreck at Albenga was originally either part of a figurehead, an *aphlaston*, or another composite ship decoration. Furthermore, he suggests that the holes in this horn were fashioned to allow the passage of cords to hang ribbons, emblems or flags (Lamboglia, 1952: 187). Lamboglia's (1964: 252) later study of a similar horn discovered during investigation of the shipwreck at Punta Scaletta concluded that it may have been mounted on this ship's bow because it was uncovered near its forward extremity (Lamboglia 1964: 252). Mas (1985: 165) concurs with this hypothesis and suggests that the chance find discovered near Isla Grosa may have also adorned a ship's bow, adding that the representation of horns on the bow of a Roman merchantman depicted on an *as* of Dertosa further supports this theory (Kapitän, 1996: 211, pl. 68).

Theories relating to the mounting of horns on ship's bows, sterns, and spars are all viable. Ancient ship representations and ethnographic parallels recorded by Mouchot (1970: 315-317, figs.8-10), Hornell (1925: 303-306, pl. 25, 26.1) and Filgueiras (1978: 37, figs. 37, 49, 52, 55-57, 59) show a number of possible arrangements for the mounting of horns at the bows of boats and ships.

The precise function of these ornaments is difficult to determine without the direct testimony of an ancient source. It appears likely that they could have functioned as both epiphanies and apotropaions to protect their ship, its captain, and its crew. The association first suggested by Mouchot (1970) between these objects and the Dioskouroi is intriguing. However, it is possible that the horns could have acted as *anathemata* of sacrifices to other gods or heroes who both had associations with seafaring and enjoyed



the sacrifice of bulls, including Dionysos, Isis, Poseidon, Sarapis, or Zeus (Rougé, 1981: 197-198; Burkert, 1985: 64-65, 138). Horns may have been prepared and mounted on ships so that a particular deity would remember a sacrifice, and not question the reverence of the ship's captain and crew when they encountered danger at sea.

This is not an unreasonable suggestion considering the need for seafarers to maintain contact and amicable relations with the gods while at sea, as well as their use of specific areas of ships as sacred space (Brody, 1998: 63-72).<sup>[34]</sup> The bow, the guiding point of a ship, and the stern, which houses the quarter rudders, are both known to have possessed shrines housing guardian deities, and were often decorated with apotropaions or epiphanies (Svoronos, 1914; Meiggs, 1997: pl. 20; Brody, 1998: 71, 135, fig. 19). In addition, areas associated with the rigging of ancient ships may also have been considered sacred space. This supposition is based on associations between the Dioskouroi and St. Elmo's fire and finds of decorated elements of running rigging that have been discovered both in association with Hellenistic and Roman shipwrecks, and as chance finds from the sea (Freschi, 1995; Galili & Sharvit, 1999b: 173-174, figs. 13-14). Furthermore, iconographic evidence exists that shows symbols of deities set in the place of a ship's mast and spars (Brody, 1998: 134, fig. 16).

Horns displayed on ships may have also functioned as apotropaions against envy and the 'evil eye.' Holloway's (1988) study of the apotropaic function of wall-paintings in 6<sup>th</sup>-century BC tombs at Tarquinia concluded that both horned animals and the horned-hand symbol were used to ward off envy and the evil eye during the 6<sup>th</sup> century BC. Moreover, horned animals commonly appear attacking the eye in representations of the

much-suffering eye that were clearly meant to repel envy and the 'evil eye.' Although, the lead-filled horns are not contemporary with either the tombs at Tarquinia or extant representations of the 'much-suffering eye,' the suggestion that the lead-filled horns functioned in a similar manner should not be dismissed. The gap between Holloway's work and the depiction of horned animals on representations of the much-suffering eye may relate to preservation rather than to an indication of the diminishing and subsequent resurgence of the belief that the horn was an effective weapon against envy and the 'evil eye.'

## CONCLUSION

It has been shown that Greek literature attests to the idea that ship eyes primarily functioned as epiphanies to represent a supernatural consciousness that helped guide the ship and watched for hazards. Another function of ship eyes may relate to their use as apotropaions against harmful forces such as envy. Study of Greek and Latin literature shows that both the Greeks and the Romans understood and feared envy. They believed its power could be projected by supernatural means through the eyes of mortal and divine beings, very similar to the modern conception of the 'evil eye.'

In Archaic and Classical Greece, representations of eyes seen on many domestic articles and, albeit rarely, as architectural decorations may have functioned at times as both epiphanies that showed the presence of a supernatural consciousness, and as apotropaions used to counter the ills of envy. A direct link between this idea and seafaring may be found on the Torlonia relief, which may show that Roman mariners

both feared envy and the ‘evil eye’ and used eyes as apotropaions to repel its malevolent force.

Extant ship decorations dated to as early as the 3<sup>rd</sup> century BC further support this notion. These decorations comprise *gorgoneia*, phalli, *hippocampi*, and horns that once decorated ancient watercraft. Although different in form, these devices served a similar purpose to earlier representations of eyes from Archaic and Classical Greece that show the presence of a divine protector and act as apotropaions that could function to counter envy.

Considering these arguments, it seems reasonable to suggest that the eyes on Archaic, Classical, and Hellenistic Greek ships could have served a similar purpose. Like the eyes on the ashlar block at Thasos, on eye cups, on the Rhodian *epinetron*, and on a myriad of other contemporary Archaic and Classical military and domestic articles. Ship eyes could have functioned as both epiphanies that showed a divine protecting consciousness, and as apotropaions that worked against harmful forces such as envy.

## CHAPTER V

### CONCLUSION

The previous chapters have presented evidence that shows the marble eyes discovered at Tektaş Burnu and Zea likely once adorned the bows of ancient ships between the 5<sup>th</sup> and the 3<sup>rd</sup> centuries BC. Archaeological evidence shows that the eyes on ancient Greek ships were often constructed as separate applied elements. Study of references to ship eyes in Greek literature shows that they functioned as symbols of consciousness that guided the ship and helped in avoiding hazards. Thus, these symbols functioned as epiphanies, but the identity of the presence they represented can only be identified by associated iconography or texts.

Studies of similar eye representations that appear on domestic articles and as architectural decorations suggest ship eyes may have served additional functions. An understanding and fear of envy, as well as a belief that it could harm through supernatural means, is documented by Greek and Latin authors as early as the 5<sup>th</sup> century BC. Theories related to the use of eyes as apotropaions used to counter envy are based on analysis of material from the Archaic and Classical Periods in Greece. Moreover, further links between a fear of envy and the ritual beliefs of mariners appear during the Hellenistic and Roman Periods. Considering both the possible use of eyes as apotropaions to counter the effects of envy during the Archaic and Classical Periods, as well as evidence that suggests mariners in the Hellenistic and Roman Periods decorated their ships with devices intended to function as both epiphanies, showing the presence of

a divine protector, and as apotropaions to counter envy, it is possible that the eyes on Archaic, Classical, and Hellenistic ships served a similar purpose. Future discoveries of related artifacts and representations will help to refine this hypothesis.

## NOTES

- [1] This fastener has been identified by the author as lead because of the appearance and texture of the metal and the nature of the corrosion products that were visible at the time of its recovery. This identification was confirmed by tests conducted by Asaf Oron at the Bodrum Museum of Underwater Archaeology in 2000. A sample was taken from this fastener and sent to the Isotrace Laboratory at Oxford University for lead isotope analysis that same year. To my knowledge, results of this analysis are pending and possible sources for the lead have yet to be identified. Extraction of the sample confirmed that this fastener was wholly constructed of lead.
- [2] Analysis of tool marks on the marble eyes was conducted primarily through analysis of published photographs and descriptions that were compared by the author to other examples of tool marks from photographs of Archaic, Classical, and Hellenistic marble sculpture. Closer examination of each eye is necessary to precisely determine the tools and techniques used in their manufacture. For discussions concerning the tools and techniques of marble sculptors, see Casson, 1937; Richter, 1943; Nylander, 1965; Adams, 1966; Nylander, 1966; Casson, 1970: 169-222; Rockwell, 1990.
- [3] For examples of the plastic eyes Saatsoglou-Paliadeli considered in her report, see Carapanos, 1878: 218-219, pl. 60.6; Furtwängler, 1906: 426; Perdrizet, 1908: 209-209; and Mendel, 1914: 146. For an example of a similar recent discovery from Samothrace that is identified as a statue eye, see Lehmann, 1962: 174-175.
- [4] This is a tradition that continues to present. Images of human limbs and body parts appear in some Greek Orthodox churches. Their modern Greek name is *toximata*, Wachsmann, 2005: personal communication.
- [5] For discussions of these elements, see Svoronos, 1914: 84-142; Torr, 1964: 68, 69; Wachsmuth, 1967: 82-97; Morrison & Williams, 1968: 47, 133, 134; Casson, 1995: 86, 110, 346.
- [6] “. . .unmittelbar unter dem neuen Wege liegen im wasser die parallelen Mauerzüge zwischen denen die attischen Trieren lagen.” from Lolling 1880: 384.
- [7] One possibility for the fashioning of eyes from marble may relate to a belief that marble itself possessed prophylactic properties, but no relevant evidence was discovered to support this notion during the preparation of this thesis.

- [8] Morrison suggests that these entries refer to a ship's oar ports, but later appears to change this supposition in favor of the hypothesis that the term *ophthalmos* means ship eye in the Athenian naval inventories, see Morrison & Williams, 1968: 283-284; Morrison, Coates & Rankov, 2000: 149.
- [9] Although later, representations of the bows of Hellenistic warships on l'Arc d'Orange clearly show how the eyes could have adorned the upperworks of vessels while leaving room for the *ptychis*, see Basch, 1987: 429a, fig. 929.
- [10] The Dorak knife depicts a series of ships with eyes. It was supposedly discovered during the clandestine excavation of two royal tombs dated to the 3rd millennium BC located south of the Sea of Marmara. The authenticity of this find is in doubt, see Basch, 1987: 91-92.
- [11] It is possible that the eyes that appear on Geometric Period ship representations are in some way related to the zoomorphic figureheads seen on representations of Bronze Age ships and boats. The mechanics of this relationship are difficult to discern, but it seems probable that the common Bronze Age bird-head motif may have functioned as an epiphany similar to the manner in which later ship eyes functioned as indicators of a supernatural presence. For examples of Bronze Age ship representations with zoomorphic figureheads, see Wachsmann, 1998: 112, 139, 149, 177, 181, 201, 202, figs. 6.52, 7.21, 7.41, 8.23, 8.32, 8A1, 8A2a.
- [12] A number of these may have eyes adorning their bows. Published photographs of a *krater* and a clay ship model, both from Protogeometric tombs at Fortetsa on Crete, hint at their existence, but only careful examination of these actual representations will determine whether or not they have eyes, see Brock, 1957: 11-14, 41-43, 53, 143, pls. 36, 135; Johnston, 1985: 39-40; Basch, 1987: 159-160, figs. 320-321.
- [13] A ship depicted on Late Geometric sherds from a tomb at Khaniale Tekke on Crete may also have an eye on its bow in the form of 6-point star enclosed in a rectangle, see Boardman, 1967: 73, pl. 6.21.
- [14] Circular eyes appear to be represented on a pair of firedogs in the shape of Late Geometric warships discovered in an 8th-century BC tomb at Argos. A similar pair from a tomb at Kavousi on Crete may also have eyes. The validity of these suppositions can only be determined by careful examination of these actual objects, see Johnston, 1985: 40-41; Basch, 1987: 189, fig. 396-397.
- [15] A fragment from the stem of a clay ship model from Larisa dated to between 700 and 660 BC is decorated with an eye, a waterbird, and a dog, see Johnston, 1985: 53-54.

- [16] A Near Eastern relief of a warship from Karatepe in southern Turkey dated to c. 700 BC has a heavy blunt forefoot decorated with an eye similar to many 7<sup>th</sup> and early 6<sup>th</sup> century BC Greek ship representations, see DeVries & Katzev, 1972: 55, fig. 6.
- [17] For discussions of the design and function of the most extensively studied extant naval ram, the Athlit ram, see Casson & Steffy, 1991; Oron, 2001.
- [18] Similar reasoning can be applied to Mycenaean boar tusk helmets which may have served as symbols of the power, rank and military prowess of their owners, Wachsmann, 2005: personal communication. For illustrations of these helmets, see Vermeule, 1972: pl. 39b; Dickinson, 1994: 202, 204, 207, pl. 5.21.
- [19] A number of Archaic clay models from Corinth, Isthmia, Cyprus, and possibly Athens are decorated with zoomorphic *emboloi*, while others that undoubtedly represent small craft are merely decorated with eyes, see Morgan, 1935: 197, pl. 5h; Stillwell, 1952: 197, pl. 43.31.4, 43.31.5; Johnston, 1985: 68-71, 73; Basch, 1987: 238, fig. 496.1; Karageorghis, 1996: 73-75, pl. 41.
- [20] Aeschylus writing in the 5th century BC, calls galleys “dark-eyed” in *Persae*, 558-561, and “dark-prowed” in *Supplikes*, 743-744.
- [21] A similar scene appears on a much later amphora from Paestum dated to 330 BC, see Basch, 1987: 411.
- [22] The earliest example of a merchantman with eyes is possibly the roundship depicted on the Aristonothos *krater* dated to c. 660 BC. This vessel appears to have had a simple circular eye decorating its bow set high on its port side near its stem. Both a 7th- and a 6th-century BC merchantman model from Amathus may have had eyes represented by circular protrusions on their bows; alternatively, these may be catheads. The identity of these features can only be determined by careful examination of each actual representation, see Morrison & Williams, 1968: 74-75, pl. 9b; Basch, 1987: 258-259, figs. 558-559.
- [23] Interestingly, the model from Amathus appears to be decorated with two sets of eyes, based on a drawing that appears in Basch, 1987: 253, fig. 539. One set appears similar in position and representation to the Attic black-figure example. The other is more naturalistic in form and is positioned at the bow between the wales. This is especially interesting because no other example of a merchant vessel or boat exists from ancient Greece or Cyprus that has multiple sets of eyes. The only other extant examples of ships with multiple sets of eyes are warships that had zoomorphic *emboloi*, zoomorphic *proemboloi*, or zoomorphic figureheads in addition to standard ship eyes. Only study of the actual model will confirm or refute the existence of two sets of eyes adorning its bow.



- [24] The ship representation in *la tomba della nave* may have had an eye decorating its forward protrusion. The lower portion of a circular eye appears to be preserved in photographs of this painting, but only study of the actual representation will determine whether or not this feature is an eye, see Moretti, 1961: 51; Shuey, 1978: 25, fig. 6.
- [25] An often overlooked representation of an Archaic merchantman may be contemporary with these representations. It appears to have a similar protrusion at its bow, see Young, 1938: 232, fig. 10.
- [26] Another model in bronze discovered in the Erechtheion at Athens is dated to the end of the 4th century BC and is reminiscent of the galley depicted on the ivory plaque from the sanctuary of Artemis Orthia at Sparta. It similarly appears to have a circular eye decorating the upperworks of its bow, see Göttlicher, 1978: 68, pl. 27.362.
- [27] A possible example of a 5th-century BC merchantman with eyes exists on a red-figure *pyxis* in the Musée de Picardie in Amiens. It depicts a two-masted merchantman under oars with a small circular eye adorning its bow below the level of its oar ports. The authenticity of this representation is in doubt because its decoration was retouched in the early 20th century. At present the amount of reconstruction in relation to the original design is unknown, see Basch, 1987: 272-273, 301, fig. 577. It is also possible that at least two more examples can be added to the list of *lekythoi* depicting Charon in boats with circular eyes. Only examination of these actual objects will determine whether or not their bows are decorated with eyes, see Beazley, 1963: 1232.bis, 1234.25.
- [28] A 5th-century BC wall-painting from *la tomba di caccia e pesca* in Tarquinia preserves a small fishing boat with its bow painted to resemble a bird head, see Basch, 1987: 411.
- [29] It is interesting to note that earliest extant depiction of a ship with an eye decorating its bow was discovered in Egypt. The eye takes the form of the *wadjet*-eye and is found on a relief from Sahure's burial temple at Abusir that is dated to the mid-third millennium BC, see Wachsmann, 1998: 13-14, fig. 2.3. The *wadjet*-eye was used by the Egyptian as a protective device. Cemal Pulak (2006) has suggested that the Greek concept of the evil eye may have been derived from the Egyptians, but the extent of influence the Egyptian belief in the power of the *wadjet*-eye had on the development of both the Greek and Roman fear of envy and the evil eye as well as their general belief in the apotropaic power of eyes is difficult to ascertain.

- [30] An elaborate clay model of a Punic merchantman may have eyes adorning its bow in a similar manner. Only study of this actual object can confirm or refute this supposition, see Basch, 1987: 398, 828.
- [31] Hesiod (*Theogonia*, 278-280) tells a slightly different tale. He does not place her affair in Athena's temple.
- [32] For extant examples, and discussions of the decoration of the *embolos* and the *proembolos*, the primary and secondary rams of ancient galleys, see Benoit, 1971: 409-410, fig. 12; Brouskari, 1985: 46; Galeria Nefer, 1987: 25; Murray, 1991; Calligas, 1996; Pridemore, 1996; Cavazzuti, 1997; Steinhauer, 1998: 30-31, pl. 1; Oron, 2001.
- [33] It is interesting to note that many of the apotropaic phalli discovered in Pompeii retain their original red coloration, see Jashemski, 1977: 219-220.
- [34] Much archaeological and textual evidence exists for the rituals conducted aboard ancient ships, see Wachsmuth, 1967: 342-393; Rougé 1981: 199; Radić, 1991; Kapitän, 1996; Brody, 1998: 63-85.

## REFERENCES

## TRANSLATIONS

Primary sources and translations consulted during the preparation of this thesis can be found in volumes of the *Loeb Classical Library* published by the Harvard University Press. These texts were supplemented by Latin volumes of *Oxford Classical Texts* published by Oxford University Press, and the following works:

Aristotle, *The Works of Aristotle*. 12 Vols. D.W. Thompson trans. 1910. Oxford.

Hesiod, *Hesiod's Works and Days: A Translation and Commentary for the Social Sciences*. D.W. Tandy & W.C. Neale trans. 1996. Berkeley.

Hesiod, *Theogony, Works and Days, Shield*. A. Athanassakis trans. 1991. Baltimore.

Hesiod, *Hesiod*, R. Lattimore trans. 1959. Ann Arbor.

Heliodorus, *An Ethiopian Romance*. M. Hadas trans. 1999. Philadelphia.

Persius, *The Satires*. J.R. Jenkinson trans. 1981. Warminster.

Theocritus. 2 Vols. A.S.F. Gow trans. 1950. Cambridge.

## REFERENCES CITED

Adams, S., 1966, *The Technique of Greek Sculpture in the Archaic and Classical Periods*. London.

Assmann, E., 1889, Seewesen. In: A. Baumeister (Ed.), Vol. 3, *Denkmäler des Klassischen Altertums zur erläuterung des lebens der griechen und römer in religion, kunst, und sitte*. 1593-1639. München.

Athanassakis, A., 1991, *Hesiod: Theogony, Works and Days, Shield*. Baltimore.

Auguet, R., 1998, *Cruelty and Civilization: The Roman Games*. New York.

Baker-Penoyre, J., 1909, Thasos (Continued). *Journal of Hellenic Studies*, **29**: 202-250.

Barron, J., 1966, *Silver Coins of Samos*. London.

Basch, L., 1987, *Le musée imaginaire de la marine antique*. Athens.

- Bass, G.F., 2002, Golden age treasures. *National Geographic*, **201.3**: 102-117.
- Bass, G.F., 1997, A rare representation of a Greek merchant ship. *INA Quarterly*, **24.1**: 26.
- Beazley, J.D., 1971, *Paralipomena: Additions to Attic Black-Figure Vase-Painters and to Attic Red-Figure Vase-Painters*. Oxford.
- Beazley, J.D., 1963, *Attic Red-figure Vase-Painters*. 2<sup>nd</sup> ed. 3 Vols. Oxford.
- Beck, H., 1973, *Folklore and the Sea*. Vol. 7, *American Maritime Library*. Middletown.
- Bell, E.E., 1970, Two krokotos mask cups at San Simeon. *California Studies in Classical Antiquity*, **10**: 1-15.
- Benoit, F., 1971, Pièces de grément et d'armement en plomb et pièces décoratives trouvées en mer. In: *Actes du IIIe Congrès international d'archéologie sous-marine Barcelona 1961*. 394-411. Bordighera.
- Betlyon, J., 1982, *The Coinage and Mints of Phoenicia: The Pre-Alexandrine Period*. Chico.
- Bielefeld, E., 1959, *Corpus vasorum antiquorum, Deutschland Band 18, Altenburg Staatliches Lindenau-Museum Band 2*. Berlin.
- Bienkowski, P., 1893, Malocchio. In: *Eranos Vindobonensis: Festschrift zur 42. Versammlung deutscher Philologen und Schulmänner in Wien, dargebracht von der philologisch-archäologischen Gesellschaft in Wien*: 285-303. Vienna.
- Blümel, C., 1964, *Die archaisch griechischen Skulpturen der Staatlichen Museen zu Berlin*. Berlin.
- Boardman, J., 1974, *Athenian Black Figure Vases*. London.
- Boardman, J., 1967, The Khaniale Tekke tombs, II. *Annual of the British School at Athens*, **62**: 57-75.
- Boardman, J., 1954, Painted votive plaques and an early inscription from Aegina. *Annual of the British School at Athens*, **49**: 183-201.
- Bowie, A.M., 1997, Thinking with drinking: Wine and the symposium in Aristophanes. *Journal of Hellenic Studies*, **117**: 1-21.
- British Museum., 1965, *A Guide to the Principal Coins of the Greeks, from circ. 700 BC to A.D. 270, Based on the Work of Barclay V. Head*. London.

- Brock, J., 1957, *Fortetsa, Early Greek Tombs Near Knossos*. Vol. 2, *Annual of the British School at Athens, Supplement*. Cambridge.
- Brody, A.J., 1998, "Each Man Cried Out to his God": *The Specialized Religion of Canaanite and Phoenician Seafarers*. Atlanta.
- Broneer, O., 1959, Excavations at Isthmia: Fourth campaign, 1957-1958. *Hesperia*, **28**: 298-343.
- Brouskari, M., 1985, *The Paul and Alexandra Canellopoulos Museum*. Athens.
- Bruckner, A., 1963, Römischer Balkenkopf aus dem Rhein bei Wardt-Lüttingen, Kreis Moers. *Bonner Jahrbücher des rheinischen Landesmuseums in Bonn und des Vereins von Altertumsfreunden im Rheinlande*, **163**: 11-16.
- Burkert, W., 1996, *Creation of the Sacred: Tracks of Biology in Early Religions*. Cambridge.
- Burkert, W., 1985, *Greek Religion*. J. Raffan trans. Cambridge.
- Calligas, P., 1996, Bronze ram of a ship. In: H. Tzalas (Ed.), Vol. 4, *Tropis: Proceedings of the 4<sup>th</sup> International Symposium on Ship Construction in Antiquity*, Athens. 129-141. Athens.
- Canter, H.V., 1937, Ill will of the gods in Greek and Latin literature. *Classical Philology*, **32**: 131-143.
- Carapanos, C., 1878, *Dodone et ses ruines*. 2 vols. Paris.
- Carlson, D., 2003, The Classical Greek Shipwreck at Tektaş Burnu, Turkey. *American Journal of Archaeology*, **107**: 581-600.
- Casson, L., 1996, New evidence for Greek merchantmen. *International Journal of Nautical Archaeology*, **25**: 262-264.
- Casson, L., 1995, *Ships and Seamanship in the Ancient World*. 2<sup>nd</sup> ed. Baltimore.
- Casson, L. & Steffy, J.R., 1991, *The Athlit Ram*. College Station.
- Casson, S., 1970, *The Technique of Early Greek Sculpture*. New York.
- Casson, S., 1937, Note on the use of the claw chisel. *American Journal of Archaeology*, **41**: 107-108.

- Catling, H.W., 1986-1987, Archaeology in Greece, 1986-1987. *Archaeological Reports*, **33**: 3-61.
- Cavazzuti, L., 1997, Il προεμβόλιον del porto di Genova. In: *Atti del convegno nazionale di archeologia subacquea, Anzio, 30-31 maggio e 1 giugno 1996*. 79-89. Bari.
- Claridge, A., 1990, Ancient techniques of making joins in marble statuary. In: M. True & J. Podany (Eds.), *Marble: Art Historical and Scientific Perspectives in Ancient Sculpture*. 135-162. Malibu.
- Clauss, J.J., 1989, The episode of the Lycian farmers in Ovid's *Metamorphoses*. *Harvard Studies in Classical Philology*, **92**: 297-314.
- Couchoud, P.L. & Svoronos, J., 1921, Le monument dit des taureaux a Délos et le cult du navire sacré. *Bulletin de correspondance hellénique*, **45**: 270-294.
- Davidson, G., 1952, *The Minor Objects*. Vol. 12, *Corinth*. Princeton.
- Dawkins, R.W., 1929, *The Sanctuary of Artemis Orthia at Sparta*. London.
- Day, J., 1994, Interactive offerings: Early Greek dedicatory epigrams and ritual. *Harvard Studies in Classical Philology*, **96**: 37-74.
- Deonna, W., 1938, *Le Mobilier Délien*. Vol. 18, *Délos*. Paris.
- Detienne, M., 1989, Culinary practices and the spirit of sacrifice. In: M. Detienne & J-P Vernant (Eds.), *The Cuisine of Sacrifice among the Greeks*. P. Wissing trans. 1-20. Chicago.
- DeVries, K. & Katzev, M., 1972, Greek, Etruscan and Phoenician ships and shipping. In: G.F. Bass (Ed.), *A History of Seafaring Based on Nautical Archaeology*. 37-64. London.
- Dickie, M., 1995, A joke in old comedy: Aristophanes fragment 607 PCG. *Classical Philology*, **90**: 241-245.
- Dickie, M., 1991, Heliodorus and Plutarch on the evil eye. *Classical Philology*, **86**: 17-29.
- Dickie, M., 1990, Talos bewitched: Magic, atomic theory and paradoxography in Apollonius *Argonautica* 4.1638-88. Vol. 6, *Papers of the Leeds International Latin Seminar*. 267-296. Leeds.
- Dickie, M., 1975, Ovid, *Metamorphoses* 2.760-64. *American Journal of Philology*, **96**: 378-390.

- Dickinson, O., 1994, *The Aegean Bronze Age*. Cambridge.
- Diels, H., 1915, Das *Aphlaston* der antike Schiffe. *Zeitschrift des Vereins für Volkskunde*, **25**: 61-80.
- Dodds, E.R., 1951, *The Greeks and the Irrational*. Berkeley.
- Dragatsis, I., 1900, Περὶ τῶν ἐν Πειραιεὶ ἀνασκαφῶν, *Praktika tēs en Athēnais Archaialogikēs Etaireias*, **1899**: 37-39.
- Dragatsis, I., 1885, Πειραϊκαί, ἀρχαιοτήτες. *Ephēmeris Archaialogikē*, **1885**: 85-92.
- Dunbabin, K.M. & Dickie, M.W., 1983, Invidia rumpantur pectora: The iconography of *phthonos/invidia* in Graeco-Roman art. *Jahrbuch für Antike und Christentum*, **26**: 7-37.
- Durand, J-P., 1989, Greek animals: Toward a topology of edible bodies. In: M. Detienne & J-P Vernant (Eds.), *The Cuisine of Sacrifice among the Greeks*. P. Wissing trans. 87-118. Chicago.
- École Française d'Athènes., 1967, *Guide de Thasos*. Paris.
- Eisman, M.M., 1972, Are eyes apotropaic? *American Journal of Archaeology*, **76**: 210.
- Elworthy, F.T., 1895, *The Evil Eye: An Account of This Ancient and Widespread Superstition*. London.
- Ermeti, A.L., 1981, *Il monumento navale*. Vol. 3.1, *L'Agora di Cirene*. Rome.
- Evelyn-White, H.G., 1914, *Hesiod: The Homeric Hymns and Homeric*. New York.
- Faraone, C., 1992, *Talismans and Trojan Horses: Guardian Statues in Ancient Greek Myth and Ritual*. New York.
- Filgueiras, O.L., 1978, *A propósito da protecção mágica dos barcos*. Lisbon.
- Franklin, S.B., 1901, Public appropriations for individual offerings and sacrifices in Greece. *Transactions and Proceedings of the American Philological Association*, **32**: 72-82.
- Fraser, P.M., 1960, *The Inscriptions on Stone*. Vol. 2.1, *Samothrace*. New York.
- Freschi, A., 1995, An ancient warship in the waters off Capo Rascolmo, Sicily. In: M. Bound (Ed.), *The Archaeology of Ships of War*. 10-12. Oxford.

- Frondeville, G., 1966. Mahdia. In: J.P. Taylor (Ed.), *Marine Archaeology: Developments During Sixty Years in the Mediterranean*. 39-52. New York.
- Frost, H. & Basch, L., 1975, Another Punic wreck in Sicily: Its ram; 2. The ram from Marsala. *International Journal of Nautical Archaeology*, **4**: 219-228.
- Furtwängler, A., 1906, *Aegina: Das Heiligtum der Aphaia*. 2 vols. München.
- Galeria Nefer., 1987, *Nefer*. Vol. 5, *Sales Catalogue*. Zurich.
- Galili, E. & Sharvit, Y., 1999a, Ancient ships and marine devices: New finds from Israel. In: H. Tzalas (Ed.), *7<sup>th</sup> International Symposium on Ship Construction in Antiquity, Programme & Abstracts*. Pylos.
- Galili, E. & Sharvit, Y., 1999b, Ship fittings and devices used by ancient mariners: Finds from underwater surveys off the Israeli coast. In: H. Tzalas (Ed.), Vol. 5, *Tropis: Proceedings of the 5<sup>th</sup> International Symposium on Ship Construction in Antiquity, Nauplia 1993*. 167-183. Athens.
- Garland, R., 1995, *The Eye of the Beholder: Deformity and Disability in the Graeco-Roman World*. Ithaca.
- Gianfrotta, P.A., 1977, First elements for the dating of stone anchor stocks. *International Journal of Nautical Archaeology*, **6**: 285-292.
- Gifford, E.S., 1958, *The Evil Eye: Studies in the Folklore of Vision*. New York.
- Göttlicher, A., 1978, *Materialien für ein Corpus der Schiffsmodelle im Altertum*. Mainz.
- Grandjouan, C., 1989, *Hellenistic Relief Molds from the Athenian Agora*. Vol. 23, *Hesperia Supplement*. Princeton.
- Granier, J., 1965, Trouvailles fortuites et glanes archéologiques sur le littoral Gardois. *Rivista di studi liguri*, **31**: 253-300.
- Grant, M., 1995, *Gladiators*. New York.
- Greenwell, P.G., 1881, Votive armour and arms. *Journal of Hellenic Studies*, **2**: 65-82.
- Greifenhagen, A., 1962, *Corpus vasorum antiquorum, Deutschland Band 21, Berlin, Antiquarium Band 2*. München.
- Gropengiesser, H., 1970, *Corpus vasorum antiquorum, Deutschland Band 31, Heidelberg Universität Band 4*. München.



- Guillerm, A., 1999, Les navires geants Hellenistiques. In: H. Tzalas (Ed.), Vol. 5, *Tropis: Proceedings of the 5<sup>th</sup> International Symposium on Ship Construction in Antiquity, Nauplia 1993*. 193-199. Athens.
- Haley, H., 1890, The social and domestic position of women in Aristophanes. *Harvard Studies in Classical Philology*, **1**: 159-186.
- Hardie, M.M., 1923, The evil eye in some Greek villages of the upper Haliakmon valley in west Macedonia. *Journal of the Royal Anthropological Institute of Great Britian and Ireland*, **53**: 160-172.
- Henderson, W.J., 2000, Aspects of the ancient Greek symposion. *Akroterion*, **45**: 6-26.
- Holloway, R.R., 1988, Early Greek architectural decoration as functional art. *American Journal of Archaeology*, **92**: 177-183.
- Horn, H.G., 1974, Drei römische Bronzen in Privatbesitz. *Bonner Jahrbücher des rheinischen Landesmuseums in Bonn und des Vereins von Altertumsfreunden im Rheinlande*, **174**: 179-192.
- Hornell, J., 1925, Horns in Madeiran Superstition. *Journal of the Royal Anthropological Institute of Great Britian and Ireland*, **55**: 303-310.
- Hubbard, T.K., 1990, Envy and the invisible roar: Pindar, Pythian 11.30. *Greek, Roman and Byzantine Studies*, **31**: 343-351.
- Hughes, D.D., 1991, *Human Sacrifice in Ancient Greece*. London.
- Jahn, O., 1855., Über den Aberglauben des bösen Blicks bei den Alten. *Berichte über die Verhandlungen der königlich sächsischen Gesellschaft der Wissenschaften zu Leipzig, Philologisch-Historische Classe*, **7**: 28-110.
- Jashemski, W., 1977, The excavation of a shop-house garden at Pompeii (I.xx.5). *American Journal of Archaeology*, **81**: 217-227.
- Johnston, P., 1985, *Ship and Boat Models in Ancient Greece*. Annapolis.
- Joncheray, J.P., 1976, L'épave grecque, ou étrusque, de Bon Porté. *Les cahiers d'archéologie subaquatique*, **V**: 5-36.
- Jordan, B., 1975, *The Athenian Navy in the Classical Period: A Study of Athenian Naval Administration and Military Organization in the Fifth and Fourth Centuries B.C.* Berkeley.
- Jordan, D.R., 1999, Three curse tablets. In D. R. Jordan, H. Montgomery & E. Thomassen (Eds.), *The World of Ancient Magic: Papers from the First International*

*Samson Eitrem Seminar at the Norwegian Institute at Athens, 4-8 May 1997.* 115-124. Bergen.

Kähler, H., 1960, *Rom und seine Welt*. München.

Kaltsas, N., 2002, *Sculpture in the National Archaeological Museum, Athens*. Los Angeles.

Kapitän, G., 1996, Archaeological evidence for rituals and customs on ancient ships. In: G.Kuppuram & K. Kumudamani (Eds.), *Marine Archaeology: The Global Perspectives*. 2 Vols. 205-216. Delhi.

Kapitän, G., 1973, A Corinthian shipwreck at Savelletri (Brindisi, Apulia, Italy). *International Journal of Nautical Archaeology*, **2**: 185-186.

Karageorghis, V., 1996, *The Cypro-Achaic Period Monsters, Animals and Miscellanea, Vol. 6, The Coroplastic Art of Cyprus*. Nicosia.

Kienast, H.J., 1978, *Die Stadtmauer von Samos*. Vol. 15, *Samos*. Bonn.

Koehler, C.G., 1978, Evidence around the Mediterranean for Corinthian export of wine and oil. In: J.B. Arnold (Ed.), *Beneath the Waters of Time: Proceedings of the Ninth Conference on Underwater Archaeology*. 231-239. Austin.

Konrad, C., 2006, Personal Communication.

Kopcke, G., 1967, Neue Holzfunde aus dem Heraion von Samos. *Mitteilungen des Deutschen Archäologischen Instituts: Athenische Abteilung*, **82**: 100-148.

Kyrieleis, H., 1981, *Führer durch das Heraion von Samos*. Athens.

Kyrieleis, H., 1980, Archaische Holzfunde aus Samos. *Mitteilungen des Deutschen Archäologischen Instituts: Athenische Abteilung*, **95**: 87-147.

Lamb, W., 1936, *Corpus vasorum antiquorum, Great Britain Fascicule 2, Cambridge Fitzwilliam Museum, Fascicule 2*. Oxford.

Lamboglia, N., 1964, La campagna 1963 sul relitto di Punta Scaletta all'Isola di Giannutri: Relazione preliminare. *Revista di Studi Liguri*, **30**: 229-257.

Lamboglia, N., 1952, La nave Romana di Albenga. *Rivista di studi liguri*, **18**: 131-236.

Lang, M., 1990, Ostraka. Vol. 25, *Athenian Agora*. Princeton.

Lattimore, R., 1959, *Hesiod*. Ann Arbor.

- Lawall, M., 1997, Report on a visit to INA at Bodrum, July 9-11 1997. Unpublished Report.
- Lease, E.B., 1919, The number three, mysterious, mystic, magic. *Classical Philology*, **14**: 56-73.
- Lee, D.D., 1951, Greek personal anecdotes of the supernatural. *Journal of American Folklore*, **64**: 307-312.
- Lehmann, K., 1962, *The Hall of Votive Gifts*. Vol. 4.1, *Samothrace*. London.
- Levi, D., 1941, The evil eye and the lucky hunchback. In: R. Stillwell (Ed.), Vol. 3, *Antioch on-the-Orontes*. 220-232. Princeton.
- Lolling, H., 1880, Schiffsaugen. *Mitteilungen des Deutschen Archäologischen Instituts: Athenische Abteilung*, **5**: 384-387.
- Lorber, F., 1979, *Inschriften auf korinthischen Vasen: Archäologisch-Epigraphische Untersuchungen zur Korinthischen Vasenmalerei im 7. und 6. Jh. v. Chr.* Berlin.
- Lowe, J.E., 1929, *Magic in Greek and Latin Literature*. Oxford.
- Mack, R., 2002, Facing down Medusa (An aetiology of the gaze). *Art History*, **25**: 571-604.
- Mair, A.W. & Mair, G.R., 1960, *Hymns and Epigrams*. Cambridge.
- Maloney, C., 1976, Don't say "pretty baby" lest you zap it with your eye: The evil eye in South Asia. In: C. Maloney (Ed.), *The Evil Eye*. 102-148. New York.
- Mark, S., 2005, *Homeric Seafaring*. College Station.
- Mas, J., 1985, El poligono de Cabo de Palos: Sus aportaciones al estudio del trafico maritimo antiguo. In. *VI Congreso Internacional de Arqueología Submarina, Cartagena, 1982*. 153-171. Madrid.
- McCredie, J.R., 1987, A ship for the great gods: Excavations in Samothrace, 1986. *American Journal of Archaeology*, **91**: 270.
- McDaniel, W.B., 1918, The pupula duplex and other tokens of an "evil eye" in the light of ophthalmology. *Classical Philology*, **13**: 335-346.
- Meiggs, R., 1997, *Roman Ostia*. 2<sup>nd</sup> ed. Oxford.
- Meiggs, R. & Lewis, D., 1969, *A Selection of Greek Historical Inscriptions to the End of the Fifth Century B.C.* Oxford.

- Mendel, G., 1914, *Catalogue des sculptures grecques, romaines et byzantines*. Vol. 2. Constantinople.
- Michaelis, A., 1885, Sarapis standing on a Xanthian marble in the British Museum. *Journal of Hellenic Studies*, **6**: 287-318.
- Milne, M., 1945, A prize for wool-working. *American Journal of Archaeology*, **49**: 528-533.
- Mingazzini, P., 1938, Il santuario della dea Marica alle foci del Garigliano: Ornamenti, oggetti d'uso, vasi, armi in bronzo. *Monumenti Antichi*, **37**: 913-914, pls. 41-42.
- Moreau, A., 1976-1977, L'oeil maléfique dans l'oeuvre d'eschyle. *Revue des études anciennes*, **78-79**: 50-64.
- Moretti, M., 1961, *Tarquinia: La Tomba della Nave*. Milan.
- Morgan, C.H., 1935, The terracotta figurines from the north slope of the Acropolis. *Hesperia*, **4**: 189-213.
- Morrison, J.S., Coates, J.F. & Rankov, N.B., 2000, *The Athenian Trireme*. 2<sup>nd</sup> ed. Cambridge.
- Morrison, J.S. & Coates, J.F., 1996, *Greek and Roman Oared Warships*. Oxford.
- Morrison, J.S. & Williams, R.T., 1968, *Greek Oared Ships*. Cambridge.
- Mouchot, D., 1970, Pièces d'ancres, organeaux et ornements de plomb antiques découverts entre Antibes et Monaco. *Rivista di studi liguri*, **36**: 307-318.
- Murgoci, A., 1981, The evil eye in Roumania and its antidotes. In: A. Dundas (Ed.), *The Evil Eye: A Folklore Casebook*. 124-129. New York.
- Murray, O., 1993, *Early Greece*. 2<sup>nd</sup> ed. Cambridge.
- Murray, W.M., 1991, The provenience and date: The evidence of the symbols. In: L. Casson & J.R. Steffy (Eds.), *The Athlit Ram*. 52-66. College Station.
- Murray, W.M., & Petsas, P.M., 1989, *Octavian's Campsite Memorial for the Actian War*. Vol. 79.4, *Transactions of the American Philosophical Society*. Philadelphia.
- Neilson, H.R., 2002, A terracotta phallus from Pisa ship E: More evidence for the Priapus deity as protector of Greek and Roman navigators. *International Journal of Nautical Archaeology*, **31**: 248-253.

- Nicolson, F.W., 1897, The saliva superstition in classical literature. *Harvard Studies in Classical Philology*, **8**: 23-40.
- Nowak, T.J., 2001, A preliminary report on *ophthalmoi* from the Tektaş Burnu shipwreck. *International Journal of Nautical Archaeology*, **30**: 86-94.
- Nylander, C., 1966, The toothed chisel in Pasargadae: Further notes on old Persian stonecutting. *American Journal of Archaeology*, **70**: 373-376.
- Nylander, C., 1965, Old Persian and Greek stone cutting and the chronology of Achaemenian Monuments: Achaemenian Problems I. *American Journal of Archaeology*, **69**: 49-55.
- Ogden, D., 2002, *Magic, Witchcraft, and Ghosts in the Greek and Roman Worlds: A Sourcebook*. New York.
- Ohly, D., 1953, Holz. *Mitteilungen des Deutschen Archäologischen Instituts: Athenische Abteilung*, **68**: 77-126.
- Oron, A., 2001, *The Athlit Ram: Classical and Hellenistic Bronze Casting Technology*. Unpublished thesis, Texas A&M University.
- Payne, H., 1940, *The Sanctuaries of Hera Akraia and Limenia*. Vol. 1, *Perachora*. Oxford.
- Perdrizet, P., 1908, *Monuments figurés petit bronzes, terres-cuites, antiquités diverses*. Vol. 5, *Fouilles de Delphes*. Paris.
- Petersen, L.H., 1997, Divided consciousness and female companionship: Reconstructing female subjectivity on Greek vases. *Arethusa*, **30**: 35-74.
- Pitrè, G., 1981, The jettatura and the evil eye. In: A. Dundas (Ed.), *The Evil Eye: A Folklore Casebook*. 130-142. New York.
- Pomey, P., 1995, Les épaves grecques et romaines de la Place Jules-Verne à Marseille. *Académie des Inscriptions & Belles-Lettres, Comptes rendus des séances de l'année 1995, Avril-Juin*. 459-484.
- Pridemore, M., 1996. *The Form, Function, and Interrelationships of Naval Rams: A Study of Naval Rams from Antiquity*. Unpublished thesis, Texas A&M University.
- Pritchett, W.K., 1979, *The Greek State at War, Part 3: Religion*. Berkeley.
- Pulak, C., 2006, Personal Communication.

- Pulak, C. & Townsend, R.F., 1987, The Hellenistic shipwreck at Serçe Limanı, Turkey: Preliminary Report. *American Journal of Archaeology*, **91**: 31-57.
- Queyrel, F., 1990, Aphrodite et les marins. In: H. Tzalas (Ed.), Vol. 2, *Tropis: Proceedings of the 2<sup>nd</sup> International Symposium on Ship Construction in Antiquity, Delphi 1987*. 283-285. Athens.
- Radić, I., 1991, Three more *louteria* finds in the Eastern Adriatic. *International Journal of Nautical Archaeology*, **20**: 155-160.
- Raubitschek, A.E., 1949, *Dedications from the Athenian Akropolis: A Catalogue of the Inscriptions of the Sixth and Fifth Centuries B.C.* Cambridge.
- Raubitschek, I.K., 1997, *The Metal Objects (1952-1989)*. Vol. 7, *Isthmia*. Princeton.
- Recio, M.R., 2000, *Cultos marítimos y religiosidad de navegantes en el mundo griego antiguo*. British Archaeological Reports International Series, 897. Oxford.
- Reiss, E., 1897, Superstitions and popular beliefs in Greek comedy. *American Journal of Philology*, **18**: 189-205.
- Reiss, E., 1895, On ancient superstition. *Transactions of the American Philological Association*, **26**: 40-55.
- Reminick, R.A., 1976, The evil eye belief among the Amhara. In: C. Maloney (Ed.), *The Evil Eye*. 85-101. New York.
- Rice, E., 1993, The glorious dead: Commemoration of the fallen and portrayal of victory in the late classical and hellenistic world. In: J. Rich & G. Shipley (Eds.), *War and Society in the Greek World*. 224-257. London.
- Richter, G.M.A., 1970, *Perspective in Greek and Roman Art*. New York.
- Richter, G.M.A., 1956, *Metropolitan Museum of Art Catalogue of Engraved Gems: Greek, Etruscan, and Roman*. New York.
- Richter, G.M.A., 1943, The Drove. *American Journal of Archaeology*, **47**: 188-193.
- Richter, G.M.A., 1907, Three vases in the Metropolitan Museum: Illustrating women's life in Athens. *American Journal of Archaeology*, **11**: 417-428.
- Roberts, H., 1927, Louisiana superstitions. *The Journal of American Folklore*, **40**: 144-208.

- Robinson, D.M., 1945, A new Attic onos or epinetron. *American Journal of Archaeology*, **49**: 480-490.
- Robinson, D.M., 1941, *Metal and Minor Miscellaneous Finds*. Vol. 10, *Excavations at Olynthus*. Baltimore.
- Rockwell, P., 1990, Some reflections on tools and faking. In: M. True & J. Podany (Eds.), *Marble: Art Historical and Scientific Perspectives in Ancient Sculpture*. 207-222. Malibu.
- Rolley, C., 1986, *Greek Bronzes*. London.
- Rougé, J., 1981, *Ships and Fleets of the Ancient Mediterranean*. S. Frazer trans. Middletown.
- Rouse, W.H.D., 1902, *Greek Votive Offerings: An Essay in the History of Greek Religion*. Cambridge.
- Saatsoglou-Paliadeli, C., 1980, Μαρμάρινοι ὀφθαλμοὶ ἀπὸ τὸν Πειραιᾶ. *Archaiologikē Ephēmeris*, **1978**: 119-135.
- Schoeck, H., 1969, *Envy: A Theory of Social Behaviour*. M. Secker trans. New York.
- Segrè, M., 1936, Dedicativa votiva dell'equipaggio di una nave rodia. *Clara Rodos*, **8**: 225-244.
- Shapovalov, G., 1994, Navigation in the spiritual life of the ancient population of the Black Sea coast. In: M. Lazarov & C. Angelova (Eds.), Vol. 6.1, *Thracia Pontica: La Thrace et les sociétés maritimes anciennes, Proceedings of the International Symposium 18-24 September 1994*. 259-270. Sozopol.
- Shapovalov, G.I., 1990, Votivnuie yakorya iz Chernogo moray. *Sovetskaia arkhologia*, **3**: 259-260.
- Shuey, E., 1978., *Underwater Survey and Excavation at the Ancient Port of Gravisca, Italy*. Unpublished thesis, Texas A&M University.
- Slane, K.W. & Dickie, M.W., 1993, A Knidian phallic vase from Corinth. *Hesperia*, **62**: 483-505.
- Smith, K.F., 1902, Pupula duplex: A comment on Ovid, *Amores* 1.8.15. *Studies in Honor of Basil Gildersleeve*. 287-300. Baltimore.
- Spooner, B., 1976, The evil eye in the Middle East. In: C. Maloney (Ed.), *The Evil Eye*. 76-84. New York.

- Steffy, J.R., 1991, The ram and bow timbers: A structural interpretation. In: L. Casson & J.R. Steffy (Eds.), *The Athlit Ram*. 6-39. College Station.
- Steffy, J.R., 1985, The Kyrenia ship: An interim report on its hull construction. *American Journal of Archaeology*, **89**: 71-101.
- Stein, H.F., 1976, Envy and the evil eye: An essay in the psychological ontogeny of belief and ritual. In: C. Maloney (Ed.), *The Evil Eye*. 193-222. New York.
- Steinhart, M., 1995, *Das Motiv des Auges in der griechischen Bildkunst*. Mainz.
- Steinhauer, G., 1998, *Ta Mνημεία και το Αρχαιολογικό Μουσείο του Πειραιά*. Athens.
- Stillwell, A.N., 1952, *The Potters' Quarter: The Terracottas*. Vol. 15.2, *Corinth*. Princeton.
- Svoronos, J.N., 1914, Stylides, ancres hierae, *aphlasta*, *stoloi*, *ackrostolia*, *embola*, *proembola* et totems marins. *Journal international d'archéologie numismatique*, **16**: 81-152.
- Tandy, D.W. & W.C. Neale, 1996, *Hesiod's Works and Days: A Translation and Commentary for the Social Sciences*. Berkeley.
- Tarn, W.W., 1910, The dedicated ship of Antigonus Gonatas. *Journal of Hellenic Studies*, **30**: 209-222.
- Tavener, E., 1966, *Studies in Magic from Latin Literature*. New York.
- Tavener, E., 1916, Three as a magic number in Latin literature. *Transactions and Proceedings of the American Philological Association*, **47**: 117-143.
- Toby, A., 1979, A warship from Elmalı, Turkey. *International Journal of Nautical Archaeology*, **8**: 7-12.
- Torr, C., 1964, *Ancient Ships*. Chicago.
- Tupet, A-M., 1976, *La magie dans la poésie Latine: Des origines à la fin du règne d'Auguste*. Lille.
- Van Straten, F., 2000, Votives and votaries in Greek sanctuaries. In: R. Buxtom (Ed.), *Oxford Readings in Greek Religion*. 191-223. New York.
- Van Straten, F., 1981, Gifts for the gods. In: H.S. Versnel (Ed.), *Faith, Hope and Worship. Aspects of Religious Mentality in the Ancient World*. 65-151. Leiden.
- Vermeule, E., 1972, *Greece in the Bronze Age*. Chicago.



- Wachsmann, S., 2005, Personal Communication.
- Wachsmann, S., 1998, *Seagoing Ships and Seamanship in the Bronze Age Levant*. College Station.
- Wachsmuth, D., 1967, *ΠΟΜΠΗΙΟΕ Ο ΔΑΙΩΝ: Untersuchung zu den Antiken Sakralhandlungen bei Seereisen*. Berlin.
- Walcot, P., 1978, *Envy and the Greeks: A Study of Human Behavior*. Warminster.
- Walter, H., 1990, *Das griechische Heiligtum dargestellt am Heraion von Samos*. Stuttgart.
- Walters, H., 1931, *Corpus vasorum antiquorum, Great Britian Fascicule 8, British Museum Fascicule 6*. London.
- Ward, C., 2004, *Rough Cilicia Maritime Survey*. [http://pasture.ecn.purdue.edu/~rauhn/rc2004/RC04\\_report.htm](http://pasture.ecn.purdue.edu/~rauhn/rc2004/RC04_report.htm).
- Yoffie, L.R., 1925, Popular beliefs and customs among Yiddish-speaking Jews of St. Louis, Mo. *Journal of American Folklore*, **38**: 375-399.
- Young, G., 1938, Archaeology in Greece 1937-1938. *Journal of Hellenic Studies*, **58**: 217-239.

## VITA

Troy Joseph Nowak received his Bachelor of Arts degree in History from Salisbury State University in 1997, and both his Master of Arts degree in Anthropology with a specialization in Nautical Archaeology and his certificate in Historic Preservation from Texas A&M University in 2006.

Mr. Nowak has training and experience in terrestrial and underwater archaeological survey and excavation, the conservation of archaeological objects from terrestrial and marine environments, archaeological illustration, underwater remote sensing and scientific diving.

During his tenure at Texas A&M University, he worked at the Conservation Research Laboratory and on various shipwreck excavations and surveys in Bulgaria, Canada, Cyprus and Turkey. In addition, he has worked on phase I, II and III archaeological excavations with various cultural resource management organizations in New York, North Carolina and Virginia.

Mr. Nowak has also published articles and book reviews in *INA Quarterly*, *International Journal of Nautical Archaeology* and *Historical Archaeology*, and has presented papers at meetings of the American Schools of Oriental Research and the Society for Historical Archaeology.

He can be reached at R. Christopher Goodwin & Associates, Inc., 241 East 4<sup>th</sup> Street, Suite 100, Frederick, Maryland 21701, where he works as a Nautical Archaeologist.