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A Provincial Centre on the western border of Urartu: Palu Fortress

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ABSTRACT

Palu Kalesi is a fortress site situated in modern Elazığ province. In the Middle Iron Age, this region was the western borderland of the Urartian Kingdom and the primary contact zone where political and cultural relations transpired between the Urartu and the neighbouring Neo-Hittite kingdoms. The site was also a strategically crucial military post that provided logistic support for the Urartian armies during their western expeditions. The fortress was built as a provincial centre shortly after the foundation of the Urartian Kingdom, and the settlement lasted for a long time until the fall of the kingdom.

This study presents previously unrecognised archaeological remains, which were identified during our recent investigations at Palu Fortress. Our survey of the site revealed that the Middle Iron Age citadel consisted of two sectors, and the Lower Citadel was enclosed by sturdy fortifications and terrace walls reinforced with bastions. Moreover, while Urartian rock signs were already recorded at Palu, our investigations documented previously unknown rock signs at the site. In addition, other previously unrecognised features dating to the post-Urartian periods were identified by our recent investigations, including five single-roomed rock-cut tombs and two stepped rock-cut tunnels.

To better understand the relationship of the archaeological features at the site, a topographic map of Palu Fortress was drawn and visible archaeological remains dated to the Urartian and post-Urartian periods were marked on this map. In addition, the multi-roomed tombs of the Urartian period were scanned using Lidar sensors, and Lidar data were used to generate 3D models and rectified plans of the tombs. Finally, a preliminary virtual 3D reconstruction of the Urartian period fortifications was generated on the basis of recently discovered remains.

Keywords: Urartian Kingdom, Palu Kalesi, Provincial Centre, Rock-cut tomb, Elâzığ

Introduction

Palu Fortress lies on a calcareous ridge that forms the southwestern extension of Mount Gökdere in the eastern part of modern Elazığ province (Fig. 1). The rocky ridge upon which the fortress is built extends approximately 1,300 m northeast-southwest and approximately 700 m northwest-southeast. The northern, northeastern, and northwestern aspects of the ridge are characterised by rocky outcrops, steep cliffs, and precipices, while its eastern and southern slopes descend to the Murat River valley with a sharp incline. Within the settlement area of the fortress, there are rocky outcrops reaching approximately 10 m in height, and these areas are not suitable for construction (Fig.2).

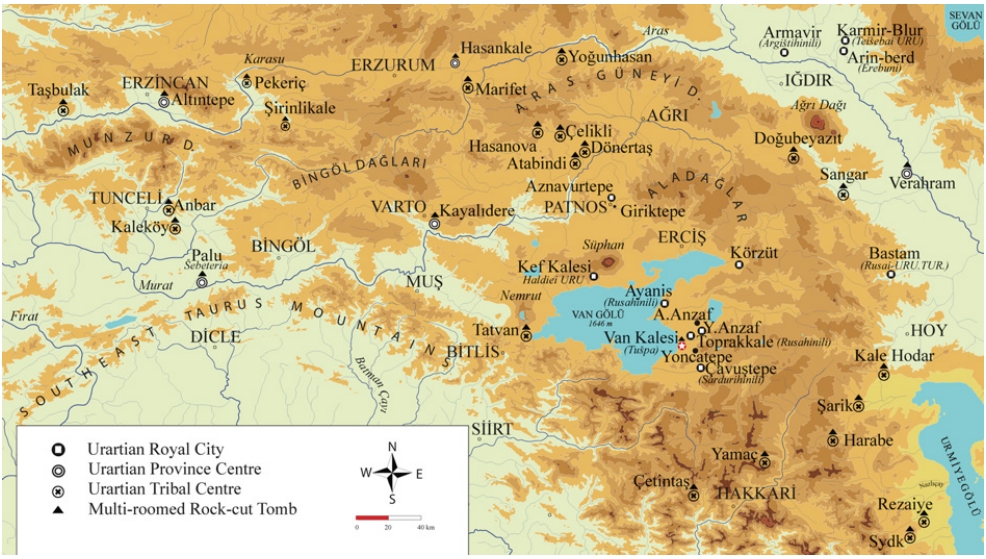

Figure 1: Map of Eastern Anatolia showing the distribution of Middle Iron Age sites.

Palu Fortress is surrounded by wide tracts of agricultural land. This cultivable basin stretches from north of the fortress to the banks of the Peri stream, covering about 23,500 hectares, encompassing part of modern Kovancılar and Karakoçan districts that lie north and northeast of Palu. This fertile land is presently used for cultivating crops (Fig. 3).

Early accounts of the Palu Fortress are attested to in travellers' and explorers' memoirs. Travellers' accounts of the Palu Fortress are typically limited to a brief description of the

general view of the site. These narratives highlight the glamour and impressive height of the standing architectural remains of the fortress.[1]

Unfortunately, however, Palu Fortress was severely damaged by the devastating earthquake of 1789, and its impressive remains mentioned by travellers were mostly razed to the ground and have been laid in ruins ever since.[2] The fault line that caused this earthquake of severe regional impact passes directly by the southern skirts of the ridge where the fortress lies. Northeast-southwest-oriented fissures that are deep and wider than 3 m are visible in the bedrock on the top of the ridge. Because the fortress was founded on a calcareous outcrop that is highly susceptible to earthquakes, this catastrophe severely impacted the site.

Figure 2. General view of Palu Fortress from the northwest with the Murat River in the background.

1 Venetian traveller Barbora visited Palu during his travels in Anatolia and Iran between 1474 and 1478. Barbora relates that Palu Fortress lay on a rocky ridge and was surrounded by fortifications (Barbaro and Contarini 1873). According to the accounts of Polish traveller Simeon, who visited Palu in 1613, the fortress lay on a ridge with steep cliffs, and there was an inscription and a temple dedicated to Mesrop, where Simeon entered and prayed (Simeon 2007). The renown traveller of the 17th century, Evliya Çelebi, on the other hand, highlights the impressive and defensible character of the fortress in his description of Palu. He mentions that the fortress had an iron gate, a mosque, an armory, cisterns, cellars, and a stepped tunnel that reached down to the Murat River. Additionally, Evliya Çelebi states that only administrative officials lived in the fortress and there were no soldiers because the site's topography was not suitable for troops (Kahraman & Dağlı 2006).

2 The British consul of the time in Erzurum, James Brant, visited Palu fortress in 1838 and was astonished by the ruined state of the site (Brent & Glascott 1840). Most probably, the fortress was already severely damaged by the 1789 earthquake, and the impressive fortress described by earlier travellers was laid to ruins. In fact, Kinneir describes Palu as a settlement with massive rubble on its peak that is repeatedly shaken by earthquakes. Kinneir suggests that the Palu Fortress may have belonged to "Balisbiga", an administrative region of the Sophene Kingdom, and he regards the sizeable collection of coins and medallions found at the site as evidence in support of this claim (Kinneir 1813).

The earliest investigations at Palu Fortress date to the mid-19th century when travellers' interest in Eastern Anatolia began to increase. Observations by these early explorers focussed almost only on the visually striking examples of rock-cutting like the multi-roomed rock tombs, inscriptions, and stepped tunnels at Palu. No comprehensive and systematic investigation had been conducted to date at the site before our investigations, and many of the archaeological remains presented in this study were not recognised previously by researchers. For example, in his report on the Palu Fortress in his explorations in the region, Burney (1957: 53) states that there is no evidence of Urartian period fortifications at the site.

Figure 3: View of the plain from the Upper Citadel of Palu Fortress, looking northeast.

Our investigations and surveys at Palu Fortress showed that the citadel of the fortress consisted of two sectors. Remains of the terrace wall that delineated these two sectors are still visible inside the citadel. In addition, our surveys documented the remains of a robust fortification wall reinforced by bastions that enclosed the entire citadel. Although Urartian rock signs have already been reported from the fortress in earlier publications, previously unrecognised rock signs and a basalt column base datable to the Urartian period were discovered at the site by our investigations. Additionally, our recent discoveries introduced to scholarship for the first time in this study include two stepped tunnels, five single-roomed rock-cut tombs, and other archaeological remains that empirically document the post-Urartian settlement periods at Palu Fortress.

A topographic map of the site was prepared to better understand and comprehensively present the relative locations of the previously known and recently discovered archaeological remains and features at Palu Fortress (Fig. 4). Rock-cut tombs were scanned using Lidar sensors, and Lidar data were used to generate 3D models and rectified plans of the tombs. This work enabled us to obtain high-resolution measurements of the positions and elevations of the various rock tombs investigated at the site.

The Citadel

As mentioned above, the Middle Iron Age citadel of Palu Fortress consists of two sectors separated by wide terrace walls. The Upper Citadel is a small area that stretches 100-130 m North-South and 80-70 m east-west at the peak of the ridge, covering approximately 0.80 hectares. The northern side of the Upper Citadel is limited by a 60-m-high precipice. Its southern end is marked by a rocky outcrop about 10-15 m high. This rock massif creates a natural boundary between the Upper Citadel and the Lower Citadel. The eastern and western sides of the Upper Citadel are characterised by steep slopes that extend down to the Lower Citadel.

The main access to the citadel at Palu is made possible by a natural ramp on the western skirts of the ridge, which starts on the northern slope of the ridge, ascends turning west following the topographic contour, and reaches the Lower Citadel. This ramp is about 150 m long, and its uneven width varies between 8 and 10 m. In the Middle Ages, mortared revetment walls were built along the exterior edges of the ramp, which still serves as the main access path for the citadel today.

In the Middle Ages, the Upper Citadel witnessed a period of intensive construction activity. Most structures dated to this period have collapsed; however, the partially standing remains of the fortification walls with mortared masonry, portions of other structures, and cisterns are still preserved. Urartian period structures are covered by the architectural remains of the Middle Ages.

The preserved architectural remains of the Urartian period in the citadel area are restricted to a small portion of terrace walls and foundation beds cut into the bedrock for terrace walls and fortifications. Additionally, an Urartian inscription carved on bedrock is found west of the citadel, and three multi-roomed rock-cut tombs are carved into the cliffs north of the citadel (Fig. 4).

The Upper Citadel covers a small area with an uneven and sloped terrain, which presents a challenge to the construction of large building complexes in this area. To overcome this challenge, the Urartian builders created a level ground in a wide area by laying out terrace walls to create platforms for large buildings in the citadel. At Palu, traces of stepped foundation

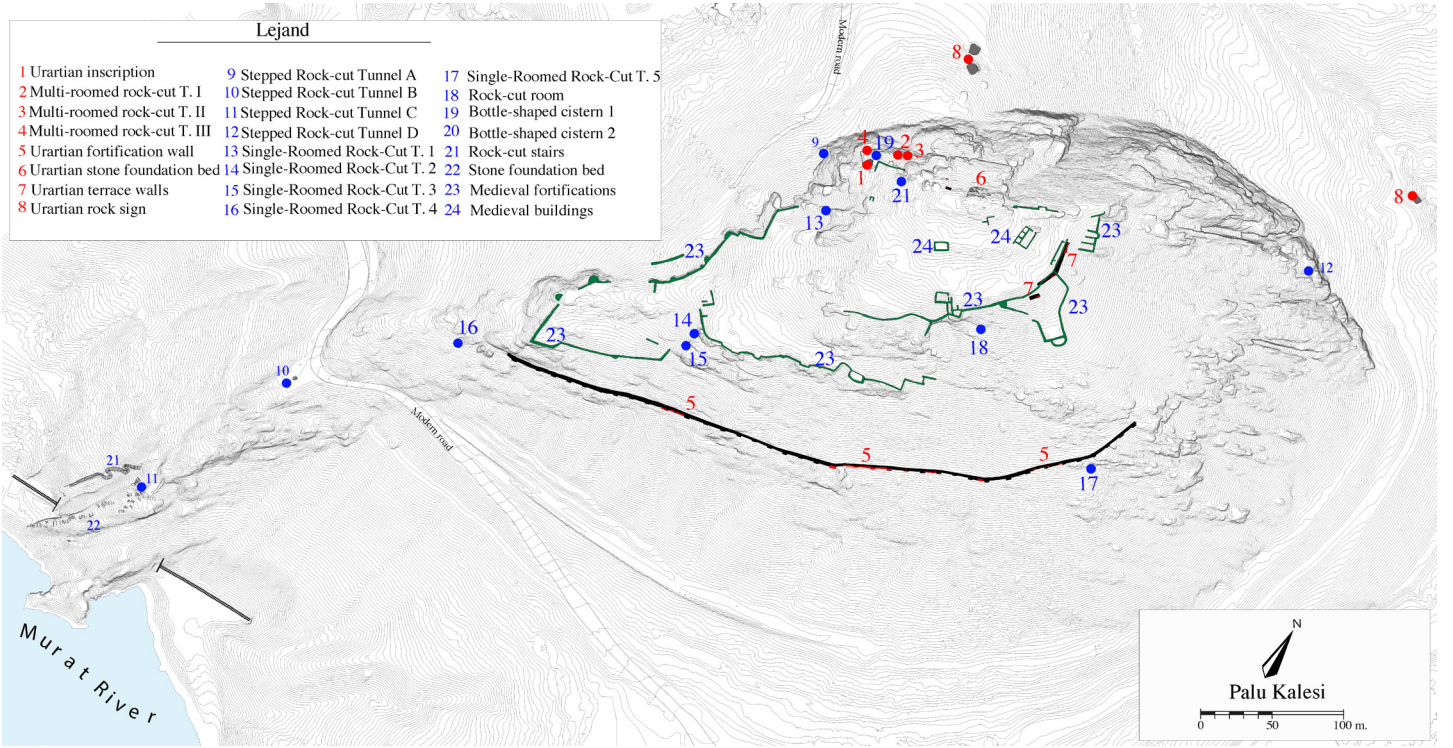

Figure 4. Topographic map of the Palu Fortress.

beds that are about 8-10 m wide and have 10–15 steps are found on the steep northern slope of the Upper Citadel. These remain indicate that the terrace wall continued northeast of the citadel. The basalt blocks on the interior façade of the terrace wall are preserved up to a single course above the foundation bed in a very restricted sector.

A wide platform measuring 40 m x 20 m was created on the northern slope of the Upper Citadel with the help of terrace walls. This area is in a prominent spot that oversees the rest of the citadel. Traces of ca. 1-m-wide foundation beds and rock-cut drainage canals in this area indicate a monumental building here (Fig. 5, 6).

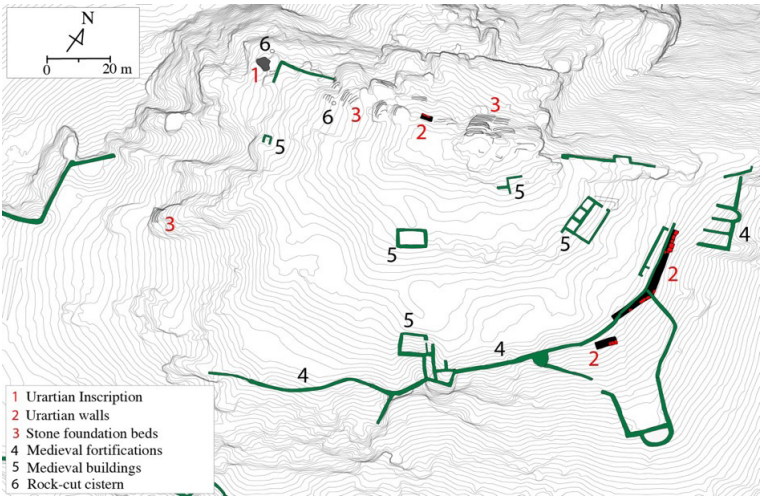

Figure 5: Topographic map of the Upper Citadel.

Figure 6: Aerial photograph of the Upper Citadel.

The prominent location of the wide terraced platform at the peak of the citadel, the size of the platform that is wide enough to support a temple structure, the traces of wide foundations, and drainage canals carved into the bedrock strongly suggest that a temple complex was built here at Palu like the ones known from provincial centres at Altıntepe and Kayalıdere.

Figure 7: Remains of the terrace wall that separates the Upper Citadel from the Lower Citadel.

In the Urartian Kingdom, temples were built in royal cities and provincial centres. Temples were at a prominent spot, usually at the peak of the citadels (Köroğlu 2020; Konyar 2022). The Urartian temples have similar dimensions and a square floor plan adorned with risalites abiding by a standard template. The largest excavated examples of Urartian temples are the Haldi temples at Altıntepe, Armavir, and Toprakkale measuring 13.80x13.80 m and the smallest known Urartian temple is the Irmushini temple at Çavuştepe measuring 10x10 m (Çifçi 2017: table 22; Danışmaz 2020: 52). Urartian temples are not isolated buildings. Usually, temple complexes include a frontal courtyard and auxiliary service rooms built along one side of the courtyard. Typically, drainage canals are found at the foundation level of Urartian temples.

Traces of foundation beds for terrace walls are also visible on the eastern side of the Upper Citadel like the remains north of the citadel. The terrace walls in the east can be traced all the way to the northeastern tip of the Upper Citadel (Fig. 8). A 7-m-long portion of the terrace wall is preserved in a section that is about 15 m from the northeastern corner. The wall is preserved to a height of 2 m and consists of nine courses of dry wall. Similar to the fortification wall, the terrace wall is also built from roughly dressed cyclopic blocks.

The terrace wall continues southward for 13 m and turns southwest at a 45$^{0°}$ angle. The cornerstones of the wall are visible at the point where the wall changes direction. No remains are visible after this point for about 5 m, after which the remains of the wall continue to the east. This 5-m-wide portion, where no foundation remains are visible, may have been the location of a gate that allowed passage from the Upper Citadel to the Lower Citadel.

Figure 8: Foundations of the terrace walls in the northern sector of the Upper Citadel.

The western edge of the Upper Citadel is characterised by steep cliffs similar to its eastern edge. In a small area where the surface of the bedrock is exposed along the western edge of the outcrop, there are traces of foundation beds, which may have belonged to the terrace wall. In this sector, the boundary between the Upper Citadel and the Lower Citadel is marked by a terrace wall similar to that in the eastern part of the Upper Citadel.

The boundaries of the Lower Citadel of Palu Fortress can be traced along the eastern, southern, and western limits of the Upper Citadel, and the Lower Citadel spreads down to the skirts of the rocky ridge. The southern and southeastern slopes of the Lower Citadel facing the Murat River valley are defended by a 5-m-wide fortification wall. The northern edge of the Lower Citadel is marked by the rock massif between the Upper and Lower Citadels. It is not possible to determine whether the western and northwestern sides of the Lower Citadel were enclosed by fortifications in the Urartian period, because mediaeval fortifications and buildings are superimposed on the Urartian structures in this area. A 50-m-high precipice defines the western limit of the Lower Citadel.

The Lower Citadel covers an area of approximately 4.90 hectares, but not all areas of this terrain are suitable for construction. There are outcropping rock massifs that reach a height of 5–10 m, especially in the eastern and northern portions of the Lower Citadel.

Early travellers' accounts about Palu Fortress and the remains of fortification walls and other structures with mortared masonry demonstrate that there was intensive building activity and inhabitation at the site in the Middle Ages. It can be inferred that, at certain areas of the site, architectural remains of the Urartian period are superimposed by mediaeval structures. In fact, cyclopic blocks from Urartian buildings are used as spolia in some mediaeval structures. Furthermore, a basalt column base found on the southern slope of the Upper Citadel clearly indicates Urartian period architecture at the fortress.

At Urartian royal settlements and provincial centres, basalt column bases are usually found in the courtyards of temple and palace complexes and in audience halls. Column bases known from Kayalıdere measure 77 cm in diameter (Burney 1966: 67), while at Altıntepe column bases have a diameter of 70 cm (Özgüç 1966: 3). The column base at Palu is 70 cm in diameter like Altıntepe (Fig. 9).

Figure 9: Basalt column base belonging to a monumental building in the Upper Citadel.

The most tangible evidence of Urartian presence at Palu Fortress is a cuneiform inscription carved into bedrock at the site.[3] The inscription is located at the northwestern tip of the Upper Citadel. The remains described above as possibly belonging to a temple are situated just next to the Urartian inscription. The inscription is carved on the façade of a rocky outcrop that measures about 3.7x4.0x20.0 m. The western façade of the rock is shaved off and a 30-cm-deep niche (3.40x1.50 m), is cut into the façade for the inscription. The inscription is carved in two parts inside the niche. The upper portion consists of 28 lines, while the lower portion has only 7 lines of cuneiform text. The text reads as follows:

> *"The god Ḫaldi set off with his weapon, he conquered the territory of the city Šebeteria, he conquered the territory of the city Ḫuzana, he conquered the land Ṣupa. Behind(?) the god Ḫaldi, behind(?) the weapon of the god Ḫaldi, through the protection of the god Ḫaldi Minua, son of Išpuini, set off, he conquered the territory of the city Šebeteria, he conquered the territory of the city Ḫuzana, he conquered the land Ṣupa. He came to the land Hati (Hatti).*
> *He set up a stele for the god Ḫaldi. In the city Šebeteria, he built a chapel(?) of the god Ḫaldi. Near by the city Šebeteria he conquered (some) lands. He put the king of Miliṭia (Malatya) under tribute. Through the greatness of the god Ḫaldi I am Minua, son of Išpuini, strong king, great king, king of the Bia lands, lord of Ṭušpa-City.*
> *Minua says: (as for the one) who destroys this inscription, (as for the one) who damages it, (as for the one) who makes anyone else do such things, may the god Ḫaldi, the Weather-God, the Sun-God and (all) the gods annihilate him under the sun! . . . (rest untranslatable)"* (CTU I, A 5-5).

The inscription is concerned with the political pursuits of the Urartian Kingdom in the region. According to the inscribed text, the Urartian king conquers the country of Şebeteria city, the country of Huzana city, and the city of Supa. The king subdues the King of Melid but spares him his life with the condition of paying tribute to the Urartu. The king also commissions a temple to be built in the city of Şebeteria. The city of Şebeteria mentioned in the text should be equated with the Palu Fortress where the inscription is located. Although not certain, the city of Huzana in Urartian texts is localised at Hozat Fortress in the mountainous region of modern Tunceli province (Köroğlu 2022: 220-221). In the highlands of Tunceli, there are tribal centres of the Urartian Period like Kaleköy/Mazgirt and Anbar, and the purpose

3 Records indicate that Fathers Natanyan and Sirvantsdyants were present at Palu together in 1878. In his memoirs, Sirvantsdyants describes the Urartian cuneiform inscription at the site, and he relates that he entered the Urartian rock-cut chamber-tombs, where Saint Mesrop had once retreated into a hermitage, as Simeon has previously reported. Sirvantsdyants also mentions that many coins were found in these ruins by local people and were sold to interested collectors (Bardizaktsi, Natanyan, & Sirvantsdyants 2010). Natanyan states that he wanted to copy the inscription but could not because of its height. It appears that the Armenian priests were not aware that the Palu inscription was already copied by Sir Layard 31 years ago. Layard, who was conducting excavations at significant sites of the Assyrian Empire around Mosul at the time, visited Palu in 1847 on the way back from Mosul. He copied the cuneiform inscription of Palu and sent the copy to the British Museum (Layard 1849: 172, 189).

of Menua's military campaigns may have been the subjugation of the tribes inhabiting the highlands north of Palu Fortress. Menua's campaigns and construction activities in the region suggest that the kingdom strategized to establish its authority in this settlement basin during his reign. Regarding the inscription at Palu Fortress, it should be noted that the text does not mention any siege of the settlements of Melid or a battle between Urartu and the King of Melid. The inscription does not name the king of Melid, nor does it give an account of the war booty.

Urartian Fortifications

The citadel of the Palu Fortress was defended by a robust fortification system during the Urartian period. The southern aspect of the ridge is characterised by steep cliffs along the Murat River canyon. Rocky outcrops at the eastern and western ends of the southern slope reach as high as 30-40 m, and a wide and 420-m-long fortification wall reinforced by bastions was built between these two rock massifs (Fig. 10, 11).

Figure 10: Lower Citadel fortifications, view from the northeast.

The fortifications are built of roughly dressed cyclopic blocks. These blocks range from 2.5x0.50 m to 0.40x0.20 m in size. While most blocks are cut from limestone, occasionally blocks cut from volcanic rocks like basalt and andesite are also used.

The foundation trench of the fortifications was cut into the bedrock along the slope as terraced foundation beds featuring five to ten steps. The walls were erected in dry-wall

masonry without mortar on top of this sturdy foundation bed. At present, a 35-m-long section of the fortification wall along the southern slope of the Lower Citadel is preserved to a height of five courses, reaching approximately 3 m. The fortifications stretch east for about 30 m and begin ascending towards the higher part of the citadel with a 20% incline and join the cliffs at the peak. In this sector, portions of the fortification wall are preserved to a height of one or two courses intermittently with about 10-15 m gaps in between. This appearance of the wall is a result of the collapse from the upper parts of the citadel, the rubble of which has covered long portions of the fortification wall.

A 110-m-long stretch of the southern fortifications in the west passes through rocky and sloping terrain. Some of the building blocks from this sector of the wall have collapsed and tumbled down to the banks of the Murat River in the post-Urartian period, and these blocks have been used as spolia in the construction of the houses, the church, and the mosque near the bank of the river. Therefore, the traces of the fortification wall in this sector are limited to foundation beds.

Figure 11: Lower Citadel fortifications, view from the east.

Figure 12: Foundation beds of the Lower Citadel fortifications cut into the bedrock.

Here, the imprint of the stepped foundations for the fortification wall appears as seven to eight parallel rows that are variably 35 to 50 cm wide (Fig. 12). The first course of the stone blocks on the exterior face of the wall is preserved in certain portions of this foundation trench along the slope. Additionally, traces of foundations in this area indicate that auxiliary structures were built abutting the interior face of the fortification wall.

Figure 13: Virtual 3D reconstruction of the Urartian fortifications of Palu Fortress.

It is not possible to document whether the Urartian fortifications continued north after reaching the western tip of the Lower Citadel. At this point, foundation beds are not visible on the bedrock. Probably, the portion of the Urartian fortifications that we would expect to see in this sector are superimposed by mediaeval fortifications. In fact, traces of the fortification wall foundations on the bedrock and remains of terrace walls are partially visible in the northern portion of this area, where the Urartian rock tombs are located. In the northeastern sector of the citadel, the rocky outcrops rise to a height of 100 m, and there are no traces of foundations or remains of walls in this area (Fig. 13).

Although it is not feasible to take accurate measurements of the fortification wall because of the ruined and unstable state of the remains, in some sectors the wall body measures about 3 m in width. In other sectors, foundation trenches reach a width of 5 m. The body of the fortification wall is reinforced by bastions that are evenly spaced 7 m apart. Each bastion is 3 m wide, and the bastions protrude about 50-60 cm forward from the exterior face of the wall. This construction technique has allowed this sturdy fortification wall and its bastions to also serve as a revetment wall for the buildings inside the citadel.

Multi-Roomed Rock-Cut Tombs and Rock-Cut Niche

Multi-roomed rock-cut tombs at Palu fortress are dated to the Urartian period based on the characteristics of their construction and interior plans. The presence of these tombs at the site has been known since the early expeditions by travellers.[4] The first substantial study of these tombs was conducted by Charlesworth, who visited the site in 1975. Charlesworth attempted to draft a plan of the tombs; however, he was only able to draw a sketch of a single tomb (labelled Multi-roomed Rock-cut Tomb I in our investigations). Because the paths leading to the entrance of the other two tombs were blocked with earth and rubble, Charlesworth was not able to access them (Charlesworth 1980). Later, the tombs were investigated systematically by Çevik as part of a thesis research, and the first comprehensive plan of the multi-roomed tombs at Palu was prepared and published as part of this study. In Çevik's plans, the relative positions of the burial chambers of the tombs appear parallel to each other (Çevik 2000: lev. 20a, 28a, 29a).[5] Soon after Çevik's investigation, the tombs were investigated in detail once more by Sevin and his team, who conducted regional surveys in the area. Later, plans of the tombs were redrawn by Köroğlu based on these new investigations, effectively showing that the tomb chambers were not situated parallel to each other (Köroğlu 1996: res. 5, 6, 7).

4 British geographer and traveller Tozer, who visited Palu in 1874, describes the Urartian inscription at the site in his travel accounts. Additionally, he states that Palu Rock Tombs I and II have rooms with similar plans, and Palu Rock Tomb III can be accessed by a rock-cut staircase. Tozer proposes that these rock-carved tombs must have been built for kings and points out the similarity of these tombs to the rock-cut tombs known from Van Fortress (Tozer 1881: 250-253).

5 Çevik investigated the Palu Fortress as a research project for his M.A. thesis. In this study, investigations focussed on previously recorded rock-cut features at the fortress, and the plans of the multi-roomed rock-cut tombs at the site were evaluated in comparison with other known rock-cut tombs in the region (Çevik 1987).

Table 1. Dimensions (in metres) of rooms in the multi-roomed rock-cut tombs of Palu Fortress.

	Main Doorway	Room 1: Main chamber	Room 2	Room 3	Room 4
Multiroomed Rock-cut Tomb I	0.95x1.50	3.55x4.70	4.80x3.80	3.85x3.20	3.10x3.60
Multiroomed Rock-cut Tomb II	1.10x1.65	3.85x4.25	2.20x3.15	2.60x2.20	3.10x2.20
Multiroomed Rock-cut Tomb II	1.85x1.10	3.10x3.40	2.20x1.73		

Multi-roomed rock-cut tombs at Palu fortress (Table 1) are carved into the bedrock on the steep cliffs of the rocky outcrop northwest of the Upper Citadel. These tombs can be accessed only through the Upper Citadel. A platform measuring about 9.30x3.00 m is cut into the bedrock adjacent to the Urartian inscription on its northeastern side. A path of rock-cut steps that is 12.5 m long and 40–50 cm wide begins at the southeastern corner of this platform and leads to the entrance of Multi-roomed Rock-cut Tomb I. Another path of steps that is 9 m long connects the end of this rock-cut staircase to the entrance of the Multi-roomed Rock-cut Tomb II. In the latter 8 m of this path, the face of the bedrock is shaved off for about 30-40 cm to create a sufficient horizontal surface for the steps to be carved.

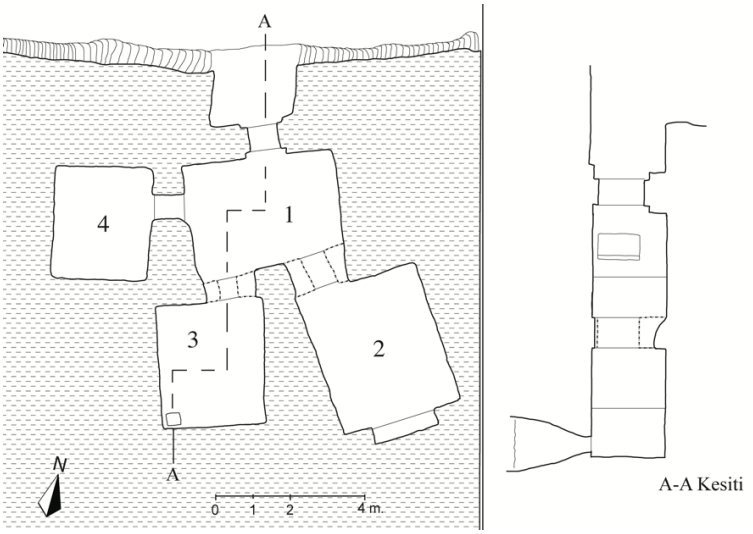

Figure 14: Architectural plan of Multi-roomed Rock-cut Tomb I.

The multi-roomed Rock-cut Tomb I consists of a main chamber (Room 1) and three subsidiary rooms (Rooms 2-4) that can be accessed by doorways located on the southern and western walls of the main chamber (Fig. 14). The front façade with the entrance to the main chamber is cut into the bedrock slightly recessed from the stepped path that passes in front of the tomb, which has allowed for a space measuring 2.60x2.10 m with a barrel-vault ceiling that can serve as an antechamber. The frame of the doorway for the main entrance is adorned by a single ridge moulding all along the edge. The original lento of the main entrance is not preserved because the top section of the doorway was recut to expand the doorway in the Middle Ages.

The floor plan of the main chamber in Tomb I approximate a rectangle with parallel sides of slightly uneven lengths. The eastern wall of the chamber is shorter than the western wall, resulting in the southeastern corner of the room having an acute angle. The ceiling of this main chamber is 2.45 m high. A rectangular doorway on the southern wall of the main chamber provides access to the first subsidiary room (Room 2). In the Middle Ages, this doorway was widened on both sides. A wide, rectangular niche (2.00x1.75 m) is cut into the southern wall of the main chamber. The closest examples of such niches of this size are known from rock tombs at Anbar and Kaleköy in the Tunceli region (Danışmaz 2019: 127).

The second subsidiary room (Room 3) of Tomb I is also accessed through a rectangular doorway cut into the southern wall of the main chamber. A 3-m-deep, bottle-shaped pit with a rectangular mouth is carved into the floor in the southwestern corner of the room. This feature may be interpreted as a refuse pit, and similar rock-cut pits are known from rock tombs in the Van province at Büyük Horhor and Kayalıdere (Konyar 2022: 233; 2011: 214, 215). The last room (Room 4) of the tomb can be accessed by another rectangular doorway on the western wall of the main chamber. This fourth room has a flat ceiling that is 2.20 m high.

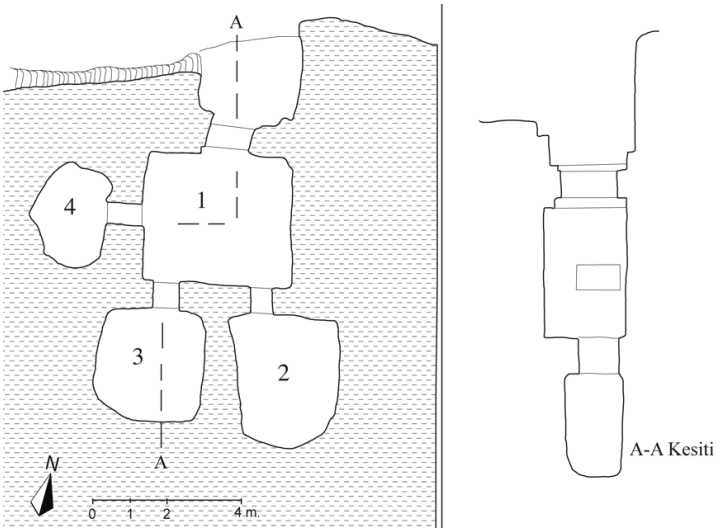

Figure 15: Architectural plan of Multi-roomed Rock-cut Tomb II.

The second multi-roomed tomb, Multi-roomed Rock-cut Tomb II, is accessed by a stepped path that begins along the front façade of the Multi-roomed Rock Tomb I. The steps on this path are partially carved into the vertical face of the bedrock (Fig. 15). As in the first tomb, the main entrance to Tomb II is accessed through rock-cut platform (3.00x2.90 m) with a barrel-vault ceiling. The platform is open on the side that overlooks the precipice. A narrow parapet wall consisting of a few courses of mortared masonry was built on this edge of the platform in the Middle Ages. Tomb II consists of a main chamber (Room 1)

and three subsidiary chambers (Rooms 2-4) that can be accessed from the main chamber. The arrangement of the rooms is the same as in Multi-roomed Rock-cut Tomb I: Rooms 2-3 are accessed by doorways on the southern wall of the main chamber, and a doorway on the western wall leads to the last room (Room 4).

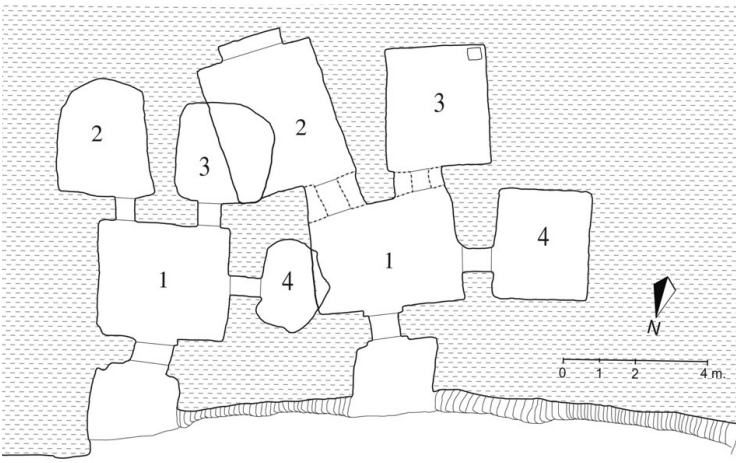

Figure 16: Composite plan of Multi-roomed Rock-cut Tombs I and II.

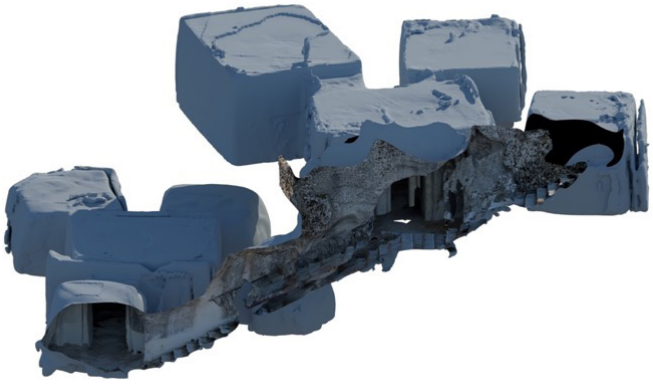

Figure 17: 3D models of Multi-roomed Rock-cut Tombs I and II based on Lidar data.

The entrance to Tomb II is through a rectangular doorway (1.10x1.65 m). Similar to the adjacent Tomb I, the doorway frame is decorated with a single ridge moulding all along the edge. The main chamber has a square plan with parallel walls and even corners, and its ceiling is 2.40 m high. Doorways for the subsidiary rooms of the tomb are cut as rectangular openings into the walls of the main chamber. The ceilings and back walls of the third and fourth rooms are curved, which indicates that the carving of these rooms was left unfinished.

The reason why the back rooms of Tomb II were left unfinished has remained an unanswered question until the present. Our Lidar-sensor scans of Multi-roomed Rock-cut Tombs I and II provide an explanation. When the 3D reconstructions of the two tombs are viewed together, Rooms 3 and 4 of Tomb II appear to lie just below the main chamber (Room 1) and the first room (Room 2) of Tomb I. The Lidar data demonstrate that the distance between the floor of the back room of Tomb I and the ceiling of the back room of Tomb II is only 1.5 m. In other words, if the unfinished Rooms 3-4 of Tomb II were carved deeper, they would have caused the Tomb I above to have collapsed (Fig. 16, 17). It is likely that the masons carving the tomb realised this risk and stopped expanding the rooms into the bedrock.

Multi-roomed Rock-cut Tombs I and II are similar in many ways. Both tombs are accessed by the same path, and both have a platform in front of the main entrance that is recessed from the path. The main entrance of both tombs is a rectangular doorway decorated with a single ridge moulding along the frame. The spatial arrangement of the main chamber and the subsidiary rooms is the same, and the ceiling of the main chamber has a similar height in both tombs. The distinguishing features of the Multi-roomed Rock-cut Tomb I are the large niche on the southern wall of the main chamber and the bottle-shaped pit in the third room of the tomb.

The third multi-roomed rock-cut tomb at Palu Fortress is accessed by a rock-cut staircase that begins at the southwestern corner of the rock-cut platform that lies northeast of the Urartian inscription. The steep path formed by these rock-cut steps leads north on the eastern side of the rocky outcrop to the platform in front of the tomb.

The multi-roomed Rock-cut Tomb III consists of a main chamber and a secondary room that is accessed by a doorway on the southern wall of the main chamber (Fig. 18). The main entrance of the tomb is a rectangular doorway that measures 1.80x1.00 m. The ceiling of the main chamber is flat, and it is 2.40 m high. There are two niches on the eastern and western walls of the main chamber and a single niche on its southern wall. The niches measure 45x55 cm, and there are small, ovoid pits carved inside them. Such pits inside niches are known from rock-cut tombs at Taşbulak, Şirinlikale, Atabindi, Dönertaş, and Kayalıdere.

The second room of the tomb is accessed from a rectangular doorway on the southern wall of the main chamber. The western and southern walls of the room are finished relatively evenly, while the eastern wall is carved roughly, and its corners are left curved.

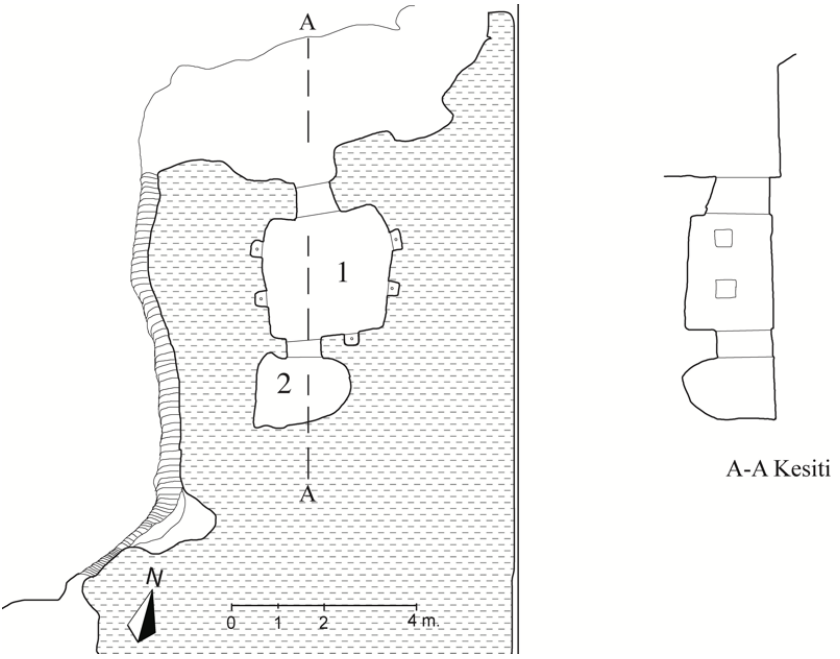

Figure 18: Architectural plan of Multi-roomed Rock-cut Tomb III.

There is a rock-cut niche on the face of the cliff just next to the entrance of Multi-roomed Rock-cut Tomb III. The niche is 3.50 m wide, 1.80 m high, and 60-70 cm deep. Its top is shaped like an arch. When closely observed, the face of the bedrock on the interior walls of the niche has two distinct colours preserved in patches. The brownish grey layer that is closer to the surface is an older surface that has been exposed to the elements for a longer time, whereas the lower part has a yellowish colour because it has been exposed to air for a shorter period. This appearance shows that the interior surface of the niche was cut back by approximately 5–10 cm at a much later time than the original carving of the niche. In fact, the lower section of the niche is recessed about 25-30 cm deeper than the rest of the surface, which shows that the niche was cut back a second time, but this task was left unfinished.

Single-Roomed Rock-Cut Tombs and Rock-Cut Room

Similar to the remains of the Urartian fortification/terrace walls and rock signs, single-roomed rock tombs at Palu Fortress were also overlooked by previous researchers. There is no information about the single-roomed rock-cut tombs of the site recorded in travellers' accounts or academic literature. Five single-roomed rock-cut tombs and a rock-cut room were discovered at Palu Fortress by our investigations (Table 1). All single-roomed tombs are located inside the Lower Citadel. They are easily accessible through a short rock-cut path and a few rock-cut steps. A common characteristic of single-roomed rock-cut tombs is that there are no klines (platform beds) inside them. When compared with the multi-roomed

rock-cut tombs of the Urartian period, workmanship in the stone carving is relatively poor in these single-roomed rock-cut tombs. In most cases, ceilings are carved unevenly, and the corners of the rooms are not cut at sharp angles. Moreover, there are no evenly cut doorways to serve as an entrance to the tombs; rather, the front façades appear as wide openings in the bedrock. One of the reasons for this appearance is the location of the tombs at the edge of the calcareous cliff, which has eroded with time. The great earthquake at Palu has also increased the impact of erosion on the front façade of the tombs. In particular, in the areas of the Lower Citadel where the tombs are located, massive rocks and boulders as large as 5 m tall have broken off the cliffs and tumbled down the slope.

Table 2. Dimensions and locations of single-roomed rock-cut tombs and the rock-cut room at Palu Fortress.

	Room size (m)	**Location (GPS WGS-84)**
Single-roomed Rock-cut Tomb 1	1.50x2.50	37S 582844–42842110
Single-room Rock-cut Tomb 2	3.00x3.70	37S 582798–42844113
Single-room Rock-cut Tomb 3	3.00x1.30	37S 582792–42841030
Single-roomed Rock-cut Tomb 4	3.40x3.00	37S 582654–42844044
Single-roomed Rock-cut Tomb 5	1.40x3.30	37S 583068–42844157
Rock-cut Room	7.50x3.00	

Figure 19: Single-roomed Rock-cut Tomb 3.

Single-roomed Rock-cut Tomb 1 is situated on the rock massif that lies about 50 m southwest of the Urartian inscription. Access to the tomb is through a 1-m-wide path east of the rocky outcrop where the tomb is located. There is a rectangular platform (2.10x4.00 m) in front of the tomb. The entrance and the front façade of the tomb have been destroyed. The tomb chamber has a rectangular plan measuring 1.50x2.50 m. The floor of the tomb chamber is covered with the rubble from the destruction of the front façade of the tomb.

Single-roomed Rock-cut Tomb 2 is carved into a rocky outcrop about 45 m south of the entrance to the citadel. The front façade of the tomb faces west. There is a rock-cut platform (2.0x3.0 m) in front of the entrance to the tomb. The floor of the platform is ca. 3 m higher than the walking ground. Both this platform and the entrance to the tomb are covered by the rubble of the medieval fortification walls, which pass just next to the tomb. The tomb chamber is rectangular in plan and measures 3.00x3.70 m. The calcareous nature of the bedrock has made the site vulnerable in the face of earthquakes and due to this damage, parts of the tomb ceiling have also collapsed.

Figure 20: Single-roomed Rock-cut Tomb 5.

Single-roomed Rock-cut Tomb 3 lies about 9 m south of Single-roomed Tomb 2. The tomb floor is located about 1 m higher than the walking ground. The rectangular tomb chamber measures 3.00x1.30 m, and its ceiling is ca. 1.50 m high. There is no kline in the tomb chamber. The front façade of the tomb is open and faces east (Fig. 19).

Single-roomed Rock-cut Tomb 4 lies at the western tip of the citadel. The front façade of the tomb faces east, and it is wide like the other single-roomed tombs. The tomb chamber measures 3.40x3.00 m, and there is a wide rock-cut platform in front of the tomb.

Single-roomed Rock-cut Tomb 5 is situated in the southeastern sector of the citadel where outcropping rock massifs begin. The tomb chamber is rectangular and measures 1.40x3.30 m. Its front façade is open and faces southeast. The floor of the tomb chamber is carved evenly flat, and its ceiling is 1.60 m high (Fig. 20).

The rock-cut room lies south of the terrace walls that separate the Upper Citadel from the Lower Citadel. The entrance to this context is blocked by the rubble of the mediaeval fortification walls from above; nevertheless, the structure can still be accessed through a small gap within the rubble. The entrance to the context is through the entirely open front façade that is as wide as the room (3.0 m) and is arched at the top. The room has a rectangular plan, measuring 7.5x3.0 m, and the final 2 m of the depth of the room at the back seems to have been carved at a later stage to enlarge the context. The height of the ceiling reaches 4 m at certain points, but the ceiling is not at an even height across the context.

Stepped Rock-Cut Tunnels

Stepped rock-cut tunnels at Palu Fortress are as impressive and outstanding as the rock-cut tombs at the site. Carving these deep tunnels through the bedrock on the slope of the rocky ridge must have been a rather challenging task that required as much expertise as carving the rock-cut tombs.

There are four stepped rock-cut tunnels at Palu Fortress (Table 3). Previous research and publications have identified the characteristics of Tunnel A south of the fortress and Tunnel B northwest of the fortress. The two additional tunnels identified by our research at the site are Tunnel C, which lies on the northeastern slope of Palu Fortress along the Murat River valley, and Tunnel D, which is situated at the northeastern tip of the Lower Citadel.

Stepped Rock-cut Tunnel A is on the northwestern slope of the fortress. The entrance to the tunnel is through a large gallery carved into the rock (Fig. 21). The entrance to the gallery faces southwest and is located about 4.5 m higher than the walking ground. The gallerys entrance is 4 m wide and 2.7 m high. Notches on the floor and the walls of the entrance indicate that it was narrowed by the building of stone building stone parapet walls around its sides. This observation is supported by the arrangement of the rock-cut steps on two sides of the path leading to the entrance. The 4.0-m-wide entrance narrows in a recessed form as one walks into the gallery so much that the width across the mid-section of the gallery is as narrow as 2.5 m.

Table 3. Dimensions and characteristics of stepped rock-cut tunnels at Palu Fortress.

	Location	**Entrance size (m)**	**Exit from the Tunnel**
Stepped Rock-cut Tunnel A	Northwestern slope	1.50x2.10	Not present
Stepped Rock-cut Tunnel B	Southwestern terrace		Not present
Stepped Rock-cut Tunnel C	Southwestern terrace	1.70x1.40	Present
Stepped Rock-cut Tunnel D	Northeastern citadel	1.60x1.70	Unidentified

Figure 21: Entrance to the gallery leading to Stepped Rock-cut Tunnel A (left), entrance to Tunnel A (right).

The ceiling of the gallery is formed as a barrel vault. After the entrance, wide, descending steps are cut into the bedrock floor of the gallery. The last section of the gallery is formed as an open-air platform that measures 7.0x2.7 m. This opening appears to be due to the weakness of the bedrock at this spot to support a ceiling. Similar to the wide entrance to the gallery, the open-air portion of the gallery was also narrowed with a stone parapet wall, as the foundation cuts for the stone blocks on the floor demonstrate. Another opening, only 1.70x0.90 m wide, is present in the continuation of the tunnel, which appears as an intentionally cut feature to aid lighting and air circulation in the tunnel.

The entrance to Rock-cut Tunnel A is at the end of the gallery described above (Fig. 21). The interior of the tunnel was blocked with the rubble that filled over the years, and access to the tunnel was not possible until recently. The rubble inside the tunnel was cleaned out during salvage excavations by the museum, and access was enabled. The depth of the tunnel into the bedrock from its entrance to its end is 54 m. The first portion of the tunnel is north-south-orientated for 65 rock-cut steps, and then its orientation turns east, and the tunnel continues for another 139 rock-cut steps. The tunnel then continues descending northwest with a sharp slope and ends without an exit.

Figure 22: Entrance to Stepped Rock-cut Tunnel B.

Stepped Rock-cut Tunnel B lies southwest of the ridge, next to the edge of the modern road that goes down to the Murat River (Fig. 22). Salvage excavations have been conducted by the museum inside and around the tunnel recently. Cleaning and excavation revealed that the tunnel has no exit. The entire length of the tunnel from the entrance to the end descends towards the Murat River for about 5-6 m and comes to an end inside the bedrock. On the basis of the deep cracks in the bedrock inside the tunnel, it may be concluded that the carving of the tunnel was unfinished due to safety concerns.

In addition to the two previously known tunnels at the site, the first additional tunnel documented by our investigations is Stepped Tunnel C, which starts ca. 115 m southwest of the entrance to Tunnel B (Fig. 23). The entrance to Tunnel C is adjacent to the rock-cut steps described below. The tunnel reaches the Murat River valley, which is about 80 m lower than its entrance. The entrance to the stepped tunnel measures 1.70x1.40 m, and it is accessed via rock-cut steps similar to the other tunnels at the fortress. The first 1.5-m-long portion of the tunnel after the entrance is filled with rubble. After this accumulation of rubble, however, the tunnel continues uninterruptedly for 50 m, descending all the way to the Murat River. The lower portion of the tunnel turns slightly eastward and continues inside another rock massif. The tunnel has an opening here due to a collapse at the point of this transition from one rocky outcrop to another. A 10-m-long stretch of the tunnel can be followed inside after this point. In the rest of the tunnel, rubble of the collapses along the tunnel that are visible on the surface

along its length shows that the stepped rock-cut tunnel reaches the bank of the Murat River at the valley bottom. The stepped rock-cut tunnel that reaches the Murat River reported in Evliya Çelebi's account of the Palu Fortress must be this tunnel.

Figure 23: Entrance to Stepped Rock-cut Tunnel C (left), view from inside the tunnel (right).

The last stepped tunnel at Palu Fortress is carved into the northeastern tip of the rock massif on which the citadel lies. In contrast to the other three tunnels, the entrance to Stepped Rock-cut Tunnel D is opened at the top of the rock massif (Fig. 24). The entrance is severely damaged because of natural causes; nevertheless, steps cut into the bedrock can be followed all the way to the entrance to the tunnel. The entrance of the tunnel measures ca. 1.60x1.70 m. The rock-cut steps in this section are as wide as 1.50 m with a tread of 30 to 40 cm per step.

Figure 24: Exterior view of Stepped Rock-cut Tunnel D (left) and interior of the tunnel (right).

After about the first 8-9 metres of the tunnel from the entrance, the tunnel reaches the edge of the cliff and turns towards the bottom of the slope. The sides of the tunnel along its length have collapsed at certain locations due to natural causes. The final 15-m-long stretch of the tunnel is blocked because the rubble collapses from above. The exit of the tunnel is not visible at the base of the rocky slope. If the tunnel originally had an exit, it must have been filled up and covered by rubble and erosion from the slope over time.

Rock-Cut Steps and Cisterns

The rock-cut steps at Palu Fortress are on the southwestern slopes of the rock massif where the fortress lies (Fig. 25). The steps are carved on the lowest natural terrace that stretches from the banks of the Murat River towards the citadel, where Stepped Tunnel B and Stepped Tunnel C are located. This natural terrace stretches for approximately 230 m, and the rock-cut steps are found in two separate locations.

The first set of steps starts at about 2-3 m south of the entrance to Tunnel B and continues uninterruptedly for about 230 m along the back edge of the terrace, reaching the river after crossing over the modern railway tunnel. These steps are carved into the bedrock somewhat roughly and they do not abide by a standard measure. In the section where the rocky ridge is narrow, the steps are about 2 m to 3 m wide, while in the midsection where the ridge is

wider, there are three parallel groups of steps. The rough workmanship of the carving and their uneven widths give the impression that this set of steps may have been stepped/terraced foundation beds rather than a stepped path.

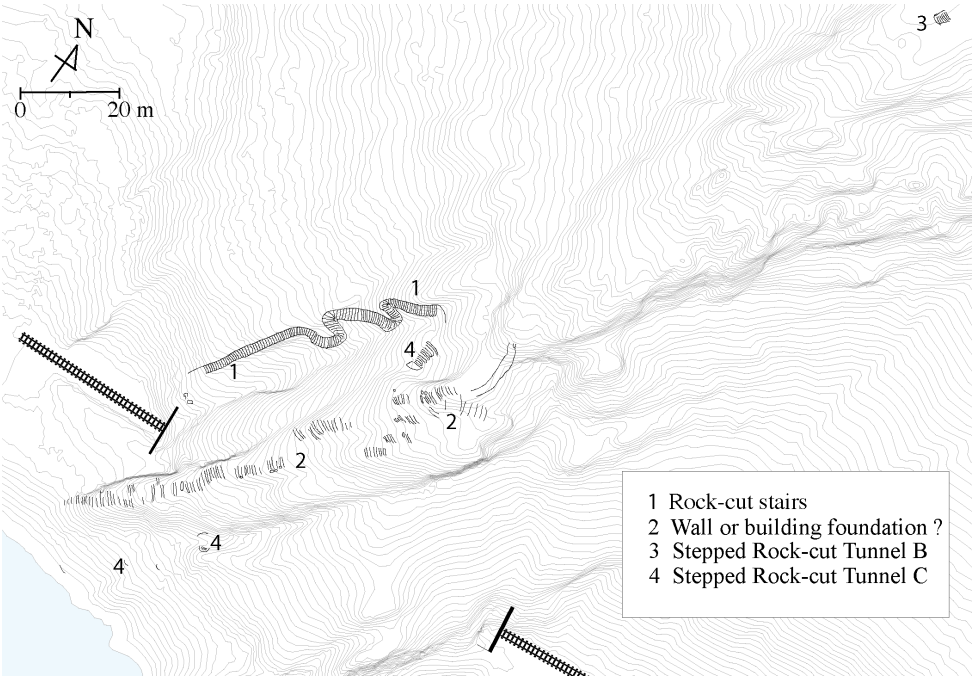

Figure 25: Topographic map of the rock-cut steps descending to the Murat River.

The second set of steps begin about 20 m southwest of the entrance to Tunnel B. A 1.5-m-wide and 2.0-m-deep trench was cut into the bedrock, and the steps were cut into this trench. It may be said that the stepped path probably extends down to the Murat River. During the construction of the railway, however, a part of the stepped path was destroyed, and therefore, the path could not be followed uninterruptedly (Fig. 26). Part of the steps descending to the Murat River are carved in a zig-zag pattern to create a path that is easy to tread, compensating for the steep incline of the slope.

Rock-cut, bottle-shaped cisterns at the Palu Fortress are located inside the Upper Citadel. Cistern I lie just next to the path that leads to the Multi-roomed Rock-cut Tombs I and II. The mouth of the cistern has an oval shape. The edges of the mouth have cracked and broken off due to natural causes in some areas. The mouth of the cistern measures 1.10 m across, but it tapers out towards the bottom like a wide flask, and the diameter across measures about 3 m in the midsection. The measurable depth of the cistern is 2.20 m; however, because of the rubble at the bottom of the cistern, the depth cannot be measured accurately. There are no traces of plaster on the walls of the cistern.

Figure 26: Foundations of fortifications descending to the Murat River (left) and rock-cut steps (right).

The second bottle-shaped cistern at Palu Fortress lies 25 m southeast of Cistern I at the peak of the Upper Citadel. Its mouth is also oval-shaped and measures 1.10 m across, similar to Cistern I. Because the cistern was filled with rubble at the time of our investigations, its depth could not be determined.

Stepped rock-cut tunnels and rock-cut cisterns found at fortress settlements in Eastern Anatolia have been commonly regarded as diagnostic criteria for identifying Urartian settlements. Undoubtedly, the expertise of the Urartians in stonemasonry has contributed to the wide acceptance of this idea by scholars. In fact, the presence of stepped rock-cut tunnels was considered significant evidence for dating fortresses and settlement sites to the Urartian Period. Recently, however, a comprehensive evaluation of the fortresses where stepped tunnels are found in Eastern Anatolia has called into question the basic premises of this dating. This evaluation also considered the types, functions, and purposes, as well as the geographical distribution of stepped rock-cut tunnels in Eastern Anatolia. Based on the examination of all these lines of evidence, the study concludes that the stepped rock-cut tunnels like single-roomed rock-cut tombs, are not associated with the Urartian Kingdom but are part of a cultural tradition that arrived in Eastern Anatolia in the Hellenistic Period (Köroğlu and Danışmaz 2018).

Rock-Cut Signs

Urartian rock-cut signs are defined as geometric signs cut into the bedrock as grooves on rocks or rocky outcrops near Urartian settlements (Belli 1989, 2000). These "circles" and V-shaped, L-shaped, sickle-shaped, and canal-shaped signs that are carved into the bedrock appear as the products of a deep-rooted tradition in the region like the rock-cut tombs.[6]

Four rock-cut signs carved onto two separate rock faces along the northern cliffs of the Palu Fortress have already been reported in previous publications and plans for the site. During our survey at the site, we identified another rock-cut sign on a large boulder northeast of the previously recorded signs.

Figure 27: Urartian Rock-cut Signs at Palu Fortress.

In total, there are rock-cut signs on three boulders on the north and northeastern skirts of the citadel (Fig. 27, 4). Rock-cut signs at Palu are situated outside the fortifications that enclose the citadel, as is the case at Upper Anzaf and Çavuştepe fortresses. At the first location where rock signs are found, there are three signs on the face of the bedrock on a boulder that

6. Rock signs at Palu Fortress are carved onto the face of boulders like those at Edremit, Deliçay, and Mağara Tepe. Note that the oval-shaped signs at Palu may be quarrying marks left on the bedrock from the extraction process of a stone block for a column base. Views about the purposes and functions of Urartian rock-cut signs vary (for details, see Konyar 2006).

lies about 5 m higher than the walking ground. The second boulder bears only a single sign. The third boulder with signs is situated close to the valley bottom of the dried creek about ca. 280 m northeast of the other two rock faces bearing signs. Probably, this third boulder was also originally located at a higher elevation near the other two with signs; however, due to the impact of the earthquake, this boulder, like others around it, split off the cliff and tumbled down the slope towards the valley bottom.

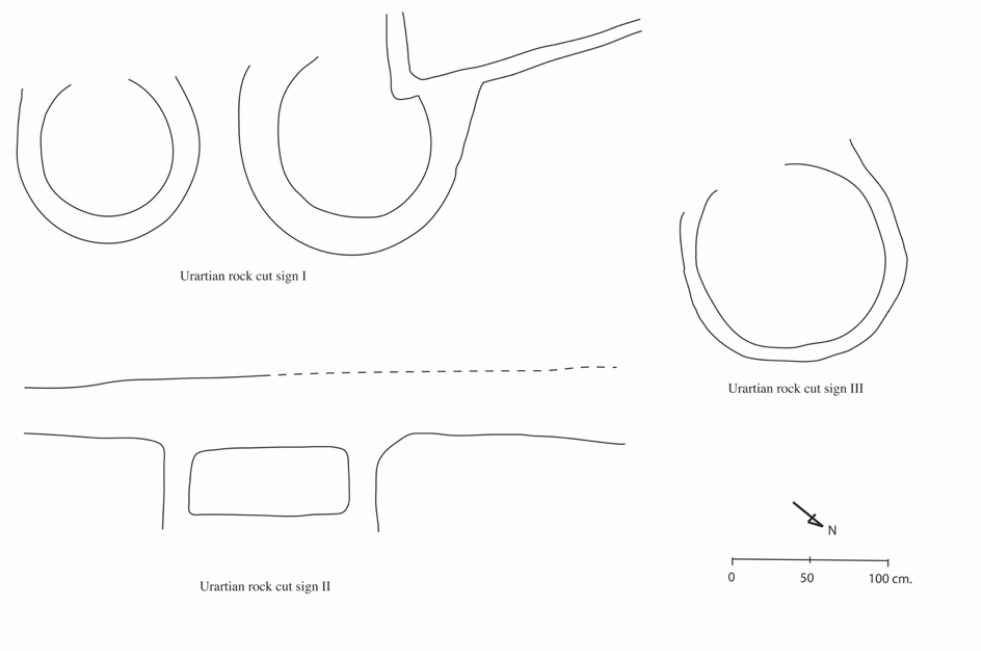

Figure 28: Scaled line drawings of Urartian Rock-cut Signs at Palu Fortress.

The first boulder with signs on the northern skirts of the fortress bears three rock-cut signs. Of the three signs, the one in the southwest is a partial "circle" that has a diameter of 1.35 m. The circular groove is about 10-15 cm wide, and it is 15-20 cm deep. Next to this sign is a second sign that is similar but is oval rather than a circle and has a 1.70-m-wide diameter. The final sign on the first boulder is L-shaped and about 1.70 m long. Its northern tip intersects with the oval sign (Fig. 28).

The second boulder that bears signs on the northern slope lies about 6-7 m east of the boulder with the first set of signs described above. The rock-cut sign on this boulder is a composite shape made up of a straight canal that is about 50 cm wide and 3.70 m long and a rectangle measuring 1.00x1.30 m attached to the canal on its southwestern side. The southeastern portion of the sign was damaged due to natural causes.

The previously unpublished rock-cut sign carved on the third boulder is also a partial "circle" identical to the sign on the first boulder. Its diameter is 1.5 m, and the circle is incomplete with a gap to the south.

Within the Urartian cultural geography, Urartian rock-cut signs are a type of archaeological evidence that is found in association with all known settlement types. They are known from Urartian royal fortresses like Upper Anzaf, Çavuştepe, and Bastam, Urartian period tribal centres like Atabindi and Tatvan, and Urartian provincial centres like the Palu Fortress (Danışmaz 2018a: fig. 5). Unlike the rock-cut signs at Anzaf and Atabindi, the rock-cut signs at Palu Fortress are not carved onto a bedrock façade. Signs at Palu are found on boulders at rocky outcrops. The form of these "signs" indicates that they may be quarrying marks caused by tools during the extraction of blocks for columns or column bases from the bedrock.

Discussion

Research related to the Urartian Kingdom at Palu Fortress has so far focussed on the cuneiform inscription and the multi-roomed rock-cut tombs at the site, overlooking other remains that have been documented for the first time by our team. New investigations have shown that the citadel of the Palu Fortress was planned in two parts. Partitioning of the sectors of a citadel as necessitated by the topography is among the known characteristics of Urartian settlements. A similar situation is observed at another Urartian provincial centre, Kayalıdere (Burney 1966), and at the Urartian royal city, Bastam (Kleiss 1980). The citadels of these cities were separated into different sectors, and temples and important administrative buildings were built in the highest sector.

Wide terrace walls demarcate the two sectors of the citadel of Palu Fortress, labelled Upper Citadel and Lower Citadel. The cuneiform inscription is located inside the Upper Citadel, and the multi-roomed rock-cut tombs are on its steep northwestern cliffs. Moreover, in a similar fashion to the terrace walls known from Urartian royal cities, on the steep slopes of the fortress, stepped foundation beds were cut into the bedrock and wide terrace walls were built on top to provide sufficient floor space for the monumental buildings of the Upper Citadel. This sector constitutes the peak of the citadel. Traces of sturdy foundations and fragments of large column bases bear witness to the presence of monumental buildings in the Upper Citadel during the Urartian period.

The Lower Citadel of Palu Fortress is enclosed by wide fortifications to the south and southeast. The fortification wall accommodates the topographic relief of the site, but it abides by a plan that the Urartian builders sought to establish. Wide, terraced foundation beds for the Lower Citadel fortifications were also cut into the steep cliffs and slopes of the site. The body of the fortification wall, which is as wide as 5 m in some sections, was built using the

dry-wall technique without the use of mortar. In addition, the wall body was reinforced by bastions placed at regular intervals to increase the strength of the fortifications.

The remains of wide fortification and terrace walls, foundation beds, and architectural elements of monumental buildings at Palu Fortress indicate that the establishment and construction of this fortress site was preplanned, similar to other Urartian settlements. In fact, Palu's significance for the Urartians is highlighted by the textual records of the period.

The Urartian Kingdom intended to establish hegemony in the Middle Euphrates basin, where Palu Fortress lies, since the foundation of the kingdom. Urartu's involvement in the region lasted until the final demise of the kingdom. Textual sources of the period indicate that successive military campaigns in this region were organised by almost all Urartian kings (Köroğlu 2022; Danışmaz 2021).[7]

Undoubtedly, one of the major challenges that the Urartians faced in attempting to establish hegemony in the region was the distance between the core of the kingdom and this western borderland. The Urartian capital is about 400 km from the Middle Euphrates basin, which lies on the periphery of the kingdom. Considering that an army could travel an average of 15 to 20 km per day on the rough terrain of Eastern Anatolia, just the trip back and forth would take the armies about three months and probably longer given the mountainous topography of the region.

As a strategic solution to this challenge, the Urartian state established a strong provincial administration in the region. The administration of the province was trusted by regional governors bearing the title ^{Lu}EN-NAM. Textual evidence shows that the Urartian provincial governors could launch a military expedition alone or in coalition with other governors without orders from the king. Governors are also known to have made amendments to tax and tribute arrangements in the name of the king (Danışmaz 2020: 266).

Palu Fortress was founded soon after the establishment of the Urartian Kingdom and a man named Titia was appointed as the provincial governor (CTU I: A 5-8). In the reign of Sarduri II, the political borders of the region changed after the Urartian armies crossed west of the Euphrates River, and a new provincial governor named Zaiani was appointed after the expansion of the Urartian territories (CTU I: A 9-18). Soon after, however, the Urartian armies were defeated definitively by Assur, and the political influence of the Urartian

7. After victorious battles against the Neo-Hittite Kingdoms, the Urartian Kingdom procured substantial labour force from the region by forced deportation of local populations (Tan 2020: 214 f.)

Kingdom began to diminish in the region.[8] Textual sources indicate that in the 7th century BC, a man named Siplia served as the Urartian provincial governor in the region (Lanfranchi and Parpola 1990: 87).[9]

The only Urartian site in the region that is an eligible candidate for an Urartian provincial centre is the Palu Fortress. Archaeological remains at the fortress support the interpretation that Palu Fortress was built to serve as a provincial centre since its foundation. It follows that the three multi-roomed rock-cut tombs at the site must have belonged to the provincial governors of Palu and their families. The three family tombs at the site may be associated with the lineages of the three provincial governors named in the textual sources.

Considering the substantial labour expenditure necessary for carving the stepped rock-cut tunnels and single-roomed rock-cut tombs at Palu Fortress, we may surmise that the site was still a prominent settlement in the Hellenistic Period.[10] As mentioned above, stepped rock-cut tunnels, single-roomed rock-cut tombs, and rock-cut cisterns in Eastern Anatolia were accepted as products of Urartian culture in earlier studies. For this reason, in the following decades, all fortresses and settlement sites where such rock-cut features were identified by surveys in the Middle Euphrates basin were also dated to the period of the Urartian Kingdom without questioning the validity of these chronological criteria. If we were to accept these criteria as trait marks of the Urartian Period, over 30 archaeological sites in Elazığ and Tunceli provinces alone would have to be dated to the Urartian period. Recent investigations in the region, however, strongly suggest that the stepped rock-cut tunnels, single-roomed rock-cut tombs, and rock-cut cisterns in Eastern Anatolia should be dated to the post-Urartian periods (Köroğlu and Danışmaz 2018).

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8. The first 12 years of the reign of King Sarduri II appear to be a period in which the Urartu was most actively engaged in military and political domination of the Middle Euphrates basin. Undoubtedly, an important factor that enabled the Urartians' penetration of this region was the political turmoil that the Neo-Assyrian Kingdom was experiencing at the time. During this period, the Urartians' military campaigns reached as far west as the western banks of the Euphrates River and the southern skirts of the Taurus mountains. The Urartians established hegemony over the Neo-Hittite Kingdoms in the region and defeated the armies of Assyrian King Adad-Nirari. The prowess of the Urartian Kingdom in this region, however, ended with the ascension of Tiglath-Pileser to the Assyrian throne. Eventually, the Urartian armies were defeated irreversibly by the Assyrians in a battle near Halpa, and the Euphrates River remained a natural boundary between the Urartu and the western world for a long time (Danışmaz 2018b).
9. This period was a phase in which the Urartian Kingdom sought to reclaim these territories.
10. Kinneir, who visited Palu in the early 1800s, believed that the significant collection of coins and medallions found at Palu indicates that the fortress must have been Balisbiga, an important city of the Sophene Kingdom (Kinneir 1813).

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