

# Two Imperial Monuments in Puteoli: Use of Proconnesian Marble in the Domitianic and Trajanic Periods in Campania

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## TWO IMPERIAL MONUMENTS IN PUTEOLI: USE OF PROCONNESIAN MARBLE IN THE DOMITIANIC AND TRAJANIC PERIODS IN CAMPANIA

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### Abstract

This paper is focused on two major public monuments of the Domitianic and Trajanic periods from Puteoli (modern Pozzuoli) on the Bay of Naples. There are no architectural traces of these monuments in Pozzuoli today and their specific ancient locations are not known. Our knowledge of them, therefore, is based on two joining marble panels, one in the University of Pennsylvania Museum of Archaeology and Anthropology in Philadelphia and the other in the Neues Museum in Berlin. Scientific analyses of the marble of both panels show they are of Proconnesian marble, providing evidence for identifying other possible fragments of the monuments. In addition, the precisely dated inscription of AD 95–96 on one side of the Philadelphia panel is an important example of a monument constructed by imperial order made of Proconnesian marble, establishing another fixed point in the late Flavian period for the use of this marble in the Italic peninsula.

### Keywords

Proconnesian, marble, Puteoli

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This paper is focused on two major public monuments of the late 1<sup>st</sup> and early 2<sup>nd</sup> centuries AD from Puteoli (modern Pozzuoli) on the Bay of Naples. There are no architectural traces of these monuments in Pozzuoli and their specific ancient locations are not known, so our knowledge of them is based on two joining panels, one in Philadelphia and one in Berlin, and on the identification of other possible fragments, for which the provenience of the marble is of importance.<sup>1</sup>

The first of these two monuments from Puteoli is represented by a large rectangular (H. 1.62; W. 1.145; P. Th. 0.285 m) marble panel in the University of Pennsylvania Museum of Archaeology and Anthropology in Philadelphia (hereafter referred to as the “Penn Museum”) (MS 4916; ROMANO 2006, 255–266, no. 123 for the previous key bibliography) (Fig. 1). It was discovered in fragments, 150 m west/southwest of the Flavian amphitheater in Puteoli around 1908 on the property of Pasquale Elia in the Rione Ricotti district of the modern town (not far from the ancient Via Domitiana). It was reported to have been reused as a paving stone for an ancient road (ZEVI 1993, 130–131). The panel was acquired by the Penn Museum in 1909. On one face (Side A) is an honorific Latin inscription lauding the emperor Domitian for his good public works benefitting Puteoli, probably for the continuation of a road, the Via Domitiana, that linked Puteoli with Sinuessa, on the coast, which, in turn, was linked to the Via Appia and Rome (FLOWER 2001, 632–634).

When Domitian was assassinated in AD 96 with the collusion of the Praetorian Guard, the Roman Senate moved immediately to posthumously condemn Domitian through a process popularly known by its modern term, *damnatio memoriae*. Monuments erected in Domitian’s honor, statues of him, and inscriptions lauding him were defaced or obliterated. We are, thus, left today with a rather imperfect picture of the imperial monuments of his reign. This inscription from Puteoli, however, is

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Fig. 1. Panel with Domitianic Inscription (Side A), from Puteoli. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, MS 4916 (photo: Penn Museum)



Fig. 2. Relief Panel with Roman Soldiers (Side B), from Puteoli. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, MS 4916 (photo: Penn Museum)

a notable exception, making it an especially important document for Roman history. The inscription was not destroyed but “erased,” using a chisel to carefully pick out the 11 lines, but it is still possible to read each line with a raking light. The inscription can be closely dated by historical information, including the death and so-called *damnatio memoriae* of Domitian, and by imperial titles, especially the reference to his 15<sup>th</sup> tribunician year, to between September AD 95 and September AD 96.

The panel in Philadelphia with its inscription was probably part of a monumental base that supported a statue of Domitian. Since the molded frame around the inscription is preserved, we can conjecture that the width of the front of the base was around 1.145 m. The depth of the base is not possible to calculate since the inscription block was probably affixed to the core of a built-up type of base (see HØJTE 2005, 30–35). The height of the base was almost certainly greater than the height of this panel, since there would have been some more substantial elements at the bottom (socle, orthostates or stepped base) and at the top (molded capping stones and plinth).

We cannot be certain if the base supported a standing image of Domitian or an equestrian statue. For the latter, the horse would have been more or less in a frontal position, like the one from Domitian’s Villa at Castel Gandolfo (BERGEMANN 1990, 63–64, P12, Taf.

20–23c). As a general parallel, it is pertinent to consider the bronze equestrian statue of Domitian discovered in the sanctuary of the Augustales at Misenum, just northwest of Puteoli along the Bay of Naples. It can be closely dated by a fragmentary inscription to almost the same time period as the Puteoli monument, between December of 94 and September of 95 and may also have commemorated the completion of the Via Domitiana. We must assume that the statue that once stood on the Puteoli base was destroyed or the head was possibly removed and the statue transformed by replacing the head with that of another emperor, as was done in the case of the very slightly earlier statue of Domitian from Misenum, the face of which was replaced with Nerva’s following Domitian’s *damnatio memoriae* (ADAMO MUSECETTOLA 2000, 65; VARNER 2004, 121). In the end, since the upper surface of the Puteoli base is not preserved, we cannot determine if the image of Domitian was of marble or bronze. The size of the inscribed panel indicates that the base was big enough for a life-sized or over-life-sized statue.

The inscribed marble panel in Philadelphia, however, had a second life. The block was turned around (but with the top surface oriented in same direction) and the back was carved and reused in another major imperial monument in Puteoli (Side B) (Fig. 2). It bears images in low and high relief of Roman soldiers, including possibly





Fig. 3. Detail, Shield Emblem of Scorpion on Relief Panel, from Puteoli, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, MS 4916 (photo: Penn Museum)

a member or members of the Praetorian Guard, the elite protectors of the emperor, identified by their emblem, the scorpion, on the shield of one of the figures (Fig. 3). On the left edge of the panel is half of a figure in relief, marching to his right, wearing a short *tunica*, a *paenula*, and heavy sandals or *caligae*. He holds a spear in his left hand which leans against his left shoulder, passes by the back of the head of the figure behind him and ends at the top frame. We know that at least one more block would have been joined to the left side of this panel to complete this one figure.

Behind the left figure marches another figure, executed in very low relief. His body is in three-quarters frontal position, and he wears a short tunic and a cloak. His left arm is bent and he holds the looped strap of his shield by his left index finger; a large oval shield (*scutum*) decorated with an elegant floral anthemion and a scorpion in low relief in the center is slung over his back left side. He also wears *caligae* on his feet. His head is in profile facing to his right, and he is beardless and has longish, wavy hair that is brushed forward to his brow, bound by a narrow band below the crown.

On the viewer's right is a figure in high relief, separated from the other two figures by a vertical molded frame. The background curves in deeply from the central



Fig. 4. Relief Panel, from Puteoli. Neues Museum, Antikensammlung, Staatliche Museen, Berlin, Sk 887, post-conservation, 2013 (photo: Antikensammlung Staatliche Museen)

frame to the figure's right, a device to mask the transition to deeper relief. This soldier is in a frontal position with his right arm bent, holding a spear vertically, which is now largely broken off. He wears a short *tunica*, a hooded *paenula*, and a *cingulum* or military belt in front. A sword (*gladius*) in its scabbard hangs from a strap over his right shoulder. He is beardless and has a short hairdo with the locks brushed forward along his forehead.

The Penn Museum panel is joined at right angles with another marble relief panel (H. 1.59; W. 0.86; Th. 0.22 m), now in the Neues Museum in Berlin (Sk 887; KNITTLMAYER, HEILMEYER 1998, 211; SCHWARZMAIER, *et al.* 2012, 296–298, no. 171) (Fig. 4). It was discovered in Puteoli in 1801 in a context that is unclear, and acquired by the Antikensammlung in 1830. The adjoining Berlin panel completes the rightmost figure on the Penn Panel. The Berlin panel shows that the left arm



Fig. 5. Oblique View of Viewers' Left Side of Relief Panel, from Puteoli. Neues Museum, Antikensammlung, Staatliche Museen, Berlin, Sk 887 (photo: Hans Rupprecht Goette)

of the rightmost figure on the Penn panel is down, supporting a small oval shield (*palma*) at his left side (Fig. 5). This corner of the monument probably had a molded frame, but conservation of the panel carried out in 2009 shows that the present molding was reconstructed in the 19<sup>th</sup> century (personal communication, Wolfgang Massmann, Antikensammlung conservation records, June 2013). In high relief in a frontal pose is a single soldier wearing a *tunica*, *paenula*, *cingulum*, and *caligae*, with a *gladius* hanging at his right side and a small oval shield, a *palma*, at his left. The viewers' right side of the panel is carefully finished, with a large ancient dowel cutting and pour channel from the top of the block and with 3 cm wide finely-picked contact bands at the front and back edges, all from the block's previous use. It is not clear, therefore, if another relief panel was attached at this edge. The back of this panel seems to have been sawed off in



Fig. 6. Plaster Casts of the Joined Puteoli Panels in Philadelphia and in Berlin in the Museo dei Campi Flegrei, Baia (photo: Hans Rupprecht Goette)

post-ancient times, and the thickness of the panel is 6 cm less than that of the Philadelphia panel. Casts of the Penn and Berlin panels were made and assembled in Rome for the Mostra Augustea della Romanità in 1937-1938 and were displayed for many years in the Museo della Civiltà Romana in EUR, Rome (Fig. 6); a cast of the joining fragments is also in the Museo Archeologico dei Campi Flegrei in Baia. These provide helpful visualizations of the appearance of at least one corner of this monument.

Comparison with dated works and stylistic elements suggest that the reliefs were carved in the reign of the emperor Trajan. The hairstyles match closely those of the Trajanic period, and the hairdo of the figure on the Berlin panel closely imitates the hairstyle of Trajan himself (Fig. 7). In general, the reliefs date to the early years of the 2<sup>nd</sup> century AD.

None of the soldiers on these two panels are wearing helmets or heavy armor. They are shown standing or in procession, wearing only part of their military costume, and there is no reference to a specific setting, such as an architectural backdrop. We are not sure, therefore, if we should interpret these as historical reliefs commemorating a specific event, like a military ceremony or a scene of *reditus* or triumphal return, or if these are, rather, more generic representations showing Trajan's loyal troops, celebrating the military might of the empire and Trajan's control of the army. The way in which the figures on the left are shown in low and very low relief



Fig. 7. Detail, Head of Soldier, Relief Panel from Puteoli, Berlin SK 887 (photo: Hans Rupprecht Goette)

and in profile, separated from the frontal figures in high relief at the corners, may be a clue to understanding the monument.

It is not at all clear what form this Trajanic period monument in Puteoli took. Sieveking put the reliefs on a base for an equestrian monument (1919, 8). Since then, however, most scholars have assumed that the Berlin and Penn museums' joining relief panels were part of a commemorative arch, an arch over the Via Domitiana, either in the attic story or decorating socles of the bases for free-standing columns at the front of the arch (FLOWER 2001, 640–642). There is no place, however, in the upper story of a typical Roman commemorative arch for two such reliefs that join at right angles with no heavy architectural member defining the corner. That these reliefs adorned the pedestals or socles for free-standing columns at the front of an arch is also problematic, given that there was at least one more panel to the left of the Philadelphia relief, making these socles impossibly large. In the only Trajanic arch more or less completely preserved, the Arch of Trajan at Beneventum, there is a single fornix with attached columns articulating the corners and a wide undecorated socle (ca. 1.50 m high and 4 m wide), anchoring the massive piers. The measurements of

the Puteoli reliefs would fit comfortably on this type of rectangular socle but the only parallel for reliefs in this position is the much later Arch of Galerius in Thessaloniki, ca. AD 298–303. Rather, these Puteoli reliefs were likely in a position close to the ground level of the viewer, perhaps forming the corner of an enclosure, like a monumental statue base, an altar, a balustrade or a podium where the images of soldiers would be shown processing toward a focal point, such as a staircase or doorway or the front of the monument.

Hans Rupprecht Goette, Irene Bald Romano, and Claudia Valeri are continuing to work on possible reconstructions of the monuments. Since the Puteoli monument of the Trajanic period is so enigmatic, one of the avenues we are exploring regarding its reconstruction is the possible identification of other fragments among the Puteoli sculptures in the Museo Archeologico dei Campi Flegrei in Baia (and elsewhere). One of the critical issues in identifying other fragments of the same monument, however, is confirmation of the provenience of the marble. In 2004 Norman Herz carried out stable isotopic analysis of a sample from the Penn Museum panel with results that offered several possibilities in the overlapping isotopic fields of ancient marbles. The tentative conclusion at that time was that the marble may be from Paros (Chorodaki) (ROMANO 2006, 255). Subsequent analysis in 2009 of a portion of the same sample by Donato Attanasio using six discriminant variables, including stable isotopes, electron paramagnetic resonance, and petrographic analysis determined that the marble definitively comes from the Proconnesian quarry (Proconnesus I) on the island of Marmara. The white marble is medium-grained (maximum grain size: 1.4 mm) with large blue/grey banding (color: 79). The sample emitted a strong sulfur odor upon grinding, which is consistent with Proconnesian marble. The EPR intensity is extremely low, i.e., with low manganese concentration of 6 ppm, and the stable isotopes are within the range for Proconnesian:  $d^{18}\text{O}$  -1.43;  $d^{13}\text{C}$  2.79 (Fig. 8).

Since the block in the Penn Museum with its inscription on one side was reused in the Trajanic period monument, it is important to confirm the provenience of the marble for the rest of the monument, presuming that a single marble source was most desirable. With the kind permission of Andreas Scholl in the Antikensammlung and the assistance of Wolfgang Massmann in the Conservation Department, a sample was taken from the panel in the Neues Museum, and stable isotopic and chemical analyses of the marble were carried out by Walter Prochaska in his lab in Leoben, Austria. The sample from the Berlin panel revealed results for the stable isotopes and chemical composition compatible with Proconnesian marble:  $d^{18}\text{O}$  -2.23;  $d^{13}\text{C}$  2.62 (See also Fig. 8);  $\text{MgCO}_3$  0.96; Fe 34; Mn 6 ppm; Sr 130. The manganese content is low, which is consistent with Proconnesian marble.

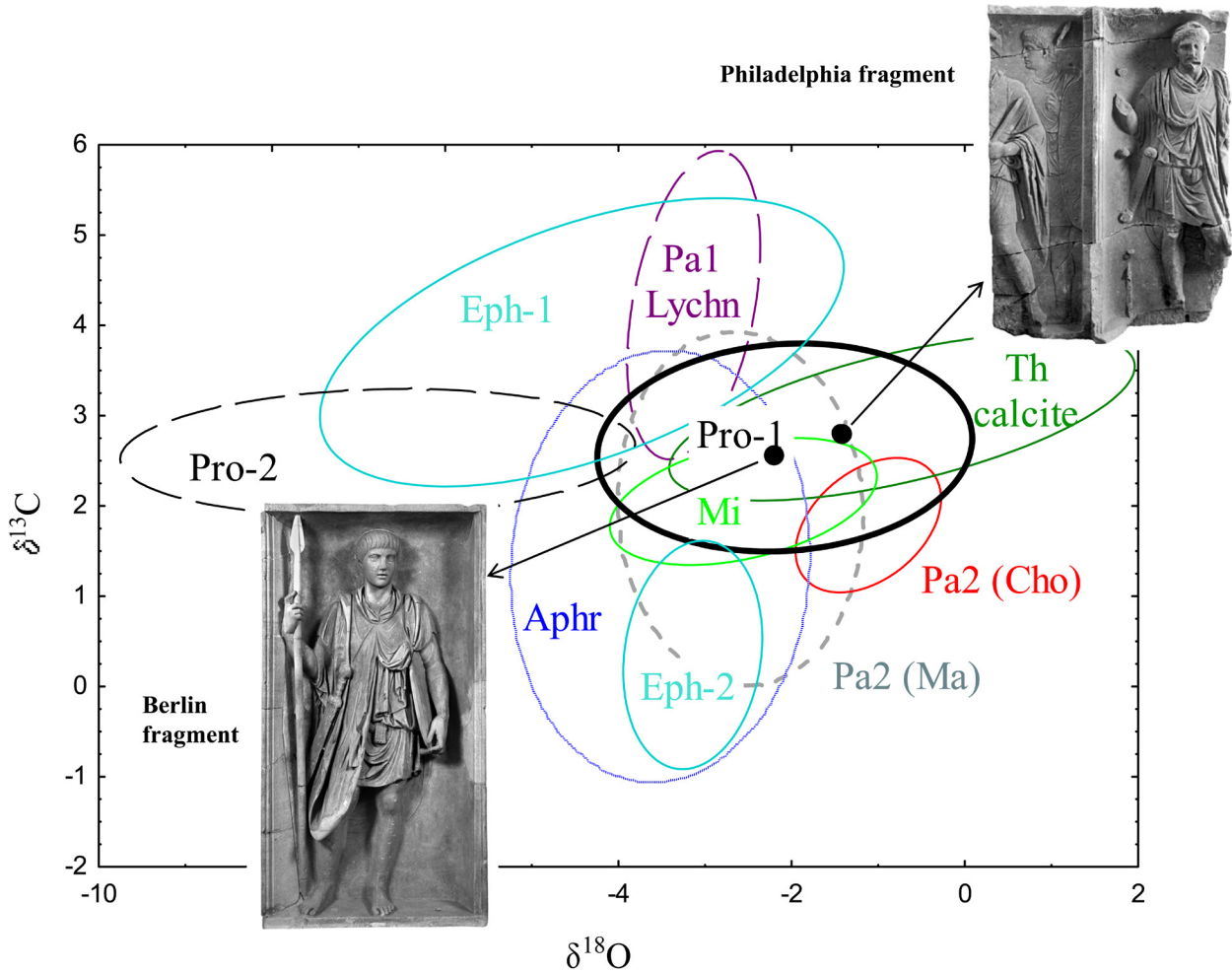


Fig. 8. Graph showing Results of Stable Isotopic Analyses of Samples from the Puteoli Panels in the Penn Museum, Philadelphia and in the Neues Museum, Berlin (graph: Walter Prochaska)

Other than confirming one of the variables in identifying other fragments of this monument, why are these marble provenience results important and what do they add to our picture of the Roman marble trade? We know that Proconnesian marble was utilized in the 6<sup>th</sup> century BC and for some major 4<sup>th</sup> century BC and Hellenistic monuments in Asia Minor and in the northern Aegean. For example, the structure of the Mausoleum of Halicarnassos was executed in Proconnesian marble (Vitruvius 2.8.10; Pliny, *NH* 32.15.1), while the sculptures were carved from other marble. The main marble for the 2<sup>nd</sup> century BC Altar of Pergamon was probably Proconnesian (HEILMEYER 2007, 127–132, 159–160), and Proconnesian marble has been attested in the Sanctuary of the Great Gods on the northern Aegean island of Samothrace, including in the Propylon of Ptolemy II, built between 285 and 281 BC (MANIATIS *et al.* 2012).

It has been demonstrated, however, that exploitation of the quarries of Marmara in the Roman period was a gradual process beginning in Flavian times, eventually

replacing Luna marble in the 2<sup>nd</sup> century AD as the most prevalent white marble for architectural monuments in the Italic peninsula and elsewhere. The earliest known Roman use of Proconnesian marble in Italy occurs in several architectural elements from the Temple of Venus at Pompeii that can be dated between the earthquake of AD 62 and the AD 79 eruption of Vesuvius (ATTANASIO *et al.* 2008, 749, 752). In the city of Rome, the use of Proconnesian marble has also been documented in the late Flavian period, in the Domitianic construction of the Domus Flavia on the Palatine hill; this may have been the very first importation of that marble to Rome (BRUNO, *et al.* 2002, 291–3, 298; PENSABENE 1998).

At the site of Puteoli, Filippo Demma has noted the presence of Proconnesian marble among the architectural blocks of the Flavian amphitheater, as well as its subsequent dominance as the marble of choice for the architecture of the post-Flavian monuments, though as far as we know these have not been scientifically tested (DEMMA 2007, 231–2). We noted from visual inspection

that the dedicatory inscription for the amphitheater is also probably Proconnesian. Since the Domitianic inscription in the Penn Museum from Puteoli is very precisely dated to AD 95–96 the confirmation that the marble is Proconnesian is of importance in adding to the history of the use of this marble in the Roman period in Campania. We must assume that a statue of the emperor Domitian would not have been erected except under strict imperial control or imperial order, so, as such, this inscription constitutes important early evidence for a monument constructed by imperial order of Proconnesian marble, thus establishing another fixed point in the Domitianic period for the history of the Roman use of this marble.

## REFERENCES

- ADAMO MUSCETTOLA S. 2000: “Miseno: culto imperiale e politica nel compresso degli Augustai”, *RM* 107, 79–109.
- ATTANASIO D., BRILLI M., BRUNO M. 2008: “The properties and identification of marble from Proconnesos (Marmara island, Turkey): A new database including isotopic, EPR and petrographic data”, *Archaeometry* 50 (5), 747–74.
- BERGEMANN J. 1990: *Römische Reiterstatuen: Ehrendenkmäler im öffentlichen Bereich*. Mainz: Ph. von Zabern.
- BRUNO M., CANCELLIERE S., GORGONI C., LAZZARINI L., PALLANTE P., PENSABENE P. 2002: “Provenance and distribution of white marbles in temples and public buildings of Imperial Rome”, in HERRMANN J. J., HERZ N., NEWMAN R. (eds.): *ASMOSIA V*. London: Archetype Publications, 289–300.
- DEMMA F. 2007: *Monumenti Pubblici di Puteoli per un’Archeologia dell’Architettura*, Rome: L’Erma di Bretschneider.
- FLOWER H. I. 2001: “A Tale of Two Monuments: Domitian, Trajan, and Some Praetorians at Puteoli”, *American Journal of Archaeology* 105, 625–48.
- HEILMEYER W.-D. 2007: “Berliner Marmore aus Kleinasien: Bericht über ein geologisch-archäologisches Projekt 1994-2004”, *JdI* 122, 127-161.
- HØJTE J. M. 2005: *Roman Imperial Statue Bases from Augustus to Commodus*. *Acta Jutlandica LXXX:2*, *Humanities Series* 78. Aarhus: Aarhus University Press.
- KNITTLMAYER B., HEILMEYER W.-D. 1998: *Staatliche Museen zu Berlin, Die Antikensammlung. Altes Museum - Pergamonmuseum*. Mainz: Ph. von Zabern.
- MANIATIS Y., TAMBAKOPOULOS D., DOTSIKA E., WESCOAT B. D., MATSAS D. 2012: “The Sanctuary of the Great Gods on Samothrace, Greece: An Extended Marble Provenance Study”, in GUTIÉRREZ GARCIA-M. A.; LAPUENTE P.; RODÀ DE LLANZA I. (eds.): *ASMOSIA IX*. Tarragona: Institut Català d’Arqueologia Clàssica, 263–78.
- PENSABENE P. 1998: “Il fenomeno del marmo nella Roma tardo-repubblicana e imperiale”, in PENSABENE P., (ed.): *Marmi antichi II. Studi Miscelanei*. Rome: “L’Erma” di Bretschneider, 333–90.
- ROMANO I. B. 2006: *Classical Sculpture: Catalogue of the Cypriot, Greek, and Roman Stone Sculpture Collection*, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology.
- SCHWARZMAIER A., SCHOLL A., MAISCHBERGER M. 2012: *Die Antikensammlung der Staatlichen Museen zu Berlin*, Berlin: Staatliche Museen zu Berlin.
- SIEVEKING J. 1919: “Römisches Soldatenrelief”, *SB-Münch*, 3–9.
- VARNER E.R. 2004: *Mutilation and Transformation: Damnatio Memoriae and Roman Imperial Portraiture*, Leiden/Boston: Brill.
- ZEVI F. 1993: *Puteoli, Vol. I*. Naples: Banco di Napoli.