

The Architecture and Function of the Stadium of Kibyra

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The ancient city of Kibyra is located on a mountainous site on three prominent hills a short distance northwest of the town of Gölhisar in the Lakes region of southwest Asia Minor. It was important in the ancient world due to its fortuitous location at the intersection of the cultural regions of Lycia, Karia, Pisidia and Phrygia and at the crossroads of important north-south and east-west commercial routes (Fig. 1). It was the most important city in the north-west part of the Pisidia region and was called Kabalia or Kibyratis during the Roman era. The city became rich through its developed industry and abundant natural resources, and thus gained a dominant position on the network of regional trade routes during the Hellenistic period. Likewise, its strategic geographic location allowed it to become the most important commercial, political and military power in this region during the Roman period.

The first excavations in the city began under the leadership of S. S. Başer during 1988-1989 in the underground burial chambers on the south-west slope of the Theater hill and then in the odeion. These mostly took the form of rescue excavations; nevertheless, significant results were attained from this initial work¹. No archeological excavation work was conducted in the city and the neighbourhood, other than the predominately epigraphic surface surveys that have been carried out by Th. Corsten since 1995². Systematic excavations at Kibyra were begun in 2006 under the auspices of the Directorate of the Burdur Museum and with scientific consultancy from the Archaeology Department of Mehmet Akif University. This work has been in progress since 2006 under the leadership of Ş. Özüdoğru³.

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1 S. S. Başer, "1988- 89 Yılları Kibyra Kurtarma Kazıları", MüzeKKS, 19-20, 1991, 235-260.

2 Th. Corsten, "Kibyra. Bericht über die Forschungsreise 1995", AST 24.1, 1997, 63-72; Th. Corsten "Ein neues Buchstabenorakel aus Kibyra", EpigrAnat 28, 1997, 41-49. Th. Corsten - R. Kearsley - G. Horsley, "Inscriptions from Kibyra in the Museum at Burdur/Turkey", EpigrAnat 28, 1997, 53-56; Th. Corsten, "Kibyra. Bericht über die Forschungsreise 1996", AST 15.1, 1998, 367-369; Th. Corsten - T. Drew-Bear - M. Özsait, "Forschungen in der Kibyritis", EpigrAnat 30, 1998, 47-80; Th. Corsten, "Kibyra 1997", AST 16.1, 1999, 387-390; Th. Corsten, "Kibyra 1998", AST 27.1, 2000, 215-216; Th. Corsten, "Kibyra 1999", AST 18.1, 2001, 255-256; Th. Corsten, "Kibyritis in Antiquity", Anatolian Archaeology 7, 2001, 17; Th. Corsten, Die Inschriften von Kibyra, 1. Die Inschriften der Stadt und ihrer näheren Umgebung (2002); Th. Corsten, "Kibyritis in Antiquity", Anatolian Archaeology 8, 2002, 20; Th. Corsten, "Kibyra 2001", AST 20.2, 2003, 83-84; Th. Corsten, "Kibyritis in Antiquity", Anatolian Archaeology 9, 2003, 26-27; Th. Corsten, "Kibyra 2002", AST 21.1, 2004, 229-234; Th. Corsten, "Kibyritis in Antiquity", Anatolian Archaeology 10, 2004, 22-23; Th. Corsten, "Kibyra 2003", AST 22.1, 2005, 29-34; Th. Corsten, "Kibyritis in Antiquity", Anatolian Archaeology 11, 2005, 27-28 ; Th. Corsten, "Estates in Roman Asia Minor: the case of Kibyritis", in S. Mitchell - C. Katsari (ed.), Patterns in the Economy of Roman Asia Minor (2005) 1-52; Th. Corsten, "Kibyra 2004", AST 23.1, 2006, 19-20

3 Ekinci et al. 2007, 22- 28; Ekinci et al. 2008, 35-41; Ekinci et al. 2009, 32-39; Dökü - Özüdoğru 2009, 51-55; Özüdoğru - Dökü 2010, 37-45; Özüdoğru et al. 2011, 36-43.

The first aim of this study is to examine the architectural details and the problems of the stadium which was the most magnificent building constructed in Kibyra during the Roman period. It is also a study of the function of the stadium, its place within the city's urban fabric, its typological importance among Anatolian stadiums during the Roman period, its dating from evidence provided by inscriptions and small finds, and finally a discussion of two differing opinions concerning the interpretation of the traces of earthquake. This is, in part, the result of archaeo-seismological studies and evidence for which can be seen clearly in the area.

The History of Kibyra⁴ and its Urban Development

According to the geographer Strabo, who mentions Kibyra for the first time in the ancient sources, the city was initially founded by the Lydians⁵. It subsequently moved to its current location where it became a city with an area extending over 100 stadia during the Hellenistic period. This statement finds support in the location of the Göladası, Şehertaşı settlement located on the Uylupınar Lake which is 18 km. east of Kibyra⁶. The Uylupınar Şehertaşı settlement dates from the Lydian period and subsequently moved to the hill where the new city of Kibyra was founded during the 3rd century B.C. This resettlement, where it is located today, was probably undertaken for security reasons. Therefore, it is not wrong to call Şehertaşı Old Kibyra⁷.

The city was ruled by tyrants, and the name of the first known tyrant or tyrant gens is Moagetes, according to Polybius⁸ and Strabo. The city began to become rich and develop during the second half of the 2nd century B.C., and it became the political centre of the Kabalia or Kibyriatis region. Strabo records that Kibyra had formed a tetrapolis (a union of four cities) with Balboura (Altınyayla), Boubon (İbecik), and Oinoanda (İncealiler) and was the capital of this federation⁹. Archaeological remains from the city dating from the Hellenistic period are a Doric monumental tomb¹⁰ in the eastern wall of the stadium and the temple located just above the theatre which was later converted into a three-vaulted church, but which is dated to the Hellenistic period from its original architectural decoration. Moreover, the ceramic workshops located on a hill above the theatre and the quantity of ceramic moulds found during the course of the stadium excavations clearly show the city was an important center of ceramic production. Also, Hellenistic inscriptions were found during the course of excavations in the agora and the odeion, inscriptions in which the name Moagetes is recorded. These structures were used as meeting places, which is significant in indicating the power of Kibyra during this period¹¹.

During the Roman period L. Licianus Murena terminated the rulership of the Kibyran tyrant (?) Montages II 85/54 and in 82 B.C. dissolved the federation and included the capital Kibyra within the province of Asia¹². Despite this, the city preserved its richness and political power

⁴ The history of Kibyra has been studied by L. Meier of the DAI in Istanbul.

⁵ Strabo 13.4.17.

⁶ Ekinci et al. 2007, 26 Fig. 6; Ekinci et al. 2008, 32-33; Ekinci et al. 2009, 36-37; Dökü - Özüdoğru 2009, 51; Corsten et al. 2011, 182; Corsten et al. 2012, 175-176; Dökü 2012.

⁷ Ekinci et al. 2007, 26 Fig. 6; Ekinci et al. 2008, 32-33; Ekinci et al. 2009, 36-37; Dökü - Özüdoğru 2009, 51; Corsten et al. 2011, 182; Corsten et al. 2012, 175-176; Dökü 2012.

⁸ Polybius, 21, 34.

⁹ Strabo 13.4.631.

¹⁰ Özüdoğru et al 2011, 36 ff. Fig. 1, 2.

¹¹ The inscriptions of Kibyra inscriptions have also been studied by L. Meier.

¹² Polybius 21.34; Strabo 13.4.631.

within the region. The city suffered from a major earthquake in A.D. 23 and the damage from this disaster was in part relieved through the exemption of the city from taxes and with the donation of financial aid to the city following this disaster by the emperor Tiberius. Following this exhibition of benevolence by the emperor, the name of the city was changed to Kaisareia Kibyra¹³ and a new calendar system began to be used. After these events, the ancient sources become silent concerning the subsequent history of the city.

Kibyra in the Roman era began to be decorated with monumental architectural buildings indicating the imperial power of the Roman Empire in the region. The city has a compact structure with its necropolis surrounding the main hill on three sides upon which the public buildings¹⁴, including the stadium, agora, theatre and odeion constructed from the 2nd to the 3rd centuries A.D. are located (Fig. 2). The entrance to the city is through a three-vaulted, two-towered monumental gate on a street with monuments and sarcophagi on both sides. The street, continuing from the splendid entrance of the stadium toward the west, should have led directly to the agora. The monumental agora, with its two-sided stoa extending in a north-south direction and shops located at the rear of the east stoa, are in fact a reflection of commercial magnificence that survived uninterrupted up to the late 6-7th centuries A.D.¹⁵. But all the buildings within this area must have been demolished in order to build the defense walls of the city during its last years, with this material reused to construct the city walls. On the northwest corner of the agora, a bathhouse stands with its large gymnasium. If one follows the main street, passing south of the agora towards the west, the well-preserved theater and odeion are seen immediately to the south of it. The survey carried out on the hill over the odeion reveals the existence of ceramics workshops which continued to function over a long period from the Hellenistic period onwards¹⁶.

The Location of the Stadium within the City

The stadium, whose excavation began in 2006, is situated on the west end of the Necropolis road and oriented in a north-south direction on the east slopes of the city. It is reached after passing through a monumental gate which has a true likeness to the architecture of the Frontinus Gate in Hierapolis¹⁷ (Fig. 2). The stadium together with other public buildings including the agora, theater, odeion and the bathhouse on the main hill have been dated to the 2nd-3rd centuries A.D., and are very important for defining the nature of the urban planning of Kibyra during this period. During the Hellenistic period the public buildings and the necropolis were located on the hills where defence was easiest, whereas the city extended down towards the valley during the centuries of the Pax Romana. There must be several reasons for selecting the slopes of a main hill for the location of a stadium. When it is considered in general, the position occupied by the stadium of a city is very closely related to the topography of its settlement. Therefore it has a few different forms related to the particular topography of the settlement, which can be classified as below:

13 Bean 1997, 168; Th. Corsten, *Die Inschriften von Kibyra*, 1. Die Inschriften der Stadt und ihrer näheren Umgebung (2002) 11-12.

14 D. Tarkan, *Kibyra Kabartmalı Sunakları Tip, Biçem ve Atölye* (Akdeniz University Unpublished MA Thesis 2011).

15 Özüdoğru - Dökü 2011, 39 ff. Fig. 2.

16 Ekinci et al. 2007, 22-28; Özüdoğru - Dündar, 2007, 145 ff.; Ç. Uygun - E. Dökü, "Kibyra Yerel Kırmızı Astarlı Seramiklerinden Örnekler", Adalya 11, 2008, 133 ff.; Ekinci et al. 2008, 35-41; Ekinci et al. 2009, 32-39; Dökü - Özüdoğru 2009, 51 ff.

17 F. D'Andria, *Ein archäologischer Führer in Phrygien (Pamukkale)* (2003) 70 ff. Figs. 43-46.

1. A stadium is built between two slopes if there are two adjoining hills so that either, or both, sides might be naturally used by the spectators, or these slopes could be used as a natural support for rows of seats if the architectural embellishment of the stadium was undertaken¹⁸.
2. If the city is a mountainous settlement such as Tlos and the stadium requires a long area, the stadium is sited along the slope of a hill, so the rows of seats are located on this slope¹⁹.
3. If it is a city like Perge, located in an expansive plain, the stadium is sited on a flat area not far from the city, in a manner not to hamper the expansion and development of the settlement.²⁰ The rows of seats are placed upon a series of constructed angled vaults.
4. If a city is located in a mountainous area like Kibyra, there are two options for constructing a piece of monumental architecture such as a U-shaped stadium with a single sphendone. The first is to site the stadium on the plain just below the city. However, a stadium built in this location is quite distant from the city and the requirement to provide support for the cavea on constructed vaults will cause considerable expense. This situation is a very difficult choice both architecturally and financially. The second option is to site the stadium on the slope of the main hill at the entrance to the city where the other public buildings are located. Thus the building would remain within the city as well as conserve architectural and material resources by establishing the steps for seating on the side of the slope. Therefore the stadium of Kibyra was probably sited for these reasons in a north-south direction on slope of the main hill where the other public buildings were located.

The Architecture, Function and Dating of the Kibyra Stadium

The stadium of Kibyra is entered through a propylon consisting of five arched entrances (Figs. 3-5). When considered as to plan, it is distinguished among other Roman-period stadiums through its single sphendone U form, which is the most common form in Anatolia. It is different than the double sphendones in Laodicea²¹ and nearby Aphrodisias²² (Figs. 5, 6). Moreover, it has a different plan from those stadiums that are one sided and lean into the slopes of hills such as the stadiums at Tlos²³, Arykanda²⁴ and Kadyanda²⁵ in Lykia, the southern neighbour of this region. Although associations can be drawn between the stadium of Kibyra and those of Ephesus²⁶, Magnesia at Meandrum²⁷, Perge²⁸, Aspendos²⁹, Sillyon³⁰,

¹⁸ Romano 1993, 17 ff.; Saltuk 1995, 16-19; İlhan 1996, 23, 24.

¹⁹ Romano 1993, 17 ff.; Saltuk 1995, 16-19; İlhan 1996, 23, 24.

²⁰ Saltuk 1995, 69-73; Özdzibay 2008, 134 ff.

²¹ C. Şimşek, Laodikeia (Laodikeia ad Lycum) (2007) 200 ff. Figs. 69 a, b, c, d.

²² Welch 1998, 547 ff.

²³ Saltuk 1995, 68 Fig. 45; Bean 1997, 68 Fig. 25; Bayburtluoğlu 2004, 278.

²⁴ Saltuk 1995, 67 Figs. 43, 65 a, b; Bean 1997, 143 Figs. 16, 79; Bayburtluoğlu 2004, 139 ff.

²⁵ Saltuk 1995, 67 Figs. 43, 65 c; Bean 1997, 45 Figs. 3, 8; Bayburtluoğlu 2004, 288.

²⁶ H. Engelmann, "Zum Stadium von Ephesos", ZPE 149, 2004, 71 ff.

²⁷ P. Roos, "In search of ancient stadia and hippodromes in Anatolia", OpAth 20, 1994, 183 Fig. 4; O. Bingöl, Magnesia Ad Maeandrum (1998) 87 Fig. 115.116; O. Bingöl, Menderes Magnesiası Stadium Kazıları (2004, 2007, 2008)", Anadolu 34, 2008, 101-128; O. Bingöl, "Magnesia Antik Dünyanın Coşkulu Mekanı Stadyum", Aktüel Arkeoloji 23, 2011, 118-127.

²⁸ Saltuk 1995, 71-73 Fig. 48, 72-81; İlhan 1996, 53-55 Fig. 57; Özdzibay 2012, 79 f. Fig. 68-69.

²⁹ Saltuk 1995, 69, 70 Fig. 47, 67-71; İlhan 1996, 55 f. Fig. 63.

³⁰ Saltuk 1995, 70, 71 Fig. 49, 82-84; İlhan 1996, 55 f. Fig. 63.

Selge³¹ in its form, it has a unique plan among the stadium of Anatolia with its architectural details.

The size of Kibyra's stadium establishes it among the most magnificent to have been constructed in Anatolia with an approximate capacity of 10,000 people and a running track that extends for 200 meters. It likewise presents a distinctive appearance through its architectural richness. The stadium is entered through a propylon that is 7.94 m. high and 25.35 m. long standing on a 3.50 m. spaced six-footed base. This provides the main entrance from the north (Figs. 3, 4)³². Since the west side of this U-shaped stadium with single sphendone rests on the slope, 21 rows of seats divided by kerkides were placed into the cavities cut into the conglomerate bedrock or upon the bedrock reinforced with rubble stone. In contrast, on the eastern side, a total of eight seats are seen, but traces of the kerkides cannot be seen due to the mass destruction caused by the earthquake and the removal and reuse of these architectural blocks in other buildings. The application of clear Roman axial symmetrical architecture, despite many difficulties to be explained below, suggests that the kerkides between the western rows of seats must have had the same form as those between the eastern rows. The eastern seats were placed on the main rock strengthened through the construction of a retaining wall due to the reduced elevation of the slope behind it. On the façade of the retaining wall bearing these seats, there are rectangular small cells (0.90 m. x 2.30 m.) built from rubble stone and lime mortar. These cells were filled with little pieces of rubble stones and the seats were placed upon these supports. A 0.60 m. wide wall, upon which the last row of the seats was placed, stands behind the cells carrying the seats and limits the whole area in a north-south direction (Figs. 5, 6). In order to protect this thin retaining wall against the elevation of slope, it was strengthened by main rock vaults measuring approximately 3 m. long and 2.80 m. wide. These are two-storied beginning from the middle of the eastern façade of this construction. In front of these vaults stands a 1.80 m. wide retaining wall of rubble stone and limestone upon which eight rows of seats were placed. The slope's decline was compensated for by filling the rubble stone cells in the front with the two-storied vaults at the back strengthened with rubble stones and by building a retaining wall supported by thick and high rubble stone wall immediately in front of these vaults. Consequently adding only eight rows of seats, while reinforcing the eastern steps was a solution produced in accordance with both the topography of the land architecturally and seismically, as well as to preserve the splendid view of the plain and lake for the spectators sitting on the western side, as was usually the case in the Hellenistic theater tradition. However, despite all this effort, this construction was destroyed by an earthquake and the eastern rows of seats were completely destroyed (Figs. 5, 9-11 a, b). Hence the attempt to make this magnificent building situated on a slope at Kibyra earthquake resistant was in vain.

Together with these architectural details, the stadium is shaped according to the topography of the land and important as the most magnificent building where Roman axial symmetrical architectural understanding is exhibited. This is manifested in the western seating elevated in the form of 21 rows due to their placement into the natural slope but which are continued uninterrupted to the middle of the sphendone where the natural slope ends. The natural slope decreases with the difference of elevation from this point so the continuance of the 21 rows was ensured to the end of the sphendone arch through the construction of a retaining wall supported by vaults. From the place where sphendone arch ends, eight rows of seats extend along

31 A. Machatschek - M. Schwarz, Bauforschungen in Selge (1981) 80 ff. Fig. 3, 56-59.

32 M. C. Kaya, Kibyra Mimari Bezemeleri (Akdeniz University Unpublished MA Thesis 2011) 8f.

the eastern cavea (Figs. 5-8). During the studies carried out in 2009 to determine the wall at the south end of stadium upon which the eastern seats rest, we found that the sphendone was supported by two vaults averaging 3.35 m. wide and 10 m. high alongside the sphendone's semi-circle. When forming these vaults with blocks cut from the main rock inside, one outer row was hidden by smoothly cut limestone blocks (Figs. 9-10). Most probably the bed-rock revealed when leveling the hill during building of the stadium was cut into blocks and used to construct the vaults at the rear of all the eastern seating. However, because this conglomerate main rock is not a particularly good building material strong enough to support the vault, it was filled with mortars and stones in order to strengthen it (Figs. 9-11 a-c).

These unusual architectural details, especially those planned for the eastern seats, differentiate Kibyra's stadium from others in Anatolia by making it unique. As a result, in the south where the vertical angle of the slope's elevation decreases suddenly, the 21 rows of seats continued until the end of the sphendone arch. These were arranged in two floors and supported by vaults reaching up to 20 m. in height and reinforced from inside by a rubble stone wall³³. The eastern rows of seats arranged here in eight steps continued the system employed on the south. Here the vaults, the average of which are 2.80 m, filled with unhewn stone and lime mortar inside are seen to be two storied beginning from the middle part and are placed against the retaining wall (Figs. 4, 6, 11 a-c). The section of the eastern seats facing the track is seen to be placed upon an artificial slope with small cell-shaped walls made of rubble stone and limestone and are filled with rubble stone.

On the stadium's track used for competitions, architectural details such as the stone steps designed especially for races in order to ensure the simultaneous exit of athletes³⁴ and evidence for the Hysplex system named as the exit mechanism³⁵ have not yet been found in our excavations. But a detail that draws attention here is the waste-water system constructed with a great pithos connected to clay pipes beneath the 21 western rows of seats. This system was likely employed to ensure the discharge of the rainwater that collected in the kerkides, which was then directed into a pithos placed on the bed-rock below before it reached the floor of the stadium.

The ingress and egress of the spectators and athletes into the stadium was provided by three doors (Figs. 4, 6). The first is the monumental propylon located in the north. It was the main gate facing the city. The other door was opposite the seats of honour in the middle of the western rows of seats through which the athletes came on to the field and saluted the dignitaries. The third door was the vaulted one at the southern end and located in the middle of the sphendone. Thus comfortable entry and exit for the crowds of spectators was provided through both ends of the north-south-orientated stadium.

The portico, which stood over the western rows of seats, would have been covered with a wooden roof and provided a monumental façade to the stadium (Figs. 4-6, 10, 12). This structure achieves the architectural aim of suggesting a holistic appearance, given its similarity to the monumental gate providing entry at the north. The total height of the portico is about 6 m.; it is elevated over plinths placed every 4 m. and linked by arches. The dedicatory inscription along the upper blocks of the portico can be traced along its whole length. The length of the inscription - only 40 m. of its 70 m. length was found during the excavations - again stresses

³³ Özüdoğru et al. 2011, 36 f. Fig.1.

³⁴ Saltuk 1995, 20-21 Fig. 5a, b; Valavanis 1999, 1 ff. Fig. 1-6.

³⁵ Saltuk 1995, 21-22 Fig. 12 a-c; Valavanis 1999, 1 ff. Fig. 1-6.

the magnificence of the building. The dedicatory inscription, dated to A.D. 198-211, states that “the stadium is dedicated to Zeus, Emperor Septimius Severus and all his family”³⁶. Needless to say, this was a very important archaeological and epigraphical find. The terrace wall that continues behind the portico area is the final architectural element that defines the structure’s west side.

Another area related to the stadium is a late building formed from spolia blocks at the south-east end of the stadium. It was discovered and exposed during excavations in the 2009 season. This building is a two-storey monumental tomb built from rubble stone and lime mortar with an *in antis* plan. Two different reused column bases at the entrance in the middle of the ante walls of the building have been protected until today. While the main room of the two-storey building was supported by vaults placed on four sides of the room below, the lower floor was employed as a burial chamber. In the arcosolium on the east there is a rectangular chamasorion cut into the main rock. As a result of the excavation work, it was determined that this building measuring 8.70 x 7.30 m. can be dated to the 6th-7th centuries A.D. It is thought to be a monumental tomb in temple form, such as a Martyrion³⁷ (Figs. 6, 13).

The stadium of Kibyra must have been employed not only for athletic events but also for gladiatorial fights and venationes. Many stadium and theaters in Anatolia hosted not only athletic competitions but also, with some architectural additions, gladiator fights. This latter form of entertainment is understood to be imported from Rome³⁸. To protect spectators from these brutal fights, parapets made of high stone blocks or walls and separating the steps of rows and the orchestra are found in many Anatolian stadiums and theaters³⁹. Stadiums provided ready arenas for well-attended gladiator fights and for the fights of venatores with wild animals, particularly in densely populated cities where elite officials or aristocrats lived. However, these spectacles were also performed in theaters of smaller and less crowded dimensions⁴⁰. Consequently this change in the understanding of entertainment was reflected also in the architectural modifications, which included protective parapets and expansions to increase spectator numbers, began to be found in theatres as well as stadiums⁴¹. This transformation is best observed architecturally in the details of Perge’s stadium. Here a circular wall was constructed at the sphendone during Late Antiquity and thereby the zones of athletics and fighting were separated from each other⁴². Wooden parapets employed to create a security wall between the gladiators and spectators during the gladiator fights and venationes are thought to have been employed in the stadium of Aphrodisias, providing another architectural option⁴³. Evidence for these wooden parapets, employed for this same purpose, is also found at the Rhodiapolis theatre in Lycia⁴⁴. Consequently, the stadium of Kibyra was undoubtedly used not only for athletic competitions but also for gladiatorial fights. The most important finds

36 These Kibyra inscriptions have been studied by L. Meier.

37 Özüdoğru - Dökü 2010, 37-45; M. C. Kaya, “Kibyra’dan Bir Geç Dönem Mezar Yapısı”, Mehmet Akif Ersoy University, Western Mediterranean Nature and Earth Sciences Symposium 4-6th November 2010.

38 Ferraro 1988, 155 ff.

39 Ferrero 1988, 155 ff. Fig. 214-220; Özدilek 2011, 267 ff.

40 Özدilek 2011, 267 ff.

41 Ferrero 1988, 155 ff. Fig. 214-220; Özدilek 2011, 267 ff.

42 Özdzibay 2008, 134 ff. Fig. 44.; Özdzibay 2012, 79-80 Figs. 68-69.

43 Welch 1998, 102 ff. Fig. 11-12.

44 Özdilek 2011, 55, 88, 95 Pl. 7 Fig. 21; B. Özدilek, Lykia’daki Gün Yüzüne Çıkarılan Rhodiapolis Tiyatrosu (2012) 98 Pl. 13 Fig. 18.

substantiating that this occurred are the scenes of gladiatorial fights on the tombs of gladiators, possibly Kibyran, which were found during excavations by the Burdur Museum on the road to the necropolis east of the stadium. Additional reliefs depicted the fights of venatores with animals and scenes of gladiator fights⁴⁵. The existence of two cages, one fixed to the floor and the other placed on a wooden cart for transport during a fight between venatores and animals, is a unique iconographical depiction that particularly informs the function of Kibyra's stadium (Figs. 14 a-b). The first relief depicts the door of the cart furthest left raised up, and so one of the animals participating in a fight with venatores is released (Fig. 14 a). On the second relief all the doors of the other cage are opened, and the animals have been released. However, there is no wheeled cart in this depiction and the cage must have been put on the ground (Fig. 14 b). In conclusion, the existence of a cage carried on a cart that is seen in friezes in which venatores fight and upon which crowded war scenes are depicted should remind us that these spectacles were most probably held in an area larger than a theatre, therefore within the stadium. Although a parapet separating the spectators and gladiators has not yet been found, it is likely that the wooden parapet employed in the Rhodiapolis theatre and the Aphrodisias stadium might also have been used in Kibyra's stadium. Consequently, although the stadium of Kibyra was planned and built for athletic competition, these reliefs that show fighting scenes of gladiators, venatores and animals, recovered from the necropolis area, demonstrate it was also employed for gladiatorial events. Moreover, numerous depictions of gladiatorial fights appear in relief on locally produced oil lamps, the majority of which were found in underground burial chambers that date to the second half of 2nd century A.D. (Figs. 15 a, b)⁴⁶. These are an important indication of how the gladiators played an important role in the social life of the city.

The dating of the construction of Kibyra's stadium has become clearer through the discovery of the dedicatory inscription on the upper part of the western building that continues along the portico. We determined that the building inscriptions were placed on the third and fourth bases of the monumental propylon which provided entry into the building from the south. The inscription states that Flavius Kapiton and his cousin Titus Flavius Ovidianus are honoured by the assembly and the people of Kibyra for donating money for the construction of the stadium. The date of the inscriptions is thought to be the late 2nd century A.D⁴⁷. This dating is compatible with the agora, theater and odeion buildings also situated on this main hill area we have termed the Centrum. Kibyra was destroyed several times by earthquakes, and the city repeatedly survived and rebounded to display again its richness. The most important data proving this is the use of spolia material re-employed in the foundations of the portico bases on western rows of seats (Fig. 16). This physical evidence has assisted us in determining the earthquakes that occurred during periods of building, their usage and destruction, and, at the same time, in attaining more definite results concerning the seismicity of Kibyra. As will be discussed in more detail in the section on earthquakes below, the fault line that passes through the middle of the sphendone and extends down from the eastern rows of seats towards the necropolis road - a misfortune in its day - has provided us with the opportunity to better understand the past of the stadium and Kibyra.

⁴⁵ Ekinci 2003, 55 Fig. 1.2; the "Kibyra Gladiator Friezes" have been studied by. H. A. Ekinci - C. Berns.

⁴⁶ Uzunaslan 2010, Fig. 33, 38; Metin 2012.

⁴⁷ These inscriptions have been studied by L. Meier.

The Development of Stadium Architecture and the Kibyra Stadium within the Typology of the Anatolian Stadium

To determine the place of Kibyra's stadium within the typology of Anatolian stadiums, it is necessary to understand the architecture of a stadium and its development. During the Archaic period, Homer mentioned a dromos first in the Iliad (23.758) in a race competition prepared for Patroklos⁴⁸, then in the Odyssey (8.121) in race competitions for the entertainment prepared to honor Odysseus⁴⁹. Dromos is a term used to express the place where races are conducted. However, in Hellenic literature the word stadium began to be used by Simonides, Pindaros and Bacchiliydes to express the place and a building in which a competition is held early in the 5th century B.C.⁵⁰. Moreover, Herodotus and Thucydides used stadium also as a defined unit of distance measurement⁵¹.

Stadiums at Olympia, Isthmia and Halieis in the 6th to 5th centuries B.C. were buildings with a rectangular dromos which was approximately 182 m. long and 15.24 m.-30.50 m. wide, forming a slight convex shape, with the spectators seated on the hills at both ends⁵². However, since the measurement of 600 feet is not the standard length of a stadium, different dimensions from 166 meters to 192 meters can be found⁵³. The earliest archaeological findings that confirm this definition is the stadium at Olympia dated to the middle of the 6th century B.C. It was employed primarily to stage religious games⁵⁴. This was followed by the Isthmia Poseidon Temple and Archaic Isthmia and Corinth Stadium dated to the mid-6th century B.C., which were likewise connected to the sacred games⁵⁵. The Halieis stadium dates from the 6th century B.C. and has an earth rampart constructed for the spectators at the sides and a rectangular dromos as in Olympia and Isthmia. Its connection with temple of Apollo Halieis as well as its length of 166.50 m.⁵⁶ is of great importance. Rows of seats were first added to the stadiums at Epidaurus and Nemea in 4th century B.C.⁵⁷. Although the sphendone was initiated in the Hellenistic period, it became the traditional form for stadium construction during the Roman period⁵⁸.

Stadium buildings became more common in Anatolia in the Hellenistic era and especially during the period of the Roman Empire. This increase in number also saw the combination of functions with stadiums being not only the places for athletics, but also arenas employed for gladiatorial fights⁵⁹. N. İlhan has established the functional and architectural typology of the Anatolian stadiums known to the present day (Fig. 17).

48 Romano 1977, 13, 14.

49 Romano 1977, 13, 14.

50 Romano 1977, 14.

51 Romano 1977, 16.

52 Romano 1977, 3 ff.; Saltuk 1995, 13 ff.

53 Romano 1977, 17; Saltuk 1995, 14 ff.

54 E. Kunze, V. Bericht über die Ausgrabungen in Olympia (1956) 1 ff.; E. Kunze, VIII. Bericht über die Ausgrabungen in Olympia (1967) 1 ff.; E. Kunze, X. Bericht über die Ausgrabungen in Olympia (1981) 1 ff.; Kyle 1993, 92-93.

55 Romano 1977, 26; Kyle 1993, 92-93.

56 Romano 1977, 34.

57 Romano 1977, 38; S. G. Miller, "Turn and Lanes in the Ancient Stadium", AJA 84.2, 1980, 159-166; S. G. Miller, Excavations at Nemea II-The Early Hellenistic Stadium (2001) 1. ff.

58 Saltuk 1995, 30.

59 For the influence of the Roman life of spectacle, see M. B. Poliakoff, "Stadium and Arena: Reflections on Greek, Roman, and Contemporary Social History", OLYMPIKA: The International Journal of Olympic Studies II, 1993, 67-78; Pietsch 2002, 9 ff.

According to this typology:

1. Temple - Stadium: stadium connected to a Sacred Field. An example is the one associated with the Didyma temple of Apollo⁶⁰. Although the stadium of Kadyanda has been included in this group, it should instead be included among those with single side rows of seats, added by us as section 8 and having common features with other stadiums in the Lykian mountain cities.
2. Gymnasium - Stadium. The triple gymnasium in Pergamon's middle city is an example of this type; it is a transition stage in the architecture of the stadium⁶¹.
3. Xystus type: xystus is where athletes exercised being the length of one stadium and linked to the stadium in the form of a covered stoa. The Priene stadium is the only example of this type, due to the Doric stoa located next to it⁶².
4. Rectangular Form (without sphendone): stadiums close to the rectangular shape with a slightly convex curvature like the archaic stadium. The stadiums at Miletus and Arykanda as examples of this type⁶³. However, the stadium of Arykanda will be evaluated in section 8 together with that of Kadyanda.
5. Single sphendone: most common type in Anatolia. Examples of this include stadiums at Ephesus and Magnesia as well as in Pamphylia at Perge, Aspendos and Sillyon. The plan of the stadium of Selge, located on the border of Pamphylia and Pisidia, was very clearly influenced by the Pamphylian stadiums⁶⁴.
6. Double sphendone (Stadium - Amphitheatre): monumental character exhibiting a closed structure into itself. Examples of this type are found in Aphrodisias, Laodicea and Nysa⁶⁵.
7. Stadium combined with a theatre: stage buildings incorporated architecturally. The stadium of Aizanoi is limited by theatre's stage building to the north⁶⁶; the stadium of Sardis also falls within this group⁶⁷.

Stadium typology should be completed with an additional category:

8. Single side with seating rows: single side with seating rows placed upon the slope. The stadiums of Tlos⁶⁸, Arykanda⁶⁹ and Kadyanda⁷⁰, significant examples of this type, are found in the mountainous cities of the Lykian region. Beyond Lykia the stadium of Priene, also in a mountainous setting, can be included in this group.

According to these stadium types, the stadium of Kibyra should be included within the type of the single sphendone that developed during the Roman Empire Era. This type is best exemplified by the stadiums in the Pamphylian region. Additionally, the Kibyra stadium employs a portico (most probably covered) over the western rows of seats as a xystus. This created both

60 İlhan 1996, 46-47 Fig. 82.

61 İlhan 1996, 47 ff. Fig. 82.

62 İlhan 1996, 49 f. Fig. 82.

63 İlhan 1996, 50 f. Fig. 82.

64 İlhan 1996, 51 ff. Fig. 82.

65 İlhan 1996, 58 ff. Fig. 82.

66 C. Rohn, "Die Arbeiten am Theatre - Stadium - Komplex von Aizanoi", AA 116, 2001, 303-317.

67 P. Roos, "On the Connection between Theatre and Stadium in Anatolian Cities", Arkeoloji Dergisi Özel Sayı I, Erol Atalay Memorial, 1991, 165-168; İlhan 1996, 62-63 Fig. 82.

68 Ş. Aktaş - M. Duman, Stadium 3-4 Fig. 5.6 in T. Korkut, "Tlos 2009 Yılı Kazı Etkinlikleri", KST 36.1 (2010) 1-16

69 Saltuk 1995, 67, Fig. 43, 65a, b; Bean 1997, 143 Pl. 79 Fig. 16; Bayburthuoğlu 2004, 139 ff.

70 Saltuk 1995, 67, Fig. 43, 65c; Bean 1997, 45 Figs. 3, 8; Bayburthuoğlu 2004, 288.

a covered area to protect spectators and athletes from natural conditions as well as allowed athletes to exercise in inclement weather. This feature may be evaluated typologically as a fusion between the single sphendone and the xystus types.

Two Different Geological Viewpoints Regarding the Traces of Historical Earthquakes in the Kibyra Stadium

Devastating earthquakes in ancient times caused destruction and transformation, deformed buildings and left significant marks on the history of ancient sites. While the natural traces of these earthquakes disappeared as a consequence of subsequent erosion and sedimentation, historic buildings have often retained traces of these events to the present day. Describing and analyzing these deformations at ancient sites contributes to a better assessment of any geologically recent seismic activity and risk and its consequences upon the history of the archeological area.

South-western Turkey is rich in well-exposed archaeological sites which today preserve damage caused by historical earthquakes (e.g. Priene, Hierapolis, Knidos, Sagalassos, Pinara, Aspendos, Side, Cremina, Selge, etc.). Kibyra was damaged at times by earthquakes because of its location on the Fethiye-Burdur fault zone that formed a secure corridor extending to the Mediterranean. The city's stadium, sited on a north-north-east trending fault zone, especially provides evidence of severe seismic destruction. Kibyra was destroyed by an earthquake in A.D. 23 and restored with help from the emperor Tiberius⁷¹. According to Guidoboni et al., the A.D. 417 earthquake also occurred in this fault zone and so seriously damaged Kibyra⁷². With most recent studies, Akyüz and Altunel (2001) stated that the earthquake in 417 happened on the fault line running through the stadium causing a surface break. There are no reports of other earthquakes after the city was abruptly abandoned following this event in 417⁷³. However, based upon detailed field observations Karabacak (2010) has suggested that a later large earthquake caused extensive damage in Kibyra probably after the 7th century A.D. (Figs. 18-21).

Karabacak proved from archaeoseismological data that the stadium was damaged by various earthquakes over time. The most revealing data concerns the fault running through the seats of the stadium. Traces of the surface break have been proved in the course of excavation and through microtopographic LIDAR (Fig. 20) measurements, whereas shallow geophysical studies have been used for deep traces. In the stadium the damage related to seismic shaking are the blocks of columns fallen in domino-style towards the west (Fig. 6). Detailed archaeoseismological surveys have shown that the stadium was devastated by an earthquake in the 5th century A.D. (most probably the earthquake of A.D. 417) that caused a surface break⁷⁴. The stadium floor and the eastern rows of seats must have been so damaged that the stadium could not be used for its original purpose after this date. The seats were not restored after this earthquake; the surface break on the stadium floor and the portico covered with dense sedimentation are the proof for this. The dating of the collapsed blocks using the OSL method shows that another earthquake occurred probably around the 10th or 11th centuries A.D. However, the stadium was not in use then but further extensive damage was still dealt to its remains (Fig. 21).

71 Bean 1997, 168.

72 G. Tiraina - E. Guidoboni - A. Comastri, Catalogue of ancient earthquakes in the Mediterranean area up to the 10th century (1994) 286.

73 Akyüz - Altunel 2001, 1-7.

74 Karabacak et al. 2009; Karabacak 2011, 429-447.

Elitez and Yaltırak, on the other hand, suggest that the above-mentioned fault line does not pass through the stadium, and the deformation supposedly caused by the fault line was instead caused by the lateral expansion caused by the seismic wave (Figs. 22-25)⁷⁵. They conclude that the destruction of the stadium was certainly caused by an earthquake. But when the geological data is considered, they find no valid evidence that the fault line causing the earthquake passed through the stadium. On the contrary, the character of the destruction with its rotation and domino effect points to the clearly observed fault lying 2.5 km. west of the stadium, and this fault has been mapped with its data (Figs. 23-25). Moreover, when the level of the fault plane and the depth of the earthquake are considered, the epicenter should have been somewhere to the west of Lake Gölhisar. It is thought that this would be sufficient to explain the damage to the fill area over a wide area⁷⁶.

Conclusion

As mentioned in the discussion above, when the other public buildings of Kibyra are considered, the stadium is the most monumental civic building. It was reconstructed again in a magnificent way after several earthquakes that occurred between the 2nd and 3rd centuries A.D. Being the only U-shaped stadium with a single sphendone among the Anatolian stadiums, it has the same typology with the stadiums of Ephesos, Magnesia ad Meandrum, Perge, Aspendos, Sillyon and Selge. The mountainous site of Kibyra had an important role in understanding the architecture of stadiums during the Roman period. Located on a slope at the city's entrance, the stadium had its rows of seats arranged in two levels, which were supported by vaults on the eastern part of the hill where the elevation of slope suddenly decreases. The construction of the stadium is dated to the late 2nd to early 3rd century A.D. This estimated date is derived from the evidence provided by the inscription on the propylon and porticos. A.D. 417 is the date when the stadium was destroyed and no longer employed for its original function; this was determined through geological studies. In this earthquake it is thought that the eastern seating supported by vaults was completely destroyed and never rebuilt. The gladiator reliefs found in eastern necropolis of Kibyra show that although the stadium was built for athletics, it was also used as an arena in which gladiatorial fights and venationes were held. The Kibyra stadium with its striking architectural detail therefore has great importance among the examples of well-preserved stadiums in Anatolia.

⁷⁵ Elitez 2010; Elitez et al. 2009, 296 f.; Elitez et al 2011; Elitez - Yaltırak 2012, 89.

⁷⁶ Elitez 2010; Elitez et al. 2009, 296 f.; Elitez et al. 2011; Elitez - Yaltırak 2012, 89.

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Özet

Kibyra Stadionu'nun Mimarisi ve Fonksiyonu

Kibyra Stadionu kentin doğu eteklerinde ziyaretçileri nekropol yolunun sonundaki anıtsal giriş kapısından sonra ilk karşılayan anıtsal mimaridir. 2006 yılında başlayan kazılar çok bilinmeyen Anadolu Roma Dönemi Stadion mimarisi üzerine oldukça önemli veriler sunmuştur. Anadolu Stadionları tipolojisi içerisinde hemen yakınındaki çift Sphendoneli Aphrodisias ve Laodikeia Stadionlarından çok, Pamphylia Bölgesi Stadion Planlarında görülen tek Sphendoneli "U" form-ludur. Kentin M.S. 2.- 3. yy. kamu yapılarının bulunduğu ana tepeliğin yamacına konumlandırılan Stadion'un batı oturma sıraları, yamacın yaslandığı için 21 sıra kadar yükseltilirken; doğuda kodun birden düşmesi nedeniyle arkası tonozlarla desteklenmiş bir istinat duvarının üzerine sadece 8 basamak yerleştirilebilmiştir. Ancak Roma mimarlığının katı simetrik anlayışı nedeniy-lede Sphendone yayının ortasında biten doğal yamaç sonrasında, iki sıra tonozlarla yükseltilmiş 21 oturma basamağı Sphendone'nin bitimine kadar uzatılmış ve buradan 8 oturma basamağına düşürülmüştür. Bu mimari çözüm depremlerle birkaç defa yıkılmış olan kentin coğrafyasına, konglomera ana kayasına karşı dayanıklı bir mimari oluştururken, Roma mimarisinin katı simetrisinin eklenmesiyle ortaya çıkan ünik bir form oluşturur.

Kibyra Stadionu'nu diğer Anadolu stadionlarından ayıran sadece planı ve kendine has mimiari çözümleri değil aynı zamanda bir görüşe göre Sphendone'nin tam ortasından, diğer görüşe göre Stadion'un yakınından geçen ve doğu oturma sıralarını yikan bir fay hattının varlığı dikkat çekicidir. Bu durum kent için sansızlık olarak nitelense de, yaptığımız arkeosismolojik çalışmalarımızla ortaya çıkan bir kentin depreme karşı nasıl bir savaş verdiği ve bunun mimarilere nasıl yansdığını anlamamız açısından önemlidir. Ayrıca özellikle arkeolojik ve epigrafik veriler doğrultusunda M.S. 2. yy. sonu, 3. yy. başlarına tarihlenen stadion'un; arkeosismolojik verilerle M.S. 5. yy. içerisinde olasılıkla M.S. 417 depremi ile yıkılarak son bulmuşluğunu belirlemek, arkeoloji ve arkeosismolojik yöntemlerle bir yapının ve sonrasında kentin hikayesini daha net olarak göstermesi açısından önemlidir.



Fig. 1 Map of Kabalis-Kibyratis (Talbert 2000, 65).

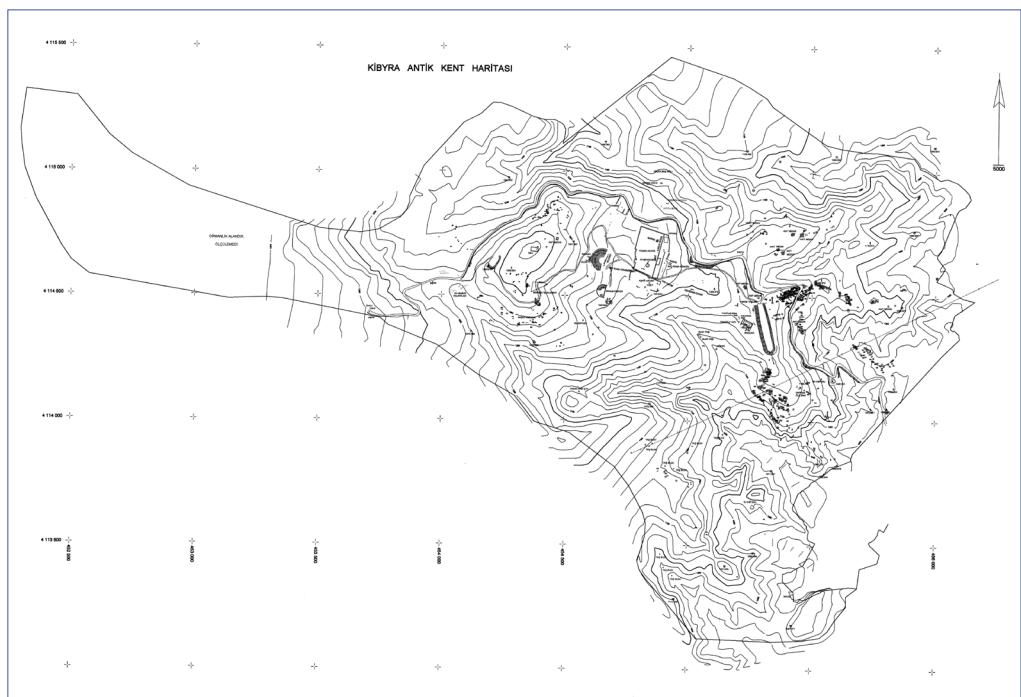


Fig. 2 Map of Kibyra.



Fig. 3
Propylon of stadium
after excavation.



Fig. 4
Propylon building of
stadium and Hellenistic
monumental tomb in
eastern retaining wall
(Architects I. Akgül –
N. Gürlesin – M. Sayan –
N. Kocaman).



Fig. 5 Aerial photograph of stadium.

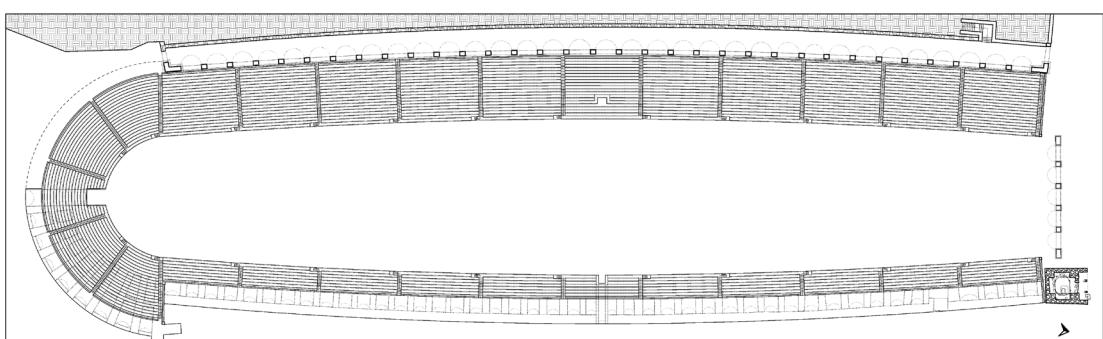


Fig. 6 Plan of stadium (Architects I. Akgül – N. Gürlesin – M. Sayan – N. Kocaman).

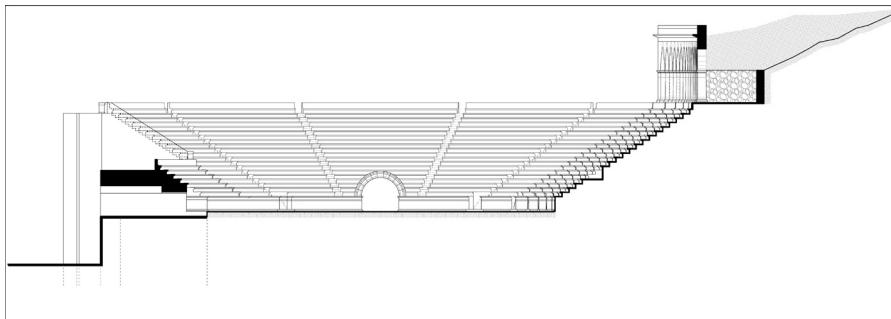


Fig. 7
Cross-section of
21 rows of seats
extending to end
of sphendone
arch (Architects
I. Akgül –
N. Gürlesin –
M. Sayan –
N. Kocaman).

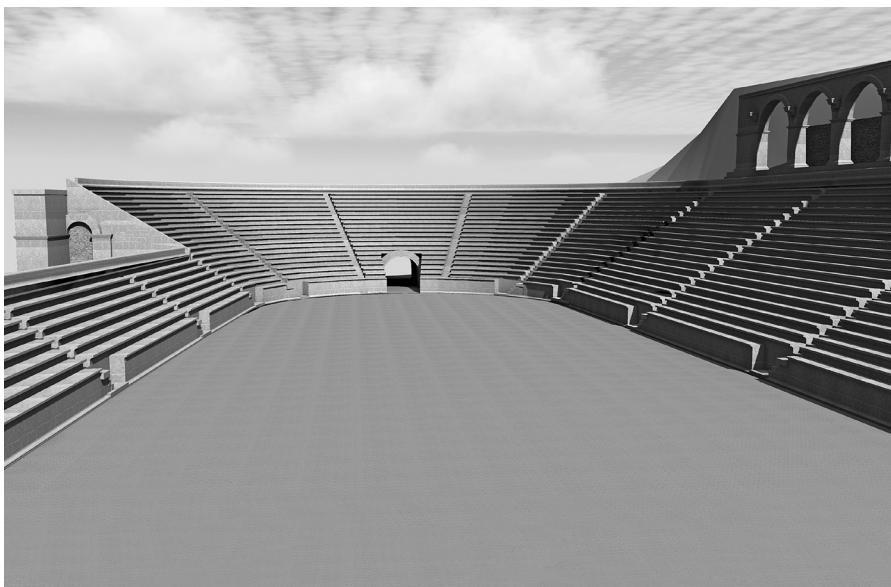


Fig. 8
3-D View of 21
rows of seats
extending to end
of sphendone arch
(Architects I. Akgül –
N. Gürlesin –
M. Sayan –
N. Kocaman).



Fig. 9
Sphendone vaulted
arch support for
south-eastern
two-storey
retaining wall.



Fig. 10
Sphendone vaulted arch support for south-eastern two-storey retaining wall
(Architects I. Akgül – N. Gürlesin – M. Sayan – N. Kocaman).



Fig. 11a
Eastern gate and vaults of two-storey retaining wall.

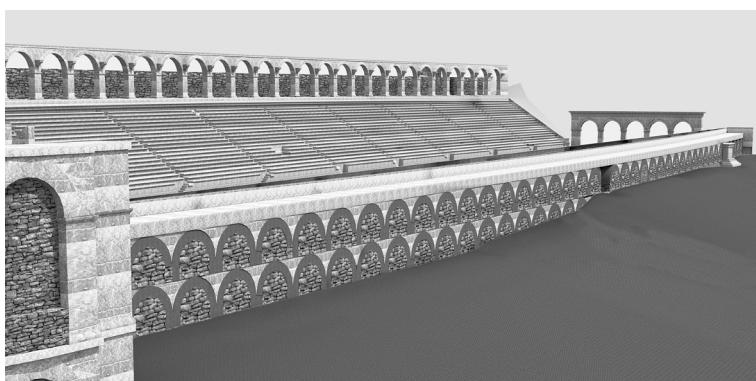


Fig. 11b
Eastern gate and vaults of two-storey retaining wall
(Architects I. Akgül – N. Gürlesin – M. Sayan – N. Kocaman).

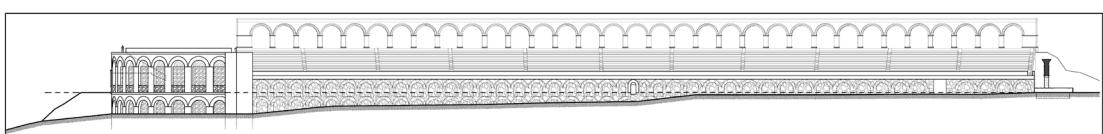


Fig. 11c Eastern view of stadium (Architects I. Akgül – N. Gürlesin – M. Sayan – N. Kocaman).



Fig. 12
Stadium's porticus area
(Architects I. Akgül –
N. Gürlesin – M. Sayan –
N. Kocaman).



Fig. 13
Martyrion north
of stadium.

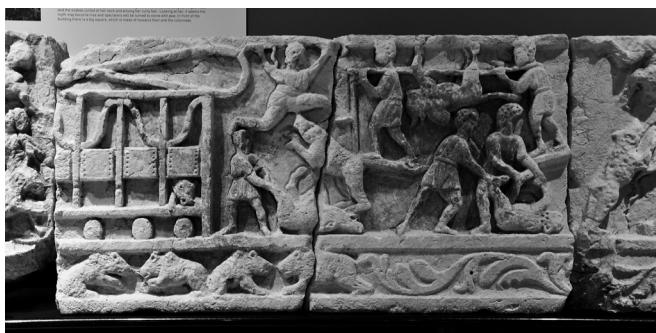


Fig. 14a
Depiction of wild animal cage brought on cart
combined with depictions
of animal hunts on
venationes reliefs.

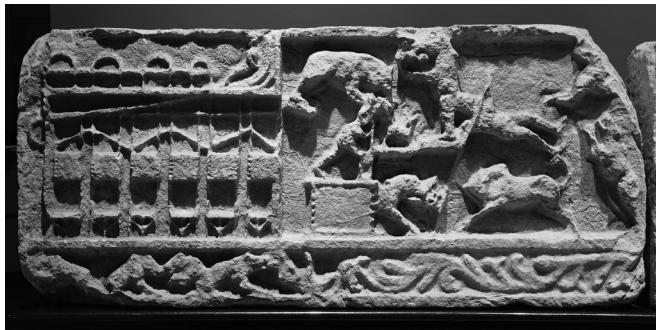


Fig. 14b
Depiction of caged
wild animal on
venationes reliefs.



Fig. 15a Gladiatorial fights in relief on locally produced oil lamps (Uzunaslan 2010, Fig. 33, 38; Metin 2012, 772 Figs. K79).



Fig. 15b Gladiatorial fights in relief on locally produced oil lamps (Uzunaslan 2010, Fig. 33; Metin 2012, 772 Figs. K80).



Fig. 16 Spolien material re-employed in the foundations of the Portico bases on the west seating rows of the stadion.

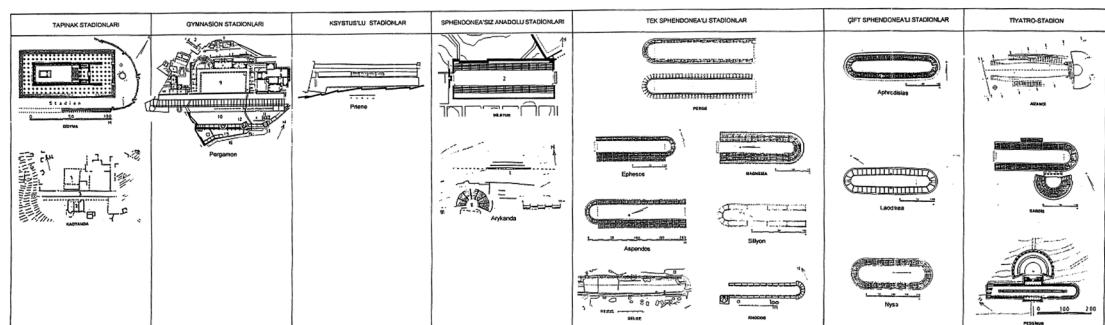


Fig. 17 Typology of Anatolian stadiums (İlhan 1996, Fig. 82).

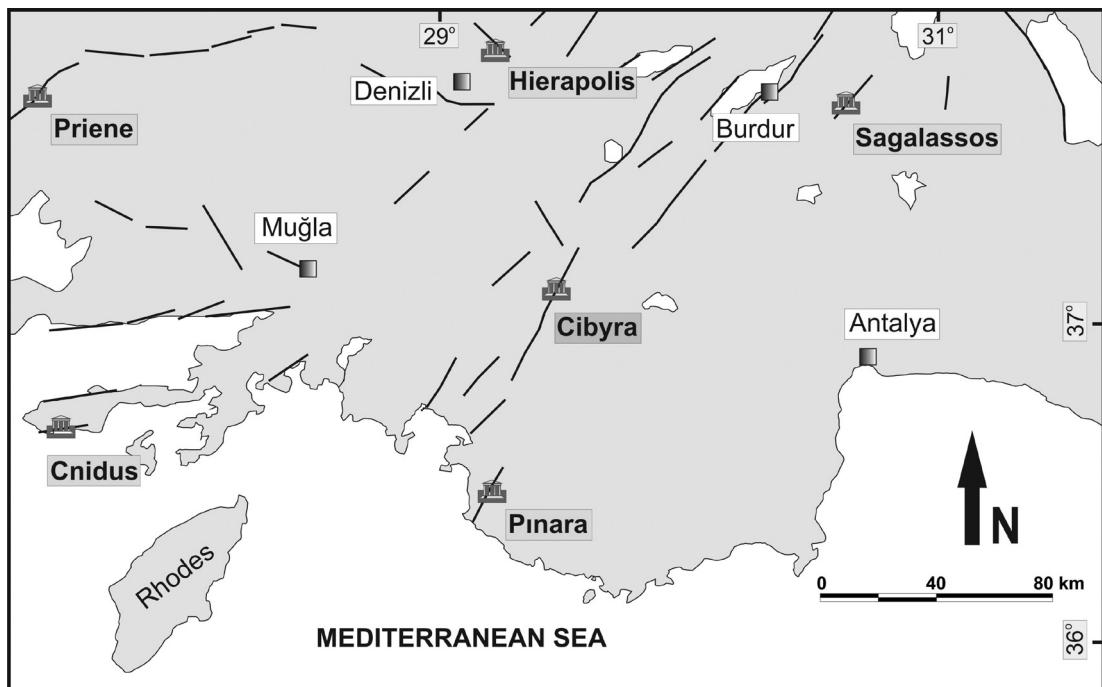


Fig. 18

Major active faults and the location of some of the ancient cities in southwestern Turkey (Karabacak et al. 2009, Fig. 1.1.b; Karabacak 2011, Fig. 1).

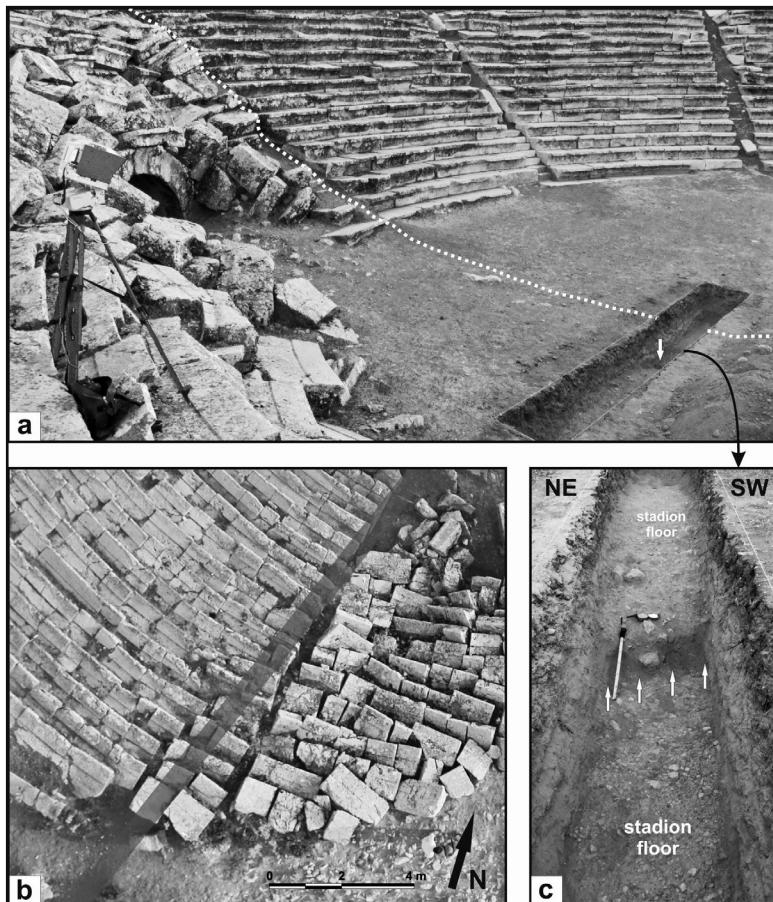


Fig. 19

a. Faulting at the southern entrance to the Kibyra stadium.
 b. Aerial photo from seat rows.
 c. The archeological excavation of the probable rupture extension.
 Deformation is obvious on the stadium floor, made of compressed limestone pebbles on the flattened bed-rock (red lines and arrows show the fault) (Karabacak et al. 2009, Fig. 4.20 a-c; Karabacak 2011, Fig. 10 a-c).

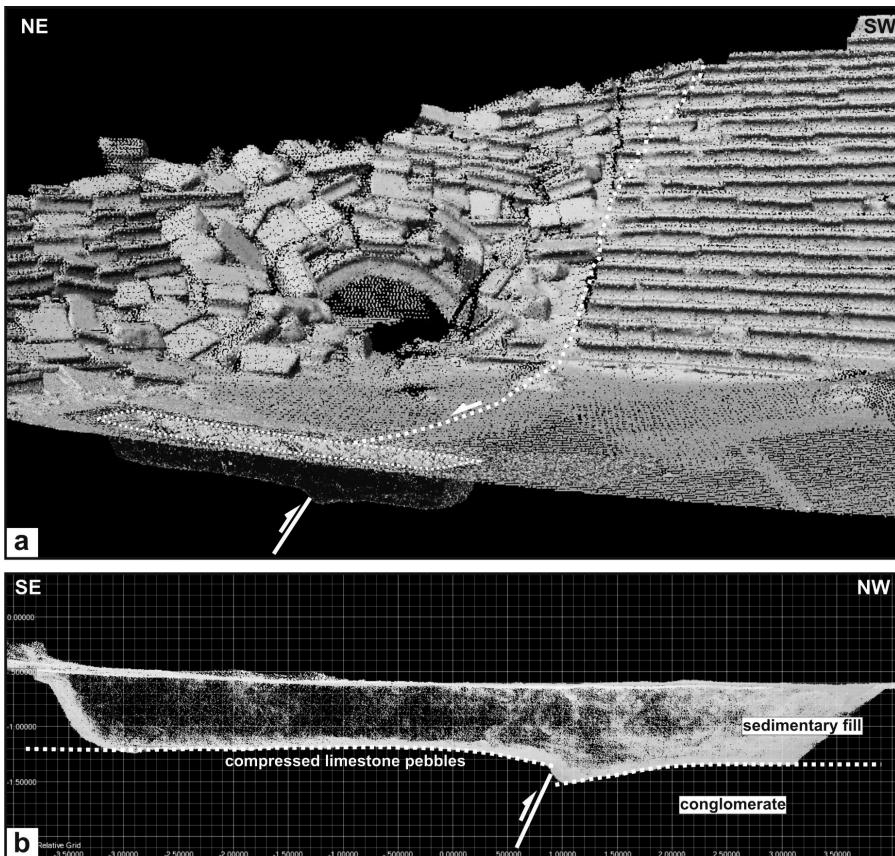


Fig. 20
 a. LIDAR studies on the southern entrance to the Kibyra stadium.
 b. Cross section through the buried stadion floor obtained by LIDAR measurements which indicates the amount of vertical displacement. (red lines and arrows show the fault) (Karabacak et al. 2009, Fig. 4. 21 a, d; Karabacak 2011, Fig. 11 a-d).

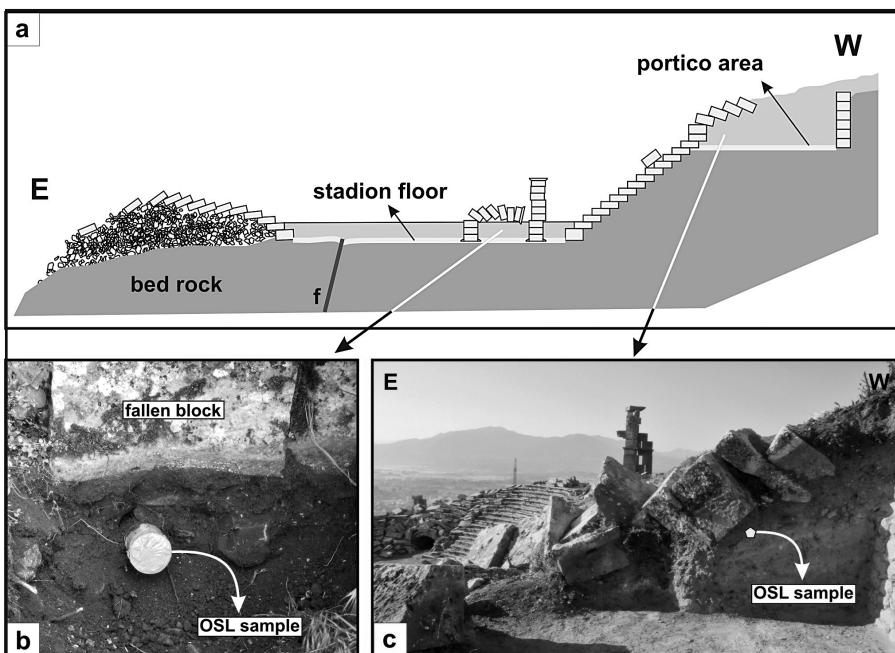


Fig. 21
 a. Model of the Kibyra stadium, which schematizes the earthquake-related deformations in the same section, not drawn to scale. (f: fault rupture).
 b. A fallen block of the northern entrance column and OSL sampling below it. c. The side columns of the portico area have fallen towards the west in domino-slice of salami style upon the sedimentary deposit. (Karabacak et al. in press).



Fig. 22
Photo of the
Kibyra fault line
(Elitez – Yaltırank
2012).

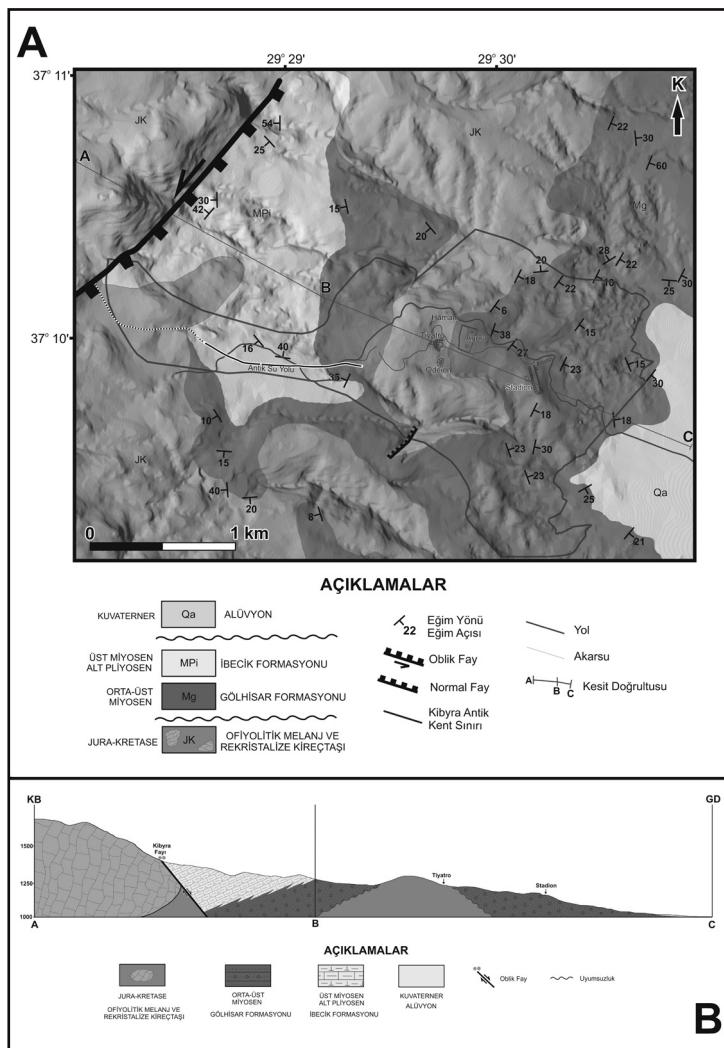


Fig. 23
The geological
map (A) and
cross-section (B)
of Kibyra
(Elitez – Yaltırank
2012)

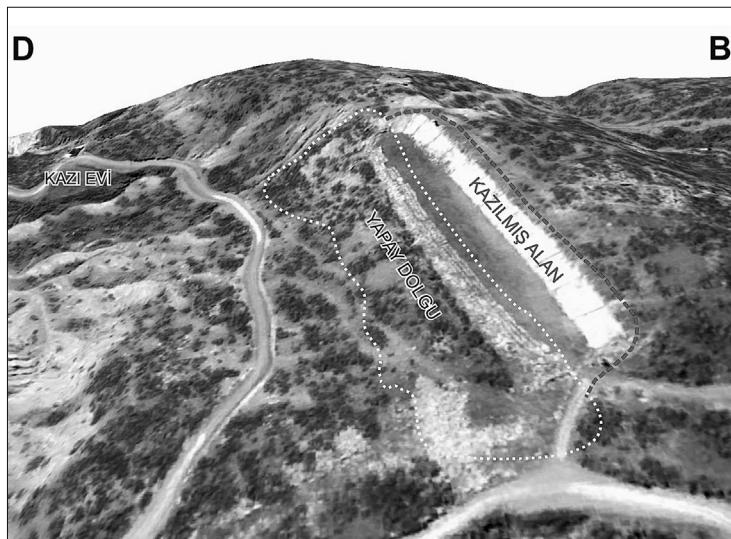


Fig. 24
The combination of the satellite image and digital elevation model of the stadion and the approximate situations of excavated and artificial fill areas (Elitez – Yaltırak 2012).

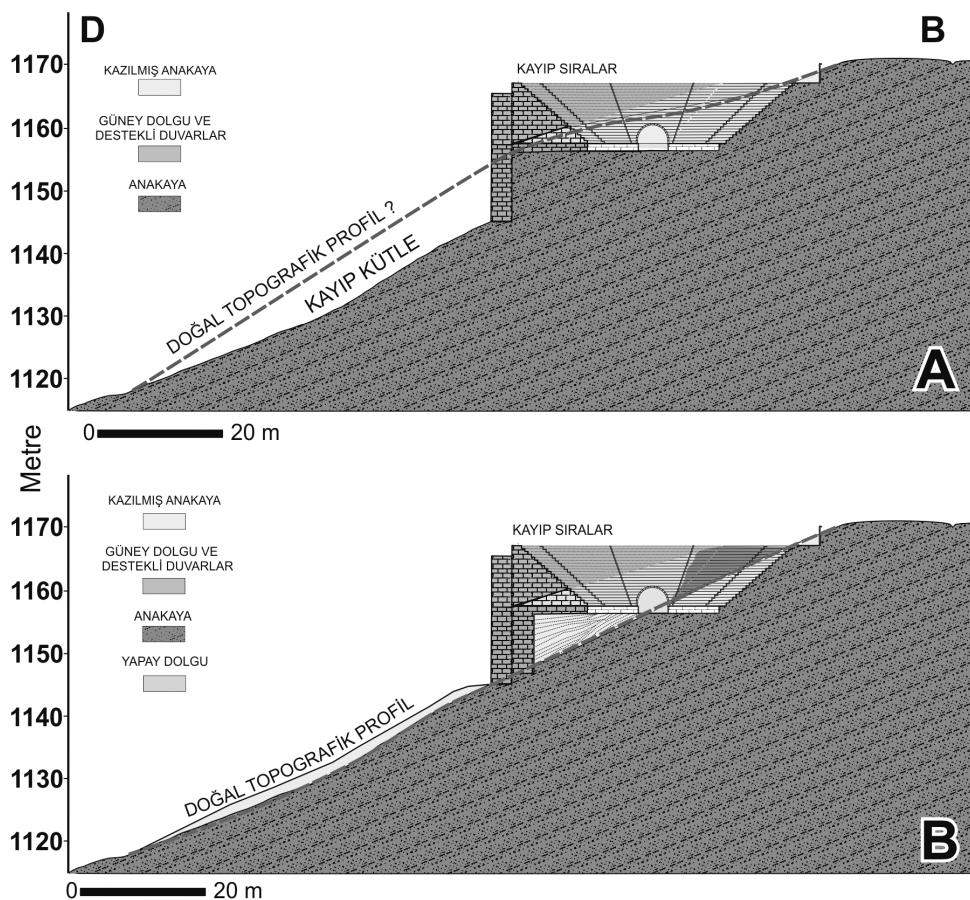


Fig. 25 The real scaled topographic profile of the hill where the stadion located and the situation of the southern seat rows.

A: The stadion is completely on the bedrock. B: The western side of the stadion is on the bedrock and the southern side is on the artificial fill (Elitez – Yaltırak 2012).