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Çamlıbel Mezar Anıtının Arkeolojik Önemi ve Kullanılan Doğal Taşlarının Özellikleri

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Özet

Türkiye'nin en önemli ören yerlerinden biri olan ve tarihi geçmişi Geç Neolitik Çağ'a kadar uzanan Aphrodisias antik kentinin yakınlarında ortaya çıkarılan Çamlıbel Mezar Anıtı hem arkeolojik açıdan hem de mimarisinde kullanılan doğal taşları açısından bölge arkeolojisine son derece önemli katkılar sağlamıştır. MS. 3.yy'a tarihlenen anıt Anadolu'da az sayıdaki birkaç yerde bilinen "Tapınak Planlı Mezar Anıtı" tipinin yeni bir örneğidir. Kuzey Karia bölgesinin iki önemli kenti olan Aphrodisias ile Menderes Antiokheiası arasındaki bir coğrafyada yer alan mezar anıtı, bir antik kentin nekropol (mezarlık) sahası içinde bulunmayıp tek başına, bağımsız bir yapı olarak inşa edilmiştir. Üç basamaklı ve iki sütunlu bir cepheye sahip olduğu anlaşılan mezar anıtı dar bir pronaos (sundurma) ve dikdörtgen planlı bir naostan (ana oda) oluşur. Tapınak planlı mezar Anıtının mimarisinde kullanılan doğal taşlar, alınan örnekler üzerinde yapılan makroskobik ve petrografik incelemeler sonucunda, 2 farklı köken grup, 5 farklı doğal taş

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cinsi ve 6 doğal taş türü olarak saptanmıştır. Gruplar, metamorfik ve sedimenter kökendir. Mermerler, Bantlı Gnays, Şist ve Leptit (meta volkanit) metamorfik, Traverten ise sedimenter köken ve doğal taş cinsi olarak belirlenmiştir. Makro ve mikro özellikleri, birlikte değerlendirildiğinde doğal taş türleri; Orta kristalli beyaz mermer (Ortalama tane boyutları OTB-352,37 µm), Orta kristalli beyaz-gri mermer (Ortalama tane boyutları 786,37 µm), ince-orta kristalli şistozite gösteren siyah-beyaz renkli gnays, ince-orta kristalli beyaz sarımsı şist, ince kristalli beyaz-pembe renkli leptit, beyazımsı- krem renkli az gözenekli traverten olarak sınıflandırılmıştır.

Anahtar kelimeler: Afrodisyas; Karia; ÇamlıbelMezarAnıtı; BantlıGnays;DağaltaşTürleri

Archaeological Importance of Çamlıbel Tomb Monument and Characteristics of Its Natural Stones

Abstract

The Çamlıbel Tomb Monument, which was discovered near the ancient city of Aphrodisias is one of the most important ruins of Turkey and which dates back to the Late Neolithic Age. It has remarkable contributions to the regional archaeology both in terms of archaeological and natural stones used in architecture. The monument dated to the 3rd century AD is a new example of the "Temple Planned Tomb Monument" known in a few places in Anatolia. The tomb monument is located in a geographical area between two important cities of North Karia region, Aphrodisias and Antiokheia Ad Meandrum. The tomb monument was built as an independent structure, not in the necropolis of an ancient city. It seems to have a three-stepped and two-column facade, consisted of a narrow pronaos (porch) and a rectangular planner naos (main room). The natural stone used in the "Temple Planned Tomb Monument" was determined as 2 different origin groups, 5 different natural stone genus and 6 natural stone types as a result of the macroscopic and petrographic examinations made on the samples taken from the group. The origins of the groups are metamorphic and sedimentary. Marbles, Banded Gneiss, Shist and Leptite (meta volcanic) belong to metamorphic origin group while travertine is determined as sedimentary origin and natural stone genus. Natural stone types are classified in terms of their macro and micro properties. These are; (i) white marble with medium crystalline

(average grain size 352 μm), white-gray marble with medium crystalline (average grain size 786 μm), (ii) black-white colored gneiss showing fine-medium crystalline schistosity, (iii) fine-medium white yellowish schist, (iv) fine-crystalline white-pink leptite and (v) whitish-cream coloured low-porosity travertine.

Keywords: Aphrodisias; Caria; Çamlıbel tomb monument; Banded gneisses; Natural stone types

Introduction

The Çamlıbel Mezar Monument is one of the most important ruins of Turkey which was found near the ancient city of Aphrodisias and dates back to the Late Neolithic Age (Joukowsky, 1985; Erim, 1986). It is important to study its archaeological history and natural stones used in architecture (Fig. 1). In this study, archaeological significance, historical geography and architectural characteristics of this structure have been determined. On the other hand, due to its proximity to the ancient city of Aphrodisias, natural stone types used in the construction were identified, classified and their petrographic characteristics were revealed.

Location and Historical Geography of Çamlıbel Tomb Monument

The Çamlıbel Tomb Monument was unearthed in the western part of Turkey in Karacasu that is a district of Aydın. The monument is located at the 7th kilometer of Karacasu-Nazilli Highway where is covered with pine trees on the west side of the road and is stored in the open-air warehouse area of the Forest Sub-district Directorate.

The Çamlıbel Tomb Monument, about 17 km west of the ancient city of Aphrodisias, is located in the central part of the Dandalaz Valley, where the Dandalaz Stream is connected to the Great Menderes River from southeast. Dandalaz stream which is called Morsynos in the Antique Age and Dandalos in the Middle Age forms the valley and it flows about 500 m east of the Dandalaz Stream.

The geography of the monument was within the borders of Karia Region⁴ in the Antique Age (Umar, 1999 and Üreten, 2005). The tomb monument is located between the two major cities of the Karia region, Menderes Antiokheias (Antiokheia Ad Meandrum) and the city of Aphrodisias. It was probably on the edge of a historic road connecting these two important ancient cities (Fig. 2).



Figure 1. Location map of Çamlıbel Tomb Monument.

⁴Footnote: 1: Apart from the roughly present-day Fethiye area called Karia in antiquity, Muğla province is a large part of Aydın province and a small part of Denizli in the north-east. The region was formed by the Lydian Region in the north and the Büyük Menderes River called Meandros in the ancient past, or the Aydın Mountains whose ancient name was Mesogis, extending just beyond it. On the borders of the Karia Region see: Umar, 1999, 1; Üreten, 2005, 197; Ramsay, 1960, 472,

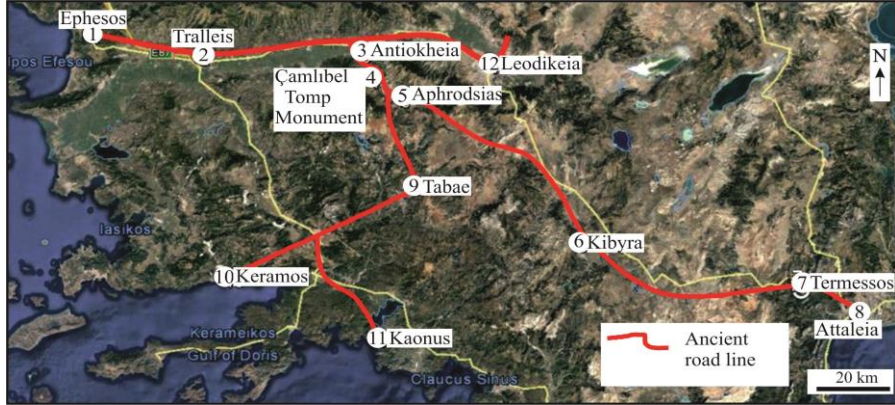


Figure 2. Ancient road route passing Büyük Menderes Basin and Dandalaz Valley.

Methodology

To identify the natural stone types used in the architectural construction of Çamlıbel Tomb Monument (Figure 3), permission was taken from the Ministry of Culture and Tourism, General Directorate of Cultural Assets and Museums. The architectural structure of Çamlıbel Mezar Monument was determined during the study. The 'Temple-Type Tomb Monument', which had an architectural structure, was reconstructed. Samples of parts were collected from natural stones used in the main building of the monument and on the surrounding walls. Four thin sections were made in different aspects from each sample. Detailed petrographic analyses of the specimens were performed using an Olympus-Bx41TF polarizing microscope. Digital camera was microscopic integrated and thin sections were photographed. For the grain size measurements of crystal white and white gray marbles, TCA-300 microscope camera integrated software view 7 computerized image analysis method was used. An average of 500 size measurements were made from the marble samples. Average and maximum grain sizes of crystalline marbles were determined. As a result of the petrographic analysis, the natural stone genus group and natural stone types used in the monument were determined (Table 1).

Additionally, inductively coupled plasma – mass spectrometry method has been applied to determination chemical composition all stone sample. The major, trace and rare element composition of the stone used Çamlıbel Tomp are given in Table 2 and Table 3.

The Excavation of the Tomb Monument and its Architecture

The Çamlıbel Tomb Monument was unearthed with the rescue excavations carried out in 2014 and 2016 under the presidency of the Aphrodisias Museum Directorate with the permission of the Ministry of Culture and Tourism, General Directorate of Cultural Assets and Museums (Fig.3).

Monument was not in an ancient necropolis area, it was built as an independent structure. The tomb is on the east-west direction and the main gate faces east. The tomb monument which seems to have a three-stepped and two-column facade consists of a narrow pronaos (porch) and a rectangular planner (main room).

The Archaeological excavations revealed that up to the level of the roof the naos section of the tomb dominated by coarsely finished local stones like schist and gneiss. The top portion of the Naos should have been covered by using timber frame and roof tiles on the frame. Almost no evidence of roof tile was found in the excavations made in the pronaos section of the tomb. This suggests that the top of front room was open.

Coarse khorasan mortar traces and marble coating pieces that can be seen in both the front and main rooms demonstrate that the entire tomb is covered with marble plates with various colors and veins. This marble coating was also found on the main body floor of the podium at the back of the tomb chamber. There are no in-situ cultural assets in the excavations carried out in the Çamlıbel Tomb Monument, which seems to have been robbed and destroyed several times in the Late Antiquity as well as more recently. Many small fragments that belong to

Dokymeio type columned-figured sarcophagus were found as distributed and scattered around.



Figure 3. A general view of Çamlıbel Tomb Monument after excavation and sample location map.

The pieces found are close to those produced in Aphrodisias in terms of sarcophagus typologies and artistic characteristics of the figures (Smith, 2008). The examination of the sarcophagi pieces, ceramic samples and coins found in excavation revealed that the Çamlıbel Tomb Monument was built during the Roman period at first half of the 3rd century (Fig.4).

In the excavations of the year 2016 in the south and southeast of the tomb, traces of a unidentified structure were found. This structure that consists of quadrilateral rooms was built using untreated local stones and soil mortar. The results show that it was built about 100 years after the construction of the tomb in the 4th century. Some parts of this structure lean against the outer walls of the tomb monument and architectural elements removed from the tomb monument were used in the construction of this structure (Fig. 5).

Archeological importance of Çamlıbel Tomb Monument

Temple consists of a narrow pronaos and a rectangular plan of naos. The front facing that is at the east of the temple had a triangular pediment. The entrance was decorated with three steps of stairs and two columns. All these features reveal that the Çamlıbel Tomb Monument is a planned antique temple.

In terms of these characteristics, the Çamlıbel Tomb Monument is an example of “The Temple-type Tomb Monument” as the ones in Pamphylia, Lykia, Psidia and Kappadokia (Oztaner 2010, Işık 2010) in other parts of Karia from the Classical Period to the Roman Period (Bulut and Gülşen, 1998 and Cornack, 2004). It is certain that the monument is located in the Aphrodisias cultural area. But it is not yet possible to know whether the owner person or family of the grave was Aphrodisians or whether it was a rich merchant or a commander who had been in the area for a short period of time. There was no epigraphic evidence that could identify the owner of the tomb during excavations. However, the special architecture of the building and its geographical position suggest that the monument was made for a private person or a family (Fig. 6).

One of the most important road routes used in ancient times came from Ephesos direction and continued along the Great Menderes Basin to the east. In the middle part of the basin, another road to the south entered the Dandalaz Valley and reached further south through Aphrodisias (Ramsay, 1960 and Sögüt, 2007). This historic road, extending from the middle part of the Great Menderes Basin to Aphrodisias, probably should have been passing from the immediate vicinity of the Çamlıbel Tomb Monument, perhaps even ahead of it.

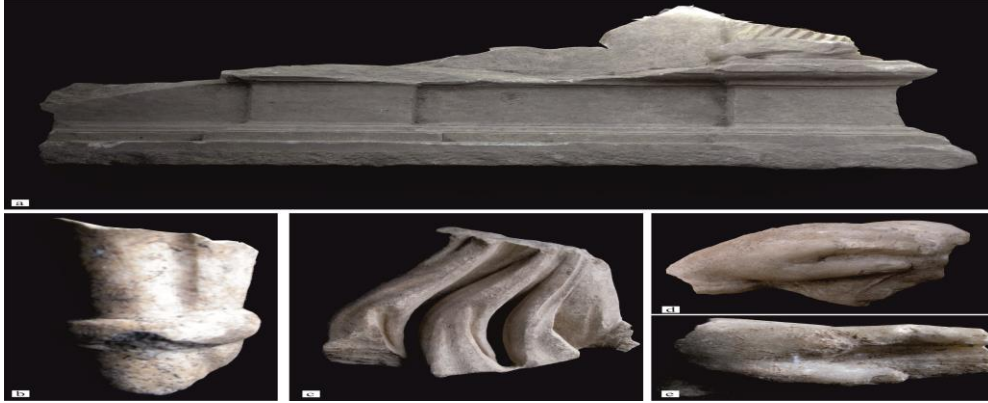


Figure 4. Figurative Sarcophagus: A piece from the short side of the sarcophagus, niche column rising on altar (a), Arm or leg piece with bracelet attached (b), A piece from the goddess of Nike, which embellishes the corner of the sarcophagus (c), A left hand holding a case (d), A male hand holding a wand or roll (e).



Figure 5. Columns belonging to the late period settlement and the slope next to the east of the grave chamber.

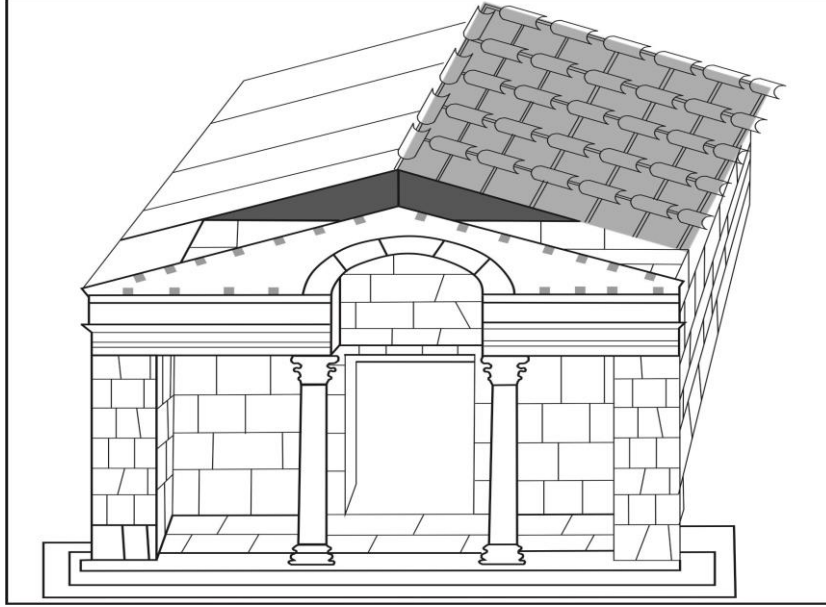


Figure 6. Reconstruction of Çamlıbel Tomb Monument

The ancient city of Aphrodisias, to which the Çamlıbel Tomb Monument is associated, had an art academy that produced sculptures and sarcophagus from marble during the Roman period for about seven hundred years (Smith, 2006, 2008b; Van Voorhis, 2008). In the excavations in the different geographies of the Eastern Mediterranean sculptures produced in Aphrodisias were found. This proves the works of natural stone products produced in the city are exported to overseas geographical regions. A number of important public buildings found in the area demonstrate that Aphrodisias has successfully used natural stones extracted from its geographical workshops not only in artistic events such as sculpture and relief, but also in architectural decoration. For this reason, the natural stones used in the Çamlıbel Tomb Monument have a special importance.

Types and features of natural stones used in the Çamlıbel Tomp Monument

In the Roman period, white, white-gray-black, crystalline marble types were commonly used. However, in this building white and white-gray marbles as well as thin-medium-grained schistosite banded gneisses, light colored mica-quartz schists, Leptites (Meta volcanics) and sediments of light colored low porosity travertine type natural stones were used (Table 1).

Table 1 Classification and types of natural stones used in the Çamlıbel Tomb Monument

Natural origin group		Natural stone genus	Natural stone species
1	Metamorphic	Marble	White marble with medium crystal
2	Metamorphic	Marble	White-gray marble with medium crystal
3	Metamorphic	Genies	Black and white banded genies
4	Metamorphic	Schist	White yellowish schist with thin-medium
5	Metamorphic	Leptite	White-pink leptite with fine-crystalline
6	Sedimentary	Travertine	Whitish-cream coloured travertine with

Table 2. Percentages of major element oxide of stones used Çamlıbel Tomp Monument.

Sample No	Major element oxide %												Total
	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	P ₂ O ₅	MnO	Cr ₂ O ₃	LOI	
1	0.03	<0.01	<0.04	0.3	56.7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	42.9	99.7
2	0.32	0.09	0.13	2.34	52.8	0.02	0.01	<0.01	0.03	<0.01	<0.002	44.1	99.5
3	66.90	16.35	4.12	1.01	1.80	3.72	4.09	0.73	0.11	0.08	0.001	0.96	99.72
4	69.02	16.09	2.81	0.7	2.93	4.05	2.83	0.32	0.15	0.05	0.001	0.12	99.9
5	69.85	14.23	4.38	1.86	1.09	2.32	3.18	0.69	0.14	0.05	<0.002	1.36	99.15
6	0.27	0.05	0.13	0.32	55.5	<0.01	0.01	<0.01	<0.01	<0.01	<0.002	43.8	100

Table 3. Trace and rare earth element composition of stones used Çamlıbel Tomp Monument.

Sample No	Trace element ppm						
	Ba	Ni	Sr	Zr	Y	Nb	Sc
1	<5	<20	148	<5	<3	<5	<1
2	5	<20	283	<5	<3	<5	<1
3	862	95	158	265	45	20	7
4	1018	2.9	760	165	21.4	11.9	12
5	653	61	192	128	19.7	10.8	<1
6	6	<20	837	5	<3	<5	<1

White marble with medium crystal

White marble with medium crystals that was widely used in sculpture, sarcophagi and constructions in Aphrodisias are also seen in the cover plates of the floor and walls of the monumental tomb, the podium in the naos, and the facade pediment (Fig.7a, b and c). The figurative sarcophagus fragments found in the monumental tomb were produced by using white marble (Fig.4). Crystalline white marbles, which are monochromatic and granoblastic, are composed of calcite crystals and are monomineralic. Polysynthetic twinning, thick twin lamellars and orientation are observed in the calcite crystals. At the grain boundaries, 120 degree angles were observed for only a few boundaries. Grain size distribution is inequigranular, grain boundary geometry is interlobate, and grain shapes are in subhedral > anhedral. The average grain size is 575 μm and the maximum grain size is 1116 μm (Fig.7d and e).



Figure 7. White marble type used in monumental tomb construction (a, b, c) Macroscopic (d) and microscopic (e) appearance of white marble with medium crystal (thin section/2x-Cross polar)

White-gray marble with medium crystal

The white gray marble was used in the construction of columns longer than 2m in the monumental tomb. Two columns at the front of the reconstruction of the Çamlıbel tomb monument (Fig. 6) were probably made from this marble. The same types of marble columns are used in the ancient city of Aphrodisias (Fig.8a, b and c). The dominant monomialic granitic monocrystalline white gray crystal is composed of calcite crystals with marble, polycrystalline and deformation twins. There are distortions in the grains; 120 degree angles are rarely observed. The crystal size distribution is inequigranular, the grain boundary geometry is interlobate, and the crystal form is in the subhedral > unhedral. In the polychromatic marble, mica minerals, dolomite and rarely scattered quartz crystals are observed. The mean particle size was 352 μm and the maximum particle size was 786 μm (Fig. 8d and e).



Figure 8. White gray marble used in monumental grave (a) and the same marble column in Aphrodisias (b-c). Macroscopic (d) and microscopic (e) view white-gray marble with medium crystal (thin section/2x-Cross polar

Black and white colour banded gneiss with thin-medium crystal and schistosity

Black and white colour banded gneisses with fine-to-medium schistose structure in were used together with crystalline marble blocks on the peripheral wall of the monumental tomb(Fig. 9a). The gneisses used in the late period building next to the tomb are also observed with strengthened the planes of the schistosity due to the usage of a white colored mortar with a high strength. Further examination of the properties of the used mortar may provide a different approach to the reason for using this natural stone species. The use of banded gneiss-type natural stones with schistosity in such ancient structures is not a common occurrence. Banded gneiss with granoblastic texture has fine-medium-grained schistose structure. It consists of dark colored and light colored planar consecutive levels (Fig. 9b). The light-colored parts are composed of quartz and feldspar, the dark colored parts are biotite and amphibole minerals with iron and magnesium(Fig. 9c).

White yellowish schist with thin-medium crystal

The rocks, which are poorly schistosity, light-colored, quartz-rich schist features with mica minerals, were used together with gneisses and leptites in both the tomb monument and the walls of late-period wall structure(Fig. 9d). The schists used in the monumental tomb are composed of mainly quartz minerals, muscovite and biotite, and smaller amounts of garnet minerals. Linearity is observed in mica minerals, while orientation in quartz widespread areas is unclear. The rock with granoblastic texture is mica-quartz schist. (Fig. 9e and f).

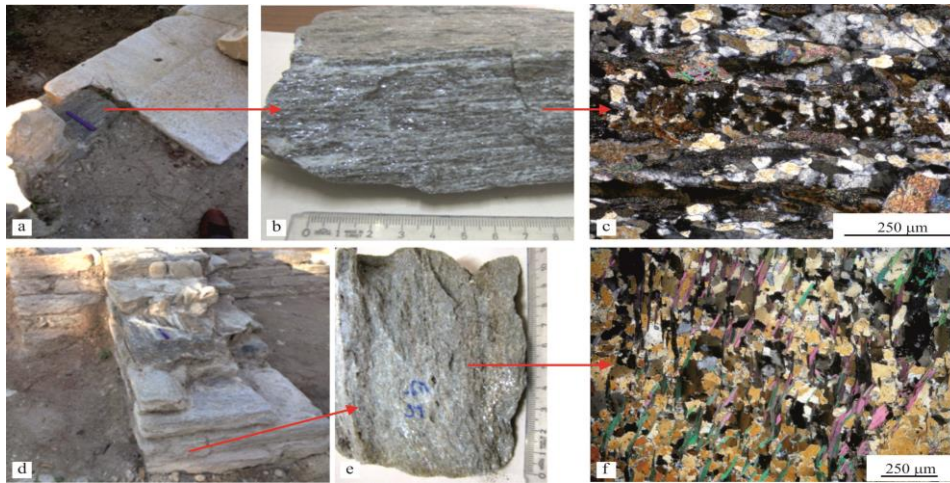


Figure 9. Mortar plastered gneiss used with white marble in the Çamlıbel Tomb Monument (a), Macroscopic (b) and microscopic (c) view banded gneiss with thin-medium crystal (thin section/4x-Cross polar), Light-colored schists used in monumental graves (d), Macroscopic (e) and microscopic (f) view schist with thin-medium crystal (thin section/2x-Cross polar)

White-pink leptite with fine-crystalline (Meta volcanic)

The white pink colored leptites (meta volcanic) have a macroscopic appearance that is hard, massive and poorly oriented. In the tomb monument, they

were used together with schist and gneiss-type natural stones in the construction of wall (Fig.10a). Leptites with granoblastic hornfelstic texture are predominantly unoriented and have finely crystalline structure (Fig.10b and c). Quartz, plagioclase, orthoclase, muscovite, biotite and garnet minerals constitute a significant mineral composition. It is observed that fine-grained garnet and biotite minerals are clearly observed and these metavolcanites were found to be garnet-biotite leptites (Candan and Kun, 1991).

Whitish-cream coloured travertine with low-porosity

In the whitish-cream colour range, the predominant monochromatic massive structured traverten contains small amount of pores and the size of the pores are 1-5 mm. At this stage of excavation work, semi-processed blocks and column samples were identified in the monumental tomb area (Fig.10d). In the thin section images of travertine type natural stone, irregular and different sized micritic pellet granules, micritic clouds and piles are observed in micritic and sparitic cement. There are small micritized bioclast residue traces and fenestral porosity type (bird eyes) voids. The inside edges of the voids are surrounded by isopak microspar belts. In some spaces, the outer wall of this basin is surrounded by micritic and sparitic beam sets. The general character of the travertine is pelsparitic (Fig.10e and f).

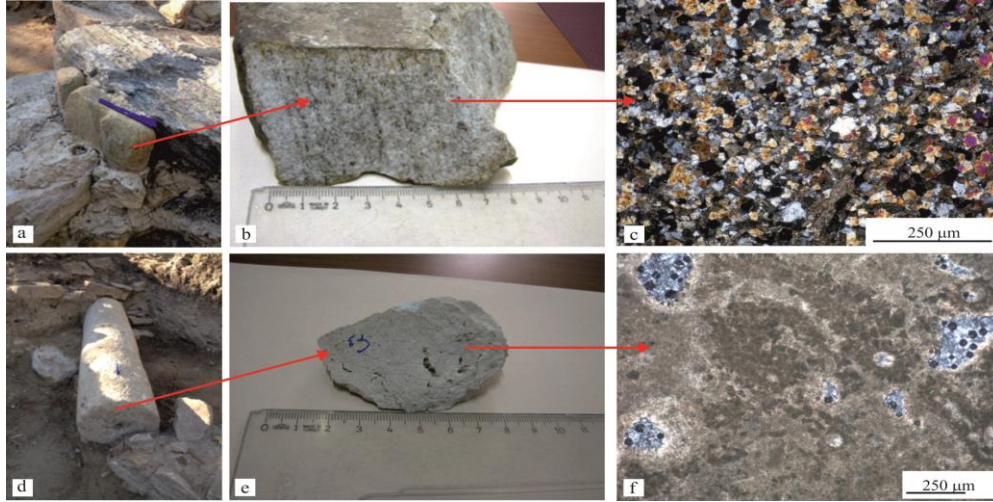


Figure 10. The use of fine-crystalline white-pink leptytes in tomb monument (a), Macroscopic (b) and microscopic (c) view of leptyte with thin crystal (thin section/4x-cross polar), Semi-finished blocks in Çamlıbel Monument Tomb travertine column (d), Macroscopic (e) and microscopic (f) Pelsparitic travertine (thin section/4x-Cross polar)

Conclusion

The Çamlıbel Mezar Monument, located near the northern border of the geographical area called Karia in Antiquity, is in the territorium of Aphrodisias and it is one of the most important cities of the region. The tomb monument, which is unique to Aphrodisias with its 'Temple Planned Tomb', had to be a sign of the most important commercial-military road in the era at the same time. If the excavation of the Çamlıbel Tomb Monument is completed and the landscaping can be arranged around the monument, more archaeological data will be obtained and a new tourism area will be created.

Several natural stone types were used in the architecture of the Temple Planned Tomb Monument. As a result of the macroscopic and petrographic investigations on the samples taken, 2 different origin groups, 5 different natural stone species and 6 natural stone species were determined. Groups are metamorphic and sedimentary. Marbles, Banded Gneiss, Shist and Leptyte (meta

volcanic) are metamorphic while Traverten is determined as sedimentary origin and natural stone type. Macro and micro properties along with natural stone types were evaluated together and classified as medium-white marble, white-gray marble with medium crystallinity, black-white gneiss with thin-medium crystalline schistosity, white yellowish schist with fine-austenitic crystal, white-pink leptite with fine crystals and whitish-cream colored low-porosity travertine.

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