



THIASOS

RIVISTA DI ARCHEOLOGIA E ARCHITETTURA ANTICA

2020, n. 9.2

IN SOLO PROVINCIALI

*Sull'architettura delle province, da Augusto ai Severi,
tra inerzie locali e romanizzazione*

a cura di Giuseppe Mazzilli

«THIASOS» Rivista di archeologia e architettura antica
Direttore: Giorgio Rocco
Comitato di Direzione: Monica Livadiotti (vice-Direttore), Roberta Belli Pasqua, Luigi Maria Calìò
Redazione: Davide Falco, Antonello Fino, Chiara Giatti, Antonella Lepone, Giuseppe Mazzilli, Valeria Parisi, Rita Sassu
Anno di fondazione: 2011

DIANE FAVRO, *The Unequal Triangular Obelisks of Anatolia*

Il contenuto risponde alle norme della legislazione italiana in materia di proprietà intellettuale ed è di proprietà esclusiva dell'Editore ed è soggetta a copyright.

Le opere che figurano nel sito possono essere consultate e riprodotte su supporto cartaceo o elettronico con la riserva che l'uso sia strettamente personale, sia scientifico che didattico, escludendo qualsiasi uso di tipo commerciale.

La riproduzione e la citazione dovranno obbligatoriamente menzionare l'editore, il nome della rivista, l'autore e il riferimento al documento. Qualsiasi altro tipo di riproduzione è vietato, salvo accordi preliminari con l'Editore.

Edizioni Quasar di Severino Tognon s.r.l., via Ajaccio 41-43, 00198 Roma (Italia)
<http://www.edizioniquasar.it/>

ISSN 2279-7297

Tutti i diritti riservati

Come citare l'articolo:

D. FAVRO, *The Unequal Triangular Obelisks of Anatolia*,
in G. MAZZILLI (a cura di), *In solo provinciali, Sull'architettura delle province, da Augusto ai Severi, tra inerzie locali e romanizzazione*, *Thiasos* 9.2, 2020, pp. 177-194.

Gli articoli pubblicati nella Rivista sono sottoposti a referee nel sistema a doppio cieco.



THE UNEQUAL TRIANGULAR OBELISKS OF ANATOLIA

Diane Favro

Keywords: funerary obelisk, triangular design, Roman construction, Nicaea, Hierapolis

Parole chiave: obelisco funerario, forma triangolare, costruzione romana, Nicea, Hierapolis

Abstract

In the second century AD, curious obelisk tombs appeared in Bithynia and Phrygia. Unlike monolithic Egyptian uprights, these were composed of multiple blocks and triangular plans. Epigrams imply solar associations as typical with Egyptian obelisks, yet the spires were not monolithic and had no explicit Egyptian features. Pragmatic concerns may have inspired the unusual configuration. The tapered forms exploited broad extra-urban vistas. The triangular shape reduced the overall mass and weight, while the ashlar coursework facilitated construction, thus reducing costs. Another funerary obelisk in Thracia reverted to the normative square obelisk shape, implying a conservative transfer of pattern in a more isolated province. Though anomalous, the triangular memorials from Asia Minor help clarify the motivations for appropriating, adapting, and constructing obelisks across the Roman world, and underscore the value of broadening discussions beyond the canonical to the exceptional.

Nel II sec. d.C., in Bitinia e Frigia furono realizzate alcune singolari tombe a forma di obelisco. Diversamente dai monumenti egizi, monolitici, quelli microasiatici erano composti da diversi blocchi, apparecchiati secondo una pianta triangolare. Se i testi di antichi epigrammi rimandano a una chiara associazione con il Sole, com'è tipico in Egitto, le strutture in esame, che non sono monolitiche, mancano tuttavia di esplicite caratteristiche riconducibili ai prototipi egizi. Sono forse aspetti pratici ad aver ispirato questa insolita configurazione: la forma svettante ne favoriva un'ampia visibilità, a raggio extraurbano; la pianta triangolare ne conteneva la massa complessiva e il peso; l'opera muraria in blocchi sovrapposti ne agevolava la costruzione, riducendone così i costi. In Tracia fu realizzato un altro obelisco funerario che ripeteva la canonica pianta quadrangolare, rimandando a un'esportazione conservatrice del tema, in una provincia più remota e isolata. Pur anomali, i monumenti funerari a pianta triangolare in Asia Minore contribuiscono a chiarire le ragioni alla base dell'adozione, dell'adattamento e della costruzione di obelischi nel mondo romano, sottolineando l'importanza di ampliare l'indagine oltre ciò che è canonico e sino alla scala dell'eccezionale.

Though associated with Egypt, obelisks are strongly linked to ancient Rome. The first emperor Augustus relocated several obelisks in Egypt and ordered the transport of at least four large monoliths to his capital. Subsequent emperors followed his example, raising enormous Egyptian originals (and imitations) at racetracks, sanctuaries, and tombs at the great city on the Tiber. The Romans admired obelisks as symbols of conquest rife with solar associations; equally important they took pride in the transportation and re-erection of the giant stones as showy demonstrations of their own technological and logistical expertise¹. The powerhouse imagery of giant obelisks in imperial capitals has overshadowed their deployment elsewhere. Over centuries of robust obelisk literature production, only episodic references have been made to smaller examples situated in funerary gardens and sanctuaries of Egyptian cults. Similarly, Roman examples produced outside Egypt are often disparagingly described as “fake” or “false”, and thus not worthy of deep consideration². Slight attention has been given to stone needles that appeared in a few ancient Italian cities, even less to those elsewhere in the Empire. This situation has precluded the study of similar building forms which accepted – and resisted – established definitions and expectations. An innovative exploitation of obelisks to mark tombs in Roman Asia Minor provides a valuable case study stimulating consideration of the architectural form, function, and

¹ FAVRO 2018.

² Only in recent years have Roman-made works in Egyptian styles

begun to be reassessed and contextualized: SWETNAM-BURLAND 2015, pp. 314-315.



Fig. 1. Map of Eastern Anatolia and Thrace (rendering by A.).

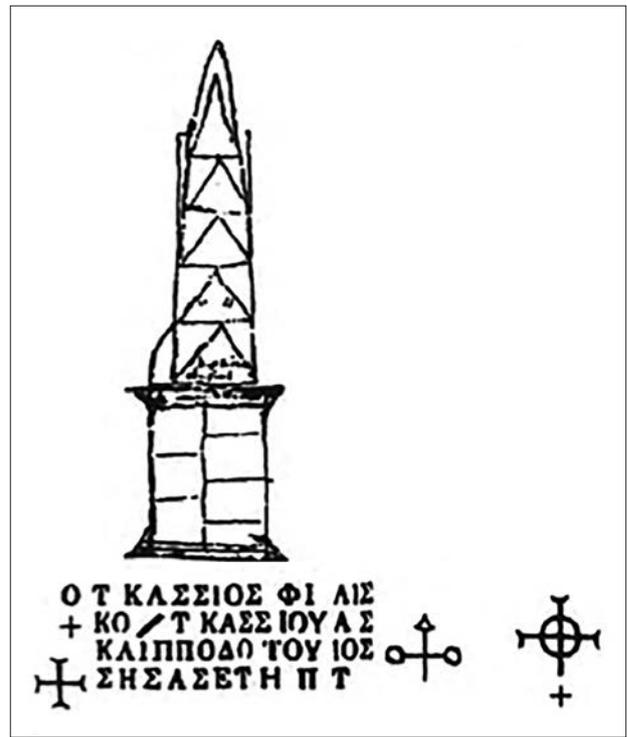


Fig. 2. Drawing of Beştaş Funerary Monument and inscription near Nicaea by Dernschwam; note the graphic representation of the triangular shape for each stone course (after DERNSCHWAM, BABINGER 1923, p. 158).

subsequent influences of these objects far outside the ancient capital cities, challenging the absence of anomalies from canonical discussions.

An anomalous obelisk

In 1555 the German-speaking businessman (Fugger) Hans Dernschwam (1494-1568) was in Constantinople as part of a European delegation to the Ottoman sultan Suleyman I³. Recording a trip to Amasya along the highway north of Nicaea (Iznik) he wrote:

“As we walked on this plain, on the side of the road among the fields we saw an obelisk... From the ground up it is raised on large rectangular [quadrangular] blocks of stone. Over [above] these layers there is a finial [spire] 1 ¼ arm lengths high and a width of ½ arm lengths high or more. On top of this are 5 pieces of triangular shape placed on top of each other in a visually pleasant way is a monument which becomes smaller as it goes up and at the very top becomes very pointed. On it there is an inscription in Greek... On the triangular block above it there are two holes”⁴ (figs. 1, 2).

Two centuries later the English prelate Richard Pococke (1704-1763) took a similar trip and wrote:

“On the twenty-first, we set out and travelled on the north side of the lake [Iznik], and in about four hours came to an obelisk, about a mile to the north of it; the people call it Besh-Tash [Beştaş = five stones] because it consists of only that number; ... it is of grey marble, and of a singular kind, for it is

³ Dernschwam’s detailed diaries in High German were not published until the late 19th century, though their content greatly informed the descriptions by Ogier Ghiselin de Busbecq published in 1581, and repeatedly republished and translated: BUSBECQ 1581; DERNSCHWAM, ÖNEN, BABINGER 1992.

⁴ *IK* 9, no. 85; DERNSCHWAM, ÖNEN, BABINGER 1992, pp. 215-216; translation of Dernschwam by F. Yegül. The square pedestal base

(ca. 3.35 m tall) was composed of a stepped platform and a plinth chastely ornamented with lion paws and palmettes at the corners: SCHNEIDER 1943, p. 7, Pls. 1-2; MERKELBACH 1987, pp. 33-34. The holes on the obelisk’s sides 2.5 m above the base indicate the placement of bronze ornament or statues. Note that measurements given are approximate, as these monuments have not been published in full.

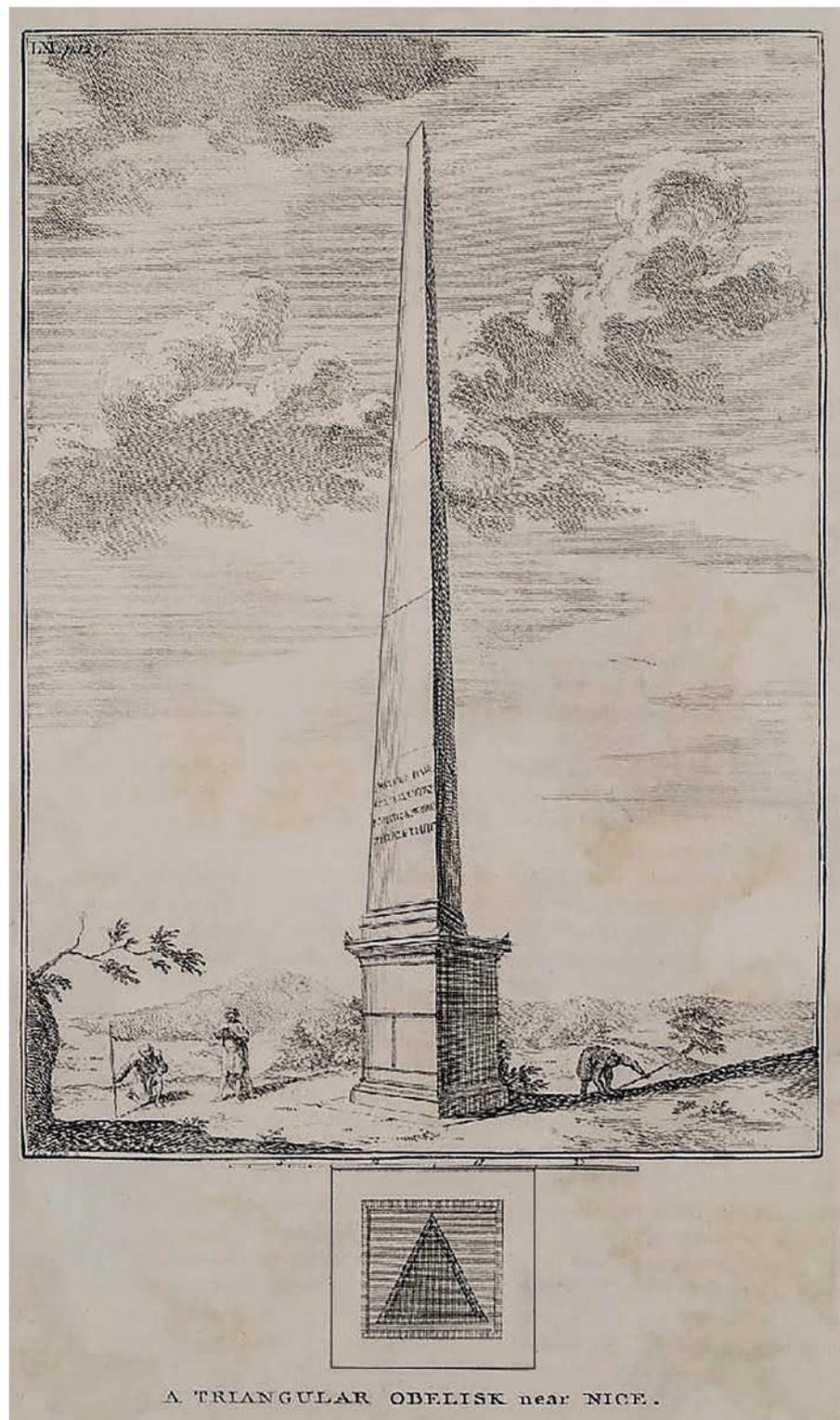


Fig. 3. Etching of Beştaş Funerary Monument near Nicaea (after POCOKE 1745, Pl. LXI).

triangular, and stand on a base and pedestal, six feet nine inches square, and about eleven feet high⁵. There is an inscription on the south side of it, from which one may conclude, that it was erected as a sepulchral monument, probably to some great citizen of Nice(a); The import of the inscription is, that C. Cassius Philiscus, the son of C. Cassius Asclepiodotus lived eighty-three years⁶ (fig. 3).

⁵ Two or more courses originally sat atop the remaining stones, rising to a total of about 15 m in height. Suggestions for the lost crowning element include: a simple pointed stone or statue of a Nike figure,

bird (eagle?), or the deceased.

⁶ POCOKE 1745, p. 123.



Fig. 4. West corner of Beştaş Funerary Monument near Nicaea (A.'s photo).

The *Cassii* were a prominent Bithynian family, ancestors of the statesman and historian Cassius Dio (d. 235). Tacitus records that C. Cassius Asclepiodotus was exiled by Nero after the Vinician conspiracy of 66 AD, but later rehabilitated by Galba⁷. His long-lived son probably died around 120 AD and was memorialized with the obelisk, though the burial chamber has not been excavated⁸.

The two cited descriptions and accompanying drawings of the Beştaş memorial are provocative and engaging. Despite the early publication of a scaled illustration by Pococke and repeated references to the “triangular obelisk” on the outskirts of Nicaea by other travellers and epigraphists, this funerary monument never received much scholarly notice⁹. Identification of another Roman triangular funeral memorial at Hierapolis in Phrygia, known as the Tomba del Solitario, likewise has not resonated in broader scholarship about obelisks, which has eschewed such ancient aberrant forms. This unequal treatment is especially surprising given the pointed interest in triangular shapes during the Renaissance when humanists sought allusions to the Christian trinity. Alberti postulated the existence of three-sided obelisks and pyramids in antiquity, and some humanists created their own variants¹⁰. The Anatolian obelisks they remain little known.

⁷ P.C. Tacitus, *Annales*, 16, 33; Cassius Dio, *Historia Romana*, 62, 26.

⁸ BEKKER-NIELSEN 2008, pp. 109-114. Nyquist suggests that a stone knob (0.3 m tall) Southeast of the obelisk, may mark the entrance to the *hypogeum*: NYQUIST 2014, pp. 14-16. The minutes of the Grand National Assembly of Turkey mention illegal digging of a subterranean chamber, but give no specifics: ANONYMOUS 2004.

⁹ For example, Pococke's image of the monument is reproduced in an article about Iznik, but not mentioned in the text: MANGO 1951. A

similar historical amnesia occurred with the towering triangular spire designed by architects Wallace Harrison and J. Andre Fouilhoux for the 1939 New York World's Fair, dubbed the “Trylon” (a neologism formed by merging “triangle” and “pylon”).

¹⁰ L.B. Alberti, *De re aedificatoria*, 8, 3. The romance novel *Hyperotomachia Poliphili* of 1499 illustrated a Trinitarian Obelisk supported by sphinxes: CURRAN 2007, pp. 140, 152.



Fig. 5. Inscription on southwest side of Beştaş Funerary Obelisk near Nicaea (A.'s photo).

Skewering the skies

Both Dernschwam and Pococke resolutely identified the Beştaş monument as an obelisk, though it deviates in significant ways from the definitions provided by Roman sources. Following Herodotus, Pliny the Elder in the first century AD described a monolithic stone upright of Aswan granite in Egypt as *obeliskos*, pointedly using the Greek word for “little skewer” or “spit” rather than the local Egyptian term *tekhen* (*techenu*, “to pierce”); he associated such monoliths with solar cults, specifically equating their tapered form with the sun’s rays¹¹. Writing at the end of the fourth century, Ammianus Marcellinus (d. 400 AD) gave what was by then (and remains) a canonical description:

“Now an obelisk is a very hard stone, rising gradually somewhat in the form of a turning-post [*meta*] to a lofty height; little by little it grows slenderer, to imitate a sunbeam; it is four-sided, tapers to a narrow point, and is polished by the workman’s hand. Now the infinite carvings of characters called hieroglyphics, which we see cut into it on every side, have been made known by an ancient authority of primeval wisdom”¹².

The Beştaş Monument near Nicaea in Bithynia challenges these characteristic features (fig. 4). The spire is composed of tall marble pieces without mortar, not a monolith of hard granite; its sides narrow sharply rather than “little by little”. The surface is carved not with Egyptian hieroglyphs, but with a Roman funerary inscription written in Greek¹³ (fig. 5).

¹¹ Pliny the Elder, *Naturalis Historia*, 36, 14.

¹² Ammianus Marcellinus, *Res Gestae*, 17, 4, 7-8. Classical translations

are from the Loeb Classical Library unless otherwise noted.

¹³ *IK* 9, no. 85.

Most surprisingly, the plan is an equilateral triangle rather than the usual rectilinear shape of Egyptian examples¹⁴ (figs. 2, 3). Neither Pliny the Elder nor other ancient writers noted the number of sides when describing obelisks. Many ancient (and Renaissance) authors used the terms “obelisk” and “pyramid” interchangeably, a somewhat appropriate confusion given the modern identification of a three-sided geometric shape as an elongated tetrahedron or triangular pyramid¹⁵. One last distinction is important to note. In Egypt, both pyramids and obelisks were capped with a four-sided *Benben* or *pyramidion*, associated with the rays of the sun, the creation mound of the Egyptian god Atum, and the cardinal points; being rectilinear this fetish would not fit atop a triangular spire.

Cultic solar connotations arise in almost every ancient and modern discussion about obelisks, inspired by the forms’ evocative, pointed interaction with the sky. Five Doric Greek epigrams glorifying another tomb near Nicaea (specific location unknown) imply erection of another obelisk, possibly also triangular in shape¹⁶. The stanzas describe a memorial by Lake Ascania (Iznik Gölü) erected by the son of Sacerdos to honor his father and his mother Severa. Among many accomplishments Sacerdos is praised as the savior of Nicaea¹⁷. After the city was leveled by an earthquake (121 AD), he attended the *Panhellenia* games in Athens in the 130s as Nicaea’s representative; while there he successfully appealed to Hadrian for post-earthquake support. Sacerdos died in Attica, but was memorialized at his hometown in Bithynia¹⁸. The poems lauding his monument repeatedly allude to solar associations:

“Boast, Nicaea, of the tomb as tall as heaven
and the pyramid (*πυραμιδα*) that is neighbor to the sun,
Which hides the hierophant renowned among morals
buried in its measureless monument.
This is the great sepulcher of Sacerdos, of Severa is
this memorial, to which heaven, not Hades, is neighbor”¹⁹.

“The heavenly memorial and the point (ray) of beaten gold
matches the life of a man who found even his burial
neighboring the stars”²⁰.

Though described as a pyramid, the references to the towering height of Sacerdos’s tomb and its golden ray (possibly a gilded capstone) imply an obelisk form. After all, a traditional four-sided pyramid design would have been gigantic in order to be described as a “neighbor to the sun”. In contrast, pointed verticality characterizes the obelisk, which operates as a penetrating directional indicator. Though narrow, the polished stone sides of the spire bounced light back to the overarching heavens, a shining reference to eternal cycles²¹. The name “Sacerdos” implies the deceased held an important religious office, though the specific cult cannot be identified²². Given the extant evidence, the most that can be said is that the numerous references to the sun and stars in the texts, as well as the tapering architectural form of the Sacerdos monument emphasized solar or astral immortality²³.

Unfortunately, the poems do not provide any information about the plan of the Sacerdos obelisk. The triangle had mathematical, symbolic, and philosophical significance in antiquity, including an association with universality derived from its status as the smallest number able to describe a plane figure; the form was also linked with divine triads, the arrowhead of Diana or Eros, female power, and Bacchus²⁴. However, the strongest argument for a three-sided design is the proximity of the Beştaş monument. The poetic descriptors of the Sacerdos memorial readily apply to the towering spire of Cassius Philiscus Northwest of Nicaea, indicating a close architectural resemblance. In addition, the *Cassii* are known to have owned property by Lake Ascania. Family ties between the donors of the funerary obelisks could justify the three-sided plan and underscore the generational emphases of both memorials²⁵.

¹⁴ The typical Egyptian obelisk was composed of a frustum (the portion of a pyramid remaining after its upper part has been cut off by a plane parallel to its base) crowned with a small square or rectangular pyramid.

¹⁵ I will refer to the Anatolian triangular spires as obelisks due to their close visual similarity to Egyptian spires, while emphasizing the need for increased scholarly interrogation of terms.

¹⁶ *Anthologie Grecque* 15, nos. 4-8 (inscription now lost). A tenth-century annotation notes that the inscription was “copied at Nicaea near the lake on the obelisk”: MERKELBACH 1987, pp. 159-163; NYQUIST 2014, pp. 11-14, 17-20; BOWIE 2016.

¹⁷ *Anthologie Grecque* 15, nos. 7-8.

¹⁸ Hieronymus, *Chronicon*, 198, 10. The death of Sacerdos is generally placed after 137 AD, the year the *Panathena* was included

in religious calendar of Athens: FERNOUX 2004, pp. 175-176.

¹⁹ *Anthologie Grecque* 15, no. 4.

²⁰ *Ibid.*, no. 5.

²¹ The Egyptians are thought to have associated the triangular sides of pyramids with both the descending rays of the sun and an ascending pathway to heaven. The obelisk, though narrower, has a more pointed connection to the sky (pun intended).

²² Alternatively, Sacerdos could simply be the *cognomen* of the deceased.

²³ MERKELBACH, STAUBER 2001, pp. 159-163. For possible connections of Sacerdos to the imperial cult see DELCHEV, RAYCHEVA 2018, p. 253.

²⁴ JOOST-GAUGIER 2018, pp. 33, 40, 49, 170; NYQUIST 2014, pp. 37, 47, 70-71; DEONNA 1968.

²⁵ BIRLEY 2013, p. 159. Based on a riddle in one of the epigrams

In Archaic and Classical Greece tombs, cenotaphs, and other memorials celebrated the “third father” (*tritopator* or ancestor of the third degree) based on the notion of family memory encompassing four-generations. In Attica such ancestor burials took the form of three-sided platforms and enclosures, though these had little in common with the vertically oriented three-sided obelisks of Anatolia²⁶. Closer in architectural form were a handful of triangular grave markers erected in Attica during the Roman era (most in the second century BC) with tapering rectangular stone uprights forming squat obelisks carved on one or more sides. The majority of these commemorated deceased children, which may explain their short overall size and height (generally around 1 m), a poignant allusion to an unrealized generation²⁷. A few examples were somewhat taller, such as the triangular grave marker for Sosibios of Sounion rising ca. 2 m in the Kerameikos cemetery; the triangular shape of this grave marker may indicate the death of a youth, or that two other generations were to be (or were) buried nearby (fig. 6). The tapered unornamented sides of the Sosibios memorial recall the obelisk profile, but the capping element – a bulbous poppy pod symbolizing sleep – thwarted visual connection to the sky so powerful with the memorials of Egypt and Asia Minor.

The Attic exploitation of triangular grave markers to revere direct ancestors resonates with the familial connections of the Anatolian uprights. The poems of Sacerdos specifically mention son, father, and grandfather²⁸. The provisions for corner statues at Beştaş prompt speculation the sculptures depicted three generations²⁹. Such allusions reinforce generational continuance as a link between the life and death, paralleling the ties between the sun and earth as represented in the imagery of the sun’s rays. Of course, there may have been additional motivations for the triangular form. After all, the Roman predilection for pluralism in meaning resonates in the mash up of Egyptian and Greek artistic elements of the Nicaean obelisks, as well as in the underlying assumptions about their shapes. Extending the inquiry, possible reasons for selecting an anomalous three-sided plan and sharply pointed form may be proposed based on viewer experience and pragmatic architectural concerns.

Grounding the spit

Roman tombs were designed to attract an audience. Placed along roads and at prominent locations they drew the eye, compelling viewers to move closer to learn about the life and achievements of the deceased recorded in inscriptions and reliefs. Augustus flanked the entry to his giant mausoleum in Rome with stele inscribed with a detailed



Fig. 6. Grave marker for Sosibios of Sounion in the Kerameikos Cemetery, Athens, ca. 2 m (photo-rendering by A.).

Bowie suggests that the tomb belonged to C. Cassius Sacerdos, son of C. Cassius Chrestus, a Nicaean notable who died ca. 90 AD: BOWIE 2016, pp. 19-20; *Anthologie Grecque* 15, no. 7.

²⁶ ANTONACCIO 1995, pp. 263-265. A large tomb at Knidos (third century BC) displayed tripods awarded to a deceased athlete. These sit atop two uprights (ca. 9 m) that appear to be triangular, but are actually hexagonal with three short facets between longer concave sides. Such distinctly agonistic monuments do not appear to have

influenced the triangular obelisks under discussion.

²⁷ GROSSMAN 2013, pp. 219-220.

²⁸ References to pious ancestors may have been calculated to ensure family members continued to be appointed to the same priesthoods: MERKELBACH, STAUBER 2001, p. 159; NYQUIST 2015, pp. 19-20.

²⁹ There are no precedents to suggest Sacerdos’ wife was included in a familial trinity; cf. DEONNA 1968, p. 103.



Fig. 7. Glass cameo flask with Egyptianizing scene, Roman, 25 BC – AD 25. Glass, 7.6 × 4.2 cm (The J. Paul Getty Museum, 85.AF.84. Digital image courtesy of the Getty's Open Content Program).

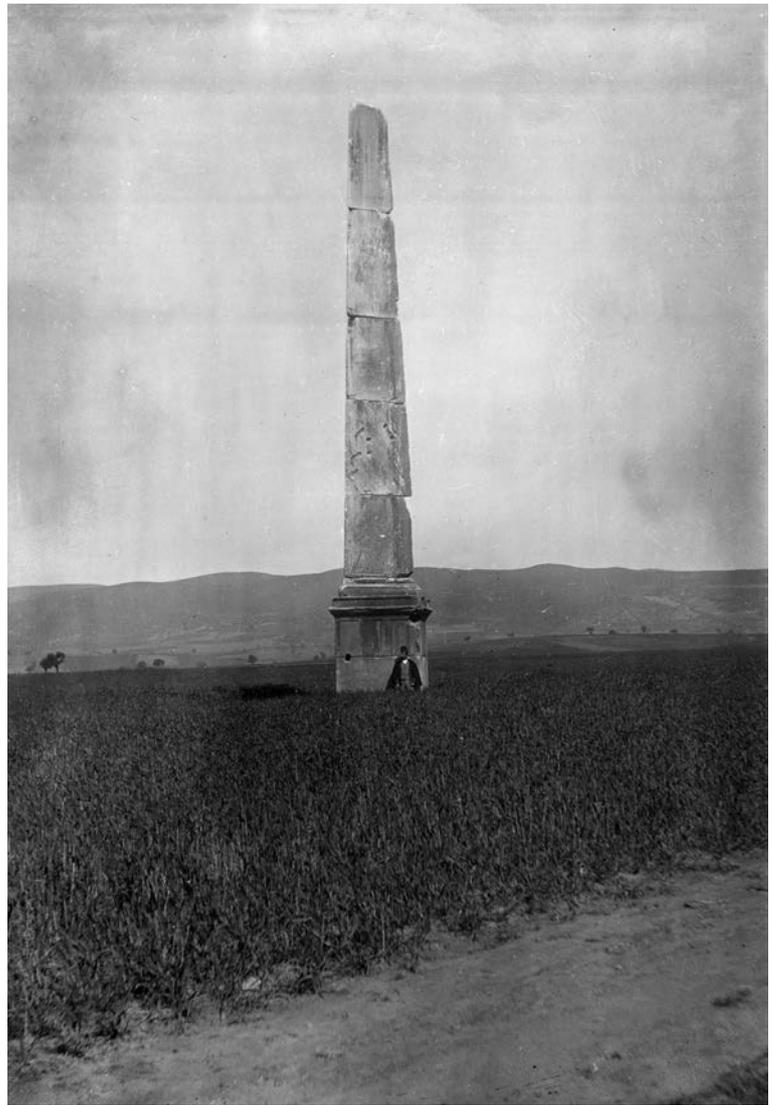


Fig. 8. 1896 photograph of the Beştaş Obelisk near Nicaea (©D-DAI-ATH-Kleinasiens 84; Photo: Körte, courtesy of the DAI Athens).

list of his accomplishments as well as two obelisks (ca. 14.6 m tall), overtly extolling the role of such uprights as door guardians, general associations of Egypt with endurance and eternal life after death, and his conquest of the land of the pharaohs. The first emperor and other Romans expanded the use of obelisks, placing them as mid-space objects with room to breathe, as represented on a small cameo flask of the Augustan age (fig. 7). Southeast of his Mausoleum, Augustus placed a towering obelisk (21.7 m tall) in the middle of a large plaza linked with solar time. Romans moving along the Via Flaminia from both directions found their gaze directed towards other Augustan projects in the *Campus Martius*, much like the sightline of a gun³⁰. At the same time, the obelisk irresistibly compelled people to come closer and move around the spire. Conversely, the Romans situated obelisks on the *spina* of circuses where they emphasized timelessness and verticality, their fixed position contrasting with the ephemeral horizontal action of competitors on the racetrack. The Egyptians raised obelisks by using ramps and manpower, angling the monoliths on sockets cut in relatively low rectangular stone blocks³¹. In contrast, the Romans raised the monoliths atop tall pedestals, in part for technical reasons and in part to provide space for inscriptions at a legible height. This raised position further increased the height and lifting effort, compelling viewers to contemplate the complex engineering required, all features that reinforced the importance of the chosen location³².

Singular funerary markers atop stepped bases have a long history in Asia Minor, as evident with the numerous pillar tombs of central Lycia³³. They continued to evolve and proliferate in the Hellenistic and Roman periods, in part

³⁰ FAVRO 1993. Recent research on the so-called *Horologium Augusti* suggests the obelisk was not the gnomon of a sundial, but a meridian marker.

³¹ ARNOLD 1991, pp. 66-72.

³² For Roman attitudes to architecture and the construction process see REITZ 2012.

³³ Over fifty funerary pillar monuments have been recorded in Lycia from the Late Archaic to the Hellenistic period: MARKSTEINER 2002, pp. 219-225. Lycian stelae are sometimes referred to as obelisks in modern literature, as is the case with the so-called Xanthos Obelisk (ca. 400 BC).

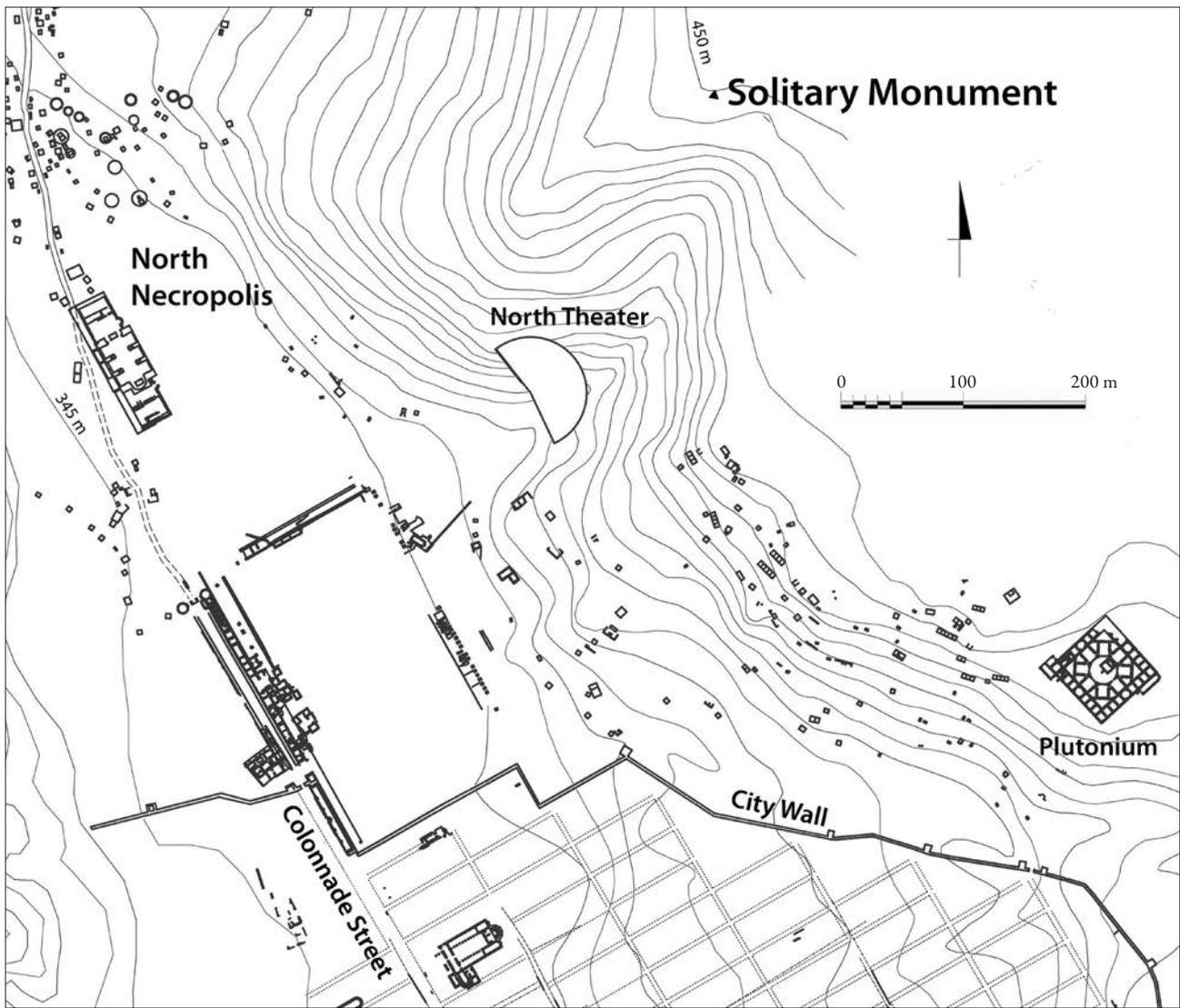


Fig. 9. Map of Hierapolis (rendering by A., after that by Politecnico di Torino and Missione Archeologica Italiana di Hierapolis di Frigia).

energized by greater familiarity with Egyptian obelisks, peaking with the Egyptomania promulgated by Hadrian in the second century AD. Vertical funerary forms offered obvious advantages in the broad open landscapes of Anatolia. Rising above competing tombs in crowded cemeteries, tall uprights drew attention, and could be seen from afar. A text describes the tomb erected near Lake Ascania for Achaïos by his father as “shining” and “what is tall from a distance” (ὕψιφάτης), perhaps yet another triangular obelisk³⁴. Residents of Roman Bithynia often chose isolated positions for their tombs; Cassius Philiscus situated his spire on the plain several kilometers outside Nicaea. Assessment of ancient view-sheds from afar is difficult due to human and natural alterations to the landscape over time, yet some general comments are possible. Today the Roman ground level of the Beştaş spire is several meters below a surrounding olive grove. The ancient view of the obelisk was more dramatic, approximating that shown in a photograph of 1896³⁵ (fig. 8). The lofty structure must have attracted the attention of travelers moving along the well-traveled highway between Nicaea and Nicomedia. Seen from a distance, the monument appeared to be a “standard” four-sided, monolithic obelisk firmly situated in the open space of the plain, the sharp corner angles and receding sides visually enhancing the impression of height. Only upon nearing the tomb did observers become aware the plan was triangular, though this anomaly was countered by typical Roman elements including familiar ornaments and common rectangular pedestal. To read the funerary inscriptions they had to face the only side of the obelisk parallel to the side of the base, a positioning that normalized the obelisk’s appearance (fig. 3). Looking up at the towering shaft, observers read the Greek text that

³⁴ *Anthologie Grecque* 7, no. 701. A triangular shape has been proposed, solely based on the proximity to the extant Beştaş monument: MERKELBACH, STAUBER 2001, p. 164.

³⁵ In the first century BC Vitruvius urged Roman architects to consider viewing distances (*De architectura libri decem*, 6, 2, 2).

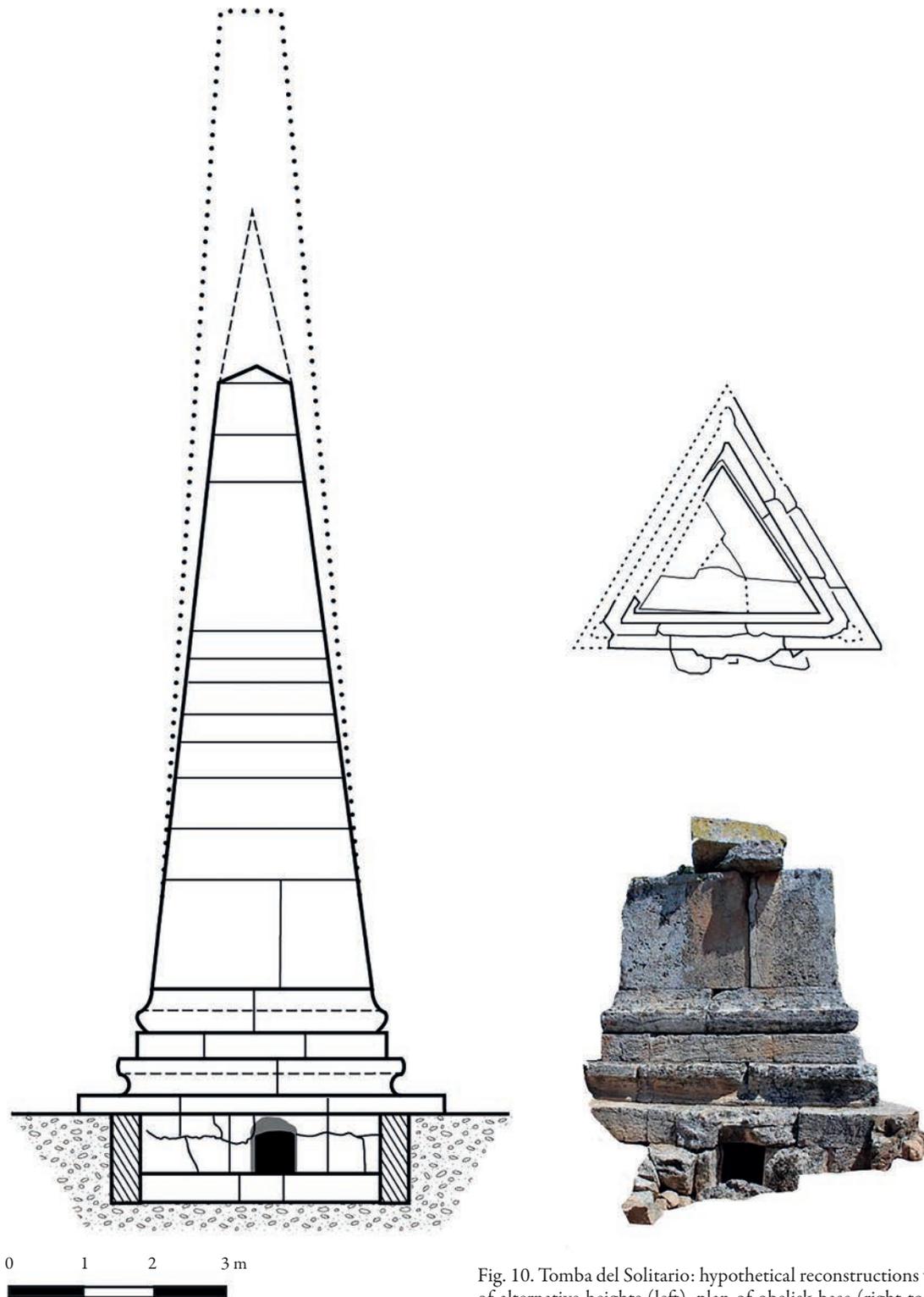


Fig. 10. Tomba del Solitario: hypothetical reconstructions with spire of alternative heights (left), plan of obelisk base (right top), extant remains (right bottom; rendering by A.).

situated the achievements of the deceased within the territory of Nicaea, the rich farmlands probably owned by the *Cassii*, and the temporal context of past and future generations.

Remains of another triangular obelisk are found in Phrygia, at Hierapolis near the border with Caria, reached in about eleven days by sea (a month by foot) from Nicaea by ancient routes³⁶ (figs. 1, 9). The so-called Tomba del Solitario (C13) is dated to the second century AD based on its similarity to the Beştaş tomb and the coarse style of the

³⁶ For route times see SCHEIDEL *et alii* 2019. The primary source for the Tomba del Solitario (C13) at Hierapolis is a fine Master's thesis

by Anne Nyquist, which also explores other triangular funerary memorials: NYQUIST 2014. See also VERZONE 1978, pp. 417,

façade typical of high imperial architecture in Asia Minor³⁷ (fig. 10). The spire stood directly above a small triangular tomb chamber with a door facing Southwest. Partly carved into the living rock, the small *hypogeum* had metal locks on the door and massive walls to support the weight above. A relatively low base with a carved bench, plinth, scotia and torus (the latter unfinished) sat atop the chamber. Large stone slabs (approximately 3.10 x 0.6 m) formed the bottom of the obelisk with a triangular plan. The fallen pieces of greyish white limestone scattered across the site indicate the upper courses decreased in height, and width as the shaft rose. The total height of the original obelisk cannot be easily determined; estimates range from 10 to 15 m, possibly crowned with a pointed capstone³⁸.

The Tomba del Solitario originally stood above the sprawling northeastern necropolis of Hierapolis. As the modern name attests, it was apart from other burials, sitting on the upper slopes North of the city. During the second century AD, wealthy occupants of Asia Minor frequently sought peaceful, isolated, pastoral sites for burial where they could rest eternally amid funerary gardens³⁹. The unknown occupant of the obelisk tomb may have followed this trend, but obviously also wanted his memorial to be seen from afar. Visibility was a challenge at Hierapolis where ultimately some 6,000 tombs jostled for space in the North Necropolis. Perched behind and above the North Theater (elevation ca. 450 m asl), the Tomba del Solitario was about 100 m higher than the roadway lined with tombs that approached the city from the North. As a result, the limestone spire was visible from many locations in the low-lying Lykos Valley stretching to the Southwest⁴⁰. Nearing the town, observers may have seen the upright shaft silhouetted against the sky. Despite its obvious visual attraction from a distance, the Tomba del Solitario itself was too remote and too unadorned to draw visitors closer. It, like the triangular monument of Nicaea, was outside the city, firmly part of the landscape, a human-made monument grounded in the land, yet reaching to the sky.

In the early second century AD people across the empire succumbed to a second wave of Egyptomania championed by the emperor Hadrian even before he first went to the land of the Nile around 130. During early visits to both Nicaea and the Hierapolis area his large traveling entourage was presumably replete with Egyptian and Egyptianizing objects, stimulating the imaginations of local residents who subsequently advertised their awareness with showy monuments in the landscape⁴¹. Yet why did patrons choose to erect obelisks with three sides? And why only at these two specific sites? Of course, prosaic lateral regional influences may be at play. The patron of the Tomba del Solitario may have had familial connections with the *Cassii*; or been active in the same cult as Sacerdos; or may simply have seen the obelisk on a visit to Nicaea. The specific hierarchy of motivations behind the selection of a triangular, multi-stone obelisk designs for these Anatolian tombs may never be clear; religious, solar, numerological, and generational associations, as well as personal preference, are among the valid contenders. A factor infrequently considered, but equally valid, is the pragmatic matter of cost.

Saving a denarius

In addition to social, religious, political, iconographical, functional, and experiential determinants, available technologies, labor, and materials shape architecture. As important, though hard to document for ancient structures, are the patron's finances. The individuals who commissioned the triangular funerary obelisks were obviously wealthy and of high standing. The long-lived Cassius Philiscus had a proud heritage of family members who donated major works in Nicaea⁴²; Sacerdos was venerated by every city in Greece⁴³. The unknown patron of the Tomba del Solitario had the resources to fill his tomb chamber with valuable goods requiring a strong metal lock, and to create a lofty monument that would compel viewers to contemplate his achievements. Wealth, however, does not preclude frugality. Examination of the triangular shafts from the standpoint of cost-effectiveness may provide some insights regarding the choice of this anomalous form.

419; BERNS 2003, p. 159; RONCHETTA 2008; AHRENS 2011. The general presumption is that the Hierapolis tomb was erected after that at Nicaea, though there is no definitive evidence about dating.

³⁷ BERNS 2003, p. 168 f.n. 285.

³⁸ The Solitario Tomb may not have been completed; the torus was left unfinished and some lifting bosses were not removed. On possible height see RONCHETTA 2008; NYQUIST 2014, p. 10 fig. 6. Excavations are needed to clarify measurements, architectural form, and the function of adjacent structures of later date.

³⁹ Ahrens ties preference for funerary gardens to the Second Sophistic movement of the second century: AHRENS 2011, pp. 103-104.

⁴⁰ Visual connections between the Tomba del Solitario and urban structures may inform symbolic associations, but are difficult to

determine. Nyquist suggests a connection with sun worship since the tomb was directly North of Temple C in Apollo's Sanctuary. This temple had an underground sulfurous chamber linking the sun-god with the primeval earth, much as the obelisks linked the sun and burial chambers, yet the function of the temple and meaning of the north alignment require further consideration: NYQUIST 2015, pp. 9, 37; SEMERARO 2014, pp. 17-19.

⁴¹ Hadrian is thought to have stopped in Laodicea on the Lykos on his way to Egypt in 129 AD; if so, he must have visited nearby Hierapolis renowned for its sulfurous springs and *Plutonium*: BIRLEY 2013, p. 223.

⁴² P.C. Tacitus, *Annales*, 16, 33.

⁴³ *Anthologie Grecque* 15, no. 6; BEKKER-NIELSEN 2008, pp. 109-114.



Fig. 11. Relief of obelisk in transit, northeast face of the base for the Obelisk of Theodosius in the hippodrome of Constantinople (A.'s image).

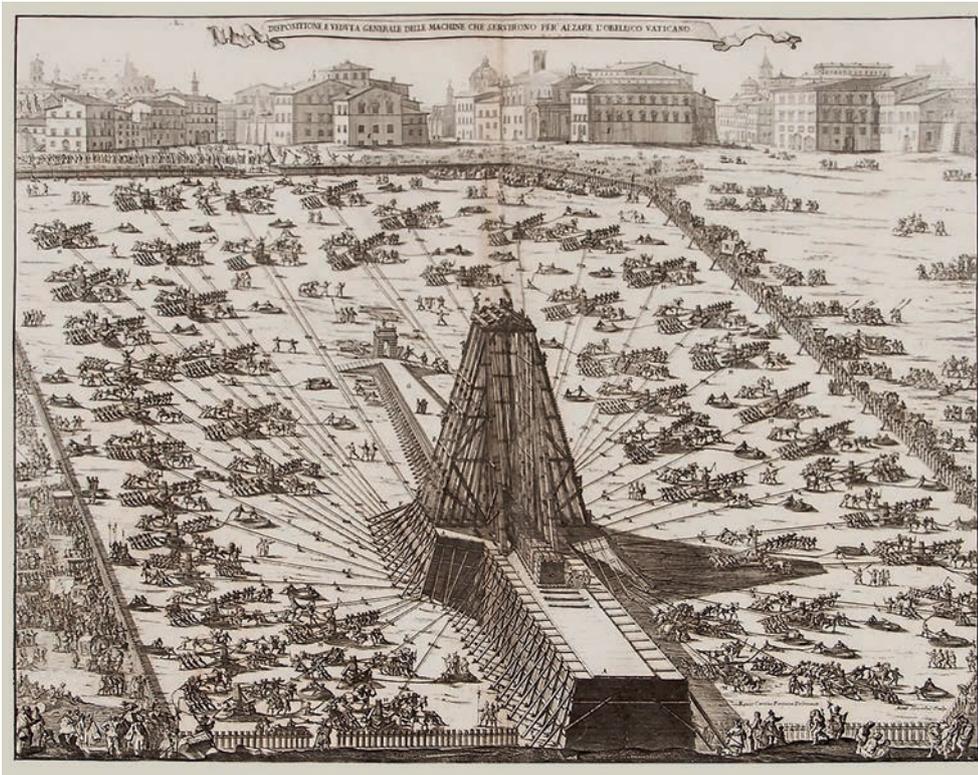


Fig. 12. Relocation of the Vatican Obelisk in Rome under the direction of Domenico Fontana, 1586 (etching by Niccolò Zabaglia, 1664-1750, Public domain).

The desire to erect a towering solitary spire presented notable construction challenges in antiquity. The Egyptians shaped monolithic obelisks from dense granite, some over 25 m in height and weighing several hundred metric tons. In their own day, the Romans valued the great skill to quarry and transport large obelisks, as well as the logistical expertise necessary to coordinate armies of workers and heavy machinery to raise the huge stones⁴⁴. The emperor Augustus relocated Egyptian obelisks to Rome with great fanfare to showcase both Roman engineering expertise, putting the specially-designed obelisk ship on public display after its use⁴⁵. Transport through Rome drew large crowds watching the lengthy teams of oxen pulling the heavy stones, a spectacle depicted on the base for the Obelisk of Theodosius (ca. 390 AD) in the hippodrome of Constantinople (fig. 11). The Egyptians had relied on ropes, hundreds of men, and sand ramps to transfer obelisks from horizontal to vertical positions⁴⁶. In contrast, the Romans deployed enormous cranes, towering wooden lifting towers, and winches, including numerous capstans. Block and tackle pulleys attached to the lifting towers raised a monolith upright from a horizontal transport position; once vertical, the obelisk supported by ropes and iron bands was slowly lowered onto spacers (astragals) atop the base⁴⁷. A similar process was followed in 1586 by the architect Domenico Fontana when moving a large ancient Egyptian obelisk (ca. 326 metric tons) from the Circus of Nero in Rome to the center of the Piazza San Pietro 250 m to the Northeast; the undertaking required ample open space for 900 men, 140 horses, 40 large capstans, 44 winches and a large lifting tower, and took over five months⁴⁸ (fig. 12).

⁴⁴ On the valuation of monoliths for columns and bases in antiquity see YEGÜL 2014, pp. 204, 210.

⁴⁵ Pliny the Elder, *Naturalis Historia*, 36, 14.

⁴⁶ The exact method used by the Egyptians to raise large obelisks remains controversial, but certainly involved hundreds of workers,

sand ramps, and leveraging; CURRAN *et alii* 2009, pp. 30-31. For engaging experiments of different approaches see BARNES 1997.

⁴⁷ FAVRO 2018.

⁴⁸ CURRAN *et alii* 2009, pp. 102-139; ARNOLD 1991.

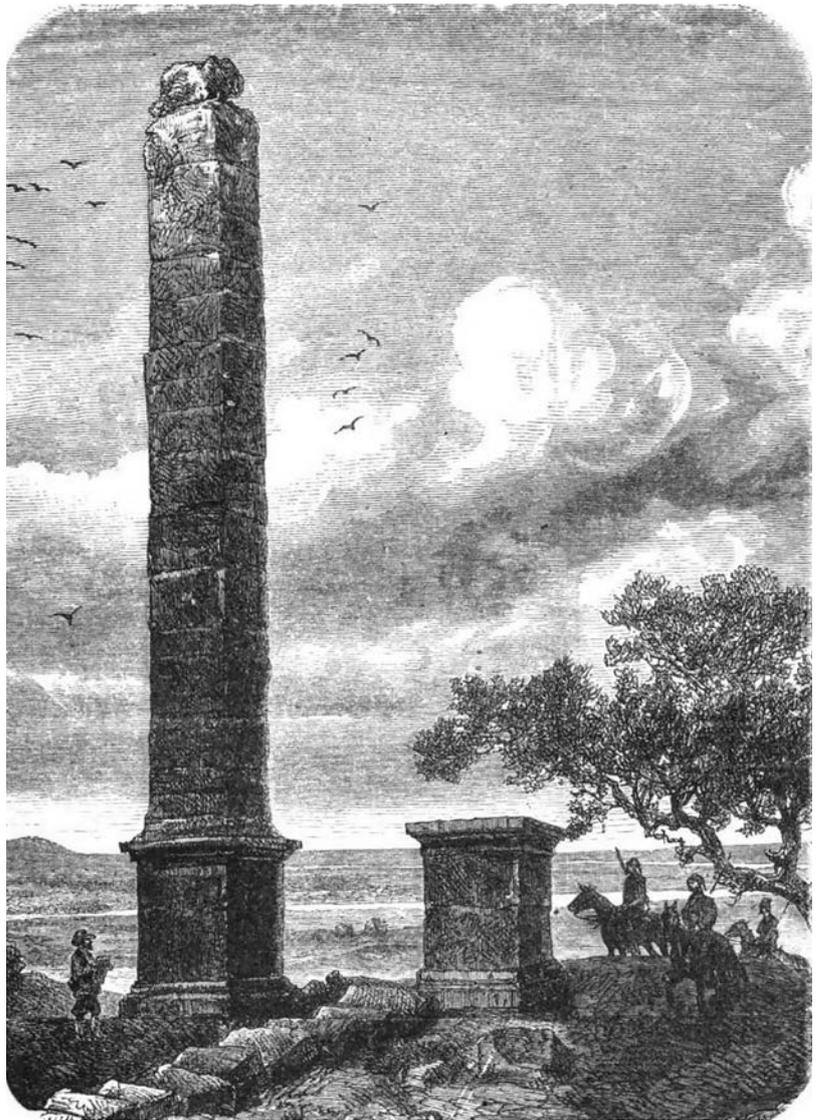


Fig. 13. Nineteenth century etching of Lesicheri Pillars (after KANITZ 1882, p. 5).

If C. Cassius Philiscus and the unknown donor of the Tomba del Solitario had chosen to use monoliths for their funerary obelisks, the expense would have been significant. At Nicaea, proximity to a major road linking to the coast would have facilitated a monolith's transport by water and the relatively flat, uncongested surroundings would have accommodated lifting equipment and workers, but at what cost? Though an obelisk shaft measuring 15 m is less than two-thirds the size of the Vatican Obelisk, it still would have required a massive lifting tower and substantial workforce. At the sloping site of the Tomba del Solitario in Hierapolis, transport would be difficult and extensive groundwork necessary to provide flat space for manipulating a monolith and lifting machinery. The donors of these funerary projects were men of wealth, but not on the scale of an emperor (or pope). Furthermore, in the less-densely populated parts of the Roman Empire, the great spectacle of transporting a monolithic obelisk had limited audience value.

An expedient solution was to create a shaft composed of individual blocks. A rectangular pillar could be easily built using cranes and scaffolds, but expenses increased, and stability decreased, as the design grew taller. A triangular obelisk required less than half the volume of stone needed to build a square one of comparable height – a significant difference to a cost-conscious donor⁴⁹. The choice of ashlar construction of stone courses provided further advantages. At Beştaş the architect had six or more stones pieces, tied together with metal dowels for added strength. Medium sized blocks were easy to quarry and transport, and required less working space on site, simpler machinery, and shorter building schedules, all factors that reduced expenditure. The savings on labor were significant. Four men could lift the largest stone of the Beştaş obelisk shaft weighing approximately 5,000 kg using a *polyspastos* crane with three by five

⁴⁹ The comparative volumes are based on the generalized measurements of the Beştaş Obelisk provided by Pococke. For simplicity, volumes are calculated as if the obelisks were elongated

pyramids 15 m in height; that with a triangular base (1.87 x 1.87 x 1.7 m) has a volume of ca. 7.09 cu m; that with a square base (1.8 m) a volume of ca. 14.45 cu m.



Fig. 14. Lesicheri Pillar, Bulgaria (Powerfox, CC BY-SA 4.0, <https://creativecommons.org/licenses/by-sa/4.0>).

pulleys, several masts, and a large treadwheel⁵⁰. The upper courses of progressively smaller blocks could be elevated with simpler cranes and winches. When completed, the tapered design of a triangular obelisk had smaller angle of repose than a square version; the triangular shape diminished overall wind load, while the sharp corners deflected gusts.

The architect of the Tomba del Solitario further lessened lifting loads, and thus expenses, by having narrower and more courses (possibly eleven) to create the obelisk spire at Hierapolis. The larger lower levels were composed of multiple stone pieces. This strategy greatly minimized the need for heavy lifting machines and workers. At the same time, however, it increased the chance of distortion. The larger stones of the lower courses were held in compression by their own weight along with that of the stones above; smaller stones at the upper levels did not carry sufficient loads to keep them in place. The addition of iron clamps and dowels at the uppermost levels proved insufficient to prevent lateral shifting, which was exacerbated by a significant design weakness. The tall spire rose directly over the subterranean tomb chamber. The architect provided thick walls along the sides of the heavy shaft, but could not prevent deformation. The collapse of the obelisk may have been due to the architect's lack of skill, but the Beştaş and Tomba del Solitario obelisks both convey a sense of experimentation in form and structure providing insights about the creation and ultimate failure of a provincial architectural design.

The atypical triangular form of the Anatolian funerary served specific (if uncertain) symbolic needs and provided highly visible monuments at a reduced cost, but did not resonate across the Roman provinces; no other Roman funerary obelisks in a triangular shape have been discovered. A distant parallel, however, is informative. In Thracia (*Moesia Inferior*) to the East of Anatolia a patron erected two obelisks at a presumed funerary complex about 18 km West of Nicopolis ad Istrum⁵¹ (fig. 13). Both had rectangular bases. One remains partially standing to a height

⁵⁰ DIENEL, MEIGHÖRNER 1997, p. 13; RABABEH 2015.

⁵¹ No tomb chamber has yet been discovered, possibly indicating a memorial complex rather than a tomb. In the late nineteenth century

the Austro-Hungarian explorer Felix Kanitz recorded a fragmentary inscription (now lost) naming a donor (restored as "Claudius Valens" or "Quintus Julius"); the text cannot be securely associated with the

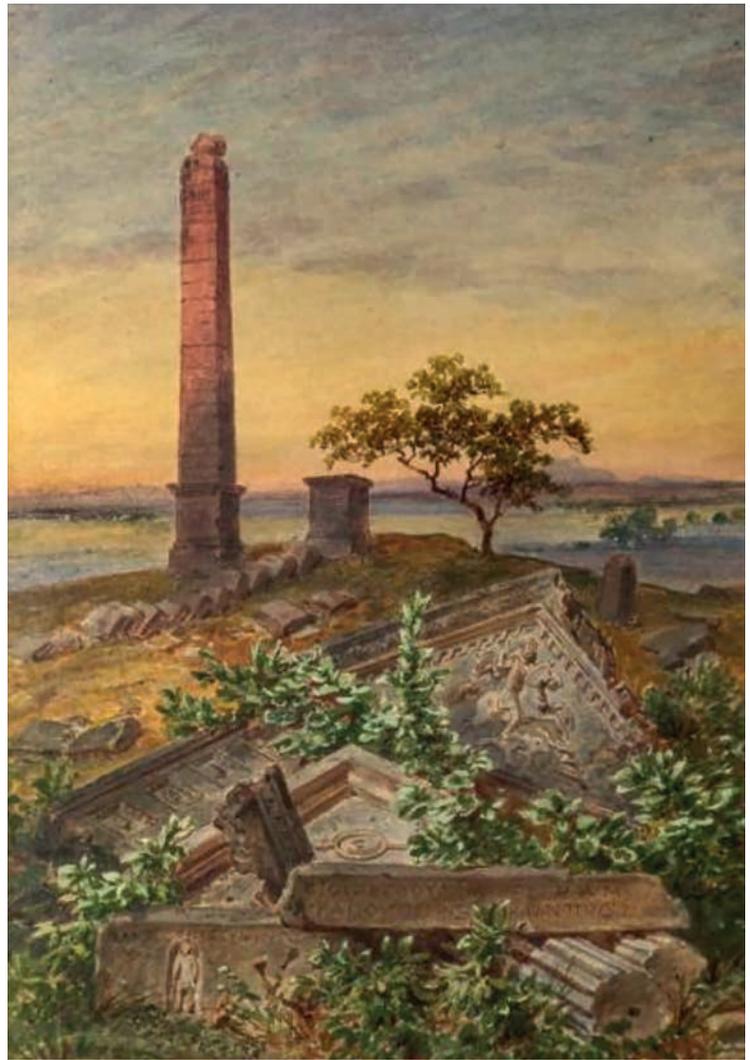


Fig. 15. Watercolor by F.P. Kanitz (c. 1870) showing the Lesicheri Pillar and various unidentified architectural pieces (Central Library of the Bulgarian Academy of Sciences, CC Europeana Collection).

of 12.6 m. Roughly dated to the second century, the standing Lesicheri Pillar (Markov Kamak) appears remarkably similar to the Beştaş obelisk, with a high pedestal surmounted by a spire composed of multiple stone courses⁵² (fig. 14). Positioned on the plain near a major road outside the city, the Thracian spires drew attention, affirming visibility as a principal design factor for obelisks in provincial settings. Delchev and Raycheva suggest that the similarity between the funerary obelisks in Thrace to those in Bithynia reflects a direct “transfer of pattern” from Anatolia⁵³ (fig. 15). The argument is supported by connections between the regions. During the second century a number of settlers from Bithynia, many from the cities of Nicomedia and Nicaea relocated in Thracia. Notably, a *collegium* of Nicomedian stone craftsmen (*lithoxooi*) moved to Nicopolis ad Istrum, possibly encouraging the erection of funerary obelisks⁵⁴. The Thracian donor opted for matching spires with rectangular plans close to canonical Egyptian pairs, though as with the Anatolian examples, with Roman-style pedestals and cost-effective ashlar construction. After Trajan founded Nicopolis ad Istrum to mark his victory in the Dacian Wars, Roman citizenship and communications with the Mediterranean world increased⁵⁵. Aspiring to be part of the mainstream, the Thracian donor chose normative forms; in contrast residents of Nicaea and Phrygia with broader worldviews experimented with known designs. Architects in both regions operated within a *continuum* of structural exploration, as they strove to erect tall, but stable, autonomous monuments while controlling costs and time to completion.

obelisks and may be a later addition: *IGBulg* II, no. 701; DELCHEV, RAYCHEVA 2018, pp. 252-256.

⁵² The dating is based on the similarity to Hadrianic Egyptianizing designs and specifically the Beştaş obelisk. As at Nicaea, the profiled upper socle of the pedestal was carved in the lowest block of the obelisk shaft.

⁵³ DELCHEV, RAYCHEVA 2018. The relocation of Bithynians to Thracia supports the proposed transfer of the obelisk design from

Anatolia, however the direction of influence may be reversed.

⁵⁴ Several Bithynians held high cult positions (including for the imperial cult) at Nicopolis ad Istrum, which might indicate shared religious motivations for the obelisk designs: DELCHEV, RAYCHEVA 2018, pp. 254-256; *IGBulg* II, nos. 600, 674, 667, 668, 688.

⁵⁵ Hadrian and his entourage may have visited Thracia in 124 AD: BIRLEY 2013, p. 159.

Conclusion

The obelisk is a familiar architectural form, like the pyramid, tied for eternity with western notions of ancient Egypt, persistently linked with death, empire, immutability, and monumentality. Such associations have tended to preclude or minimize exploration of variants, or of issues that do not conform within the enduring, totalizing definitions of the form⁵⁶. An obelisk is an obelisk; in architecture it must be big, unwieldy, monolithic, and heavy. Or does it? Even in antiquity there were deviations, if at times subtle. Beyond a variety of scales both in Egypt and Roman Italy, there were differences not only in ornamentation and siting, but also in architectural form. The base-to-height ratios encompass a notable range; size and placement of carvings varies widely; the angle of the slant is inconsistent⁵⁷. Knowledge about obelisk forms emanated not solely from Egypt and Rome, but moved laterally across provinces. Such issues have not been deeply interrogated within the expansive corpus of Egyptian and Roman examples. Examination of provincial variations reveals the need for diverse architectural investigations to deepen comparisons and analyses. The cases from Anatolia bring pragmatic concerns to the forefront in different ways. Obelisk studies have long focused on symbolism and the thrilling displays of giant obelisk-ships and the complex machinery to lift great stones (always with disaster threatening). Yet the capabilities of available technology, design stability, site limitations and available funds underlie projects of every size throughout history. Examination of individualized provincial interpretations from the Roman world simultaneously embrace and resist traditional, generalized definitions of the obelisk, provoking reconsideration of the entire corpus, and reinvigorating architecture-centered analysis. “Provincial”, “atypical”, “non-canonical”, “aberrant”, and “pragmatic” are not derogatory words implying waning knowledge, aspirations, or capabilities in architecture, but adjectives indicating opportunities for experimentation in their own time, and reassessment in our own.

⁵⁶ Among numerous ignored anomalous forms is a Late-Antique memorial column (known as Belkis Minaresi) in Ankara with horizontal fluting only recently published in full: KADIOĞLU 2011.

⁵⁷ Studies of base-to-height ratios of obelisks, including standards

for calculation, are long overdue. Also needed are studies of the slant or taper of obelisks (*sgd*) which has been studied in relation to Egyptian mathematics, but not architecture: KATZ, IMHAUSEN 2007, pp. 34-35.

References

- AHRENS 2011 = AHRENS S., *Hierapolis: graver med utsikt*, in *Klassisk Forum* 2, 2011, pp. 98-108.
- ANONYMOUS 2004 = *Türkiye Büyük Millet Meclisi* 22.55, July 6, 2004, p. 320 (<https://www.tbmm.gov.tr/tutanaklar/TUTANAK/TBMM/d22/c055/tbmm22055110.pdf> accessed July 30, 2019).
- ANTONACCIO 1995 = ANTONACCIO C.M., *An Archaeology of Ancestors: Tomb Cult and Hero Cult in Early Greece*, Lanham MD 1995.
- ARNOLD 1991 = ARNOLD D., *Building in Egypt: Pharaonic Stone Masonry*, New York 1991.
- BARNES 1997 = BARNES M., *Secrets of Lost Empires: Obelisk* (film), NOVA Public Broadcasting Services, February 12, 1997.
- BEKKER-NIELSEN 2008 = BEKKER-NIELSEN T., *Urban Life and Local Politics in Roman Bithynia: The Small World of Dion Chrysostomos*, Aarhus 2008.
- BERNS 2003 = BERNS C., *Untersuchungen zu den Grabbauten der frühen Kaiserzeit in Kleinasien*, Bonn 2003.
- BIRLEY 2013 = BIRLEY A.R., *Hadrian: The Restless Emperor*, London 2003.
- BOWIE 2016 = BOWIE E., *Doing Doric*, in SISTAKOU E., RENGAKOS A. (eds.), *Dialect, Diction, and Style in Greek Literary and Inscribed Epigram*, Berlin 2016, pp. 3-22.
- BUSBECQ 1581 = BUSBECQ O.G. DE, *Itinera Constantinopolitanum et Amasianum*, Antverpia 1581.
- CURRAN 2007 = CURRAN B.A., *The Egyptian Renaissance: The Afterlife of Ancient Egypt in Early Modern Italy*, Chicago 2007.
- CURRAN *et alii* 2009 = CURRAN B.A., GRAFTON A., LONG P.O., WEISS B., *Obelisk: A History*, Cambridge MA 2009.
- DELICHEV, RAYCHEVA 2018 = DELICHEV D., RAYCHEVA M., *The Lesicheri Pillar and the Transfer of Funerary Architecture Trends from Bithynia to Roman Thrace*, in *Bulletin of the National Archaeological Institute, Известия На Националния Археологически Институт (INAI)* XLIV, 2018, pp. 245-258.
- DEONNA 1968 = DEONNA W., *La Niké de Paionios de Mendé et le triangle sacré des monuments figurés*, Bruxelles 1968.
- DERNSCHWAM, BABINGER 1923 = DERNSCHWAM H., BABINGER F. (translated by), *Hans Dernschwam's Tagebuch einer Reise nach Konstantinopel und Kleinasien (1553/55)*, Studien zur Fugger-geschichte 7, München 1923.
- DERNSCHWAM, ÖNEN, BABINGER 1992 = DERNSCHWAM H., ÖNEN Y. (translated by), BABINGER F. (introduction by), *Istanbul ve Anadolu'ya seyahat günlüğü*, Ankara 1992.
- DIENEL, MEIGHÖRNER 1997 = DIENEL H.-L., MEIGHÖRNER W., *Der Tretradkran*, 2nd ed., München 1997.
- FAVRO 1993 = FAVRO D., *Reading the Augustan City*, in HOLLIDAY P.J. (ed.), *Narrative and Event in Ancient Art*, New York 1993, pp. 230-257.
- FAVRO 2018 = FAVRO D., *Obelisk Bones / Obelisk Kemikleri*, in *Seleucia ad Calycadnum VIII*, 2018, pp. 13-25.
- FERNOUX 2004 = FERNOUX H.-L., *Notables et élites des cités de Bithynie aux époques hellénistique et romaine: III^e siècle av. J.-C. - III^e siècle ap. J.-C.*, Lyon 2004.
- GROSSMAN 2013 = GROSSMAN J.B., *Funerary Sculpture*, Agora 35, Athens 2013.
- JOOST-GAUGIER 2018 = JOOST-GAUGIER C.L., *Measuring Heaven: Pythagoras and His Influence on Thought and Art in Antiquity and the Middle Ages*, Ithaca NY 2018.
- KADIOĞLU 2011 = KADIOĞLU M., *Column of Belkız (so called Julian? Column)*, in KADIOĞLU M., GÖRKAY K., MITCHELL S. (eds.), *Roman Ancyra*, Istanbul 2011, pp. 225-238.
- KANITZ 1882 = KANITZ F.P., *Donau Bulgarien und der Balkan. Historisch-geographisch-ethnographische Reisestudien aus den Jahren 1860-1879*, 2, Leipzig 1882.
- KATZ, IMHAUSEN 2007 = KATZ V.J., IMHAUSEN A., *The Mathematics of Egypt, Mesopotamia, China, India, and Islam: A Sourcebook*, Princeton NJ 2007.
- MANGO 1951 = MANGO C.A., *Iznik*, in *Archaeology* 2, 1951, pp. 106-109.
- MARKSTEINER 2002 = MARKSTEINER T., *Trysa – eine zentrallykische Niederlassung im Wandel der Zeit: siedlungs-, architektur- und kunstgeschichtliche Studien zur Kulturlandschaft Lykien*, Wien 2002.
- MERKELBACH 1987 = MERKELBACH R., *Nikaia in der römischen Kaiserzeit: 307. Sitzung am 17. Dezember 1986 in Düsseldorf*, Wiesbaden 1987.
- MERKELBACH, STAUBER 2001 = MERKELBACH R., STAUBER J., *Steinepigramme aus dem griechischen Osten: Die Nordküste Kleinasiens (Marmarameer und Pontos)*, München 2001.

- NYQUIST 2014 = NYQUIST A., *The Solitary Obelisk: The Significance of Cult in Hierapolis of Phrygia*, Masteroppgave i arkeologi, Universitet I Oslo, November 2018.
- NYQUIST 2015 = NYQUIST A., *Tomba del Solitario e Necropoli Nord-Est di Hierapolis di Frigia*, in SCARDOZZI G. (ed.), *Nuovo atlante di Hierapolis Di Frigia: cartografia archeologica della città e delle necropoli*, Istanbul 2015, pp. 118-119.
- POCOCKE 1745 = POCOCKE R., *A Description of the East, and Some Other Countries*, 2.2, London 1745.
- RABABEH 2015 = RABABEH S., *Technical Utilization of Lifting Devices for Construction Purposes in Ancient Gerasa, Jordan*, in *International Journal of Architectural Heritage* 9.8, 2015, pp. 1023-1036.
- REITZ 2012 = REITZ B., *Tantae Molis Erat: On Valuing Roman Imperial Architecture*, in SLUITER P.I., ROSEN R.M. (eds.), *Aesthetic Value in Classical Antiquity*, Leiden 2012, pp. 315-344.
- RONCHETTA 2008 = RONCHETTA D., *Necropoli nord*, in D'ANDRIA F., SCARDOZZI G., SPANÒ A. (eds.), *Atlante di Hierapolis di Frigia*, Istanbul 2008, p. 79.
- SCHEIDEL *et alii* 2019 = SCHEIDEL W., MEEKS E., GROSSNER K., ALVAREZ N., *ORBIS: The Stanford Geospatial Network Model of the Roman World*, <http://orbis.stanford.edu/> (accessed June 7, 2019).
- SCHNEIDER 1943 = SCHNEIDER A.M., *Die römischen und byzantinischen Denkmäler von İznik-Nicaea*, *IstForsch* 16, Berlin 1943.
- SEMERARO 2014 = SEMERARO G., *Archaeology of the cult in the sanctuary of Apollo in Hierapolis*, in *ScAnt* 20, 2, 2014, pp. 11-29.
- SWETNAM-BURLAND 2015 = SWETNAM-BURLAND M., *Egyptian-Style Monuments*, in FRIEDLAND E.A., SOBOCINSKI M.G. (eds.), *The Oxford Handbook of Roman Sculpture*, Oxford 2015, pp. 307-322.
- VERZONE 1978 = VERZONE P., *Hierapolis di Frigia nei lavori della Missione archeologica italiana*, in *Un decennio di ricerche archeologiche*, Quaderni de "La Ricerca scientifica" 100, 1, Roma 1978, pp. 391-475.
- YEGÜL 2014 = YEGÜL F.K., *A Victor's Message: The Talking Column of the Temple of Artemis at Sardis*, in *Journal of the Society of Architectural Historians* 73, 2, 2014, pp. 204-225.