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From Lycia to Teke Province, from Cedar to Warehouse the Story of Antalya Wooden Granaries

Lykia'dan Teke İline, Sedirden Ambara Antalya Ahşap Tahıl Ambarlarının Öyküsü

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Abstract: The geography of Anatolia is one of the important steps in human development from the Neolithic Age, shifting from hunter gathering to production culture. Antalya, located at the intersection of the Mediterranean and the Taurus Mountains, became one of the oldest inhabited production centers of Anatolia. The tradition of the wooden granary, called Ambar, centered in an area of the Taurus mountains, concentrated around the Beydağları near the western part of the city, is an important part of this production culture that still survives. Starting from the Konyaaltı countryside, Ambar found in some villages of Kumluca, Elmalı, Finike, Demre and Kaş were built with timber obtained from cedar, larch, or juniper trees according to the forest products in their regions. In my research I have found that certain Ambars, which in the past were built without using nails, were built in a region of Konyaaltı Doyran (Sinandeğirmeni), in the Bezirgan and Gökçeören villages of Kaş. In other areas, an ambar is often located as an extension of residences or in areas such as courtyards independent of the residence. The collective construction of these Ambar is a natural consequence of the plateau-coastal production relationship that has continued in these regions for thousands of years. It has necessitated the construction of these warehouses in a collective shared public area in settlements which were vacated due to the annual mass migration between the plateau and the coast. The aim of this study is to investigate the traditional civil architecture and agricultural culture of the Ambar, wooden storehouses and the distribution of these structures, most of which have shared historical characteristics.

Keywords: Cedrus • Granary• Vernacular Architecture • Lycia • Storage • Antalya

Öz: Anadolu coğrafyası Neolitik Çağ'dan itibaren insanoğlunun üretim kültürüne geçiş yaptığı önemli duraklardan biridir. Akdeniz ile Torosların kesiştiği coğrafyada yer alan Antalya ise Anadolu'nun en eski yaşam ve üretim merkezlerinden biri olmuştur. Torosların bir kolu olan ve kentin batı kesiminde yer alan Beydağları çevresinde yoğunlaşan ahşap tahıl ambarı geleneği de bu üretim kültürünün günümüze kadar ulaşan önemli bir parçasıdır. Konyaaltı ilçesi kırsalından başlayarak Kumluca, Elmalı, Finike, Demre ve Kaş ilçelerine bağlı kimi köylerde görülen ahşap tahıl ambarları, bulundukları bölgelerdeki orman dokusuna göre sedir, karaçam ve ardıç ağaçlarından elde edilen kerestelerle inşa edilmiştir. Geçmişte çivi kullanılmadan, geçme tekniği ile inşa edilen tahıl ambarlarının Konyaaltı Doyran (Sinandeğirmeni) ve Kaş'a bağlı Bezirgân ile Gökçeören köylerinde toplu olarak bir bölgede inşa edildikleri gözlenir. Ambarların toplu olarak inşa edil-mesi, binlerce yıldır bu bölgelerde süregelen yayla-sahil üretim ilişkisinin doğal bir sonucudur. Diğer yerlerde ise çoğunlukla konutların bir uzantısı olarak ya da konuttan bağımsız avlu gibi alanlarda konumlandırılmıştır. Bu araştırma ile Antalya'nın batısında, bulunan ahşap tahıl ambarlarının geleneksel sivil mimari ve tarım kültürü açısından incelenerek bugünkü durumları ve dağılımlarının ortaya çıkarılması amaçlanmıştır.

Anahtar Kelimeler: Sedir • Tahıl Ambarı• Kırsal Mimari • Lykia • Ambar • Antalya

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Antalya is one of the important cities of the Mediterranean with its coastline of 640 kilometers. At the same time, 77 percent of the city, which has a mountainous geography, consists of mountainous lands. Plains, which form only 10 percent, are generally located in river basins and these areas have turned into agricultural producing centers. The eastern and western borders of Antalya Province, which is surrounded by Burdur, Isparta and Konya in the north, Karaman and Mersin in the east, and Muğla to the west, are bordered by rivers. Dozens of large and small rivers, streams and streams in the region between the Kaledran Stream in the east and the Eşen Stream in the west reach the sea from the mountains. The western part of the Taurus Mountains, which consists of young fold mountains connected to the Alpine-Himalayan system, covers a large part of the province and are located on both sides of the Antalya Gulf, extending to the west of the Antalya Gulf. In Antalya, where the Mediterranean climate is seen in the coastal areas, the steppe ecology, where the Iranian-Turan climate type is seen, begins when crossed the Yenice Strait and entered Korkuteli borders. In the eastern part of the province, there are areas where the effects of the Mediterranean climate, Iranian-Turanian and European Siberian climate and ecology are intertwined, with deep valleys extending from the coast to the interior and mountainous regions. In addition, the cultivation of subtropical fruits on the Alanya-Gazipaşa coasts is becoming increasingly common. With this aspect, Antalya hosts one of the rare geographies where three different climate types can be seen at such close distances within a narrow region. By means of this climate feature, the olive can be cultivated side by side with cedar trees at an altitude 1200 meters in Akseki. Antalya is also an important forest geography. The natural cedar forests that grow in the mountainous regions of Elmalı, Finike and Kaş host the most important cedar communities of the species known as (Cedrus Libani) or Taurus Cedar, and there are important cedar forests in the Akseki and İbradı localities.

The city named Antalya, was founded by the Pergamon King Attalos Philadelphos II (159-138 B.C.) in the middle of the II century B.C., named as Attaleia in memory of its founder, became independent after the Pergamon Kingdom withdrew from the historical scene in 133 B.C. and cooperated with the pirates together with other cities in the region (Phaselis, Olympos, Korykos). When piracy in the Mediterranean began to disturb Rome, Servilius Vatia was sent to the region in 77 A.D. and the coastal cities, including Attaleia, were punished by being included under Roman rule. In this process, the lands of Attaleia were declared as Roman land (ager publicus)[1]. However, due to the inability to defuse the piracy completely and the ongoing Mithridatic wars, Rome sent Pompeius to the region within the scope of the Lex Gabinia, which was accepted in 67 B.C[2]. As learned from Cicero (*Leg. Agr*. I. 5; II. 50), Pompeius Servilis wanted the Attaleia lands, which were turned into state land by Vatia, to be put up for sale. The same Pompeius, while escaping to Egypt after being defeated in the war with Caesar this time, stopped by the city again in 48 B.C. (Plut. *Pomp*. LXXVI 1). It is known that about ninety-six years after Pompeius' visit (in 48 A.D.), St. Paulus came to Attaleia during his first missionary journey and preached there with Barnabas (*Acts* 14.25). It was connected to this province with the establishment of the combined province of Lycia and Pamphylia during the reign of Emperor Vespasianus[3]. In 131 A.D., Emperor Hadrianus probably visited the city of Attaleia during his second eastward journey. An honorary arch was built in the

1 For the piracy in Mediterranean Sea, see Arslan & Tüner Önen 2011, 189-199.

2 Arslan 2007, 446 vdd.

3 For the epigraphical evidence see Gökalp 2008.

city in connection with this voyage in memory of the emperor and honorary inscriptions were erected for both the emperor and his family (*SEG* VI. 649; XVII. 559). Compared to other cities, a remarkable number of senators and knights were documented in the city during the II[nd] century A.D. The documentation of nine senators and nine knights in Attaleia during this period must be related to the Romans living in the city[4]. After the Roman Empire was divided into two as East and West with the death of Emperor Theodosius in 395 A.D., the Pamphylia Region, to which the city of Attaleia was connected, along with all Anatolia, passed under the dominance of the Eastern Roman Empire. Inscriptions dated to this period refer to the city as both a "famous colony" and a "famous city"[5]. After that, Attaleia is counted among the cities of the Pamphylia Province of Late Antiquity in the Synecdemos of Hierocles (*Hier*. 679, 5). In this period, it is seen that the city became an active trade port of the Mediterranean basin. By means of its convenient location and sheltered harbour, it became the capital for the navy of the Kibyrraioton Thema at the beginning of the VIII. century. In 790, a sea battle took place between the Eastern Roman and the Muslim Arabs off the Attaleia coast[6]. 1084, it was turned into a metropolitan by the emperor Alexios Comnenus. The city, which was under the rule of the Eastern Rome for a long time, was conquered by Gıyaseddin Keyhüsrev I, sultan of the Anatolian Seljuk State in 1207, but soon the city was captured by the Latins in 1211 with the support of the local people and the Crusader navy from Cyprus. The city, which was recaptured by Izzettin Keykavus I in 1216, chronologicalunder the rule of the Seljuks, the Karamanids, Teke Branch of the Hamidoğulları and as "Teke Sanjak" of the Ottoman state from 1391 until the First World War[7]. Antalya, which was occupied by the Italians in 1919, became part of the Republic of Turkey from the end of the occupation in 1921.

Antalya has attracted the attention of geographers and travellers as well as new settlers in every period for thousands of years. The famous geographer of antiquity, Strabo from Amasya, mentions Attaleia in his work titled as *Geographika*[8]. Ibn Battuta, who travelled to the west of the Black Sea, starting from Alanya to Western Anatolia, Central Anatolia and Sinop in the 14[th] century, also stopped by Antalya and recorded that the communities of the city with different beliefs were separated from each other by walls. According to this, Muslims would locate at the fifth street of the city, and this can be supported by remaining walls inside the city. While talking about Antalya, Ibn Battuta also mentioned the city's castle, bazaar, mosques, madrasas and baths, and stated that the city is a city with vineyards, plenty of fruit and delicious water[9]. The agricultural wealth of the region has been recorded since antiquity. It is known that particularly olive and wine, cotton, wood and wood products such as charcoal, resin, pitch, turpentine and tar were exported[10]. In addition to these

4 Gökalp 2008, 39.

5 Gökalp 2008, 53.

6 See Hellenkemper & Hild 2004, 300-301.

7 Fleming 2018, 6-7.

8 Str. XIV. 4. 1: "After Phaselis, Olbia, which is the beginning of Pamphylia and a large castle, and from there to the river called Cataraktes (today's sinkhole brook), which crashes down from a high rock with a large volume and whose sound can be heard from afar, are arrived. After that, the city of Attaleia is arrived. It is named after its founder, Attalos Philiadelphos. It also sent a colony to Korykos, a small town surrounded by a large wall…".

9 İbn Batûta Sey. 402-406.

10 Akdoğu *et al.* 2011, 286-288.

products, it is known that grain production was intense in the region. Such that, as the names of the cities Kadrema (= Gedelma) and Kadyanda (= Üzümlü) indicate the richness of grain, there are grain sellers in Arsada and Oinoanda[11]. In an inscription discovered at Telmessus, besides wheat, legumes, millet and sesame are also mentioned (*TAM* II/1 1). While it is learned from Cicero (*Verr.* II/1. 95) that Verres forced Lycia and Pamphylia to give grain; it is learned that the people living around Arneai increased their grain production by praying to God through the work written of the life of Nicholaus of Sion[12]. The granarium buildings known from the regional cities of Andriake and Patara were also built very large and sheltered, showing the importance of grain storage. Of course, although these structures are related to pre-export storage, the existence of local and individual grain storage is indisputable. The granaries examined here also enlighten the importance of grain production in the region as the present witnesses of a tradition that was formed as need-based.

Granaries of Antalya

There are three types of wooden granaries in Antalya, which we have determined as the study area. Apart from these granaries, wooden granaries used adjacent to the houses or used as an element inside the building, which are generally smaller in size and generally rectangular in form, are used in the eastern part of the Province (Gündoğmuş, Aksu, Akseki, Serik, Manavgat, İbradı). In the east of Antalya, granaries are smaller in size and are usually located inside the houses in some villages because wheat cultivation is less practiced due to the mountainous and rocky terrain. For instance, in the granaries of Gündoğmuş, Kayabükü village, the upper part of the houses with earthen roofs are usually built close to the road level. This ensures easy transfer of the crop from the field to the granary. After being washed, the wheat, which is easily spread on the roof from here, is emptied into the granary inside the house through a hole on the roof and covered with soil or stone and stored. While the buildings serve as a living area, the grains dried on the roof are easily stored in the granary inside. Thus, the functionality brought to the space facilitates daily life. In such granaries, the interior is built of wood and the body walls are made of stone and/or mud-brick, integrated with the living space.

Fig. 1. Elmalı Beyler Village, Granary of the Baysarı Family

In the western part of Antalya, particularly in the villages surrounding the Elmalı Plain, wooden granaries, which were built as a necessity of large scale production in the past, and mostly built by feudal families, come to the forefront. There are examples of these granaries in villages such as Beyler and Karamık located in the southwest of the Elmalı Plain. In these settlements, where farms were owned by feudal families in the past, the wheat produced by the villagers called sharecroppers

11 About this topic, see Hellenkemper & Hild 2004, 276. For the possibility of Kadrema being a garrison city with granaries, see also Şahin 2002.

12 Ševčenko & Ševčenko 1984, 92-94.

or tenant farmers was stored in these huge granaries with a capacity of 50-300 tons, according to the information given by the villagers. Such large granaries concentrated in a certain region can be considered in the first group (Fig. 1).

The granaries in the second group, on the other hand, have smaller storage capacities to satisfy the needs of a family in mountainous settlements. The last few examples of granaries in Elmalı Gölova, Düden villages are unique buildings in terms of their architectural features and functions. Wooden granaries, which are combined with a single or two-room house, were designed to both store products and provide living space. In the Elmalı villages, there are also small-scale granaries located inside or adjacent to the houses. In these granaries, the granary-space pattern is intertwined, the ground floor is generally shaped as a granaryworkshop and the upper floor as a small living space (Fig. 2).

Fig. 2. An Example of a Granary with a Residential Function Above it in the Village of Elmalı Gölova

Fig. 3. General View of the Lycian Type Granaries of Kaş Bezirgân Village from the West

When looking at the geography that was called as Lycia in the past and then Teke Province, there are villages starting from Beydağları, particularly to the west of Antalya, and granaries that we can describe as the third group and which we can call the individual Lycian type in the rural areas of Elmalı, Kumluca, Finike, Demre and Kaş. These granaries are saddle-roofed, cubical, almost identical in scale and architecture, with the vast majority of them built of cedar, a few examples of larch and juniper. There are individual examples of Lycian type granaries reaching today, although a few, in Sinan Değirmeni in Antalya Konyaaltı, Dereköy in Kumluca, Yazır, Elmalı, Beyler, Söğle, Gökpınar, Gölova (Müğren) and Yapraklı (Guğu) villages in Finike and Beymelek and Belören (Muskar) villages of Demre. The focus of our research includes the Lycian type wooden granaries in the third group. These are granaries built in the courtyards of the houses or collectively in a certain area of the village, which are often by a threshing floor, and hasd a watchman-guard. Starting from Konyaaltı district (Sinandeğirmeni) and continuing their collective existence today in the villages of Bezirgân and Gökçeören in Kaş further west, a significant part of the granaries have been destroyed, succumbing to time and human destruction. While granaries are located adjacent to or near the living areas and independently in many villages, the fact that the granaries are built collectively in these settlements is important for understanding the production history of the region (Fig. 3).

The fact that the mountainous and active topography in the western part of Antalya allows the cultivation of products such as wheat, barley and millet, as well as chickpeas and lentils due to the climatic conditions, has also been a determining factor in the distribution of granaries in the settlements. The widespread use of cotton and citrus fruits since the 20th century, mostly in the large plains in the eastern part, has gradually affected production areas such as Kumluca, Finike, Demre

and Kınık and Ova of Kaş. Production in large and small polje plains and other fragmented agricultural lands in the mountainous regions outside the large plains enabled the granaries to be collected in these regions. On the other hand, production in Antalya was concentrated in higher areas in the past.

The most important reason for this is that malaria and similar diseases are common on the coasts due to the hot climate and coastal marshes, and water resources are more abundant in mountainous regions[13]. The fact that coastal settlements have been open to dangers and attacks from the sea since ancient times, makes the mountains and plateaus more safe living areas is also an important reason for this preference. Coastal plains and settlements, which are touristic centers today and also provide a suitable climate option for greenhouse agriculture, were areas where the population decreased to a great extent during the summer months. The 13th century appearance of the dual lifestyle between the plateau and the coast in the region continued until recently[14].

Fig. 4. Konyaaltı (Doyran) Sinandeğirmeni Lycian Type Wooden Granaries

Another factor in the end of the tradition of life and production between the plateau and the coast is the change in production tools and methods. For instance, Konyaaltı Sinandeğirmeni District was the plateau of Doyran village and a region where subsistence agricultural production was practised until the 1980's. While the mill that gave its name to the neighborhood, belonged to a family of Anatolian Greeks who migrated from this region during the population exchange between Turkey and Greece in 1924, it continued to serve under the management of the local people after the population exchange. The Doyran villagers, who used to produce wheat and barley on the slopes that were located in this region in the past and can be considered as marginal agricultural land today, used to provide for their winter needs by saving their products collected after the traditional harvest in the about 60 granaries in Sinandeğirmeni (Fig. 4). On the lands where wheat and barley were produced in the past, tomato, pepper, eggplant and bean-dominated vegetable production has become widespread in the greenhouse of today. This change has directly affected the architectural pattern as well as the agricultural culture.

The same is true for the villages of Kaş, where granaries are densely observed. The villages in the

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13 The epic among the nomads in the region briefly summarizes this issue: 'If the grass of a place is a sedge and a bird is a goose, don't think, stop'.

14 Gordlevskiy 2018, 68. "For the nomad, the city is a dungeon. The Sultan is bored in the city, too and the nomadic spirit lives in him; he can't sit in one place either. He frequently moves from Konya to Kayseri, and in the winter he goes to the Mediterranean coast, to Antalya".- "Not long ago, at the end of the 19th century, the villages and cities on the Mediterranean coast were emptying in the summer, having the view of dead villages and cities. The people gathered their herds, escaped from the boring and stifling heat, and went to the mountains and highlands and sought coolness".

Kaşregion were established in two separate places as a plateau and a coastal settlement as a continuation of thousands of years of tradition. For instance, 'Yayla Bayındır', 'Sahil Bayındır', 'Yayla Çukurbağ', 'Sahil Çukurbağ'. This nomadic life, depending on the climate, has directly affected many areas, from production to culture. As a result of the nomadic lifestyle, wooden granaries were located collectively in certain areas and watched by a guard when the population was away. In this cycle, valuable items other than grain, which should be preserved, were also stored in the granaries like a bank vault[15]. However, the fact that there has not been enough scientific study on this subject causes the last witnesses of the period, which covers a very important part of Anatolian history, to be forgotten without being sufficiently understood, with their passing of one by one.

Another feature of the Lycian type wooden granaries is that they carry the transfer of the past cultures of the geography in which they are located. The form of the granaries in the regions that intersect with the Lycian geography carry traces of the original forms seen in the residential architecture of the past and in rock tombs and sarcophagi (Figs. 5-6).

Fig. 5. Reconstruction of a Lycian House in the Ancient City of Limyra in Finike.

Fig. 6. An Example of a Sarcophagus and Rock Tomb in the Ancient City of Sura (Demre)

This similarity drew the attention of travellers who visited the region as a result of the orientalism movement in the 19th century, and they added many drawings of Lycian house and tomb forms to their books. The pioneers of these travelers, who convey the spirit of the period, can be mentioned

15 The most important feature of the granaries in this region is not only to store grain. It is the most important reflection of the dominant Yörük culture in the region. It is the embodiment of a life style that has been going on for years as a summer house-winter house (highland-coast) in architecture. These small spaces also act as a kind of collective safe where they keep their minimal household items and even their assets such as money and gold. Yoruks, who do not tend to property and live with nature, animals, and people at the center of their lives, remind us of a common saying in the region; "One camel carries the burden of the nomad, but forty camels cannot carry the pleasure".

as Charles Fellows, Charles Texier, William Muller, Georges Perrot, Charles Chipez, Otto Benndorf, George Niemann.

The notes and drawings of the archaeologist Otto Benndorf and the architect George Niemann in the book entitled *Reisen in Lykien und Karien*[16], based on their travels in Lycia, are extremely important. In the book entitled *Asia Minor* published by Charles Fellows, comparative drawings of granaries and Lycian tombs provide information about the architectural reflection of this cultural transfer[17] (Fig. 7). The granaries in the depictions of Charles Fellows are still being used today (Fig. 8).

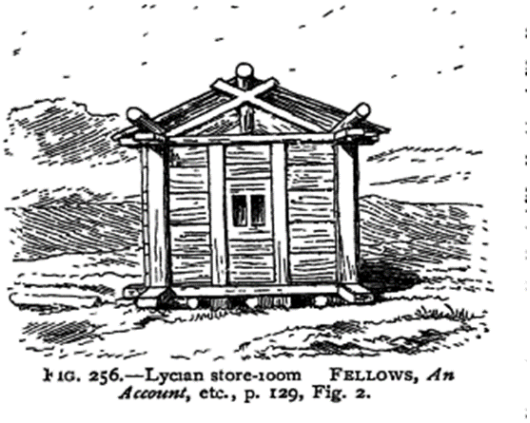
FIG. 256.—Lycian store-room FELLOWS, *An Account*, etc., p. 129, Fig. 2.

Fig. 7. Fellows 1840, 129

Fig. 8. The Embodied Structures of the Drawings in the Fellows 1840 Book Continue to Exist in Sinandeğirmeni

The illustration by Otto Benndorf of Kınık village is also valuable in terms of depicting rural architecture and a granary example (Fig. 9). He compares the Lycian tomb monuments in the region with the houses of the region. He draws attention to the wooden appearance of the jambs and pilasters of the tomb monuments, the wooden Lycian houses living in the stone tomb monuments and their historical and organic interaction with the living areas and wooden granaries in the region (Fig. 10). The common point of all travellers is that they interpret this striking similarity as a historical continuity. It is extremely important for this flow to progress in a healthy way for centuries, both in terms of function and architecture. When the details such as rectangular form, hipped roof, jambs, animated facade designs that can be considered simple, door details almost the size of a window that allows the entrance to the interior which are seen on Lycian tombs and details in the sarcophagus with 4-sections, which developed accordingly in the interior, where the corpses were placed, are examined; the similarity with the granaries is extremely impressive. Charles Texier visit-


Fig. 49 Hütte von Gèndowa

Fig. 9. In a Depiction of a Settlement from the Village of Kınık, the Granary Located next to Flat-Roofed House with 2 Storeys on the left Draws Aattention in fig 49, in Benndorf & Niemann 1884, 84

16 Niemann 1884.

17 Fellows 1852.

ed the region in 1833 and 1843, carried out various studies and published the information and drawings he collected in his work entitled Asia Minor in 1862 (Fig. 11)[18]. Lore Muhlbauer conducted an extensive study about the Lycian Rock Tombs in which she compared Lycian rock tombs with Lycian wooden architecture. The study also covered the technical elements of Lycian wood construction. She published the work in 2001 *Lykische Grabarchitektur vom Holz zum Stein*.

Fig. 10. Benndorf & Niemann 1884, 100 fig. 56

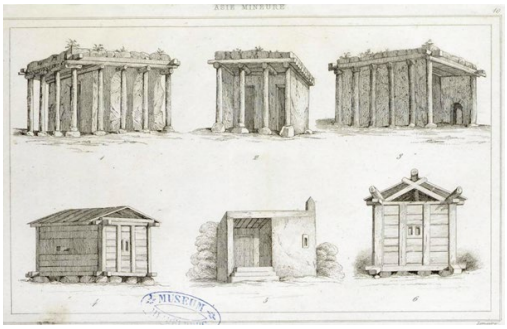

Fig. 11. Texier 1862, Levha 10

Wood, which is the main material of the granaries, was procured from the forests in the places where the granary was built. Accordingly, those in Konyaaltı/Sinandeğirmeni were mostly built from black pine and juniper wood in one or two examples, while the granaries in Gökçeören and Bezirgân villages of Kaş were built of cedar trees from Katran Mountain in the region. According to the narration of local people, the granaries were built by the masters, including the local Greeks, in the past. This profession, which was learned through the master-apprentice relationship, became an important line of work during the periods when the need for use continued. The local masters, who were handed over by the Greeks after the population exchange, continued to serve mostly as itinerants. The most important feature of the granaries is that they can be dismantled and the damaged parts can be repaired. In this way, they have survived to the present day with small repairs and additions[19]. Due to their ability to be disassembled, the granaries some-

Fig. 12. Bezirgân Granaries General View

18 Texier 2002, 320: "The Lycians used to choose the steepest places to build their cities. Not in terms of the construction style of their tombs; but they used to carve their tombs into the mountains and rocks around the city, with reliefs that differed from each other in shape. On the slopes of the rocks, there are tombs that display a delicate building with wooden facades. Their pillars, floor beams and ceilings made of round branches are carved on stones by imitating this shape. The sarcophagi carved from one piece of stone reveal a wooden crate placed inside a sarcophagus of other stone. The stone sarcophagus is in the form of an inverted boat or a pointed arch, unlike any other, with a raised center".

19 It is common to use tar between timber in minor repairs. Tar is obtained by burning and distilling cedar woods and is also used as an antiseptic. It is diluted and given to animals to drink against diseases. It is applied to the navel in case of colds, stomach bees, and directly on the wound in case of wounds. Yoruks tan their tents with

times were passed into other hands, were sold or placed on a different piece of land by the owner. The granaries in Konyaaltı/Sinandeğirmeni, Kaş/Bezirgân (Fig. 12), Kaş/Gökçeören, which are located collectively, are registered and are not sold to different locations, on the other hand, since they are registered, they cannot be repaired by their owners, this situation shortens the life of the granaries. Recently, many granaries have been damaged due to harsh weather conditions and have been left to disappear due to the inability to intervene.

The individual granaries in the gardens of the houses continue to pass into other hands today, particularly the granaries used in the tourism sector can be easily dismantled and placed in different places. The granaries, which are used for firing materials in the new agricultural culture that started with greenhouse cultivation, are unfortunately today sacrificed to tourism.

On woodworking in Antalya, which is a forest city, it is required to mention the Tahtacılar who have been working in this region and in different geographies of the country for many hundreds of years. Today, Tahtacı communities living in Çukurova, the Mediterranean and Aegean regions have given up forestry labors with the use of modern technologies and machine power in forest processing. According to Faruk Sümer, the Tahtacılar are 'Ağaçeri' Turkmen who came to Anatolia with the Mongol invasions and settled in the Maraş, Elbistan and Malatya regions in the 13th and 14th centuries. This community, belonging to the Oghuz tribe, was called Agaceri because they lived in the forests. According to Sumer, the Ağaçeriler point to the fact that the Babai Revolt, which took place in 1239-1240, started in the Malatya region, suggesting the possibility that this community may be the remnants of the Babailer who took refuge in the forested areas. Sumer considers the Tahtacılar, whom he counts as the grandchildren of the Ağaçeriler, to be the most beautiful representatives of Turkmeneli, who carried on the art of woodworking from ancestor to grandfather. He emphasizes that today the Turkish groups called Tahtacı in cities such as Çukurova, İçel, Antalya, Isparta, Burdur, Konya, Muğla, Denizli and Aydın were given this name because they were engaged in the business of providing timber for construction. It is noteworthy that Tahtacı communities are settled in the regions where wooden granaries are densely seen in Antalya[20]. The Tahtacılar continues to exist in settlements intertwined with forested areas in Kumluca, Kemer, Elmalı, Kaş and Finike, and Serik. Akçaeniş are connected to Elmalı, Gökbük, Arif, Menevşelik and Çatallar connected to Finike, Toptaş, Beşikçi and Hızırkahya connected to Kumluca, Değirmendere connected to Kemer, Koyunlar and Varsak connected to Kepez, Karatepe connected to Konyaaltı and Yeni Mahalle of the center of Serik districts are the settlements where the Tahtacılar live[21].

Plan

When examining the plans of wooden granaries, we see the structural transfer of the past. Their foundations date back to Lycian houses and tomb monuments inspired by these houses. This reminds us of the importance of transferring the life cycle through generations and cultures. Like the ancient Lycian burial chambers, they are formed with a saddle/hipped roof, square plan, and a single main entrance and just like the burial places in the burial chambers, there are sections called gübse,

püse against all kinds of pests on their migration routes, in this way the living space is protected against pests such as scorpions, insects and snakes.

20 Sümer 1988, 460-461.

21 Coşkun 2013, 33-54.

which consist of rectangular crates and surround the inside of the U-shaped space (Fig. 13).

The granaries, built from wood, have four facades and have two storeys with an entrance from the porch section. It is usually accessed from the floor to the porch section with a wooden ladder, it is also used as a rectangular stone step, which is approximately 60 cm high from the floor, called the steppingstone, in those granaries without stairs. The area with a porch and balcony is the ground floor, and the main space is accessed through a wooden door with a width of approximately 70x100 cm on the ground floor. On the floor of the main space, there is a wooden granary where the grain is stored in four sections, the grains placed in the granary are stored in the form of direct pouring, they are not stored in sacks or similar bags, because the warehouse lets air in, the cereal also retains its freshness from the first day inside, they do not cause to get a bitter taste, smell or infestations. These sections are again covered with wooden plate-shaped covers, these plate covers form the floor of the entrance floor. On the ground floor, there are crate shaped sections, all of which are made in wooden crossover technique, with the wooden interior called gübse turning in a 'U' shape, coming to the right, left and opposite parts of the door. An average granary consists of 6 or 8 güpse. Even a few granaries have double doors with their backs to each other and the doors to open in the opposite direction, these usually belong to two brothers or two very close relatives. Their structural general plan is the same, only the 3 sides of the granary, the front facing the opening door is closed, the interior parts are built in the same mechanism and each has 3 sections, like a granary divided into two. Everything related to life is put into the U-shaped crates inside the wooden granaries, as a continuation of the nomadic tradition, beds, quilts, carpets, rugs, daily use items are still being preserved (Fig. 14).

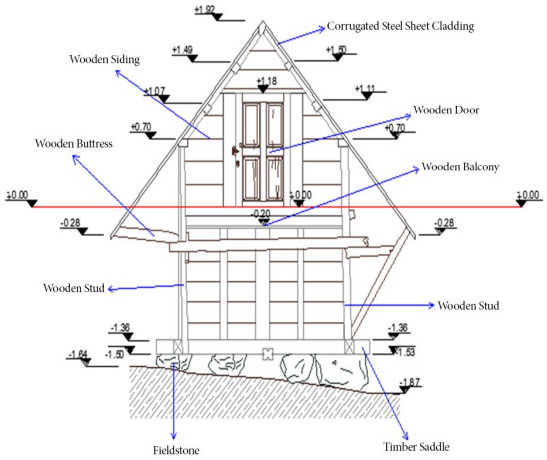

Fig. 13. The Main Facade of the Granary

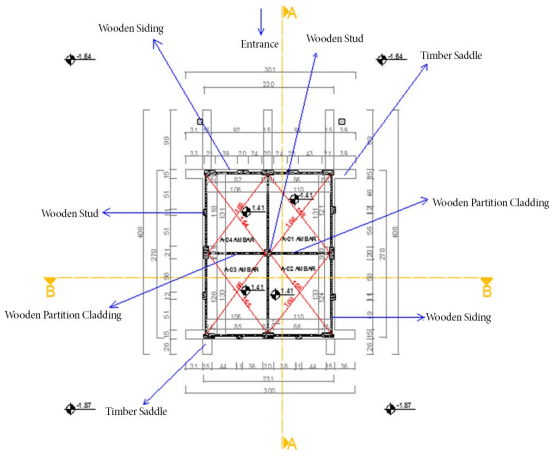

Fig. 14. Interior Detail of the Granary Ground Floor Material and Technique

Material and Technique

The main material used in all granaries in the region is Cedar and even less black pine used in Sinandeğirmeni. With their long-lasting, hard-textured, antiseptic and protective properties, they do not allow creatures such as mice, insects, scorpions, and snakes to live in them. Cedar, which is attributed to holiness in many cultures, takes on the protection of the material put in the granary in a physical and mystical sense.

In the area for the granary, a foundation with 50-60 cm in depth is dug first, and four planks are placed in the middle of that rectangle to form a rectangular area, and 4 balance planks extended di-

agonally from one end to the other, and 8 planks of 2 meters length are placed vertically. 4 more interlocked planks are placed on top of these vertical planks. After that, the main structure of the granary is completed by making the lower sections of the inside, side gübse and roof (Fig. 15).

The logs cut from the cedar tree, the main material of the granary, are passed through a hand saw in the past and then through a sawmill to obtain smooth planks. The wooden planks to be used in the construction of the granary are cut with a metal piece called 'Keniş' attached to the planer in the saw machine and grooved with a 2 cm blade. Because of the name of the tool used for this groove, this process is called 'interlocked' ('kenişlenmiş') (Fig. 16). The grooves and ridges cut into the planks combine to form body walls. Vertical frame walrus head is used to make the wooden body walls stacked horizontally with the frame system strong. The roof part is made entirely of cedar wood (Larch in Sinandeğirmeni) as a hipped roof with the technique of passing. In the original granaries, the top cover was made in the form of a natural covering, called harlama, on a cedar roof, which dates back to the Neolithic period. Harlama is the most aesthetic and natural material that protects the upper part of the structures by knitting and tying cedar shells, corn stalks and reed stalks in a regular manner. By means of harlama, the wooden roof continues to take in air. Unfortunately, due to absrasions and disinterest over recent years, the granaries have often been covered with sheet metal or corrugated, while there are still granaries covered with wood or tiled on wood.

Fig. 15. Wooden Pillars and Roof Support Units

Fig. 16. Muhsin Ok, the Last Granary Craftsman, Shows the 2 cm Wide Keniş Section Opened on the Plank, the Fixing Plank Placed Vertically on the Wooden Piles is Called Morsa

The corners of the granaries are connected by crossover technique called dovetail, in this way, in the logic we see at lock head (morsa), the structure is also interlocked from the edges. On the floor of the granaries, large pillow stones such as from a floodplain are placed and the building is placed upon these stones. In this way, both the elevation of the sloping land is adjusted, the granary is balanced and the wood takes air in and is protected from all kinds of moisture, mud and insects with the passing of air from the lower part of the granaries. In the region, particularly in the heavy rains in January and February, water penetration into the granary is prevented and the life of the wood and the material inside is extended against any weather situation.

Pegs made of wood are used instead of nails in granaries, because the metal material causes deterioration to the wood and first rusts and then worms. While the planks are being processed, the pin locations are pre-determined like the groove locations, the holes are drilled, and the wooden pins are then hammered in to these places.

The granaries have a single entrance door and the pattern of each granary door is different, this is due to the craftsmanship of the master who built the granary. Each door motif is the signature of the craftsman who built that granary and is the only decoration in the building, each craftsman has his own door shape, the dimensions of the doors, some vertical, some horizontal, and some diagonal in the shape of a lozenge, are generally approximately 1.20 meters by 80 cm as standard. The granaries built by travelling craftsmen working building granaries in different villages can be identified from the door signature in this way.

The porch section is usually accessed by a wooden ladder, this ladder is permanently mounted to the front in the most granaries. In front of the granaries, there is always an overlay stone to take and put the goods, these cube-shaped stones, measuring approximately 50x60 cm, mostly consist of spolia materials collected from a nearby ancient city, abundant in the Lycian geography, mostly milestones and column bases are used, useful in terms of their shape.

Plan Units

The ladder can be mobile or mounted on the bench of the space, although its dimensions vary according to the granary, its dimensions are approximately 150x50 cm. They are built from the same material as the granary.

The bench; the entrance floor of the granaries is reached by a wooden ladder. From the ladder, you can reach the bench, which is about 130-150 cm above the ground. The bench is the first place where the grain brought in sacks are unloaded. The grain is taken inside here, and the goods inside are loaded onto the animals with the help of the overlapping stone in front of the porch.

Fig. 17. Before the Use of tile and Metal Sheet Cover on the Roof Formed by the Wooden Timbers Called Harlama, Juniper Bark, Stems and Leaves of Corn and Reeds were Also Used as a Protective Upper Cover

Entrance Space; The bench, which is approximately 130-150 cm above the ground, is accessed by a simple wooden ladder built on the main facade of the building. The wooden entrance door is reached from the wooden floored bench. The entrance area is entered through the wooden entrance door measuring approximately 120x80. The floor of the place has wooden flooring and wooden hatch covers. A crate at a height of about 90 cm from the floor on the right and left sides and opposite the entrance of the space surrounds it in a 'U' shape. Household items such as beds and quilts are put into this crate. The walls of the place consist of 3 cm thick wooden coverings made of cedar, the ceiling consists of wooden veneer boards nailed on wooden rafters, it is unpainted.

Roof; The roof of the warehouses is a hipped roof and a slope of approximately 45 degrees. Cedar tree veneer boards were nailed onto the wooden rafters. Although the roof covering was covered with a natural material called harlama in the first examples, tiles were placed on them over time, since the maintenance of the covering boards could not be done (Fig. 17). Today, most of the grana-

ries are covered with corrugated metal sheets for protection.

Granary Space; The entrance is accessed through the wooden cover on the floor of the space. It has four sections, usually the section sizes have a symmetrical distribution. On the floor of the place, there are wooden floor boards made of cedar wood, approximately 3 cm thick. The walls of the space consist of wooden partition coverings made of cedar tree with approximately 3 cm thickness. The ceiling of the granary is the floor of the entrance area. There is a wooden cover on the ceiling. The cereals are poured freely into this place and are preserved in this way. The fact that every surface of the granary is cedar wood allows the grain to take the air in from all directions. In this way, grain can be stored for a long time without being affected by moisture. The storage part of the granary was built at a depth of approximately 120 cm.

Comparison

The granary forms, which are adjacent to or separate from the square-shaped living area seen in Eastern Antalya, in the provinces of Isparta and Burdur, which we examine as the Western Mediterranean, attract our attention. Depending on the geography, examples built with wooden hipped roofs or stone flat roofs have been used from the past into the present. These granaries are in the form of a village house room and are of the dimensions commonly used in Anatolia. This style of architecture is seen in the eastern districts of Antalya.

The granaries in Ankara Nallıdere district are similar to the wooden granaries of Antalya in terms of their architectural form, while black pine, which is abundant in the region, was used fot the timber. As a plan, it creates a transition between Serender, which is widely used in the Black Sea, and the Antalya wooden granaries. It has almost the same size and function as the granaries in Elmalı in terms of structure and operation. As the Central Anatolia Region unites Anatolia with its geographical function as a keystone, it has undertaken a similar function combining the Black Sea and Mediterranean features in the architectural tradition[22].

The use of wooden granaries is concentrated from west to east in the Black Sea, but they have use in different sizes and functions[23]. In general, although serender is a commonly used name, it is also known as nayla, tekir, mazı, ambar, bagen, paska, merek, and, kelif, according to the regions. Serenders are located outside the house, they do not have a physical connection with the house. The building is generally in the form of a simple house with a hipped roof, with four legs, and a single room, on six or eight wooden legs, depending on the possibilities and needs. The space is accessed by a wooden portable ladder. It is raisedup 2-3 meters from the ground with the feet, a pillow stone is placed beneath these feet to prevent them from being affected by soil moisture. Rats and pests are prevented from entering the serender by placing a caster (tekir, aşak) on the top of the feet and covering the wooden feet with tin. Wood obtained from the trees in the region is used as material, these can be hornbeam, chestnut, spruce, fir. The products cultivated in the Black Sea region are dried and preserved within these serenders.

Similar granaries can be seen in many parts of Anatolia. It shows differences in architecture, material and technique according to the production, vegetation, traditions and customs of the region.

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22 Küçük N., *Bitirme Tezi* 2020, 102-104.

23 Eruzun 1977.

When the best material is defined as the closest material, materials that are low cost financially and morally, easily processed, long-lasting, and able to preserve the product in the best way show themselves as the effect of the natural environment on the building. In short, geography is the most basic factor that determines structures. These structures, which are on the verge of extinction, are encountered in many parts of Anatolia such as Bursa Büyükorhan district, Afyon Sincanlı and Hocalar districts, Tokat Niksar district, Balıkesir Sındırgı and Edremit districts, Çorum Sungurlu and İskilip districts, Samsun Lâdik district, Kütahya Gediz district, Eskişehir Mihalıççık district, Çanakkale Bayramiç district, Uşak center and Banaz districts although they have not been studied much. The wooden granaries in the provinces and districts we have mentioned can be seen in the common areas of the village in some places, and in the gardens of the houses in some places, just as in the examples from Antalya. Although the material employed varies according to the forest feature in the region, larch and juniper were preferred in Ege, Central Anatolia and Marmara. In the Black Sea, hornbeam and spruce are mostly preferred and materials from different trees are also seen as regional features while the building technique is almost the same.

Although people in different parts of the world have changed from hunter-gatherer to production culture at different times, the practical methods they have found to preserve products are surprisingly similar. The granaries, like other examples of civil architecture, are shaped depending on the material in the geography in which they live. The granaries, which were built using wood in places where the forest texture is dense and using stone and adobe in arid regions, are the embodiment of the instinct of preservation and accumulation in the human spirit, with the common mind.

These granaries are termed Loft in Norway[24], as Storehose in Sweden[25], and Aitta in Finland[26] located to the east of it are similar to the examples we see in Anatolia, the foot/supporting parts are very low compared to the Lofts, just like in the Antalya example, they are at a height of about 50 cm from the ground and are supported by stone pillows beneath them, as a building technique, it is crossover wood, wolf throat, no obvious decoration technique is observed, and northern pine is used extensively as the construction material.

In Spain, the granaries called Horreo are distributed just like in Turkey. Although wooden and stone warehouses have similar plan schemes in Spain, material changes are observed depending on the geography and climate[27]. Horreos, which rise on stone feet to prevent moisture and protect from insects, form the common landscape of the Galician countryside, it is known that there are about 100 thousand in the region. The most common form is wood-framed, granite-carcassed and tile-roofed[28]. As we go towards the east, they become larger and have a square form and with stone material like ours.

Very similar granaries can be seen in Portugal. Although their number is less than in Spain, architectural, material and technical features are also observed in Portuguese granaries. Similar wooden granaries are frequently seen in the north-eastern rural areas of Italy, which have a similar climate

24 Karpuz 1999.

25 http://cumberlandnjart.org/cumberland-historic-sites/swedish-granary/

26 https://www.hankahomesteadmuseum.org/buildings/granary-aitta/

27 Rudofsky 1964.

28 Juvanec 2012.

and topographical features.

In this region, which we term Asia Pacific, all of the granaries were built using the wooden cross-over technique and again without the use of metal. Like other examples, they are raised on 4-6-8 feet, have a hipped roof, are covered with reeds on planks, they are used to store rice, the main crop of this region, although still in use in rural areas, wooden granaries called Yayoi in Japan[29] are exhibited in open-air museums as cultural heritage. They continue to be used in Indonesia with the name Lumburg, attributed to holiness[30].

The wooden granaries, called pataka, used by the natives of New Zealand, are used not only for crops, but also for various tools such as clothing, ornaments, weapons, containers. Unlike other examples, they are elaborately decorated with wooden figurative and abstract carvings. Today, various examples are exhibited at the South Island Maori open-air museum, in the Māori Collection at the Auckland Museum[31].

Conclusion

Wooden granaries, which are an important part of the phases that human beings went through in the farming culture that started with the agricultural revolution, has also been the carrier of the civil architectural culture according to the geographical regions in which they are located. Considering examples from all over the world, it is striking that wooden granaries have similar architectural and material characteristics in different geographies. In this respect, it is possible to say that geography is a determinant of architectural culture, just as it is in food and beverage accumulation, clothing and music. In this sense, to describe the wooden granaries of Antalya only as an extension of Lycian architecture cannot go beyond being the product of the 19th century orientalist and romantic point of view. Today, with the change in production culture and technology, the transition to industrial production in agriculture and architecture, this deep-rooted tradition based on its geography has also to a great extent disappeared. Some countries have re-functioned wooden granaries, which are a valuable unit of civil architecture, which they see as a part of their culture and have made them a part of tourism and for different cultural activities. Some countries have kept their granaries alive on their stamps as a requirement of their respect for the past. In our country, apart from one or two initiatives, there is no conservation or re-functioning project for wooden granaries that we can find in almost every region. In order to transmit this culture to the future, it is important that the last granary craftsmans and the last granary users should be found and be recorded quickly and preservation, conservation, restoration and re-functioning studies should be carried out immediately. Restoring and re-functioning the available examples of wooden granaries, which have witnessed a long period of our rural architectural past, as well as their historical and cultural qualifications, will contribute to the preservation of agricultural history and rural architectural heritage.

There is no significant effort in this regard in Turkey. Wooden granaries, which, due to their structural characteristics, were rapidly destroyed by succumbing to natural conditions and human destruction, disappeared in many regions before their numbers and qualities could even be documented. It is important for our civil architectural history as well as agricultural culture with a history

29 Sakai 1993.

30 Nooy 1979.

31 Best 1916.

of 12 thousand years that these cultural assets, which face rapid extinction today and share the fate of the previous ones, are preserved and kept alive through the work to be done by local governments, universities, relevant ministries and the people of the region. This culture of production and life, which continues in pursuit of the cycle of sun, rain, wind, seed, grass and water, and has spanned a long period of time, deserves more attention. Witnessing the thousands of years of history of food and nutrition culture, which is one of the most important parts of human life, from field to table, wheat to bread, granaries also tell us the story of the relationship that humans had with the geography the inhabited. This story is a common issue that forms our common past and identity. Geography and people will not speak the same language in the future as they did in the past. Therefore, it is an important human responsibility to remember this language and transfer it to the future.

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