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KEÇIÇAYIRI: AN EARLY BRONZE AGE II FORTIFIED HILLTOP SETTLEMENT (NORTHWEST ANATOLIA)

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ABSTRACT

The article deals with the architecture of the Early Bronze Age II fortified hill-top settlement of Keçiçayırı, located in the eastern Phrygian Highlands (north-western Turkey). Measuring ca 130 x 100m, the settlement is established on a flat surface on top of a hillock known as Cıbırada, with the fortification wall closely following the external contours of Cıbırada. The row-houses, connected to the fortification wall at the rear often have shallow porches at the front, which open onto a possible central courtyard. The site is of great importance as it shows the existence of fortified settlements in the highlands of the Eskişehir region, already around the middle of the third millennium BC and possibly in connection with intensified trade relations between distant areas. The settlement of Keçiçayırı, which currently represents the only known example of these settlements, may have been built to manage and protect sources of raw materials like flint.

KEYWORDS: Keçiçayırı, Early Bronze Age, Western Anatolia, Phrygian Highlands, architecture, fortified hill-top settlement

1. INTRODUCTION

The settlement of Keçiçayırı is located in the eastern Phrygian highlands, 22km south of Seyitgazi, 5km southwest of the village of Bardakçı, at the eastern edge of a small plain known as Keçiçayırı [Goat Meadow] surrounded by low forested hills (Figs. 1-2).

Salvage excavations at the site have been carried out between 2006 and 2009 by the Directorate of the Eskişehir Archaeology Museum with the scientific consultancy of Prof. Turan Efe, and have uncovered archaeological levels pertaining to the Early Neolithic, Late Chalcolithic, late EBA II, early EBA III, Roman, and Early Byzantine periods (Efe et al, 2011: 9). These excavations were carried out in four separate areas, namely the "*Höyük*" (Mound), the "Northwest Fields", the "Terrace" and "Cıbırada", a small hillock with flat top rising ca 50m above the valley bottom; archaeological investigations mostly focused on Cıbırada (Efe, Türkteki 2007: 76) (Fig. 3).

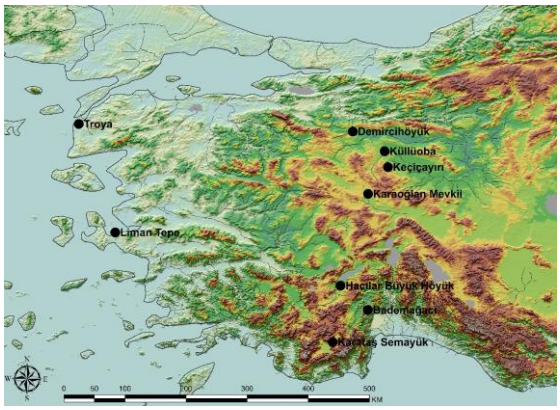

Figure 1. Western Anatolian sites mentioned in the text

Figure 2. Excavations on the Cıbırada Hillock, from the north

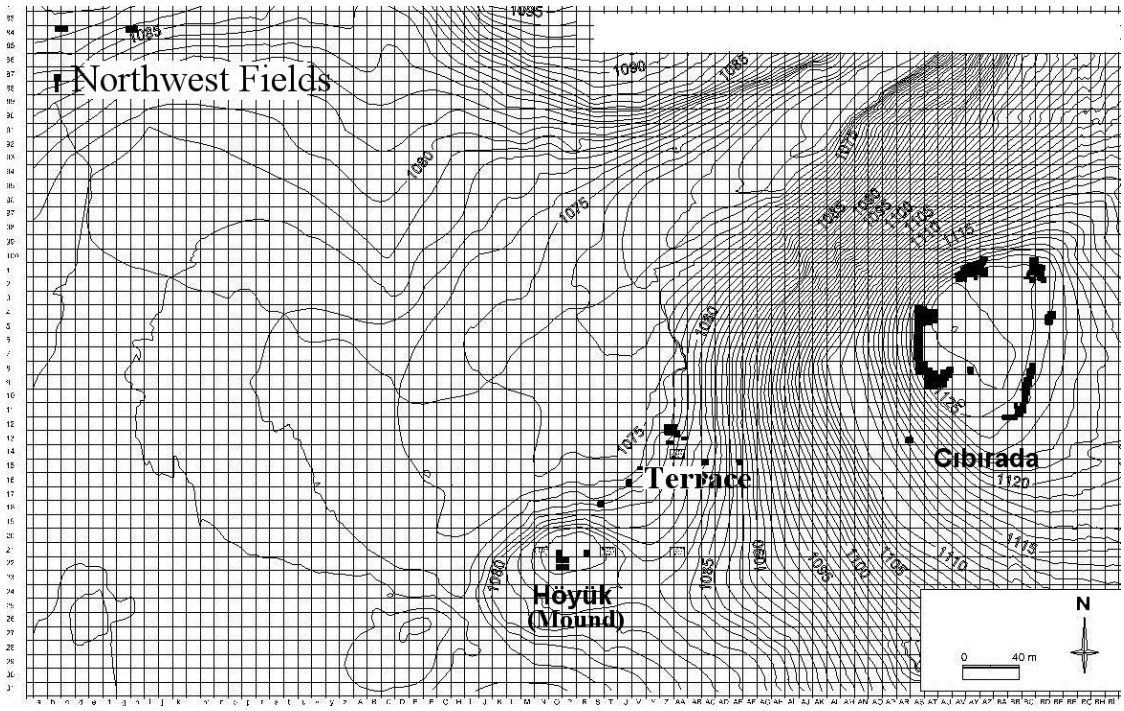

Figure 3. Topographical plan and excavated areas

The earliest cultural deposit at Cıbırada is dated to the Early Neolithic, the architecture of which has not been determined. At the upper level, there is an EBA II (2700-2400 BC) fortified hill-top settlement measuring approximately 130 x 100m, which is mainly preserved along the slopes of the hill. The aim of the article is to provide a detailed report on the architectural remains of these upper phases of the settlement. As the fortification wall was built to coincide with the slopes of the flat area on the hill, the external contours of the settlement do not follow a regular plan. This can clearly be seen in the north-

western section of the site, where the fortification wall makes gentle turns with saw-tooth offsets in places. Unfortunately, due to intense agriculture and erosion, the cultural layers in the centre of the settlement have mainly been destroyed down to the bedrock, as well as in the southern and north-eastern areas. This has made it impossible to reach a definite conclusion as to whether there was a courtyard in the centre of the site and whether any independent structures stood here. It seems however plausible that the houses, connected to the fortification wall at the rear, may have opened up onto a possible central courtyard at the front. It is also possible that two facing gates may have stood in the south and the north-east, although there is no concrete archaeological proof of a gate in the south. At the north-eastern point the fortification wall is wider on both sides of the disturbed area, suggesting that there was once a gate here. The plan of one of the settlement's main gates, introduced in detail below, has been uncovered almost in full in the western section.

Figure 4. Large stone blocks on the outer face of the fortification wall in the east

In the southeast, the fortification wall curves very regularly towards the west. In this section of the settlement the houses contain –in addition to a room in front – small partitions adjacent to the fortification wall at the back, which are thought to have been used as silos. In the northern section of the settlement, single-roomed houses built adjacent to the fortification wall have been uncovered. These severely-burnt houses were built on a very steep slope; the difference in height between their front and back sections reaches almost two metres (Fig. 4). The basements of these houses had a sloping surface, and it is thus likely that the wooden floor of the upper level was built at the same height as the internal section of the site. The likelihood of this is increased by the fact that the houses had very thick foundations to carry the second floor and a significant amount of finds were uncovered not directly on the floor but within the deposit. Furthermore, the houses here have front porches that are not particularly deep.

The EB II settlement has two main phases, whose stratigraphic relationship could not been precisely followed everywhere on site. The pottery however displays homogeneous characteristics across the two phases, suggesting a relatively short time span, and shows parallels with Küllüoba IV B phase (c. 2500-2450 BC) (Sarı 2012: 169).

2. ARCHITECTURAL REMAINS

Here the areas for which the architecture has been studied are presented in three sections: western, northern and eastern. The southern section of the settlement has been almost completely destroyed, probably as a result of building activities during the Roman period.

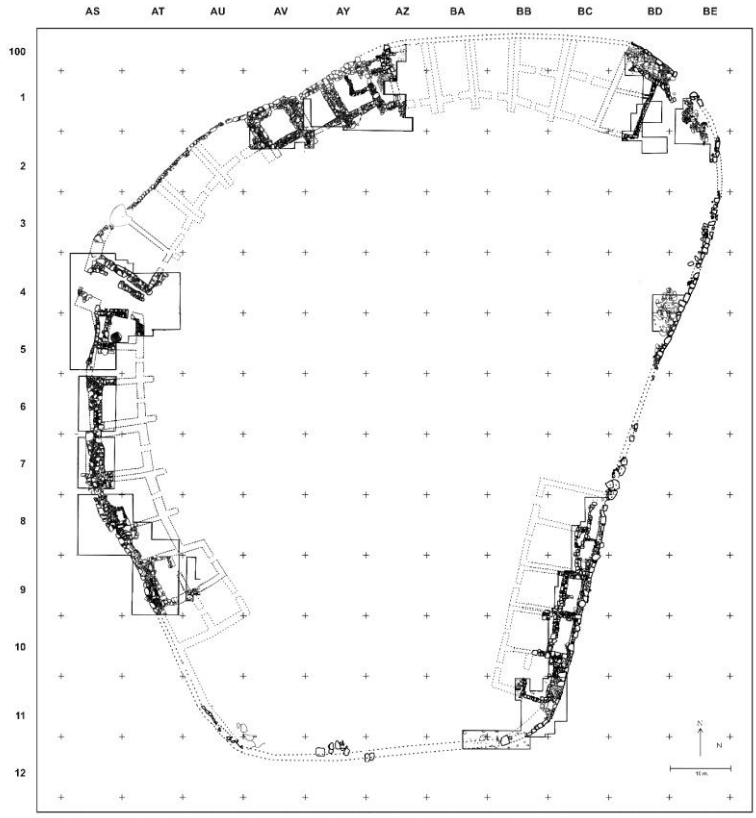

Figure 5. General settlement plan of the Keçiçayırı EB II period

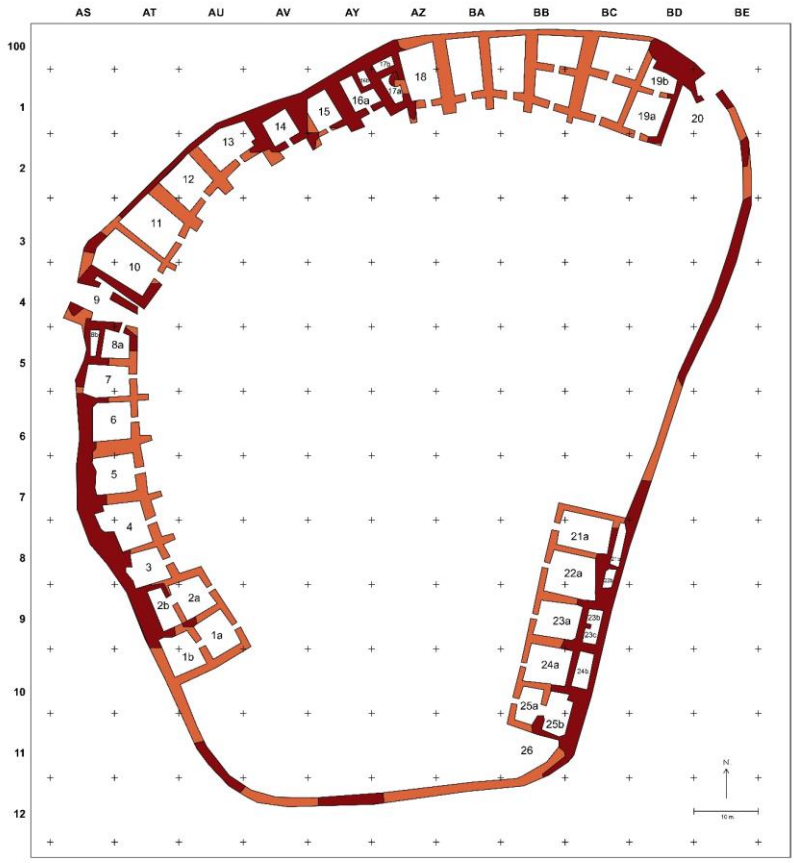

Figure 6. Schematized settlement plan of the Keçiçayırı EB II period

2.1 Western Section

In the west of the settlement, excavations have been carried out in grids AT 9, AU 9, AS-AT 8, AV 8, AS 7, AS 6 and AS-AT 4-5. Furthermore, in the north-western section, the defensive wall has been documented through cleaning works in grids AS 3-4, AT 2-3, AT/AV 2 and AV 1-2. From the destroyed south-western section of the settlement to the western section towards the north, thirteen rooms, including the gate, have been determined. These rooms have been numbered consecutively from south to north (Fig. 6). In this section the fortification wall and houses adjacent to this wall have been uncovered (Figs. 7-9). The majority of the front sections of these single-roomed houses that open onto a possible courtyard in the centre of the settlement have not been excavated. It is thought that the two southernmost buildings in this section were each formed of two rooms. We can assume that the other buildings are formed of a single room and a porch, as seen in the examples whose front parts were also excavated in the north (rooms 14-16).

Figure 7. Fortification wall and the houses built against it the in the western section

In the southernmost part of the western section, only the northern sidewall of rooms 1a and 1b have been uncovered. This wall was used jointly as the south wall of rooms 2a and 2b to the north of the building. During the work carried out on the front part of room 2a, the bedrock was reached at a level of approximately 0.4m below the surface. However, these two buildings, as stated above, were made of two rooms. The remains of a partially destroyed oven were found in the northwest corner of room 2a. It is clear from the deposit that this room suffered a fire, although the interior of the room has not been excavated. It is thought that the building to the north was a single-roomed structure. This room (number 3) measures 6.0 x 5.2m and in its northwest corner, adjacent to the fortification wall, a rectangular silo was built. An additional wall, partially made of small stones, was built at the point where the fortification wall meets room 4 further to the north.

Figure 8. Drawing of the architectural remains in in the western section

Here, the gaps between the rear walls of the houses and the fortification walls were not filled with small stones as they were in the south. We can therefore conclude that the buildings from here to the northern section were constructed adjacent to the fortification wall. A silo was uncovered in the northwest corner of room 4. Room 5, measuring 6.0 x 5.4m, is adjacent to this room from the north. Here, the fortification wall corresponding to this room is

comprised of two walls, the outer of which has been partially destroyed. The second wall is made of smaller stones. The third wall, adjacent to these walls, belongs to the building. The fact that room 5 has independent walls of its own suggests that this building had a roof at a level different from the other buildings adjacent to it. The dividing walls between rooms 5 and 6 have to a large extent been destroyed.

Damage on the interior of the fortification is also found on the wall further north. This is why the section of the fortification wall that coincides with the rear of room 7 appears weaker than in other sections. To the north of this room, a long, thin corridor-shaped room (room 8b) was uncovered inside the fortification walls, and to the east of this corridor a rectangular room with an oven was uncovered (room 8a). Heavily burnt mudbrick rubble shows that these two rooms also suffered serious fire damage.

Figure 9. Fortification wall and part of the house built against it in Trench AT 9

The settlement's "Western Gate" is located where the slope decreases slightly, at the end of the natural terrace that rises from the bottom of the western slope (room no. 9, Figs. 10-11). The gate opening measures 5m and is delimited by two thick opposing walls. These two walls join the body of the fortification wall from the south and north, and approach each other slightly in the east in order to form the entrance of the interior gate. The pile of stones found at the front entrance of the partially ruined gate show that two facing towers may have been placed at each side. The gate room is reached from the front entrance, which is set out a little from the body of the wall. The recess in the north-western corner of the gate room may belong to a staircase landing used to reach the upper floor of the tower.

Figure 10. Western Gate, from the west

Figure 11. Western Gate, from the east

The wall belonging to the south wing continues for approximately 6m to the east, after which it turns south to form the front façade of the house here with a wall made of smaller stones. In the wall that delimits the gate from the south there is a doorway measuring 0.6m in width. This door provides access from the gate room to room 8a, which contains an oven and was probably used as a guard's room. The wall to the northern wing continues for 8m, after which it bends to the north, forming the front façade of the room here. On the eastern side of the doorway, an additional wall was built parallel to this north wall to form a corridor 0.5m in width. The internal gate that is located between the eastern end of the additional wall and the southern sidewall of the gate, measures 2m in width. At the same end of this additional wall there is a very smooth-surfaced serpentine stone. This stone may have been the base for a wooden post that was possibly located at northern wing of this gate. As such, it is probable that the Western Gate was formed of two entrance gates at each end, with an intermediate room in the centre. It is therefore likely that the entrance to the settlement was closed off by two separate wooden doors. We assume that the narrow, corridor-like entrance in the north was regularly opened and closed for everyday activities, while the wider gate was opened in exceptional circumstances. According to T. Efe, this corridor may have been used to reach the gate room and attack the enemy from behind if they managed to force the interior door (Efe et al, 2011: 15).

The gate's northern wall also forms the southern wall of building 10. The bedrock behind this room seems to have been integrated into the fortification wall. From this section towards the northeast, in the section corresponding to grids AS 3-4, AT 2-3, AT/AV 2 and AV 1-2, the fortification wall continues with offsets at regular intervals, and only the external row of the wall's stones has been uncovered. Here the side and front walls of rooms 11 and 12 have not been excavated.

2.2 Northern Section

In the settlement's northern section, excavations have been carried out in trenches AV 1-2, AY 100, AY 1, AZ 100 and AZ 1. Here, four rooms were uncovered, most of which suffered fire damage (Fig. 13). These rooms, with their back onto the fortification wall, are adjacent to each other and three of them feature independent walls. Of these, room 14 measures 4.6 x 4.1m, and in its EB II layers many loom weights and pottery sherds were found. Room 15, which is adjacent to this room from the east, has its own independent walls like the other houses in this section, and measures 4.0 x 5.2m. A lower-phase floor that again slopes downwards from south to north, was reached approximately 2m below the surface. The difference in level between the south and north of the floor is approximately 0.4m. Approximately 15 loom weights were found in the southern part of the room. As well as this, restorable pottery, a chipped stone blade and a brush were found in the room. Immediately to the south of this room the bedrock rises suddenly, and in the south-western corner the wall therefore continues towards the west in zigzags. Although the room's entrance has not been fully determined, a gap found in the middle section of the southern wall may belong to an entrance.

Figure 12. Burnt room 16 in the northern section with in situ finds.

Located to the east of room 15, room 16 was severely burnt like the other rooms in this section, and all the deposit here has been excavated, bringing important finds (Fig. 12). In the north-eastern quarter of the room, a separate cell-type chamber was uncovered, delimited by small stones slabs, placed immediately on the floor. The northern side of this chamber is enclosed by the body of the fortification wall. The western and southern walls of the chamber must have also served as supporting walls for the upper floor of the house. The walls of the house measure approximately 1m in width and the floor has a steep slope; the fact that the pieces of some of

the vessels are spread over a large area gives the impression that they may have fallen from an upper floor, suggesting that these houses had basements. The difference in height of the floor between the north and south is approximately 1.3m. The entrance to this room opens onto a terrace cut into the bedrock. This room has an area of 27m², and here almost every variety of finds that could be found in an Early Bronze Age settlement was recovered *in situ* in a single room, concentrated along the room's eastern wall. As well as over forty pieces of restorable pottery, the finds included marble idols, animal figurines, grinding stones, many loom weights, spindle whorls, metal moulds, *tuyères*, a clay stamp-seal, clay brushes, andirons, piece of a portable hearth, a decorated drum-shaped clay object, chipped stone blades and a chipped stone arrowhead, a stone mace head, and a pounding stone. Most of these finds came from within the deposit accumulated above the floor, giving the impression that they fell from the upper level. Besides the artefacts related to metallurgy, recovery of many different find groups gives the impression that the upper floor housed objects needed for daily use.

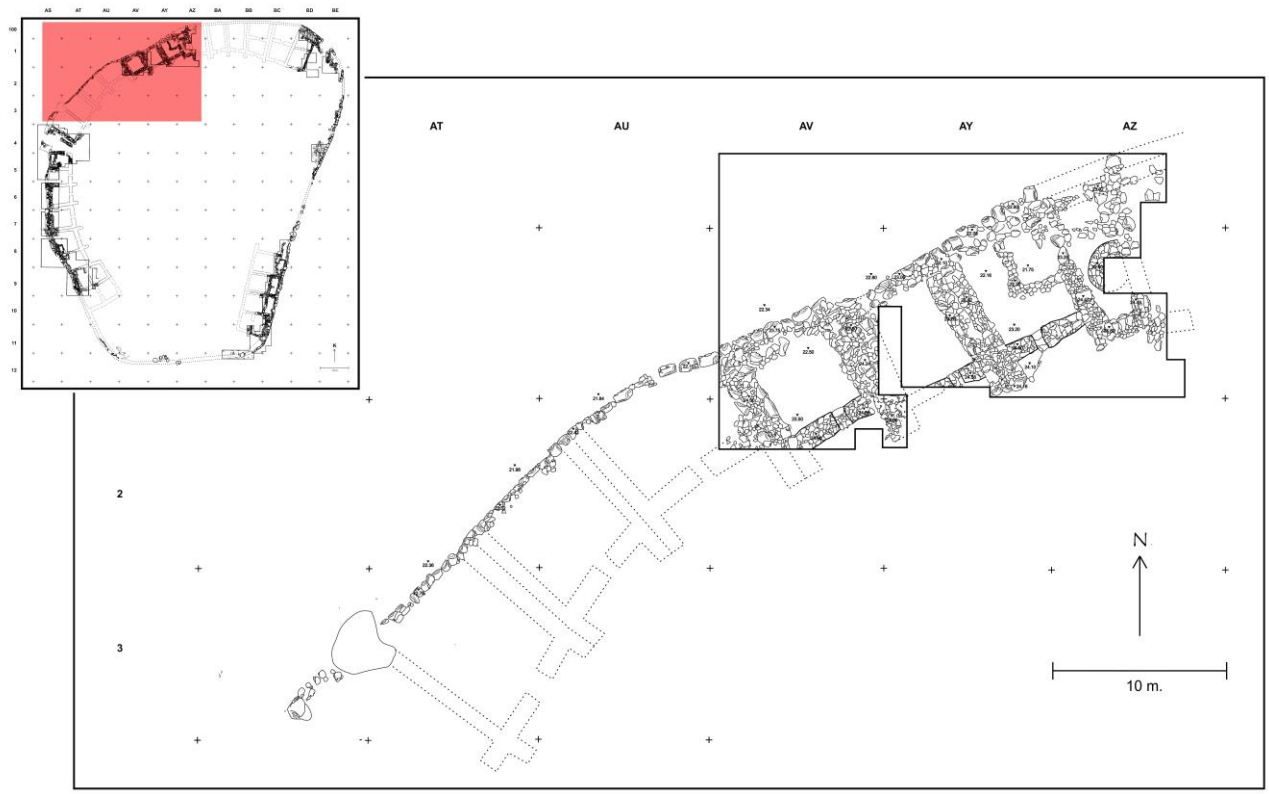

Figure 13. Architectural remains in the northern section

Figure 14. Outer stone row of the fortification wall in Trench BD-BE 4-5

Further east lies a narrow trapezoid room (room 17a). Close to the centre of the room, the remains of a large oven were determined adjacent to the eastern wall. The floor of this oven is laid with stone chippings. At the back of the room, against the fortification wall, is a cell-shaped unit measuring 2.2 x 1.0 m that was probably used as a silo. Room 17a shares a wall with room 18 to the east. We have no information on the plans of the houses further to the east due to lack of excavation.

2.3 Eastern Section

The external line of the fortification wall has been documented through excavations carried out in trenches BD 1, BD 2, BE 1 and BE2 in the northeastern section of the Keçiçayırı settlement, as well as through cleaning work in trenches BE 3, BE 4, BD 5 and BD 6 (Fig. 15). Further south, in the southeast of the settlement, excavations were also carried out in pits BD 7, BC 8, BC 9, BC 10, BB BC 11 and BB 12 (Fig. 17).

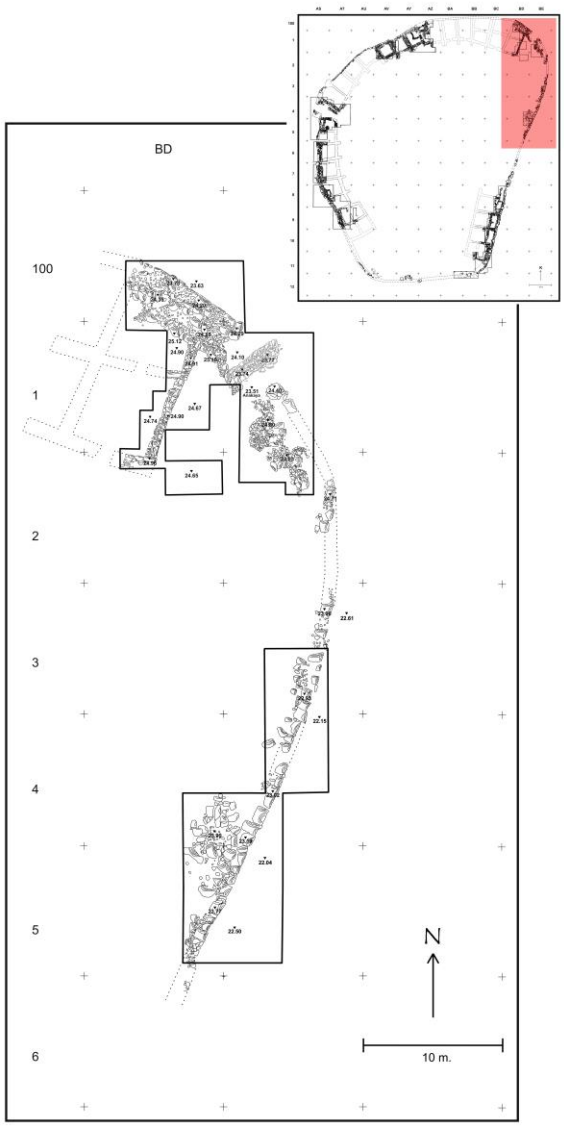

Figure 15. Fortification wall and the houses built against it in the northeast of the settlement

The fortification wall has thus been almost fully uncovered in the eastern section (Fig. 14-15). The remains of buildings were exposed in the south-eastern section, and it is thought that one of the gates of the settlement may have been located at the north-eastern end. However, due to destruction over an extended area, it is not certain whether or not a gate existed here. As stated above, since the fortification wall is wider on both sides of the ruined section, there is a high possibility that a gate was located here. Here, a wall built perpendicular to the fortification wall stands on the bedrock and was built prior to the fortification wall. We cannot say with certainty whether or not this wall remained in use after the construction of the fortification wall. To the west of the destroyed section, the fortification wall is formed of four rows of stones. The gaps between these are again filled with stone chippings. A wall measuring 9 m in length was uncovered to the west of the possible entrance. This wall belongs to a two-roomed building (nos. 19a and 19b) with no front porch, whose rear wall lean onto the fortification wall.

Figure 16. Row-houses along the fortification wall and possible silos in the eastern section, from the south.

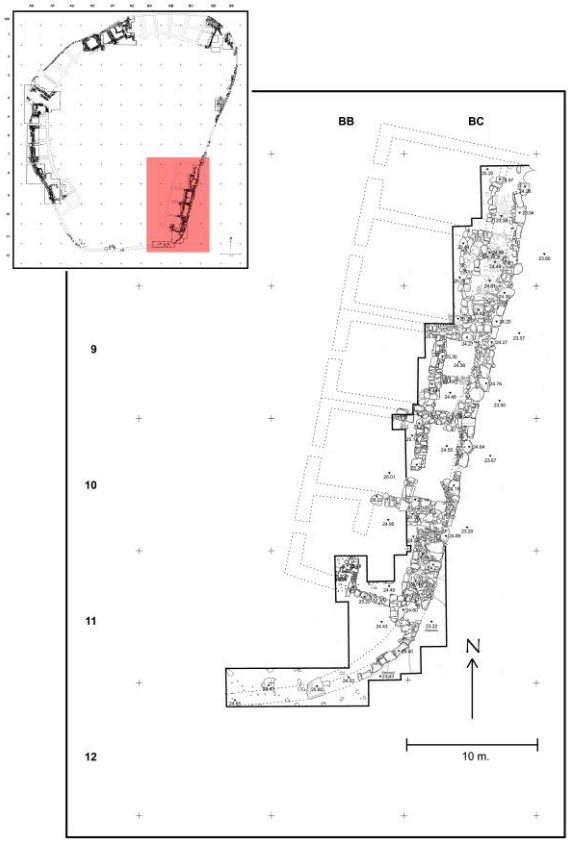

Figure 17. Drawing of the architectural remains in the eastern section

From this section, we can trace the fortification wall, which is built of very large clear-cut stone blocks, running south for approximately 60m (Figs. 16, 17). Here we also see that in some places huge outcroppings of bedrock were included in the body of the fortification wall. Four of the five houses partly exposed in the southeast of the settlement (numbers 22a-b, 23a-b, 24a-b and 25a-b) have small cell-like rooms (cubicles) at their backs. The house in the south has two rooms (numbers 25a-25b) without cubicles. Large sherds from a pithos have been found in cell 22b behind room 22a. There are two cubicles (numbers 23b and 23c) behind room 23a, with a door for traffic between them. A beak-spouted jug has been recovered in the deposit of cubicle 23a. The rectangular cubicle of the third house (no. 24b) is larger than those of the others.

In the very south, the fortification wall curves very regularly towards the west, and begins to rise towards the surface (Fig. 17). Just as in many other sections of the fortifications, the wall here does not sit directly on the bedrock, and a cultural deposit of 0.3 m in thickness was found underneath. Furthermore, it has been determined that large stones were used for the fortification wall onto which room 25b is attached, and three rows of well-preserved stones reaching 2m in height have been determined on the wall's exterior façade. After this section the fortification wall rises gradually to the west on the virgin soil, and here only the exterior row of stones of the wall has been preserved. However, further to the west, both the fortification wall and the buildings inside the settlement have been completely destroyed. Since the slope outside the site here is very slight, it is possible that one of the entrances to the settlement would have been located in this section.

Figure 18. Flint quarries around Cıbırada

3. ARCHITECTURAL CONSTRUCTION TECHNIQUES AND MATERIALS

At Keçiçayırı, the fortification walls that are in places built on a very steep slope follow the external contours of the Cıbırada Hill, where the settlement is located. We can see that, in the eastern and south-eastern section, the walls were built into the deposit of the previous level, while in other sections the lowest row of stones was placed directly on the bedrock. According to geologist Prof. E. Altunel, who carried out investigations at the site, the large blocks of limestone used for the external façade of the walls and the small and medium-sized limestone rocks used in the walls of buildings were taken from limestone layers on the slopes of Cıbırada. Thanks to naturally-formed horizontal and vertical cracks, the stone blocks were removed from their stratum with no need for cutting and were used in the settlement with no further shaping. Also flintstone lenses between stratified limestones in the bedrock were detected by geologist Prof. E. Altunel. These layers of flinstone are located on a ridge northeast of the settlement, and were certainly quarried during the prehistoric times, as indicated by the abundance of working debris, flakes and some prismatic coresscattered in the area (Fig. 18-19).

Figure 19. Flint quarries on the Cıbırada

In the settlement of Keçiçayırı, the rear walls of the houses were mainly constructed independently of the fortification walls, with the resulting gaps filled with stones of various sizes. The body of the fortification wall is built entirely from large stones. Generally made from a single row of stones, the fortification wall is formed of two rows in the northern section. In the places where the bedrock protrudes from the surface, this has been incorporated into the body of the fortification wall. In general, a single row of medium-sized limestone blocks was used for the stone foundations of buildings. At the southernmost point, the preserved row of stones from the fortification wall that curves towards the west has been completely destroyed, as it increasingly rises to the surface in the west. This can clearly be seen in the south-eastern section, where the external row of

stones for the fortification wall is not generally placed directly on the bedrock. In this section, on the external façade of the wall, three rows of large stones that were placed on top of each other to reach 2m in height have survived intact. No preserved mudbrick walls were found on the stone foundations of the fortification walls and buildings. The very small amount of mudbrick remnants found around the walls suggests that the buildings were to a large extent built of stone. Floors have been uncovered in only a few rooms and were made from beaten earth. We can understand that the houses built on a very steep slope in the north had basements. Therefore, the wooden floor of the upper level must have been built at the same height as the ground level at the front of the house.

4. COMPARISONS

The settlement of Keçiçayırı, located in the Phrygian Highlands, dates to the end of the EBA II period and displays an almost oval-shaped irregular form due to the fact that it follows the external contours of the slope on which it is located. The houses adjoining the fortification wall open onto a possible central courtyard. Keçiçayırı's settlement plan reflects the characteristics of what M. Korfmann describes as the "Anatolian Settlement Plan" (Korfmann 1983: 222) and that the author describes as the "Inland Western Anatolia Settlement Model" (Fidan 2013: 117). It shows similarities with that of Küllüoba phase 5, dated to the Transition Period into the Early Bronze Age (ca 3200-3000 BC), the EBA I and II periods at Hacılar Büyük Höyük, Karataş-Semayük and Demircihöyük; the EBA II settlements of Küllüoba and Karaoğlan; and the early EBA III period settlement at Seyitömer (Korfmann 1983: fig. 343; Topbaş et al. 1998: fig. 2; Duru, Umurtak 2010: fig. 2; Mellink 1974: fig. 1; Fidan 2012: figs. 7, 21; Umurtak, Duru 2013: fig. 4; Bilgen 2010: 565). Furthermore, at Keçiçayırı no houses are found outside the fortification wall, as is also the caseat Karaoğlan, Demircihöyük and Bademağacı. As we know, upper and lower settlements in the pre-EBA III period in the area are thus far only attested at Karataş-Semayük and Küllüoba. The main difference between Keçiçayırı and all the other settlements established on plains is that it is a fortified hill-top settlement.

In places, the defence system at Keçiçayırı was built very robustly. Large stone blocks were used in the construction of the fortification walls. Also sometimes the bedrock was used as fortification wall in Keçiçayırı. Dhaskalio is the best parallel example of this situation on the Aegean coast (Boyd 2013). The gaps between stone blocks, that in places formed two or three rows built back to back, were filled with small stones or stone chippings. In this way, the wall construction technique in the settlement closely resembles that seen in the Karaoğlan Mevkii settlement (Topbaş et al. 1998: 24-25). Furthermore, in Karaoğlan Mevkii, like in Keçiçayırı, indistinct sawtooth offsets were observed on the outer face of the fortification wall. Furthermore, we can say that after Troy and Liman Tepe, Keçiçayırı represents the strongest defence system of the period built in Western Anatolia (Mellaart 1959; Erkanal 2001, 263). It is known that strong fortification systems were built in settlements on the Aegean coast possibly against the danger which is expected to come from the sea (Caskey 1968; Doumas 1972: 159; Bossert 1967: 58; Parlama 2003: 281–287, Liritzis 2010: 1368).

However the establishment of such a strong fortification system on a sheltered hill in inland western Anatolia is quite surprising. As it is in the Neolithic period, it is possible that the reason to settle here in the Early Bronze Age is the flint quarry located on the hill where the settlement was situated. So it is possible that the strong fortification system encircled the settlement is to guard the flint quarry. The settlement was dated to the end of the EB II period, which is characterised by the beginning of intensive trade relations between inland western Anatolia with northern Syria via Cilicia (Efe 2007). Keçiçayırı was situated along a line in the south-north direction in the eastern side of the Phrygian highlands, between Emirdağ and Eskişehir plains, probably on the path of the trade route coming from Akşehir and Bolvadin toward Eskişehir plain (Efe et al. 2011: fig. 16).

On the fortification wall in the western section of Keçiçayırı, the space the size of a house was set aside between the houses adjacent to the wall for a gate. The plan of the entrance known as the "Western Gate" resembles a long single-roomed house. In Küllüoba, the "South-eastern Gate" dating to the beginning of the EBA resembles a trapezoid shape that narrows inwards (Fidan 2012: fig. 12). The form of the gates thus resembles the long house-shaped gates with two open ends found in the settlement of Bademağacı (Duru, Umurtak 2010: fig. 2). In fact, the most developed of these gates that resemble a long house are seen in the entrances at the settlements of Troy IIc, d, e and f (Mellaart, 1959: figs. 6-8). However, these long, megaron-plan gates with deep porches at the front and rear are different from those at Keçiçayırı, as well as from those at Bademağacı and Küllüoba. While the plan of the gates in these settlements is different from that of the other houses, the gate plan in Troy must have been inspired by the megaron plan in the site during the same period. The megaron building type forms a characteristic house plan in Western Anatolia from the beginning of the

Early Bronze Age (Düring 2011: 263-270; Fidan et al. 2015: 67) and it also holds an important place at Keçiçayırı. Porches of the single-roomed buildings in the north of the settlement have also been uncovered. Based on this, it is thought that the buildings of similar size in the western section were also built in the megaron style with a porch. The rows of adjoining houses mostly have their own independent walls, and these megara were used as dwellings. We can assume that the rectangular cells located along the fortification wall in the east served as storage rooms.

5. CONCLUSION

As the aim of the excavations on the hill of Cıbırada was to discover the settlement plan, there has, as stated earlier, been little opportunity to excavate the archaeological deposits within the rooms. However, investigations in the burnt rooms in the northern section yielded a large amount of intact pottery dating to the EBA II period as well as finds made of stone and baked clay. These rooms, which were thought to be dwellings in the settlement, sometimes have silos at their backs. As we can understand from a few well-preserved rooms, these houses also had a hearth or an oven. Although their function has not been precisely determined, the rear of the buildings in the eastern section may have been used for storage purposes.

The most distinctive feature differentiating Keçiçayırı from many other excavated contemporaries is that it was established in a mountainous area on a high hill. In this sense it's only possible to compare Keçiçayırı with Göltepe on the Taurus Mountains (Yener 1995: 177). Also some Early Bronze Age settlements in the highlands contemporary with Keçiçayırı have been found in surveys carried out on the Upper Menderes Basin in recent years (Dedeoğlu 2014: 24).

In summary, Keçiçayırı is of great importance as it shows that, around the mid-third millennium BC, settlements fortified with strong walls were built in the highlands of the Eskişehir region, especially in parallel to intensified trade relations between distant areas. The settlement, which currently represents the only known example of these sites in Inland Western Anatolia, may have been built to manage and protect sources of flint. Furthermore, the settlement of Keçiçayırı may have served as a caravanserai to accommodate traders travelling between regions during this period or as a guard post established with the aim of ensuring safety along the route.

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