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“Throne” of Apollo Amyklaios Provenance of the Stones: Preliminary Conclusions

Ο ΝΕΟΕΡΕΘΕΙΣΜΟΣ that it was decided should be investigated in the research programme on the sanctuary of Apollo Amyklaios was above all the provenance of the marble used in the construction of the architectural members of the “Throne” (fig. 1). This programme, begun in 2008 in collaboration with Dr Y. Maniatis, Director of the Archaeometry Laboratory of the N.C.S.R. “Demokritos”, and his colleagues, seems to be producing some very interesting results.

It was also important to ascertain where the material came from that was used in the construction of other parts of the Throne, such as the crepis (fig. 2), as well as the round, stepped construction (= altar) (fig. 3) in which other types of stone have also been identified. Quite different stones have been used in the retaining walls of the hill, as we know from earlier research (figs 4-5).

More specifically, in Ernst Fiechter’s significant article of 1918,¹ marble (occasionally white) is noted as the material used for the composite capitals, the columns, the epistyle and the sima of the Throne, whereas grey stone—“bläulicher Stein”—is found in the bases and steps, the floor slabs, the ashlar blocks of the walls of the Throne and in the architectural members of the round altar. According to Fiechter poros has been used for the foundations of the Throne and the round altar, while the surviving superstructure is made of marble.

Simply by looking at the stone used to carve the architectural members of the Throne one can see that in fact it is made up of darker and lighter grey marble, which in certain members, such as the composite capital no. 929 in the Archaeological Museum in Sparta (fig. 6), is charac-

teristically shot through with very fine (2-5 mm) darker grey veins, running from top to bottom and parallel with one another, as shown at least in this particular capital. These veins are very unusual and therefore an important characteristic.

A simple visual examination of the material confirms its relationship with the marbles from the ancient quarries in “Gynaika” in the district of Goranoi (Lakonia) and at “Platyvouni” in the Taygetos, better known as the “Sochas quarries”, situated slightly further to the north (fig. 7). Therefore we took samples both from some of the architectural members of the Throne and from these two quarries, which are well known to scholars from a series of publications.²

They are the two quarries nearest to the Amyklaion Hill, which would have made it easier and cheaper to transport the quarried stone than bringing it from other quarries on Taygetos or even the Parnon mountain range. Moreover, testing samples of the grey marble quarried at “Gynaika” and samples of the marble from the well-known ancient *perirrhanteria* (lustral basins on stands) from the 7th c. BC, using the isotopic method of analysis, led Jane Burr Carter to suggest that the grey marble for all the Archaic *perirrhanteria* came from “Gynaika”³ and to attribute them to a Lakonian sculpture workshop despite the obvious stylistic differences between them.⁴

If this is, in fact, the case, then it can be safely assumed that the quarry was already in operation at such an early date, an assumption that significantly strengthens the likelihood that the marble for the Amyklaion Throne came from the same source. Yet it should be noted that this



Fig. 1. A recent attempt at reconstructing part of the Throne.



Fig. 2. The foundations and crepis of the Throne in situ (photo: G. Alevras).



Fig. 3. A recent attempt at reconstructing part of the "round altar".



Fig. 4. View of the retaining wall of the terrace
(photo: G. Alevras).



Fig. 5. View of the retaining wall of the terrace
(photo: G. Alevras).

quarry is a little farther away than the one at Platyvouni (Sochas quarries), which would have made it more difficult to transport the quarried material and consequently more expensive. On the other hand, however, there are as yet no indications that the Platyvouni quarry was operating in the Archaic period, though, of course, this does not mean that it could not have begun operating in this early period.

A recent simple visual inspection of the various architectural members of the Amyklaion led to the following preliminary conclusions (which have yet to be confirmed by tests in the Archaeometry Laboratory of the N.C.S.R. "Demokritos"). First of all the marble of the very well-known part of the sima of the Throne with the relief decoration of flowers and lotus buds, temp. inv. no. 482β (fig. 8), has a light, greyish white colour, the lightest colour of all the architectural members. The same applies to the part of the frieze with triglyph and metope, temp. inv. no. Α 136 (fig. 9), in the Ardamis Storeroom of the 5th EPCA (Ephorate of Prehistoric and Classical Antiquities) in Sparta, where the marble has also a light greyish white colour, and is as yet of unknown provenance. However, it is not certain that this architectural member belonged to the Throne, as the architect Themis Bilis has informed me. The marble of the mouldings, temp. inv. no. Α 421 (fig. 10), is also greyish white, as are the sima, temp. inv. no. Α 411 (fig. 11), re-used as a threshold, both in the Ardamis storeroom of the 5th EPCA of Lakonia. According to Y. Maniatis and D. Tsambakopoulos, it is likely that



Fig. 6. Composite capital from the Amyklaion. Archaeological Museum of Sparta, inv. no. 929 (photo: G. Alevras).

the marble for both these architectural members came from Doliana, but further confirmation from isotopic analysis is needed.

In any case white marble was extracted (fig. 7) from quarries at sites near Areopolis, and at Charouda,⁵ Meza-pos,⁶ and Marmari,⁷ as well as from Agios Menas to Porto Kayio in the Taenaron district.⁸ According to information received from Dr Y. Maniatis there is a small area with sites yielding white, fine-grained marble, which in any case clearly differs from the whitish marble of the above-mentioned architectural members. Moreover, a type of white marble was quarried near Vresthena and Chrysafa



Fig. 7. Map of Lakonia, marked with the most important quarry sites (map: A. Eustathopoulos).

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Fig. 8. Architectural members from the Amyklaion: sima, temp. no. Α 482β (above),
mouldings (middle), slab (below). Archaeological Museum of Sparta.



Fig. 9. Metope and triglyph, temp. no. Α 136. Sparta,
Ardamis Storeroom (photo: G. Alevras).



Fig. 10. Moulding, temp. no. Α 421. Sparta,
Ardamis Storeroom (photo: G. Alevras).



Fig. 11. Sima/threshold, temp. no. Α 411. Sparta, Ardamis Storeroom (photo: G. Alevras).

in the Parnon mountain (fig. 7).⁹ Then again, it is not impossible that the white marble used at the Amyklaion came from some other, closer, site in the Taygetos, which has perhaps not yet been identified, since all the above-mentioned sources of white marble are some distance away from Amyklai.

Despite the fact that isotopic analysis of the marble from these sites is not yet complete, we can make the preliminary observation that a provenance from the “Gynaika” quarry at Goranoi in the Taygetos, which as we have seen, was operating in the Archaic period, of all the material used on all the other architectural members appears to be confirmed.

Moreover, in the retaining wall that surrounded the hill of the Amyklaion, also built in the Archaic period, conglomerate, a sort of limestone with pebbles in it (figs 4-5), was used. This material must have been quarried somewhere close to the Amyklaion. However, we have not yet succeeded in identifying the quarrying site, though we searched for it in 2008 in collaboration with S. Vlizon, using information from local people. The 1990 IGME

geological map (fig. 12) shows a large concentration of conglomerate stone in the area facing the Amyklaion, i.e. modern Skoura and Platana, an area which, on account of its proximity to Amyklai, would have been a convenient source of the necessary materials. According to the geologist Stathis Chiotis both the Menelaion and the Leonidaion in Sparta were constructed of this same material (figs 14-15).¹⁰ In any case, both in the Evrotas region and quite close to the Amyklaion we discovered blocks of conglomerate the source of which has either been exhausted in the meantime or may now be covered with vegetation, but we did not find any clear signs of quarrying. Nor is there any mention of sites where conglomerate stone was quarried in this period in the publication of the systematic surface survey of Lakonia made between 1983 and 1989 and published in 1996 and 2002 by W. Cavanagh, J. Crouwel, R. W. V. Catling and G. Shipley.¹¹ By contrast conglomerate was quarried at Agios Vasileios Xerokambi, where a very important Mycenaean site has been found.¹²

In any case, if the material for the most important and prominent part of the Throne was most probably sourced

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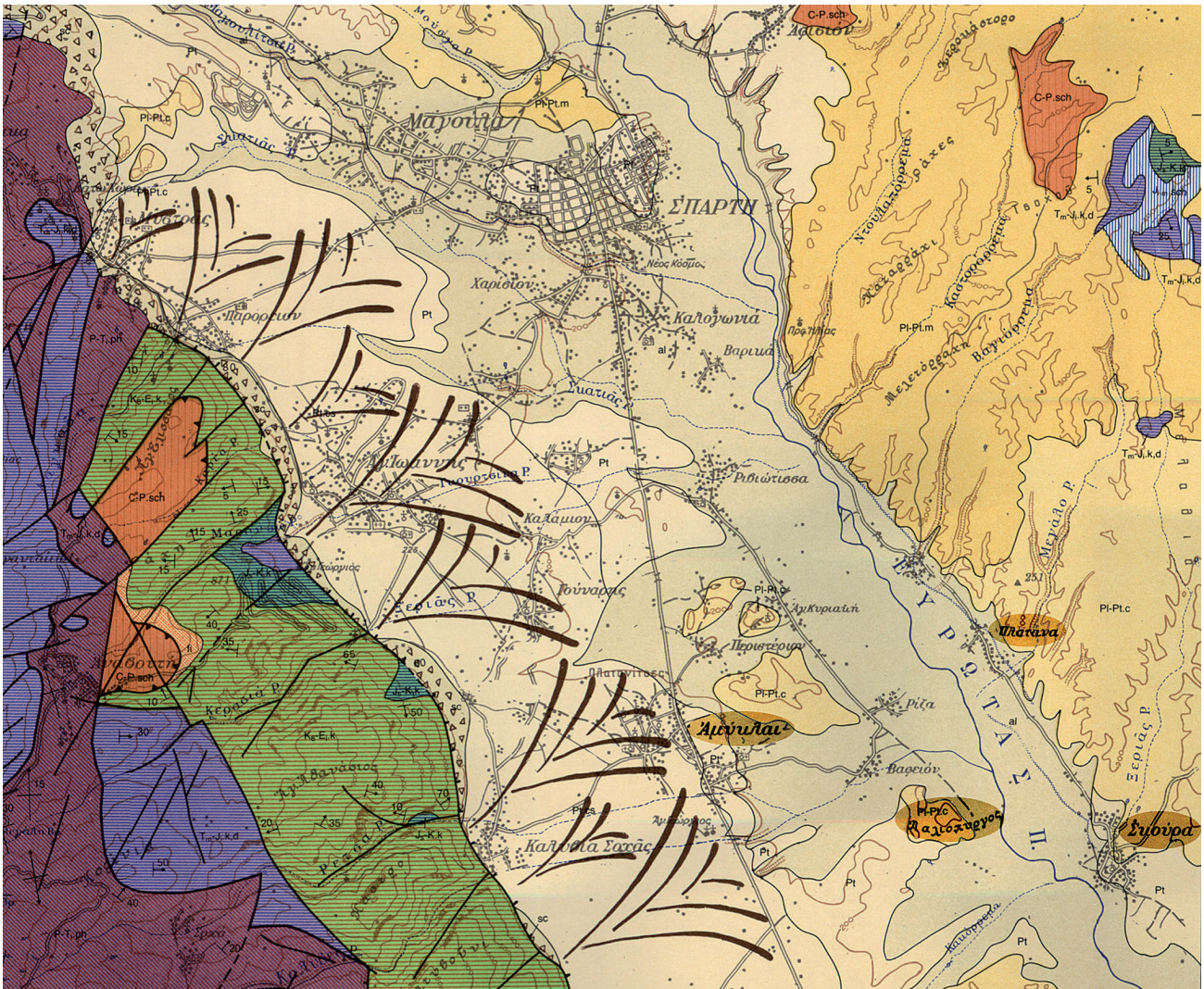


Fig. 12. Detail of IGME geological map Sparta-Amykles area (photo: G. Alevras).



Fig. 13. View of the Leonidaion (photo: G. Alevras).



Fig. 14. Detail of the Leonidaion (photo: G. Alevras).

from a nearby quarry or quarries in the Taygetos, as noted above, it is equally reasonable to assume that the materials for the less important parts of the monument would be brought from even closer sites, which would be even more convenient for the transportation of materials. According to Vlizos, the porous slabs of the crepis of the Throne could have been made from the rock of the very hill on which the Amyklaion sat, a theory which should be confirmed or refuted in the near future. In any event,

all these preliminary conclusions and working hypotheses can only be considered certain, having been confirmed or disproved, once the isotopic analysis by the Archaeometry unit of the N.C.S.R. “Demokritos” Laboratory and the relevant archaeological research has been completed.

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Ο ΟΥΟΟ

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1. Fiechter 1918, 130-64.
2. For recent publications on these quarries see: G. Kokkorou-Alevras *et al.* 2006, 109-21 (with bibliography).
3. Carter Burr 1988, 418-31, esp. 424-25.
4. On the different styles of the *perirrhanteria*, see: Kokkorou-Alevras 1986, 81-82 with earlier bibliography. See also: Sturgeon 1987, 52-53; Arapojanni 1996, 77; Kokkorou-Alevras 2012, 28-29.
5. Chiotis 2001, 561; Tsouli 2009, 397-99.
6. Gorgoni *et al.* 1992, 155-57; Higgins – Higgins 1996, 58; Bruno *et al.* 1998, 41; Kokkorou-Alevras *et al.* 2014, no. 678.
7. *RE* 2. Reihe, III A 2 (Stuttgart 1929) Sparta: Geographie 1347 (F. Bölte); Cooper 1981, 190-91; Herz – Cooper – Wenner 1982, 270; Cooper 1986, 1-27; Cooper 1988, 68; Cooper ΟΟΟΟ

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8. On quarries producing white marble in Lakonia, see: Atanassio *et al.* 2006, 108-14. I am grateful to my friend Dr Y. Maniatis for bringing this publication to my notice. On other quarries in Lakonia, but of darker marble, see: Kokkorou-Alevras *et al.* 2009, 169-79. On Lakonian quarries in general: Kokkorou-Alevras *et al.* 2014, *s.v.* Lakonia, nos 661-702.

9. Kokkorou-Alevras *et al.* 2009, 169.

10. The map was kindly put at our disposal by Dr Stathis Chiotis, who as a research geologist at IGME has been closely involved in the study of ancient quarries. Many thanks for his help.

11. Cavanagh *et al.* 1996, 288-93, esp. 290-91. For a conglomerate quarry very close to Amyklai, in Vapheio, Palaiopyrgi (Palaipyrgos), dated in the Late Bronze period see: Kokkorou-Alevras *et al.* 2014, no. 663. In my visit at the place in 2014 I found only two conglomerate blocks; the hill was covered by dense vegetation.

12. I am much indebted to Dr A. Vasilogambrou, former Ephor of the 5th EPCA of Lakonia, who is making a systematic excavation of the area and showed me the small area from which this stone, which was used on site, was quarried.

ΓΕΩΡΓΙΑ ΚΟΚΚΟΡΟΥ-ΑΛΕΥΡΑ

Το ιερό του Αμυκλαίου Απόλλωνα.

Η προέλευση του υλικού: προκαταρκτικά συμπεράσματα

Ένας από τους στόχους που τέθηκαν στο τρέχον ερευνητικό πρόγραμμα του ιερού του Αμυκλαίου Απόλλωνα που διεξάγεται με τη διεύθυνση του καθηγ. Α. Δελιβορριά, είναι η εξακρίβωση της προέλευσης των λίθων που χρησιμοποιήθηκαν στην ανέγερση των κτηρίων και των υπόλοιπων λίθινων κατασκευών –αναλημματικών τοίχων, θεμελιώσεων κ.ά.– του χώρου. Για τον ασφαλή προσδιορισμό του υλικού, κυρίως του μαρμάρου στο οποίο έχουν λαξευθεί τα αρχιτεκτονικά μέλη του "Θρόνου" του Απόλλωνα και του "Βωμού", ξεκίνησε συνεργασία με τον δρ Γιάννη Μανιάτη, διευθυντή του Εργαστηρίου Αρχαιομετρίας του Ε.Κ.Ε.Φ.Ε. «Δημόκριτος» και τον συνεργάτη του κ. Δ. Ταμπακόπουλο. Τα προκαταρκτικά συμπεράσματα αυτής της συνεργασίας είναι τα ακόλουθα. Κατ' αρχάς από την απλή οπτική παρατήρηση των αρχιτεκτονικών μελών που βρίσκονται κατά χώραν ή φυλάσσονται στο Αρχαιολογικό Μουσείο της Σπάρτης και στην αποθήκη Αρδάμη της Ε' ΕΠΚΑ, διαπιστώνεται η λάξευσή τους σε σκοτεινότερο και ανοικτότερο φαιό μαρμάρο, καθώς και σε λευκόφαιο (εικ. 1-3, 6, 8-11). Τα μάρμαρα αυτά φαίνονται συγγενή με εκείνα των γειτονικών λατομείων του Ταϊγέτου, στις θέσεις «Γυναίκα» και «Πλατυβούνι», και για τον λόγο αυτό έγινε δειγματοληψία, τόσο από τα αρχιτεκτονικά μέλη των οικοδομημάτων του Αμυκλαίου όσο και από θέσεις και των δύο αυτών λατομείων, προκειμένου να πραγματοποιηθεί ισοτοπική ανάλυση. Ιδιαίτερα πιθανή φαίνεται η προέλευση του μαρμάρου από το λατομείο στη θέση «Γυναίκα» που

σύμφωνα με ενδείξεις ήταν σε λειτουργία ήδη κατά τους αρχαϊκούς χρόνους. Μάλιστα, το μάρμαρο των σύνθετων κιονοκράνων, όπως π.χ. του κιονοκράνου αρ. ευρ. 929 στο Μουσείο της Σπάρτης (εικ. 6), είναι πολύ πιθανό να προέρχεται από το λατομείο στη «Γυναίκα», όπου εντοπίζεται μάρμαρο σκοτεινού φαιού χρώματος που διατρέχεται από λεπτότητες, παράλληλες, κατακόρυφες φλέβες ακόμη σκοτεινότερου φαιού χρώματος. Ωστόσο, παρόμοιο μάρμαρο υπάρχει και στο «Πλατυβούνι», λείπουν όμως οι ενδείξεις για τόσο πρόωμη λειτουργία των λατομείων αυτής της θέσης. Εξάλλου, άγνωστη είναι μέχρι στιγμής η προέλευση του ανοιχτού χρώματος, λευκόφαιου, μαρμάρου που απαντά σε μερικά από τα αρχιτεκτονικά μέλη του Αμυκλαίου, όπως το τμήμα σίμης αρ. ευρ. 482β (εικ. 8) και το τμήμα θριγκού με τρίγλυφο και μετόπη αρ. ευρ. Λ 136 (εικ. 9). Τέλος το λευκόφαιο μάρμαρο των αρχιτεκτονικών μελών, όπως του κυματίου αρ. ευρ. Λ 421 (εικ. 10) και της σίμης αρ. ευρ. Λ 411 (εικ. 11), πιθανόν να προέρχεται από τα λατομεία των Δολιανών στην Αρκαδία. Ωστόσο, λατομεία λευκού μαρμάρου υπάρχουν και στη Μάνη, καθώς και στα Βρέσθαινα και στα Χρύσαφα της Λακωνίας. Μόνο όμως τα τελικά αποτελέσματα των ισοτοπικών αναλύσεων του «Δημόκριτου» θα μας δώσουν ασφαλείς απαντήσεις. Εξάλλου, στους αναλημματικούς τοίχους του ιερού έχει χρησιμοποιηθεί κροκαλοπαγής λίθος (εικ. 4-5) που απαντά στη γύρω περιοχή, αλλά το λατομείο εξόρυξής του δεν έχει ακόμη εντοπισθεί.

