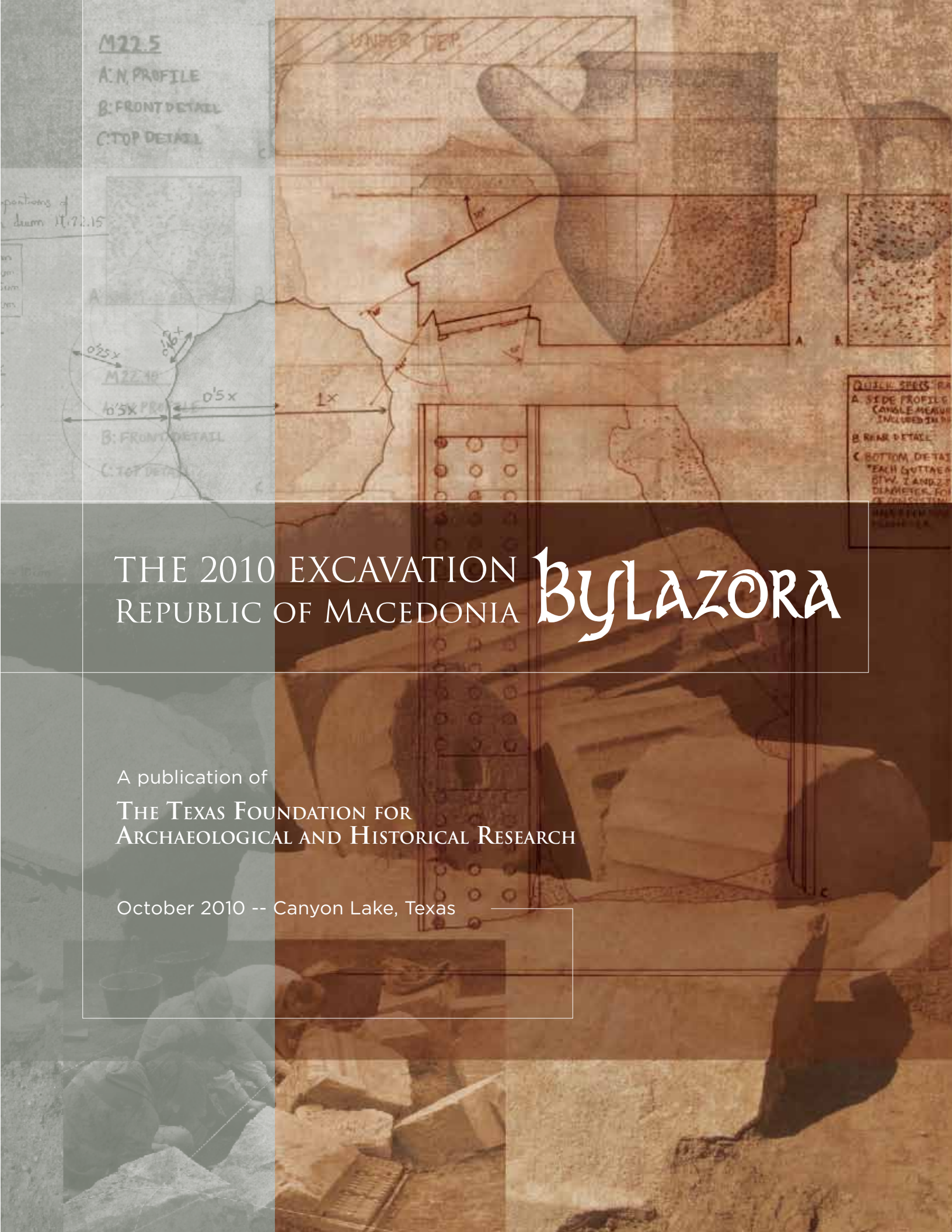


# THE 2010 EXCAVATION
# REPUBLIC OF MACEDONIA
# BYLAZORA

A publication of

**THE TEXAS FOUNDATION FOR ARCHAEOLOGICAL AND HISTORICAL RESEARCH**

October 2010 -- Canyon Lake, Texas

**The 2010 TFAHR International Field School**, **The Archaeological Excavations at Bylazora** and **this publication** were made possible by generous financial assistance from the following:

## MAJOR FUNDING

Joseph and Lisa Turano
David and Lucia Warden

## DONATIONS

Peter and Susie Doe
Amy Donaldson
Anita Doyle
The ExxonMobil Foundation
James and Ruth Harrison
David Lasater
Eulah Matthews
Douglas Michels
Richard Moiel and Kathy Poeppel
William Neidinger
Barbara Perry
Mary Rich

## CONTRIBUTIONS

Ira and Brenda Allen
Lauren Casapulla
Chevron Humankind Matching Gift Program
Mr. and Mrs. E. Everett Deschner
Michael and Margaret Donohue
Susan Erickson
Ann Fowler
Kathleen Gammill
Trudy MacGregor
Diane Mattly
Robert and Dorothy Neidinger
Julie Simonella
Teresa Southwell
Roy and Deirdre Spann
Slawomir Szyszka
Carol Wiener

TFAHR would also like to acknowledge the support of the Sveti Nikole community, including:
The People's Museum of Sveti Nikole
The Municipality of Sveti Nikole

Finally, TFAHR received invaluable assistance from
Jennifer Wells, United States Peace Corps Volunteer based in Sveti Nikole,
who worked as liaison between TFAHR, the People's Museum of Sveti Nikole, and
the Sveti Nikole community.

For more information about the
**Texas Foundation for Archaeological and Historical Research,**
visit our website at **www.tfahr.org**
or write to: **TFAHR**
**PO Box 2688**
**Canyon Lake, TX 78133-0028 USA**

# THE 2010 EXCAVATION

# BYLAZORA

## REPUBLIC OF MACEDONIA

A publication of

**THE TEXAS FOUNDATION FOR ARCHAEOLOGICAL AND HISTORICAL RESEARCH**

October 2010 -- Canyon Lake, Texas

# Contents




**Covers and title page:**
Photos by Eulah Matthews, Candace Richards, and Andrew Rizzo; drawings by Pablo Aparicio Resco, Bridgid Purcell, Kyle Egerer, Joseph Rantz.

**Publication design and layout**
by Teresa Southwell.


# Introduction

By **Eulah Matthews** and **William Neidinger**

In January of 2008 Mr. Boban Husenovski, an archaeologist with the Museum of Gevgelija, relayed an invitation from Mr. Aleksandar Danev, Director of the People's Museum of Sveti Nikole, to Mrs. Eulah Matthews and Dr. William Neidinger of the Texas Foundation for Archaeological and Historical Research (TFAHR) to bring the TFAHR International Field School to Sveti Nikole, Republic of Macedonia. The project was to be a long-term, cooperative excavation of the site many now believe to be the legendary Paionian city of Bylazora.

The Paionians were the people who inhabited the core of ancient Macedonia (the Axios/Vardar River watershed) before the arrival of the Macedonians themselves (**Fig. 1**). As the Macedonians began to conquer the Paionians, they neither expelled nor exterminated the Paionians. Rather, the Paionians remained a significant ethnic minority within the ancient Macedonian kingdom. For example, after they were conquered by Philip II, they fought loyally alongside Alexander the Great in his Asian campaigns. But as Macedonia began to disintegrate after the death of Alexander, the Paionians took the opportunity to regain their ancient freedom. The last centuries of ancient Paionia saw the Paionians at times warring against the Macedonians and at times allied with them against common enemies like the Dardanians, Danubian Celts (Gauls), or Romans.


**Figure 1.** The lands of the Paionians.

**Figure 2.** Professor Ivan Mikulcic (left) visiting the site of Bylazora in 2008, with Boban Husenovski (right).

The site we are digging was identified as Bylazora (the largest of the Paionian cities, according to ancient sources) only in 1976 by Ivan Mikulcic, who, contrary to the prevailing opinion at the time, suggested looking for the fabled city not at nearby Titov Veles, but near Sveti Nikole (**Fig. 2**). Following Mikulcic's suggestion, small soundings were made at the site in the 1980s and 1990s. Extensive excavations commenced with TFAHR's invitation to dig in 2008.

From 2008 to 2010 the TFAHR International Field School has provided 83 places for teachers, students, and volunteers from 17 different countries at the Bylazora excavations. Dig participants are involved in all aspects of archaeological work: actual excavation, pottery washing, finds analysis, restoration, documentation, photography, and publication. Participants pay their own way to Bylazora, and TFAHR pays for their room and board, equipment, supplies, transportation to the site, and transportation on regular field trips to other historical sites in Macedonia. Weekly lectures are another feature of the TFAHR International Field School. TFAHR has also accommodated on the dig local high school students, volunteers from the United States Peace Corps, and visitors from the USA. TFAHR also hires workmen from Sveti Nikole and the nearby village of Knezje.

In the last three seasons work has been concentrated on the acropolis of Bylazora. In previous seasons we unearthed the northern defensive wall of the acropolis, a propylon (monumental gateway), and several buildings constructed on terraces overlooking the propylon. In 2010 work continued in the propylon area

(Sector 3, **Fig.3**) and a new Sector 6 was opened on the western side of the acropolis. The discoveries of the first three seasons have already tremendously expanded our knowledge of Paionian history, the fate of Bylazora, and Paionian-Macedonian urban planning.

**Figure 3.** Bylazora Sector 3 on the final day of the 2009 season.

The results of the first three seasons are also beginning to shed light on another aspect of ancient Greek, Macedonian, and Paionian history, that is, the extent of the Hellenization of the peoples who came in contact with the ancient Greek cities. In her book, *Paeonia* (Skopje, 1999), E. Petrova devoted a chapter to a history of the scholarly debate regarding the racial-linguistic origins of the Paionians. Suffice it to say that there has not been a scholarly consensus on Paionian origins since the topic was first researched in the late nineteenth century. Some have sought the origins of the Paionians among the Thracians, the Illyrians, the "proto-Phrygians," and even the Greeks. Whatever the ultimate origin of the Paionians, TFAHR's recent excavations are bringing to light evidence of a rapid and early Hellenization at Bylazora: importation of Greek ceramics, use of the Greek alphabet, imitation of Greek ceramic shapes, and construction utilizing the classical Greek architectural orders.

Our immediate tasks are two. The first will be to try to distinguish how much of this Hellenization is a product of direct contact between Paionians and Greeks and how much of it is a result of Macedonian influence over the Paionians. After all, the Macedonians themselves began a deliberate and intense program of Hellenization (or, more properly, Atticization) under their king Archelaos I (*reg.* 412-399 BC). And that Hellenization certainly continued under Philip II, who brought the Paionians back into the Macedonian orbit with his invasion of 358 BC. The second, and more difficult task, will be to try and ascertain the "depth" of such Hellenization. Were the Paionians merely adopting the externalia of Greek culture or were they adopting the underlying values that gave rise to the outward manifestations? As an example: the *kantharos* and the *skyphos* are traditional Greek wine drinking vessels, which are often depicted in symposium scenes. At Bylazora the Paionians both imported and imitated such vessel shapes (**Fig. 4**). But does that mean that they also adopted the institution of the symposium and all that that might have entailed? We now have abundant evidence that the classical Greek architectural orders were employed at Bylazora, perhaps in temple construction (**Fig. 26**). But what further implication does that carry for our understanding of Paionian religion? Did the Paionians adopt the Greek *cultus* in their worship? Did they Hellenize their native deities? We hope to enlighten such dilemmas with the results of future excavations.

**Figure 4.** *Kantharos* (left) and *skyphos* (right) found at Bylazora.

# The Location of Bylazora

By **Ivan Mikulcic**[1]

**Figure 5.** Bylazora seen from the west.

Bylazora, the largest city of pre-Roman Paionia, traditionally has been located only approximately in northern Paionia, roughly near the modern town of Titov Veles. This location is supported by Polybius, who notes that Philip V of Macedonia captured the city from the Dardanians in 217 BC, thereby controlling the paths used by the Dardanians to attack Macedonia (and Paionia).

All known pre-Roman hill forts (*oppida, oppidula*) of northern Paionia are listed on the map (**Fig. 6**). These are mainly small hill forts (2.5 hectares) and middle sized hill forts (3-4 hectares); one is located in the narrows of the Vardar River near Titov Veles. However, the hill fort near the village of Knezje in the middle of the Ovče Pole (Sheep Plain) basin, is 19.6 hectares. In Paionia and neighbouring regions the author has taken thorough measurements of about 50 pre-Roman hill forts. Considering the size of the city near Knezje, this is the biggest city of this era in this area.

The Ovče Pole basin was the northern part of Paionia and it was later also a part of the Roman province of Macedonia; this is confirmed by epigraphical evidence from Roman times. Because of its location, the city near Knezje could control almost all the paths which lead from Dardanian territory into northern Paionia. At the same time, this city would be the hub of economic activity in this region.

The interior of the plateau was divided by lateral walls into several terraces. On the highest terrace parts of a large building have accidentally been discovered, also of fine ashlars. Roof tiles of the Hellenistic type (with wash on one side and a thin slip) are found frequently, as well as terracotta antefixes.

Due to the intense soil erosion, the northern half of the settlement is cut by huge furrows, making it possible to ascertain an exact stratigraphy of the cultural layers and to collect much pottery and other small finds.

The shapes and the types of pottery date from the late Hallstatt period to the early Hellenistic epoch. There is no evidence from late Hellenistic or later times. Also, the written sources indicate that Bylazora was abandoned at this time.

The size of the city near Knezje, its location, its fortifications, the ruins and the small finds indicate that this could be ancient Bylazora.

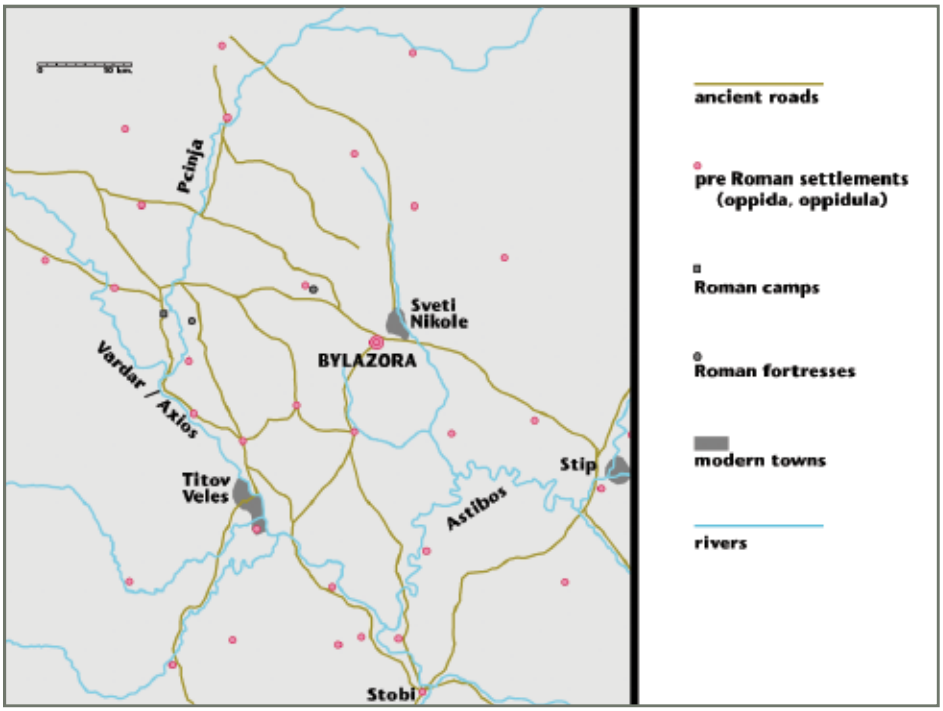



**Figure 6.** Survey map of the Ovce Pole.

[1]Dr. Ivan Mikulcic gave TFAHR his kind permission to translate the German abstract of his 1976 article, *Die Lage von Bylazora*, which appeared in *Annuaire de la Faculte de Philosophie de L'Universite de Skopje*, Tome 2 (28), 1976. The translation was done by Daniela Fuchs, a participant in the 2010 TFAHR International Field School.

# A History of the Paionians from the Ancient Literary Sources

By **Padraic Emparan**

Paionia and its environs are first mentioned by Homer in the *Iliad* (II:848-850); Pyraichmes, from Amydon in the Axios valley (**Fig. 7**), led "the Paionians with the curved bows" upon the plains of Troy, as part of an allied contingent to aid the Trojans. Homer also describes another Paionian leader present at Troy, Asteropaios (XVII:551), who led the Paionians with their long spears, from a land that was hilly and fertile. Some have considered that the mention of two leaders of two separate contingents of Paionian fighters might represent two tribal elements of the same people inhabiting the northern part of Paionia (Asteropaios) and the southern part (Pyraichmes). Similarly, Euripides' description (*Rhesos*, 408-11) of the Paionians (albeit four hundred years later) living west of the Strymon, and famous for horse breeding, expands the environs of the Paionians to the east and north of the Axios River; this same horse breeding culture was affirmed by Mimnermus' mention (*Elegia* A II frag. 11) of the Paionians as settled between the Axios and the Strymon rivers.

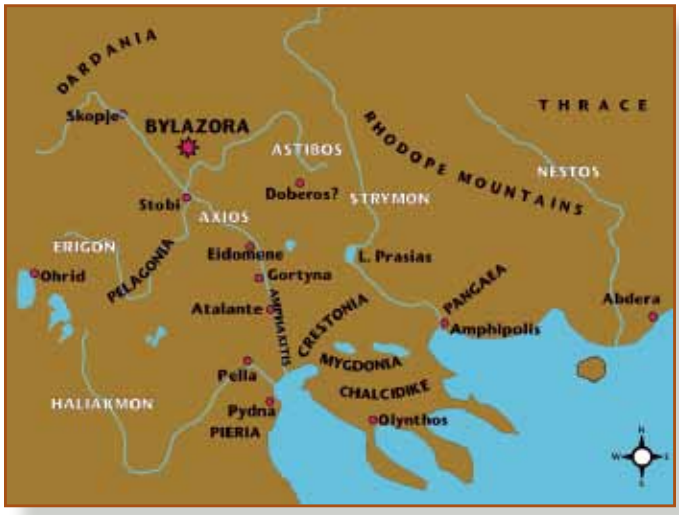



**Figure 7.** Map of the Northern Aegean.

Thucydides and Herodotus not only discuss the location of the Paionians at the end of the 12th century, but also their customs and habits. Thucydides (II 99.4) describes the Paionians as the original inhabitants of the Axios valley from the northern mountains down past Pella to the sea, land later conquered by the Macedonians. Herodotus (V:15, 16 and VII:113) describes two Paionian tribes, the Siriopaiones and the Paioplai, locating them near Pangaea, Lake Prasias, and the Strymon River. A third tribe, the Doberes, is mentioned by Herodotus, as being north of Pangaea.

Herodotus (V:1) also mentions that the Paionians attacked, conquered, and brutally treated the inhabitants of Perinthos, near the Black Sea. Pindar (fragments 60, 61) confirms Paionian aggression in his paean to Abdera, whose citizens had warded off the Paionian host. According to Thucydides (II:96-99), the Upper Strymon was settled by the Paionian tribes, the Laeaei and the Agrianes, and to the west and north of them are the tribes Thucydides described as the "independent Paionians." These independent Paionians are not described in full by Thucydides, but they and the Agrianes and the Laeaei figured prominently in the campaign of Sitalkes I, the Odrysian king of Thrace, who launched a campaign against the Macedonians during the Peloponnesian War.

Two geographers, Ptolemy and Strabo, gave further evidence as to the shifting locale of the Paionians and their territory during the sixth century BC. Two more tribes were described by Ptolemy as lying northwest of Pangaea, the Asterai and Ioroi (Ptolemy III, 13, 27-28); and Strabo (VII frag. 38) states that Paionia spread from Pelagonia (on the Erigon River) in the west to Pieria in the east, as well as into Mygdonia and Crestonia. Strabo also confirms Homer's description of Paionia as a hilly region, and added that the northern part lay between the Rhodope Mountains in the north and the Astibos River to the south.

Paionian hegemony, then, seemed to have stretched from the Rhodope Mountains in the north to the effluence of the Axios River, the region called Amphaxitis, as it covered both sides of the Axios River.

This loose control was first challenged by the Macedonian king, Amyntas I, as he expanded Macedonian power to the east. Amyntas' expansion into southwest Paionia occurred at approximately the same time as the Persian onslaught into southeast Paionia. The Persian expansion into the lower regions of the Strymon and the Axios severely weakened Paionian hopes to control

the Chalcidike peninsula and the mouth of the Axios. Herodotus (V:12-17) explains that the Persians crossed the Hellespont and invaded the coastal areas of the Strymon and the Axios. The Paionians, wanting to meet the Persians on the coastal road, had deserted their cities. The Persians decided to attack the cities and, finding them abandoned, succeeded in capturing the same cities without loss. The Paionians, upon hearing their cities were held by the Persians, hastened back to their respective regions and surrendered. Thus the invasion of the Persians in the late 6th century reduced the Paionians to the middle and northern sections of their original territory.

Following upon Persian gains in the lower Strymon and Axios, Paionian hegemony was next attacked in the north by the Thracians and in the west by the Macedonians. Thucydides' (II:96 *seq.*) description of the invasion of Macedonia by Sitalkes, the Odrysian king of Thrace, during the height of Athenian influence in the region is significant as it is the best source for Paionian history. Sitalkes' forces (including the Agrianes and the Laeaei, Paionian tribes mentioned earlier) crossed the well-worn area near the Cercine Mountain in the east and drove west to Doberos in 429 BC. After capturing Doberos, Sitalkes invaded the southern lands of the Paionians, then attacked the cities of Eidomene, Gortyna and Atalante on the Axios River. Other cities surrendered in the advance of Sitalkes, who ravaged but did not control the region. But lacking food and supplies, Sitalkes retreated from further advance after thirty days.

From the onset of the 4th century, Paionian history is tied to Macedonian social and political change. According to Diodorus' account (XVII, 17, 4), the Macedonian King Perdikkas III attempted to repel Illyrian and Triballian attacks to his western and northern borders; these efforts resulted in Perdikkas' death and the destruction of over 4000 Macedonian troops in 359 BC. This defeat emboldened Macedonia's neighbors, the Thracians, the Athenians and the Paionians to intervene in Macedonian affairs. Amid this political chaos, the Paionians attacked Macedonia. Philip, becoming regent of Macedonia, either cajoled or bribed Athens, Thrace and Paionia not to intervene in Macedonian politics. But learning of the death of the Paionian king Agis, Philip marched on and defeated the Paionians in 358 BC. Although Paionia now had to pay taxes and supply Philip with troops and supplies, Paionia was still given a free hand in local affairs, even retaining the heir of Agis, Lykpeius, as regent. But Lykpeius subsequently joined Athens, the Thracian king Cetriporus, and the Illyrian king Grabus in an anti-Macedonian plot. Diodorus describes this regional alliance against Philip as having no effect on Macedonia. Philip's reaction was audacious: pre-emptive warfare. After smashing the Illyrians, Philip moved against the Paionians and gave them an ultimatum; the record is silent, but one expects that he got his way with little military effort. Demosthenes' *First Olynthiac*, a speech of 352 BC, refers to this attack of Philip, ". . . Philip attacked the Olynthians, and his army attacked the Illyrians and the Paionians . . .; the Paionians and the Illyrians . . . they all want more than anything else to be autonomous and refuse slavery . . . " At the same time, Isocrates, Philip's lackey, mentions that the Paionians were tax-paying clients of Philip; what else could Philip do with a rebellious client?

Ancient sources are silent about what happened in Paionia for the next fifteen years. However, Plutarch (*Alexander 39*) and Quintus Curtius Rufus (IV:9.24) provide some information on Paionian activities. At the battle of Gaugamela (334 BC) there is mention that Ariston, commander of the Paionian cavalry, was ordered by Alexander to crush the Persian leader Satropates. Again, there is a paucity of information about what happened after this battle to the Paionian cavalry and soldiers. The Paionians are not mentioned until after the death of Alexander III (the Great) and the accession of Antipater as regent of Macedonia. Arrian (succ. frag 1A) and Dexippus (succ. frag 1) tell us that Antipater became *strategos* of the Hellenes, Illyrians, Triballians, and Agrianes (a Paionian tribe). Further speculation about rulers of Paionia is fraught with difficulty, as there is no Paionian king list. The last credible king was Lykpeius and the next is Audoleon, who ruled twenty years later. Who was the king during this interim period of Paionian history? The logical answer is to assume that Audoleon's father, Patraus, succeeded Lykpeius; but this is difficult to say.

Diodorus (XX:19.1) says that Audoleon, aided by the Macedonian Cassander , waged war against the Autariatae, who had settled in Paionian territory and numbered 20,000; it is recorded by Diodorus (III:30.3) that the Autariatae were fleeing a swarm of mice and frogs in their own territory. Diodorus (XX:19.1) declares that Audoleon was crowned king in 306 BC and hence asserted his autonomous kingship with inscriptions, coins, and other titles. In 293 BC Audoleon is mentioned by Plutarch (*Pyrrhus 9*) as participating in the anti-Macedonian coalition of Pyrrhus , who was also joined by the Illyrians, and Bardylis, along with his Paionians. Demetrius' defeat by Pyrrhus and Lysimachus must have paid off for Audoleon, but there is not a mention of the particulars.

King Audoleon of Paionia is mentioned in an inscription in Athens which commemorates the fact that Audoleon provided grain to the Athenians when the Macedonian Antigonus Gonatas blockaded the port of Piraeus. Audoleon's shipment to a smaller port nearby fed the hungry Athenians and garnered him and his descendants Athenian citizenship. Audoleon died in 286 BC. Polyaenus (IV:12.31) states that Ariston, son of Audoleon, was about to be crowned king when Lysimachus attacked Paionia and forced the youth to flee to Dardania. So

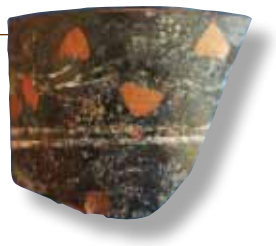
Paionia returned to a dependant client status until Lysimachus' death in 281 BC.

In 279 BC, Gauls from the Danube invaded the regions of Macedonia and Paionia. Livy's description (XXXVIII:16.1 *seq.*) of the advance is the best source for what happened next in Paionia. Led by Brennus, the Gauls came to Dardania in large numbers, in search of new territories and rich spoils. After their arrival in Dardania and Paionia, they quarreled and spread over this territory, so that 20,000 people, led by Lonarius and Lotarius, separated from Brennus and headed for Thrace. Paionia, without a leader (Ariston never having assumed the title of king after his expulsion to Dardania), was basically defenseless against the Gauls.

It is thought that Ariston's brother Leon assumed the throne after the Gauls fled. Pausanias (X:13.1) writes that Dropion, the son of Leon, dedicated a bronze statue of a Paionian bull in Delphi; this same Dropion dedicated a statue at Olympia as well. It is assumed that Dropion succeeded his father in the mid 3rd century. Polybius (V:97) reports that in 217 BC King Philip V of Macedonia (*reg.* 238-179 BC) conquered Bylazora, the largest city in Paionia, which controlled the access roads from Dardania to Macedonia, and thus he had to fear the Dardanians no more. Livy writes that the area of Paionia was the focus of fierce and numerous battles during the Roman-Macedonian wars. Paionia became the base of operations for the Romans to quell Dardanian attacks, especially after the battle of Cynoscephalae in 197 BC. However, the Macedonians under Kings Philip V and Perseus (*reg.* 179-168 BC) used Paionian territory as a buffer zone between Macedonia and Dardania, still a constant threat, by employing Macedonian commanders within Paionia, who would lead Paionian troops against outside threats. However, one of these commanders, Didas, is recorded by Livy (XL:21, 23) as a pro-Roman sympathizer implicated in a murder plot against Perseus' younger brother, Demetrius, who died mysteriously. Livy mentions the Paionians again, describing a meeting which took place at Pella in 171 BC. This meeting at the palace of the ancient Macedonian kings was called by Perseus to summon troops for war against Rome. Perseus gathered 43,000 men, among them Paionians from Paroria and Parastrymonia, districts in Thrace, as well as the Paionian Agrianes, who supplied about 3000 men. After the battle of Pydna, in which Perseus and his allies were defeated by Rome, Paionia ceased to be mentioned as an independent state or a client kingdom of Macedonia. The Paionians had been so intertwined with Macedonian destiny for most of their history, that when the Romans divided up the region of the upper Axios so as to end the hope of Macedonian resistance and resurgence, Paionia, too, was divided up and subsumed into these new provincial divisions. How long the Paionians retained a separate ethnic identity is uncertain; but the name Paionia would survive to designate the region of the upper Axios river watershed.

Many of the Paionian cities continued to live on into the Roman Period and later, being reconstituted and recolonized by Republican and Imperial forces. However, it is interesting to note that the city of Bylazora, once the largest of the Paionian cities, was never mentioned in Ptolemy's *Geography* (*ca.* 135 AD), the legendary city now abandoned and forgotten.

# The Acropolis of Bylazora



By **Eulah Matthews** and **William Neidinger**

At the commencement of our first season in 2008 we divided the site of Bylazora into six sectors, utilizing previous test soundings and accidental discoveries that were made in the 1980s and 1990s (**Fig. 8**). Four of those six sectors are located on the acropolis of Bylazora. Sectors 1 and 2 turned out to be dry holes dug into what we now believe are huge mounds of fairly sterile soil deposited on the acropolis in modern times. Sector 3, an old refilled sounding from previous years, was reopened in 2008; expanding it, we exposed about 25 meters of the northern defensive wall of the acropolis and discovered the propylon (monumental gateway). Sector 4 was a ceremonial pool accidentally unearthed in 1994 by bulldozers digging for road base material. Sector 5 was a sounding made in the 1990s on the middle terrace of Bylazora. Sector 6 was, according to the accounts given to us this summer by men from the nearby village of Knezje, originally an old trench dug by the Yugoslavian army during war exercises in 1983. This explains the modern food tins and bullets found there this summer.

In 2010 TFAHR divided its efforts between Sectors 3 and 6.

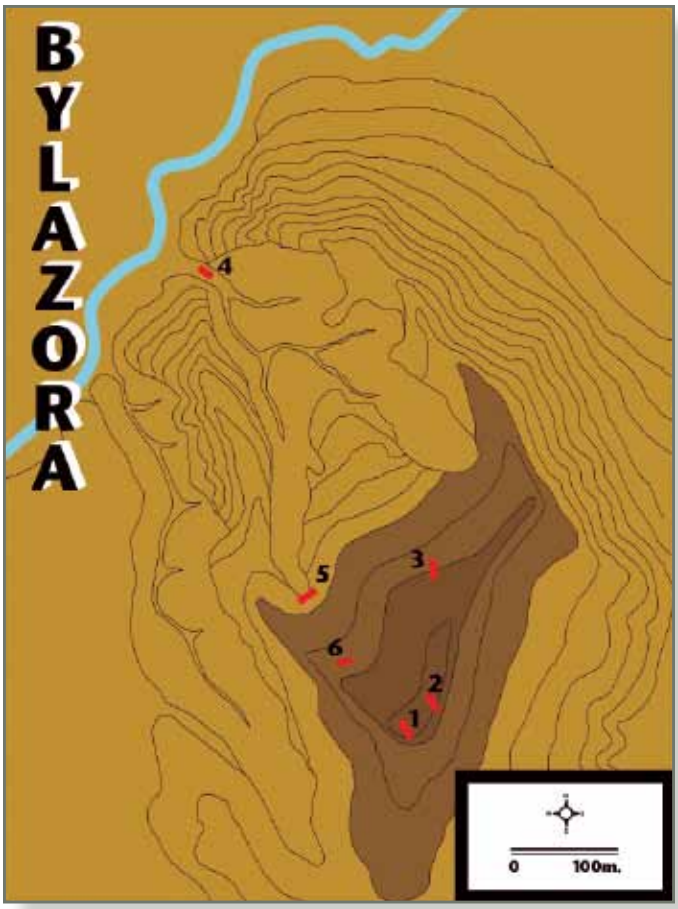



**Figure 8.** The sectors of Bylazora.

## A Tentative Chronology for the Acropolis of Bylazora

In 2009 we proposed a tentative chronology that still holds up fairly well after our 2010 discoveries.

**Phase 1:** The acropolis is surrounded by a casemate wall. A large tower (First Tower) flanks an entrance in the northern part of the acropolis; an altar was erected beside this entrance. Ceramics from houses that were probably destroyed to build the wall date to *ca.* 400 BC, giving us a rough date for the construction of the wall and First Tower. This is not to suggest that there are not habitation strata at Bylazora pre-dating Phase 1, since scattered pottery finds indeed date back to at least the seventh century BC.

**Phase 2:** The First Tower is largely dismantled as the propylon is constructed. A new altar is built roughly in the same location as the old one, but at a higher level. Phase 2 can be dated to the early fourth century BC. (**Fig. 9**)

**Phase 3:** Bylazora is attacked and the propylon is destroyed, but a small Doric style building is built on another part of the acropolis.

**Phase 4:** Squatters move into the ruins of the propylon; this part of the acropolis of Bylazora (Sector 3) seems to have gone derelict at this time. Pottery from one of the squatter buildings built into the ruins of the propylon give this First Squatter Period a lifespan of roughly late fourth century BC to *ca.* 275 BC. One candidate for the destroyer of the propylon is King Philip II of Macedon, who attacked and conquered the Paionian kingdom in 358 BC. The end of the First Squatter period came with the invasion of the Danubian Celts (Gauls) in 279 BC.

**Phase 5:** This is a period of partial abandonment of at least the northern part of the acropolis.

**Phase 6:** A nearly 0.5 meter thick layer of sterile soil is laid down over the ruins of the First Squatter Period and a Second Squatter Period commences, people again living in the ruins of the former public structures of the city. Squatters utilized the still standing lateral walls of the propylon as well as the magazines of the casemate

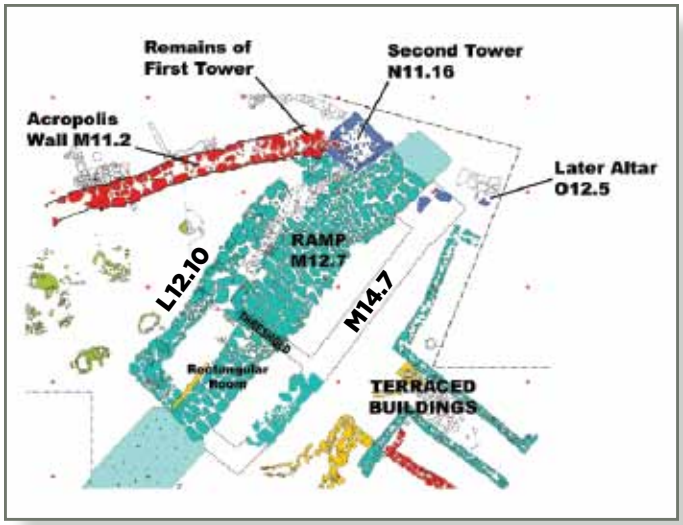



**Figure 9.** Plan of the propylon.

wall of the acropolis. This appears to be the final phase of habitation at Bylazora; pottery from the Second Squatter Period dates to the early second century BC.

**Phase 7:** The destruction of Bylazora came in two stages. Bylazora itself was probably left desolate by the wars between the Paionians, Dardanians, and Macedonians. The Romans may have delivered the *coup de grâce* to the city with their conquest of the Balkans in the early second century BC. But a systematic dismantling of the city came later.

## Sector 3. The Propylon.

Most of the evidence for the chronology of the acropolis has come from the trenches of Sector 3. The

commanding feature of Sector 3 is the propylon (**Fig. 9**). As we mentioned, the propylon did not exist in Phase 1. Next to the large First Tower was some sort of entrance into the acropolis, but since it rests beneath the stones of the ramp of the propylon, our chances of exploring it are minimal. A small altar was erected on the eastern side of this original entrance (**Fig. 10**).

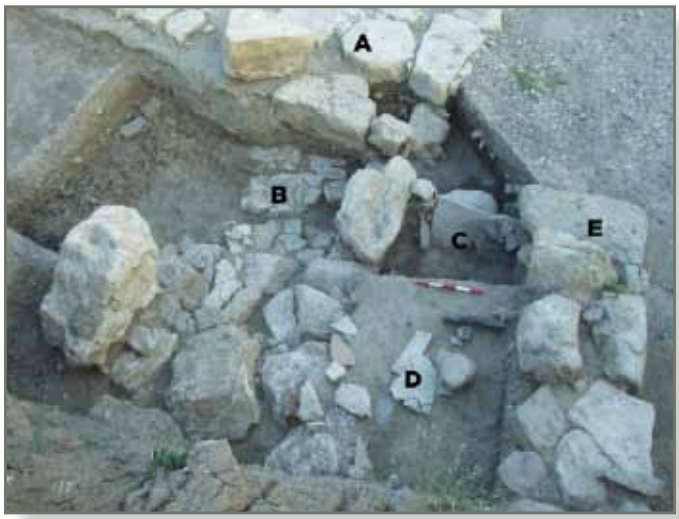



**Figure 10. (A)** Ramp. **(B)** Original acropolis wall of Phase 1. **(C)** Remains of altar from Phase 1. **(D)** Remains of propylon altar. **(E)** Late wall, built after the destruction of the propylon.

Phase 2 saw the construction of the propylon some time after 400 BC. What precisely occasioned the construction of this monumental gateway is not known. Perhaps it was done by way of repairs to the city after Sitalkes' destructive invasion of Paionia and Macedonia in 429 BC, although the extant ancient sources do not specifically mention Bylazora as being in Sitalkes' path. In truth, we are currently at a loss to determine the date of the propylon, until we can lift some of the ramp's stones and excavate underneath them. In any case, the building of the propylon necessitated the partial dismantling of the older First Tower and the construction of a smaller, more compact Second Tower (N11.16) that flanked the ramp on the west. When we excavated beneath the foundation of the Second Tower in 2009, we found stones of the acropolis wall and First Tower beneath the Second Tower. Likewise, the eastern tower of the propylon rested, as we discovered this season, almost directly upon the lower courses of the original defensive wall at this point.

A new altar (O12.5) was built along with the propylon. The two altars from Phases 1 and 2 explain the enormous amount of ash and burnt animal bones found scattered about the entrance to the propylon. A small

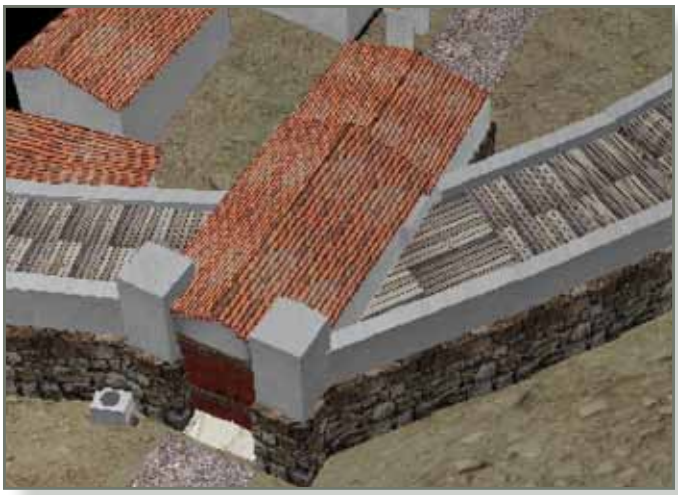


**Figure 11.** Reconstruction of the propylon.

altar at the entrance to the city is a commonplace in ancient Mediterranean cities.

The propylon (**Fig. 9 and 11**) consisted of two towers flanking the entrance, an inclined ramp, and a rectangular room whose stones were laid flat; the ramp and rectangular room were separated by a raised threshold, whose stones sport a socket for a locking bolt and show signs of vehicular wear. Two thick walls (L12.10 and M14.7) served as the lateral walls of the propylon and supported the roof. Evidence for a tiled roof came from the abundance of roof tiles found directly above the paving stones of the ramp in the 2008 season. Most of the eastern lateral wall was quarried away in antiquity. In the 2010 season we discovered some of the foundation courses of the eastern wall of the rectangular room (**Fig. 12**).


**Figure 12.** Eastern wall of the rectangular room of the propylon. (**A**) Ramp. (**B**) Threshold. (**C**) Rectangular room. (**D**) Wall L12.10. (**E**) Wall M14.7.

Several small buildings (**Fig. 9**) were built to the east of the propylon and further uphill on the acropolis; they were definitively aligned with the propylon and cascaded downhill in terraces following the inclination of the ramp of the propylon, which was also probably the natural slope of the hill. A deep sounding through the floor of one of these buildings revealed an earlier structure of Phase 1 that followed a similar alignment (**Fig. 13**), meaning that the general orientation of the northern entrance to the acropolis of Bylazora remained the same in Phases 1 and 2.

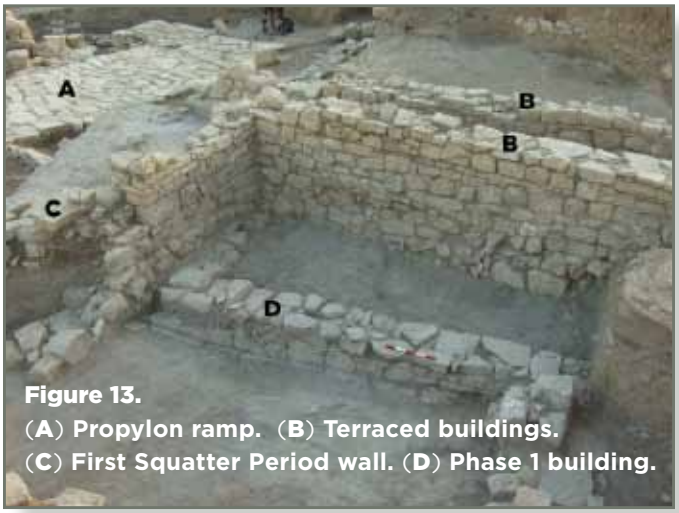



**Figure 13.**
**(A) Propylon ramp. (B) Terraced buildings. (C) First Squatter Period wall. (D) Phase 1 building.**

## Sector 3. A Casemate Wall.

One of the features of the acropolis wall that always struck us as peculiar was its thinness, about 1.10 meters thick. While perhaps this might be considered thick in absolute terms for a wall, for a major defensive wall of a city it is certainly not all that substantial. How could it have withstood a siege? How could it have supported a fighting platform for soldiers defending the city? The mystery was solved this season. Defensive wall M11.2 was only the outer wall of a casemate wall that fortified the acropolis of Bylazora. The inner wall of the casemate wall, wall J13.12 (**Fig. 14**), was uncovered this season. Walls I13.8, J13.7, and K13.12 joined the inner and outer walls dividing the casemate into separate rooms or magazines (**Fig. 15**). The roof covering the magazines would have served as the fighting platform for the soldiers defending the city.

Walls I13.8 and J13.7 rest directly atop a large terracotta surface (I13.14) whose exact function remains unknown (**Fig. 16**). I13.14 appears to be earlier than the casemate wall, belonging, therefore, to a pre-Phase 1 period of Bylazora's history. Only future excavation might reveal the nature of this surface.

**Figure 14.** Inner casemate wall (J13.12) and western wall of the propylon (L12.10).

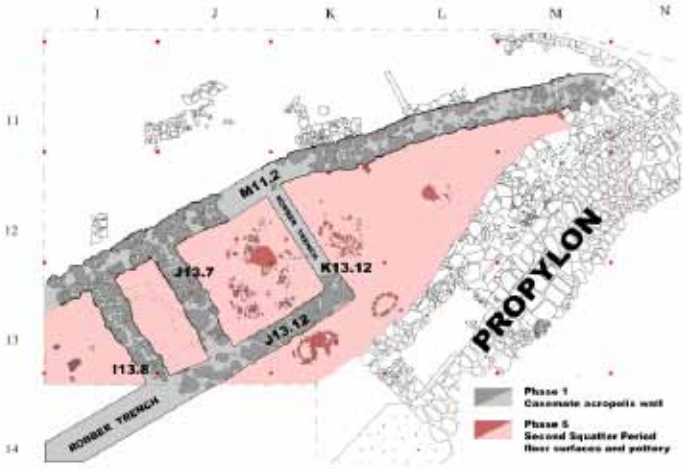



**Figure 15.** Casemate wall.

**Figure 16.** Terracotta surface (I13.14), beneath casemate walls I13.8 and J13.7.

## Sector 3. The Squatter Periods.

This section (Sector 3) of the acropolis of Bylazora was destroyed possibly in the mid-fourth century BC; if so, a likely candidate for its destroyer is the Macedonian king Philip II, who attacked Paionia in 358 BC, upon the death of the Paionian king Agis. But enough of the structures remained intact for squatters to move into the ruins. We used the term "squatter" deliberately, describing people who, without title, have moved into what was once public land. By anyone's definition, a propylon is a public structure. With the propylon now in ruins, however, squatters moved into what remained of the propylon and erected temporary structures; this is the First Squatter Period (Phase 4) (**Fig. 17**). Utilizing the still standing lateral walls of the propylon, they divided the rectangular room and ramp up into smaller compartments by building wattle and daub and clay partition walls, one of which survived nearly perfectly intact (L13.11); other such walls were found in crushed or toppled over conditions in the 2008 season.

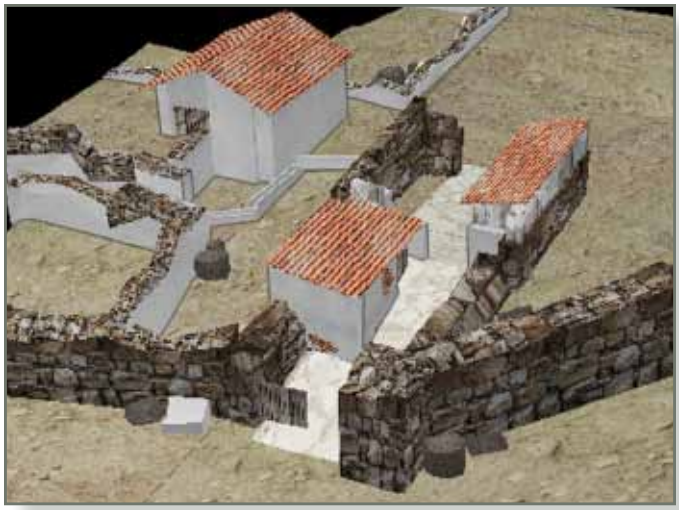


**Figure 17.** Reconstruction of the propylon in the First Squatter Period.

In 2008 and 2009 TFAHR excavated one of these squatter habitations and found on its floor (which was actually the paving stones of the rectangular room of the propylon) a mass of very datable pottery (**Fig. 18**). In the 2009 TFAHR publication, Jo-Simon Stokke, using the evidence of the pottery, dated the end of the First Squatter Period to *ca.* 300-275 BC. This frames the lifespan of the First Squatter Period from (possibly) Philip II's invasion of 358 BC to the invasion of the Danubian Celts (Gauls) in 279 BC.

**Figure 18.** Removing pottery from a First Squatter Period dwelling.

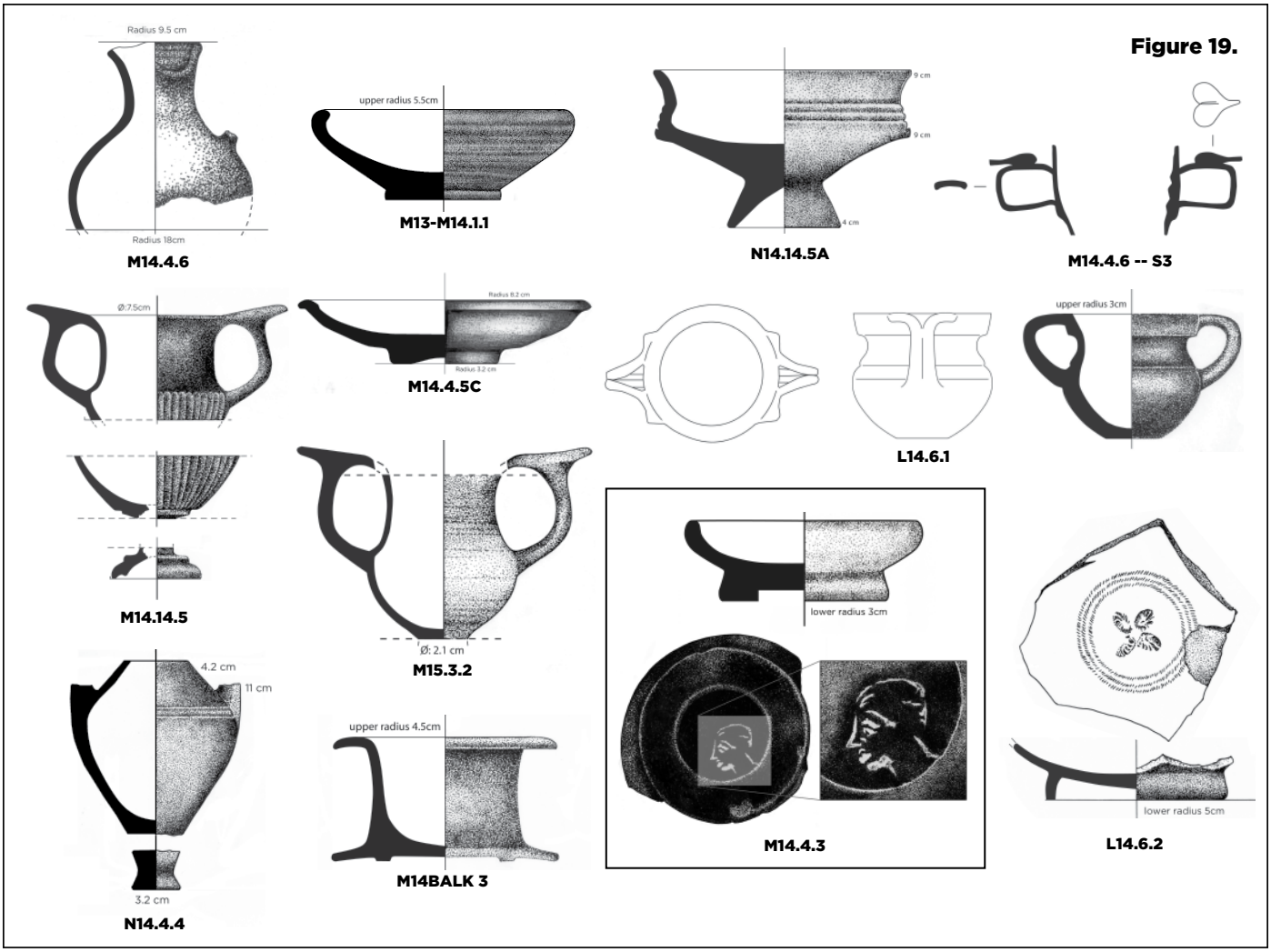
In addition to utilizing the ruins of the propylon, squatters also inhabited some of the terraced buildings overlooking the propylon, using stones from various ruined building to add makeshift walls to still-standing structures. From the terraced buildings the squatters of Phase 4 threw their garbage out against the eastern lateral wall of the propylon, which was still standing. The ceramic evidence from this dump confirms the dating of the First Squatter Period (**Fig. 19**).

After the Celtic invasion of 279 BC, this area of the acropolis lay abandoned for some time (Phase 5). Then a nearly 0.5 meter thick layer of fairly sterile soil was laid down over the ruins of the First Squatter Period (**Fig. 15**), and a Second Squatter Period (Phase 6) commenced, people again living in the ruins of the former public structures of the city. Squatters utilized the still standing lateral walls of the propylon and the terraced buildings, as well as the magazines in the casemate wall of the acropolis.

In the 2008 and 2009 seasons we had uncovered a considerable stretch of floor surfaces from this Second Squatter Period up against acropolis wall M11.2 (**Fig. 20**). Strewn across the floors were masses of pottery, a number of small hearths, several large *pithoi*, and numerous large chunks of burnt mud brick. But, strangely enough, we found no lateral walls connecting to M11.2, walls which would have divided this large expanse of floor surface into rooms or individual houses. This anomaly was solved in the 2010 season with the discovery of the casemate wall.

All the walls of the casemate wall were still standing during the two squatter periods, but they were later

**Figure 19.**





robbed out after Bylazora had fallen into ruins. The soil which filled in these robber trenches is still quite distinct from the surrounding soil all across the site (**Fig. 21**). So, the question becomes, how did we not, for two entire seasons and part of the third, notice these robber trenches when we excavated the floor surfaces of the Second Squatter Period? The answer lies in the proximity of the Second Squatter Period stratum to the surface. The plateau of Bylazora was arable farmland until it was recently nationalized. The farmers' ploughs went deep enough to disturb much of the archaeological remains of Phase 6; pottery was crushed, *pithoi* tops broken off and upturned, mudbricks dragged about, and even floor surfaces cut into. The deepness of the plough furrows would have obliterated the clean lines of the robber trenches, which did not become visible until after we had dug deeper than the reach of the plough blade.

**Figure 20.** Floor surface with pottery, from the Second Squatter Period.

**Figure 21.** Robber trench visible in the balk.

## The Destruction of Bylazora.

The pottery of this last era (Second Squatter Period, Phase 6) indicates that habitation at Bylazora came to an end in the early second century BC. This was a period of continual warfare between Paionians, Macedonians, and Dardanians; the era culminates with the Roman conquest of the Balkans in 168 BC. Who actually delivered the death blow to Bylazora is uncertain. Bylazora was abandoned. But not forgotten.

What always struck us as odd in excavating the Bylazora acropolis was the lack of architectural debris around the site – there was little in the way of masses of fallen stone from the acropolis walls, for example. The reason why became obvious this season.

All across Sectors 3 and 6 are traces of robber trenches (**Fig. 21**). A robber trench is formed when stones from a wall have been quarried (or robbed) away and, subsequent to the quarrying operation, soil comes to fill in the trench, leaving the soil of the robber trench distinctly different (in texture or color) from that which surrounds it.

The ruins of this legendary, large (19.6 hectares), and now abandoned city must have remained visible for kilometers around and for quite some time **(Fig. 22**). What a convenient quarry! Someone came back to Bylazora after the city was abandoned and used the ruined and desolate city as a quarry. Large useable stones were pried up and carted away, hence no piles of stones fallen from walls. Smaller fashioned stones were cut up and burnt down for lime to make mortar. Large amounts of quicklime and extensive signs of stone burning were found all across Sector 6. Since mortar is unknown at Bylazora, the limeburners must have come from elsewhere. Our guess: Roman Stobi.

**Figure 22.** The plateau of Bylazora.

An ancient road bypassed Bylazora's ruins on its way to Stobi, about thirty kilometers away (**Fig. 6**). Stobi started coming into prominence after Bylazora lay in ruins. Bylazora must have been a convenient quarry for Roman Stobi, both for stones and mortar material. In any case, by the time Ptolemy writes his *Geography* in *ca.* 135 AD, he lists Stobi amongst the cities of the region, but no mention is made of Bylazora.

## The Question of a Temple.

It is hard to excavate on the acropolis of an ancient city and not hope that somewhere nearby might rest the ruins of a temple. And several finds over the years fed that hope. First, there was the discovery of items that could have been votive gifts left at a temple: miniature vessels, figurines, loomweights with images of deities, a votive key, etc. (**Fig. 23**). Second, built into the Second Tower and also into a wall of the First Squatter Period were fragments of triglyph and metope blocks

**Figure 23.** Miniature vessels, loomweight and votive key.

**Figure 24.** Reused triglyph and metope fragments in Sector 3.

(**Fig. 24**). "Stones from a ruined temple," we mused. Finally, there was the matter of the propylon itself. Surely such a structure opened onto something important, like a temple. The ramp and threshold, we hoped, would lead directly to a temple. Then came the rectangular room and it, in turn, merely opened onto a large pebble-paved open area. Perhaps beyond the open area lay our temple; but a test sounding there unearthed nothing.

As a last resort, we sighted a line up the center of the ramp, through the center of the rectangular room, across the open pebble-paved area, and then across about 100 meters of the summit of the acropolis itself towards Sector 6 (**Fig. 25**). Interestingly enough, almost nothing ancient was uncovered in this trench: we discovered modern ploughed up debris from when the site was farmland, then fairly sterile undisturbed ancient soil with just a few potsherds and rooftile fragments, and then the sandy gravel that is the subsoil of the plateau of Bylazora. This probably means that the center of the acropolis was a large open area and that the buildings are going to be found along the fortified periphery of the acropolis. After about 100 meters of nothing and as the trial trench neared Sector 6, we hit several stones of a building of the Doric order (**Fig. 26** and **30A**), from a temple, we hoped. But in a subsequent article in this publication, Mr. Kyle Egerer presents evidence that the building from which the stones came was more likely some sort of stoa. Whether the building was actually located exactly where we found the stones is problematic. The "temple stones," as we came to call them, had clearly been cut up and were on their way to be burned down in a lime kiln. Evidence of burning is extensive in Sector 6 (see the last article in this publication by Mr. Danny McAree). Beneath the scattered "temple stones" are stones that might be part of the stereobate (leveling course) of the building (**Fig. 27**). But many of these stones have also been robbed out and only through further excavation will we be able to confirm if this is indeed the building's foundation. The "temple stones" were part of a large dump. In the dump were pieces of pottery, roof tiles, human re-

**Figure 25. Test trench across the acropolis.**


**Figure 26.** The "temple stones."

**Figure 27. Corner of the Doric order building.**

mains (at least three skulls), canine, bovine, and swine remains, and various other stones (**Fig. 28**). Possibly everything was on its way to being burned or this area simply became a refuse and "burial" pit after Bylazora was abandoned. Although there is extensive evidence of stone burning (ash, burnt stones, quicklime, etc.), an actual lime kiln has, as yet, not been unearthed. A volute from an Ionic capital was found in the vicinity of the stones (**Fig. 29**). Even a cursory glance informs one that this is not a weight bearing architectural fragment. Rather, it appears to be a part of an altar.


**Figure 28.** Human and animal bones, and other debris, were found amongst the stones.

**Figure 29.** Ionic volute, perhaps a fragment of an altar.

## Sector 6. The Western Acropolis Wall.

The discovery of the stones led us to shift our efforts from Sector 3 to Sector 6. In hopes of finding more of our "temple," we quickly expanded the area to be excavated from about 25 $m^2$ to about 400 $m^2$, moving thereby into the trench dug by the Yugoslav army in 1983. But no more stones were discovered, and whether we are actually on a stereobate course or not awaits further clarification next season.

What is beyond doubt is the discovery of the western acropolis wall (**Fig. 30** on page 18). Parts of it are 3 meters thick and preserved to a height of nearly 3 meters (**Fig. 30B**). At several points we dug along the foundations of the wall. At one stretch there are projecting foundation stones which also may have served as a splashboard to protect the base of the wall from erosion (**Fig. 30C**). By the end of the season we had not reached the lowest course of foundation stones at any point in our trenches.

Why was the wall so thick at this spot, three times as thick as the acropolis wall in Sector 3? It may be because the main gate to the acropolis is here. The propylon was certainly a ceremonial entrance way. The western gate may have accommodated everyday traffic, up this, the gentlest slope leading up to the acropolis of Bylazora. On the afternoon of the last day of the dig we uncovered what may be one flank of this gate; a socket was cleared which may have held a locking beam (**Fig. 30D**). Next year we need to clarify the relationship of the acropolis defensive wall and gate to the wall running beneath the "temple stones."

Dating the western acropolis wall and gate is difficult at this point in our investigations. Some datable ceramics (third century BC) were found outside the wall in a small dump (**Fig. 31**). But the pottery only dates the dump, not the wall. Careful digging into the wall's foundations needs to be done next season in order to obtain a secure date for the construction of the wall.

**Figure 31.** *Kantharoi* from a dump near the wall.

## Future Excavations.

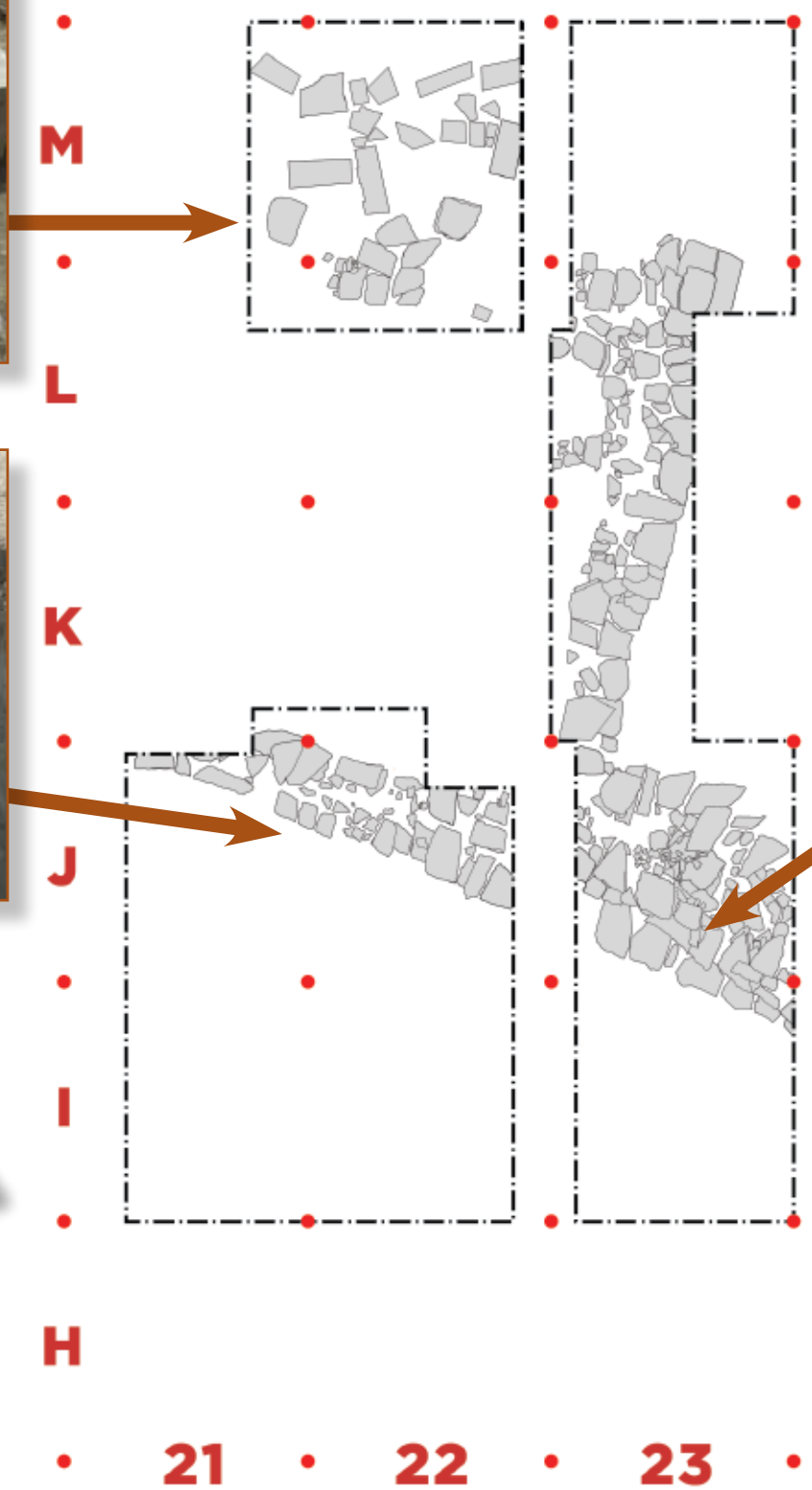
The discovery of the robber trenches in Sectors 3 and 6 sheds some interesting light on the last days of Bylazora. The people who quarried away the stones did so methodically and carefully: they dismantled the walls still standing, carted off large and useable stones, and then dug down into the foundations for what was of value to them. The robber trenches were rarely more than a few centimeters wider than the walls themselves. Quarrying operations stopped when the stones became too small or were too difficult to pry up. The quarrymen may have left the ramp of the propylon intact because they were using it as a road to cart away the stones. This may have been what caused the vehicular wear in the stones of the threshold.

All this has implications for the archaeological methodology employed in future excavations at Bylazora. Once the topsoil is cleared away, excavation will have to proceed with special regard to the robber trenches, because what remains of any monumental structures may not be the walls themselves, but only the foundations of the walls, or the outlines of the walls left behind as the robber trenches. In other words, floors and surfaces might remain without any associated walls (as in the squares where we first uncovered the remains of the Second Squatter Period). Our understanding of the layout of the acropolis will then be determined as much by what has been removed (the evidence of the walls as left behind in the traces of the robber trenches), as by what actually remains (extant walls and foundations).

We also hope that in one of the robber trenches the quarrymen may have dropped something that might identify them, or at least allow us to pinpoint the age when the stone robbing was done.


**Figure 30A.**

**Figure 30B.**

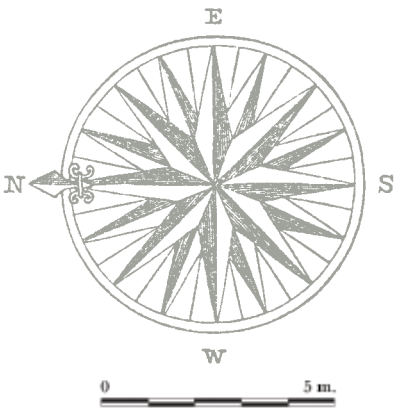
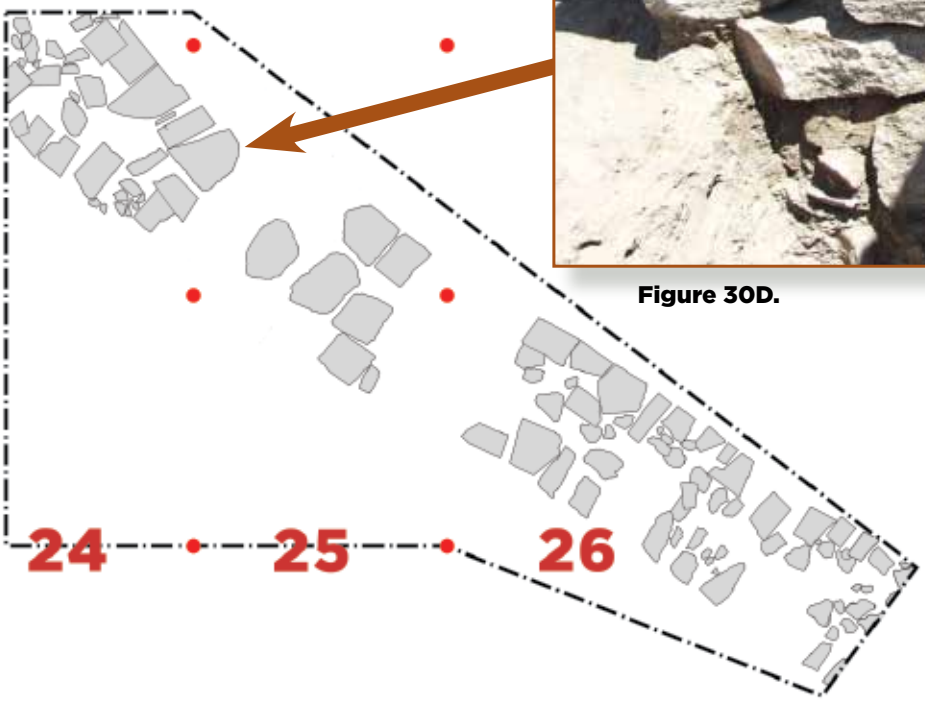



**Figure 30C.**

**Figure 30D.**



# The Architectural Blocks of Sector 6

**by Kyle T. Egerer**

A total of seventeen architectural blocks were found in Sector 6 in the 2010 season. Most were found in square M22, the only exceptions being: block M22.S10 which is in both M22 and L22; block M22.S18 which was uncovered in square L22; and M23.2.S3 which was found in square M23 (**Fig. 32**). Most of the blocks were found within *ca.* 0.20-0.40 m. of the surface.

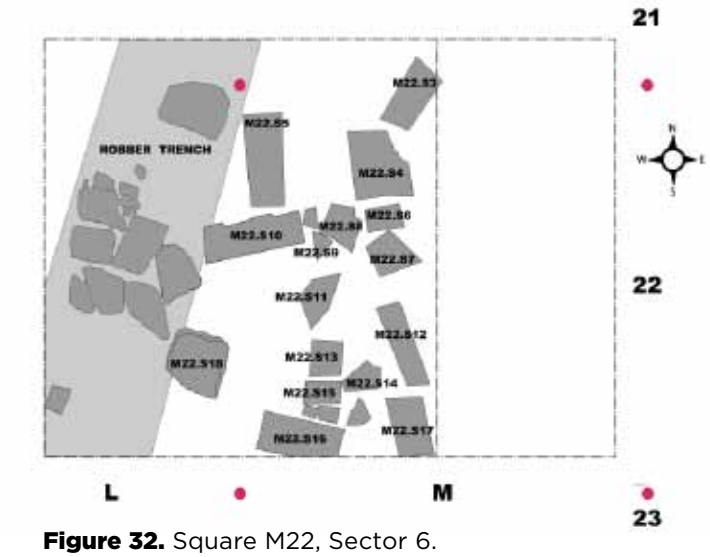



**Figure 32.** Square M22, Sector 6.

These seventeen blocks reflect the entire gamut of architectural stones used in Greek monumental architecture. Because of the corpus' size and the difference in preservation of each block, we will discuss only those blocks most important in developing stylistic *comparanda* with other Doric order buildings. The stones discussed here are essential in establishing a possible construction date of the building these blocks were once a part of. (A catalogue of each architectural block follows this article; for a glossary of architectural terms, see http://www.tfahr.org/PhotoArch_Present.html.)

Four of the seventeen stones belonged to a Doric style column; three of the four are column drums, the fourth is a Doric capital **(Fig. 33**). The largest drum of the group is M22.S16, 1.07 m. long, with a bottom diameter of 0.465 m. (calculated from the facet arrises) and a top diameter of 0.416 m. (measured from flute arrises). Twenty flutes, each 0.013 m. high, decorate the shaft of the drum. The arrises of the shaft flutes continue to the larger end of the drum creating a 20-sided faceted band 0.055 m. high. This faceted band terminates the column's larger end, which is a likely indication that the bottom portion of the column was also faceted, because Doric columns were not typically constructed to have bases beneath them.


**Figure 33.** Column stones and capital early in the excavation; see also pages 26-33 for details of stones and more photos and drawings.

The other two column drums, M22.S13 and M22.S15, are smaller in size, and also have twenty flutes. M22.S13 (found with its southern end slightly in contact with the northern side of M22.S15) measures 0.46 m. in length; its northern end is 0.425 m. in diameter. The flutes on the northern end of M22.S13 measure 0.066 m. in width, while those on the southern end are 0.066-0.067 m., a difference possibly suggestive of the drum's *entasis.* Some decorative plaster remains visible on one side of the drum. A small impression of the architect's compass is still visible on the northern end (See page 31). M22.S15 is slightly smaller with a length of 0.44 m.; its western end diameter is 0.405 m. The flutes on M22.S15 are 0.065 m. wide on both ends. There are a number of architect's incisions left on the western end of the drum. Similar to M22.S13, a small impression was left by the end of the architect's compass in the center of the drum. Radiating out from this point are three intersecting incisions: one long one extending the radius of the drum to the trough of a flute, and two shorter ones, which, if extended to

the outer edge of the drum, would have met a flute arris (See page 32). Both sets of marks preserved on M22.S13 and M22.S15 indicate how the architect may have planned and carved the column drums.

When the Doric capital was uncovered, it was situated at a slight angle with its neck in the ground allowing us to see only its abacus and echinus. In order to access the base of the neck and count the number of flutes, we displaced the capital from its original context (**Fig. 34**). The neck of the capital is 0.05 m. high and, like the other three column drums, has twenty flutes. The flutes terminate beneath the first of three annulets, forming small half-moon facets between the arrises. Increasing in diameter as they proceed up to the bottom of the echinus, each annulet measures *ca.* 0.005 m. high and is pronounced only nominally. The echinus is 0.06 m. high, with an upper diameter of 0.51 m., both dimensions resulting in a slightly curved echinus that is almost rectilinear. The abacus measures 0.10 m. high and has a width and depth of 0.52 m. The capital's total height is 0.245 m., with a neck diameter of 0.40 m. (measured from arrises). A semi-rectangular Lewis hole and several arced incisions were left by the mason. One of the incisions is inscribed along the entire circumference of the neck just inside the flute troughs.

**Figure 34.** M22.S14. Note mason's circular incision lines, especially the arc touching the flutes; see also page 31.

Although we do not know for certain that these four column pieces were intended to be placed one atop the other creating a single Doric column, several general points can be made about the dimensions of the hypothetical column, how it was constructed, and its date. It is commonly held that Greek architects used a set of pre-established proportions, based on the diameter of the column base and the widths of the abacus and triglyph, to construct Doric style buildings.[1] We know that the height of the abacus may have typically been determined before hand, based on the study of a capital from Assos.[2] We know, too, that the height of the echinus was calculated to equal half the difference of the abacus width compared to the upper diameter of the column.[3] Thus, in our case, this holds true: (0.52 – 0.40 m)/ 2 = 0.06 m. And we also know that the upper diameter of the column was based the pre-established lower diameter of the column.[4] Unfortunately, a column base was not found during the 2010 season, so we can only postulate the lower diameter of our column. Based on the 0.46 m. bottom diameter of M22.S16, the fine difference in flute widths of blocks M22.S13 and M22.S15 (suggestive of a very slight – almost negligible – *entasis*), as well as the observation that columns after the 5th century BC were generally more slender,[5] it is reasonable to say that the lower diameter of our column could not have been more than *ca.* 0.50-0.55 m. Considering the general trend from the middle of the 5th century through the 4th century for the dimensions of the capital to be reduced in places like the northern Aegean and the fact that the echinus started becoming rectilinear only after 400 BC, it is reasonable to suggest a date between the last quarter of the 5th and first quarter of the 4th centuries BC for the M22.S14 capital.[6]

This proposed date for the Doric capital also holds true with the chronological analysis of the column drums. The most valuable pieces of evidence at our disposal are the thin 0.05 m. 20-sided faceted band at the base of M22.S16, and the fact that 20 flutes were carved on each of the four column parts. By the middle of the 6th century BC, when columns of Doric temples started increasing in height (and decreasing in width), columns with 20 flutes were adopted, replacing the 16-fluted column, to accentuate the column's height.[7] Increasing the column's height and the number of flutes added a visual lightness to a temple's façade. In the 5th and 4th centuries the slenderness of the column persisted, promoting slighter proportions throughout the entablature, ultimately to the point where, in the 4th century, the height of the column was surpassing the lower diameter of the column by a factor of at least six to one.[8]

The decision to carve facets (as opposed to flutes) into the lower portion of a column was done, among other reasons,[9] for aesthetics. When a column was made specifically for a stoa, portico, or building with an overhanging porch, its lower third was often faceted because its position in the building was not exposed to adequate light to produce the desired effect of shadows produced by the flute arrises.[10] It is somewhat difficult to determine a ratio of the faceted portion to the height of the rest of the column for a stoa. On the basis of several examples, Coulton suggests that the lower portion of the

column was typically faceted to a height approximately equal to the height of a man, *ca.* 1.60-1.80 m., or about one-third the height of the entire column.[11] He also comments that columns incorporated into stoas in the Hellenistic period tended to be about seven times the bottom diameter, a proportion that perpetuated a tall slender column.[12] Comparing these proportions with the hypothetical bottom diameter of the M22 column, we realize that the four pieces we have, *i.e.*, M22.S13-M22.S16, are not necessarily characteristic of an entire stoa or temple column.[13] All this means one of two things: either that there are missing pieces of the upper column (which is a likely scenario considering the variability of the M22 corpus), or simply that the column is indeed smaller than what is established by the *status quo* of temples and stoas located in mainland Greece, the northern Aegean, or parts of eastern Asia Minor. Thus to assert that the column pieces belonged to a temple, stoa, or house, would be conjectural, and we can only go so far in providing an informed suggestion as to the building's identity at Bylazora.

**Figure 35.** M22.S5 (left), M22.S17 (right); see also pages 27 and 33.

Blocks M22.S5 and M22.S17 (**Fig. 35**) were both part of the architrave course of the building at Bylazora. The latter was only partially uncovered by the end of the 2010 dig season because its southern half was beneath the balk separating squares M22 and M23. The exposed portions of M22.S17 measure 0.75 m. long by 0.35 m. high by 0.45 m. deep. The regula on the front face of M22.S17 is 0.25 m. long by 0.025 m. high, with four guttae, each *ca.* 0.02 m. in diameter, decorating its bottom edge[14]. The taenia measures 0.04 m. in height and was pronounced from the front plane of the block by *ca.* 0.025 m. The dimensions of block M22.S5 are comparable to those of M22.S17; the block is 1.19 m. long by 0.40 m. high by 0.42 m. deep. The regulae are between 0.25 and 0.255 m. long by 0.015 m. high, and both display evidence of having six guttae of *ca.* 0.02 m. diameter each. The taenia of M22.S5 is slightly larger; it measures 0.045 m. high.

The most puzzling feature of M22.S5, however, is the 0.095 m. depression on the block's southern end (See page 27). It appears that the depression was carved into the face of the block when the block was initially made because the depression does not interrupt the regula/guttae combination. Had this depression been carved after M22.S5 was first made, the architect probably would have been forced to cut into the end regula/guttae pair. A plausible explanation for the depression is that it was carved into the block to accompany another architrave block placed perpendicularly to it. There are two issues with this is hypothesis, however. On the one hand, the neighboring block placed at a right angle would have likely also had one regula/guttae pair on its end, so when the two blocks were placed together the result would have been an interior corner with two converging regulae, resulting in a corner unpleasing to the eye. On the other hand, the depression suggests that the block was either included in an interior architrave course of a building, or incorporated in a *pteron* (wing of a building) protected by an overhanging soffit. With these two points in mind, M22.S5 would have been more suited in a building such as a propylon, stoa, or some form of portico, where people would not have had an easy perspective on the block.

**Figure 36.** M22.S7 (left), M22.S10 (right); see also pages 28 and 29. Note peeling plaster on M22.S10.

The two frieze blocks, M22.S7 and M22.S10 (**Fig. 36**), were carved from what appeared to be the same limestone used in the other blocks found in square M22. A triglyph and metope are partially preserved on M22.S7, the block has a length of 0.55 m., a height of 0.405 m., and a depth of 0.435 m. (including the thickness of the triglyph). The triglyph is 0.34 m. high by 0.235 m. wide, with each glyph face measuring *ca.* 0.04 m. wide, and each trough measuring *ca.* 0.045 m. wide. The glyph furthest to the left is partially damaged. A crown molding 0.05 m. high culminates the face of M22.S7. Though both ends of the block received damage in antiquity, the eastern end does show evidence of *anathyrosis* (See page 28). Provided the smoother band along the outer edge of M22.S7's eastern end is actually *anathyrosis* and not just a peculiarity in how the block was made or fractured, it could indicate that this end was placed on top of a column capital contacting another frieze block, because regardless of how many triglyphs were included

in each intercolumniation, one was always centered over a capital.

M22.S10 is preserved almost completely intact, measuring 1.21 m. long by 0.405 m. high (including the crown molding) by 0.42 m. deep (including the thickness of the triglyph) (See page 29). Both triglyphs are 0.35 m. high and are pronounced 0.035 m. from the plane of the metopes. The west triglyph measures 0.25 m. wide, with each glyph 0.04 m. wide, and each trough 0.045 m. wide. Conversely, the east triglyph is 0.265 m. wide, because the middle glyph is 0.045 m. wide and both troughs are 0.05 m. wide. Either as a result of the breadth of the triglyphs or because the mason was forced to make up space, the west metope is 0.34 m. wide, and the east metope is 0.39 m. wide. This incongruity in the metope widths is not surprising, because Doric architects were constantly confronted with the issue of the end triglyph being placed over the corner column or at the end of the frieze.[15] Similar to the eastern end of M22.S7, both ends of M22.S10 were carved with *anathyrosis*. There are also some traces of plaster left on the front face of the block (**Fig. 36)**.

The proportional evolution of the frieze and architrave in the Doric order in both sacred and secular architecture is similar to how parts of the column evolved. As mentioned above, in the middle of the 5th and early part of the 4th century, Greek masons began constructing the constituent parts of buildings to accentuate the growing tendency for more slender columns. This trend is also reflected in the height of the entablature (the architrave, frieze, and cornice). In order to reduce the visual weight, *i.e.*, the amount of space the entablature occupied on the building façade, architects began reducing the height of the architrave and frieze. By the 4th century BC the entablature of the Doric temple had been decreased to equal about a quarter of the height of a column.[16] Architects of stoas also perpetuated this tendency by reducing the height of the architrave even further to be less than the height of the frieze.[17] Considering the 0.805 m. combined height of blocks M22.S5 and M22.S10 (0.40 m. and 0.405 m. respectively) and Lawrence's ratio of entablature height to column height in a Doric temple, the column produced would be quite short for a temple, 3.22 m.. If we use the 0.805 m. height for the entablature and apply it to the height of a the stoa proposed earlier, *i.e.* between 3.5 – 3.85 m., we find that our architrave is between 0.07 – 0.157 m. less that what would be required of it.[18] But when we consider that the entablatures of stoas tended to be proportionally less high in relation to their overall column height, 0.07 – 0.157 m. is not too much of a difference for the height of the entablature, especially because we are not entirely certain we have all the drums to the column of square M22.


**Figure 37.** Geison block M22.S4, *et al.*; see also page 26.

The geison block found in square M22 has provided us with several pieces of evidence with which we can provide a possible date for the building of the structure (**Fig. 37**). At its longest extent M22.S4 is 0.90 m. long by 0.26 m. high by 0.675 m. deep (including the soffit); without the soffit the rectangular portion has a depth of 0.46 m. The soffit is raked to 30˚ and has three sloping mutulae beneath the rake, each with a set of 3 x 6 guttae that are *ca.* 0.02-0.025 m. in diameter (See page 26.). The mutulae measure *ca.* 0.25 m. long by 0.16 m. wide and are spaced evenly apart from one another. At the tip of the geison, there is an ovolo accentuating the raking portion, under which is a deeply undercut narrow Doric drip with little to no trace of curvature. On the reverse side of the block is a fascia molding very similar to those found on antae blocks M22.S8 and M23.2.S3; the lower fascia band is 0.075 m. high, the upper 0.105 m. high. The Doric drip and the geison crown at the end of the soffit are the two most datable pieces. Comparison of the drip on M22.S4 with Lucy Shoe's corpus of Greek moldings, two similar profiles come to light: that from the marble geison used in the Temple of Hephaistos at Athens (450-440 BC), and the drip profile from a geison found associated with the Stoa of Zeus Eleutherios (430-409 BC) in the Athenian agora.[19] A comparative analysis of the geison crown on M22.S4 leads us to two later buildings, specifically the Temple of Apollo Patroös (third quarter of the 4th c. BC), and the South Agora building at Delos ( first quarter of the 3rd century BC).[20] The profile from the geison crown retrieved from the building in the South Agora at Delos is strikingly similar to the profile of M22.S44, only differing slightly in how much it is pronounced from the frontal portion of the geison block.

There have been a total of three anta capitals found at Bylazora: two in 2010, and another in 2009. Because the current article focuses on the architectural blocks found in Sector 6 during the 2010 season, this writer will focus on the former two. M22.S8 (See page 28) is 0.435 m. long by 0.25 m. high by *ca.* 0.43 m. deep. The block was carved from limestone of small to fine grain size, displaying, from the bottom up: two fascia bands, the lower being 0.075 m. high, the upper band being 0.105 m. high, followed by a small fillet, a cyma reversa, and a cavetto at the top of the block. The block's top corners are heavily damaged; however, one of the fractured corners, was found laying directly to the west of the block, and was easily inserted into the scar of M22. S8. The molding dimensions of this corner fragment are almost exactly the same as those of M23.2.S3, the second anta capital found at Bylazora in 2010.

**Figure 38.** Two views of the anta capital M23.2.S3., no longer *in situ* but still in an inverted position.

M23.2.S3 (**Fig. 38**) was found in square M23 south of the main concentration of architectural blocks in square M22. Similar, if not the same, limestone used to carve M23.2.S3 was also used in M22.S8.[21] M23.2.S3 measures *ca.* 0.52 m. wide (including anta capital) by 0.43 m. deep (excluding anta capital) by 0.24 m. high. The molding consists of a bottom fascia band 0.07 m. high, top fascia band 0.10 m. high, a small fillet, a cyma reversa 0.03 m. high, cavetto 0.025 m. high, and an upper fascia band 0.01 m. high. Although the rear end and the edges of the block were nominally damaged, traces of *anathyrosis* are discernable on top of the block.

Stylistically both M22.S8 and M23.2.S3 are similar to anta capitals excavated from buildings at Olynthus. Two notable comparisons from Olynthus[22] include the anta capitals from House A vii Room 7, and iv Room 9, both of which predate 348 BC. The former is so similar, in fact, that the dimensions of its molding[23] are almost the same as those of M23.2.S3.

From the evidence of the seventeen blocks found during the 2010 dig season, what can be said about the nature and date of the building we are dealing with? We suggested several types of buildings the architectural blocks could have belonged to in antiquity: a Doric style temple, a stoa, a colonnaded secular building such as a propylon, or even a house. Based on the discussion of the possible height of our column (again keeping in mind that we do not have all the constituent parts) and the discussion of the height of the entablature in relation to the height of the column, the temple can be ruled out. The height of a standard temple column of the 4th century exceeds the *ca.* 3.0 – 3.85 m. range we are likely dealing with.[24]

Deciding between a stoa, propylon, other colonnaded secular building, or a house is particularly complicated because the buildings have similar architectural motifs with equally similar proportions incorporated into them – especially during the 4th century BC. Therefore, we have to turn to what we know to be true. The most convincing comparative evidence suggestive of a stoa includes the faceted lower portion of M22.S16, the height ratio of the entablature to the column height, the echinus profile, the geison crown of M22.S4 and the two anta capitals M22.S5 and M23.2.S3. Stoa columns with their lower portions faceted are almost ubiquitous throughout the eastern Mediterranean during the Hellenistic period. On the other hand, faceted columns are also used in other secular buildings, like the middle terrace of the acropolis at Lindos, or even the 2nd century houses on Delos (House on the Hill or House of Cleopatra).[25] The houses at Delos are atrium style houses with an inner portico, a feature which can not be entirely factored out of our equation, because of the small depression on the southern end of M22.S5. Atrium style houses datable to the first half of the 4th century with inner porticos were also found at Olynthus, which is where the anta moldings comparable to those of blocks M22. S8 and M23.2.S3 were identified.

The dates of all the buildings mentioned above are conflicting. The earliest possible date we can use to date the stones from square M22 is provided by the geison crown compared to the one identified with the *ca*. 430 – 409 BC Stoa of Zeus Eleutherios. Conversely the latest date we can use is the 2nd century BC, based on the faceted columns and rectilinear echinus profiles from the houses on Delos. Thus, the stones have to fall between the second quarter of the 5th and the early 3rd century BC, a span of roughly one hundred and thirty to one hundred and fifty-five years! Although this span from 430 – *ca.* 275 BC includes Philip II of Macedon's 359 BC arrival in Paionian Bylazora, the eventual dating of the stones relies primarily on more evidence, and another dig season.

## ENDNOTES:

[1] Coulton 1976, 118; 1977, 59-66; 1979, 93; Vitr. I. 2.4; IV. 3.3-4.
[2] Coulton 1979, 81-2, 93, Fig. 1.
[3] Coulton 1979, 93.
[4] Coulton 1979, 93.
[5] This is based on Coulton's comment (1979, 91-93) that the proportions of Doric capitals from the Peloponnesus as well the northern Aegean, Delos, Rhodes, Pergamon, and Ionia started being reduced in the 4th century. Considering that the proportions of the echinus are directly affected by the width of the abacus and the top diameter of the column, which is directly calculated from the lower diameter of the column, it is thus viable that the columns were becoming more slender in the Hellenistic period.
[6] It is important to note that this date is suggested in consideration of the Doric capital and the column drums found within its vicinity; this date is subject to change because the capital was found with other architectural blocks of different morphologies, whose characteristics may influence the dating of the building as a whole. For 4th century trends in the Doric order in the Peloponnesus, northern Aegean, Delos, Rhodes, Pergamon, and Ionia see Coulton 1979, 91-2. For rectilinear echinus profile see Coulton 1979, 82. The trend of reducing the echinus is also noticeable in Attica between 450-400 BC as well, see Coulton 1979, 89. For intentionally reducing the width of capitals fabricated in the 4th century and their effect on the echinus shape see Lawrence 1983, 70.
[7] Lawrence 1983, 68. It should also be noted that after the mid 6th century BC columns with 20 flutes were the norm, unless significant changes were made to either the height or the breadth of the column, in which case flutes were added to the column shaft usually in factors of 2 (*cf. ibid.*; Dinsmoor 1975, 53-4; 111-12).
[8] Lawrence 1983, 70.
[9] According to Lawrence 1983, 68, columns were left faceted or unfluted for 3 other reasons: either the mason did not finish carving the column, the column was never intended to be fluted, or simply to protect the column's lower portion from getting chipped by people passing between neighboring columns.
[10] Coulton 1976, 112-13.
[11] Coulton 1976, 112-14; Here Coulton provides two examples, the Stoa of Attalos in Athens and the Abaton at Epidauros. The column height of the former is 5.236 m. with the faceted lower portion equal to 1.77 m.; the column height of the latter being 5.18 m. with 1.60 m. of the total height being faceted.
[12] Coulton 1976, 108-9; Vitrivius also mentions that columns used in stoas or colonnades should be proportionally taller than columns incorporated into temple architecture (V.9.3).
[13] Using the hypothesized 0.50-0.55 m. bottom diameter and the Hellenistic 6:1 ratio for the height of a temple column to its bottom diameter established by (Lawrence 1983, 70), we would get a height between 3.0 – 3.3 m., which is probably too low for a temple, especially considering the width of the abacus on M22.S14. Again using the hypothesized 0.5 – 0.55 m. bottom diameter, however, with the Hellenistic ratio of 7:1 for the height of a stoa column in relation to its bottom diameter as proposed by (Coulton 1976, 108-9), we find that the column would have a total height between 3.5 – 3.85 m. One third of this height reserved for the faceted portion of the column would be 1.167 – 1.283 m., the remaining two-thirds made up by the combined heights of M22.S13-M22.S16, *i.e.*, 2.215 m., which is almost twice 1.167 m.
[14] The 3rd and 5th guttae from the right were missing.
[15] *Cf.* Coulton 1977, 60-4.
[16] Lawrence 1983, 72.
[17] Coulton 1976, 109.
[18] Although Lawrence's ratio for entablature height to the height of a column for a Doric temple is being used here to address the possibility of the building being a stoa, the decision is done for consistency because no such ratio has been developed for stoas, other than to say that entablature heights in stoas tended to be even less than there temple counterpart in relation to the height of the column.
[19] For the Doric drip geison profile from the Temple of Hephaistos, see Shoe, L. 1936, 158 (Pl. LXXIII, 15) with references; for that from the Stoa of Zeus Eleutherios see Shoe, L. 1936, 158 (Pl. LXXIII, 19) with references.
[20] For the Temple of Apollo Patroös in the Athenian Agora, which was unfortunately destroyed before the time of Shoe's seminal work, see Shoe, L. 1936, 37-8, (Pl. XX, 5); for the South Agora building at Delos see Shoe, L. 1936, 37-8, (Pl. XX, 13).
[21] This comment is based entirely on the visual appearance of both blocks by archaeologists on site in July of 2010. No microscopic analysis of the rocks' composition was done.
[22] Shoe 1936, 63f., Pl. LXXVI, Nos. 29-30.
[23] H. 0.212 m.; H. of bottom fasciae 0.071, top fascia 0.095 m.; for profile and dimensions of anta capital from House A vii 7 *cf.* Shoe 1936, Pl. LXXVI, No. 29 and *Olynthus* VIII Pl. 64, No. 1; for dimensions of M23.2.S3 see Catalogue of Architectural Blocks in this publication.
[24] See Dinsmoor's Chronological List of Greek Temples in Dinsmoor 1975.
[25] See Dinsmoor 1975, 323-4, Pl. LXX.

## SELECT BIBLIOGRAPHY:


Coulton, J.J., *The Architectural Development of the Greek Stoa*, Claredon Press, Oxford, 1976.
---, *Greek Architects at Work: Problems of Structure and Design*, London, 1977.
---, "Doric Capitals: A Proportional Analysis", The Annual of the British School at Athens, No. 74, 81-154, 1979.
Dinsmoor, W.B., *The Architecture of Ancient Greece.* An Account of its historic Development. 3rd Ed., W.W. Norton & Company, New York, (Reprint of 1950 3rd ed.), 1975.
Lawrence, A.W., *Greek Architecture*, 5th ed., 1983.
Matthews, E., and Neidinger, W., *The 2008 Excavation.* Bylazora Republic of Macedonia. The Texas Foundation for Archaeological and Historical Research, Canyon Lake, TX, Sept. 2008.
---, *The 2009 Excavation.* Bylazora Republic of Macedonia. The Texas Foundation for Archaeological and Historical Research, Canyon Lake, TX, Sept. 2009.
Robinson, David M., *Excavations at Olynthus*. Part II Architecture and Sculpture. Houses and Other Buildings, The John Hopkins Press, Baltimore, 1930.
Robinson, David M., and Graham, J. Walter, *Excavations at Olynthus*. Part VIII The Hellenic House. A Study of the Houses found at Olynthus with a detailed Account of those Excavated in 1931 and 1934, The John Hopkins Press, Baltimore, 1938.
Rose, Charles Brian, "The Temple of Athena at Ilion," in: *Studia Troica Sonderdruck*, Band 13, pp. 27-88, 2003.
Shoe, Lucy T., *Profiles of Greek Mouldings*, 1936.
Spawforth, T., *The Complete Greek Temples*, Thames & Hudson Ldt., London, 2006.
Wescoat, Bonna D., "Designing the Temple of Athena at Assos. Some Evidence from the Capitals," *American Journal of Archaeology* 91: 553-568, 1987.

# Catalogue of Architectural Blocks of Sector 6

**by Kyle T. Egerer**

**Block M22.S3**

(Each block is identified by its square number, e.g., M22 and the number given to the individual stone, S3).

***Dimensions:*** 0.740 m. long x 0.44 m. high x 0.31 m. deep.

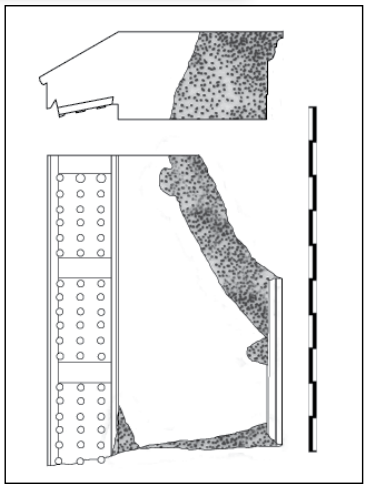
***Description:*** Block was photographed and drawn *in situ.* Limestone with small grain size, little to no inclusions. Top of block damaged to the extent that nothing can be said accurately about its profile; bottom, though unexposed, is finely carved and finished; both sides (A, B) are well carved displaying evidence of a thin molding *ca.* 0.05-0.07 m. wide; west end of block is better carved than east end.



**Block M22.S4**

***Dimensions:*** At its longest extent 0.90 m. long x 0.26 m. high x 0.675 m. deep (0.46 m. in depth not including the raking portion of the geison). Mutulae 0.16 x 0.25 m.; guttae (3 x 6) ranging in diameter 0.02-0.025 m.; guttae are spaced evenly apart from each other; space between neighboring mutulae *ca.* 0.055 m.; angle of rake 30º, angle of soffit between bed-molding and mutual 50°, 0.26 m. in length (B). Reverse side of block decorated with fascia consisting of two bands (C) [bottom band = 0.075 m. high, top band 0.105 m. high (*i.e.*, below ovolo)].

***Description:*** Geison block, carved from similar limestone as M22.S3. Block was photographed and drawn *in situ,* discovered soffit up exposing the mutulae, guttae and ovolo molding. Northeast corner fractured (A), south end fractured, drip edge of soffit partially chipped.

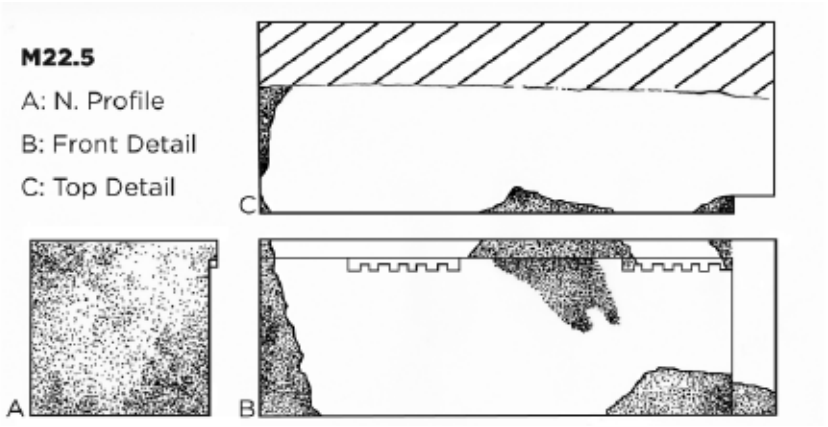




**Block M22.S5**

***Dimensions:*** 1.19 m. long x 0.40 m. high x 0.42 deep; taenia 0.045 m. high; regulae 0.25-0.255 m. long x 0.015 m. high; guttae *ca.* 0.02 m. in diameter spaced evenly apart.

***Description:*** Architrave block carved from similar, if not the same, limestone as other blocks. Block was photographed and drawn *in situ*, uncovered during the excavation of the new test trench in Sector 6 causing damage to the front of the block between the regulae / guttae clusters (A). North end fractured (B); south end appears to be an end piece, as evidenced by the 0.095 m. wide depression terminating the end of the block (C).







**Block M22.S6**

***Dimensions:*** Measured on exposed face of block; east side *ca.* 0.255 m., south end 0.355 m., total of 0.430 m. wide (east to west).

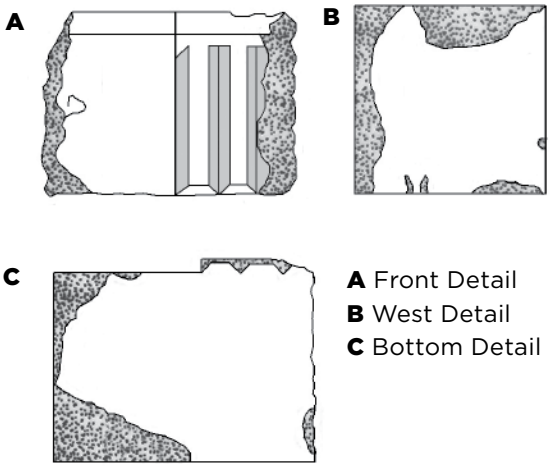
***Description:*** Limestone block with small to fine inclusions. Photographed *in situ*; largely unidentifiable block, north end is carved flat with chips along corner, south end is fractured, both east (B) and west (C) sides appear to be carved flat; possible traces of *anathyrosis* on exposed surface (A).



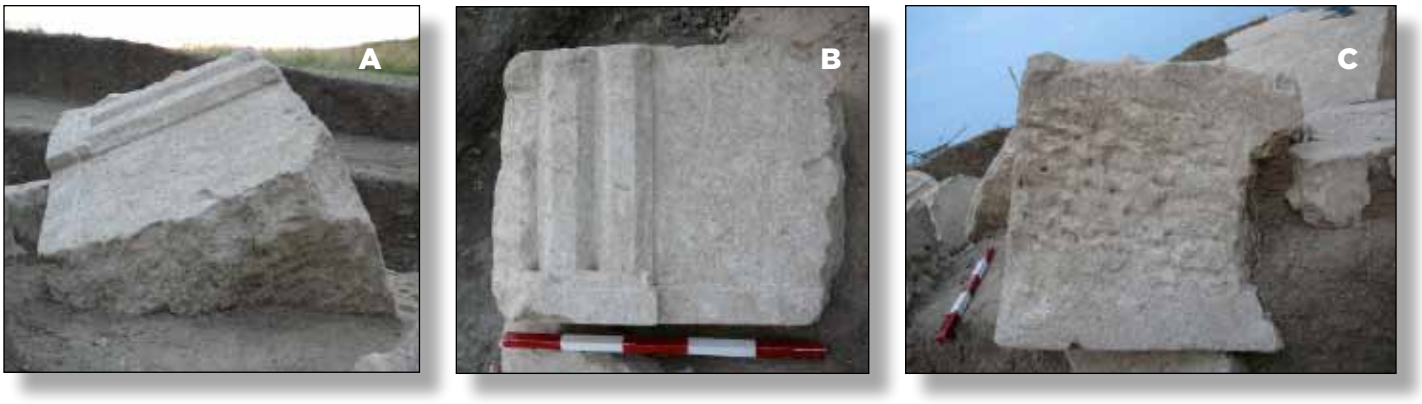
**Block M22.S7**

***Dimensions:*** 0.55 m. long x 0.405 m. high x 0.435 m. depth (0.40 m. without thickness of triglyph). Triglyph is 0.235 m. wide; each glyph face is *ca*. 0.04 m. wide, the troughs are *ca*. 0.045 m. wide. Crown molding on the upper portion of the frieze is 0.05 m. high (A).

***Description:*** West end fractured (B), east end appears to be planar with possible traces of *anathyrosis* (C), the furthest glyph to the east is partially fractured off.




**A** Front Detail
**B** West Detail
**C** Bottom Detail

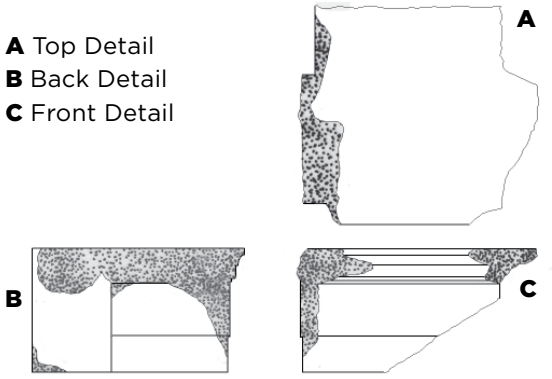



**Block M22.S8**

***Dimensions:*** 0.435 m. long x 0.25 m. high x *ca.* 0.43 m. deep; fascia decoration: bottom band (0.075 m. in width), top band (0.105 m. wide).

***Description:*** Anta block. Carved from limestone with small to fine grain size. Top corners of anta capital molding are heavily damaged (A and B). Upper molding consists of a small fillet, cyma reversa, and a cavetto at the top of the block.

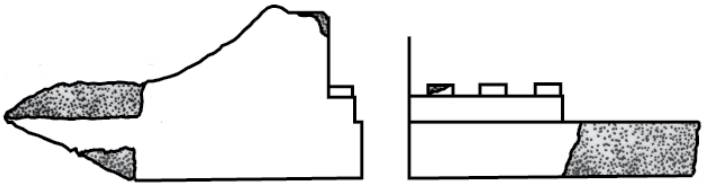
**A** Top Detail
**B** Back Detail
**C** Front Detail



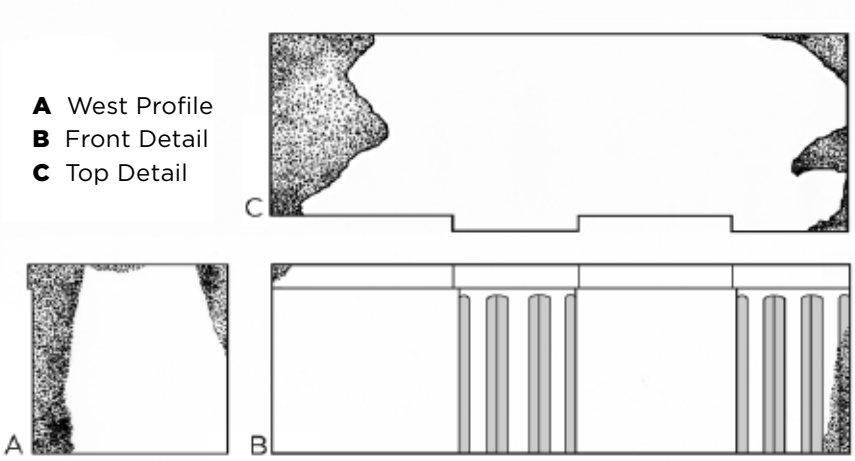

**Block M22.S9**

***Dimensions:*** Fragment of architrave. Taenia is 0.045 m. high; regula is *ca.* 0.02 m. high; guttae are 0.025 m. in diameter.

***Description:*** Fragmented corner piece with 3 guttae on it. North end is planar. Some decorative plaster remains on faces of block.



**A** West Profile
**B** Front Detail
**C** Top Detail




**Block M22.S10**

***Dimensions:*** 1.21 m. long x 0.405 m. high x 0.42 m. deep (A through C); west triglyph 0.35 m. high x 0.25 m. wide, each glyph is 0.04 m. wide, each trough is 0.045 m. wide (D); east triglyph is 0.35 m. high x 0.265 m. wide; glyph width east to west. 0.04, 0.045, 0.04 m.; troughs are 0.05 m. wide. Both triglyphs are pronounced 0.035. m. from the rear plane of the metope. The west metope is 0.34 m. wide, compared to the 0.39 m. width of the east metope.

***Description:*** Frieze block carved from limestone with small to fine grain size. The block was photographed and drawn *in situ*. Possible that both ends were carved with *anathyrosis* technique (B and C). Some plaster decoration remains on the entire block. Small corner fractures (southeast, southwest, northwest). Small backhoe scar from the claw noticeable on top of west end.




**Block M22.S11**

***Dimensions:*** 0.69 m. long x 0.41 m. high x 0.42 m. deep.

***Description:*** Large rectangular limestone block with small to fine grain size. Photographed and drawn *in situ*. A decorative fascia 0.135 m. wide runs the entire length of the block's frontal face (A). The block is fractured on both ends, east (B); west (C).




**Block M22.S12**

***Dimensions:*** 1.0 m. long x 0.445 m. high x 0.365 m. deep

***Description:*** Large rectangular limestone block without any identifiable features, could have possibly been incorporated into a wall constructed of ashlar masonry. The block was photographed and drawn *in situ*. The top of the block is well preserved (A). The east side is highly damaged with a large fracture spreading half of the east face (B). West side is well preserved (C). North end of block appears to have *anathyrosis* incorporated into its carving (D). The south end is fractured.




**Block M22.S13**

***Dimensions***: 0.46 m. long; north end is 0.425 m. in diameter (the south diameter could not be obtained because of the proximity of this end to the neighboring drum, M22.S15). The *entasis* of the column drum is measurable (the width of the flutes at the south end is between 0.066 – 0.067 m., whereas the width of the flutes on the north end is 0.066 m., as measured from arrises) (A).

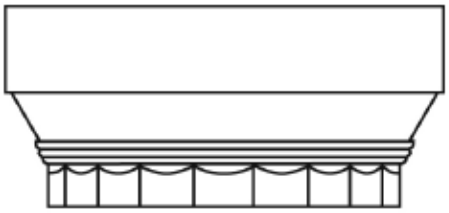
***Description:*** Column drum with 20 flutes carved from limestone of small to fine grain size. An impression from the point of the architect's compass is noticeable in the center of the north end (B). Entire column drum intact, except for a couple of chips on the arrises. Remnants of decorative plaster present in places (A).



**Block M22.S14**

***Dimensions:*** Height of capital 0.245 m. (abacus + echinus + neck); abacus is 0.10 m. high x 0.52 m. long x 0.52 m. deep (A). Diameter of echinus at top is 0.51 m.; diameter of echinus at bottom is 0.42 m.; the diameter of the neck, as measured from the arrises is 0.45 m. (B).

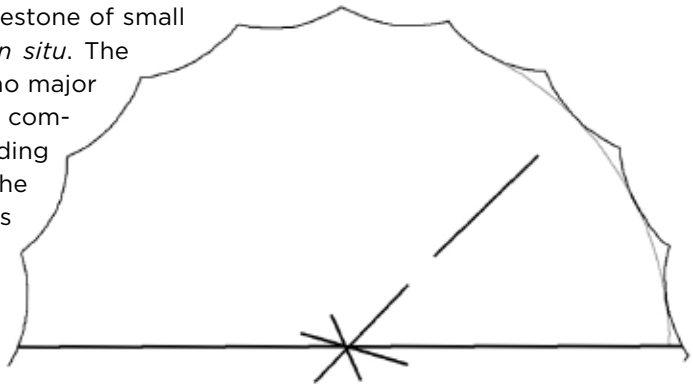
***Description:*** Doric capital carved from limestone. Neck has 20 flutes; three annulets below echinus. There is a circle incised on the bottom of the capital by architect's compass; several rays of inconsistent length also incised; a semi-rectangular hole, *ca.* 0.25 x 0.25 m., of roughly defined edges present on bottom surface of neck (B).



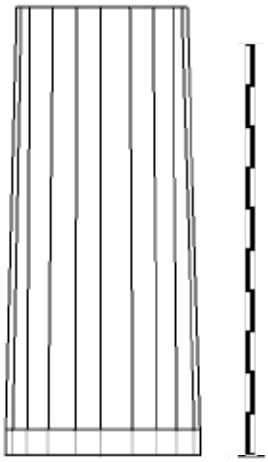

**Block M22.S15**

***Dimensions:*** Column drum is 0.44 m. long; west end is 0.405 m. in diameter; (diameter of east end was unobtainable because of the block's proximity to M22.S14). Flute height is 0.01 m.; flutes are 0.065 m. wide on both west and east ends, thus no evidence of *entasis* (measured from arris to arris) (A and B).

***Description:*** Column drum with 20 flutes carved from limestone of small to fine grain size. Drum was photographed and drawn *in situ*. The drum is intact except for small chips on the flute arrises, no major damage. A small impression left by the end of architect's compass in the center of the drum on the west end (C). Extending from this impression are several incised lines: one from the center impression to the trough of a flute, and two others forming a small "X" in the center of the drum.





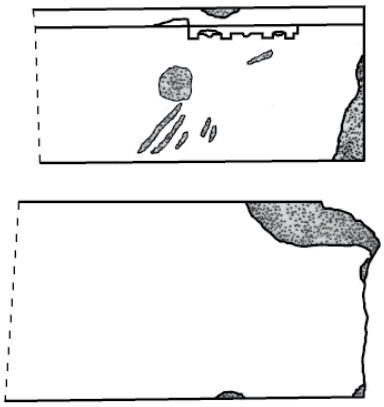


**Block M22.S16**

***Dimensions***: Column drum is 1.07 m. long. Bottom diameter 0.46 m. (calculated from the flats of the facets, and 0.465 m. from the arrises of facets); top diameter 0.416 m. (measured from flute arrises); flutes are 0.013 m. in height. Faceted band is 0.055 m. high.

***Description:*** Column drum constructed of limestone of small to fine grain size, largely intact, bottom is chipped in places (B). Photographed and drawn *in situ*. 20 flutes whose arrises terminate in a faceted band (A).


**Block M22.S17**



***Dimensions:*** 0.75 m. long x 0.35 m. high x 0.45 m. deep. Regula is 0.25 m. long x 0.025 m. high; guttae are *ca.* 0.02 m. in diameter; taenia is 0.04 m. high and pronounced *ca.* 0.025 m. from front plane of block.

***Description:*** Architrave block carved from limestone consisting of small to fine grain size. The block was photographed and drawn *in situ*, the south end remains in the balk between squares M22 and M23. The third and fifth from the right guttae are missing. Some scaring is noticeable on front face.

**Block M22.S18**

***Dimensions:*** *ca.* 0.60 m. long x 0.60 m. wide x 0.33 m. deep.

***Description:*** Badly damaged (probably by fire) green sandstone block that strangely appears to have belonged to an Ionic capital, judging by its general shape. Block was not individually drawn because of poor state of preservation.

**Block M23.2.S3**


***Dimensions:*** *ca.* 0.52 m. wide (including anta capital); *ca.* 0.425 m. wide (excluding anta capital) (A and B, D); 0.43 m. deep (excluding anta capital) (C); 0.24 m. high. Molding detail: bottom fascia band 0.07 m. high; top fascia band 0.10 m. high; cyma reversa 0.03 m. high; cavetto 0.025 m. high; upper fascia band 0.01 m. high.

***Description:*** Anta capital block carved from limestone with small to fine grain size. Back end of block is fractured. Inside corners of anta capital are fractured; nominal chipping along edges. Trace of *anathyrosis* on top of block (A). Small fillet carved between the top fascia band and cyma reversa.



# THE SACRED POOL OF BYLAZORA

**By Pablo Aparicio Resco**

In 1994 bulldozers digging for road base material at the village of Knezje, near the town of Sveti Nikole, uncovered a large stone structure at the foot of the hill of Bylazora. The structure was excavated and published by Zoran Georgiev that same year (Georgiev 1994). Georgiev argued that the structure was a fortified well (that is, a well with a tower above it) that was part of the defensive walls of Bylazora. After examining parallels in the Mediterranean world, we will suggest another possibility: that the structure is a monumental sacred pool. The longitudinal axis of the structure, running from the steps to the opposite wall (**Fig. 39**), is oriented to the sunset of the summer solstice. The position where the sun sets on this day (21 June) in this place (Sveti Nikole), is 303º 25' off north on a completely flat horizon (Meteorological information from http://www.gaisma.com, with data obtained from the NASA Langley Research Center Atmospheric Science Data Center; New *et al*. 2002. Compared with the astronomical computer program "Cartes du Ciel"). The pool is oriented to 302º, which corresponds closely enough to the sunset point, the discrepancy perhaps due to the fact that the horizon is not completely flat but obscured by small hills. It was no accident that the pool was oriented to the summer solstice sunset.

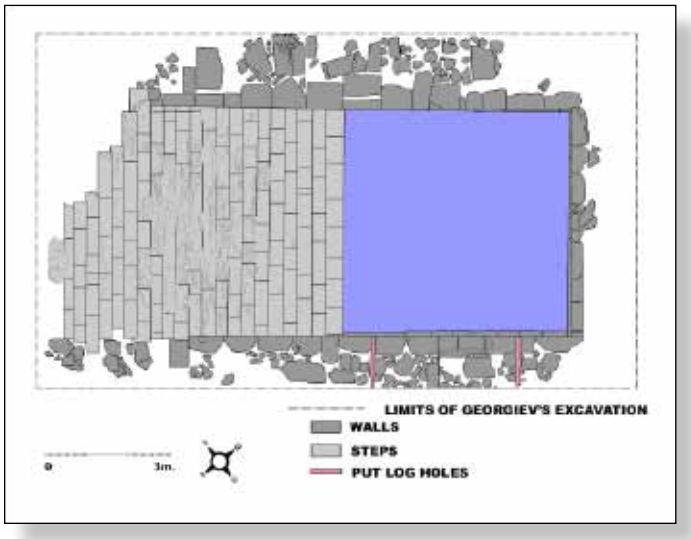



**Figure 39.** Bird's eye view of sacred pool.

The location of the quarry that supplied the stones for the sacred pool is not known. In the immediate vicinity of Bylazora there are no limestone quarries. There is the possibility that the stones of the pool came from a dismantled building or buildings on the acropolis; this might account for the different types and sizes of the stones and the various stages of dressing. Still, the ultimate location of the original quarry or quarries remains unknown. If the stones did not come from a nearby quarry and had to be transported on carts from a distant location, this speaks of a very complex organization involving high costs and many workers. Rough cutting would have been done in the quarry. Final cutting would surely have been done at the construction site itself because, although all the stones are ashlars, they are of different sizes in each course, that is, a pseudo-isodomic construction (**Fig. 40**).

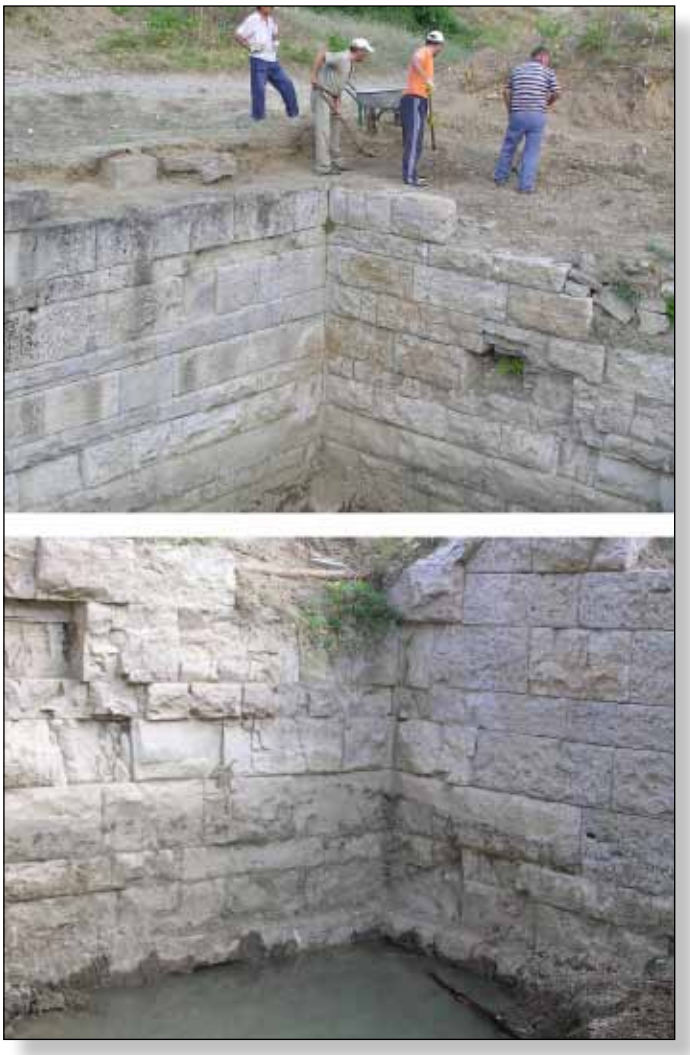


**Figure 40.** The sacred pool's northwest wall (above, left), northeast wall (below, right).

The first stage of construction would have been the excavation of the area into which the pool would be built. The excavated area was a rectangle of 12.1m. x 5.4m., to a depth of at least 5.50m., that being the distance from the lowest to highest step. Next the builders set the first courses of the walls and then the steps into the excavated hole. The courses of the walls continue beneath the lowest step, sinking into the mud; but how deep is not possible to determine, since digging is impeded by the rising water level and constant mud. The excavation of the pool was probably done in the months of August and September, the driest time of the year in this area, when the water level is lowest. The courses rest upon one another without any mortar or cement to bind them together. Once these lowest courses were set, the builders continued setting the upper courses, lowering the stones down into position by rope from the ground level. The last extant course comes up to a height of 4.41 m. from the lowest step; presumably more courses would have come up to the highest step. But even at the highest step, we are not sure that this was the ground level in ancient times. However many more steps and courses there might have originally been, there is no archaeological evidence to suggest that, in antiquity, this structure was part of a tower or bastion rising high up above ground level.

The finishing of the stones was probably done once the stones were set into position. This explains the put log holes in the side walls: three in the left wall at a height of 2.67m. above the lowest step, and three on the right side at 2.56m. These must have been used to brace some kind of scaffolding that allowed the masons to finish the stones of the upper courses (**Fig. 41**). This scaffolding system would be secured to the walls only at the points of the put log holes. This also explains why the put log holes are not at exactly the same level – there was no need for them to be. In the finish of the stones one can see the difference in the various types of limestone, as the chisel marks are seen much more clearly in the softer stones than in the harder ones.

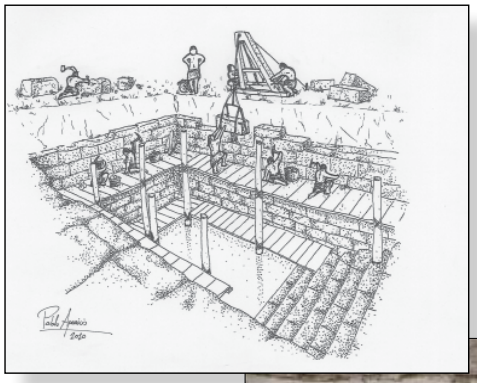


**Figure 41.** Reconstruction of the building process.

**Figure 42.** One of the KEP inscriptions.

Georgiev believed that the pool was built in the late fifth century BC, basing this on the style of the letters KEP (kappa-epsilon-rho) carved into two of the stones (**Fig. 42**). There is a possibility, however, that the northwest wall of the pool was rebuilt in ancient times: it is in much better condition and its pseudoisodomic construction is very different from that of the northeast wall (**Fig. 40**).

The monumental stairway provides some interesting clues about the history of the sacred pool (**Fig. 43**). The lowest three steps (1-3) are in very good condition, probably because they were little used. It is also possible that in antiquity they were below water level most of the year; this seems to be reflected in the north wall of the pool, where the constant presence of water has left its mark on the softer and more porous limestone. It is also possible that when the pool was abandoned, these steps were soon covered by mud and debris, which promoted their preservation. The next two steps (4-5) are in a worse condition, especially at the edges of the stones, which are the parts which would suffer the most from wear and tear, reflecting a greater use in antiquity. The following nine steps (6-14) are in the worst condition, particularly the softer stones, clearly reflecting heavier usage. Furthermore, after the pool was abandoned, the water continued to corrode the steps and contributed to their poor condition. The last 6 steps (15-20) are different; they are wider and higher, nearly .28m. high, while the rest of the steps are between .20m. and .25m. high. Perhaps they are part of a reconstruction made in ancient times. The height of these upper steps would have made it rather difficult for women carrying heavy terracotta water jars or water skins to manage a descent and ascent, had this structure been a cistern.

The monumental steps were set around the fifth century BC (per Georgiev), along with the walls of the pool. We might hypothesize: 1) many people frequented the upper steps and many of them came down to the middle steps (to witness a religious rite, for example); but, 2) only a few people went down to the lowest steps; then 3) the deterioration of the higher steps from continual wear might have required reconstruction, possibly in the fourth or third century BC. A reconstruction for this reason may explain why the stones in the upper steps are harder and bigger blocks than those in the lower steps. After this, the pool continued to be used in the same

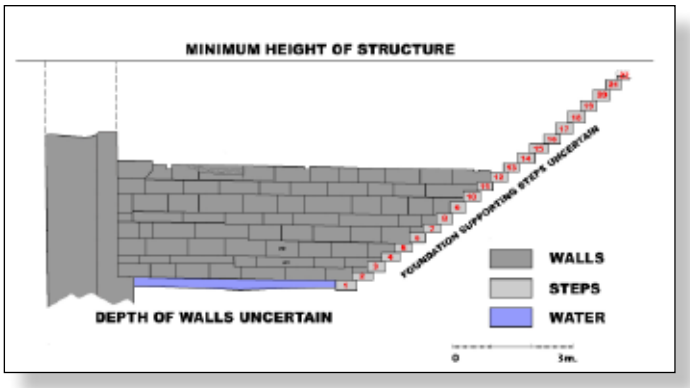



**Figure 43**. Monumental stairway; the two upmost steps discovered by Georgiev are now gone.

fashion, but now the middle steps continued to deteriorate more and more. However, by the second century BC Bylazora was destroyed and abandoned. When the Romans came to quarry away the stones of Bylazora, the upper courses of the walls were dismantled and the pool fell into ruin, hidden and gradually covered by mud and debris washed down from the slopes until its complete disappearance at the foot of the hill of Bylazora.

There are a number of reasons to argue against this structure being a fortified well or cistern. [By definition, a cistern is a structure used to store water, which can come through pipelines or aqueducts, or directly from the rain. However, if the structure can be filled with water directly from the earth, then we are talking about a well or a pool.]

First, Sector 4, where the pool is located, at the foot of the northwest slope of the hill, is one of the lowest points in the area (**Fig. 44**). If cisterns were built to address the water needs of a city, especially in time of siege, they were usually built at high points in the cities, as in Mycenae or Athens. Likewise, closer to the Paionian world, in cities like Perperikon or Orraon (Antoniou 2006: 457-462) there were large rectangular cisterns in

**Figure 44.** The sacred pool, now covered by a shed, at the foot of the hill of Bylazora. The stream, now a trickle, flows through the trees behind the shed.

the upper part of the city. Certainly it makes little sense to build a cistern at the foot of a city because, in case of siege, the acropolis quickly would lose its connection to the water source, which would be fatal.

Second, along the northern and northwestern parts of the hill of Bylazora, there is a small brook. The lay of the land suggests that it was a larger stream or river in former times. The pool is about 30 meters from the stream. Why would anyone build a cistern so close to a stream from which they also could extract water? The proximity of this stream is another factor that leads us to doubt that this structure is a cistern.

Third, consider the monumental stairway. The steps of the pool occupy half the building and one quarter of the entire volume of the excavated area (**Fig. 45**). This is certainly impractical for a well or cistern, since the aim would be to store as much water as possible. In the cisterns of Lato, Orraon, Perperikon, *et al*., the stairs that gave access to the water supply were constructed to occupy as little space as possible, to increase as much as possible the amount of water stored in the cistern. In Bylazora the monumental steps prevented the structure from accumulating such a large amount of water.

Fourth, the height of the upper steps (.28 m.) would have made it rather difficult for women carrying heavy terracotta water jars or water skins to manage a descent and ascent, had this been a frequented water supply.

Fifth, Georgiev hypothesized not just a cistern but a fortified cistern that was part of the circuit of walls. But as the land around the pool was cleared away lower and lower every year since 1994, no trace of an ancient wall has been found.

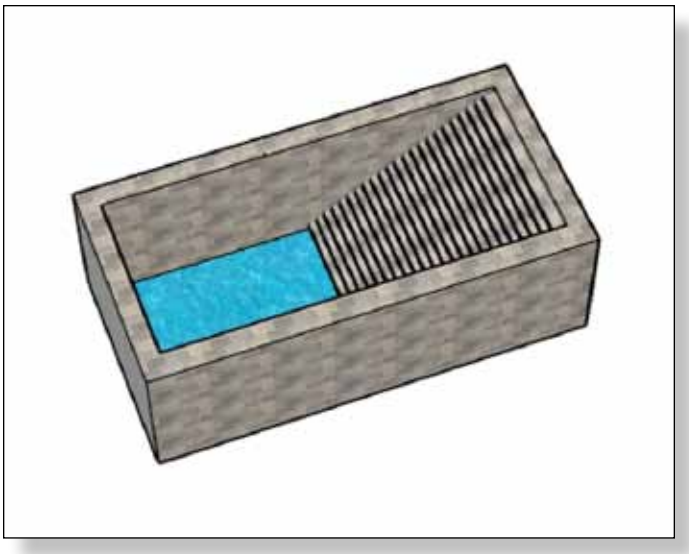


**Figure 45.** Schematic reconstruction of the sacred pool showing the amount of space taken up by the monumental staircase.

So, if the structure is not a fortified cistern, what is it? Perhaps the closest parallel to the Sacred Pool of Bylazora is the Minoia Fountain of Delos. It also is a rectangular stepped stone pool, with a large flight of stairs. This Hellenistic fountain was excavated in 1908, and the archaeologists found various offerings inside and an inscription in Greek devoting it to the nymphs (Holleaux 1909: 17 ff).

The structure found at Bylazora, like that of Delos, is a stepped pool. This type is the oldest and easiest to build: a space dug into the ground or into the rock to allow water to drain in and a staircase that leads to it (Glaser 2000: 414 ff). There are numerous examples all around the Mediterranean world, from Minoan to Roman times. However, since Hellenistic times there existed a more efficient hydraulic technology to build pools and cisterns for daily use, utilizing water conduits and aqueducts. But conservatism is a well-known characteristic of religious practice, in cult and architecture. And that is what we see in the Minoia Fountain of Delos and also in the sacred pool of Bylazora. Any Greek who walked around the Minoia Fountain of Delos in the third century BC would know that this was not an ordinary well or cistern but a sacred structure, as might a Paionian seeing the pool of Bylazora.

The pool's position at the foot of the hill, its proximity to the river, and the absence of other structures around it suggest that this pool was in a clearing large enough to accommodate crowds for celebrations. Most importantly, the pool is oriented to the point on the horizon where the sun sets on the summer solstice. This is, of course, a special date, full of meaning in the ancient world, and whose significance is well attested. Therefore, we should not take the orientation of the pool of Bylazora as something casual or accidental, but something quite deliberate and intentional.

We suggested that the upper steps were used by many more people than the lower ones, and had to be replaced. The relative lack of wear on the lowest steps, compared to the middle steps, suggests that not everyone would descend to the level of the water. It is possible that the descent was reserved for a privileged elite, perhaps the priestly caste.

Possibly the most important day at the sacred pool was sunset at the summer solstice, which might be observed from the upper steps of the pool. After the solstice celebration, it is plausible that people could have come during the whole year not only from Bylazora, but also from other cities, to benefit from the healing properties of the waters. The water from Knezje to this day is noted for its purity and freshness. Curiously, Polyaenus (*Stratagems* 4.12.3) speaks about baths next to the Astibo River (near modern-day Stip, Republic of Macedonia) where the Paionian kings were crowned.

However sure we may be of the sacred character of the pool of Bylazora, we must emphasize that no one has discovered any archaeological material in or around the structure that allows us to confirm or deny the existence of any particular ritual or belief.

## BIBLIOGRAPHY:


**Antoniou, G.** et al. "Water Cistern Systems in Greece from Minoan to Hellenistic Period". In: *Proc. of 1st IWA International Symposium on Water and Wastewater Technologies in Ancient Civilizations*, 28-30 October 2006, Iraklio, Greece, pp. 457-462.

**Gerogiev, Zoran.** "Early antique Tower-wells in Brazda, near Skopje, and Knezje, near Sveti Nikole". 1994.

**Glaser, Franz.** "Fountains and Nimphaea", *Handbook of Ancient Water Technology*, Wikander, O. Ed. Boston. 2000. 414 f.

**Holleaux M.** *et al. Exploration archeologique de Delos : faite par l'Ecole francaise d'Athenes sous les auspices du Ministere de l'instruction publique ... / publiee sous la direction de Theophile Homolle et Maurice Holleaux* Fontemoing et Cie, editeurs, Paris. 1909.

**Martin-Romo, Rodrigo de la Torre.** "Técnicas pre-industriales de la talla en piedra" en *Los Retablos: técnicas, materiales y procedimientos.* 2006.

**Popovsky, Kiril.** and **Lund, John**. *Geothermal Energy Resource of Macedonia.* U.S.A./Macedonian scientific study, 1996/1999.

**Popovsky, Kiril.** and **Gorgieva, Mira**. "Thermal Spas in Macedonia", *International Summer School on Direct Application of Geothermal Energy.* Geothermal Association of Macedonia – MAGA. 2008.

**Radoeva, Vania.** "Los Tracios." *Revista de Arqueología.* Nº 344. 2010. pp. 50-59.

# Evidence for Lime-Burning at Bylazora

**By Danny McAree**

During excavations at Bylazora, Republic of Macedonia in 2010, TFAHR expanded its research area from the propylon and associated buildings in Sector 3 of the ancient acropolis to Sector 6, further to the west.

**Figure 46.** Soil flecked with lime.

In this area, the brown, sandy clay loam topsoil was found to contain huge amounts of flecks and fragments of compact white material. Not slivers or fragments of stone, which might be expected from the extensive dismantling and "robbing" of the stonework of the ancient buildings, but a softer material initially identified as lime mortar or lime plaster (**Fig. 46**).

A detailed examination of representative samples of this material has shown that although they are all lime, they contain no added sand, aggregate, or other inclusions that might be expected if they were the detritus from the demolition of buildings bonded or plastered with lime mortar or plaster (McAree 2010).

In addition to the frequent small fragments of lime, there were large weathered pieces of lime, up to 0.35m. in length, which had clearly been heated or burnt, turning the stone dark red or purple; the interior of the rock displayed a very distinctive pale blue-green hue. Unlike normal chalk or limestone rock, this material could easily be broken in the hand, normal rock requiring a stiff blow from a pick or hammer.

Also present were occasional larger pieces of limestone rock, up to 0.6m. long, exhibiting "crazed" cracking across their surfaces, clearly the effect of sustained heat or burning (**Fig. 47**).


**Figure 47.** Heat crazed and cracked limestone.

To date no evidence for either clamp or pot kilns has been observed at Bylazora. However, field excavations of 2nd and 3rd century Roman lime kilns and numerous medieval and post medieval lime kilns in Great Britain and in Europe have all produced similar circumstantial evidence (Dix 1979, Johnson 2002, Williams 2004, Grant and Chambers 2005, McAree 2007 and 2010).

The "calcining" of the lime on site produces a lighter (up to 30% weight loss after firing) and softer lime "shell" which must then be broken and ground down to a powder for mixing in mortar and plaster, or for use as a lime wash. This process inevitably results in abundant flecks and fragments of "calcined" lime being distributed around the work area.

The heating of the limestone in the kiln is a less than exact science. The stone directly in contact with the burning fuel often over-cooks, resulting in discolouration and further chemical changes which make it useless for either mortar, plaster, or for liming of agricultural land. This is a common waste product of the firing process and the distinct colouration makes it easily identifiable in the archaeological record. The changed chemical balance also results in a softer, friable material, even after many years of exposure to water and carbon dioxide in the atmosphere.

Stone at the periphery of the kiln process is heated and cracked as gasses are expelled, but often fails to fully "calcine." These heat-cracked stones are also commonly found in the vicinity of areas used for the processing of limestone.

Fragments of burnt or "fired" clay were found across the excavation area, together with fragments of a slag-like material, clearly the result of intense heating but lacking the metallic residues to be found in metal or glass working (**Figs. 48**).

**Figure 48.** Examples of burnt clay and slag.

One sample was found to be a thick section of fired clay containing fragments of broken pottery acting as grog to prevent cracking and spalling in high temperatures. Adhering to this was a layer of concretion formed from mineral salts and ash up to 50 mm thick (**Fig. 49**).

**Figure 49.** Kiln lining with charcoal, ash and mineral slag deposits.

Examination of this sample by specialists in both ancient metallurgy and pre-historic industrial techniques has confirmed that it represents a clay kiln or furnace lining. It has clearly been exposed to extreme temperatures, certainly in excess of 1000°, and probably formed part of the floor of a kiln or furnace (Bridgeford 2010, Chapman personal communication).

Chemical examination of the slag reveals it to be a mix of mineral salts and wood ash. The mineral salts include alumina and silicates as well as sulphates, some iron salts and traces of magnesium and sodium. These salts are all common trace elements in limestone, particularly limestone of the "hydraulic" varieties (Gilks 2010). Of particular interest at Bylazora was a series of carved limestone blocks representing the major architectural elements of a classical Doric order building (**Fig. 26**). Although there were squared and carved triglyph-and-metope and geison blocks, they had not been removed for re-use elsewhere but had been deliberately broken into smaller, more manageable pieces (**Fig. 50**).

**Figure 50.** Deliberately broken limestone blocks from a Doric order building.

It would be normal for limestone intended for lime-burning to be broken into pieces up to about 0.5m. long. Although the blocks recovered were up to 1.2m. long, the evidence of tool marks indicates they had been deliberately broken, not cracked in the course of dismantling or destruction. It is probable that these stones are a stockpile robbed from the sacked city and were awaiting further processing when they were abandoned.

Given all the assembled archaeological evidence in this part of the site, it seems clear that extensive lime-burning was taking place in and around the immediate vicinity of the collection of dressed and decorated limestone blocks. In the absence of evidence for a kiln, the nature of the lime-burning process cannot be definitely proven, but the presence of clay kiln lining and the volume of residue from lime-burning would indicate the use of a stone lined lime kiln.

The ancient city of Bylazora was occupied from the 7th to the 2nd century BC, when it was sacked and the site abandoned. By this time the Romans were past masters at producing both lime for mortar, and for use in concrete. The establishment of Roman Stobi, would have provided an opportunity and an impetus for the abandoned site of Bylazora to be stripped of all its useful building stone, that stone too small or too detailed for use elsewhere being consigned to the lime kilns established on site.

Given the difference in weight following "calcining," it was far easier and profitable to transport the processed lime to Stobi than to carry waste stone that distance for processing there.

It remains for future excavation to determine if the few decorated stone fragments abandoned by the lime-burners are all that is left of the rich architectural heritage of Bylazora's Doric building.

## BIBLIOGRAPHY:


**Bridgeford, S,** 2010 *Examination of industrial residue, Sample 1/2010: Bylazora*, Unpublished client report

**Dix, B,** 1979 'Roman lime-burning' in *Brittania* 10

**Gilks, K J,** 2010 *Analysis of mineral deposits on burnt clay sample: Bylazora Sample 1/2010,* Unpublished Client Report, Independent Analytical Laboratories Limited

**Grant, D,** and Chambers, M J, 2005 *Quarries, furnaces and kilns, industrial processes in the post-Roman era,* Research Paper 23, Greece and the Balkans

**Johnson, D,** 2002 *Limestone Industries of the Yorkshire Dales,* Tempus

**McAree, D F,** 2007 *Archaeological excavation at Cotes Road, Barrow upon Soar, Leicestershire,* 2006, Northamptonshire Archaeology Report 07/148

**McAree, D F,** *2010 Archaeological excavation at 136 Cotes Road, Barrow upon Soar, Leicestershire,* 2009, Northamptonshire Archaeology Report 10/11

**Williams, J,** 2004 *Lime-burning in West Sussex, and the Newbridge Wharf Limekilns, Billingshurst,* Sussex Archaeological Collections, Vol 142

**Williams, R,** 2004 *Limekilns and Lime-burning,* Shire Album 236


## The Texas Foundation for Archaeological and Historical Research

thanks the following participants in our 2010 excavations:

### THE TFAHR INTERNATIONAL FIELD SCHOOL

Pablo Aparicio (Spain)
Kyle Egerer (Michigan, USA)
Padraic Emparan (California, USA)
Alissa Fitzsimons (Ireland)
Daniela Fuchs (Germany)
Gail Gant (Texas, USA)
Deborah Haberman (Washington, USA)
Nicholas Johnstone (Scotland)
Elina Larravide (Maryland, USA)
Victor Lopez (New York, USA)
Adrien Louarn (France)
Francis Malec III (California, USA)
Elizabeth de Marigny (Texas, USA)
Eulah Matthews (Texas, USA)
Diane Mattly (California, USA)
Daniel McAree (England)
Matthew McTernan (England)
Karoline Mikkelsen (Norway)
William Neidinger (Texas, USA)
Bridgid Purcell (Ireland)
Joseph Rantz (Georgia, USA)
Candace Richards (Australia)
Andrew Rizzo (Colorado, USA)
Teresa Southwell (Texas, USA)
Slawomir Szyszka (Poland)
Petra Zvireci (Czech Republic)

### VISITORS FROM THE UNITED STATES

David Warden, Lucia Warden and Stephan Warden of Houston, Texas

### AND OUR MACEDONIAN COLLEAGUES

Aleksandar Danev, Stefan Danev, Trajce Natsev, Zvonimir Nikolovski

**Workers from Sveti Nikole and Knezje:**

Nedzat Ajdinov, Grozde Davidov, Cvetko Eftimov, Cvetko Jakimov, Sase Kostadinovski, Stanojko Kostadinovski, Goran Milevski, Nenad Ordev, Mishko Tosev, Goko Trajcev, Mane Trajcev, Dragan Trajkovski

### UNITED STATES PEACE CORPS VOLUNTEERS:

*The following United States Peace Corps Volunteers worked alongside the TFAHR International Field School on their vacations and days off:*

John Bannon, Meredith Brandstetter, Jordan Calhoun, Jane Clark, Harpreet Datt, Sarah Goldberg, Kristen Halseth, Nathaniel Hussey, Catherine Kalinowski, Heidi Kleister, Jennifer Knowles, Anna Koivu, Phil Lampron, Jessica Meyer, Lillian Mizrahi, Amanda Moskal, Kerry Plath, Kaylee Poleschook, Jillian Schuster, Jennifer Wells. This volunteer effort was coordinated by Jennifer Wells.

# The 2010 TFAHR International Field School

THE TEXAS FOUNDATION FOR ARCHAEOLOGICAL & HISTORICAL RESEARCH
2010 EXPEDITION TO BYLAZORA (Sveti Nikole)

LOCUS NUMBER

AREA / SECTOR

OPEN DATE — OPEN LEVEL

CLOSE DATE — CLOSE LEVEL

LOCI BELOW

LOCI ABOVE

LOCUS TYPE
TOPSOIL, GRAVE, WALL, FLOOR (BEATEN EARTH), FLOOR (PLASTER), FLOOR (OTHER), OBSTRUCTION LEVEL, RUBBLE, ASH, PIT, FILL, INSTALLATION, OVEN / KILN, OTHER

DESCRIPTION

NAMES: