

# Archaeological survey at Balama Byzantine Castle in Pisidia (southwest Turkey): a preliminary report



**Abstract:** The ancient region of Pisidia, located in southwest Turkey, has a settlement history extending from the Prehistoric period to the end of the Byzantine era. Numerous settlements established in this area lay along the Via Sebaste — a vital route connecting the East and the West. During the Roman period, socio-cultural development flourished there with the spread of colonization. Later, as part of the Byzantine Empire, Pisidia, became a focal point of political and social conflict due to its strategic position, leading to the construction of fortified settlements in strategically important rural areas to ensure their defense. Among these settlements is Balama Castle, situated atop a commanding hill. The site features houses, cisterns, churches, and fortification walls with towers placed at regular intervals. The walls, constructed of rubble stone, lime mortar, and broken bricks, suggest that the fortifications were constructed in no specific order. The main goal was apparently to quickly build defensive structures to protect the region. Balama Castle was not a renovation of an earlier structure but a part of a newly developed defense system. This system, created by the Byzantines in the 11th century AD, remained in use through the 12th century AD. Balama Castle, dating to the Middle Byzantine period, was identified during an archaeological survey conducted in the region in 2017. This study serves as a preliminary report presenting the initial findings from the site.

**Keywords:** Pisidia, Balama Castle, Middle Byzantine period, Byzantine church, fortification

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## INTRODUCTION

Settlement in the Pisidia region has continued uninterrupted from the Prehistoric period to the present day. During the Roman period, the construction of the Via Sebaste, which connected the Mediterranean coast of Asia Minor to the hinterlands, spurred the emergence of new sites. The Roman colonization process of the 1st and 2nd centuries AD brought important socio-cultural developments to Pisidia (Levick 1967: 38–41; Belke and Mersich 1990: 152–153; Mitchell 1993: 76; Syme 1995: 226–230). However, with the decline of the Roman Empire, the region faced external threats, likely beginning with the Arab invasions. In response, the Pisidian population took defensive measures. In the long term, however, important urban centers like Sagalassos, Pisidia Antiocheia, and Cremna experienced a gradual decrease in their population, as their inhabitants migrated to rural areas. Despite this shift, little is known about the rural settlements due to the limited data collected on their architectural layout. While some information on rural areas in Roman Pisidia has been shared with the academic community, data on both urban and rural sites from the Byzantine period remains scarce,

and Byzantine ruins are identified mostly within former Roman settlements (Mitchell 1993; Waelkens 2002; Vanhaverbeke and Waelkens 2003; Izdebski 2013; Kaptijn, Waelkens, and Poblome 2014; Becks, Polat Becks, and Metin 2015). Balama Byzantine Castle is an exception, which stands out as a unique example of exclusively Byzantine construction in the Pisidia region.

The plan and wall construction of Balama Castle suggest it was built rapidly during the Middle Byzantine period. Its location atop an easily defensible hill commanding its surroundings was a strategic choice. The need for such a fortification in the rural area likely arose from the political turmoil of the time. Inhabitants of the countryside may have built the castle for defense against the Seljuk raids or as protection from Mediterranean piracy and banditry. The castle is a simple yet functional structure, incorporating houses, cisterns, churches, towers, and strategically positioned fortification walls.

This study introduces Balama Byzantine Castle to the scientific community for the first time, although further detailed research will be required to fully understand its historical and architectural significance.

## HISTORICAL GEOGRAPHY OF PISIDIA

Today, the Pisidia region encompasses the entire provinces of Isparta and Burdur, the northern part of Antalya, and the western part of Konya. It is bordered by the Taurus Mountains to the south and the Sultan Mountains to the north. Its eastern boundary stretches from the western edge of Lake Beyşehir

to the midpoint of the Manavgat River [Fig. 1]. Pisidia is adjacent to Phrygia to the northwest, Lykaonia to the east, Mil-lais and Kabalis (or Kabalia) to the west, and Isauria and Cilicia to the southeast. Defining the precise boundaries of Pisidia is a challenge, however, as they evolved over time.

The region is predominantly mountainous, with settlements located in sheltered valleys and plains, or on the banks of rivers and lakes nestled among the mountains and hills of the interior, separated from the coast by the Western Taurus Mountains (Waelkens 2002: 322–328). The region features two vital river systems, the Kestros (Aksu) and the Eurymedon (Köprüçay).

The region likely derived its name from the indigenous Anatolian people inhabiting the area, who are thought to have originated from the Luwians mentioned in 2nd millennium BC sources (Özsait 1980: 109–114; Metin 2022: 1). The name “Pisidia” was first mentioned by Xenophon, who

claimed that the Pisidians might share origins with the Milyas, Solymoi, Kabaleis (Kabaliens), Isaurians, and possibly the Lycians along the coast (Xen., *An. I.I*: 11). Besides Pisidians, other groups inhabited the region as well. Herodotus described ancient Pisidia and its surroundings as “Milyas, the land of the Solymys” (Hdt. I: 173). He also noted, through without mentioning the name “Pisidia”, that the area west of the Halys (Kızılırmak) River was under Lydian rule during the reign of Croesus (Hdt. I: 28). Pliny identified the inhabitants of Pisidia as Solymi (Plin., *HN V*: 24). Strabo, who provided the most comprehensive account of the region, referred to the residents of Termessos as

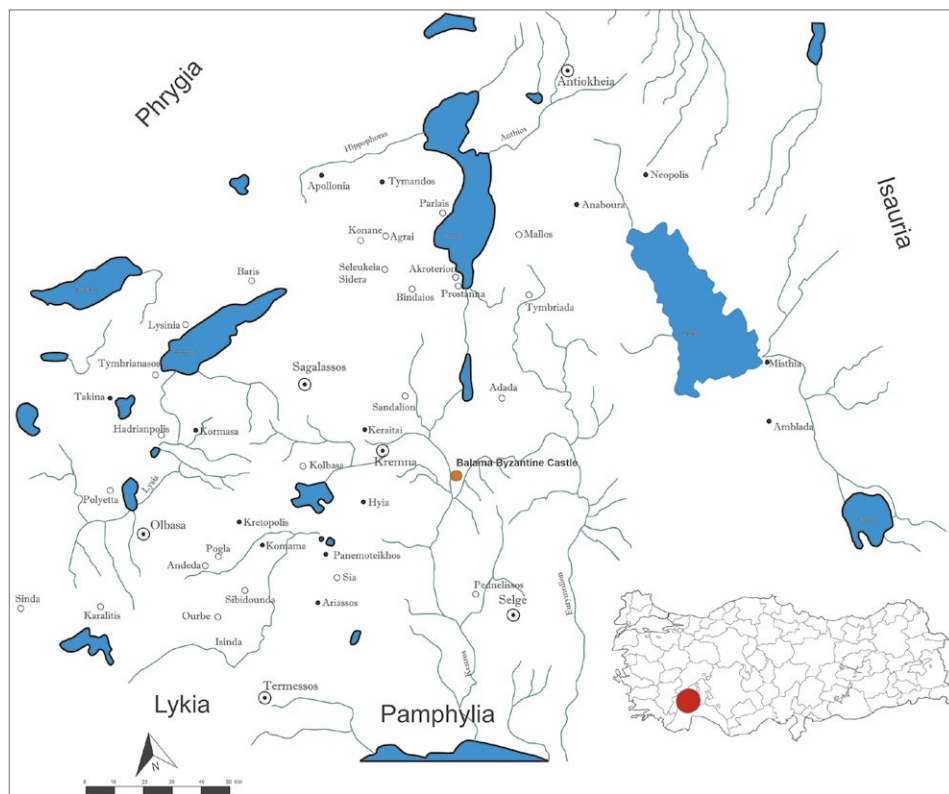


Fig. 1. Pisidia region (Cremna Survey Archive)

Solyms and to the mountain near the city as Solyms (Strab. XIII.IV: 16). He also mentioned that Selge, Sagalassos, Pednelissos, Adada, Tymbrada, Cremna, Pityasos, Amblada, Anabura, Sinda, Ariassos, Tarbassos, and Termessos were Pisidian cities (Strab. XII.VII: 2).

Following the death of Alexander the Great, the Pisidian region was successfully incorporated into the territories of various Hellenistic kingdoms established by his successors. These kingdoms were characterized by a high degree of instability, with the region frequently changing hands (Mitchell 1992). After the Battle of Kurupedion in 281 BC, which resulted in the death of Lysimachus, the region, along with the rest of Anatolia, came under Seleucid rule (Levick 1967). During the Seleucid period, military colonies were established along the trade route linking Anatolia, Pisidia, Syria, and the Aegean. These colonies helped secure the military connections vital to the Seleucids' strategic interests (Levick 1967).

Roman rule in Pisidia began with the bequest of the Kingdom of Pergamon to Rome by King Attalos III in 133 BC (Strab. XIII.IV). To establish control in the region and create a defensive buffer against the Parthians, the Roman Empire set up vassal kingdoms in the region. In 39 BC, Mark Antony appointed Amyntas as the vassal king of a territory encompassing Lykaonia, Phrygia Paroreios, Isauria, and Pisidia (Strab. XIII. IV). Following Amyntas' death, new urban colonies were established in Pisidia, including Pisidia Antiochia, Olbasa, Komama, Parlais, Cremna, and Lystra, all connected by the Via Sebaste. This road played a crucial role not only in regional administra-

tion and logistics, but also in facilitating pilgrimage, for it provided access to the ports of Attaleia and Side, enabling Christian pilgrims from inland Pamphylia and Pisidia to reach the holy lands. In addition, rural settlements flourished as a road network connected the military colonies, linking the ancient settlements in Central Anatolia to the coastal hubs (Cronin 1902).

The establishment of colonial cities in Pisidia also led to an increase in Romanization activities. As a result, the region experienced intense construction activity, particularly during the 1st and 2nd centuries AD. Under the administrative reforms of Diocletian in AD 297, Pisidia was incorporated into the *Dioecesis Asiana* along with Lycia (Levick 1967: 33; Sayar 2009). During this time, Pisidia's eastern border shifted to encompass an area from the Konya Plain to Karadağ (Karaman). Small fortified settlements such as Balama are thought to have emerged in rural areas as urban boundaries contracted (Koch 2007: 104). In this period, Antiocheia was elevated to the status of a metropolis. Subsequently, Lykaonia was divided among Galatia, Pisidia, and Isauria (Broughton 1938: 598), leading to the northeastern expansion of Pisidia's borders for the first time. The region became part of the Eastern Roman Empire after the division of the Roman Empire in AD 395.

During the Late Antique period, the Empire faced multiple challenges, including attacks from the Ostrogoths and Visigoths. Simultaneously, the rapid growth of Christianity created religious divisions within society, while the migration of northern tribes altered the

ethnic structure of the Mediterranean world (Gregory 1982). In Pisidia, 5th-century AD fortifications likely reflect the climate of insecurity caused by events such as the revolt of the Ostrogothic mercenaries under Tribigild, who marched from Phrygia through Pisidia to Pamphylia in AD 399, and the raids of the Isaurians in AD 404–406. In response to these threats, a new military command was established in Asia Minor: the Comitia of Pamphylia, Pisidia, and Lykaonia (Vanhaverbeke et al. 2004: 254–257). Additionally, the Empire appointed special officials bearing the title of Dux to combat regional rebellions (Rott et al. 1908: 14–18).

The 7th century brought further challenges as Arab raids severely damaged many Pisidian cities. This period also saw natural disasters that compounded the difficulties these cities faced (Poblome, Talloen, and Kaptijn 2017; Talloen et al. 2017; Kaptijn and Waelkens 2020). In the 9th and 10th centuries AD, although conflicts between the Byzantine Empire and migrating tribes did not have a direct effect on Pisidia, its frontier position

placed it in the path of armies on the move. Therefore, the impact of the wars was felt in the region, albeit slightly. In the second half of the 11th century AD, nomadic Turkish tribes attacked and ultimately conquered Pisidia, severing the Byzantine Empire's connection with the port of Attaleia. In turn, the Turks in control of the sea routes became a target for the Byzantines. All these struggles negatively affected the region (Belke and Mersich 1990: 68–69, 93–96).

By the 12th century AD, Pisidia had become a transit route for Crusader armies. In AD 1148, the French Crusader forces clashed with the Turks in Pisidia, at Antioch (Yalvaç), before advancing to Denizli, a Byzantine-controlled settlement with a largely depleted population due to the ongoing conflict (Odo of Deuil 1948: 109). In AD 1182, the region fell under Seljuk rule (Khoniates 1995: 133). Following the collapse of the Seljuks, the Hamidid principality ruled the area during the early 14th century AD (Uzunçarşılı 1988: 50). By the 15th century, Pisidia became part of the Ottoman Empire, giving rise to a period of lasting stability.

## BALAMA BYZANTINE CASTLE

Balama Byzantine Castle was discovered in 2017 during fieldwork of the “Cremna and its Environment Surveys” project. Initial documentation that year recorded the city gate, defensive walls, Tower No. 2, and cisterns. In 2019, further research focused on towers, defensive walls, houses, a church, and more cisterns (Metin 2022b: 127–128) [Fig. 2]. The purpose of this study is to offer a general presentation of Balama Castle. The paper is a pre-

liminary report, providing a point of departure for future detailed investigations.

Although the castle was identified during the Cremna research project, its connection to Cremna in terms of chronology and spatial relations remains unclear. Situated approximately 25 km from the ancient city, the rugged terrain between the two locations complicates direct association. Furthermore, Cremna exhibits very limited settlement evidence from the period of the

castle's construction, making it unlikely that Balama Castle functioned as a small defensive unit affiliated with Cremna.

Balama Castle is located southeast of Karacaören Dam, within the borders of Kızıllı village in the Bucak District of Burdur Province. Accessible via forest footpaths, the castle is situated in one of the dispersed village quarters. Positioned southeast of Cremna, at a distance of 25 km from it in a straight line, the castle commands a strategic vantage point over the Kestros Valley and an average elevation of 765 m. From Balama's hilltop location and from its city walls in the west, the Antalya-Aksu plains are clearly visible. The surrounding landscape includes the Karacaören Dam to the west, agricultural lands to the east, and forested hills covered with dense vegetation to the north and south (Metin 2021: 327) [Fig. 3].

The castle is set within a rocky and steeply sloped area, carved to form seven terraces filled with a mixture of stone and soil and stabilized with polygonal stones. Access to the castle involves ascending the cascading terraces and narrow steep steps leading to the entrance.

The castle has a single entrance, located on the southern side, measuring 2.85 m in width. This entrance has suffered significant damage over time [Fig. 4]. Positioned on a steep incline, the gate is reached by steps carved into the bedrock. The entrance is flanked by defensive towers. Tower No. 2, situated to the east, was constructed somewhat independently of the gate, while Tower No. 1, integrated with the bedrock on the west side, is structurally bonded with the entrance gate.

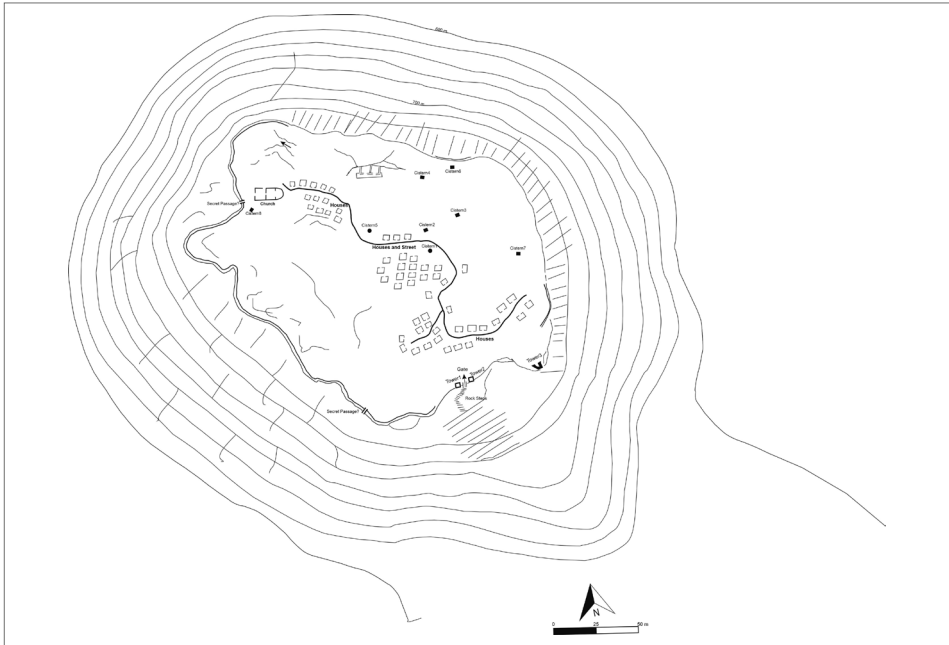


Fig. 2. Balama Byzantine Castle. Plan (Cremna Survey Archive)



The castle's location on a rocky precipice necessitated the construction of seven terraces and a stepped entrance to mitigate the challenges posed by the topography. The walls of the castle were constructed of rubble stone, lime mortar, and broken bricks. While the exterior walls were left unplastered, traces of plaster were visible on the interior walls and towers.

In the Middle Byzantine period, specifically in the mid-11th century, economic and socio-political instability arose due to the incursions of Turkish groups into Anatolia. This era of instability and political shifts extended into 12th century, resulting in the construction of new fortifications or the reinforcement of existing ones in the affected areas, with the Byzantine population increasingly seeking refuge in fortified sites (Crow 2009: 35).

Balama Castle presents a unique layout compared to other rural settlements in the Pisidia region. However, its organization bears similarities to Örentepe, a settlement within the territory of Panemoteichos, one of Pisidia's cities. Örentepe, established during the Hellenistic period, continued to exist for a considerable span of time with additions ranging in date from Late Antiquity to the Middle Byzantine period (Aydal et al. 1997: 168). In both settlements, security was prioritized, as evidenced by construction characteristics of their city walls, towers, residences, churches, and cisterns (Aydal et al. 1997). However, while the ruins and settlement structures of Balama Castle indicate its construction specifically in the Middle Byzantine period, Örentepe remained in continuous use from the Hellenistic period until the 12th century AD. The main

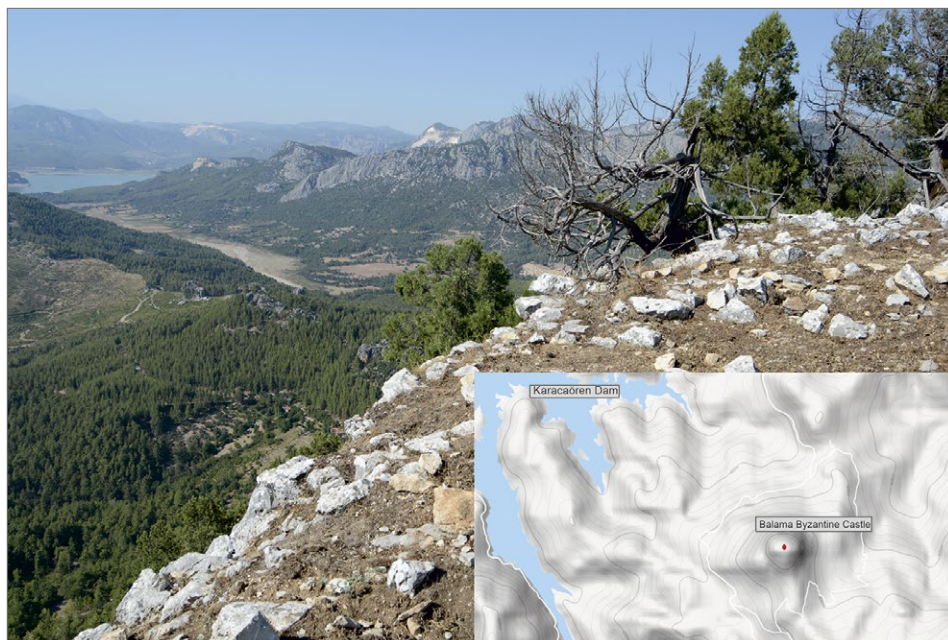


Fig. 3. A view of Kestros Valley from Balama Castle (Cremna Survey Archive)



difference between these two important forts lies in their level of dependence from other centers. Örentepe was unable to exist independently and required the support of Panemoteichos, approximately 2 km from Örentepe, for food and water supply (Aydal et al. 1997). This example supports the claim that in Hellenistic Pisidia rural fortified settlements were established to defend cities and maintain control over road networks (French 1981). However, in the Middle Byzantine period, Pisidia lacked robust urban centers. Excavations at Alexander's Hill, a site associated with Sagalassos—one of the metropolitan cities of Pisidia—reveal the decline of the latter city during this period. The once-thriving metropolis experienced a significant population decrease, transitioning into a small village-like settlement (Talloon et al. 2022).

## HOUSES

Over 50 house structures have been identified within the Balama Castle settlement. These structures begin from the eastern façade of the church and extend intermittently toward the southern entrance gate.

The residences in Balama Castle, dating to the Middle Byzantine period, represent an architectural type poorly known among rural settlements of Pisidia. Past research by Mitchell in Central Pisidia has provided significant insights into the urban and rural settlements of the Hellenistic and Roman periods (Mitchell 1986; 1988; Mitchell and Waelkens 1987; 1988; Mitchell and Güceren 1994). Our surveys conducted between 2013 and 2019 in the mountainous terrain surrounding Cremna also contributed valuable data on the settlement organization and



Fig. 4. Stepped structure providing access to the castle (Cremna Survey Archive)

residential architecture from the Roman period, especially from rural sites such as Karadığın Hill, Hisarköy Asartepe, Karapınar Asartepe, Kumaryaylası, Çayırılık Ketiri, and Eğribel/Keçipüren (Metin 2020). However, the region's rural areas and settlements of the Byzantine period remain largely uninvestigated. As previously noted, the defining characteristic of the majority of Byzantine rural settlements and villages was their location on rocky hills, which offered natural defensive advantages. These settlements were also typically surrounded by agricultural lands (Metin 2020). Balama is a prime example of such a Byzantine settlement.

The houses in Balama Castle are concentrated in the central part of the settlement, where the ground is relatively flat. Also the cisterns were built at in-

tervals within this area. A narrow street runs through the middle of the residential zone, near the entrance to both the church and the castle. Unfortunately, illegal excavations caused damage in sections where the house façades faced the street and, due to the absence of formal excavations, the ruins are covered with dense vegetation. However, traces are visible on the surface in some parts, allowing to prepare a preliminary plan of the houses.

The house walls, 0.50–0.70 m in thickness, were built using polygonal stones in the double-row drywall technique. Their inner sections were filled with small stones. In some places, the bedrock was leveled to create space for household activities. Most of the houses were single-room structures without courtyards, measuring approximately 5 m × 7 m. However, northeast of the church, the



Fig. 5. Multi-room house northeast of the church (Cremna Survey Archive)

remnants of a multi-room structure were found [Fig. 5]. Unlike the single-room dwellings, this structure had plastered walls, and tile fragments were embedded in the mortar. The wall construction technique, however, was similar to that of the fortification walls, suggesting contemporaneous construction. Given its functional features and larger size, it is likely that this building belonged to an individual of significance within the castle. Based on its proximity to the church, it may have served as a residence of a church official.

The structural remains and scattered stones from the houses identified at Balama Castle suggest that the buildings were single-story. It is possible that wood was used to construct upper floors, but this hypothesis cannot be confirmed without further evidence. Based on current observations, the settlement primarily comprised single-story houses, which were rapidly constructed. The walls of these houses were apparently built entirely of stone up to roof level. Sufficient archaeological data on the roofing of the Balama Castle residences have been obtained to indicate the use of roof tiles with forms datable to the Byzantine period. Due to project time constraints, no detailed study of the tiles has been conducted. The raw materials for the tiles used in the construction of buildings within the rural settlement of Balama Castle were likely sourced from creek beds currently submerged beneath the Karacaören Dam. The roofing of the single-space dwellings would have been relatively easy to construct, with a support framework of wooden beams, reeds and grasses to enhance impermeability,

and a final clay layer covered with tiles. There is no conclusive evidence regarding the jambs of doorways and windows, but it is possible that fragmented stones were used for these elements. Surface evidence is insufficient to determine whether small storage spaces existed outside the dwellings. This question can only be resolved through archaeological excavation.

Although the climate in the region of Balama Castle was typically Mediterranean, the site's elevated location means that it was likely affected by the prevailing winds. The houses appear to have been located so as to provide some protection from them. Given the lack of archaeological excavations, how the inhabitants heated their houses in winter and managed cooking activities remains unclear. Simple stoves inside the houses could have served both purposes, requiring chimneys in the corners of the rooms to allow the smoke to escape. Such architectural features are attested in other regions of Anatolia today (Belke 2005).

A castle similar in plan to the Middle Byzantine settlement at Balama is located in Boğazköy, the abandonment of which is dated by its assemblage to no later than the 12th century AD. The Middle Byzantine settlement at Boğazköy consisted of at least 22 small houses, two large farmsteads, houses, and a central church (Böhlendorf-Arslan 2017: 367).

## CHURCH

Churches contribute social and functional data on settlements, as their often-central position within rural settlements can help identify potential rural sites. Middle Byzantine rural churches began to flourish after the 9th century as rural

settlement became predominant. During this period, villages became largely self-sufficient, and in some cases they included monastic establishments where the most prominent public buildings were churches. The proliferation of churches in rural areas during the Middle Byzantine period reflects vibrant and dynamic rural life, political stability, peaceful condi-

tions, and economic prosperity. These remains are frequently encountered in rural areas and indicate the presence of a Byzantine or Christian population in Anatolia during this time (Tatbul 2021: 326–327).

The church at Balama Castle is located in the northwest part of the settlement, near the western walls, and northeast of Cistern No. 8. Its walls, approximately 1.20 m thick, had masonry facings on both the inside and the outside, with small stones filling the spaces between them. Their preserved parts reached 1–1.50 m in height. Dense vegetation covered the northern wall and the interior, obscuring architectural details. The church measured 21.30 m × 8.30 m, and its layout included a narthex, a naos, a bema, and an apse [Fig. 6].

The western wall of the narthex was badly damaged but showed evidence of a central doorway 1.30 m wide, with large dressed stone blocks on either side. A second doorway was likely in the northern wall of the narthex, which occupied the most deteriorated part of the church. Small holes in one of the stones in this area likely accommodated a wooden door. Around it, broken tile fragments were scattered among the vegetation. No evidence of columns or decorative elements has been found in the church. The naos and apse sections, accessed through a single entrance, were partly preserved. The south wall of the apse, constructed of stones in regular rows, remained standing, but much of the apse was destroyed [Fig. 7].

Cistern No. 8, located near the church, was possibly linked to its function. A similar connection was observed during surveys conducted in 2015 in

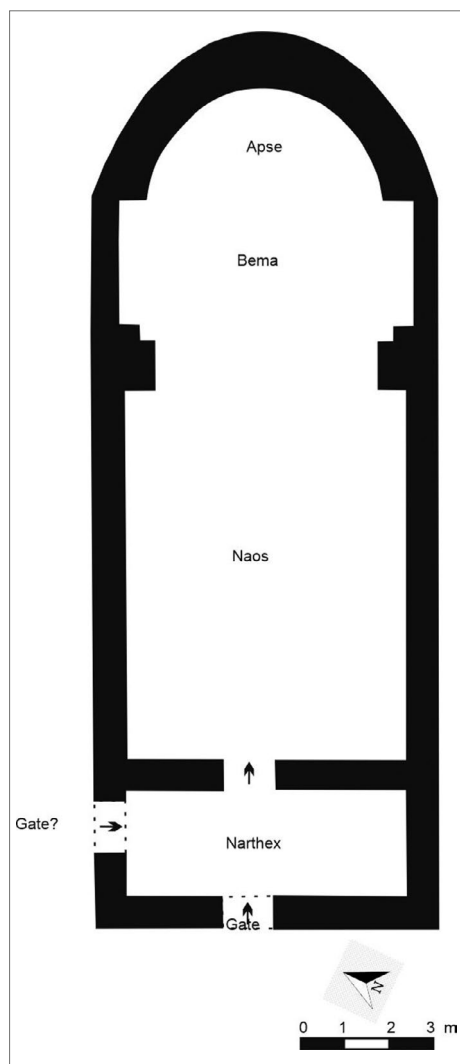


Fig. 6. Church plan (Cremna Survey Archive)



Avdancık village, Bucak District, Burdur Province, at the Altıkapılı Cave Church dated to the 11th–12th centuries AD (Metin 2018). It is possible that a small baptismal pool existed in this area at Balama Castle, although no surface findings confirm this due to dense vegetation. At Komana, Middle Byzantine churches are surrounded by burials. The grave finds and metal liturgical objects found in the associated layers were dated to the 10th–12th centuries AD (Tatbul 2021: 334). The church at Örentepe, while belonging to an earlier period, shares similarities in plan with the Balama church (Aydalet al. 1997). Topography played an important role in the construction of similar churches, such as the one built in the village of Ağlasun in Burdur Province, which is also dated to an earlier periods (Talloen et al. 2017). Structurally the Bala-

ma Castle church resembles the churches A–H in Cremna (Mitchell et al. 1995: 224–232). However, the Balama church has two doorways in the narthex, one to the east and one to the north. This plan does not find parallels in the churches in Cremna. Since 2007, numerous churches and chapels have been identified during our surveys in the region's rural areas. This abundance indicates a dense Christian population in Pisidia's countryside until the 11th–12th centuries AD.

### CISTERNS

A significant challenge for the rural settlements in Pisidia, from the Hellenistic to the Byzantine period, was the scarcity of water resources. This issue is evident in cities such as Cremna, Millias, Keraitai, Panemoteichos, and Sia in the mountainous part of Pisidia. Transferring water



Fig. 7. Ruins of the church (Cremna Survey Archive)

from valley slopes to high-altitude settlements was nearly impossible due to both the elevation differences and the extensive labor required. This problem was partly addressed through the use of cisterns carved into the bedrock, a common feature in many urban and rural settlements in the area.

In urban settlements, cisterns typically had several forms, with early examples often being bottle- or bell-shaped, and some rectangular in plan (Metin 2014). The cisterns in Balama come in both these shapes but differ in construction technique despite similarities in form. Unlike earlier examples, the cisterns in Balama prioritize functionality over form and structural uniformity and can be seen as miniature versions of the large rectangular cisterns found in such settlements as Sia and Panemoteichos.

The hill on which Balama Castle was built lacks natural water sources, and the geology of the area is unsuitable for retaining water. The porous rock and sloped terrain caused rainwater to seep through the cracks and crevices, especially in the southeastern cliffs. These geological features can still be seen today, as water still seeps through the rocks southwest of the castle, supplying a working fountain. The villagers use the water from sources along the way to Kızıllı village for agricultural purposes.

Eight cisterns were identified within Balama Castle, emphasizing the settlement's focus on water preservation. Currently, these cisterns are completely covered with dense vegetation, making it difficult to determine their exact dimensions. However, the presence of eight cisterns of different sizes suggests



Fig. 8. Cistern No. 6 (buttresses) (Cremna Survey Archive)



they were sufficient to meet the water needs of a small-scale castle settlement. Although there is no evidence of a comprehensive canal system to transport water from external sources, it is highly likely that the cisterns were filled with rainwater. Their locations appear to take advantage of natural basin areas, which would have facilitated keeping the reservoir full.

Centrally located Cistern No. 1 is rectangular, with dimensions 20 m × 5 m and a depth of 5 m. Its walls are 1.30 m thick and their inner surfaces are plastered with mortar. Cistern No. 2, a bottle-shaped structure common in Pisidia, is located approximately 8 m to the west of Cistern No. 1. Its mouth is 3 m in diameter. The interior is filled with soil and stones, impeding precise measurement of the depth. Cistern No. 3, located about 10 m to the

south of Cistern No. 2, is overgrown with vegetation and still retains water, but its depth could be estimated to 8–10 m. Cistern No. 4, northwest of Cistern No. 3, is covered with stones likely placed by shepherds to prevent small animals from falling in. The mouth diameter of this cistern measures 3.60 m. Cistern No. 5 is another rectangular structure, measuring 10.50 m × 6.70 m, with walls 1.40 m thick. The measurements suggest that this cistern was the settlement's second-largest in terms of capacity after Cistern No. 1. Cistern No. 6, built on the eastern slope and integrated with the bedrock, is circular, with a depth of 4 m and walls 1.20 m thick. This structure, found during research carried out in the city in 2019, is plastered on the inside, and its blocks are joined with mortar. In its western part, a north–south oriented wall with three



Fig. 9. Eastern fortification. A view of the stonework incorporating broken tiles (Cremna Survey Archive)

steps at its base divides the structure's interior in two. While the purpose of the wall is difficult to specify, the structural features of the ground suggest that it was designed as a sediment trap made to ensure that water for long-term storage in the cistern is clean. The eastern wall is reinforced with three buttresses (0.35 m × 0.60 m and 1.60 m high) spaced at 2 m intervals, providing additional support against potential flooding or seismic activity (Metin 2021: 327) [Fig. 8]. Cisterns Nos 7 and 8 are rectangular in plan, but their depths cannot be measured due to vegetation. These two cisterns share close similarities with examples found at the Karadiğin Hill settlement in Pisidia (Metin 2020: 90–91).

The dimensions and number of cisterns, coupled with the data on houses, provide clues on the population capac-

ity of Balama. The cisterns were probably capable of sustaining a population of approximately 200–300 individuals. For comparison, large cities like Cremna relied on 50–60 cisterns to meet the needs of significantly larger populations (Mitchell et al. 1995).

### DEFENSIVE FORTIFICATIONS

The eastern and northern parts of Balama Castle are bordered by cliffs, eliminating the need for fortification walls in these areas. As a result, the fortification system is concentrated in the west, south, and southeast [Fig. 9].

The design of the defensive fortifications was closely adapted to the topographic conditions in the castle. The walls align with the steep and rugged terrain shaped by anticline and syncline formations. The fortification wall, extending



Fig. 10. Eastern fortification. General view (Cremna Survey Archive)



from the southeast to the northwest, measures approximately 211.50 m in length [Fig. 10].

The walls, averaging 1.20 m in thickness, were constructed with small polygonal stones, filled with stone and tile fragments, and plastered with mortar. The *epalxis* (parapet walk) of the city wall measures 0.65 m in width. Two openings are present within the defensive wall, spaced approximately 163.50 m apart. The first opening, located approximately 30 m southwest of Tower No. 1, measures 0.60 m × 1.20 m and is 3.30 m deep. The second opening is of the same dimensions but has a depth of 2.50 m. These structures, with bases narrowed by two blocks placed on either side, may have served two purposes. They may have functioned as concealed entrances or exits, usable during raids or sieges. Alternatively, they

could have been part of the settlement's sewage or rainwater drainage system. It is also possible that they served both purposes [Fig. 11].

Approximately 100 m northwest from these features, in the northern part of the hill, the fortification wall is integrated with the bedrock. With the northern side of the castle protected by a cliff, there was no need for a city wall in that part. A similar approach is also observed at Cremna, where the northern part, bordered by cliffs, lacks defensive walls (Mitchell et al. 1995: 196–197). Noteworthy in Balama is a corridor or gate, 1.2 m wide and 5 m long, oriented north-east–southwest, which likely served as the settlement's primary entrance and exit.

The fortification walls of Balama Castle, constructed with rubble stone, lime mortar, and broken bricks, are charac-



Fig. 11. Secret gate – potern (?) (Cremna Survey Archive)

teristic of the Middle Byzantine period (11th–12th century AD) in terms of structural and technical features (Veikou 2012: 160). During this time, it was common for pre-existing city walls, such as those of Constantinople and Nicaea, to undergo repairs or additions. However, Komnenian fortifications were generally small and compact, emphasizing the role of urban castles as places of control and refuge. In the countryside, castles were strategically built on steep hills to control surrounding lands or on coastal peninsulas to monitor sea routes (Kontogiannis 2022: 134).

During this period, fortifications lacked discernible differentiation between plain masonry and façade design. The setting of roughly hewn stones in uneven courses predominated, with well-cut blocks reserved for critical areas such as door jambs, cornerstones, and arches

(Kontogiannis 2022: 149). Fortification designs did not follow a consistent pattern, instead relying on local techniques and materials while maximizing the advantages of the terrain. The masonry often consisted of alternating regular courses of stones and bricks, with lime mortar extensively applied to cover surface irregularities. This created a multi-colored effect by blending the red hues of the bricks, the green of the stones, and the white of the mortar (Kontogiannis 2022: 134). Evidence of rows of broken brick pieces was found in the fortification walls of Balama Castle [see Fig. 9]. However, the refined symmetry seen in the magnificent fortresses of the Middle Byzantine period is absent in a rural site like Balama. The craftsmanship of the rubble stone and lime mortar fortifications is, instead, similar to that of the

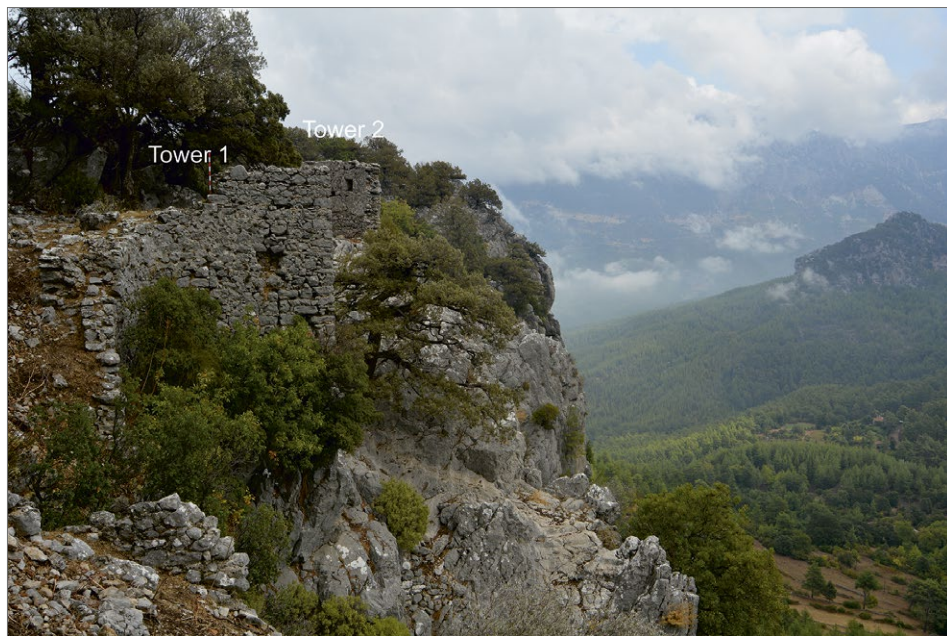


Fig. 12. Tower No. 1 (Cremna Survey Archive)



Komnenian-period fortresses. During the reign of Manuel Komnenos I (1143–1180), the theme of Neokastra was established in Northwestern Anatolia to strengthen defenses against Turkish raids (Khoniates 1995: 103). This theme gained military importance during the Laskarid period, extending to areas such as Magnesia ad Sipylum and Sardis (Ahrweiler 1965: 163). Similarly to Balama, the defensive walls of Magnesia Castle, located within the Neocastra Theme, were constructed with an internal filling of rubble stones and mortar faced on the outside with alternating rows of stone and brick on the western walls, where the outer covering is extant. These fortifications in the new chain of fortresses built by the Byzantines in the 11th century AD do not seem constructed in an orderly fashion, as the primary goal of such fortifications was

immediate defense rather than aesthetic precision (Foss 1996: 154–155). The masonry techniques observed in Balama Castle also resemble those of other fortifications, such as Peramo Castle (Belke 2020: 907), Muhla Castle (Hasluck 1909: 20), Kharaki (İlhanköy) Castle (Koçyiğit 2020: 111), and Darkale (Foss 1998: 163). Most of these castles date back to the Komnenian period (11th–12th century AD).

### TOWERS

Sturdy towers with either round or angular plans were part of the fortification system of Balama Castle. Three towers have survived to the present day among the remnants of the city walls.

Tower No. 1 is located on the bedrock on the western side of the castle gate [Fig. 12]. Access to the tower is through an opening in the northeast, where its

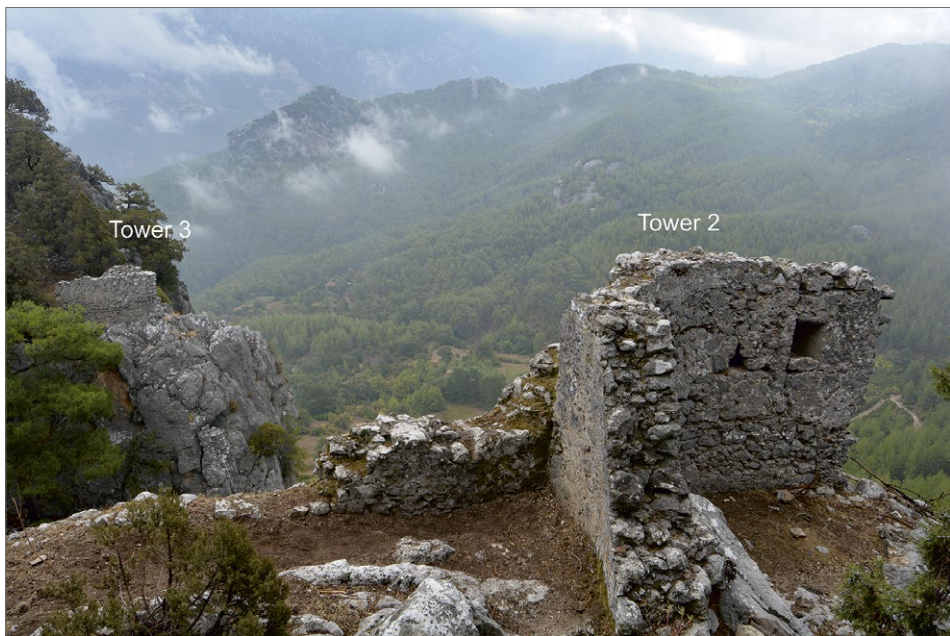


Fig. 13. Tower No. 2 (Cremna Survey Archive)

structure merges with the bedrock on the northeast and southwest sides. The rectangular tower faces the valley to the south and is oriented east–west. The walls, 1.40 m thick, are preserved to a height of 0.80 m inside the structure. Stroter pieces, likely from the tower's roof, were found nearby (Bakirtzis and Oraopoulos 2001; Kontogiannis 2022: 129).

Tower No. 2, located on the east side of the entrance, was also constructed on bedrock. Positioned overlooking the valley to the south, it shares a field of view with Tower No. 3 in the northeast. Its eastern wall, oriented north–south, features a hole or window measuring 0.50 m × 0.45 m. While the preserved east wall of the tower is 3.10 m long and 3.00 m high, the north wall, oriented east–west, is 3.00 m long and 2.70 m high. The walls of this severely damaged tower are ap-

proximately 0.80 m thick. Its plan closely resembles that of Tower No. 1 [Fig. 13].

The trapezoidal Tower No. 3, located to the east of Tower No. 2, was also constructed on bedrock at the cliff's edge [Fig. 14]. Thanks to its position, the tower controlled a wide area in the south. The structure, measuring 4.70 m × 3.30 m, has walls 1.10 m thick and features an *epalxis* (parapet walk) 0.60 m wide. The highest preserved part of the tower's interior stands at 1.50 m. Worthy of note are channel-shaped openings in the eastern wall, whose purpose is unclear. While they may have been intended for use with war machines, it is also possible that they are a result of natural damage.

Despite the towers' location in a naturally protected area, sections of defensive walls were still constructed between them, utilizing bedrock outcrops as part



Fig. 14. Tower No. 3 (Cremna Survey Archive)



of their structure. The best example is the wall between Towers Nos 2 and 3. This wall, 30 m long and 0.60 m thick,

is built of rubble stone and lime mortar with some broken bricks used between the stones.

## CONCLUSION

Historical and architectural evidence indicates that the rural population of Pisidia reached its peak in the 6th century AD (Metin 2020: 90–91). Most residences in rural Byzantine settlements were likely constructed during this time. Following the plague epidemic of the mid-6th century (AD 542), the rural population declined, reducing the need for new settlements. The small size of rural churches supports the notion of a diminished population. Population recovery spanned several centuries, with old structures destroyed or damaged during the 9th–10th centuries AD being repaired and reused. The rise in the number of fortifications during the 11th–12th centuries suggests a distinct settlement pattern traceable in the archaeological record. However, further archaeological research is needed to fully understand the rural settlement organization of mountainous Pisidia during the Middle Byzantine period.

The investigation of Balama Byzantine Castle thus far consisted in a general evaluation of the architectural features of its defense systems, residences, cisterns, and religious buildings. As no excavations have yet been conducted, the available data are limited to surface findings.

The castle was constructed with rubble stone and lime mortar, incorporating broken bricks between the stones. Even though such features and construction techniques are characteristic of the Middle Byzantine period (11th–12th centuries

AD), confirming its dating will require further support from future excavations.

Findings from Balama Castle represent settlement in Pisidia during the Middle Byzantine period with no evidence for pre-Byzantine architectural remains. This suggests that Balama was not a renovation of an earlier fortification but part of a newly constructed defense system. The unrefined craftsmanship of the fortification, built of rubble stone and lime mortar, aligns with similar fortresses of the Komnenos period, built as part of a defensive network created by the Byzantines in the 11th century AD and maintained through the 12th century AD. There is no apparent order to the construction of these fortifications located within the new chain of fortresses, as the main goal was to build them quickly for immediate protection of the area vulnerable to attack.

The terrain in which Balama Castle was located provided natural protection, further enhanced by the construction of only three towers and minimal fortifications. The building process was rapid and only areas open to attack were enclosed with walls. The simple yet functional construction process, the presence of single-space dwellings, and the absence of major urban settlements nearby suggest that Balama was a civil defense unit, likely founded by a peasant-military community of indigenous Pisidian origin.

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