

Carved in Stone

*The archaeology of rock-cut sites and
stone quarries*

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Koramaz Valley of Kayseri, Turkey Rock-Cut Architecture and Underground Cities

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Abstract: Without a single architectural feature or archaeological finding regarding the period when it was excavated, it is very difficult to date a rock dwelled structure because these structures have always been used throughout history by being changed and some of them are still being used even today. This problem, which is even applicable to only one structure, becomes much more significant if you work in a valley, containing hundreds of rock structures. Kayseri (Caesarea, Mazaca) was the capital of ancient Cappadocia during the Roman and Byzantine era. Soft volcanic rocks, caused by a million-year volcanic activity which continued up to historical periods in the region, are observed in all over Kayseri Province just as the other areas within Cappadocia as well as the numerous structures, excavated in those volcanic rocks. Within the scope of a six-year work; Kayseri Underground Structures Inventory Project, previously unpublished numerous underground cities, churches, dovecotes, even rock dwelled villages were explored. As the most important part of this study, in Koramaz Valley, 16 km in length and incorporating seven different villages therein, 476 rock-cut structures were explored and surveyed up to now. Although most of them are houses and barns, there are also 42 rock-cut churches, 11 underground shelters and tens of dovecotes and/or columbariums. We also observed that many structures, likely to be Roman rock-cut tombs due to their architecture and kline-style designs, turned into storages in time. Likewise, some structures, considered to be Roman columbariums, turned into dovecotes. Although the only structures, periods of which were exactly determined, are the churches, dated between the 7th and 11th centuries, some of the rock-hewn settlements in Koramaz Valley may be excavated much earlier as a part of rock-cut tradition for thousands of years.

Keywords: Kayseri, Koramaz Valley, rock-cut church, cliff dwellings.

Introduction

Situated in the Central Anatolian Volcanic Province (CAVP) in the middle of Anatolian Plateau in Turkey, Kayseri and its vicinity had a tremendous volcanic activity, which had started approximately 11 million years ago and continued until the Early Holocene (ca. 10.000–8.000 ago) (Aydar *et al.* 2012, 83–97). As a result of a radiometric age determination carried out recently, it is understood that the activity of the main caldera of Erciyes Mountain continued until 150.000 to 200.000 years ago and after this period, the caldera blocked (Alici Sen *et al.* 2004, 81–98). But cosmogenic dating show that several smaller lava flows occurred from monogenetic vents during Early Holocene. On the other hand, a paragraph about Erciyes in “*Geographica*”, written by Strabo in the 1st century AD, was interpreted by some scholars as the mountain was active in this period as well.

“At a little distance further there are burning plains, and pits full of fire to an extent of many stadia, so that the necessities of life are brought from a distance.... In some parts the bottom is marshy, and flames burst

out from the ground by night. Those acquainted with the country collect wood with caution; but there is a danger to others, and particularly to cattle, which fall into these hidden pits of fire” (Jones 1929, 12.2.7).

But no Late Holocene volcanic eruption from Erciyes Mountain has ever been evidenced (Aydar *et al.* 2019, 565–576).

These continuous eruptions have piled pyroclastic rocks with an enormous thickness on the surface. Both the elevations on the north and wide plateau on the south of Kayseri are completely covered by these volcanic rock deposits. The number of pyroclastic deposits shows significant differences regionally and is known to reach a thickness of 400 m in the north of Kayseri (Şen *et al.* 2003, 225–246.).

When the volcanic rocks covering the entire area was first started to be dug and when the inhabitants started to use the underground as their dwellings are unknown. Possibly, this easy to carve soft rock has been dug by local people for centuries, and a civilization dwelling in rock-cut sites

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was established in the region that is known as Cappadocia today. The continuous usage of the rock-hewn structures for thousands of years has made such an archaeological exploration impossible. The earliest dated rock-hewn structures encountered in Cappadocia are probably Hellenistic rock-cut tombs in Nevşehir/Mazıköy (Lamesa 2017, Ousterhout 2017) and Roman rock-cut tombs located in the south of Kayseri, especially the vicinity of Ayşepınar and Yeniköy (Durukan 2012). On the other hand, numerous other Roman rock-cut tombs close to the settlements have been changed in time in accordance with different purposes. From the Roman to Byzantine empires, the variety of the underground and rock-cut structures in this region was incredible. The structures carved in rocks in the area are not limited just with the houses, barns, dovecotes, tombs, and churches. There are also monasteries, aqueducts, cisterns, and even apiaries dwelled in rocks and these rock-cut structures observed in different parts of Kayseri have been continuously used until today (Gilli and Yamaç 2017).

The different natural formations of Cappadocia and numerous rock-dwelled structures dug in these formations, especially the rock-cut Byzantine churches, have drawn the attention of western travellers starting from approximately 300 years ago and have been subject to various research and scientific studies. These works and studies started for the frescoes in numerous rock-cut churches found in the area, have expanded to other rock-cut structures. Today, from the underground shelters to the hydraulic structures and from the dovecotes even to the rock-cut apiaries of the area, there are hundreds of different scholarly works and studies (for a comprehensive bibliography see (Hild and Restle 1981, Ousterhout 2017)).

Though the area where all these works and studies are being carried out is named as Cappadocia, nearly all of these works are being carried only in Nevşehir – Ürgüp – Göreme triangle and this area is a very small part of the ancient Cappadocia.

Cappadocia was a province of both the Roman and the Byzantine empires. In AD 371 it was the largest province of the Roman Empire with a total area of 50.000 km² and its capital was Kayseri (Mitchell 2018, Ramsay 1890). Kayseri was named “Mazaca” from the Hattians to Strabo and it was changed as “Caesarea” in the honor of Caesar Augustus in AD 14 and during the 3rd century AD, it was the largest city of Central Anatolia with a population of 40.000 (Baydur 1970).

Despite being the capital of Cappadocia during ancient times, no comprehensive scientific research has been carried out until now in terms of the rock-cut architecture in Kayseri. To fill this gap we, as OBRUK Cave Research Group, have started to work for the “Kayseri Underground Structures Inventory Project” in January 2014. This project, carried out based on a triple protocol with Foundation for the Protection and Promotion of the Environment and Cultural Heritage (ÇEKÜL) and Kayseri Metropolitan

Municipality, includes the research, survey, mapping, and documentation of all the underground structures in this province.

Ongoing for about six years, “Kayseri Underground Structures Inventory Project”, has a distinctive place not only as Turkey’s but one of the world’s greatest underground structures research projects with 33 underground cities, six cliff dwelled villages, 46 rock churches, two underground aqueducts and 10 Assyrian tin mines surveyed and inventoried until now. Given the fact that only one of the cliff dwelled villages has 154 different structures, the magnitude of the work should be better understood. This project has become very significant currently, mainly due to the findings in Koramaz Valley.

During our years of work in this valley, we worked with 16 researchers from five different countries, although conventional measurement techniques were used in general due to the narrowness of many buildings and the difficulty of working conditions, some important structures were drawn in 3D with a laser scanner.

When we started the Koramaz Valley rock-cut structures survey, which spread over a long time and realized with great efforts, we mainly had three goals, these were:

1. To urgently inventory all these rock-cut structures, which are continuously destroyed every day,
2. If we succeed, to include the Koramaz Valley to UNESCO World Heritage List,
3. To prepare a comprehensive conservation plan and restoration projects.

We are happy to be able to achieve our first and second goals after years of work. We are also aware of how difficult to achieve our third goal is. On the other hand, as a group that never encourages mass tourism, we will definitely be involved during the preparation of the conservation plans of Koramaz Valley.

1. General Description of Koramaz Valley

There is an elevation difference of 700 – 800 m between the plain where Kayseri is located, and mountains located 30 km east of this plain and each creek flowing down these hills has formed its valley by eroding the soft pyroclastic rocks. On the east of Kayseri, there are six different valleys eroded by these streams flowing down to the valley from the high hills and there are structures carved on the walls of these valleys by the inhabitants dwelling in the area. The longest of these six valleys is Koramaz Valley (Figure 7.1). In this 16 km long valley, there are in total seven different villages. From east to west, these are Büyük Bürüngüz, Üskübü, Küçük Bürüngüz, Ağırnas, Dimitre, Vekse, and Ispıdın. Both the interior and surrounding of these seven villages located on the slopes of Koramaz Valley are full of structures carved in rocks. Though it is very hard to date these rock structures due to their continuous usage, the experts have dated some of these rock-cut churches on the

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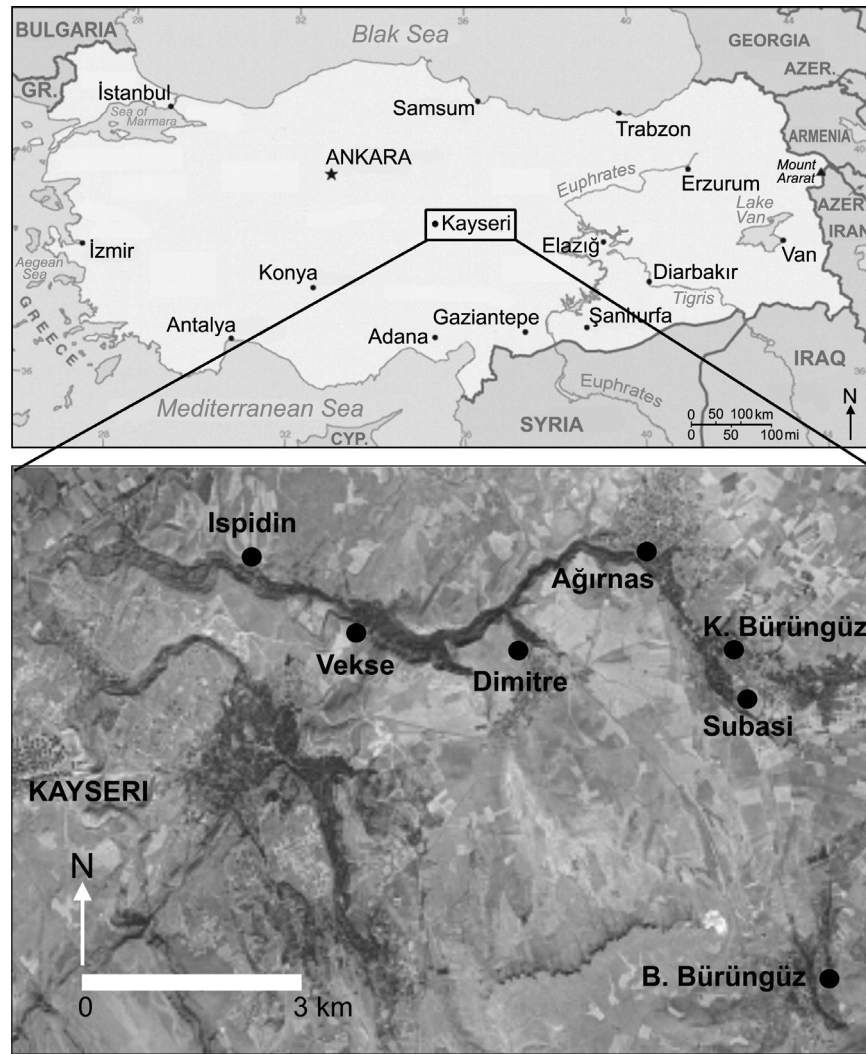


Figure 7.1. Location map showing Kayseri and Koramaz Valley. Figure created by the author, after Google Maps and Google Earth.

valley to the 10. and 11. centuries (Karakaya 2014, 2013). On the other hand, it is a generally accepted assumption that the underground cities on Koramaz Valley have been dug between the 7. and 10. centuries by the Christians living in the region as a protection against the Arab raids (Cooper and Decker 2012, Hild and Restle 1981). Beyond all these, though rock-cut structures have changed in time due to different usages, by taking into consideration the entrance carvings and interior architecture, the first purpose of construction of some structures near Ağırnas can be Roman rock-cut tombs (Gilli 2017a). To sum up, it is possible to say that the background of all these structures carved in rocks on Koramaz Valley dates back to at least 2.000 years ago and probably to even older times.

In total 476 different rock-cut structures have been explored and surveyed in Koramaz Valley and there are 42 rock-cut churches and 11 underground cities among these structures. Though most of the other rock-cut structures surveyed were houses, dovecotes, and barns, it is considered that at least 18 of them have been dug as the Roman rock-cut tombs and 16 of the structures have been dug as a *Columbarium* (Gilli 2017a, Gilli and Yamaç 2017, Yazlık 2019).

Soft pyroclastic rocks eroded with streams formed various valleys all around Cappadocia and almost all of those valleys have rock-cut structures. Longest of them all, Ihlara Valley, which is 12 km, has 23 rock-cut Byzantine churches, some having strikingly beautiful frescoes. Zelve Valley, which is actually two different valleys intersecting each other and forming a triangle, has a rock-cut village with 4 churches, a mosque, and a total of 27 rock-cut structures. People lived in those rock-cut houses until the 1950s and the village abandoned due to rock collapses. Several other small valleys around Göreme, e.g. Zemi, Güvercinlik, Kılıçlar, Meskendir were mainly used for agricultural purposes during the Byzantine era (Burri and Petitta 2005, Castellani 2002, Gilli 2017b, Gilli and Yamaç 2015). So, although some of them have few rock-cut churches, their main rock-cut structures are underground irrigation/flood control aqueducts and dovecotes (Gilli and Yamaç 2015).

If we compare Koramaz Valley with the other valleys of Cappadocia, the most noticeable difference is the amount and variety of rock-cut structures of this valley. First of all, with a total number of 476, it has more than the sum of all

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the rock-cut structures in all other valleys of Cappadocia. Secondly, there is no other valley within the whole Cappadocia with such a variety of rock-cut structures. Here in Koramaz, we can find not only houses, barns, dovecotes, or churches but also monasteries, columbariums, and even Roman tombs. And finally, it's the only valley in the region that people still live in or around. Apart from the rock-cut structures and cliff settlements in the valley, the villages of Koramaz Valley are full of centuries-old buildings, some dated back to 13. and 14. centuries. Recently accepted to UNESCO World Heritage Site tentative list, new projects for the restoration and protection of various structures in the valley had already begun.

All these rock-cut structures in Koramaz Valley can be examined village by village from east to west:

1.1. Büyük Bürüngüz Village

Büyük Bürüngüz Village is located 30 km east of Kayseri, at the beginning of Koramaz Valley and on the slopes of İvriz Mountain with a height of 1.858 m, has always been the biggest settlement of the valley. In accordance with the Ottoman registrations for the year 1500, all 99 houses were Christians, whereas in 1520, 92 houses were Christians, and 10 houses were Muslims (Inbaşı 1993). Differently from the other six settlements in Koramaz Valley, there is no cliff settlement around Büyük Bürüngüz. As it is also observed in Ağırnas Village in the same valley, all underground defense structures are beneath the houses and extend beneath the entire settlement like a cobweb (Figure 7.2). At the end of our explorations,

two different underground cities have connected at a point and with a total length of 1.273 m, Büyük Bürüngüz Underground City became not only the longest underground city of Koramaz Valley but also of Kayseri Province. It has another record with its 27 millstone doors (Yamaç 2019, 65–76). As several tunnels are blocked, this underground city, which extends beneath the entire village will possibly be much longer.

1.2. Subaşı (Üskübü) Village

The previous name of Subaşı Village in Koramaz Valley, located 4 km north of Büyük Bürüngüz Village, was Üskübü and earlier it was Skopi. Though there is no old building among the contemporary structures of the village, in accordance with the 16. century Ottoman registrations (Inbaşı 1993), this small and entirely Christian village was probably settled at its current location in the Ottoman period as well. Subaşı Underground City, located approximately 2 km southeast of the village on a deserted plain, is different from all other underground cities in Koramaz Valley both in terms of its location and architecture. The structure is located approximately 2 km southeast of Subaşı Village on a deserted plain rising towards Sivri Mountain. This underground city, dug in a brokenly volcanic tuff and appearing as a small hill on the ground, has two entrances one of which has opened due to a collapse. One of the entrances of the structure is on the north wall of an underground structure consisting of a roughly dug main chamber and two side rooms connected to the main chamber. The only millstone door of Subaşı Underground City is at the other entrance on the

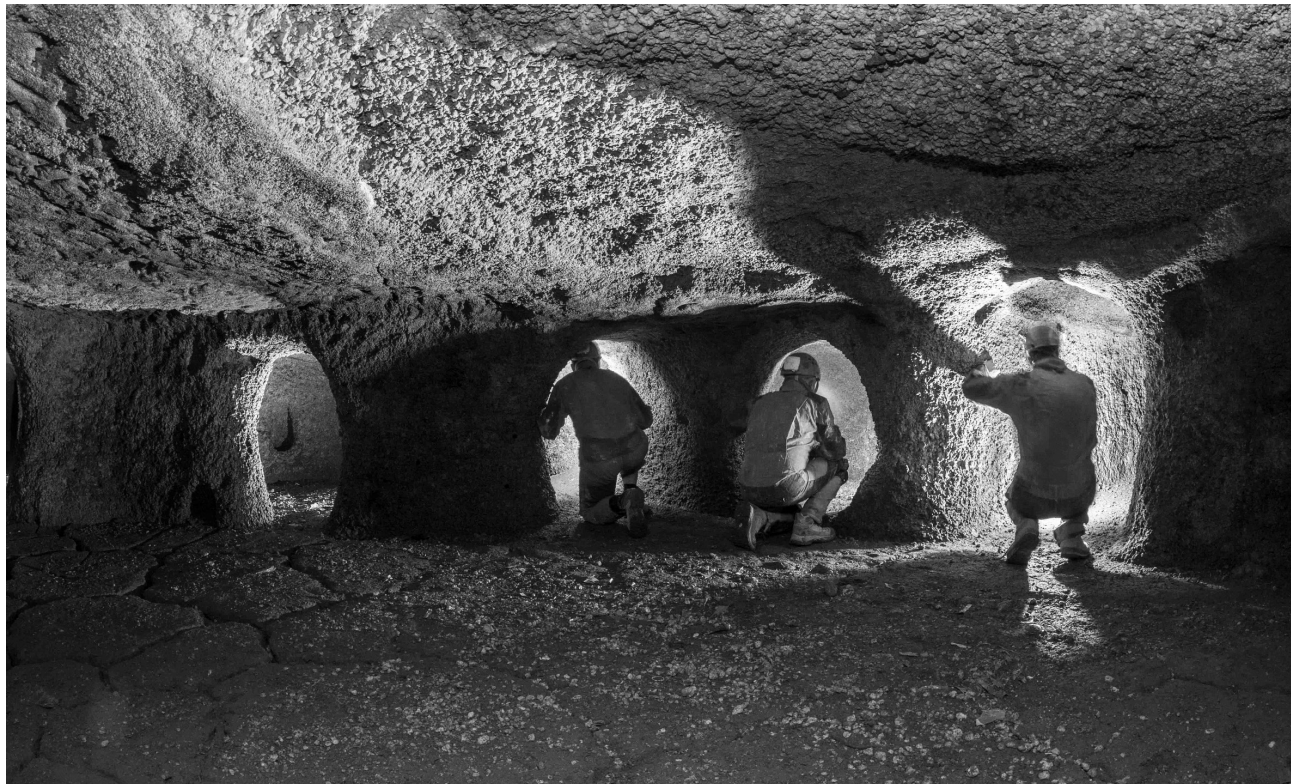


Figure 7.2. Büyük Bürüngüz Underground City. Photograph by A.E. Keskin.

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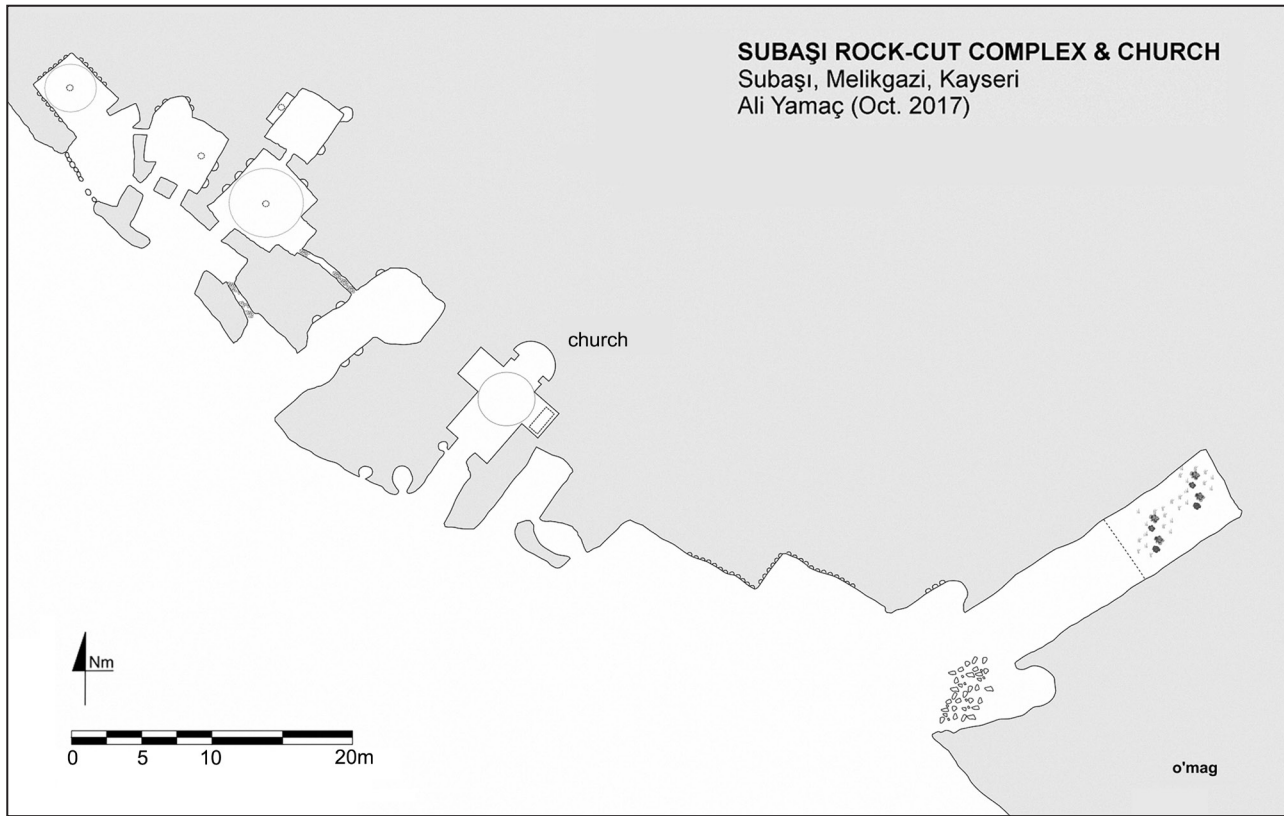


Figure 7.3. Plan of Subaşı rock-cut complex. Figure created by the author.

northwest of the south tunnel. This underground shelter with a low ceiling and intertwined rooms completely has the qualifications of a labyrinth.

There is a huge rock-cut structure complex, located 200 m northwest of Subaşı Village dug on a rocky slope, with a church as well. In this structure complex, excavated on a steep wall there are 11 different structures of all sizes. Some are connected with tunnels and this complex, consisting of some small chambers and a chamber in the size of 100 m² and a kitchen with oven and chimney, is most possibly a monastery with its church, courtyard, kitchen, dining hall, living spaces, and ceremonial chamber (Figure 7.3).

The church in this complex is a cross planned structure with an approximately rectangular planned narthex in front and can be dated to the 10th–11th centuries by taking into consideration the similar examples in Göreme (Karakaya 2014). It is one of the two largest rock-cut churches in Koramaz Valley together with Vekse No. 1 (Figure 7.4). On the partially destroyed south wall of the narthex, which has a barrel-vault ceiling, there is an arcosolium.

1.3. Küçük Bürüngüz Village

Küçük Bürüngüz is the third village in Koramaz Valley after Subaşı Village and is just 1 km away from Subaşı Village. In accordance with 1500 dated Ottoman registrations, this village had 12 houses, all of which were Christians, and in 1520, the number of houses



Figure 7.4. Church of Subaşı rock-cut complex. Photograph by A.E. Keskin.

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increased to 22 (Inbaşı 1993). And in the 1831 population census, all 34 houses in the village had become Muslims as a result of the immigration or religious conversion (Cömert 2008). The small wall settlements group, located 400 m west of Küçük Bürüngüz Village on the rocky slopes of Koramaz Valley and extending on a line with a length of 200 m in total in the north-south axle, consists of eight independent structures in total. In two of these structures, most of which are dwelling or feedlot, there are small defense shelters reached by tunnels. This rock settlement in Küçük Bürüngüz has been destroyed much more when compared with the similar in Ağırnas and Dimitre. Though one of the reasons for this destruction is the illicit excavations observed in the region, the collapses and erosions in the region are much more than all settlements of Koramaz Valley. The intensity of the collapses even makes it impossible to estimate the purpose of the construction of certain structures in this rock-cut settlement.

1.4. Ağırnas Village

Ağırnas Village has located 4 km north of Küçük Bürüngüz Village and on the slopes of Koramaz Valley. In accordance with the population and tax records of the Ottoman Empire, there were 53 Christian and 3 Muslim families in 1500. In 1520, this changed as 72 Christian and 2 Muslim families (Inbaşı 1993). The oldest houses of the village are on the first two lines facing Koramaz Valley and the house of Mimar Sinan ("Sinan the Architect"), who was born here in 1489, is also among these houses. Beneath all these old houses, there is an underground defence structure connecting to each other with tunnels. As we have seen a similar one in Büyük Bürüngüz Village, this underground shelter, extending beneath the entire village like a cobweb, continues through the entire neighbourhood by expanding to two different floors beneath the house of Mimar Sinan and extends beneath all surrounding houses. Mimar Sinan Underground City spreads to a total area of 1.850 m² in two-storeys (Figure 7.5).

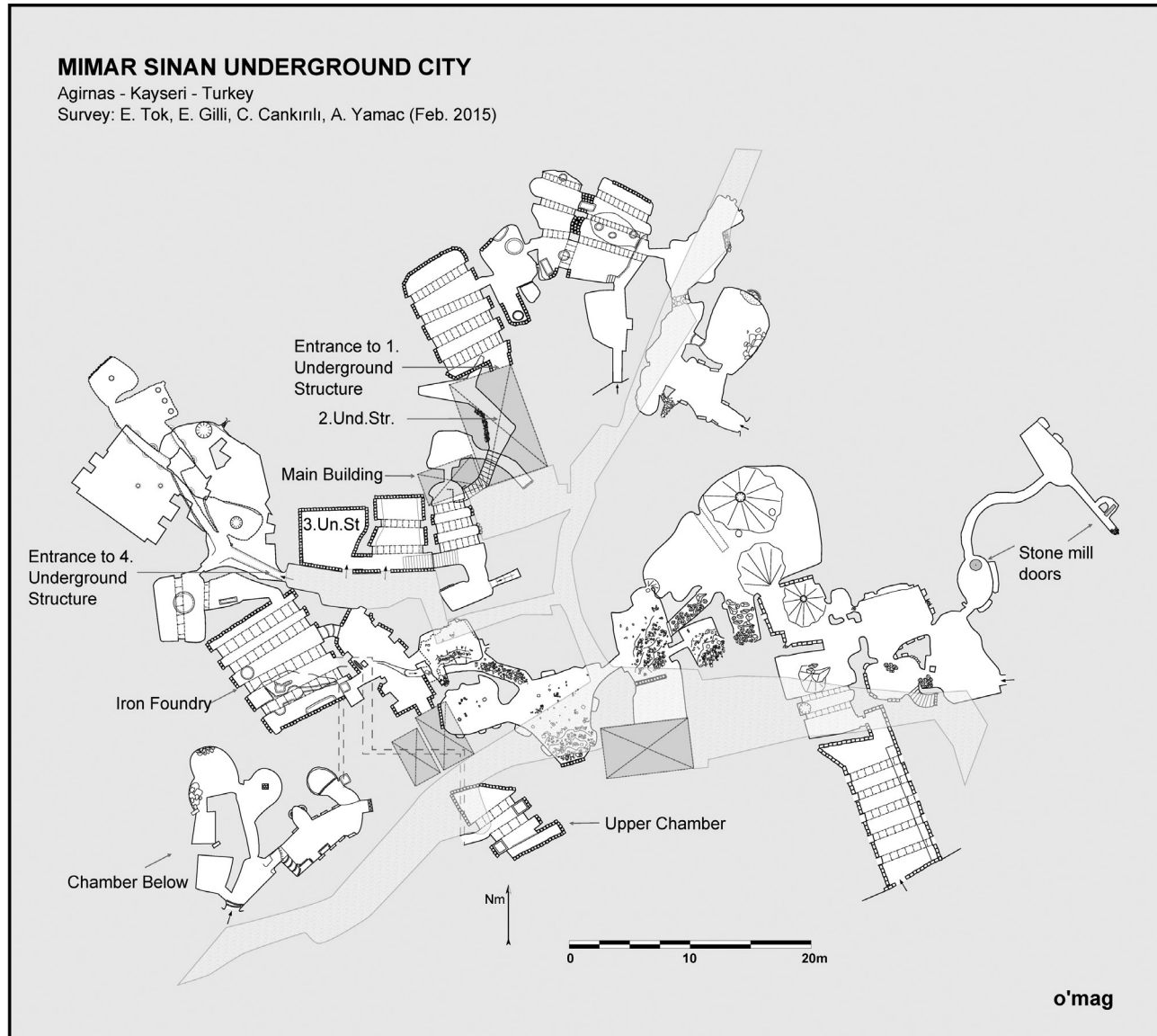


Figure 7.5. Plan of Mimar Sinan Underground City in Ağırnas Village. Figure created by E. Tok, E. Gilli, Ç. Cankırlı & A. Yamaç.

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As some of the interconnections have been cancelled, currently, we see four different underground structures beneath the house of Mimar Sinan, but it is obvious that they were one single structure. The existence of four millstone doors; three of them *in situ*, makes it obvious that the structure was built for protective purposes (Yamaç and Tok 2015, 37–46).

Another underground city in the village, located 300 m. south of the centre, is on a rocky slope on the east of Koramaz Valley. The main entrance of this structure, which is currently open to tourists, is protected with a millstone door. After the first room in the entrance, there is a small church (Figure 7.6). After the church there is a large chamber, with a length of 24 m and a width of 4 m, which has quite impressive workmanship. Another entrance on the northeast of the chamber has been cancelled but the millstone door protecting the entrance still exists.

On the other hand, located approximately 500 m west of Ağırnas, there is an enormous rock dwelled village on the walls of Koramaz Valley (Figure 7.7). Though the similar of this rock dwelled village, extending to three different walls at the southwest of Ağırnas Village where Koramaz Valley is forked, can be seen in different places in Cappadocia, these cliff settlements in Ağırnas /

Koramaz Valley is quite different in many aspects from all other similar examples.

The first and most important difference is the size of Ağırnas Cliff Settlements. Here, in total 154 rock dwelled structures have been explored and surveyed on three different walls of the valley. Though most of these structures are houses, storage units, barns or dovecotes, there are 5 churches and in addition to the ones in the village, there are 4 more underground shelters. By taking into consideration the churches and underground shelters in these settlements, it is easy to date the rock-cut architecture in this region between the 7. and 11. centuries (Lamesa 2011); however, some of structures in this region are quite evidently the Roman rock-cut tombs (Gilli and Yamaç 2017). Likewise, at least six of the dovecotes in those cliff settlements are Roman columbariums (Figure 7.8). Therefore, we can say that these rock structures in Ağırnas date to at least 2000 years ago (Gilli 2017, Gilli and Yamaç 2017, Yazlık 2019).

1.5. Dimitre Village

4 km after Ağırnas, Koramaz Valley reaches Dimitre Village. Differently from all other six villages in the valley, in accordance with Ottoman registrations from the beginning of the 16. century, the entire village was Muslims. In the registrations, in 1500, 37 houses, and in 1520, 48 houses were recorded in the village (Inbaşı 1993). The Greek name of this village, documented to be entirely Muslims for 500 years with the Ottoman registrations, proves that the history of this village is much older than the 1500s. Moreover, the “millstone doors”, still existing in some tunnels, shows that these structures were constructed for defence and as it is observed all over Cappadocia, these underground shelters were dug by the Christians to defend themselves against the Arab raids started in the 7th century.

Old Dimitre Village is not located on the mainline of Koramaz Valley, but on the north slopes of a branch extending to the east (Figure 7.9). This region is the deepest point on the entire route of Koramaz Valley; here, in Dimitre branch, the depth of the valley reaches 80 m. The rock-cut structures on the walls of this branch are more than the rock-cut structures around Ağırnas. The most important reason is that, differently from Ağırnas, the residents of Dimitre Village continued to live in these rock-cut structures until recently. When the village became uninhabitable due to the collapses, in 1966, it has moved to the plain on the valley, to its current settlement (Cömert 2008).

The rock-cut settlements of Dimitre have changed much more due to its inhabitation and usage until such a recent date. The original underground structures have changed over and over again, and houses have been constructed on top of them. During the relocation of the village in 1966, the householders removed the rocks of the houses and used them in the construction of the new houses. As a result of

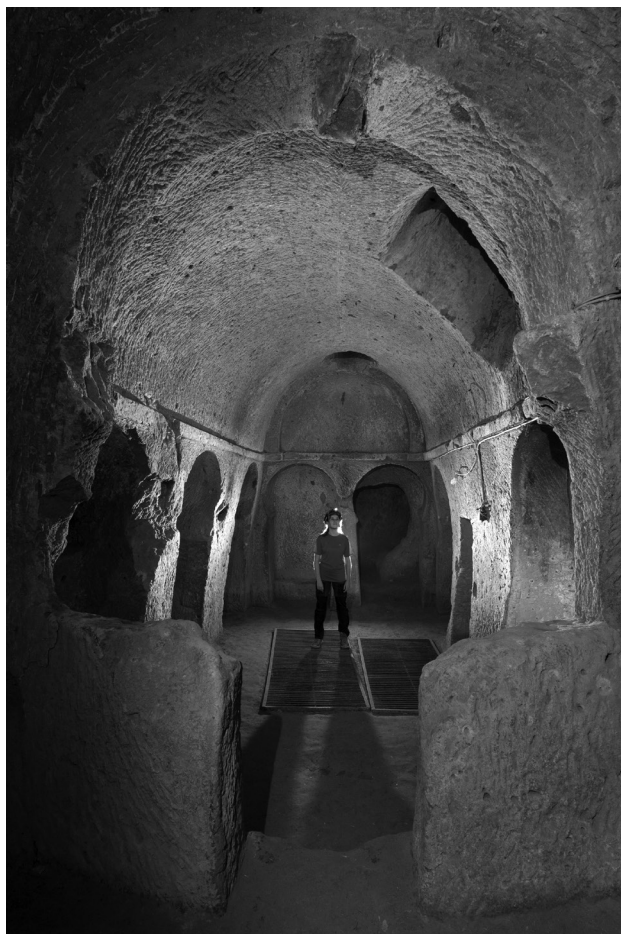


Figure 7.6. Church of Ağırnas Underground Shelter.
Photograph by R. Straub.

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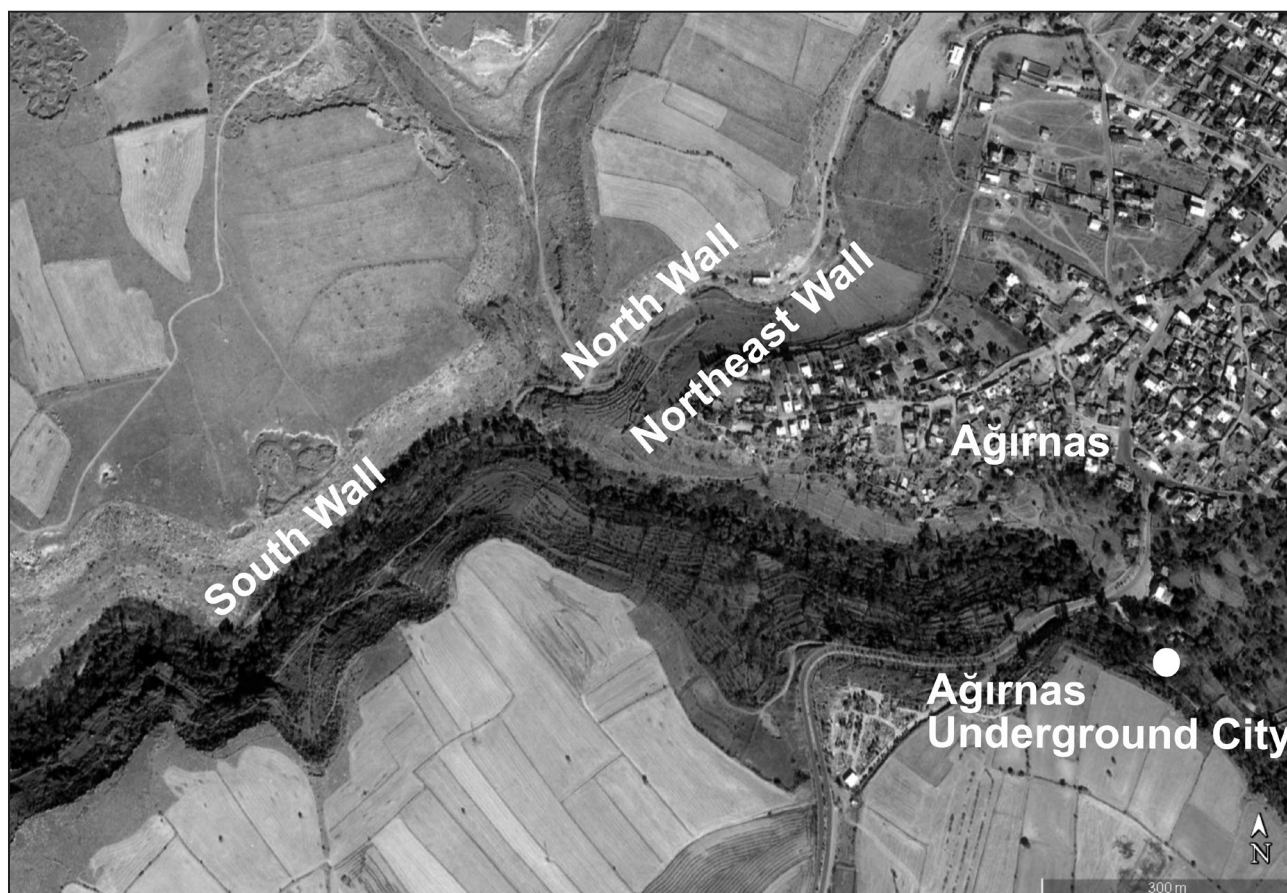


Figure 7.7. Koramaz Valley develops south of Ağırnas Village, with another small branch towards the north. All those three rock walls of the valley are full of rock-cut dwellings. Figure created by the author, after Google Maps and Google Earth.



Figure 7.8. A columbarium in Koramaz Valley near to Ağırnas Village. Photograph by R. Straub.

the removal of the rock houses constructed, the old rock-cut structures beneath have come to light.

During this study, in Old Dimitre Village, in total 229 rock-cut settlements have been explored and surveyed. Among these structures, most of which are dwelling, feedlot, and dovecote, there are also seven small rock-cut churches (Figure 7.10) and eight underground shelters. When all these numbers are taking into consideration, it is apparent

that Old Dimitre Village is the biggest cliff settlement of Turkey researched until now.

These 229 structures scattered for 900 m are more intense in the northwest and southeast parts of the wall; however, they become rare in the middle parts. Architecturally, churches are quite similar; all of them are with a length of 6–7 m and have horseshoe apse. Eight different underground shelters, located in the cliff settlements and scattered to almost all parts, have also been explored. The millstone doors and/or operation rooms in the tunnels and the shelters explored are much smaller than the underground cities in Büyük Bürüngüz or Ağırnas villages. Most of the shelters have one or at most two rooms. And the longest underground shelter explored is a three-room structure with a tunnel of 55 m in total, located on the southeast of the cliff settlement. Another reason why the defence shelters in the cliff settlements in Old Dimitre Village are less and smaller compared to the other villages is that the residents of this village lived in these dwellings until recently and probably, constantly changed and adapted these structures according to their needs. The top of this valley wall, where these cliff settlements are located, is a flat rocky plateau and on this upper plateau, there are tens of rock-cut graves carved in the rocks on the ground. Probably, the number of these graves belonging to the Roman or Byzantine periods is much more than the ones encountered in different parts of Koramaz Valley.

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Figure 7.9. West corner of Dimitre Village cliff settlement. Photograph by B. Langford.



Figure 7.10. A small Byzantine church in Dimitre Village. Photograph by D. Albov.

1.6. Vekse Village

The next stop after Dimitre in Koramaz Valley is Vekse Village which is 2.5 km far. This settlement, located on the south slopes of Koramaz Valley, is known to be centuries old. The opposite slopes of the valley consist of red-coloured volcanic rocks reaching to a height of 20 m from place to place and extending like a wall from one end to the other.

Structurally, Vekse is very similar to Ağırnas. On one side of the valley, there is the current village and on the other side, there are the rock-cut structures. Though under normal conditions the rock-cut structures on the walls of the valley are expected to be older than the village itself, in Vekse, just like in Ağırnas, there are underground defence structures and rock-cut churches both in the village and on the walls of the valley. And this shows that just like the residents in Ağırnas, the residents in Vekse continued to live on both sides of Koramaz Valley. Differently from Ağırnas and Dimitre, there are not many rock-cut settlements on the walls of Koramaz Valley extending in front of Vekse. The number of rock-cut structures determined on the north and south walls is just 12 in total and five of these structures are churches. Probably, all other rock-cut structures are under the new houses of the current village. Apart from Vekse Church No. 1, all other four churches have approximately 6 m axle, horseshoe apse plans and are similar small structures. Vekse Church No. 1, located approximately 400 m southeast of Vekse on a rocky hill, is the largest of 42 rock-cut churches explored and

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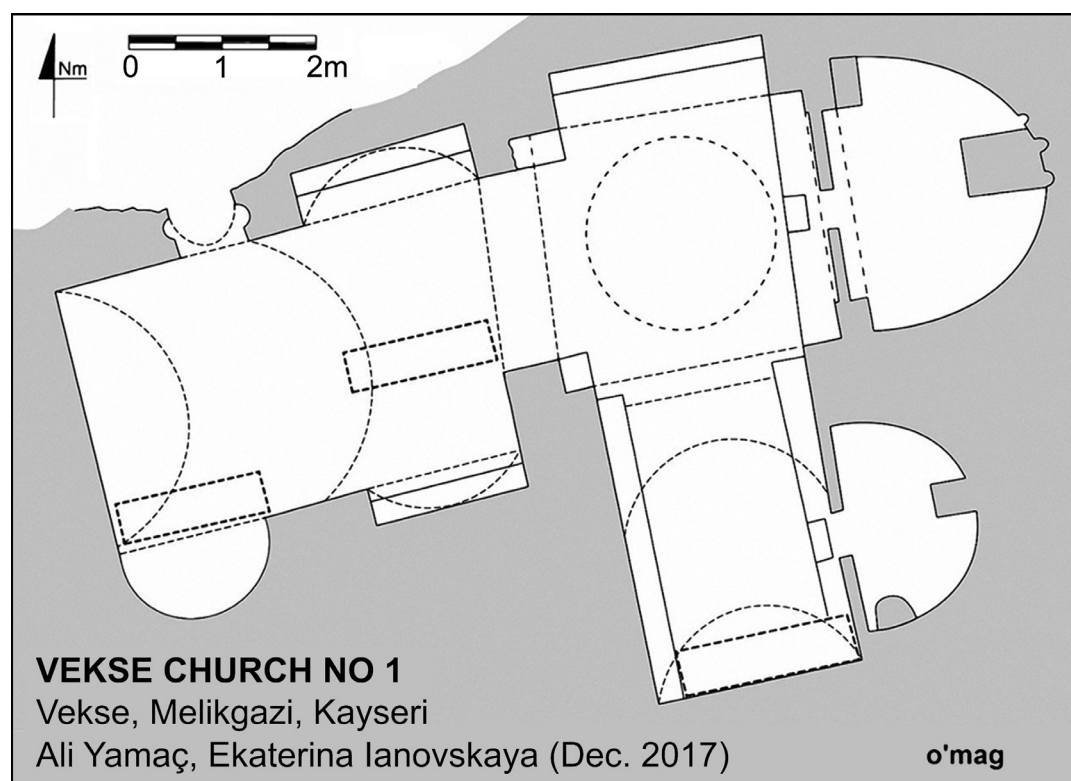


Figure 7.11. Plan of Vekse Church No.1. Figure created by A. Yamaç & E. Ianovskaya.

surveyed in Koramaz Valley and has a quite different architecture (Figure 7.11, Figure 7.12). The structure is entered from a door opened to the north. In the lower parts of the west and east walls, there are semicircular niches. Nave of the church is a Byzantine type “cross-in-square” style. In the apse free-standing rectangular-shape altar that was made from rock protrusion. The high dome supported with annular vaults and short templons of the apse. Dome pillars carved to the main rock are decorated with triangular and lintel embellishments. The double transept, expected to be in a church with such a plan, just exists in the south, and in this transept, there is another side-apse. Probably, since the rock block on the north part is not that thick, the other transept has not been dug. One fresco preserved fragmentarily on the east wall between apses and two human figures still can be seen.

1.7. Ispidin Village

This village, located on the west end of Koramaz Valley, is the last village of the valley. Unlike all other villages in the valley, Ispidin is located on the north slope of the valley, which is less curved, rather than the south slope. According to the Ottoman registrations, in 1500 population census, there were 19 houses in total and 15 of these houses were Christians. In the 1520 population census, the number of houses increased to 35 and the number of Christian houses was 23 (Inbaşı 1993).

In the village, there are 14 different rock-cut churches on both walls of Koramaz Valley. All these churches are



Figure 7.12. Vekse Church No.1, view from the apse towards the nave. Photograph by R. Straub.

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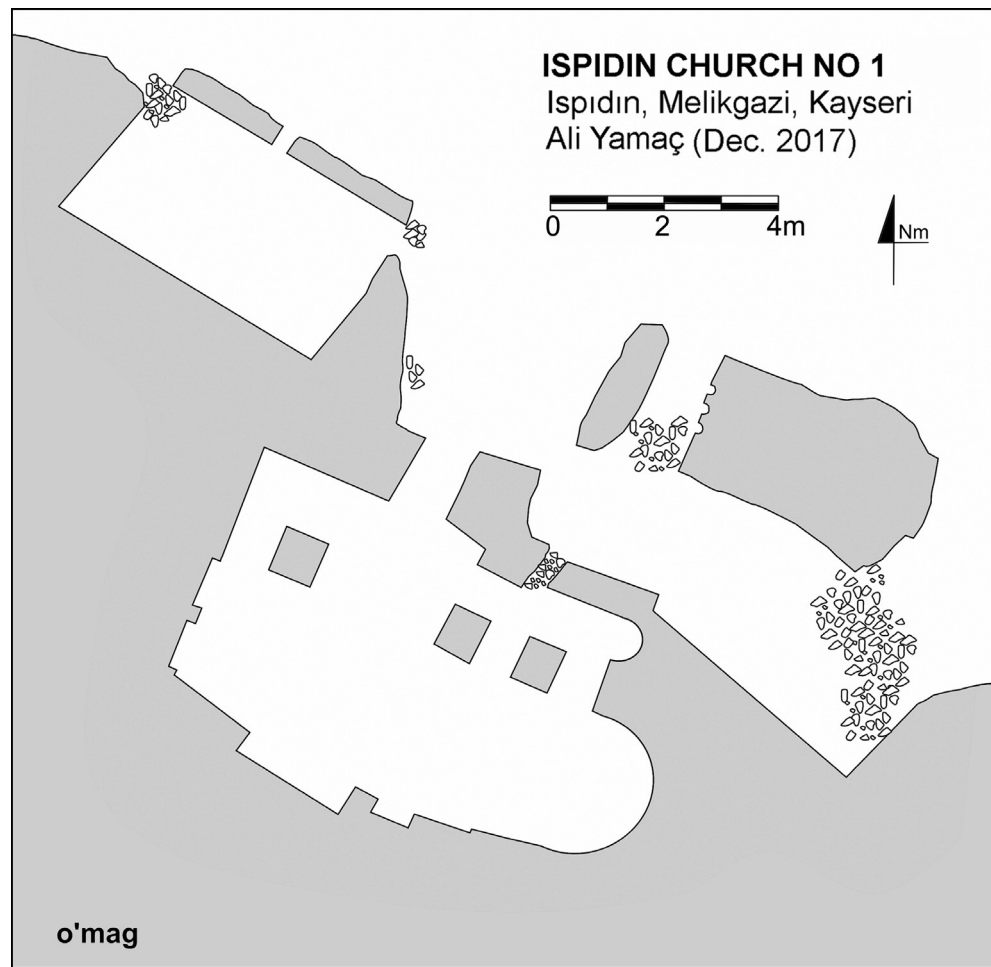


Figure 7.13. Plan of Ispidin Church No. 1. Figure created by the author.

scattered to different points of the valley and the lack of dwellings apart from 3–4 small rock-cut structures on the same rocky slope is as interesting as the excessive number of churches in such a small village. As we have observed in Vekse, it is probable that all old rock dwelled or underground structures in Ispidin must be under the modern houses of the village. On the other hand, even if we assume that, in a village with 19 houses in total in 1500, it is hard to explain the existence of 14 different rock-cut churches approximately 500 years ago. All these 14 churches are approximately in similar sizes and are small structures with the main axle length of approximately 6–7 m. Apart from one church, all other churches have horseshoe plan apse. In three churches, there is a windowed templon carved to the main rock between the apse and nave. Ispidin Church No. 1, a small rock-cut church, located on the rocky ridge next to the bridge that crosses the Koramaz Valley in the southwest of the village, was the only densely frescoed church we have come across in Kayseri. We say “it was” because the intense destruction by illicit diggers that we have observed in this church only in the last year is incredible. Most of the frescoes dated 11th to 13th centuries are now unrecognizable. The church architecture is a cross plan and there is a small narthex in the north. (Figure 7.13, Figure 7.14) (Karakaya 2013, Straub *et al.* 2019).

2. Conclusions

As OBRUK Cave Research Group, we have been carrying out artificial cavity research and inventory projects in six different provinces of Turkey for years. All these works, but especially with the intense concentration of rock-cut structures in seven different villages, Koramaz Valley is important because it shows that a rock-cut dwelling lifestyle has been widespread in the region for centuries or even millennia.

Supporting a comprehensive database to be created in the future with archaeological research carried out within the bounds of possibility will enable us to evaluate these structures, which have only been examined in terms of rock-cut churches, from a different perspective.

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Ali Yamaç



Figure 7.14. Ispidin Church No.1, view from the nave towards the apse. Photograph by R. Straub.

Bibliography

- Alıcı Şen, P., Abidin Temel, and Alain Gourgaud. 2004. "Petrogenetic modelling of Quaternary post-collisional volcanism: A case study of central and eastern Anatolia". *Geological Magazine* 141 (1): 81–98.
- Aydar, Erkan, Axel K. Schmitt, H. Evren Çubukçu, Lutfiye Akin, Orkun Ersoy, Erdal Şen, Robert A. Duncan and Gökhan Atıcı. 2012. "Correlation of ignimbrites in the central Anatolian volcanic province using zircon and plagioclase ages and zircon compositions". *Journal of Volcanology and Geothermal Research* 213–214: 83–97.
- Aydar, Erkan, Erdal Şen, Mehmet A. Sarıkaya, and Catherine Kuzucuoğlu. 2019. "In the Footsteps of Strabon: Mount Erciyes Volcano – The Roof of Central Anatolia and Sultansazlığı Basin". In *Landscapes and Landforms of Turkey*, eds. Catherine Kuzucuoğlu, Atilla Çiner and Nizamettin Kazancı, 565–576. Berlin: Springer.
- Baydur, Nezahat. 1970. *Kültepe (Kaneş) ve Kayseri Tarihi Üzerine Araştırmalar*. Istanbul: Istanbul Üniversitesi Edebiyat Fakültesi.
- Burri, Ezio, and Marco Petitta. 2005. "Runoff drainage, groundwater exploitation and irrigation with

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- underground channels in Cappadocia: Meskendir Valley case-study". *Journal of Cultural Heritage* 6: 191–197.
- Castellani, Vittorio. 2002. "I condotti idrici della valle di Meskendir". In *Cappadocia. Le città sotterranee*, eds. Roberto Bixio, Vittorio Castellani, and Claudio Succhiarelli, 279–290. Roma: Istituto Poligrafico e Zecca dello Stato.
- Cooper, J. Eric, and Michael J. Decker. 2012. *Life and Society in Byzantine Cappadocia*. London: Palgrave Macmillan.
- Cömert, Hüseyin. 2008. *Koramaz Vadisi*. Kayseri: nc.
- Durukan, Murat. 2012. *Kappadokia'da, Argaos Dağı Çevresinde Hellenistik-Roma Dönemi Mezarları ve Ölü Kültü (Graber und Totenkult In Der Hellenistisch-Römischen Zeit In Der Umgebung Des Argaos In Kapadokien)*. Istanbul: Arkeoloji ve Sanat Yayınları.
- Gilli, Eric, and Ali Yamaç. 2015. "Water Tunnels of Guvercinlik Valley (Cappadocia – Turkey)". In *HYPOGEA 2015, Proceedings of International Congress of Speleology in Artificial Cavities, Rome, Italy, March 11–17, 2015*, eds. Mario Parise, Carla Galeazzi, Roberto Bixio, and Carlo Germani. 202–208. Istanbul: Ege Yayınları.
- Gilli, Eric. 2017a. "From columbaria to dovecotes: two thousand years of use of cave dwellings in Ağırnas (Kayseri, Turkey)". In *HYPOGEA 2017, Proceedings of International Congress of Speleology in Artificial Cavities, Cappadocia, Turkey, March 6–10, 2017*, eds. Mario Parise, Carla Galeazzi, Roberto Bixio, and Ali Yamaç, 446–454. Istanbul: Ege Yayınları.
- Gilli, Eric. 2017b. "Underground hydraulic works related to artificial crop areas in Cappadocia". In *HYPOGEA 2017, Proceedings of International Congress of Speleology in Artificial Cavities, Cappadocia, Turkey, March 6–10, 2017*, eds. Mario Parise, Carla Galeazzi, Roberto Bixio, and Ali Yamaç. 228–234. Istanbul: Ege Yayınları.
- Gilli, Eric, and Ali Yamaç. 2017. "More than four thousands years of underground solutions in Cappadocia (Turkey)", Conference paper. Paris: AFTES Congress.
- Hild, Friedrich, and Marcell Restle. 1981. *Tabula Imperii Byzantini 2 Kappadokien (Kappadokia, Charsianon, Sebasteia und Lykandos)*, Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Inbaşı, Mehmet. 1993. *16. Yüzyıl Başlarında Kayseri*. Kayseri: nc.
- Jones, H. Leonard. 1929. *The Geography of Strabo*. Vol. VI, Books 12–14. Washington DC: Harvard University Press.
- Karakaya, Nilay. 2013. Ispıdın Kaya Kilisesi. In *Kayseri Ansiklopedisi*. Kayseri: Ulusal Yayınevi.
- Karakaya, Nilay. 2014. "Kayseri'nin Gesi Beldesi, Küçük Bürüngüz (Subaşı) Köyü ile Ağırnas Vadisi'ndeki Bizans Dönemine ait Sivil – Zirai Kaya Yapıları." *Turkish Studies – International Periodical for The Languages, Literature and History of Turkish or Turkic* 9/10: 335–358.
- Lamesa, Anaïs. 2011. "Détermination des intervenants lors de chantiers d'églises rupestres en Cappadoce médiévale (VIIe–XIIIe siècle): méthodes d'analyses croisées". In *Carrières et construction V*, eds. Jacqueline Lorenz and Jean-Pierre Gély, 177–190. Paris: Editions CTHS.
- Lamesa, Anaïs. 2017. "If techniques help to date a monument...three case studies". In *HYPOGEA 2017, Proceedings of International Congress of Speleology in Artificial Cavities, Cappadocia, Turkey, March 6–10, 2017*, eds. Mario Parise, Carla Galeazzi, Roberto Bixio, and Ali Yamaç, 58–65. Istanbul: Ulusal Yayınevi.
- Mitchell, Stephen. 2018. "Cappadocia". In *The Oxford Dictionary of Late Antiquity*, ed. Oliver Nicholson, 279. Oxford: Oxford University Press.
- Ousterhout, Robert. 2017. *Visualizing Community: Art, Material Culture, and Settlement in Byzantine Cappadocia*. Washington DC: Dumbarton Oaks Research Library and Collection.
- Ramsay, W. Mitchell. 1890. *The Historical Geography of Asia Minor*. London: John Murray.
- Şen, Erdal, Biltan Kürkçüoğlu, Erkan Aydar, Alain Gourgaud, and Pierre M. Vincent. 2003. "Volcanological evolution of Mount Erciyes stratovolcano and origin of the Velibaba Tepe ignimbrite (Central Anatolia, Turkey)". *Journal of Volcanology and Geothermal Research* 125: 225–246.
- Straub, Rainer, Bilgin Yazlık, and Ali Yamaç. 2019. "Die Untergrund-Christen – Isbidin Kaya Kilisesi, eine stark gefährdete Höhlenkirche in Kappadokien". *Mitteilungen des Verbandes der Deutschen Höhlen und Karstforscher* 65: 25–29.
- Yamaç, Ali. 2019. "Büyük Bürüngüz Underground Shelter (Kayseri – Turkey)". *Opera Ipogea* 2019 (2): 65–76.
- Yamaç, Ali, and Ezgi Tok. 2015. "An Architect's Underground City." *Opera Ipogea* 2015 (1): 37–46.
- Yazlık, Bilgin. 2019. "Koramaz Vadisi Columbarium Mezarları." *Turkish Studies* 14 (3): 669–733.

