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The Colourful Look of the Maussolleion at Halikarnassos

Halikarnassos Maussolleionu'nun Renkli Görünümü

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Abstract

This paper aims to investigate the painting remains and with the help of parallel examples to propose a restitution of the original colourful look of the Mausolleion at Halikarnassos which is the monumental tomb of Karian satrap Mausollos who died in 353/352 BC. It is known that the Mausolleion stood intact at Halikarnassos until an earthquake in the 12th century AD. The monumentality and artistic effect of the building influenced many architects of its time who later constructed several monumental buildings and it was listed as one of "the Seven Wonders of the World" by the ancient writers. It is well known that ancient builders coloured all the building parts including sculptures, and the Mausolleion was originally richly coloured. The colouring was not only for visual effect but it also created protection layers for the monument as we know stood intact more than fifteen centuries. Newton reported that he had observed parts of the colours were still visible on the newly excavated fragments but he also mentioned that they quickly disappeared after the exposure. A coat of varnish should have protected these colours, which were mostly organic based. The polychromy of the ancient buildings and sculptures has long been in discussion because of the remains of organic colours are scarce and not easily visible by naked eye but the advanced technics applied on the remains in recent times proved that the use of colour in antiquity was extensively common. The investigations and analyses on the existing remains of the Mausolleion also point to the colourful look. Blue, red and creamy white varnish were the dominant colours used especially on the architectural details of the monument, but yellow, brown, light blue, purple and green were also used on the mouldings and sculpture. The technique of gilding and attachments from bronze, precious stones, gold etc. were also employed for the decoration. The use of bluish limestone on the lower parts of the cella, podium, plinths and probably for chamber walls was also for decorative purpose and this enriched the look of the monument. All of the evidence helps us to propose the best possible reconstruction on colouring of the monument. Further investigations in the future might reveal more evidence but for now, it seems this colourful look is quite acceptable and it is more than a hypothetical reconstruction for the most parts. The examples from Halikarnassos, Labraunda and Priene indicate the usage of a standard way of painting and point to the unity of the Hekatomnids' architectural decoration as seen on many parts of the architectural progress of the region.

Keywords: Karia, Halikarnassos, Mausolleion, Polychromy, Painting, Architecture

Öz

Bu çalışmada MÖ 353/352 yıllarında ölen Karia satrapı Mausollos'un anıtsal mezarı olan Mausolleion'un parçalarında tespit edilebilen boya kalıntıları ve paralellik gösteren diğer örnekler ışığında anıtın orijinalindeki renkli görünümünün ortaya konulması amaçlanmaktadır. Halikarnassos antik kentindeki Mausolleion'un MS 12. yüzyıldaki bir depremle yıkılmasına rağmen sağlam olduğu bilinmektedir. Yapının anıtsallığı ve sanatsal etkisi kendisinden sonraki pek çok mimarı etkilemiş ve anıt Dünya'nın Yedi Harikasından

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birisi olarak tanımlanmıştır. Antik dönemde yapıların heykeltıraşlık eserleri de dahil olmak üzere farklı renklerle tamamen boyandıkları bilinmektedir ve Maussolleion da orijinalinde oldukça renkli bir görünüme sahipti. Bu boyama işleminin sadece görsel olmadığı, aynı zamanda yapının elemanlarını da koruduğu yaklaşık 1500 yıl ayakta durduğu bilinen yapının parçalarının iyi korunmuş durumlarından da anlaşılmaktadır. Newton, kazılar sırasında açığa çıkartılan mimari elemanların üzerinde boya kalıntıları gördüğünü ancak bir müddet sonra bu boyaların yok olduklarını aktarır. Çoğunlukla organik temelli olan boyaların orijinalinde cila gibi bir kaplama ile korunmuş oldukları büyük olasılıktır. Boya kalıntılarının çoğu zaman çıplak gözle görülemeyişleri, antik dönem eserlerinde boya kullanımının boyutunu anlamamızı sınırlandırmakla birlikte son dönemlerde teknik analizlerdeki gelişmeler, boya kullanımının oldukça yaygın olduğunu göstermiştir. Halikarnassos Maussolleion'un parçaları üzerinde yapılan incelemeler ve analizler de yapının orijinalinde renkli bir görünüme sahip olduğunu kanıtlamıştır. Mavi, kırmızı ve cila olarak da kullanılan krem beyaz renkler yapıda özellikle mimari detaylarda yoğun olarak kullanılmıştır. Aynı zamanda sarı, kahverengi, açık mavi, mor ve yeşil de bezemelerde ve heykeltıraşlık eserlerinde kullanılan renklerdendir. Yıldız kaplama, bronz, altın ya da değerli taşlardan eklentiler de yapıda görülmektedir. Mavimsi kireçtaşının cella, podyum, plinthos ve mezar odası duvarında kullanımı da dekoratif amaçladır ve anıtın görünümünü zenginleştirmiştir. Mevcut veriler ışığında yapının orijinal renkli görünümüne ilişkin oldukça kabul edilebilir bir öneri sunulabilmesi mümkün olabilmektedir. İlerleyen evrelerde yeni çalışmalarla daha fazla veri sunulabilecek olmakla birlikte, şu an yapının büyük bölümü için varsayımdan öte bir öneri olduğu söylenebilmektedir. Halikarnassos, Labraunda ve Priene'de tespit edilen benzer boya kullanımı izleri ortak bir uygulama olduğuna işaret etmektedir ve Hekatomidler döneminde mimaride görüldüğü gibi boya bezemelerinde de bir birliktelik olabileceği anlaşılmaktadır.

Anahtar Kelimeler: Karia, Halikarnassos, Maussolleion, Çokrenklilik, Boyama, Mimari

This paper aims to investigate the painting remains and to propose a restitution of the original colourful look of the Maussolleion at Halikarnassos, which is the monumental tomb of Karian satrap Maussollos who died in 353-352 BC. It was built in the centre of Halikarnassos at modern Bodrum in the southwest corner of Anatolia. It is known that the Maussolleion stood intact until an earthquake in the 12th century AD and the monumentality and artistic effect of the building influenced many architects who later constructed several monumental buildings and it was listed as one of “the Seven Wonders of the World” by the ancient writers. The knights of St. John caused the major damage to the building after its collapse by using most of its remains as spolia for construction of the Castle at Bodrum, which was built in between 1492-1522 AD. They carried away many blocks for the walls, and during these activities, the burial chamber was also looted. European researches have noticed the remains of the Maussolleion in the 18th century and carried some of the reliefs in the walls of the castle to the British Museum. C. T. Newton excavated the building in 1852 and he carried some of the remains to London¹. The scientific researches started with K. Jeppesen from Denmark in 1966 and continued by his team.

Pliny the Elder in his book *Naturalis Historia* gives the most detailed information about the building. Even though the description given by Pliny sets the basis for a reconstruction, the debates on the building continue due to the lack of sufficient building remains. It is well known² that ancient builders coloured all the building parts including sculptures, and the Maussolleion was originally richly coloured. Newton reported that he had observed parts of the colours were still visible on the newly excavated fragments but he also mentioned that they quickly disappeared after the exposure³. A coat of varnish should have protected these colours, which were mostly organic based. I. Jenkins and his colleagues studied the painting remains on the building for the first time and the results were published in “The Polychromy of the Mausoleum” paper in 1997. This paper and other excavation reports of the Maussolleion and visual inspections on the site set the basic for this paper. In

¹ Newton 1862; Newton 1865.

² Fenger 1886; Neils 2016, 164-176.

³ Jenkins et al. 1997, 35.

addition, the published parallel examples elsewhere will be used for comparisons especially for unknown parts. After all, concluding suggestions will be made on the original look of the Mausolleion at Halikarnassos (fig. 1).

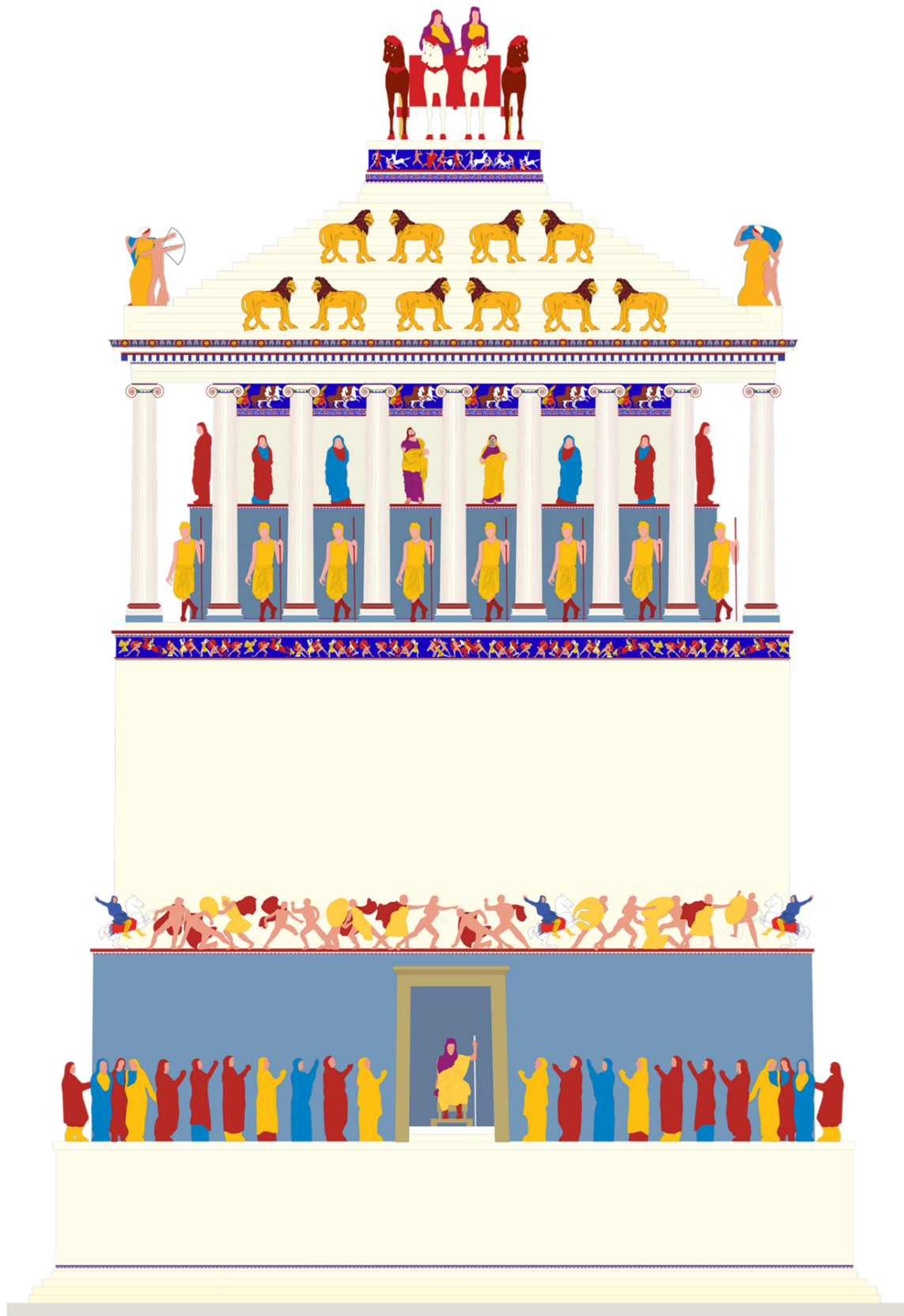


Figure 1: Coloured restitution of the Mausolleion at Halikarnassos

Quadriga

The monument has a pyramidal roof carrying a quadriga, which was made by Pytheos, probably together with Satyros. Many fragments of this chariot with four horses had been found outside of northern *peribolos* wall during the excavations conducted by Newton⁴. Newton reported red colour remains on the chest parts and on a tongue of one of the horses. This red colour is based on iron oxide pigment and probably indicates that the details of the horses were painted in red. Some of the fragments of the second horse carry thick brown coating on the front part, on the right leg and on the band of harness. After the detailed investigation by Jenkins⁵ and his colleagues, it appeared that this coating was made of lead and was used as a lamina on the purposely left rough-worked surface of the horse. An archaic column capital from Ephesos with lead gilding and gold-leaf remains might be comparable⁶ to this practise. It is also known that gold-leaf and tin sheets were used for coating of the sculptures in order to obtain metallic appearances⁷. Pliny (*nat. XXXIII.20*) informs us on using gold-leaf attached with glair to marble surfaces. The use of lead lamina below the painting of the horses seems to be used also for protection and even though there is no more evidence, the possibility of using similar technique on the other parts of the monument might be suggested. The marble fragments of the monument are quite well-preserved comparing to at least 1500 years of exposure to the weather conditions and this kind of lead gilding and/or varnish coating should have been employed. The parallel examples might help us to understand the colouring scheme of quadriga. Traces of red colour on the mouth, blue on the ear fragments of one horse and red on the mane of another horse from the pediments of Delphian Apollo⁸ (510 BC) are examples for colouring of the horses. Traces of red colour were also reported on the mane and harness of one of the horses from the sanctuary of Athena at Delphi from the end of the sixth century BC⁹.



Figure 2: Coloured restitution of quadriga and basis from east



Figure 3: Coloured restitution of quadriga and basis from north

⁴ Newton 1862, 129.

⁵ Jenkins et al. 1997, 36-37.

⁶ Jenkins et al. 1997, 38.

⁷ Brinkmann 2006e, 150, fig. 282.

⁸ Picard and De La Coste-Messeliere 1928, 24, figs. 7-8; Boardman 2005, 172, figs. 142, 230.1; Neer 2010, 96, fig. 54.

⁹ Picard and De La Coste-Messeliere 1928, 3-5, Horse text, fig. 2. XIVA.

Amazon Sarcophagus (400-340 BC) from Etruria is another example of using colour on the horses. The quadriga scene on the sarcophagus is on pink background and while the wagon is red with yellow wheels, four of the horses are white with red harnesses¹⁰. Using different colours for the horses is seen on the back of the throne from the tomb of Eurydice at Vergina (344-343 BC) on which the horses on the sides are chestnut with white harness, but the middle ones are white with red harnesses¹¹. Similarly, the horses on the Alexander Sarcophagus from Sidon were painted with white and brown¹².

After examining the parallels and the actual remains of the Maussoleion, it seems that the best colour composition for the quadriga is red for wagon, ochre for the wheels, brown with red tails and manes for the side horses and white with red tails and manes for the middle horses. It also has remains of bronze harness attachments, which should be in bronze colour originally (figs. 2-3).

The Basis of Quadriga

The Centaurs and meander friezes¹³ with a reversed Lesbian cymatium below surround the basis of quadriga. The centaur frieze is very fragmentary and full composition is not understandable. Although, there is no colour reported on the fragments, the painting scheme should be similar to the other parts of the monument. The use of Centaurs on the *metopes*, is seen on the Temple of Athena at Assos¹⁴ and Parthenon at Athens¹⁵. The backgrounds of the *metopes* of Parthenon were painted in bright red and blue but the rest has no colour remains. The friezes of Hephaisteion at Athens¹⁶ and Temple of Apollo at Bassae¹⁷ have also Centaurs but colour remains are scarce. It is only known that the background of western frieze of Hephaisteion was painted in blue¹⁸. A similar composition of the Parthenon is seen on the *metopes* of the great tomb at Lefkadia where the Lapiths were painted in earth colour on white background. As seen, there are not enough parallels for the painting scheme of the centaur frieze of the Maussoleion, but the most acceptable reconstruction seems to be earth colour for the Lapiths, white for centaurs, red for draperies and Egyptian blue for the background (figs. 2-3).

Jeppesen¹⁹ restored the lower part of the centaur frieze with a painted meander frieze similar to the meander frieze below the Chariot frieze (fig. 4). Therefore, it should also have similar painting scheme, which will be discussed in the Chariot frieze part below.

The lowest part of the basis has a cyma reversa moulding and still traces of red and blue colours are visible²⁰ (fig. 5). The Lesbian cymatium had white leaves with red edges on blue background (fig. 4). Similar scheme is seen on Labraunda Zeus and Priene Athena temples²¹.

¹⁰ Pallatino 1952, 94.

¹¹ Tsibidou-Avloniti 2002, 91-98, pl. 15D.

¹² Brinkmann 2006d, 121-132.

¹³ Tarbell 1920, 226-231; Jeppesen 1998, 175; Boardman 2005, 36-37, 136, 148, 155, 164; Er 2006, 207; Erhat 2008, 170; Sporleder 2015, 23.

¹⁴ Ridgway 1999, 151; Boardman 2005, 227, fig. 216.1; Wescoat 2012, 151, 176, fig. 84.

¹⁵ Bruno 1981, 3; Palagia 2006, 128.

¹⁶ Palagia 2006, 137.

¹⁷ Sporleder 2015, 23-33.

¹⁸ Palagia 2006, 137. The eastern frieze has also green and red paint remains but the composition is unknown.

¹⁹ Jeppesen 2002, 76, figs. 5-6, 15.3,

²⁰ Jenkins 2006, 39, fig. 20.

²¹ Koenigs 2015, 41-43; Blid 2019, 115, fig. 4.

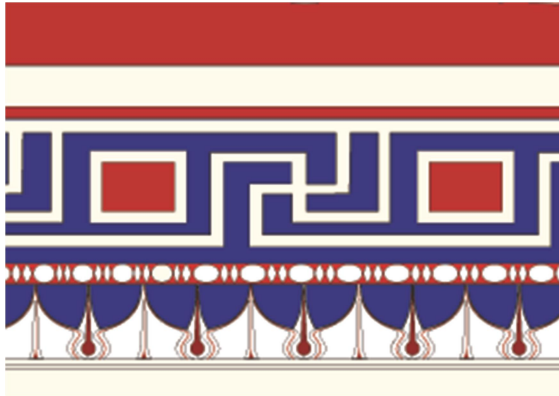


Figure 4: Coloured restitution of maeander from quadriga basis



Figure 5: Lesbian cymatium block with colour trace

Sima

Unfortunately there is no colour remains on the *sima*²² but red and blue should also be the main colours as the other parts of the monument. Similar arrangement is seen on the *sima* of the Parthenon, where blue and red are used alternatively for lotus and palmette with white background²³. The Temple of Aphaia at Aegina has also colour remains on the *sima*, which has white background and alternatively used blue, red and green for lotus and palmette²⁴. The oikoi at Labraunda was published with red lotus and palmette on the *sima*²⁵ but most probably, it had more colours originally. The tomb of Eurydice at Vergina²⁶ is another example with painting on *sima*, which is blue for background, white for lotus and palmette and red and green for the details of calyxes. The lotus and palmette on the top of *architrave* of the Mausoleum at Belevi might be comparable with blue background and white lotus and palmette, below which the spirals are red in some details²⁷. The general painting scheme of the Maussolleion and the parallel examples help us to reconstruct the colours of *sima* as blue background, white palmettes and red lotuses with green calyxes. Although there are no parallels for lion spouts, ochre faces, red tongues and manes might be proposed (fig. 6).

Geison

The ovolo moulding top of *geison* should have been painted according to Jeppesen²⁸ but no painting has survived. The colouring scheme of the monument help us to propose three colours for the cymatium as blue background, white eggs with red edges (fig. 6). The only parallel example is the cymatium on the *geison* of Belevi Mausoleum²⁹, but it differs from the Maussolleion scheme with blue eggs, red background, white darts and red strip above. On the other hand, three-coloured scheme is seen on the crowning moulding of the *architrave* of South Propylon at Labraunda. Red colour is visible on the bead and reel and faintly on the edge of eggs, but the infrared photography showed the existence of Aegyptian blue on the background of egg and dart ornament³⁰. Blue background for Ionic cymatium is

²² Jeppesen 2002, 125, fig. 13.6b; Jeppesen 2007, 245-246.

²³ Fenger 1886, pl. 2.

²⁴ Brinkmann 2003, 85-108, fig. 179; Brinkmann 2006c, 61-87, fig. 128.

²⁵ Hellström 2007, 121.

²⁶ Summit 2000, 265.

²⁷ Praschniker and Theuer 1979, 68, fig. 49.

²⁸ Jeppesen 2002, 133; Jeppesen 2007, 245.

²⁹ Praschniker and Theuer 1979, 68, fig. 49.

³⁰ Blid 2019, 116, figs. 5-6.

also seen on the *architrave* crowns of Temple of Athena at Priene³¹ and on Ionic cymatium possibly belonging to the third phase of Temple of Artemis at Ephesos³².

Dentils

The *cyma reversa* moulding top of the dentils has a painted Lesbian *cyma* with red and blue colours which are still visible³³. It might be reconstructed as having white leaves with red edges on blue background. No paint has survived on the dentils but it might have had blue paint on the interspaces between white dentils according to contrast effect seen on the other parts of the monument (fig. 6). The parallels are the Tomb of Palmettes at Lefkadia³⁴, which has white dentils with blue interspaces and the Tomb of Eurydice³⁵ with red interspaces between the white dentils.

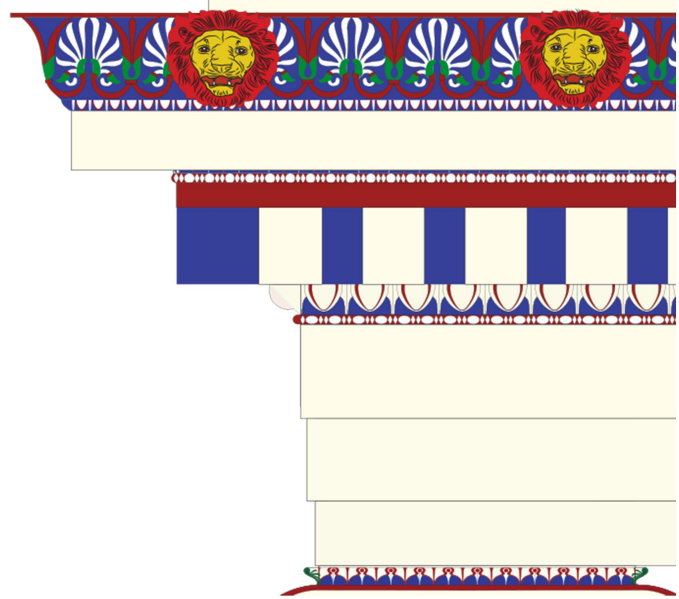


Figure 6: Coloured restitution of entablature

Architrave

There is no colour residue on the *architrave*³⁶ and it should have had creamy white varnish. The crown mouldings on the outer and inner *architraves* have Ionic cymatium painted in red and white on blue background as the other cymatium of the monument (fig. 6). The soffits of the *architrave* have rectangular panels and no colour has survived³⁷. On the other hand, if one looks at the Temple of Athena at Priene where the soffits have blue panels encircled with white bead and reel ornaments on red background³⁸, might suppose the Mausolleion had also painted ornaments. Similar colouring scheme on bead and reel is seen on the *geison* of the Temple of Zeus Labraundeus³⁹. There is no moulding along the sides of the soffit panels of the Mausolleion's *architrave* but it is quite possible that the soffits had painted bead and reel ornaments encircling the blue panels (fig. 7).

Coffers

The coffers have three layered frames with three mouldings, which are bead and reel, egg and dart and Lesbian cymatium⁴⁰. The slabs of the coffers with reliefs about Theseus, have survived fragmentarily and they have blue colour remains on background⁴¹. The

³¹ Koenigs 2015, 41-43, pl. 40.

³² Ohnesorg 2007, 125.

³³ Jenkins et al. 1997, fig. 1.

³⁴ Ρωμοπούλου 1997, 30-35, figs. 26-27.

³⁵ Kottaridi 2011, 146, fig. 165.

³⁶ Jenkins et al. 1997, fig. 1; Jeppesen 2002, 136, fig. 13.13.

³⁷ Jeppesen 2002, 136, fig. 13.13. Ff.h 1-5.

³⁸ Rayet 1880, 22; Lethaby 1908, 68.

³⁹ Blid 2019, 115-116, fig. 4. J. Blid thinks the red paint on some of the beads was miscolouring or later repair because it does not help necessary contrast effect.

⁴⁰ Jeppesen 2002, 81-82, 93, figs. 9.5, 9.7, 9.8, 9.18.

⁴¹ Newton 1862, 89; Rigdway 1999, 120.

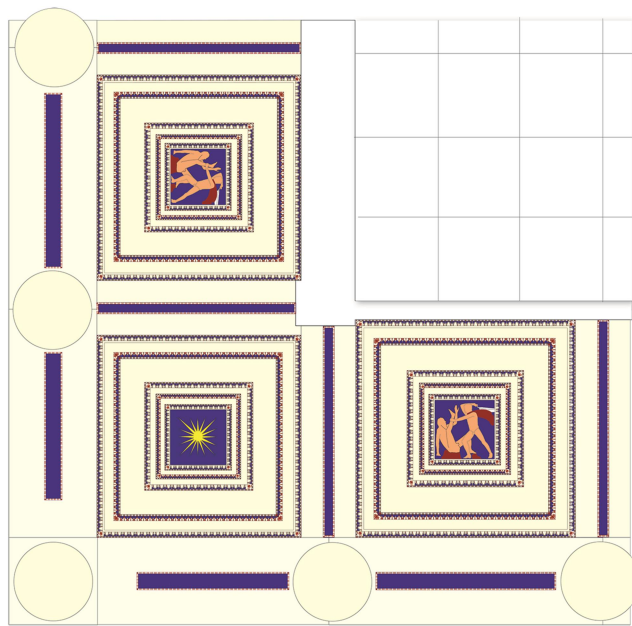


Figure 7: Coloured restitution of architrave soffits and coffers

background, men might have been painted with dark reddish-brown skin, women with pale yellow-white skin and they had red draperies or details. The other ornaments on the panels are possibly in gold colours on blue backgrounds. The cymatium on the frames should have blue background, white eggs and leaves with red details. The bead and reel should be white on red background (fig. 7).

Chariot Frieze on Cella

The chariot frieze on the top of *cella* wall has an ovolo crown decorated with egg and dart, which should have been painted as the other examples. The background of the frieze has blue colour residue as the Amazon frieze⁴⁶. The draperies of one of the charioteers and one of the horses have yellowish patina and red colour is seen on harness strap. The figures had colours but no pigment has survived on the fragments⁴⁷. A grave stele from 535-525 BC found in Athens has a painted chariot scene. The wagon of the chariot is red with two red and two white horses on black background. Although the figures have not colour remains, white for skins and red for details are likely⁴⁸. The stele of Aristion from Attica has red hair, blue helmet and body armour on red background⁴⁹. The blue background is also seen on the frieze of Siphnian Treasury⁵⁰. The possible reconstruction of the chariots at the Maussoleion seems to be two white and two brown horses with red manes as seen on the quadriga on top. The wagon should be red and the wheels in gold colour with red details. The background of the frieze is known to be blue and the drapery of the charioteer is yellowish. The charioteer

⁴² Carter 1983, 61; Cook et al. 2005, 29-30.

⁴³ Frantzi et al. 2013, 91, fig. 1.

⁴⁴ Praschniker and Theuer 1979, 1979, 64, fig. 28.

⁴⁵ Stanzl 1999, 161; Stanzl 2003, 9.

⁴⁶ Newton 1862, 246; Smith 1900, 119-120, 1036; Jenkins et al. 1997, 37.

⁴⁷ Jenkins et al. 1997, 37.

⁴⁸ Richter and Hall 1944, 233-240, pl. II.

⁴⁹ Brinkmann 2006b, 61-65, figs. 85-86; Boardman 2013, fig. 235.

⁵⁰ Cook 1981, 128; Castriota 1992, 203, 228, 309; Ridgway 1993, 487, fig. 9. 136-138; Childs 1993, 409-410; Karageorghis 1998, 291; Marconi 2007, 21.

should have skin colour and red hair (fig. 8). The bottom of the chariot frieze has a painted Lesbian cymatium⁵¹ but no colour has survived. The meander frieze below has certain signs of painting but also no colour has survived⁵². The parallel examples might help us to propose a reconstruction. The meander on the clothes of Teukros figure on the west pediment of the Temple of Aphaia at Aegina has blue, red and green colours⁵³. The meander in the fresco of Vulci Francois Tomb Chamber is white with blue lines on red background⁵⁴. The meander frieze on the corridor of the Temple of Apollo at Didyma has slight red paint remains⁵⁵. The parallels and the general colouring scheme of the Mausolleion with red, blue and white make the most possible suggestion as having blue background, white lines and red meander eyes (fig. 8).

The using of contrast effect is seen on *cella* wall and while the upper part is from white marble, the lower part was constructed with bluish limestone⁵⁶ as seen on *plinthoi* and lower podium (fig. 1).

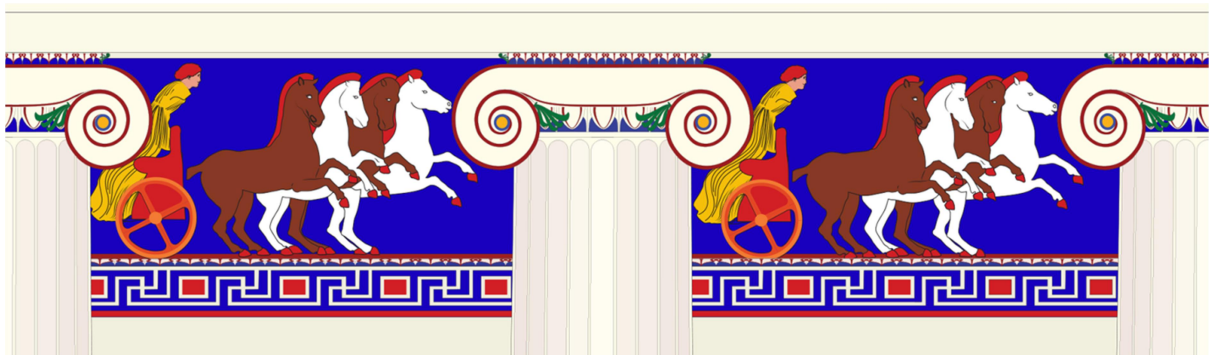


Figure 8: Coloured restitution of chariot frieze in *pteroma*

Column Capitals

The column capitals of the Mausolleion, were also painted colourfully (fig. 9). The remains of colour are seen on the Lesbian cymatium of *abacus* of a capital in the British Museum⁵⁷ and the leaves of the *balteus* of one unpublished capital in the Mausolleion Museum (fig. 10). The background of Lesbian cymatium had been painted in blue but no other colour survived. On the other hand, the rows of the leaves in the *balteus* had been painted with blue and red alternatively. The using of painted details or paintings of the ornaments on the capitals are quite common since Archaic period especially in Attika and, the ones affected by Attic examples. The common colours are blue, red, green and yellow and metal additions might also be seen. One of the closest parallel for the capitals of the Mausolleion might be Akr.3776⁵⁸ found at Athenian Acropolis. The background of the Lesbian cymatium of the *abacus* is blue, *canalis* is red and white, corner palmettes have green calyx, white leaves and red background, *echinus* has blue, green and red and the *polster* is blue with green and red lotus ornament. Another example is the capital 14a⁵⁹ found in Athenian Agora. The sides of *abacus* have eggs and darts painted in blue with yellow borders

⁵¹ Jeppesen 2002, 148, fig. 15.1.

⁵² Jeppesen 2002, 151, 154, fig. 15.5, Hd 1-2; fig. 15.6.

⁵³ Brinkmann 2006c, 80-81, figs. 130-131.

⁵⁴ Pallatino 1952, 115.

⁵⁵ Anabolu 1991, 4.

⁵⁶ Jeppesen 2002, 155-165.

⁵⁷ Jenkins et al. 1997, 36, figs. 6-7; Hoepfner 2013, fig. 51.

⁵⁸ McGowan 1997, 209-233, pl. 55a, 55c, 56a.

⁵⁹ Meritt 1996, 154, fig. 20, pl. 40, 41.

on red background. The edges of volute bands are blue and volute eyes are red with blue circle. The existing remains and parallel examples help us to propose a reconstruction for the original appearances of the capitals of the Maussoleion. The background of the Lesbian cymatium on the sides of *abacus* is blue, the leaves are white with red lines and palmettes on the corners of *abacus* are green. The edges of *canalis* and volute bands are red and the eyes are gold or yellow with blue circles. The cymatium on the *echinus* is white with red lines on blue background. The corner palmettes should also be green. The edges of *polster* are red and the rows of leaves on *balteus* are red and blue alternatively (fig. 9).

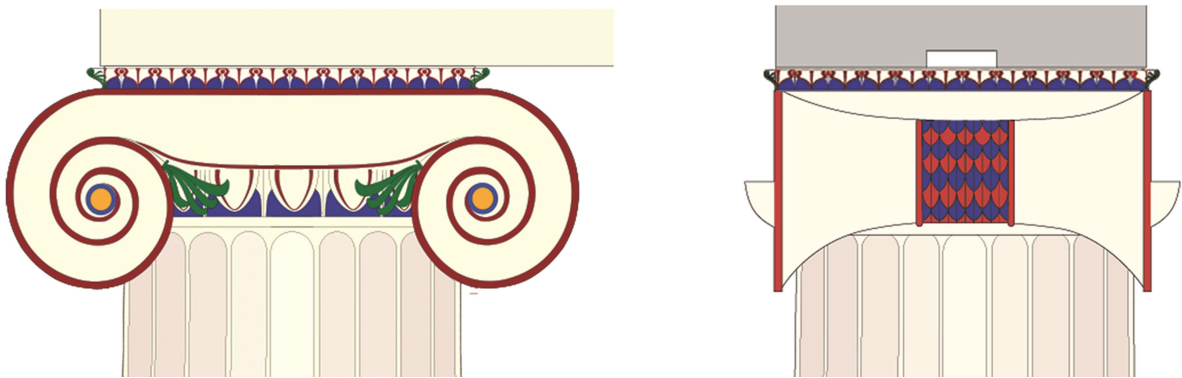


Figure 9: Coloured restitution of Ionic capital and *polster*



Figure 10: Ionic capital *polster* with red and blue colour trace



Figure 11: Coloured restitution of anta capital

The capitals of antae have no evidence for painting and there is not any parallel example to compare, but the painting scheme of the building might help us to propose a hypothetical reconstruction. The background of the capital might be blue with red edges, anthemion is red, white and green, the cymatium is white with red details and the bead and reel is white on red background. The rosettes might be red, white and gold (fig. 11).

The columns have also no traces of painting but most probably, they were varnished and the white marbles had a darker creamy tone⁶⁰. The bases of the columns have no colour traces reported but the *plinthoi* have been made from blue limestone⁶¹, which might point to the decorative purpose⁶². One of the tori in the Maussoleion Museum has a slight orange residue between the fillets, which might be remaining of red colour. It seems quite possible

⁶⁰ Jenkins et al. 1997, 39.

⁶¹ Jeppesen 2002, 145-146.

⁶² Shoe 1949, 341.

that the torus has red colour between the fillets and the rest varnished creamy white and had contrasting affect by using blue limestone *plinthoi* (fig. 12).

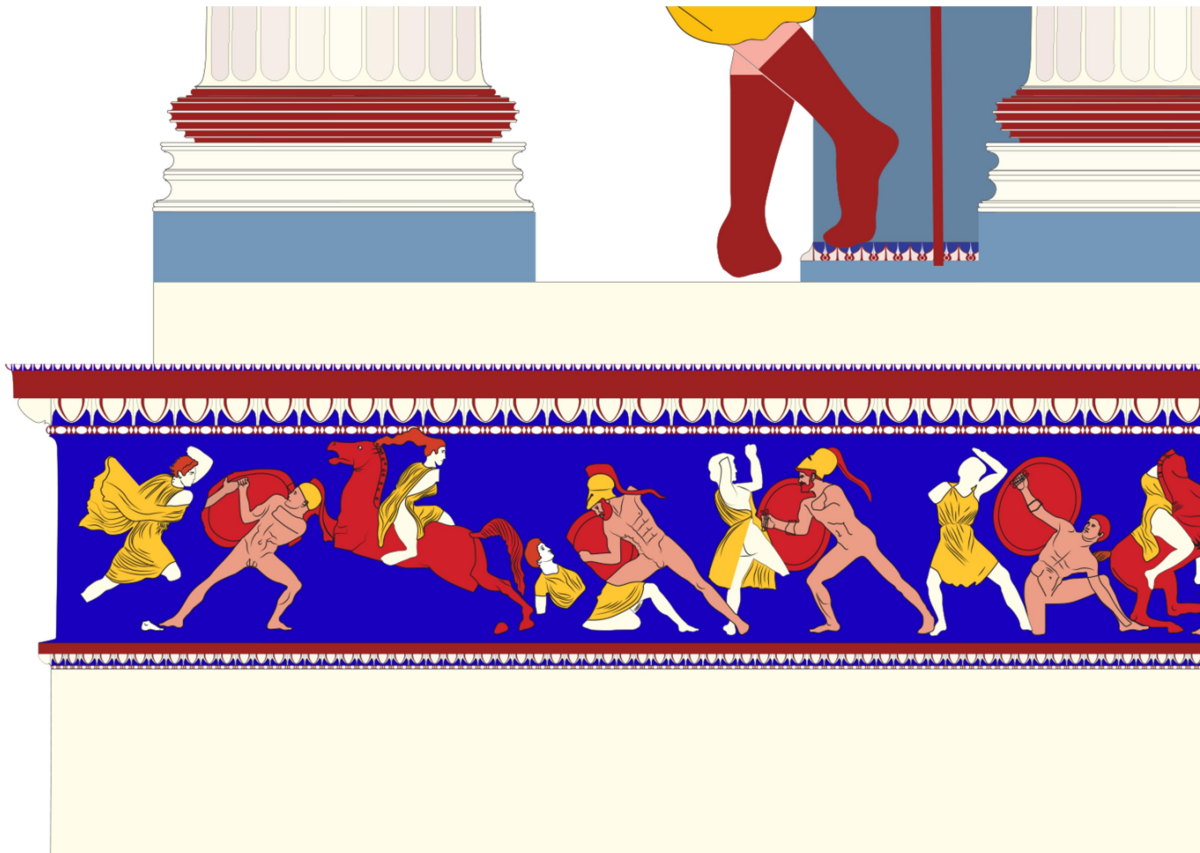


Figure 12: Coloured restitution of column bases and upper podium

Podium

The podium has a cornice above the Amazon frieze. It has a tiny ovolo and concave curve on the top and carved with egg and dart and bead and reel ornaments⁶³. The tiny ovolo on top should have been painted as blue background, white eggs and darts with red details as the other cymatia. The concave curve has no painting remains but for the purpose of harmony of colours, it should be red. The egg and dart and bead and reel ornaments should also have been painted according to the general colouring scheme (fig. 12).

The use of contrast effect is seen on the body of podium and while the upper part is from white marble, the lower part was constructed with bluish limestone⁶⁴ (fig. 1). Most probably, these parts had only creamy white varnish. The existence of the niche with seated figure, which has purple paint remains on drapery⁶⁵ and freestanding sculptures in front of this bluish lower podium most probably, was the reflection of blue background seen on the friezes. The frame of the niche might be bronze coated or in bronze colour for contrasting effect as proposed on andrones and oikoi at Labraunda⁶⁶. On the other hand, upper podium had freestanding sculptures in front of white background. This might have influenced the white background seen on the Alexander Sarcophagus⁶⁷. The freestanding sculptures, which

⁶³ Jeppesen 1998, 176; Jeppesen 2002, 183-7, fig. 19.3.

⁶⁴ Jeppesen 2002, 194.

⁶⁵ Jenkins et al. 1997, 39.

⁶⁶ Blid 2019, 118-119, figs. 8, 11.

⁶⁷ Ridgway 1999, 122.

will be discussed below, adorned upper and lower podia make vivid compositions, and all were painted. The base of podium has a reversed Lesbian cymatium. Even though there are no remains of colour, it should have blue background and white leaves with red edges.

Amazon Frieze

The Amazon frieze was placed above the *architrave* by the early researcher but most of the researchers place it to the uppermost level of the podium⁶⁸. Eleven of the Amazon frieze slabs had been removed from the Bodrum Castle and four slabs had been found during the excavations by Newton⁶⁹. A brownish orange coating is visible on the slabs 1012 and 1021 and this was most probably the remains of ancient coating for preservation⁷⁰. The general scheme of the painting on the friezes with blue background and red details is also seen on Amazon frieze. Red colour has been detected on the arm of an Amazon on slab 1007⁷¹, on the inner side of shield⁷² and on the armpit of a Greek soldier on slab 1014, on the drape of an Amazon on slab 1018, on the thigh and crest of the helmet of a Greek soldier on slab 1020⁷³. The VIL image also revealed Egyptian blue in the recesses of folds of the drape of Amazon figure on slab 1018⁷⁴. Blue colour has been detected on the background of slab 1019 and on the painted sword in the hand of a soldier on slab 1018. This blue colour of the sword should have belonged to background originally because the sword was made by gilding and kept blue under it⁷⁵. The battle scene on the frieze indicates the existence of many additions like swords or spears, but because there are no jointing holes on the slabs, most of them had been made by painting instead of adding metals⁷⁶. The blue background on Amazon frieze is evident with the remains reported by Pullan and analysed by Jenkins⁷⁷. Two of the slabs in the Maussoleion area still preserve blue paint remains. As mentioned above, the background of western frieze of the Hephaisteion was painted in blue⁷⁸ and also the blue background and red figure details on the eastern side of the tomb of Kybernis at Xanthos⁷⁹ might be comparable. Red colour on the inner side of shield on slab 1014 might indicate all shields had red colours on inner faces as seen on the Alexander Sarcophagus⁸⁰. Red colour on the inner side of the shield on the east frieze of Siphnian Treasury⁸¹ is also comparable. The outer sides of the shields had been reconstructed with yellow colour on the Alexander Sarcophagus⁸² and this should be similar for Amazon Frieze. Red colour obtained from iron oxide is seen on many parts of the figures. A. H. Smith⁸³ previously proposed that the skin of the figures was red because of red colour remains on the arm of Amazon on slab 1007 and clothes were in different colour. B. Ashmole⁸⁴ also agreed that Amazons and Greeks were in

⁶⁸ Newton 1862, 100; Dinsmoor 1973, pl. LV; Jeppesen 1989, 21; Hoepfner 2013, fig. 39.

⁶⁹ Newton 1862, 100; Jenkins et al. 1997, 38; Cook et al. 2005, 3-6.

⁷⁰ Jenkins and Middleton 1988, 196-197; Cook et al. 2005, 30.

⁷¹ Smith 1900, 100.

⁷² Smith 1900, 106; Lethaby 1908, 183; Jenkins 2006, 38, figs. 17-18.

⁷³ Jenkins and Middleton 1988, 196; Jenkins et al. 1997, 38. The extensive use of red was questioned by Jenkins for the possibility of later repairs.

⁷⁴ Merchán and Merchán 2013, 1282, fig.1

⁷⁵ Merchán and Merchán 2013, 1282, fig.1

⁷⁶ Smith 1900, 96; Smith 1920, 63; Cook 1976, 52.

⁷⁷ Newton 1862, 185; Smith 1900, 97; Frantz 1954, 244-248; Jenkins et al. 1997, 38, Col. pl. 15; Ridgway 1999, 120; Palagia 2012, 156-157.

⁷⁸ Palagia 2006, 137. The eastern frieze has also green and red colour remains but the composition is unknown.

⁷⁹ Waywell 1978, 66; Jenkins 2006, 164, fig. 154.

⁸⁰ Smith 1900, 106; Lethaby 1908, 183; Ridgway 1999, 122; Smith 2002, 194-195; Jenkins 2006, 38, figs. 17-18.

⁸¹ Shapiro 1988, 4; Schefold and Giuliani 1992, 59.

⁸² Brinkmann 2006d, 121-132, figs. 218-229, 236; Brinkmann 2008, 34-35, fig. 27.

⁸³ Smith 1900, 100.

⁸⁴ Ashmole 1972, 165.

different colours in order to make a contrast impression, but he proposed the skins of Amazons were white and the skins of Greeks were brown. B. S. Ridgway⁸⁵ also agreed to this contrast and published the skins of the figures as white or red-brown with green or yellow drapery. After all, the most probable reconstruction of Amazon figures might be white skins and yellow or green drapery with red details like hairs. The skins of naked Greek warriors should be lighter brown or most probably like skin colours. Hairs, beards and crests of yellow helmets might be red (fig. 12).

The Tomb Chamber

Jeppesen informs us that the knowledge on chamber came from the reports of Commander de la Tourette⁸⁶. It had been richly decorated and had Ionic architectural façade in relief⁸⁷. Despite of having no actual remains Jeppesen⁸⁸ reconstructed the chamber similar to the architecture of *pteroma*. It had statues on a higher level between Ionic columns and Ionic entablature in relief. This arrangement is comparable with the Mourning Women Sarcophagus⁸⁹. On the other hand, W. Hoepfner⁹⁰ reconstructed the chamber with only painted Chariot frieze on the upper part of walls. The tomb chamber of the Uzunyuva at Mylasa⁹¹ has richly painted decorations and probably chamber of the Mausolleion was richer in decoration. For this reason, the reconstruction of the chamber with architectural façade in relief and Chariot frieze seems logical even though there is not enough evidence for the chamber. The colours blue and red should be the main colours in the decoration with creamy white varnished marble parts according to general colouring scheme of the Mausolleion (fig. 13).

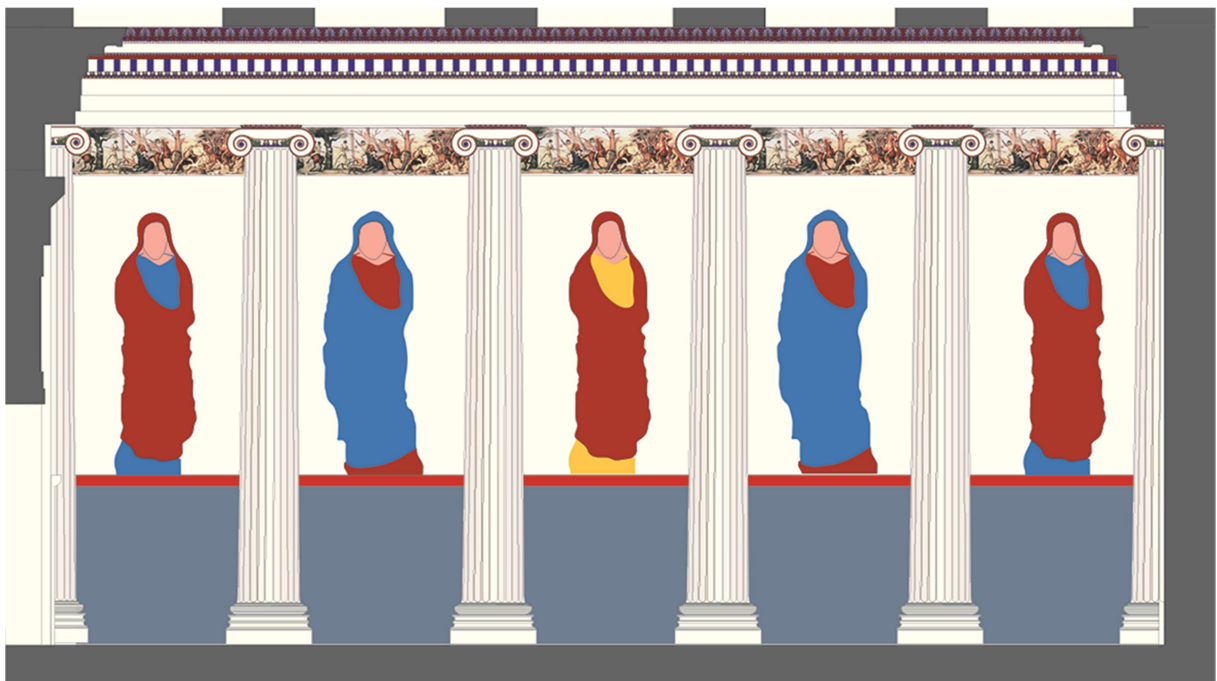


Figure 13: Coloured restitution of tomb chamber

⁸⁵ Ridgway 1999, 120.

⁸⁶ Jeppesen 2000, 155.

⁸⁷ Stark 2011, 55; Brain 2012, 77.

⁸⁸ Jeppesen 2000, 165; Jeppesen 2002, 204, fig. 24.3

⁸⁹ Osman Hamdi Bey and Reinach 1892, pl. VI-XI; Weller 1970, 219-227, pl. 1-4; Ridgway 1999, 119-120.

⁹⁰ Hoepfner 1996, 109-110, fig. 10; Hoepfner 2013, fig. 39.

⁹¹ Işık 2019.

Free Standing Sculptures

The evidence on painting indicates all sculptures in the Maussoleion were colourful⁹² (fig. 1). As mentioned above, the quadriga has red, brown, yellow and white colours. The lions on the pyramid roof have also colour remains. Brownish yellow or dark yellow colour remains are visible on various parts of the fragments 402, 407, 411, 413, 416 and 460⁹³. Brownish colour is on upper forelegs on the fragment 466⁹⁴. Red colour on the tongue of number 401 was reported by Newton but it has disappeared since then⁹⁵. The painting of tongues in red as original appearance similar to a horse from the quadriga is also common on other examples as seen on an Etruscan winged lion⁹⁶. There are some examples of painted lion statues as twin lions from Loutraki, Corinth⁹⁷ (550 BC) which was restored after the pigment analyses with dark yellow body, blue manes and red details on faces. A lion from the eastern pediment of Temple of Apollo at Delphi⁹⁸ has red on its mane with yellow endings and red on its mouth and paw that might indicate blood of its hunting. The best probable reconstruction for the lions of the Maussoleion seems to be dark yellow bodies with brownish manes (fig. 1).

The colour remains on the human statues also point to the full painting program. The so-called Maussollos statue had colour remains on his nostril and corner of eye, this unspecified colour was probably red or rose⁹⁹. The purple colour on the surface of the fragment 33 and on the drapery fold of the fragment 42 has been taught as a symbol of royalty¹⁰⁰. The light blue colour is on the drapery fold of the fragments 244 and 303¹⁰¹. The rose-red is on the drapery fold of the fragment 245¹⁰². Red is on the beard and red-brown is on the back of hair on the fragment 47¹⁰³. A red-brown deposit below the eye of a boar on fragment 367¹⁰⁴ and on the surface of slipper on the fragment 208¹⁰⁵ are taught to be colour remains. The missing plastic straps of the sandals on the fragments 27, 28, 207, 209, 210 and 228 indicate that the straps were made by painting¹⁰⁶ but no trace has survived. Blue and red colours and remains of gilding are visible on the right flank of the horse close to the lower right leg of the rider on fragment 34. These seem to be the remnants of the painted saddlecloth of the Persian rider¹⁰⁷. The horse might be white as seen on the Alexander Sarcophagus¹⁰⁸ because of contrasting effect with red saddlecloth (fig. 14).

The so-called Maussollos and Artemisia statues are the most interesting examples but no colour has survived from their bodies. The details on the face of Maussollos seem to be red but exact restoration is not possible. Both figures are wearing *chiton* and *himation*, which have been richly decorated. The purple colour remains on the fragments 33 and 42 were

⁹² Waywell 1978, 66.

⁹³ Waywell 1978, 66.

⁹⁴ Waywell 1978, 197

⁹⁵ Newton 1865, 102; Waywell 1978, 180-181.

⁹⁶ Vermeule 1961, 19, fig. 6.

⁹⁷ Brinkmann 2006a, 31, figs. 30-32.

⁹⁸ Picard and De La Coste-Messeliere 1928, 35.

⁹⁹ Waywell 1978, 98.

¹⁰⁰ Waywell 1978, 66, 113-114.

¹⁰¹ Waywell 1978, 66, 157, 163.

¹⁰² Waywell 1978, 66, 157.

¹⁰³ Waywell 1978, 66, 117.

¹⁰⁴ Waywell 1978, 66, 172.

¹⁰⁵ Waywell 1978, 66, 150.

¹⁰⁶ Waywell 1978, 41, 66.

¹⁰⁷ Waywell 1978, 66, 111, fig. 19; Jenkins et al. 1997, 36; Jenkins 2006, 38; Brinkmann 2008, 34, fig. 27.

¹⁰⁸ Brinkmann 2006d, 121-132, figs. 218-229, 236; Brinkmann 2008, 34-35, fig. 27.

connected to the royalty and this might be valid for Maussollos and Artemisia statues. A parallel for using purple on *chiton* is the statue of Artemis of Artemis and Iphigeneia group dated to the 3rd-1st c. BC from Ny Carlsberg Glyptotek Museum¹⁰⁹. Therefore, they might be reconstructed with purple *chiton* under yellow or gold *himation*, which creates contrast, and red sandals. Their hairs and Maussollos's beard might be red or red-brown similar to the fragment 47. The use of red or brown on red for hair is seen on a kouros head from late Archaic period¹¹⁰. The skins should be painted in skin colour as seen on the friezes and coffers (fig. 15).

The colours light blue and rose-red of the clothes on the fragments 244, 245 and 303 which belonged to female statues, indicate the existence of rich colourful look and also to a probable class difference. The evidence is not much but yellow or gold, red, brown and light blue should be the dominant colours for the free-standing sculptures of the Mausolleion (figs. 1, 15).

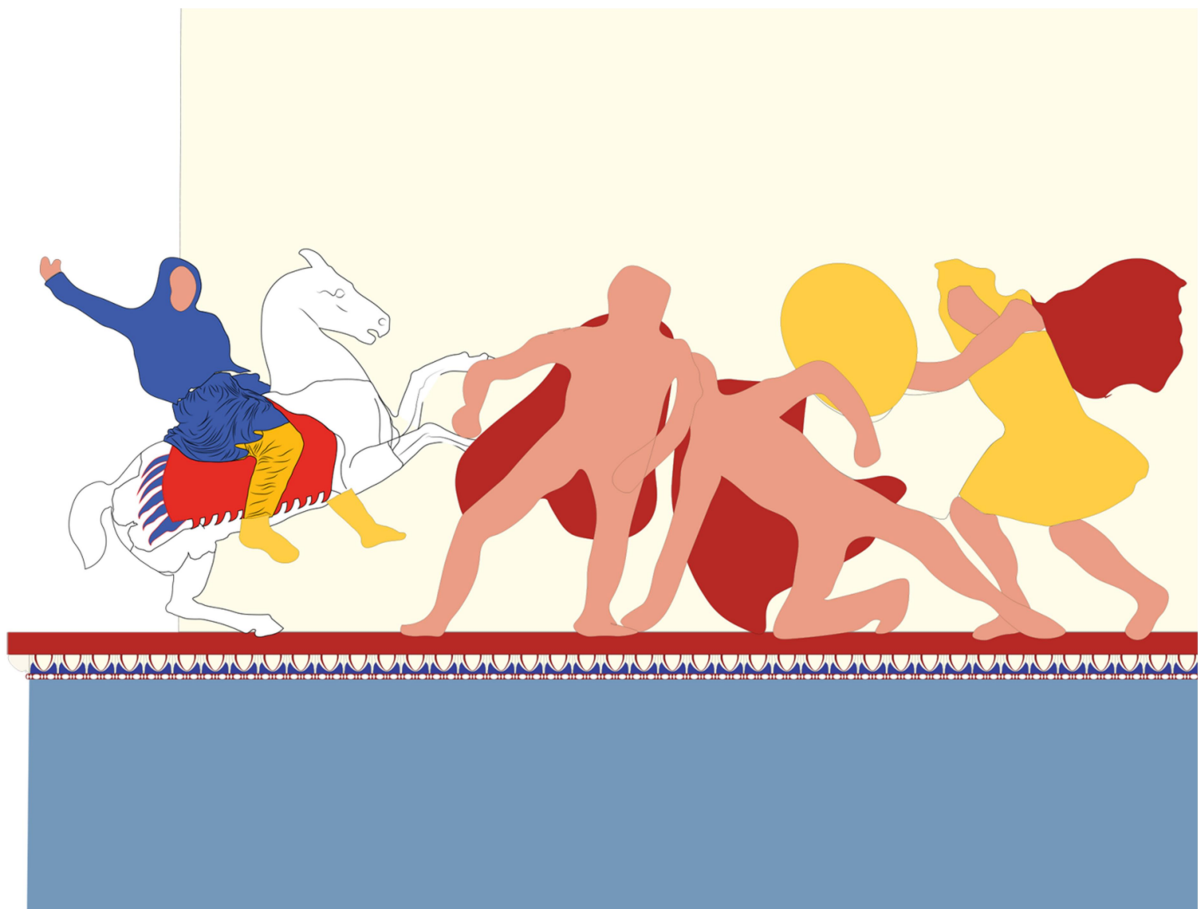


Figure 14: Coloured restitution of freestanding sculptures top of lower podium

Conclusions

The polychromy of ancient buildings and sculptures has long been in discussion because of the remains of organic colours are scarce and these colours are not easily visible to the naked eye¹¹¹. The advanced techniques applied on the remains in recent years proved

¹⁰⁹ Newby 2016, 124, fig. 2.18; Sargent and Therkildsen 2010, 14, figs. 5-6; Copenhagen, Ny Carlsberg Glyptotek Inv. no. 481-482. <https://www.trackingcolour.com/objects/22> (22.08.2018)

¹¹⁰ Hurwit 1999, 147, fig. 118; Brinkmann 2006a, figs. 23-24.

¹¹¹ For example, the Temple of Artemis at Magnesia on the Maeander was known as having no painting but improved analyses proved the use of colour on the architectural members (Zink et al. 2019, 15).

that the use of colour in antiquity was extensively common. The investigations and analyses on the existing remains of the Mausolleion also attest to the colourful look (fig. 1). Blue, red and creamy white varnish were the dominant colours used especially on the architectural details of the monument, but yellow, brown, light blue, purple and green were also used on the mouldings and sculptures. Additionally, all the paintings should have had colourless varnish for extra protection. The technique of gilding and attachments from bronze, precious stones, gold etc. were also employed for the decoration. The use of bluish limestone on the lower parts of the *cella*, podium, *plinthoi* and probably for chamber walls was also for decorative purpose and this enriched the appearance of the monument. All the evidence indicates that the Mausolleion at Halikarnassos had a very colourful look and this painting procedure also helped to protect the marbles of the monument from weather conditions.

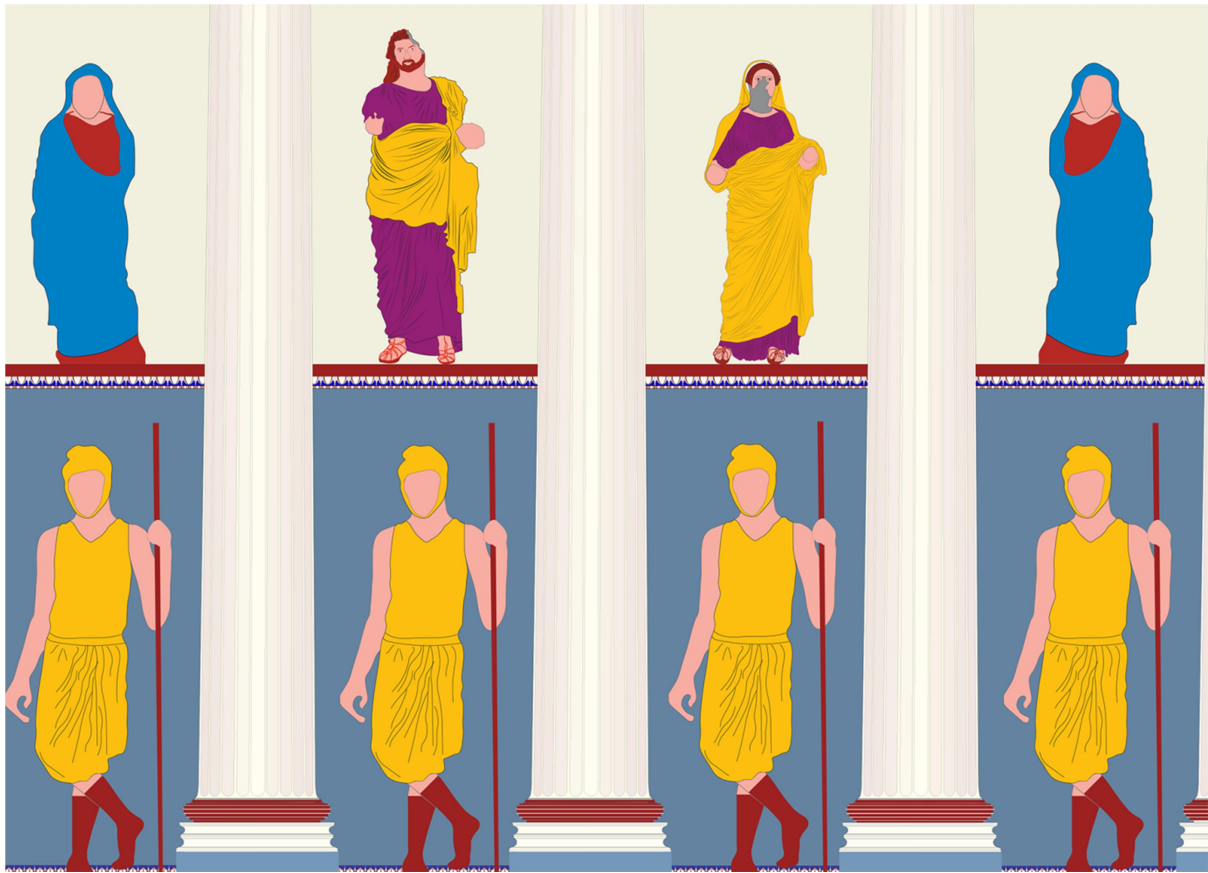


Figure 15: Coloured restitution of freestanding sculptures in *ptero*ma

The use of blue background, red details and varnished creamy white is seen on moulded or painted Lesbian and Ionic cymatia and painted meander friezes of the Mausolleion. These three colours were perhaps also used for anta and column capitals with addition of green and gold colours for some details. The sculptural parts of the monument should have had a painting design. Probably, the backgrounds were blue, the Greek soldiers and Centaurs with tanned skin but the skins of Amazons were white. The cloaks, crests and inner faces of shields were painted in red. The draperies of Amazons were yellow. According to the examples, we can say that it was painted red if there was only one horse and white and brown if there was more than one horse and also the horses had red details. Only the horse of Persian rider on the podium might be white because of contrasting effect with red saddlecloth. The quadriga had bronze attachments but the other parts of the Mausolleion should have painted details because no joint holes for any possible attachments on the blocks

are visible. The wagon of the quadriga and wagons in the Chariot frieze were red with ochre wheels. Ochre colour should be seen on the drapery of the soldiers set among the columns and in some of the friezes. The use of purple as a nobility sign is attested on the sculptures and it should be employed for the so-called Maussollos and Artemisia statues, seating figure in the niche and probable ruling couple in the quadriga together with ochre, which makes contrast. Brownish yellow is seen on the lions and *acroteria* with red details on the pyramid. Blue and red are seen on the saddlecloth of the horse of the Persian rider. Light blue on the *himation* might also be used for some of the draperies of the figures. There is not enough information for the tomb chamber but the reports and parallel features in the tomb chamber of Uzunyuva at Mylasa allow us to propose a hypothetical reconstruction.

As investigated in detail above, the scanty remains of painting on different parts of the Maussoleion at Halikarnassos attest to the colourful original look. All evidence helps us to propose the best possible reconstruction of painting of the monument. Further investigations in the future might reveal more evidence but for the time being, this colourful look presents a hypothetical reconstruction based on comparative data. As already suggested by J. Blid¹¹², the examples from Halikarnassos, Labraunda and Priene indicate the use of a standard way of painting and point to the unity of the Hekatomnids' architectural decoration as seen on many parts of the architectural progress of the region.

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¹¹² Blid 2019, 116-117.

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