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# TSIKHIAGORA 

Zurab Makharadze • Nino Kalandadze • Ana Sakhvadze







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## TSIKHIAGORA

## INTRODUCTION

The Tsikhiagora ${ }^{1}$ settlement is located in Shida Kartli (central region of Georgia), in approximately 45 km north-west of Tbilisi, on the right bank of the Kura river, on the northern outskirts of the village Kavtiskhevi (the Kaspi region), on the left bank of the river Kavtura, where the small river Shavtsqala joins the Kavtura, in the arable lands (PI. 1-3). Geomorphologically, the hill is of a raised type. Its average height reaches 12 m , while the summit's area covers 0.5 ha. (Fig. 1-3).

## GPS - 41.87449, 44.46889

The study of the Tsikhiagora site was carried out by the Kaspi Region Archaeological Expedition of the Centre for Archaeological Studies of the Georgian Academy of Sciences. The expedition worked under the leadership of Giorgi Tskitishvili in 19711993, while in 1995-2003 Zurab Makharadze was the head of the Tsikhiagora archaeological expedition. In the course of excavations, 5 cultural-chronological layers were identified, dated to the Early Bronze, Middle Bronze, Late Bronze, Early Classical, and Hellenistic periods. The total height of the stratigraphical section exceeded 6 m .

## The historical topography of the site

On the territory surrounding Tsikhiagora, on an area of 7 ha, archaeological sites of different periods and various characters have been revealed. To the west of the hill, across the river Shavtsqala, 80 m away, an Early Bronze Age necropolis was located, which has been ruined. In 50 m north-west of the hill, there was revealed a burial-ground of the $13^{\text {th }}-7^{\text {th }}$ centuries B.C., while within 800 m a necropolis of "Kasraant Lands" was found. A burial site of Dachrilebi was studied in 350 m to the north, and in 150 m northward the "Sakaraulo Seri" necropolis was revealed. On the "Sakaraulo Seri" a settlement was also studied, which reached the left bank of the river Shavtsqala. Settlements of the $3^{\text {rd }}$ century B.C. and
$5^{\text {th }}-8^{\text {th }}$ centuries A.D. are evidenced on the right bank of the river Shavtsqala, at the locality of "Okromitsebi" (Golden lands) (Pl. 3-4).

On the arable lands located eastward and northward of the hill, a large village-type settlement was discovered (covering an area of approximately 3 ha ) (PI. 2). Cultural layers dated to the $6^{\text {th }}-4^{\text {th }}, 3^{\text {rd }}-2^{\text {nd }}$, and $1^{\text {st }}$ centuries B.C. were revealed there. The settlements are close to the surface of the land and have been preserved in a fragmentary way (since this territory has been ploughed over many centuries).

A flat earth-roofed, two-chambered house dated to the $3^{\text {rd }}$ century B.C. is relatively well preserved. It is erected on a cobblestone foundation of a mixture of clay solution and unfired adobe. In one room a bipartite closed oven and a low family altar were installed. The second room is much smaller and seems to be of household function. Pottery shards and an iron sickle were discovered there [40; 42].

The necropolis of "Sakaraulo Seri" is located in 150 metres north of Tsikhiagora. It is dated to the $13^{\text {th }}$ century B.C. $-4^{\text {th }}$ century A.D. Here pit burials of the $13^{\text {th }}$ century B.C.-the first centuries A.D. were excavated, as well as pithos-burials of the Roman period, and cist-graves of the $1^{\text {st }}$ century B.C. $-4^{\text {th }}$ century A.D. In the pit graves and pithos-burials the deceaseds were laid crouched on either the right or left side, while in the cist-graves - on the side, crouched or in the supine position. The pit graves of the $13^{\text {th }}-11^{\text {th }}$ centuries BC were characterised by the abundance of pottery and jewellery. Additionally, from the $9^{\text {th }}-$ $7^{\text {th }}$ centuries B.C., weapons were discovered in the pit graves [5]. The inventory discovered in the pit graves of the $3^{\text {rd }}-1^{\text {st }}$ centuries B.C. is not diverse; jewellery and beads of different materials and shapes are uncovered alongside the pottery [36]. One rich burial stands out (PI. 98-99; Fig. 45 $)$ [41]. In 2002, during surface surveys of this territory a silver drachma of Alexander the Great (336-323 B.C.) was discovered in

[^2] sectors are referenced with Roman numerals, while the squares are marked with Arabic ones.
a destroyed layer. On the averse of the coin the head of young Heracles (having facial features of Alexander the Great) is presented, facing right, wearing a lion skin; on the reverse Zeus is depicted, sitting on a throne to the left. Behind him, traces of a Greek inscription (A^ミANAPOY) can be noted. Zeus has an eagle sitting on his right hand. Below the throne a monogram ( $M$ ? M ? ) is visible (Fig. $75_{3}$ ) [28].

The pithos-burials found on 'Sakaraulo Seri' are placed horizontally in the ground. They often have a tile, a stone or a shard of pottery, covering the mouth. The burials are dated to the $1^{\text {st }}$ century B.C. $-1^{\text {st }}$ century A.D. The inventory consists of small-sized tableware and jewellery [53]. Cist-graves are relatively few in comparison with the other types of graves. They are dated to the $1^{\text {st }}-2^{\text {nd }}$ centuries A.D. Stone slabs are used for construction. The sides of graves are made of solid stones; the roof is composed of two or three slabs. One or two deceased are found in each grave. The grave inventory is scanty, composed of one clay vessel and small pieces of jewellery [36].

The "Dachrilebi" burial ground is located 200 m north of the "Sakaraulo Seri". It is dated to the mid-dle-second half of the $4^{\text {th }}$ century B.C. On this necropolis only pithos-burials are attested. Several cases of burying deceased in the re-used pithoi are evidenced. Some of the pithoi are decorated with
red paint. The excavated burials are almost identical. This fact indicates to the identical social status of those buried. The pithoi are placed horizontally in the ground, facing east. The inventory is mainly composed of tableware and jewellery [24; 28].

One more necropolis, namely that of the "Kasraant Lands", was excavated near Tsikhiagora, in 800 m north-west of the site. The burial ground covers an area of $600 \mathrm{~m}^{2}$. It is dated to the $6^{\text {th }}-4^{\text {th }}$ centuries B.C. On the necropolis pit burials were revealed, some of which were covered with stone slabs. In each burial, one deceased was buried, as a rule. The deceased were buried in a crouched position, lying on either right or left side. In the burials the floor was paved with clay. In some cases the floors have apparent traces of fabric or leather. Grave goods were composed of pottery, iron objects, jewellery, and sometimes weapons. In two burials, the deceased were resting on the stone slabs covering the burials located below them, without any belongings at all [1].

Thus, the historical topography evidenced that the central place of this micro-region is the Tsikhiagora hill, where the earliest settlement appears in the Early Bronze Age. The hill and surrounding territory are most intensively settled in the $5^{\text {th }}$ - $1^{\text {st }}$ centuries B.C., when an architectural complex functioned on the summit of the hill (PI. 3-4).

## THE LAYER OF THE HELLENISTIC/POST-ACHAEMENID PERIOD

The summit of Tsikhiagora has been systematically ploughed since the 1930s. That is why the uppermost cultural layers were damaged and destroyed. Two elevations were noted on the surface of the hill. One is located on the north-east side of the hill (where a temple of the level III was excavated), while the other - in its north-west part (on top of the mill of level III and room № 15). Between these two elevations there was a deepening, while the entire surface of the hill was slightly sloping southwards. Due to this, during the excavations of the surface layers, different situations were shaped in different places. The total thickness of the Hellenistic layer reached 4.5 m . In sectors XXI-XXII and XXVII, two construction levels were identified, covering the temple complex of level III. However, in sector XXVI only one level was attested. The ruins of construction level III (the temple complex) were revealed immediately under the humus layer. It should be noted here, that in squares $12,13,14,37,38,39,62,63,64,87,88,89$ of sector XXVI, the entire area has been excavated and damaged by a bulldozer, before the arrival of the archaeological expedition to this region. That is why the uppermost layers (up to those of Kura-Araxes culture) were completely destroyed. In sectors XXV and XXVI, construction level I appeared immediately under the humus layer. Only the lower parts of pithoi were found there, during the placement of which the stone walls of the layer II were damaged; sometimes the damaged mud-bricks of layer III (temple complex) have also been destroyed. Two pithoi were laid down horizontally; small fragments of human bones were discovered in them. Before the excavations in sector XXI, scattered pebbles and pottery sherds were attested in the uppermost layer. After the removal of the humus layer and cleaning of the pile of cobblestones, a fragment of cobblestone building was discovered ta the depth of some 0.3 m . Some fragments of northern and western walls were preserved, forming a corner of the building. The length of the western wall is 6.5 m (it is disfigured and could not be measured precisely), while the northern wall is 4 m long. The width of the walls is more or less 0.75 m . To the west of the western wall there were found three quadrangular cliff rock stones. On two of them round wooden imprints can be noted; it can be supposed that they represented the column bases. The
distance between the supports is 1.6 m . It seems that this building had a corridor with a front door. During its excavations, no fragments of tiles were found. That is why we presume that this building had a flat roof. To the west of the front door pillars, in squares 564-589, nine small pithoi were discovered. They were scattered, half-buried in the ground. Only their lower halves were preserved. In addition to this, two big two-handled pitcher-shaped jars were found there. Both jars are red-painted. On one of them a hunting scene is depicted, while on the other jar geese-like birds are painted (PI. 28-29; Fig. 46-47). The decor on both jars looks very much like that of the Samadlo pithoi with regard to both the subject and the manner. In the ceramic material of the layer, fragments of household pottery prevailed. The greatest part of the obtained material is composed of red-clay pottery. Fragments of black-fired and polished tableware were found, as well. Generally, this building (constructed of cobblestones) and its floor level were located on the entire clay mass. It could not be the bedrock. Thus, it is evident, that this layer is earlier than the temple complex excavated in the construction level III, despite the paintings similar to those from Samadlo [42].

A pit grave, found in square 589, belongs to the level I. It was revealed at the depth of 0.15 m from the ground surface, directly in the humus layer. Both the skeleton and accompanying grave goods were destroyed and in disorder. Of the skeleton only the limb bones were preserved in the burial. It appeared that the deceased was buried with the head pointing to the east. On the wrist of the deceased there was an iron bracelet, only fragments of which were preserved. The deceased was also furnished with a black-polished, rim-moulded and big-sized bowl (fragm.), a similar but smaller bowl (broken at its time and pierced to be restored), and spherical black-polished pottery fragments (PI. 32 1,2 ). The stratigraphy of this burial, its intrusion into the layer containing painted pithoi, the location of the burial floor above the amorphous mass of the mud-brick ruins of the lower layer, as well as its inventory, date it to the end of the $2^{\text {nd }}$-beginning of the $1^{\text {tt }}$ century B.C. [42].

Level II overlaps the ruins of construction level III (of the temple). In sections XXII and XXVII this level is represented by fragments of walls built of cobblestones, using clay solution. It seems that at this level there were many buildings composed of large and small compartments, but they are preserved so frag-
mentarily that it is difficult to reconstruct their plans． These fragments of the buildings were located at the depth of 0．1－0．2 m from the ground surface．The pre－ served height of the walls is $0.2-0.3 \mathrm{~m}$ ．The cultural layer，connected with these walls，mainly consists of black－fired pottery．Among them jars with profiled surfaces are noteworthy．According to this material， layer II should be dated to the $3^{\text {rd }}-2^{\text {nd }}$ centuries B．C． （PI．35，37－38；Fig．48－49）．Two burials were excavated in this layer．One of them belonged to a child．The child was buried in a two－handled red－painted jar． The burial was found in square 559 of sector XXII， along a fragment of cobblestone wall，at the depth of 0.7 m ．It seems that the child has been buried in the house．On the pitcher－shaped jar only one han－ dle is preserved．It is pink fired．The shoulders of the vessel are decorated with a row of red－painted triangles and two parallel bands．The burial was not furnished with grave goods．The second burial was revealed in square 100 of sector XXVI．The burial pit had been dug out in the ruins of level III，reaching the surface of the destruction level III（in front of the western gate of the temple yard）．A crouched skele－ ton of an adult was found in the burial．The deceased was furnished with two earrings，made of bronze wire，an iron bracelet，a black－polished bowl，and a jug（PI． $34_{1-4}$ ）．

A quite different situation was evidenced in sec－ tor XXI，since here structures of the construction lev－ el II are built directly into the buildings belonging to the level III．Chamber №17 was excavated in squares $564,565,590$ ，and 591 of sector XXI．Obviously，it was embedded in chamber №16（grinding room）at level III after its demolition（PI．17；Fig．23）．The orientation of the walls in chamber №17 almost matches that of chamber №16（level III），but it seems that the builders did not take into account the existence of the walls of chamber №16（or maybe they had no idea about their existence）．That is why they did not use them． Moreover，they have not cleaned up the construc－ tion pit up to these walls： $10-15 \mathrm{~cm}$ are left up to the northern and eastern walls of chamber №16 and the walls of this new chamber №17 have been erected in this way．This chamber is much smaller than №16 （level III）．The thickness of the walls is 1.1 m ；doors are cut out in the southern wall．The door opening is 0.9 m wide．There was a wooden door－post near the outer edge of the door－opening，penetrating into the walls on both sides（approximately at the length of 30 cm ）．The preserved height of the walls is 1．9－
2.0 m ．The walls are constructed of unfired bricks．In the construction a pure or mixed ash solution was used to attach the mud－bricks．The mud－bricks are arranged alternatively－a half of mud－brick，then a whole one，and then another half－brick．In the next row two whole mud－bricks were used，and so long．After every two rows of masonry，longitudinal beams are placed between mud－bricks．The wood－ en beams have a cross－section of $12 \times 15 \mathrm{~cm}$ ，which corresponds to the thickness of mud－bricks．All the walls are plastered．They show slight and scattered traces of smoke，which should not be a result of fire． The floor of chamber №16（grinding room）of level III is used as the floor．A thin layer of earth is scat－ tered on the burnt floor of the mill．The only thing we can say about the purpose of this room（№17）is that it was built immediately after the destruction of the level III temple．We can also say that the ashes of sacred fire were stored there．A two－handled，brown－ fired bowl was discovered in this room，filled with pure ashes（PI． $34_{6-8}$ ）．It seems that the clergymen quickly renovated the temple ruins．Additionally，in chamber № 17 there were found red－and black－fired fragments of a big jar（PI．41）．To the east of cham－ ber № 17 （on top of the cellar of level III），a chamber was excavated，measuring $7 \times 6.5 \mathrm{~m}$ ．In its north－east corner a Khovle－type oven was revealed．There was nothing else in this chamber．The walls and floor have not been burnt．Preserved were remains of wood， which was gradually crumbled（from damp）．A sim－ ilar chamber was discovered to the west of it．Thus， a two－room $(18,19)$ structure was shaped，although no doors are visible between them．It is evident that this structure should be of the same date as that of chamber №17．Therefore，the temple of level III was destroyed in the later period．It is difficult to define the function of these rooms because，apart from the Khovle－type oven，nothing else has been evidenced． In chamber № 19 rotten roof beams were found，as well as the remains of a column．We can presume that chambers № 18 and 19 had flat roofing，since not a single fragment of tile was found here．Clean－ ing of this chamber has shown that the kitchen was built onto the burnt mud bricks of the defensive wall of level III，therefore this is a renovated chamber，too and the cultural layer contemporary to III temple is under it．In these chambers，there was revealed very scanty archaeological material，mostly fragments of kitchenware（PI．42－43）．

In square 42 of sector XXVI a big cist grave was
discovered, composed of four large stone slabs and covered by two slabs. In the stone box, the skeleton of a deceased was found, buried in a Christian manner. The remains of the older walls and floor have been destroyed by this burial; the deceased was not furnished with grave goods. It is the only one Christian burial excavated in Tsikhiagora. Its existence seems to be accidental.

In this sector a part of the building was excavated. It was built of adobe bricks. The foundations were built of pebbles in one raw, sometimes arranged in two rows. This building had a rammed clay floor. On the longitudinal axis of the building a charred wooden beam was revealed with branches arranged in the fish-bone way. On top of the beams, fragments of red-painted and unpainted tiles were revealed. It seems that the building was covered with tiles. Under this building a bakery of the III building level was revealed, destroyed by it [42, pp. 7-11].

## Temple complex

Level III was the best preserved and presented one of the Tsikhiagora site, covering the entire summit of the hill. In this layer, a temple complex was revealed, which consisted of a temple itself, a granary, a cellar, a grinding room, a bakery, a refectory, and residential structures (It should be taken into account that the entire complex was destroyed by fire, and this caused the better preservation of the site in many cases (Pl. 5-6; Fig. 1-3).

The main structure of the temple complex is represented by the temple itself (chamber №1), the inner yard of the temple, chambers №2 and №10. All these structures were built with one and the same construction technique and were covered by a common roof (Pl. 5, 10. Fig. 4-13).

The lower parts of the walls of the main structure are built of flat rock stones, piled up dry, with double facing. The facing stones are tied only longitudinally. Between these two facings shapeless crushed and broken rubble were placed in. The masonry was put together dry. Wooden beams are used to reinforce the walls. The beams are laid above the second row of the foundation wall; they are arranged lengthwise at every $0.75-0.8 \mathrm{~m}$; and at every $0.35-0.45 \mathrm{~m}$ in height. The thickness of the walls is 1.5 m . The height of the stone masonry is 2 m ( 3.5 m in chamber №10). The wall is built of mud-brick layers (in some places eight rows were preserved). The best preserved
wall fragment is 4.25 m high. It seems that the wall was at least 6 m high. Mud-bricks are attached with a clay mix and their horizontal and vertical joints are completely solid. This is due to the fact that along with square mud-bricks, half bricks $(0.42 \times 0.42 \times 0.2$ $\mathrm{m} ; 0.42 \times 0.21 \times 0.2 \mathrm{~m})$ are also used in the construction. The walls are plastered with a mixture of clay and boxwood on both sides [42; 110].

## The temple and inner yard

The temple (chamber №1) is almost square. Its inner dimensions are: $8 \times 7.5 \mathrm{~m}$. The temple stands in a square inner yard in such a way that the fence of the yard and the northern wall of the temple are shared (PI. 5-6, 10; Fig. $3_{1}$ ). A 1.6 m wide door is cut into the southern wall. The door-jambs are composed of stones all around. The windows cut into the eastern and western walls are 1.7 m wide. They are more than 0.75 m up from the floor level. For the floor of the building, wooden poles are used, led in the form of a chequerboard, covering an area of approximately $2.5 \times 2.5 \mathrm{~m}$. If the poles are tightly arranged in one direction in one section, in the neighbouring area of the same size the poles are arranged perpendicular to the first one. In general, the whole floor is covered with poles stacked in changing directions in this manner and is plastered with clay. In the centre of the hall, a wide square stone slab was found. A col-umn-like altar stood on the floor of the cella (PI. 45 ). According to G. Tskitishvili, a pillar, probably made of wood, necessary for roofing this chamber, was erected in the centre. Its capital should have been the double-protome column capital discovered in chamber №10 (PI. 96; Fig. 78). No traces of the in-ter-floor roofing have been evidenced in structure №1. In a common residential and household structure, such a height is not needed. It indeed gives to the temple a solemn look. This building was found to be almost completely empty, in terms of archaeological material. A number of fragments of red-painted pottery (Pl. 46), iron nails (large and small), as well as iron "batons" with widened heads have been revealed in this construction (Fig. 68).

The temple is surrounded by an inner yard on three sides (eastern, southern, and western ones). Almost in the middle of the yard, in 2.8 m from the temple door, an altar was revealed, built of dry masonry. It is rectangular in plan $(2.5 \times 3.2 \mathrm{~m}), 1.9 \mathrm{~m}$ high (Fig. $3_{1}, 8_{1}$ ). It seems that this is actually its original
height, since the clay daubing and ash were preserved on top of it. The burnt remains of a sheep, and a small knife were revealed on the altar. In the southwest corner of the temple yard, a $0.20-0.25 \mathrm{~m}$ high platform of crushed stone and clay was arranged. It measured $3.5 \times 3.5 \mathrm{~m}$. Its surface was plastered with clay in such a way that it deepened towards the middle (Pl. 5, 10). It can be assumed that this platform was intended for slaughtering sacrificial animals. The entrance door in the inner yard was cut into the eastern and western walls of the fortifications. All the door jambs were encircled by stones. On the verge of the western door, the remains of charred wooden beams were found, arranged in such a way that an impression of a fallen door was shaped. In the inner yard of the temple many fragments of adobe plastering were found, on which there were imprints of various shapes. The majority of these imprints were found in the eastern corridor of the inner yard. In the round shaped imprints a phoenix, a sun, and a deer are depicted, while in the quadrangular ones a rider, a winged deer or horse, and a dog are identified. The imprints were also found in other sections of the inner yard, but in small quantities (PI. 91-94; Fig. 69-73).

Apart from these, lids, a small cooking pots, red-painted bowls, a couple of fragments of pithoi, which are decorated with red paint, a fragment of an amphora-like vessel, and a so-called "shelf-like" item were found here (PI. 50-51).

## Chamber №2

Between the western wall of the temple and the defensive wall of the inner yard, a partition wall of mud-bricks is built, thus shaping a small chamber (№2). The entrance door is placed in the southern wall, in the partition wall (Fig. 9). A wooden pillar seems to stand to the left of the door. Of it only a socket and charcoal (fallen in it) have been preserved. Presumably a door was hung on it. The door seems to be single-winged, evidently opening inside.

Chamber №2 was distinguished by the abundance of archaeological materials. In this room, on the floor, at the base of the eastern wall, there lay three discs made of clay. They had relief crosses depicted on one side (PI. 47). It seems that these discs were attached to the walls and fell down during the destruction of the building. Right there (in the south-west corner of the room) fragments of adobe plastering were found, on which there is a number
of quadrangular and round imprints; in the quadrangular ones there was the image of a horseman, while in the round one - a cross was depicted; in chamber №2, under the ruins of a roof and directly on the floor, pink-fired jugs, light brown lids with red paint, as well as fragments of small-sized red painted pithoi have been revealed. Right here an amphora neck fragment and a neck fragment of analogous vessel were found (PI. 48-49). The existence of such a large amount of tableware in this room gives us grounds to suppose that this was a storage room for temple ware [42].

## Chamber №10

Chambers № 1 and № 2 are attached from the north by an east-west elongated rectangular chamber (chamber №10). Its internal dimensions are $18 \times 4.5 \mathrm{~m}$ (PI. 5, 10-11; Fig. 10-13). The door of the chamber is cut in the western wall (width -1.4 m ). This was a two-storey chamber. The walls of the first floor are built of unhewn rock stones (height 3.5 m ). The second floor is built of adobe bricks. The sockets for the joists of the interfloor ceiling are arranged on the stone wall. The mud-brick wall of the second floor was preserved at the height of 1.5 m . The distance between the axes of beam sockets of the interfloor ceiling is 0.9 m . In one case the distance is 0.85 m , while in another one it reaches 0.95 m . The rafters are placed across the width of the chamber. The floor of the chamber is made of closely placed longitudinal beams, which themselves rest on a wooden girdles arranged on stones. The stone pillows were arranged in three rows on the length of the chamber, so that the distance between the stone centres was 1.6 m . This entire construction was plastered with clay. Along the southern wall of chamber №10, a throne-like platform was excavated. It was 0.5 m high, covering the area of $3.1 \times 0.8 \mathrm{~m}$. The platform was built of cobblestones and it was plastered with clay. The floor paved in front of it was raised by 0.25 m .

Two pithoi were placed on the floor of the chamber, in its western part, by the entrance door, along the southern wall. Along the northern wall, three adobe containers were built. In one of them, located at the door, rye was kept, while in the two vessels small pithoi were placed (again, above the ground). All four pithoi are decorated with red painted bands.

On the floor of this chamber, fragments of plaster
were found, on some of which stamp impressions were preserved. Four types of impressions were identified: triangular, quadrangular, circular, and oval. All four of these types are represented by both big- and small-sized examples. On the impressions represented are: the sun, a dog, an ibex, a horse, and a deer. Plaster fragments with imprints of the stamps were found in the heap of the collapsed walls. Only in one place four large imprinted fragments of plaster were found almost "adhered" to the eastern wall. They seemed to be almost adhered to the wall because the space between these pieces and the wall plastering has not been filled with any substance. It was clearly visible, that the "good" side of the imprinted plaster of the beams was facing the wall. It was also apparent that this fragment had fallen from the ceiling. The traces of the beams followed the plaster fragment from top to bottom; therefore, if we consider the plaster as that of the ceiling, then it would turn out that the beams would have been arranged along the length of the chamber, which is confirmed in this case. The inter-floor roofing beams of the chamber were arranged on the walls longitudinally, and the covering should have been arranged on the girders with cross-beams. One of such fragments was also discovered on the northern wall; it too was "pinned", and here the traces of two beams followed it in the direction of the longitudinal axis of the room. If we compare these two pieces of information, it turns out that these two cases should be considered as fragments of ceiling plaster. The most interesting fact is that when these "pinned" plasters were taken down, on their inner side, with which they were "pinned" to the wall plasters, the impressions of stamps were noticed, arranged very close to one another. All other fragments of the imprinted plaster were found only along the walls. There were almost no cases of finding them in the middle of the chamber, at a great distance from the wall. If we take everything into account, we can assume that the ceiling was "decorated" with the stamp impressions, although not entirely, but rather along the walls, following them. Some of the imprinted fragments showed traces of a stone masonry; while others, which were evidently from the corners of the room, had imprints of stone masonry on one plane and those of wood beams on the other one. If we take this information into account, we can assume that wall plastering was also decorated, though closer to the ceiling. Therefore, they would put seals on
the walls of the chamber and on the ceiling at their junctions, and this "decoration" was wrapped around the ceiling.

According to the G. Tskitishvili in this context we can recall the custom preserved in toasts of blessing the ceiling at the end of the construction of the house and a toast that is necessary on almost every Georgian feast. We believe that this ritual of blessing the ceiling was performed here - blessing the ceiling and all persons who were present, marked the ceiling with their stamps while the clay was wet. It is worthy to note, that the seal impressions were grouped according to their subjects.

In the same chamber, at the height of 1.4 m from the floor, on the entire mass of the mud-brick wall, which itself rested on a mass of roof tiles, a column that collapsed in the centre of the cella was found, as well as a column capital. Generally, the entire ruins were directed to the north. The capital is sculpted from limestone and presents bulls with their backs against one another (PI. 96; Fig. 78). It would be more accurate to say that bullocks are sculpted here, since their horns are still small. The bullocks' nostrils are flared, that is shown by the grooves cut out above the nostrils and the lips by the sculptor (wrinkles - which appear on bulls when flaring nostrils). It has similar grooves carved out in threes above the eyes. All of this creates a tense and angry expression of the bullock (bull). On the jaws of both bullocks a relief line is drawn; it looks like a string of beads. Two bands of a decorative element looking like a leafy ornament followed along the side of both of them. Both have two grooves around their bent knees. The tendons near the ankle are displayed with grooves. Above the hooves of both bullocks a relief line is carved, looking like a string of beads. The place where the bullocks (bulls) are joined is concave and depressed [42].

Additionally, in the ruins, under the mud-bricks, we have found a large number of iron nails of different sizes (Fig. 68). An iron tool found here is notable. It reminds us of a bill-hook. The tool is destroyed, and it cannot be represented in its entire shape. Additionally, a handle of jug was found in this chamber, made of light brown clay, decorated with red painted lines, as well as sherds of bowls, painted dark brown. There were fragments of walls and bottoms of dark brown painted jars. There were mostly found fragments of large pitcher-shaped jars (PI. 52-54). The scarcity of painted pottery and their presence at a height of 3 m above the floor gave us grounds to believe that
this pottery came down together with the collapsed between-floor from the second story.

All the buildings described above (the temple, inner yard, chambers №2 and №10) were covered with flat and grooved tiles.

Chamber № 10 is connected with the corridor to its west with a door, in the opening of which charred wooden beams were found - arranged like a staircase. The floor of the corridor was located 0.65 m above that of the chamber. The steps of the staircase went into niches, specially arranged in the wall. Therefore, the staircase seems to be made during the construction of the building [110].

## Defenses and towers

The defensive walls surrounding the entire ridge of Tsikhiagora seem to be built during the construction of the main building (Pl. 5-6); while all other constructions of the temple complex seem to have been built after the construction of the fortress, as they are placed close to the plastered wall of the rampart (except of the refectory and the bakery).

The fortress, which fenced the Tsikhiagora temple complex, was reinforced by buttresses and towers. They were constructed entirely out of adobe bricks and were built on a foundation of crushed stone or cobblestone. Only in one case it was confirmed that a beam was embedded length-wise in the curtain wall (behind room №10). The width of the wall was 2.2 m . The curtain had a cladding of cobblestones on the outside, while the inside was plastered.

In the north-east corner of the hill (sector XXII - squares 561, 585, 586, 610, 611, 612; sector XXVII - squares 11,12 ) a tower (I) was excavated, located outside the curtains. It was constructed entirely of mud-bricks. The south-western wall, to which the tower was attached, is 2.6 m thick, while the thickness of the north-west wall is a little bit less, reaching 2.4 m . The eastern side of this structure is not preserved (here, the summit of the hill is missing in some areas, so the eastern wall of the curtain has been completely demolished). The remaining part of the building represents an elongated rectangle. It is 2.6 m wide, and its preserved length is up to 5 metres. The south-east wall of the tower is 1.5 m thick. Its size differs from that of the other walls. It seems to be an inner wall. It is from this side that this structure was attached to a very similar chamber, of which only the north-western corner is remained.

The preserved height of the tower wall is up to 2 m . The floor level could be noticed on the wall plastering and in the corners. The floor was also made of cobblestones plastered with clay. In order to figure out the arrangement of the floor, we removed the stones up to the depth of about 1.5 m . However, we have not reached the bottom. The impression was shaped that, underneath the corner tower with two chambers, there is a false floor completely filled with cobblestones. This has increased the fighting capability of the tower. This method was preserved in Georgian fortress constructions until the late Middle Ages. The tower has a cobblestone cladding on the outside, just as the curtain does. Almost no artefacts were discovered in the eastern tower.

The northern wall of the defences is fractured in squares 547,572 of sector XXI (along the eastern wall of the cellar). The western part of the wall extends 3.75 m to the north. In this place, outside of the curtain, a second tower, which is right-angled in plan, has been built. Its external dimensions are $8.4 \times 7.8$ m , while its internal dimensions are $4.4 \times 3.8 \mathrm{~m}$. The walls are 2 m wide, built of adobe clay mix and are plastered on both sides. The foundations of the walls are made of broken stones. Rather big cracks were noted in the eastern and western walls. It appears that the northern part of the tower slipped down the slope by $60-70 \mathrm{~cm}$, which itself caused the northern wall to settle down by approximately 60 cm , which is equal to the difference in the natural decline of the ground. It appears that the foundation of the tower had steps, levelled with the slope of the hill. The lower part of the tower was filled with large cobblestones, probably done to prevent a hole being made (by an enemy) in the wall. This stone pile was then plastered with clay and turned into the floor. On the inside of the southern wall of the tower, there was an arch-like protrusion, which was made of mud-bricks of different sizes ( $16 \times 24 \times 32 \mathrm{~cm}$ ). The arch consists of two parallel layers of vaults, the width of which is 16 and 24 cm . The height of the fixed part of the arch is 70 cm , and it protrudes 60 cm from the wall. The height of the wall was 1.5 m . It covered a space of 3.8 sq . m . Above the vaults, a pile on top of the arch protruded from the wall; it created an entire slab that, like the vault, would work under pressure. This is how it was managed to lighten the load on the vault. The arch is plastered with clay from below (PI. 13).

Using the vault-and-arch construction in Tsikhiagora, in a region which is rich in wood, was proba-
bly conditioned by the lack of wood in the construction (roofing between floors, etc.), which made the tower more resilient against fire and was thus more reliable for self-defence.

From this point of view, it is also noteworthy that there are no wooden constructions recorded in the structure of the tower walls, which is very typical of the walls of other buildings in this complex. It appears that the tower would have had an entrance from the side of the yard, on the second floor. It is presumed that this was along the corridor between the three-room building and the cellar, possibly from the walkway of the curtain.

Archaeological materials were found only under the arch to the floor (in the ruins of the walls and on the floor) (Pl. 55-58). This gives us grounds to suggest that this chamber was used. The preserved height of the wall is $3-3.5 \mathrm{~m}$. That is why we presume that the tower was at least two-storied [42].

## Chambers №21 and №22

The northern wall of the defences of the temple complex is 2.5 m away from the northern wall of the main building (room №10) and thus creates a narrow corridor where two small chambers were discovered (№№ 21-22) (PI. 5). The first room (№21) is narrow and long ( $5.5 \times 2.5 \mathrm{~m}$ ). Its western wall was of the so-called poles-and-plated cones (sarlasti) construction: a wooden frame plastered with clay (0.3 $m$ thick) on both sides. The entrance door is located in the wall which is adjoined to the northern wall of chamber №10. The door opening is 0.9 m wide. From this chamber a door was cut to chamber №22, the internal dimensions of which are $2.5 \times 1.6 \mathrm{~m}$.

In chamber №21, near the north-western corner, vertically placed large ridge tiles (diameter -0.5 m ) were cleaned; two of them lay against one another in such a way that a bipartite oven was shaped, which had a rather thick layer of ash in it. The floor of the chamber was paved with clay. Next to the preserved remains of the wooden frame of the chamber door, a large fragment of plaster was found, on which triangular ( 6 pieces), equilateral ( 2 cm ) imprints are preserved. On the imprint a stylized bull's head is depicted. Evidently, the chamber door was sealed with this stamp.

We suppose that this chamber is a place for storing the sacred fire - eternal fire. This supposition is supported by the fact that also this room was sealed.

There is no other way to explain the presence of the oven in this small chamber [42].

In chambers №21 and №22 many jugs, bowls, pots, pitcher-shaped jars, fired light coloured, were found, some of which are decorated with red paint, or red-painted. Among them, a red-painted bowl and a fragment of jug decorated with geometric ornament stand out. The pots are mostly unused, or at least they have not been placed on a fire.

The brownish-fired ritual vessel with flaring mouth and square-sectioned rim are noteworthy (PI. 59-62) [42].

## Granary

A granary was built at the boundary of the inner yard of the temple and chamber № 10 from the east (PI. 12. Fig. 14, 15). It consisted of eight chambers (№№ $3,4,5,5 a, 6,7,8,9$ ). The walls of these chambers were built of mud-bricks (from the bottom). It had only one row of stones as a foundation; the stones were not laid along its entire length, they were put intermittently. The walls were 1.5 m wide. The outside and inside of all chambers of the granary were plastered with clay. The floor was paved with clay. The internal dimensions of chambers №3 and № 9 are $5 \times 2 \mathrm{~m}$. They had an entrance door from the south. From chamber №3 to chamber №5, located to its north, access was possible through a narrow door, placed at the height of 1 m from the floor. Chamber №5 (internal dimensions: $6 \times 2 \mathrm{~m}$ ) was divided in the middle by a partition wall, which was 1 m high and 1.5 m wide (№5, 5a). As a result, two small chambers, almost pit-like ones, were shaped there. We suppose that these pits were containers for grain (so-called kodi). Chambers №7 and №8 represent similar containers. Burnt remains of grain (wheat, barley, rye) were found in them. If we calculate according to the volume of containers up to 12 tons of grain could be stored in this granary. Chambers №4 and №6 are square in plan ( $5 \times 5 \mathrm{~m}$ ) and both had fairly wide (1.8 m wide) doors in the southern wall. Grains were also scattered in these chambers (on the floor). Evidently, they were preserved here in clay vessels, fragments of which have been found in abundance. Apart from the large pitcher-shaped jars, fragments of red-fired and red-painted clay pottery (jugs, bowls, and pots) were found in the granary (PI. 63-67).

## Three-room structure (№№ 11, 12, 13)

A three-room structure (chambers №№ 11-13) was excavated to the west of the main building (PI. 14; Fig. 16). It was built adjacent to the northern wall of the rampart; a 3.5 m wide corridor separated it from the temple. This three-room structure has no traces of a great fire; the walls are only slightly singed. The walls were built and plastered with clay. The floors in all three rooms had a clay floor, and only a part of the floor was made of wood in room №11. The entrance door of this construction was arranged from the east side, directly in front of the door of chamber №10. Door-openings were cut, leading from room №11 to rooms № 12 and №13. In all door-openings the doorposts were cleaned. In the north-east corner of chamber №11, a Khovle-type oven was excavated. In the centre of the room, in front of the exit door of chamber № 12 , there stood a 0.55 m high two-stone mill. In front of the mill, from the east side, a semi-circular area for depositing flour was set up, which was plastered and encompassed by a low board. It is notable that one of the stones of the mill has a rougher surface. The surface of the second one is less rough. In the room, in the middle of the east wall, a pit for a column was cleaned, on the bottom of which a stone was placed. In room № 13 , a pithos was placed by the western wall, which damaged the wall of the lower layer during its arrangement. The lack of tiles on the floors of all the three rooms convinced us that this structure was covered with a flat roof.

Fragments of adobe plaster were discovered in chamber № 11 , on which the imprints of the stamps were preserved. Notable are the round imprint with the depiction of a rider, and the quadrangular one with the depiction of a man sitting on a chair. There were also found fragments of wall plastering with imprints of oval and triangular shapes, but no representations are visible on them [42].

## Cellar

A wine-cellar was dug to the west of the threeroom structure (PI. 15; Fig. 17-20). Between the cellar and the three-room building there is a 2 m wide corridor. The cellar is built of adobe bricks. It is built onto the wall of the curtain, which is slightly curved, according to the relief. That is why the width of the eastern part of the cellar differs from that of the western one. The length of the structure is 21 m . The width is 7 m in the western part, and 3.9 m in the
eastern one. The western wall is shared with the mill. The impression is created that the eastern wall of the mill is built onto the wall of the cellar, but there is no noticeable seam between them. This wall is 1.5 m wide. The eastern wall is 1.1 m wide. The northern wall is annexed to the curtain. The entrance door is arranged in the southern wall, almost in the middle of it. It is 1.6 m wide. The entrance is rather wide and it should be so since pithoi should be brought inside. The cellar was embedded at the depth of 0.5 m in the ground. This is confirmed by the existence of twostepped entrance. In the door opening, the remains of a wooden doorpost were found, which jut into the wall by $0.4-0.5 \mathrm{~m}$ on both sides. The diameter of doorpost was 0.25 m , as is visible from the empty space left in the mud-brick wall and the remains of rotten wood inside. There was one step set in front of the doorpost.

As for the walls of the cellar, the eastern and southern mud-brick ones were erected on a single-layer cobblestone foundation, which is not embedded in the ground, while the northern wall has a stone foundation (average height 0.5 m ). The longitudinal dimensions of the mud-bricks are $41-44 \mathrm{~cm}$, height $-12-12.5 \mathrm{~cm}$. It is evident that the adobe bricks are set on an ash-containing mixture. Just like the walls of all the buildings of the temple complex, the walls of the cellar are plastered with clay. It seems that the cellar had a flat roof, since not a single fragment of tile was found there. The presence of a single thick layer of clay on the whole area of the cellar confirms this opinion, as well as the singing of the walls 0.60.7 m high from the floor, at $2.2-2.5 \mathrm{~m}$ at some places. The mud-bricks and plaster were also half-burned. It appears that a fire erupted and the wooden ceiling of the cellar was burnt. When the supporting columns and ceiling beams were half burnt, they could no longer endure the weight of the roof and the roof collapsed completely, the floor was burnt and the lower part of the walls, as well. The flattened clay floor in the cellar is burnt. There were found ceiling beams scattered on the floor. It seems that the ceiling was roofed in the following way: longitudinally arranged beams of large diameter rested on wooden columns, while beams of smaller diameter were arranged transversely. These beams were covered with 0.5 m thick clay layer. The roof rested on four wooden pillars on the longitudinal axis. The pillars had stone supports.

The walls of the cellar are quite high ( $2-2.5 \mathrm{~m}$ );
no window is evidenced anywhere. The manner of building this cellar is almost identical to that of erecting big cellars attested in the ethnographic records.

As for the floor, it is made of beaten earth. There are quite a lot of grains mixed in its coating. The botanists attested the existence of cultivated dicotyledonous grains with a mixture of monocotyledonous ones. The mixing of grain into the coating of the floor seems to be of ritual-magical significance, likely ensuring that the cellar was fully stocked.

The cellar is arranged as follows: in the north-western corner a wine-press was erected, built of beams, measuring $2.75 \times 2.75 \mathrm{~m}$, i.e. the area of $7.5 \mathrm{~m}^{2}$ (Fig. 17). The sides were tied with two beams placed on top of each other; the preserved diameter of the beams is 0.2 m . Thus, its capacity would be $1.5 \mathrm{~m}^{3}$. The manner of the construction of the wine-press is as follows: the beams are laid on the floor, surrounded by two-beam high walls, which are tied at the corners using the jamming-in method, the sides are tied with double beams, the space between which was filled with clay, to ensure the water-resistance quality. Everywhere on the floor, as well as on the walls, the places, where the beams join, are plastered with a mixture. The mixture is quite sturdy and grey. Such a filler for cracks in wooden pottery is well known in Georgian ethnography: it is prepared by rubbing together ash and unmelted beef tallow. This is the oldest winepress found in Georgia so far, which is accurately dated [42; 110].

In front of the winepress, there is a clay taghara (isarna) (a large clay bowl), decorated with red -paint chevrons. Its diameter is 0.9 m , while the height is 0.6 m . (PI. 69 ; Fig. 17, 19, 55). According to the calculations, 250-300 litres of grape juice were poured into it. In the south-western corner of the cellar, in the vicinity of the winepress, along the western wall, there is a stone-built and clay-plastered platform. It is 0.6 m high, covering the area of $3.1 \times 1.2 \mathrm{~m}$. (Fig. 20). In Georgian ethnographic cellars, generally, the platforms are located next to the winepress, on which wicker baskets are placed, full of grapes brought from the vineyard. In the vicinity of the platform for wicker baskets (godori), on the southern wall of the cellar, a low altar is built, constructed of mud-bricks. It is square and plastered from every side. The dimensions of the altar are $1.6 \times 1.6 \mathrm{~m}$. Within it, there was found a clay disk (diameter -0.6 m ), on which a cross with equipollent arms is depicted (Fig. 20-21). A pile of pure ash was revealed under
this disk. Therefore, after the ritual was performed in the cellar, the remaining ashes have been covered and kept as a symbol of the sun. This underlines the relationship between fire and the sun once again. Right ahead of the cellar door, next to the north wall, there are two more altars built of mud-bricks and plastered with clay. They differ from one another by construction and appear to be used for different rituals (PI. 16; Fig. 22). The dimensions of the left one are: length -1.45 m , width -0.45 m , height -0.17 m . Three thick-walled hemispherical bowls of coarse clay with a quadrangular mouth are embedded in it (Fig. 63). All the three were filled up with pure ash. Next to this altar, towards the east, there is a second (third in total) one, within 1.3 m from it. The length of the altar is 1.3 m . It is 0.8 m wide and 0.4 m high. It is damaged and could not be completely restored. It seems that it consisted of two platforms. The left platform was right-angled. It was damaged by a beam that had fallen from the ceiling, and its surface is not preserved. The traces of a fire can be seen on the right platform. A goat's head was burnt in the fire. Four or five individuals are defined in the remains of the bones. The impression is shaped that they were not burnt simultaneously. Therefore, if this observation is correct, it appears that the ritual was performed several times.

48 pithoi embedded in the floor in five rows were excavated in the cellar. All of them are embedded in the ground up to their necks and are decorated with various ornaments (PI. 15, 68; Fig. 18-19, 54): with a twisted and pseudo-twisted ornament, bands and chevrons painted with red paint, unfilled elongated triangles with their ends pointing downwards and their various combinations, twisted floral ornaments inserted between the bands, etc. The pithoi were all cracked and smashed. All are high-necked. We have filled up two pithoi: one of them could hold 480 li tres of wine. Interestingly enough, this pitcher had the letter B (Beta) (PI. 70; Fig. 55 ), scratched out on its mouth before firing. According to the order of the Greek alphabet, it is equal to the number "two". Therefore, two measuring jugs of liquid could fill this pithos. Thus, one measure equalled 240 litres. 700720 litres went into the second pitcher. Therefore, three measures could go into this pithos. If we recall, that the Urartian stock akarak was equal to 200-250 litres, then it turns out that the Beta refers to exactly two akaraks, while the other pithos contained three akaraks. If we calculate the volume of the pithos to
be an average of 600 litres, it turns out that the cellar had a total capacity of 28,200 litres of wine. If we take into account that at least two pitchers should remain empty to transfer the wine, then the maximum capacity of the cellar will be 27,000 litres. After that, it is easy to imagine the scale of the temple's economy.

In eight cases, a flat tile was identified next to the pithos; it seems that they used the pithos as lids. Fired clay can be seen on top of them. Therefore, this tiles were then plastered with clay. On two of them, the stamps are preserved. On one imprint, a lion is clearly visible (PI. 95; Fig. 74). The diameter of the stamp is 7 cm . It is evident that the pithoi were sealed by the keeper of the wine-cellar, as wherever we saw the tiles, all lay beside the pitchers, and none were laid on top [42].

It is worth noting that while cleaning the winepress, a large number of grape pips were found on its floor and also under the $k h i z i^{2}$, which the scientist and viticulturist R. Ramishvili studied, and established that of the varieties known today, it is closest to the Saperavi well spread in Kartli, although the pips are smaller in size. This fact gives him grounds to conclude that the crop was taken from unirrigated plots.

One more interesting discovery was made. In one of the pithoi in front of the winepress, an almost entire vine was found. It is attested in the ethnographical data that after a bad harvest, when the next year comes and the New Year congratulatory ritual is performed in the cellar, a large vine branch or a whole grapevine is cut in the vineyard and God is implored for a big harvest in the subsequent year. Together with the discovery of the ritual hearth, this ethnographic data give us grounds to suggest that a similar ritual was performed in the cellar [42].

94 items were found on the floor of the cellar. Among them were: 17 jugs, 18 pitcher-shaped jars, 8 bowls, 11 pots, and 37 pieces of different pottery (PI. 69-73). A clay stopper for a wide-necked jug was found right there, with the impression of a isoscale triangle stamp. On the imprint of the stamp an animal depiction can be seen. It seems that not only pithoi were stamped, but other types of pottery, as well. Among the pottery finds of the cellar, of special interest is one vessel. It appears that this vessel represents a bull (it is hollow, of course). There were found a bull's head, with both the beginning of the
body and a part of the opening on the back (PI. 68). The bull's head has large wide-spreading horns, relief eyes, slightly open mouth, and prick-ears. The vessel seems to have been painted red. Due to being in a fire, the colour seems to be darkened. It is white painted on the red background. The tips of the horns are white, with a wide white stripe around the eyes. There is a white lengthwise stripe between the eyes. The edges of the eyes are white. White speckles are scattered around the nose, giving the impression that it has stringed beads similar to those on the double-protome sculpture of a bull (column capital) found in the temple; it has a triangular mark on its forehead, as if the bull has a white spot on its head. The forehead mark is exactly the same as that of the ritual bread-roll representing the bull attested in the ethnographic records.

There are three altars in the cellar. Different rituals are performed on all the three, and all of them are related to fire. The stamp with a lion representation on the lid of one of the pithoi is also worth noting. On the altar burnt heads and horns of a goat kid are burnt (we should note that the goat is a constant animal companion of Dionysus, the Hellenised deity of vineyards, wine and generally fertility of the land, originating from Asia Minor. When Dionysus was kidnapped by pirates, he turned into a lion. In the myth of Dionysus, it is said that when he found a vine branch, he replanted it into a lion's bone. Thus, the vine, according to this myth, has a close connection with the lion). G. Tskitishvili notes that in Georgia, during vintage, a lamb is usually slaughtered. Taking all this into account, we have reliable foundations to assume the existence of a cult of this deity or of its local prototype, at least in Eastern Georgia at that time. The Georgian cellar has reserved the function of a holy place up to now. In our country, it was possible to have a wedding in a cellar until now [42].

The cellar had a corridor to the south, with an entrance door cut into the southern wall, 0.8 m to the west of the three-room structure. The size of the door is 1.5 m . The length of the corridor is 24.5 m , from the three-room building up to the western wall of the cellar. However, the fact is that this corridor tapered in the western part: it was 5 m wide in the eastern end, while in the western one was only 3.5 m wide (PI. 6). The southern wall and floor of the corridor rises slowly westwards. The difference between

2 Khizi - a mixture of tallow and ash, with which wooden vessels were coated.
the far eastern and western markings of the floor is 2 m . There is a similar difference in the markings of the stones at the foundation of the southern wall. The wall is built of mud-bricks and is plastered on both sides. The plastering of this wall and the cellar wall merge very well with the flatness of the floor. In the corridor to the west of the cellar doors, along the wall, four heaps of grape pips were found, each weighing at least 1-1.5 kg. After collecting these piles, impressions of circular wicker-work were observed on the daubing of the floor. From this, we conclude that there were four wicker baskets full of grapes lined up along the wall which were burned in a fire. Therefore, the temple complex seems to be burned in autumn, at the time when the grapes were brought into the cellar and pressed.

## Chamber with hand grinders

A grinding room was excavated to the west of the cellar (PI. 17-18; Fig. 23-25), chamber №16, which shared a wall with the cellar eastwards, and with chamber № 15 westwards, while the northern wall was attached to the curtain. Its inner dimensions are $8.5 \times 8 \mathrm{~m}$. The width of the walls is a little more than 1 m . The chamber is built of adobe, the floor is paved with clay. A 1.3 m wide door is cut into the southern wall. There was a mud-brick desk along the whole length of the western wall of the chamber, on top of which hand grinders were arranged almost in a row (two were missing, lying on the floor). On the right side of each hand-grinder, there were recesses set like bowls in the mud-brick desk. In front of the desk, along its entire length, one entire flour grinder is arranged, made of adobe. It was walled off the room by a $10-15 \mathrm{~cm}$ high board. The remains of a similarly arranged flour grinder could be noted along the southern and eastern walls. Supposedly there should have been 30-32 hand grinders in total in this chamber. Hand grinders were placed slightly tilting towards the grinder in such a way that the flour could be poured in freely. The bowl-like depressions next to the hand grinders were probably intended for wheat. A miller would take out wheat from there and put it onto the hand grinder. However, only a small amount of wheat would have fit in here, approximately 2-3 handfuls. Hand grinders are arranged along the wall in such a way that the miller has only one exit in the room. This was done in such a way that for whoever sat in the northwest corner, if
he wanted to go out, he had to stop everyone since otherwise he would not have been able to come out. There were large fragments of a clay vessel in front of the grinder. The fragments belonged to a pitch-er-shaped jar (presumably). Burnt wheat was found in it. It appears that the common provision was kept in this vessel, and someone used to throw handfuls of wheat into the bowl when provision was expired.

The arrangement of the desk and the presence of 30 hand-mills in one chamber indicate to the existence of a person supervising the works undertaken in the "mill" [42].

In the chamber, a bronze stamp with a triangular loop was found, on which a dog-like animal and two birds are depicted (PI. 95 ; Fig. 75) [16].

## Chamber №15

Another chamber, №15, is attached to the grinding room from the west. It seems to be a dwelling compartment (Pl. 18-19). It is of trapezoidal shape. Its length (from north to south) is equivalent to 8.3 m . It is 4.8 m wide along the northern wall, while along the southern wall it is 3.4 m wide. The floor is made of beaten earth. The walls are built of mud-bricks and plastered with clay. The western and northern walls of this chamber are attached directly to the curtains, and the eastern wall is shared with the mill. A door opening is in the southern wall. It is 1.45 m wide. A single row of cobblestones is laid as a foundation for the mud-brick walls.

A wooden column was identified next to the north wall of the chamber. A second one was found directly ahead of it, next to the south wall. Two more columns were found in the southern part of the western wall. If we calculate the distance between the columns (approx. 1.5 m ), then there should be a total of 4 pillars next to the western wall, dividing the room into five equal parts along its longitudinal line. A base of one column was found next to the east wall. A stone, measuring $0.3 \times 0.3 \mathrm{~m}$, was cleaned on the longitudinal axis of the room. It seems that there was a main rafter in the middle, too.

The location of the charred posts made it possible to restore the structure of the roof. It appears that the duty of pulling on the grafters was carried out by a longitudinal coupled beam and the beams resting on the pillars of the longitudinal walls. Transverse rafters were then arranged on the beams, which thus formed the ceiling. The arrangement of pillars and
rafters does not allow us to define this construction as flat-earth roof; no tiles seem to be used. Thus, chamber № 15 had a flat roof, too.

In the north-eastern corner of this chamber a Khovle-type oven was placed, almost completely demolished by burrows of a badger or a fox. Preserved are: an ash-bin, a bread baker; on the wall of the room an imprint of an oven. There is a flat stone in front of the oven, evidently for sitting down on. A flat tile lay nearby on the floor. It was probably used to cover the mouth of the oven to keep warmth.

Next to the north-western corner, a two-stone grinder is attached to the northern wall at a distance of 0.7 m from the western one (Fig. 26) ).

The stones are piled on the desk made of mudbricks. The stone in the north was placed 0.7 m high, and the stone next to it, in the south, was 10 cm lower. In front of them, the mill was made with mudbricks. This grinder is analogous of the one found in the three-room structure.

At the western wall, exactly in the middle, a low "family" sacrificial altar was discovered. It is quadrangular ( $1.75 \times 1.75 \mathrm{~m}$ ) and raised by 0.15 m from the floor. In the middle it has a pit with rounded corners ( $0.75 \times 0.5 \mathrm{~m}$ ), which was full of the charcoal of thin twigs and ash. The back of the 0.2 m wide altar runs along the wall.

About three metres to the south of chamber №15, a pit (diameter 7 m ) was discovered in squares $612,613,614$ of sector XXI and 12, 13, 14 of sector XXVI (PI. 6, 8). It cuts through all the lower cultural layers and is sunk into the soil. The pit was cleared to the depth of 9 m . We could not go further down due to technical defences. The walls of the pit were reinforced with large cobblestones, and the pit was filled with a mud-brick rubble and fragments of tiles. It appears that the pit was filled up in the result of the ruin of the rampart of the temple complex and the mud-brick walls of the buildings.

The function of the pit is unclear. It should be noted that at some archaeological sites of Georgia dated to the Classical period (Uplistsikhe, Vani), even deeper pits were attested cut into the rocky ground. Their practical significance is hard to be defined. It is possible that these pits are of some ritual purpose, related to chthonic cults.

## Bakery

In squares 40, 41 of sector XXVI, a fragment of the bakery was excavated, which was damaged by the upper layer. In this chamber, along the eastern wall, 5 ovens were cleaned (PI. 8; Fig. 26 ${ }_{2}$ ). One of them had a small quadrangular "window" at the bottom, it seems that all the ovens had such a "window", but they have not been preserved. The "window" represented an air vent, to create traction. The ovens are double-walled. Two of them are joined together; the space between them is filled with earth and is plastered with clay from the outside (a diameter of $0.5-0.6 \mathrm{~m})$. By this method, the walls of the ovens are thickened in order to better retain heat.

These are the oldest confirmed ovens on the territory of Georgia. The oven is considered an Ancient Eastern find. It was also widespread in Urartu and in Georgia's neighbour at the time of Tsikhiagora, Iran.

The discovery of five ovens in one chamber must mean the baking of bread on mass, probably to entertain the worshipers coming to the temple. The discovery of 32 hand grinders, where 32 millers worked simultaneously, should also indicate the same fact. Moreover, as we have already seen, the residential buildings, which were found in the complex, were confirmed to have their own mills and bakeries [42].

## Chamber № 14 (refectory)

Another chamber (№14) was excavated next to the bakery, which is located in squares $93,94,95,118$, 119 , and 120 . This chamber has provisionally been given the name of the refectory. Room №14 is oriented from the north towards the south. It is slightly declined to the north-east. The walls, apart from the southern one, were built of cobblestones at a height of 0.5 m (at least what was left of it) and then of mudbricks. In the foundation built of cobblestone, reinforcing bars were placed at a distance of 1 m , and in height - at a distance of 0.35-0.4 m. One interesting detail was observed at the level of the foundation along the western wall, beams are stacked on both sides. They are connected to each other with crossbars. Squares are tied up from beams in this way. These squares are filled up with stones. In three cases, burnt sheep bones were found on the beams of the foundation. In one place, the shin and ankle bones, and in two places - there are parts of the ribs. In all three cases, the bones lay on the beams, and they were burned together with them. Is this the bless-
ing of the foundation carried out with the parts of the sacrificial animal? This is possible. The floor of the building is made of beaten clay. The charcoal of short beams lay in front of the door opening. This should be the remains of the carved door frame. Here, on the floor a shattered beam was revealed, which was embedded by almost 1.5 m into the western wall of the door opening and up to 1 metre into the eastern one. We think that this is the doorpost. Near the middle of the room, right in front of the door, a rather tall ( 25 cm High) quadrangular stone was placed on the floor. The base of the pillar was reinforced with two stones embedded into the floor right next to it. Near the centre of the room, a pithos was buried in the floor up to its shoulders. This chamber appears to have a front door. Its floor passed through the door opening. In front of the door the floor was paved and flattened as in the room itself. Such a paved and flattened floor stretched along the building for 1 m to the south. The slope of the hill nearby was found to have collapsed with the rest of the structure (PI. 20).

## Tiles

The temple, the granary, the bakery and the refectory were covered with curved- and flat tiles painted red. All the other structures had flat roofs. As for the tiles, Greek letters were stamped on them. Letters were identified on both flat and curved tiles (PI. $97_{2-4}$ $45_{2.9}$; Fig. 66, 67). Letters were noted on 55 flat tiles and 20 on cover-tiles. This is natural, since letters representing numbers in tens and hundreds have been identified. It seems that every $10^{\text {th }}, 20^{\text {th }}, 100^{\text {th }}$ tiles, and so on tiles were marked. The presence of two letter marks on one of the fragments confirms this fact. It was first marked by O , and then - by $६$. An omicron is deleted from the wet clay before the tile dried; it seems that an $\xi$ was applied later. As is known, the numerical value of omicron is 70 and that of ' $x$ ' is 60 . This discovery confirmed our opinion that the letters are used for a numerical value: it seems that the craftsman had made a mistake and then corrected it. It could be supposed that the craftsman was obliged to count and credit tiles made by him, since someone inspected him. Other sets of signs have also been attested on the tiles. These are indentations made by the insertion of thin sticks and fingers, with 1, 2 or 3 notches. It appears that, in this case, the craftsman who made the tiles did not know how to use letters or their numerical values. It seems that some artisans
were acquainted with Greek letters, and even had an idea about their numerical value. This fact is an indicator of the high cultural development of Iberia of that time. At the same time, it is an indicator of the close cultural relations of our society with the Greek world in Asia Minor [44].

## Terrace and large yard

The "refectory" stood on a platform tamped down with clay, which forms a terrace. On the area surrounding the eastern wall of the refectory, a pile of burnt bones and fragments of tiles were cleaned (covering an area of 20 square metres). This confirmed the fact that this level (from point $0,1.3 \mathrm{~m}$ above the floor of the temple) corresponded to that of the yard at the time of the refectory (PI. 22). On the tiles scattered here, Greek letters were identified omicron and sigma. Here a mortar was found, beautifully carved of lime-stone (PI. $75_{26}$; Fig. 60). The terrace is 0.9 m higher than the level of the yard of the temple complex and is separated from it by a mudbrick wall, the width of which is 1.1 m , length - 21 m , preserved height -0.9 m . It is plastered from the yard's side (Pl. 6). There is an exit opening from the yard onto the terrace in the middle of the wall $\left(95^{\text {th }}\right.$ square). It is 1 m wide. Three steps (each $0.25-0.3 \mathrm{~m}$ high and wide) were recorded. In the opening, remains of a wooden door-post were found, which juts into the wall by 0.3 m on both sides. The fact that the diameter of the door post is 0.3 m is evidenced by the space left in the mud-brick wall and the remains of decayed wood inside. If we take into account the volume of the ruins of the wall, it can be supposed that this wall not only separated the terraces, but also had some height. The function of this wall was probably to separate the temple from the cellar, the mill, the bakery and the refectory, so that household activities and cult services would not be mixed, and a worshipper would stay alone with the deity.

The temple complex has a large trapezoidal yard. It covers an area of 400 sq . m . It is located to the west of the temple (PI. 6). From the east, the yard is bordered by the defensive walls of the temple, and it was connected to the temple's inner yard by a door. To the north, it continues almost to the wall of the three-room structure. To the west, it is bounded by a wall, which divides it from the terrace, where the "refectory" is located; it is connected to the terrace by means of a staircase, which is located in the opening
of the wall. From the south, the yard was bordered, seemingly, by the defensive wall, which is partially lowered on the slope of the hill. The floor of the yard was paved with clay. The floor was blackened, apparently as a result of the fire that destroyed the temple. Burnt wooden beams were found on a rather large area $(10 \times 10 \mathrm{~m})$ in the yard. Their diameter is $0.2-0.25$ m , and the length of some among them reaches 5-7 m . The wooden beams lay so compactly on the floor that it gives the impression as if they were part of some large wooden construction that stood on the south wall of the fortress and collapsed into the yard during the fire (PI. 22). A few pottery fragments were found on the entire area of the yard (PI. 74, 75).

The third level of the Classical period of Tsikhiagora reflects the time of the existence and destruction of the temple complex. This very layer holds four more construction levels, which were revealed in the result of the excavation of the "refectory" and the terrace (Pl. 23-24; Fig. 26 ${ }_{2}$, 28-29).

At the level of the refectory floor, three pithoi cut open at the belly area were cleaned. These pithoi are from the bottom layer, and they were demolished and cut open during the construction of the refectory (PI. 21). Therefore, these pithoi are from level IV. After the removal of the foundations of the refectory, the remains of walls were revealed immediately under it, repeating the plan of the refectory at first sight. But actually we are dealing with completely different levels. If we start in succession, the following picture is shaped: under the western wall of the refectory a two-layered wall built of a mixture of rubble and cobblestone was revealed. Its direction coincides with the inner face of the building. Its core is filled with clay. This wall (level IV) is 4.5 m long and 1.3 m wide. It itself cuts an older wall of level V wall, which is of similar build. It coincides with the north wall of the refectory. These two walls are of different construction levels. It seems that at their conjunction, the mentioned level V wall was also cut by the pithos that was placed into the northern wall of the refectory. This wall of level $V$ has an annexe from the north (square 68). They are organically combined in such a way that their contemporaneity cannot be doubt. It gives the impression of a severed wall. A level V wall running through squares 67 and 68 seals the corner exactly at the point where the northeast corner of
the refectory is sealed. The walls of level V are mainly built of cobblestone, occasionally interspersed with white limestone blocks.

In square 92, directly under the level V wall, a wall (level VI ) of a different thickness appeared, built in a different manner and with a different material. It is narrow compared to the other walls (those located above). It is 0.70 m wide, and it is mainly built of white limestone. In square 117 it turned to the west, almost at the place where the south-western corner of the refectory was located. The eastern wall of level VI in square 92 has an annexe ( $0.55 \times 0.55 \mathrm{~m}$ ). It would be more accurate to consider it an altar placed at the wall. These are like the ones revealed in the cellar. The four levels from III to VI are built so close to one another that there is a total of $25-27 \mathrm{~cm}$ difference in height between them. Fragments of another building (level VII) were found in square 91. It is at a depth of 0.5 m below level VI. The wall of level VII is built of cobblestone on a mud mixture. It is relatively thin ( 0.6 m ) and the manner of construction is completely different. A similar wall fragment was found on the western edge of the same square. It seems that this is a fragment of two walls of one and the same building.

As for the "refectory" area, it turned out to be impossible to distinguish the floors of levels V and VI (the levels are divided only by the interaction between the remains of the walls). This is why we will characterise the entire material together. Here, too, there is mostly kitchen-ware. A grey-fired shard of a bowl with narrowed mouth, and fragments of a straw-coloured fired phial and red-painted pottery can be distinguished (PI. 76). The part of the floor of the level VI of the building that adjoined the eastern wall was well documented. More specifically, we mean the section that was located to the south of the altar, that was directly next to it. From the material, a flaxen-fired vessel stands out; there are also black and brown-fired ones. Almost all of them have evident traces of fire. In the south-eastern corner of this "building" they were found in their greatest number, again of the same material, in shape and colour. So, in a short chronological section, there is a high density of construction levels.

In the eastern part of the cellar, neighbouring to the three-room building, in squares 620-621 of sector XXI, the same circumstances were revealed as under the refectory, when descending to the lower levels. The two levels are directly on top of one another.

Both of them are cut in by the cellar. Under the cellar a rather large building stood, built of cobblestones. The walls of this building were $0.8-0.9 \mathrm{~m}$ thick. The southern wall of this building also rests on another similar wall, but they do not coincide completely. The building stone is also different, being more massive (level V). The level VI stone is thinner. This may be caused by the scale of the buildings. Both these levels were cut into by the builders of the cellar. The floor of the cellar was laid out 20 centimetres lower (PI. 8). Almost no material was encountered during the excavation of these levels, except of fragments of a few red-clay pitcher-shaped jars.

As we can see, the lower three levels of the temple complex are very closely attached, both physically and chronologically.

To the north of the terrace, in squares 16-20, a 4 m wide corridor was discovered. It is separated from the front corridor and terrace of the cellar with mudbrick walls. This corridor is connected to the terrace through an opening (square 45), and a large yard in square 21 (PI. 25). The floor of the corridor is paved with clay and rises from east to the west. After excavating the area under the refectory and the southern part of the terrace (squares 66-68, 91-93, 117-119, 144) five more construction horizons were revealed, represented by the foundations of walls built of cobblestone or crushed stone, overlapping one another (PI. 26; Fig. 29-30). Thus, the layer of the Hellenistic period is represented by eight construction horizons, six of which - III-VIII - are connected to the temple complex. Construction horizon III (PI.) reflects a destruction of the temple complex. As for the lower horizons, traces of the intensive construction works taking place in the western part of the hill during the existence of the temple are evident (Pl. 25).

The excavations carried on the terrace allow establishing the internal stratigraphy. That is why the materials will be analysed according to construction horizons or levels. The material of level III is presented on the floor of the corridor, in squares $16,17,18$ (PI. 25). It is composed of pottery (PI. $77_{1-5}$ ), which is thin-walled, fired pink, red-painted (PI. $77_{2}$ ), painted (PI. $77_{5}$ ) and with white lines on a grey background (PI. $77_{4}$ ). Tile fragments have also been found there.

Household pits dug into the terrace should belong to the same level (Pl. 26): square 94, pit № 1 (PI. $78_{8-10}$ ), pit №2 (PI. $788_{1-5}$ ), square 95, pit №3 (PI. $78_{6,7}$ ), and square 70, pit №4 (PI. 77 ${ }_{6}$ ). Black-polished (PI. $77_{6^{\prime}}$ $788_{1,3}$ ), pink-fired (PI. $788_{2,4,7}$ ), red-painted (PI. $788_{5,6,10}$ )
pottery, and pottery decorated with white bands (PI. $78{ }_{8}$ ) were found in the pits. A pithos was excavated in square 69, cut into the wall of level IV. Fragments of several pieces of pottery were found in the pithos (PI. 79), among which there are: a pink-fired, pile surfaced, red-painted pitcher-shaped jar (PI. 791), a black-fired, rough-surfaced pot made of coarsegrained clay (PI. $79_{2,3}$ ), a thin-walled, brown-polished pot (PI. 79) , and fragments of a thin-walled black-polished vessel, with marks and polished ornaments ( $\mathrm{Pl} .79_{5-7}$ ).

Level IV was revealed under the floor of the corridor in the course of excavations of the northern part of the terrace. It is represented by the remains of a large building (squares $18,19,20,43,44$ ), built of mud-bricks, on a foundation of cobblestones. The walls are 80 cm wide. The floor of rammed clay was burnt and covered with a thin layer of ashes. There must have been a second chamber on the west side. A fragment of the floor was preserved. Stratigraphically, this structure should be contemporary with the buttressed, burnt structure under the "refectory" (PI. 23), excavated earlier. A large amount of material was found in the filling of level IV, the thickness of which reached $20-30 \mathrm{~cm}$. Numerous fragments of pithoi were attested in squares 17 and 18, among which are pink-fired sherds, with smooth surface, often decorated with a relief ornament and painted red (PI. $83_{3,5,7}$ ). A rider is depicted on one of the fragments (PI. $83_{5}$ ). We have also found a black-polished bowl here ( $\mathrm{Pl} .83_{1}$ ). Attention is drawn to the fragments of two thin-walled pieces of pottery, fired pink. One of them is red-painted, with white dots added on top of it (PI. $83_{2}$ ), while the other is brown-engobed, and painted white ( $\mathrm{Pl} .83_{4}$ ). In square 43 there were found fragments of two pitcher-shaped jars, pink-fired, with a smooth surface, with relief belts, painted red (Pl. 84; Fig. 60-62).

Directly on the floor of the structure, in the ash layer fragments of high-quality pottery covered with red engobe (PI. $85_{1-3}$ ), those of pink-fired, red-painted pottery (PI. $85_{5-7}$ ), and a black-polished furnace fragment were discovered (PI. 85 ) [20; 99].

Of interest is a funnel-shaped pit, dug in square 94 from the fourth construction level (dm of mouth $-1.2 \mathrm{~m}, \mathrm{dm}$ of base -1.55 m , depth -1.5 m ). The pit was filled with sherds of almost forty vessels. Attention is drawn by fragments of a big pitcher-shaped jar, which was pink-fired, with a red-painted frieze of horses (PI. 80; Fig. 57-58). Of interest are also similar
pitcher-shaped jars of various sizes, decorated with geometric ornaments, red-painted, and with relief impressions. There were also found a pitcher-shaped jar that was decorated with relief impressions, four-handled pithos, fragments of brown engobed and white painted thin-walled pottery and thinwalled black-polished pottery, decorated with relief and polished ornamentation (PI. 81-82). In the very same pit, a copper nail and iron objects were found: a bracelet and a pointed round cross-sectioned rod.

In square 70 a small section of level V was excavated. There were found a complete tile with a sign on it, as well as a red painted pottery sherd.

## "Gate" and big yard

Important results were evidenced during the excavations of the southern slope of the hill. Remains of the defensive system of the temple and the entrance were found.

In squares 141-169, remains of a 2 m -wide defensive wall, built of mud-bricks on a cobblestone foundation were recorded. The wall facing was composed of two rows of big-sized cobblestones; the area in-between was filled with broken rubble. The outer southern side of the wall has collapsed on the slope. The wall is attached to a tower in squares 169, 170, 195 (PI. 26; Fig. $31_{2}, 37-38$ ). The tower, measuring $6.5 \times 6.5 \mathrm{~m}$, is erected on a stone foundation. The facing of the foundations is built of crushed stones and it is filled up with big-sized cobblestones. On the foundations adobe brick masonry was erected. The walls were preserved at the height of 1.2 m . It had a pile of mud-bricks from above, and it is preserved at a height of 1.2 m . The tower is completely burnt and turned into a pile of bricks. The tower is badly damaged; its south-western part has collapsed. The northern and eastern walls are relatively well-preserved. The eastern wall is specially plastered. The eastern wall of the tower is the inner wall of the chamber at the same time, located to the east of the tower.

A chamber ( $8 \times 4 \mathrm{~m}$ ) was revealed in squares 171 , 195, 196 (PI. 26-27). Its floor is 1 m below of the yard. That is why the northern wall of the chamber is cut into the ground like a terrace. The entire chamber is filled up with burnt mud-bricks. On the north side of the chamber, at the level of the yard, there were found many remains of burnt wooden beams and iron nails. Obviously, some kind of wooden construction was connected to this structure.

The western part of the chamber was cleaned. A staircase was revealed, which climbs from the clay floor of the chamber up to the big yard (PI. 26-27; Fig. 38-29). The length of the stairs is 3 m , the width -2.1 m . There are 12 steps in total. Each step is $25-$ 30 cm wide and $8-10 \mathrm{~cm}$ high. The steps are made of wooden half-beams, placed flat side up on clay foundations; the half-beams are clay plastered, as well. At the head of the stairs, 15 cm below the level of the yard, there is a specially compacted area of $2.1 \times 1.2 \mathrm{~m}$. In the middle part of the staircase, in the wall of the tower, a niche has been arranged. It is 70 cm wide and 35 cm high. A furnace was noted along with it (PI. 89 ; Fig. 64). On the steps fragments of wall daubing with traces of stamp impressions were revealed (Fig. $44_{2}$ ).

A terracotta bird figurine was found in the ruins of the burnt mud-brick tower itself (PI. $89_{2}$; Fig. $76_{3}$ ). It is incomplete, as it has no head, the figurine is fired pink and painted with red paint (Pl. $8_{2} ;$ Fig. 65 ). In these ruins, a red painted hemispherical bowl was found.

The tower and the chamber with stairs seem to be burnt earlier than the entire temple complex. The terrace wall, which borders the large yard from the west, did not show any traces of fire, and it was built directly onto the burnt mud-bricks of the tower in square 170.

The wall of the cobblestone curtain in squares 141-169 seems to be of a later period, too. It is built onto the tower. It is, in fact, cut deeply into the layers. This fact is evidenced by the materials found with it, belonging to the pre-Hellenistic layer. However, in this part of the wall, cobblestone is used for the foundations of the fortification. In all other cases, crushed cliff rock is used for both the curtain and the foundations of the towers, while for the filling cobblestone is preferred. We think that this moment also indicates to their chronological difference. The stratigraphical study also convinces us that the tower existed earlier and was burnt before the wall of this curtain was built onto it.

It seems that at some stage of the existence of the temple complex, the southern part of its fortifications was burnt and collapsed partially. The stairwell was not restored, while the burnt tower was included into a new system, in both the internal planning (the creation of a terrace) and new defensive system (PI. 25).

In the process of the excavations, it was revealed that the tower represents the western part of a large
structure, which is rectangular in shape. Its preserved dimensions are 14 m from east to west, 8 m from north to south. The southern wall of the building collapsed onto the slope. The walls of the structure are stretched out 5 m further compared to the curtain (Pl. 27-28, 100).

The width of the walls of the building is 2.8 m . It is built of mud-bricks, on a stone foundation. The facing of foundations is built of crushed stones and is filled up with large cobblestones. It had a pile of mud-bricks on top. In the western part, it has been preserved at a height of 1.2 m . The building was completely burnt. The mud-bricks had turned into adobe bricks. The inner chamber of the building was filled with burnt mud-bricks. The chamber measured $8 \times 4$ m . Its floor is plastered with clay. The western part of the chamber is partitioned with a 0.8 m thick mudbrick wall, which creates a separate room ( $2.5 \times 3.5$ m ). The partition wall is adhered to the main wall and is then plastered.

In the north-eastern corner of the chamber, two shelf-like elevations were attested, which were attached to the walls. Near the northern wall the elevation was 1 m long, 0.3 m high, and 0.15 m wide. At the eastern wall -1.8 m long, 0.3 m high and 0.2 m wide.

The eastern wall of the structure and the eastern part of the northern wall were basically ruined, as most of the stones have been removed from the foundations. After the removal of the mass of burned mud-bricks, the remains of the foundations were revealed, built of large slabs; cobblestones were used for filling. Wooden posts were also imbedded into the construction of the wall (Fig. 41).

The discovered drainage system is of interest. In the southern part of the large yard of the temple complex (square 122) a pit was cut. To the south of the pit, in the direction of the entrance, a groove was cut at a depth of 0.4 m from the floor of the yard. The walls of the groove are laid with stones. This groove, plastered with clay, goes onto the head of the stairs of the entrance building arranged on the square and under the stairs, and it is covered with pantiles in this section. This groove is then cut into the floor of the building, turns towards the south-east and passes through the east wall (PI. 27-28; Fig. 32, 40). The groove is plastered with clay; its size is $15 \times 15 \mathrm{~cm}$. On the floor of the chamber, this groove runs through the middle of a wider depression, the width of which is $0.3-0.5 \mathrm{~m}$, and the depth -10 cm . It is possible
that it was roofed with wooden planks, since a large amount of charcoal was found in it. It is worth noting that the floor of the chamber is sloped to the southeast, as does the depression of the groove.

It seems that we are dealing with a rainwater drainage system. The large yard of the temple complex is plastered with clay and is surrounded by walls built of mud-bricks. The pit serves as a collector, and the groove was used as a water outlet.

Most of the ceramics found in the chamber are discoloured from the fire, some are deformed, especially the large-sized pottery. Pottery (PI. 86-87) is mainly pink-fired, with relief impressions on the neck (PI. 86, ), which were engobed red (PI. $86_{3}$ ), and painted red (PI. $87_{2,10,11}$ ), and fragments of thin-walled, brown engobed small pottery were found (PI. 87 $)$. Additionally, there were fragments of black glossy jugs (PI. $86_{8,9}$ ) and a fragment of a pot with a rough surface fired black (PI. 86). [20; 99].

Fragments of zoomorphic pottery, brown engobed and ornamented with white dots, attract special attention. Fragments of pottery were scattered across the stairs and on the floor of the chamber. The front, chest and back parts were restored, along with the hind legs and tail, which were also ornamented in the same way (PI. 89). It is interesting that the head of this zoomorphic vessel turned out to be the bull's head, which was found during the excavation of the Tsikhiagora cellar in 1985 (PI. 90. Fig. 77). The length of the vessel is 50 cm , height - 30 cm .

A big-sized structure ( $14 \times 8 \mathrm{~m}$ ), which should represent the entrance "gate" to the temple complex, and the walls of the defenses related to it were revealed (PI. 27). The problem of entering this building from the outside remained unclear. A whole array of signs made us to think that it should be from the east. This is why an area of $10 \times 7 \mathrm{~m}$ was excavated to the east of the building, at a depth of $0.5-2.5 \mathrm{~m}$. The excavations were carried out in squares 198-199, 223-224. A curtain wall built from mud-bricks was revealed, which was preserved at a height of 2 m , with its cladding (PI. 28. Fig. 42). To the east of the building, following the curtain wall, a 4 m wide road, flattened well with clay, was observed, which descends towards the east, widens and seems to turn to the south-east (Pl. 100; Fig. 42-43). On the section of the road, which is directly connected to the building, many burnt wooden logs and plasters were found, among which we found large heavily corroded iron implements.

On the road, some pottery was found in situ, including a black-polished three-lipped jug (Pl. 88; Fig. 65) and a yellowish-pinkish fired ceramic, which in some cases is painted with red paint (Pl. 88) [for the typology, see 83; 26].

The excavations confirmed that the uphill road to the Hellenistic temple complex followed the south-eastern slope of the hill and led to the gate, whose inner chamber is connected to the large yard of the temple by some stairs (PI. 28; 100).

In the period of distructure of the Hellenistic temple complex, the yard was tamped with clay. After removing this floor, a second level of the yard was revealed, which was partially paved and most of it was covered with a layer of $15-25 \mathrm{~cm}$ thick fine gravel. Remains of the drainage system were discovered at this level (Fig. 32).

After the removal of the gravel layer, a third level of the yard was found. It was revealed that the original level of the yard was laid with paving stones and coarse gravel. The paving is not complete, squares 122, 123, - a 3.5 m wide and 5.5 m long paving seem to lead towards the western door of the temple. Squares 97,98 , are included in the unexcavated area and its shape is yet unclear. The rest of the area is levelled with thick gravel (PI. 28, 101; Fig. 33); it was filled with clay only in square 148 . The paving is made of flat shards and cobblestone. The water drainage groove (squares 97,98 ) is also arranged with flat stones, which are directed towards the pit. This last performed the function of a collector. This drainage channel is arranged on the third level floor, but it also functions in the second level of the yard at the same time. The remains of a groove found in square 121 should belong to the third level. It was annulled and, during the functioning of the second level was replaced with a groove arranged of cobblestones in square 122 (PI. 101; Fig. 33-36).

The excavations that were carried out have revealed that, during the time of the existence of the Hellenistic temple complex, its yard was altered at least three times, and its dimensions, planning and arrangement methods were always changing. However, these changes were carried out according to a unified plan, as evidenced by the functioning of the same drainage system during the existence of all three levels.

## EARLY CLASSICAL/ACHAEMENID PERIOD

The Achaemenid layer was originally discovered in the eastern part of the hill, in the area in front of the granary, where the remains of the foundations of a large building were evidenced [40, p. 169]. The layer was very damaged, although it became possible to distinguish three construction levels.

A layer of the Achaemenid period was also found under level VIII of the Hellenistic layer on the territory of the "refectory" included in the temple complex [89].

In 1986-88, in the south-western part of the hill, in sector XXVI (squares 90-92, 115-116) a paving ( 4.5 m wide, 9 m long) made of large flat cobblestones was found, in the WO direction, entering the unexcavated area to the east (PI. 101-102). The pavement was separated from the Hellenistic layer by a $30-50 \mathrm{~cm}$ thick layer of black earth. There was a depression in the pavement (square 90), also paved with stones, in which pottery sherds and a bronze triangular arrowhead were found (PI. 118), a second similar arrowhead was found on the pavement. The layer related to the paving was preserved fragmentarily in squares $42,67,92,115$, in the form of ash layers, and it was included in the unexcavated area. More than twenty pits of agricultural or cult significance belonged to it (PI. 102). Some of the pits, №№ 1 and 7 for example, were cut from the stratigraphically higher level than that of the pavement.

The material of the mentioned layer was found in squares 142,143 where the wall of the Hellenistic fortress is cut into the layer of the Achaemenid period (PI. 101).

In 2000, during the study of a large yard of the temple, when the 3 levels of the yard of the temple period were revealed together with its drainage system (squares 147-148), a part of the chamber belonging to the Achaemenid layer was excavated (PI. 101; Fig. 79, 80). It is 30 cm below the level of the temple yard, and the yard's pavement partially overlaps it. It was recorded that the eastern wall of the chamber had a length of 4 m (width 90 cm ). The rest is included into the unexcavated area. A large pile of pottery sherds was evidenced in situ on the floor of the chamber (Pl. 107, 109; Fig. 81, 82).

## Analysis of the material found in the Achaemenid layer

The pottery of the Achaemenid layer is represented by two typological and technological groups. The first group includes the pottery made of coarsegrained clay on a potter's wheel or hand-made, and have a dark grey (PI. $103_{5}, 105_{2.4}, 108_{4}, 109_{15,16}$ ), grey-blackish, (Pl. $104_{5}, 110_{5}, 112_{15}, 115_{3}, 118_{1}$ ) grey (PI. $108_{5}, 109_{13}, 110_{11}, 112_{10}, 115_{7}$ ) or dark brown (Pl. $1043_{3}$ ) fring. Most of the pottery in this group is thickwalled, unevenly fired, decorated with polished lines (PI. $109_{12}, 114_{3}$ ), incised ornament (PI. 103, $110_{5}$, $118_{1}$ ) and bands of relief ornament (PI. $109_{13}, 112_{10}$, $1155_{8}$. The pottery of the second group is made of fine clay, fired in a reddish, light flaxen or brownish colour. All of them are well, evenly baked, made on wheel, and thin-walled. Without an exception, their surfaces are well fabricated. In the majority of cases, it is polished and covered with a thick layer of red paint (Fig. 83, 85). This is a new technological method for pottery produced in Kartli.

Pottery made with new technology is also distinguished by some new, non-traditional shapes. These are: moulded and narrow-mouth bowls, spouted jugs, "teapots", pitchers decorated with high-relief bands, pseudo-cigar-like vessels, etc.

The material of the Achaemenid layer is almost uniform. All levels include pottery from both groups, which indicates their chronological proximity.

In the layer of the Achaemenid period pottery of various function are attested: household and kitchenware, tableware, and ritual pottery [21].

The household pottery is represented by pitchers, pitcher-shaped jars and jars.

Two types are identified among pithoi. Pithoi of type I have rounded rim, short neck; they are made of coarse-grained, mixed clay. They are thick-walled. One piece of such pottery was found. It has a red shard, but that should be the result of a secondary burn (Pl. 110; Fig. 81, ).

Type II pithoi have a high neck with a straight or slightly rounded edging. All of them are made of well-sedimented clay and have a light-coloured fabric. This type of pottery is characterised by a high relief band below the neck (PI. $105_{9,11}, 107_{1-3}, 116_{1}$; Fig. $81_{2}, 82$ ). One of them (Pl. 107 $)$ has a body decorated with polished lines, the other one has a $\Lambda$-like sign on its edge ( $\mathrm{Pl} .107{ }_{3}$ ), a similar sign is also found on
the handle of the jug found together with this pithos (Pl. 1099).

Close parallels to both types of pithoi from Tsikhiagora were found in horizons III [23, PI. IV, $523 \mathrm{~s}, 555$ $\left.\mathrm{s}, 565 \mathrm{~s}, 5655_{1}-\mathrm{s}\right]$ and II [23, PI. LVIII, $587 \mathrm{~s}, 1079 \mathrm{~s}, 1079 \mathrm{a}-$ $\mathrm{s}, 1080-\mathrm{s}, 1085 \mathrm{~s}, 840 \mathrm{~s}, 2185 \mathrm{~s}]$ of the settlement of Khovle.

Type II pithoi were found at the Nakhidrebi Chali settlement [13, p. 70-71, PI. XXXVIII 5 .7 $]$ and Arukhlo I settlement [13, p. 82, PI. XXXVIIII-3]. It should be noted that rim of the pithoi at the Nakhidrebi Chala differs from those of Tsikhiagora, Khovle and Arukhlo I. Their rims are similar to those of the Hellenistic period and are therefore from a later period.

Typologically similar pithoi were found in the construction horizons of Narekvavi settlement III [9, p. 56, PI. XLII $1-4$, II [9, p. 46, PI. XXXIV $_{3-6}$ ] and I [9, p. 34, PI. $\mathrm{XXVII}_{3}$.

Pitcher-shaped pithoi are represented in two types. Pitcher-shaped jars of type I (PI. 112 ${ }_{5}$ ) have rounded edging, a thick mouth, a low neck, and a black-greyish thick shard. Type II pitcher-shaped jars are characterised by a thin, outwards extending mouth, and a relatively high neck. They have a thin, light-coloured shard (PI. 103 ${ }_{2}, 110_{2}, 111_{7}, 114_{8}, 117_{1}$ ).

A jar (pseudo-cigar-like). This is a big, elongated vessel (Pl. 113 ${ }_{10}, 114_{1,7}$ ). One of them is of coarsegrained clay, of grey colour (PI. 1146). Others are well-precipitated clay, light coloured with a thin shard, with polishing. One of them (PI. $114_{7}$; Fig. 83 ${ }_{3}$ ) has a protruding base, that is why it would be difficult to set it on its foot.

The jars found in Tsikhiagora are similar to those from Khovle III [23, p. 53, PI. LIV, 858-860s, 859s] and Khovle II [23, p. 53, PI. LV-990s, 1017s, 1033s, 1083s, 1098s, 1239s, 1388, 1734, 1736].

Oil lamp (PI. $118_{4}$; Fig. 84 ${ }_{5}$ ). This type of oil lamps is unknown to us from the monuments of the Achaemenid and post-Achaemenid period of Kartli.

The kitchenware mainly consists of pots and small pots.

A pot (PI. $105_{2,4,}, 108_{5-7}, 109_{12}, 111_{4,6-8,16}, 112_{1,8,9,16}$, $113_{4-6}, 114_{3,12}, 117_{5}$ ). The absolute majority of this type of pottery is of coarse-grained clay, fired to a grey, brownish-grey colour. They are mostly handleless or single-handled. We have identified thinwalled or thick-walled ones. They are mainly unornamented. Pieces with ornamentation composed of polished lines or decorated with engraved patterns are also found.

The decoration of pots and pot-pans with polished lines has been attested since early times. Such pottery is known from the very oldest layers of Khovle [23, PI. IV, 269,-61] and we have found it in all the horizons. The closest parallels of the Tsikhiagora pieces are also identified in the Khovle II construction horizon [23, p. 51, PI. LVI, 586s].

The pots found at the Arukhlo I settlement are polished with net-patterned ornaments [13, p. 7981, $\mathrm{Pl}^{\mathrm{XLI}} \mathrm{K}_{3,4,13}$ ].

Small pots are present in small numbers in layer Achaemenid of Tsikhiagora. This does not mean that in this period this form is less common. The lack and fragmentation of the material do not give the capability of distinguishing the pottery of this group. The part of the pottery found here, the surface of which is worked on a single side, should belong to the small pots.

Despite the lack of material, from this group of pottery, two types should be distinguished: straightmouthed (PI. $115_{7,9}, 117_{2}$ ) and flared-mouthed ones (PI. $110_{7}, 111_{3,5}, 117_{4}$ ). The first type of vessel is characterised by a biconical base. All of them are fired black-ish-grey, the surface is polished and decorated with a grooved or incised ornament. One of them has a corrugated body. The second type small pots are made of well-sedimented clay. One of them is fired black; the surface is polished well and decorated with grooved bands. The surface of other pottery is also well polished, with a brownish or red fabric. They are covered with a thick layer of red paint (Fig. 85, ).

## Kitchenware

Jug. The majority of the pottery of this group is represented by shards. Despite of the fragmentation of the material, two main types of jugs can still be distinguished: beaked ( $\mathrm{PI} .117_{10}$ ) and roundmouthed (PI. $106_{2}, 109_{8-10}, 114_{3}, 115_{10}, 118_{1}$ ). All of them are flare-mouthed. Only one of them is straight-mouthed (PI. 112 ${ }_{2}$ ). One jug is fired black (PI. 118, Fig. 86), one has a dark brown (Pl. $117_{10}$ ), and dark grey fabric ( $\mathrm{PI} .114_{3}$ ), all the others have red fabric, some vessels are red painted (pl. 103 $, 110_{4}, 111_{3}$, $115{ }_{10}$ ).

The surfaces of all jugs are well polished. Dark pottery is decorated with polished lines (PI. 114 ${ }_{3}$, $117_{10}$ ) or incised ornament (PI. 118; ; Fig. 86). Analogous to the latter vessel is the jug found in horizon III of the Narekvavi settlement [9, PI. XXXII_]. The ex-
act analogue of the ornament placed alongside the Tsikhiagora jug is depicted on one of the pieces of pottery revealed in Narekvavi burial [9, PI. $\mathrm{LXV}_{3}$ ], which is contemporary of the burial revealed in construction horizon III [9, p. 67].

A beaked jug was found in burial N32 of Narekvavi burial [9, p. 67, PI. LIII ], in Khovle III [23, p. 44, PI. LIV, $702_{2}$-s] and II [23, p. 50, PI. LVI, 1390] horizons.

In the horizon of Khovle II, flared-mouthed jugs with funnelled necks were defined [23, p. 50]. They are known from construction horizons I-II of Narekvavi and corresponding burials [9, PI. $\mathrm{XXXV}_{6}$; $\mathrm{XLIX}_{3}$; $\mathrm{LXI}_{9}$ etc.].

Bowl. The pottery from this group is composed of three main types: straight-mouthed, with inturned lip and profiled.

Three pieces of the first type bowls were found (PI. $105_{3}, 117_{7,8}$ ). All three of them are made of mixed clay and have dark fabric. Noteworthy is a big bowl of dark fabric (PI. $109_{14}$ ) which has a similar mouth.

The majority of the bowls with inturned lip (PI. $103_{3}, 104_{3}, 109_{7}, 110_{6,12}, 111_{14}, 112_{3}, 114_{9}$ ) are made of well-precipitated clay and have a light-coloured (red, flaxen, light brown) fabric; the surface is polished on both sides. Some of them are red painted. Some of the pottery of this type is fired blackish-grey; one of them is decorated with grooved lines (Pl. 112 ). One such bowl has a pouring lip ( $\mathrm{Pl} .102_{4}, 110_{12}$ ), reminding us of later pieces. It seems that they turned up accidentally in this layer.

The moulded bowls can be divided into three main subtypes: bowls with in-turned rim (with diameter of mouth smaller than that of the body - (PI. $108_{10}$ ); bowls mouth and body diameters of which are almost equal (PI. $108_{12}, 111_{13}, 112_{4}, 117_{6,9}$ ), and bowls with flaring mouths (PI. 103, 104 ${ }_{6,7}, 105_{1,10}$, $108_{1-3,9,11}, 111_{10-12,15}, 113_{1,2}, 115_{6}, 117_{3,9}, 118_{2,3}$ ). One bowl of this subtype ( $\mathrm{Pl} .111_{18}$ ) is painted only from the outside. Red-fired bowls are distinguished by a thin fabric, too. Bowls of all three subtypes were found in horizons III and II [13, PIs. LIII, LVI-LVIII] of Khovle, of which bowls of subtype III stand out.

Bowls of subtype I-I were found in all three layers of the Narekvavi settlement and in the burial [9, PI. $\mathrm{XXVI}_{10} ; \mathrm{XXXI}_{3,6,7,8} ; \mathrm{XXXII}_{3,69} ; \mathrm{XLI}_{1-4} ; \mathrm{LVIII}_{2} ; \mathrm{LXIV}_{2}$.

Phials. Two pieces of pottery from this group were found (Pl. $111_{11}, 114_{10}$ ). Both of them are of well-precipitated clay, of red fabric, and red painted.

Ritual pottery. The hearth-altars and clay jugs with tubular handles are associated to this group.

The hearth-altars (PI. $115_{1,11}, 116_{3}, 117_{11}$ ) are made of coarse-grained clay. The original colour of the clay is difficult to define, as the effect of fire on them is obvious. The surface of some of them is smoothed and polished. Their base indicates to the fact that the hearth-altars had been worked out on uneven ground. This group of pottery is not known evidenced at the Achaemenid and post-Achaemenid sites of Kartli.

A jug with a tube ("teapot") is represented by two fragments (PI. $105_{13}, 115_{4}$ ). Both are made of well-refined clay and red-painted [for this type of pottery, see 83].

Three pieces of arrowheads were found. One is made of bone (Pl. $112_{12}$; Fig. 85), pyramidal, quadrangular, with downward pointed tips and with socket. Analogous arrowheads are known from the Alazani Valley [18, p. 106, $\mathrm{XXX}_{4^{\prime}} \mathrm{XXXI}_{-6,6}$ ], Narekvavi [9, p. 72, PI. LIV ${ }_{28}$ ], and Kamarakhevi [54, fig. 1009, 1186, 1187].

Two bronze arrowheads are triangular and with a short socket (PI. 118 $8_{6,7}$ ). The largest number of such arrowheads was found in Khovle III [23, p. 48, PI. LXII] and Khovle II [23, p. 55, PI. LXII] construction horizons, in the Narekvavi burial-ground [9, p.72, Pl. $\operatorname{LIV}_{2-27}$.

Iron knife (PI. 112 $1_{11}$ ) - It is sharpened on one side, incomplete [21].

## LATE BRONZE AGE

On the Tsikhiagora summit, in the western part of it (sectors XXI, XXVI), a cultural layer of settlement dated to the Late Bronze Age was excavated. The layer was 0.5-0.7 metres high. This layer is represented by two chronological levels. The cultural layer of the Late Bronze Age is covered by a 4-metre-thick one of the Classical period. The Late Bronze Age layers are badly damaged. Therefore, it is difficult to determine the size of the settlement.

Remains of four houses of the Late Bronze Age were excavated at Tsikhiagora, of which houses №1, 2 , and 3 were recorded at one and the same stratigraphical level (Late Bronze Age I); while a fragment of building №4 seems to belong to the second level (Late Bronze Age II).

House №1 is located in squares 613-614 of sector XXI (PI. 120). In the course of excavations, only the western wall of the building has been recorded, while the northern and eastern ones are located under the layer of the Classical period. A big pit (diameter - 7 m ) has cut the southern wall and almost half of the structure dated to the Classical period. In the stratigraphical section of the pit a $0,6-0,7 \mathrm{~m}$ thick layer of the Late Bronze Age, composed of two levels, can be identified. The western wall of the structure turned out to be built of beams. The beams arranged along the length of the wall are plastered with clay on both sides. The width of the wall is 0.25 m . The wall was erected on a foundation of cobblestones laid in a single row.

The interior space of the structure was filled with rubble, which consisted of a layer of plasters (0.3-0.4 metres thick). Imprints of beams were noted on separate fragments of plasters. After removing the rubble layer, a large amount of pottery fragments were found on the floor of the building.

In the north-western corner of the structure, an agricultural oven was recorded, which had a twopart ash-bin. The total length of the oven is 1 m , width -0.4 m . The oven has two levels, the measurements of the upper level are $0.7 \times 0.4 \mathrm{~m}$. The oven's arch was not preserved. Fragments of clay pottery are arranged on the upper level, and it is covered with clay, the oven has a two-part ash-bin, one of which contained only ashes, and charcoal was observed in the second. The coal pit is rectangular in shape ( $0.6 \times 0.4 \mathrm{~m}$ ), while the ash-bin is circular.

The coal pit is formed by a 5 cm wide and 3 cm
high clay wall, which is semi-circular in its transverse section. The southern wall of the ash-bin is made of clay, the dimensions of which are: width -5 cm ; height -4 cm . It is rectangular in its transverse section. The wall of the ash-bin is composed of a flat, rounded stone from the north side.

In the preserved south-western corner of the structure, traces of the altar are noted on the floor, which was heavily damaged first during the construction of the structure in the Classical period, then by the pit of the Late Hellenistic period. The existence of the altar should be indicated by the clay details found here, which are indications of the shards of the 8 cm high semi-circular section of a wall. An imprint of beams is evident on these fragments from the lower side.

At a distance of 0.8 m south from the ash-bin and 1.0 m from the west wall, there was a round wooden pillar (diameter - 6 cm ) on the floor, which was plastered with clay from the outside and had a square shape in the transverse section $(9.5 \times 9.5 \mathrm{~cm})$. The structure has a clay paved floor.

The house was burnt down in a flame. Everything carries the traces of a strong fire - the oven, the clay-plastered floor, the west wall, especially the pottery, which are mostly reddish-brown. Some shards are heavily blackened. Fragments of the one and
the same vessel are fired in different colours. Some of the shards are so deformed that it is impossible to restore vessels, although the number of existing fragments would give this possibility (PI. 122-127. Fig. 87-94).

House №2. To the south-east of structure №1, in sector XXVI, remains of structure №2 are preserved. It is located in squares $41,42,66,67$ (PI. 121), where the fragments of the foundation built of two rows of cobblestones were excavated, on which the remains of clay and burnt wooden beams were recorded.

House №3 is located in squares 115, 116, 117, 141 , and 142 of sector XXVI. The south-eastern part of a rectangular structure was excavated. The preserved dimensions of the structure are $7 \times 6 \mathrm{~m}$. The walls of the building are built of beams and plastered with clay on both sides. The building is erected on the earth mound of the Middle Bronze Age kurgan, which is levelled and is used as the floor of the structure (PI. 121).

House №4 is located 0.50 m (Late Bronze Age II) stratigraphically lower than structures №№ 1,2 , and 3. In square 140 of sector XXVI, a fragment of the clay plastered floor was preserved, on which a clay vessel was recorded. It is a big-sized pot, decorated with plain and wave-like relief bands (PI. 128; ; Fig. 94) [89; 12].

## MIDDLE BRONZE AGE

During of excavations in 1988, kurgan burials were found under the Late Bronze Age settlement layer.

The excavations were made in the south-western part of the hill. Two small-sized kurgan burials were studied (PI. 129).

Kurgan №1 was located in squares №116, 117, 141 , and 142 of sector XXVI. The kurgan had a circle of large stones, the diameter of which was 6 m . It was filled with rubble, the height of which is 0.5 m . The rubble was covered with yellow pure clay, the diameter of which is 10 m , and the thickness reaches $20-30 \mathrm{~cm}$. The clay rubble may have been harder, but during the Late Bronze Age it was used as the floor of the structure, so it was straightened out. After the removal of the stone-mound, a rectangular burial pit with rounded corners ( $1.3 \mathrm{~m} \times 1 \mathrm{~m}$, depth -1.2 m ) appeared west of the centre of the kurgan, oriented on the W-O line. The pit had been covered with wooden beams, the remains of which could be noted on the edge of the pit (PI. 130).

A badly preserved human skeleton was found on the bottom of the pit, but it could still be seen that the deceased was lying on its right side with the bent limbs, facing to the east. In the eastern part of the pit, where the skull should have been, a flat stone (pillow) was laying on the floor. In the western part of the pit, by the feet of the deceased, a clutter
of small cattle bones was found. One complete clay vessel was embedded into the south-western corner of the pit. The pit was filled with pure earth up to the height of 0.30 . It seems so that, the earth thrown in the pit during the time when the roof still existed. After the collapse of the roof, the pit was filled with rubble stones (PI. 130; Fig. 95).

Kurgan №2 was excavated at a distance of 8 m north of kurgan №1. Only the remains of the stone circle were recorded, the diameter of which is 8 m . It consisted of a wall built of medium-sized stones. The wall is 0.5 m wide and 0.2 m high. In the centre of the circle, a pit was found, oriented on the N-S line, the dimensions of which are $1.6 \times 1.1 \mathrm{~m}, \mathrm{~h}-1.3 \mathrm{~m}$. The pit had very rounded corners. In its northern part, a round hollow was found, which left the impression of a pit for embedding a pole. Elongated stones were embedded vertically in it. The diameter of the hollow is 0.3 m , height -0.4 m . The chamber of the kurgan had been entirely robbed (PI. 131). Though no dating materials were preserved in the kurgan, its stratigraphic location makes it undoubtable that it is contemporaneous with kurgan №1.

Apart from the stratigraphic information, an important object for dating is the pitcher-shaped jar type clay vessel - wide-mouthed, flat-bottomed, with out-turned lip, hand-made, asymmetrical in shape. It is fired light brown, with black spots and thick-pile surface. The fabric contains particles of mica (Fig. 95) [11].

## EARLY BRONZE AGE

In 1972, remains belonging to the Early Bronze Age were excavated in the south-eastern part of the hill, on its slope. The remains of one building were revealed there. It was constructed of woven rods, plastered with clay on both sides. The fragments of plastering with imprints of rods covered the floor. It seems that the building had north-south orientation. The northern, backside part was excavated. The rest of the slope was destroyed. The building had an entrance from the south. The floor was made of well rammed clay; along the preserved rear wall there was a small shelf-like elevation, the ends of which partly went along the side walls. The preserved north-west corner of the building was rounded. On the axis line of the room, at a distance of 1.5 m from the wall, a pit for the central pillar was dug. Its sides were strengthened with stones.

Special attention was drawn by the elevation along the wall, on which clay vessels were grouped - one was large, jug-like, surrounded with three or four small, clay drinking cups narrowed in the middle. There were 6 such groups in total. Large pieces of pottery in groups of three lay on the floor by the northwest corner, between the principal pole and the elevation [39, pp. 61-62].

Later, it was discovered that the Early Bronze Age layer extends over the entire hill.

The study of the early layers can only be achieved in the south-western part of the hill, which was damaged before the excavations, and no significant structures contemporaneous with the temple were found.

The Early Bronze Age layer of Tsikhiagora was studied in 1986-1989. The excavated area exceeds 300 sq. m. Excavations were carried out in sector XXVI [19].

## Description of the levels and layers

Under the layers of the Classical period, the depth of which exceeds 4 m , a 0.5-0.7 m thick layer of the Late Bronze Age was excavated, under which a 0.3 $m$ thick light grey sedimented sterile layer was revealed. This sterilised layer, between the Early and Late Bronze Age ones, was created when the mound was abandoned and no longer used for living on. On the very same sedimentary layer, the kurgan burials of the late stage of the Middle Bronze Age were erected.

Under the sedimentary layer, an Early Bronze Age layer was found, 1 m deep, in which two levels are distinguished - A and B. Level A consists of two cultural layers, while on the level B three settled layers were attested (PI. 132).

Despite the existing connection between the layers, some peculiarities are observed in their materials, which will be specifically mentioned while describing the distinguished layers.

## Level A

This level was almost completely destroyed by later pits and foundations of Late Bronze Age structures. It should be noted that in the area studied by us, more than 80 household pits were identified. The pits are of different sizes, 1-1.7 m in diameter; some of the pits are 2 m deep. The pits often are cut into one another. The majority of these pits belong to the Classical period and the Late Bronze Age. Many of them have been diminished to the ground, and they greatly damage the Early Bronze Age layer.

Level A in the northern part of the excavated area is preserved in squares $15,40,41,42$. Its depth is $30-$ 40 cm on average. It consists of two cultural layers. To this level belong 13 pits (PI. 133-134; Fig. 96).

Layer $A_{1}$ is located directly under the sedimentary layer (PI. 133). The remains of the building were discovered in the $15^{\text {th }}$ square. A floor of $1.8 \times 1.2 \mathrm{~m}$ was cleared out. The floor, which is 5 cm thick, is plastered several times with yellow coloured straw-mixed clay. The building on the north side is included in the unexcavated area. The west and south sides of the building are damaged by later pits. On the eastern side, a wall was found, made of clay (length 1.2 m , width 15 cm , height $15-20 \mathrm{~cm}$ ). The floor joins the wall with a rounded corner. The wall, it appears, is made of clay or mud-bricks. There is no evident sign of a pole, or a cane. The floor has a decline on the south-east side. At a distance of 40 cm from the wall of the chamber, a ring of unfired clay is carved on the floor (outer diameter is 35 cm , the inner diameter is 10 cm , the height is $1-3 \mathrm{~cm}$ ). The eastern side is higher. There is no evident trace of a fire. Fragments of a large vessel were found in situ on the floor. The vessel is black polished, with a pink lining, and large semi-spherical handles. Next to it, two small jars were found. One of them was complete, placed upside down on a large obsidian nucleus), while the other represented a small drinking cup narrowed in
the middle (Fig. 97, ).
In squares 41-42, the remains of the second building were revealed - a floor, which was plastered with yellow coloured straw-mixed clay. Its thickness was $5-6 \mathrm{~cm}$. It has been plastered multiple times. The dimensions and planning of the structure cannot be defined. The floor was strewn with pottery shards (PI. 134). In square №41, at the edge of pit №28, fragments of a hearth were recorded, which were terribly damaged (Pl.152. Fig. 127).

There is no evident trace of fire on the layer. There are no signs of major destruction either. The buildings of this layer appear to be abandoned.

Layer $\mathrm{A}_{2}$. Its depth is $15-20 \mathrm{~cm}$. It was also recorded in fragments. In the $40^{\text {th }}$ and $41^{\text {st }}$ squares, a fairly large clay plaza was cleaned, which is arranged on top of thin cobblestone foundations. A number of piles of pottery were recorded in the plaza. The plaza was plastered with yellow coloured straw-mixed clay. No traces of fire were evidenced here, too.

In square 91, a small chamber was excavated, apparently of household function. It is rectangular in shape $(2.8 \times 2 \mathrm{~m})$. The walls were preserved on the north, west and south sides. The width of the walls is 0.3 m , the height is $10-15 \mathrm{~cm}$. The northern wall was laid with flat cobblestones, the rest of the walls are made of clay. The floor of this chamber is 10 cm lower than that of the building in $B$, layer, into which it is cut. A pile of pieces of one large vessel was found on the floor.

The same layer includes medium-sized cobblestones in squares 89, 90 and an ash layer of undetermined function in square 116 (Pl. 134).

Pits №4, 5, 11, 15, 18, 19, 62, 68, 69, 77, 78, 79, 81 belong to level A , in terms of both their stratigraphy and material.

Two groups are distinguished in these pits.
The first group - pits №№4, $11,15,18,19,62$, and 68. Their diameter is $0.8-1 \mathrm{~m}$, depth is $0.6-0.8 \mathrm{~m}$. The walls are of a straight, cylindrical shape. The pits were filled with large cobblestones, ash, a small amount of faceless obsidian flakes, and a small number of pottery shards, the surface of which was covered on different sides with irregularly arranged lines scratched by comb-like tool and fragments of black polished, thin-walled vessels (PI. 141; Fig. 112).

The second group - pits №№5, 69, 77, 78, 79, and 81. Their diameter is $1.2-1.7 \mathrm{~m}$, the depth is $1.3-1.6$ m . They are bell-shaped, widening towards the base. The pits had a $10-15 \mathrm{~cm}$ layer of ashes on the bot-
tom, and ash layers could be noted over the entire height. Some of the pits had representations of an uncertain shape on the bottom, made of unfired clay, which could not be fixed in place. More numerous and diverse material was found in the pits of this group (PI.141-147).

Stratigraphically, the first group of pits is later because, in some cases, they cut the floors of layer $A_{1}$, but we group them with level A, because they were cut out before the creation of the sterile layer.

The pits of the second group belong to the cultural layers of level A, according to the stratigraphic data, but it is not impossible that some of them were arranged a little earlier, during the small chronological gap that exists between levels A and B. In all cases, the pits cut through all three cultural layers of Level B.

The pits of level A, in our opinion, belong not to the agricultural but the ritual pits. This opinion is more clearly confirmed during the analysis of the artefacts found in the pits.

## Artefacts found on level A

Level A is rich in artefacts, despite the fact that it was heavily damaged, and it was preserved and excavated over a relatively small area. The majority of the material consists of pottery. It is more important because it is found in situ on fragments of building floors and outside them. Materials from thirteen pits belong to this level. All of them represent closed complexes.

Level A consists of two layers. Material of the upper, $A_{1}$ layer: on the clay floors and in the layer linked to them (PI.148-150); the lower layer $\mathrm{A}_{2^{\prime}}$ which is uncovered over a small area and contains a small amount of material - on the clay floor (PI. 151). Material of the pits: №№ $11,18,69,19,15,68,4,79,5$ pits (PI. 141), pit №81 (Pl.142-144), pit №78 (PI.145,146), pit №77 (Pl. 147).

Despite the diversity of the ceramics and some of the noticeable differences which can be seen between the materials on the settlement floors and those discovered in the pits, and sometimes peculiar differences in the materials from the pits themselves, it occurs to us that the Level A material consists of an united complex, and it will be discussed together.

The pitcher-shaped jars are thick-walled, made layer by layer from coarse-grained clay. They are fired black on a pink lining with a polished surface.

They are characterised by a neck extended towards the shoulder, a wide flared mouth, a sharp inflection line at the transition from the neck to the shoulder, a swollen body and a narrow base. Pitcher-shaped jars found in layer A, have, in one case (P.148. Fig. 113), two massive hemispherical handles attached to the bottom of the neck, in the second case (PI.148) - two smaller handles are attached to the belly. A differently shaped pitcher-shaped jar was found in pit №78 of the very same level. It is also polished black and has a pink lining. It is distinguished by a low neck and an egg-shaped body (PI. 1453).

The pitcher-shaped jar type pottery includes massive handle fragments, hemispherical (PI. 1449), sometimes with a jagged back (PI. 1519), and a me-niscus-shaped hole, which are often carved right into the wall of the vessel (PI. $145_{9,10}$ ).

The fragments of pitcher-shaped jar type vessels found in this same level stand out sharply (PI. $151_{4.11,12}$ ). They are thick-walled, grey-fired, with a smoothed out neck, out-turned and thickened rim, and a pile surface, which was obtained as a result of special daubing of the body of the vessel with wet clay. Horizontal relief incised strips are attached on the body ( $\mathrm{PI} .151_{11,12}$ ).

The big, wide-mouthed pots are mainly represented by fragments of handles (PI. $146_{9}, 151_{10}$ ). The ribbon-shaped handles have a jagged back. They are attached to the mouth and neck, or to the mouth and shoulder. The pottery is fired red or pink on a light-coloured lining. It is polished.

Narrow-necked pots are represented of neck fragments (PI. 144, 151 ). The pottery is fired pink, grey, or black polished on a pink lining. This type of pottery includes massive handles with menis-cus-shaped holes (PI. 151 ${ }_{8}$ ), attached to the body of the vessel.

A fragment of single-handled, pear-shaped large jug stands out (PI. 149; Fig. 120 ${ }_{3}$ ). It is characterized with sharp, stepped transition from the neck to the body, with a massive handle, attached to the mouth and shoulders. The jug is thin-walled, fired black, with a black polished surface. The body is decorated with the grooved ornament.

There is also a fragment of a wide-mouthed, lownecked vessel (PI. 149 ; Fig. 120). It has a low, wellshaped neck that widens towards the shoulder, with a flared mouth, a sharp inflection line at the transition from the neck to the body, a swollen belly and a narrowed base. It has a small, hemispherical handle
attached to the shoulders. The vessel is thin-walled, fired black, with a well-polished surface. On the bottom of the neck there is an engraved ornament: a band of hatched triangles, while on the body there are chevrons composed of thin stripes. A sherd of the same type and decorated with a similar ornament was found in pit №81 (PI. 142 ${ }_{5}$ ). The ornament on it is completed entirely with engraved, incised lines.

Three-part pots, small-sized vessels (Pl. 149 ${ }_{4,5}$, $151_{14}$. Fig. 121) with a tall, slightly extended neck, flaring mouth, sharply swollen, often with thickened belly and a narrow base are thin-walled, fired black, in one layer, with a well-polished surface. Fragments of small-sized pear-shaped pottery belong to the very same group (PI.146 ${ }_{2-4}$ ).

All these smallish pieces of pottery are characterised by a very clear and refined ornamentation with engraved (stamped or incised) lines. The basic graphic ornamental style is a linear, often linear-dotted execution of a horizontal band and frieze (a row of hatched triangles, a hatched frieze) and linear chevrons or chevrons of ribbons filled with various patterns. In one case (PI. 149) , a protrusion with a horizontal relief carved on the body, divided by notches is evidenced together with an engraved ornament.

Relief ornamentation - three vertical protrusions attached to the shoulder of the vessel - decorated a fragment of the pot found in pit №81 (PI. $143_{5}$ ). It has a smoothed neck and pile body specially plastered with wet clay. A fragment with similar relief ornamentation was found in layer $\mathrm{A}_{1}$, too (PI. $149_{8}$ ).

The fragments of pieces found in layer $A_{1}$ represented a special type of three-piece pots ( $\mathrm{Pl} .150_{9,10}$ ). They have a wide, extended neck with a flared mouth, a sharp inflection line at the transition from the neck to the body, and a cylindrical body, which, judging by the analogous objects, ended with a conically narrowed base. The pottery is fired pink and traces of a reddish engobe are visible on the surface.

Similarly, spherical bodied pots are separated into a distinguished group. They are characterised by a low, cylindrical, sometimes thickened neck, a slightly flared mouth and a spherical body. In layer $\mathrm{A}_{1}$, a smallish fragment of thick-walled, pink-burnt vessel with traces of red engobe on the surface was found (PI. 150). In the very same layer, there is a fragment of a large, grey-fired pot ( $\mathrm{Pl} .150_{12}$ ), with a smoothed neck and an irregularly grooved body. This type of pottery found in pit №18 ( $\mathrm{Pl} .141_{18}$ ) also has such a
smoothed neck, and oblique deep notches on the shoulder, with irregularly grooved lines on the surface.

A fragment of a smallish, thin-walled vessel found in pit №11 (PI. $141_{11}$; Fig. 112) should be noted; it has a sharply flared mouth and an inflection line at the transition from the neck to the body. The body is covered with vertical relief stripes, and the upper part has a depression, a hollow. The pottery is fired black and the surface is polished to a metallic shine.

The jar-shaped pottery includes grey, blackish, or brownish fired vessels and pottery fragments, which is represented in large quantities in the level A material. Regardless of size, the jar-like pottery is characterised by a slightly flaring, often thickened mouth, which transits directly or over the low neck into the body. They have a wide and flat base, round, rib-bon-like and otherwise shaped handles attached to the upper part of the body. There are also met pieces without handles. The ornament on the shoulder, parallel to the mouth, goes around the vessel. It represents a relief, incised or folded band or protrusion (Fig. 119, 123, 124).

So-called jar-shaped pottery of Tsikhiagora level A is composed of two groups - smooth-surfaced (Pl. $141_{79}, 144_{8,10,11}, 145_{5,13}, 147_{12,13}, 151_{7}$; Fig. 119) and with piled surface, with a surface plastered with wet clay (PI. $141_{5}, 145_{2,4,5}, 150_{14,18}$. Fig. 123, 124).

The jars, with a smoothed surface, are sometimes also polished. Nevertheless, due to the excess of inorganic impurities in the clay, the surface is uneven, round or ribbon-shaped handles are attached to the neck and shoulders, sometimes asymmetrically (Pl. $147_{13}$ ), or onto the mouth and shoulder. In the upper part of the handles of the jar-shaped pottery found in pit №78 there are hollows (PI. 146). Analogous hollow is made on the body of one of the jars from pit №79 in the upper part of the false handle (PI. $141_{79}$; Fig. 123). The ornament consists of horizontal, relief, slightly cut stripes, and protrusions (PI. $143_{2}$, $145_{5}$, $141_{79}$; Fig. 123, 124).

Jar-like vessels plastered with wet clay have a smoothed neck and pile body. Horizontal, relief, indented or folded strips (PI. $141_{5}, 143_{3}, 150_{14}$ ), or indented protrusions (PI. 1454) often decorate the place of transition from the neck to the body.

There are different types of tubs found at level A. This type of pottery consists mostly of fragments. There are fragments of brown-fired, low, one-handled tub ( Pl .151 ), with handles carved onto the
mouth and stomach. This type of tub is characteristic for layer $A_{1}$ and $A_{2}$.

The tubs found in the pits are of a completely different type. A large sized, tall, thick-walled vessel was found in pit №78 (PI. 146 ${ }_{8^{\prime}}$;ig. 122). It has a conically narrowed body and a flat base. A massive rib-bon-shaped handle is attached to the upper part of the body. Unfortunately, only one half of the vessel was found in the pit, so it may have had a second handle, as well. The pottery is fired brown, made of large-grained clay. The outer surface is black polished. We have found fragments of small-sized vessels in the materials of pit №81 (PI. $144_{4,5}$ ). They are characterised by semi-spherical handles. They are fired pink and unpolished.

The small pots from the Level A consists of a small number of fragments and one whole piece from pit №78 (PI. 146; ; Fig. 118). This is three-parted vessel, with a wide, protruding neck, flared mouth, sharply protruding belly, conically narrowed base and a small, flat base. A semispherical handle is attached to the neck and shoulders. The vessel is fired brown. Its surface is smoothed, furnished with grooved ornament. A line consisting of two grooves follow along the transition from the neck to the belly, above which - on the neck and below it - on the body, on the opposite side of the handle, geometric patterns, meanders, etc. have been added. The ornament is applied on wet clay, hurriedly, and is not been levelled.

The mugs are of various types, represented mostly by fragments. Whole vessels of smaller size were found in layer $\mathrm{A}_{1}$ (PI. 150; Fig. 116). They have a protruding neck, flared mouth, swollen belly, narrow bottom, and a small handle with a meniscus-like hole. The vessels are fired brown, the surface is polished, and the inner surface is hurriedly evened out.

A polished, yellowish mug (PI. 142; Fig. 117) was found in pit №81. It has a low, wide neck, flared mouth, a sharp line at the transition from the neck to the round body. The handle is attached to the mouth and shoulders. The mug is decorated with the incised ornament. At the transition from the neck to the body a band of hatched triangles is located, arranged in groups, while the body is decorated with chevrons and other types of geometric patterns.

The mug of a distinguished type should belong to the pottery fragment found in pit №78 (Pl. $146_{7}$ ). It has a straight, cylindrical body and a sharply narrowed base; the vessel is fired brown and has
a smoothed surface, it is decorated with an incised ornament.

The bowls are of different types; Large, of a conical build, with a flat base (PI. 151 $)$, fired pink, with a smoothed surface. A vessel fragment of this type from layer $\mathrm{A}_{1}$ (PI. 149) has a thickened mouth. It is decorated with a dotted line.

The small-sized bowls (PI. 151 $)$ ) are characterised by a well-shaped neck, out turned lip, protruding body, and a narrow base. Special attention is drawn by a fragment of bowl found in pit №78 (PI. 146 ), with a sharply moulded, stepped transition from the neck to the belly, and from the belly to the base. The vessel is brown-fired. Both the inner and outer surfaces are well polished. The neck and belly are decorated with fine, engraved patterns. On the neck hatched triangles are engraved, while the body is decorated with chevrons with hatched triangles.

A fragment of the big-sized, thick-walled vessel with narrowed mouth and spheroid body belongs to a different type of bowls (PI. $150_{8}$ ). It is pink-fired and engobed. Another fragment belongs to a vessel with cylindrical body and rounded base (PI. 1424). It is fired brown, with smoothed surface, and decorated with an incised ornament.

The drinking cups are black-polished, thickwalled, with a well-shaped neck, a sharply widened belly, and a conical base. The difference between them is noted in their size and shape ( $\mathrm{Pl} .150_{1-3}$ ). One fragment of drinking cup ( $\mathrm{Pl} .146_{5}$ ) is decorated with a relief, circular pattern. The surface of this drinking cup is better polished than that of other pieces.

The drinking cups also include wide-necked and wide-bottomed jar-like vessels (PI. $150_{4,5}$ ), found in the layer $A_{1}$. They are fired and black-polished, like the rest of the drinking cups.

Among the materials revealed at the level $\mathrm{A}_{1}$, one group of decorated pottery stands out. These fragments belong to small-sized vessels. Due to the fragmentation, it is not possible to restore the shapes of these vessels. All pottery fragments of this group are thin-walled, black-polished, decorated with a delicately engraved (Pl. 151 $1_{3-5}$ ), grooved, or incised ornaments (PI. $141_{19}, 142_{2}, 143_{6}, 147_{5,6}$ ). The majority of the pottery fragments of this group are distinguished by a particularly high level of surface polishing (Fig. 114, 121, 125).

Shapeless pottery sherds found in the pits are arranged in a separate group. They have comb-likely grooved surface (PI. 141, 142 ${ }_{3}, 150_{12}$; Fig. 112).

Among the rest of sherds noteworthy are: a fragment of the neck with a small semispherical false handle (PI. 151 ${ }_{6}$ ), a black polished sherd of uncertain function (PI. 151 ${ }_{17}$ ), which probably represents a toe of some vessel; a fragment of the straight wall of a vessel, with a horizontal relief on both sides and a small, pointed protrusion on the mouth ( $\mathrm{Pl}. 151_{13}$ ), pink-burnt, with smoothed surface. It seems to be a fragment of the wall of a large pan-like vessel.

Numerous fragments of pan-like, side-grooved, stationary and portable vessels of various sizes are present both in the cultural layer and in the pits (PI. $143_{4,10,11}, 145_{14}, 146_{6,11}, 147_{8}$; Fig. 122). Different types of relief patterns are often applied onto the walls of the vessels. In one case (PI. 1434) the wall of the vessel is indented and a strip with relief indentations is applied on it. The walls of the pan-like vessels are well-fired (pink, grey or yellow). The surface is smoothed, though sometimes it is uneven, due to the excess of inorganic impurities.

Hearths also belong to the group of pottery. Numerous fragments of round hearths of different sizes and shapes were found on the level A, especially protrusions - lugs, characteristic of them. One or more lugs have been attested in almost all pits, both large ones characteristic of stationary ones and smaller protrusions of portable hearths (Pl. $144_{13}, 146_{10}$, $151_{15}$. The lugs of portable hearths are often painted red.

Of special interest is a round stationary hearth with lugs, found on one of the floor fragments of layer A (PI. 152; Fig. 127). It was badly damaged and could not be restored. The hearth was placed in a pit dug in the floor. It has well-fired walls, widened upwards the lip. It had no base. Its moulded, widened part was up of the floor level. On the inner side of the hearth, three lugs were shaped, one large and two relatively smaller, with two "eye-like" depressions. Since the hearth was damaged, it is difficult to determine the exact positions of these lugs. It seems that, on one side of the hearth two smaller lugs are located, while on the opposite side a bigger one was placed. The hearth is made of coarse-grained clay, fired pinkish-yellowish. The moulded wide upper part, the inner surface and lugs are plastered with pure clay and polished. The hearth shows no traces of a long-lasting fire, despite the fact that it was filled with pure ashes.

The clay wares also include a small sized, coneshaped vessel of unknown function, fragments of
which were found in pit №81 (PI. 142; Fig. 122). It is thin-walled, fired brown, and slightly polished. On the preserved fragments, three small holes for threading laces through are evidenced: two on the edge and one near the tip of the cone. The holes on the edge are arranged in such a way that one can presume that this item had a third hole for symmetry as it seems to have been used hanging. On the outer surface of the cone, various patterns are shaped by dot-and-line ornament. These patterns are arranged in a way to produce an impression that they had some deliberate purpose.

A clay model of a wheel (PI. $150_{22}$ ), black-fired, with smoothed surface, as well as a fragment of pink-fired mould for casting axe (PI. $150_{21}$; Fig. 126), made of fire-resistant clay, were found in level A.

An anthropomorphous (male) figurine was found in pit №77 of level A (PI. 147, ; Fig. 126). It is 5.5 cm high and 3 cm wide, made of coarse-grained clay. Its upper part is narrowed and the head of the figure is rendered. The nose and eyes are clearly shaped. Well-distinguished hands are bent, adhering to the chest. The figurine is fired pink and has a well-levelled surface.

## Metal objects

There was found a copper coil (Cu: 99,9: $\pm 0,19 \%$, Ca: $0,8 \pm 0,3 \%$ Fe: $0,1 \pm 0,04 \%$ ).

## Bone objects

In level A, a perforated kneecap in the shape of a wheel ( $\mathrm{Pl} .141_{5}$ ) was found in pit №5, as well as a fragment of a mushroom-shaped kneecap (PI. 149 ${ }_{15}$ ).

## Level B

Under the level A , over the entire space of the excavated area, a new one was revealed, containing three cultural layers. They are referred as level B. This level is separated from the upper one (level A) by a thin ashy one. A 2-3 cm-thick grey sedimentary layer is noticed here and there. This gives us grounds to think that a small chronological gap existed between these two levels. The lower cultural layer of level $B$ lies atop the fossilised humus. The average depth of this level is $60-70 \mathrm{~cm}$.

Level $B$ is rich in artefacts, the majority of which consists of pottery. It is all the more important because, with rare exceptions, the pottery fragments have been found in situ, inside buildings and outside them, especially in layer $B_{2}$. The settlement of this pe-
riod was destroyed by a fire, due to which the site was conserved intact. The situation differs in layers $B_{1}$ and $B_{3}$. First of all, the layers have not been burned and, additionally, they are preserved in a relatively smaller area.

Layer $\mathrm{B}_{1}$. The depth of this layer, in the best-preserved southern part of the excavated area, is 25 cm . In squares 90, 91, 115, 116, the remains of several buildings have been revealed (PI. 135).

In the $115^{\text {th }}$ and $116^{\text {th }}$ squares, the floor ( $5 \times 4 \mathrm{~m}$ ) of a structure was revealed. It was 7 cm thick, plastered with yellow clay. In the centre of the floor a round hearth ( $\mathrm{dm}-1 \mathrm{~m}$ ) with lugs was embedded. The hearth was filled up with stones and ashes. One of its lugs was found among the stones. The impression was shaped that this hearth was blocked up with stones. The hearth was badly damaged by a pit of the Classical period (Fig. 97 ${ }_{2}$ ). To the northwest of the hearth, at a distance of 0.5 m , a bowl-like vessel was placed into the floor (PI. $154_{8}$; Fig. 1336). The floor was bounded from the west by a stone wall which was 4 m long, 0.7 m wide and 0.3 m high. From the north it was joined by a wall built of mudbricks. It was 1.6 m long, 0.4 m wide, and 0.15 m high. These two walls composed the north-western corner of the building. This construction was rectangular in shape ( $5 \times 4 \mathrm{~m}$ ). It should have had an entrance from the north.

In the square 90 , to the north of the mud-brick wall, a clay floor, associated with it, was recorded. Sherds of big-sized vessels were placed on the floor (Fig. 128). It should be noted that the remains of building of the layer B, show no traces of fire. Its floor was plastered directly on the fragments of plastering of layer $\mathrm{B}_{2}$.

Ritual pit №17 belongs to the layer $\mathrm{B}_{1}$. The diameter of the pit is 1.2 m . It is 1.7 m deep. The pit is bellshaped.

The bottom of the pit was plastered with a layer of 20 cm thick pure ashes. The entire height of the pit was filled up of $8-10 \mathrm{~cm}$ thick ash-paved layers. Seven layers of ashes have been identified. The interval between the layers is $15-20 \mathrm{~cm}$. Some intact vessels, shards of pottery and other artefacts were deliberately arranged on the layers. In some cases, shards of one and the same vessel were arranged on different layers.

A ring of unfired clay (dam-1.1 m) was plastered to the floor in the $66^{\text {th }}$ square. It belongs to the layer $B_{1}$, too. There are faint traces of fire on the inner
walls of the ring. It is filled with pure ashes. There was a small platform made of flat stones erected to the west of the ring (remains of an altar?).

## Layer $B_{1}$

## Pottery

In the layer $\mathrm{B}_{1}$ artefacts made of clay are voluminous, though mostly fragmentary (PI. 153-156; Fig. $128-136$ ). This is explained by the fact that the settlement was abandoned by the population. At the same time it is badly damaged by household pits of the upper layers. To this layer belong materials from the ritual pit №17 (Pl. 157-159), part of which is represented by complete pieces. The pottery is handmade, delicately shaped layer by layer from clay of different thickness and structure. Both thick-walled vessels made of coarse-grained clay and thin-walled ones manufactured of fine-grained clay were found. The surface of the vessels is mainly polished; sometimes the inner surface is polished, too. There are evidenced unpolished pieces, too. With rare exceptions, the vessels have a black, brownish, or red colouration, mostly on a pink or grey lining. There are attested pink-fired and black glossed pieces, there are red painted vessel, too (Fig 130).

Graphical patterns, mainly incised, are widely used to decorate the vessels. Grooved-bulging and relief ornaments are also used.

Pitcher-shaped jars. Produced layer by layer from coarse-grained clay, they are fired black, brown, or red, on a pink lining (Fig. 128, 129), with well-polished surface. They are characterised by an extended neck, and a widely out-turned lip. There is a sharp line on the transition from the neck to the shoulder and from the belly to the bottom. They are not characterised by handles or any kind of ornament. Only one pitcher-shaped jar is decorated. Its massive handle is attached to the body (PI. 153 ${ }_{1,2}$; Fig. 129). The shoulders of the vessel are decorated with a band composed of two grooves, while relief meander is applied to the body.

Pots are big, wide-mouthed, mainly represented by fragments of handles (PI. 155). The lentoid handles have ribbed backs, corrugated. They are attached to the mouth and neck, or to the mouth and shoulders. These pots are fired brown or red, polished, having a pink or grey lining.

Pots, the narrow-necked ones, consist of neck
fragments and massive handles with meniscus-like holes, attached to the body of the vessel (PI. 154 ). The vessels are fired pink or grey. They are polished.

The handleless pots with three-partite-body (Pl. $154_{7}, 158_{13}$ ) are characterised by a high, slightly protruding neck, a low, sharply swollen belly, and a narrow base. They are fired black, with a pink lining, and well-polished (Fig. 133,).

The jar-shaped vessels are represented by fragments (PI. $155_{1,2}$ ). In spite of their size, the jar-like vessels are characterised by a slightly flared, often thickened mouth, which passes onto the body directly or through a very low neck. Round or ribbon-shaped handles are attached to the upper part of the body (mainly to the mouth and belly). One handle (PI. $155_{1}$ ) has a little hollow on top. The vessels are fired brownish or grey. Due to the excess of inorganic impurities into the fabric, the surface is uneven, thickpiled.

The tubs are single-handled, high or low (PI. $154_{5,6}, 157,158_{5,6,9}$ ). They have a wide flaring mouth, a protruding neck, a conically narrowed bottom, and a flat base. The handles are attached to the area between the mouth and the belly. Almost all of them are fired brown and polished. The inner surface is black and specially polished. The low tubs from the ritual pit (Pl. 158 ${ }_{5,6}$ ) stand out with their small sizes.

The tubs with indented sides are represented by three-barrelled handles (PI. 1593), fired yellowish. They are single-layered, and engobed. Tub-like vessels include narrowed-mouth vessels with a semispherical handle (PI. 157 $;$; Fig. 133 ). A complete piece was found in the ritual pit. It has a rounded body and a flat bottom. A handle is attached onto the body. The tub is fired pink, unpolished; traces of red paint can be seen near the neck. Fragments of similar vessels were also found in the layer (Pl.1554).

Small pots are three-piece, broad, with a wellshaped neck, a flared spiky mouth, protruding belly, a sharp transition from the neck to the belly, with a conically narrowed base. The handle is attached to the mouth and neck (PI. 154 $)$. They are fired brownish, with pink lining, and polished surface. Some fragments are ornamented: a band of grooves is evidenced on the shoulders of one vessel, while its body is decorated with grooved-and-bulging meander ornament (Pl. 153, 159 ${ }_{1}$; Fig. 1334 ). The fragments are mostly glossy black, with a pink lining.

The mugs consist of fragments, mostly black-polished, with grey lining. There were also found a frag-
ment of handle with oval cross-section, and jagged back characteristic of this type of pottery, and a fragment of the base with delicately engraved ornament (Pl. 1534).

Various shapes were identified among vessels of this type in layer $\mathrm{B}_{1}$. A fragment of black polished mug (Pl. 1537), with a slightly flaring wide mouth that passes directly into the body. Its body is almost straight, with a sharply narrowed base. The vessel is decorated with engraved and incised ornament. Its upper part is decorated with a band, under which a broken-lined pattern is located.

The bowls have a well-shaped neck, flaring lip, protruding belly, narrow base, and slightly bent in underside ( $\mathrm{Pl} .154_{3}, 158_{4,8}$ ). The bowls are fired dark brown or black. They are polished. Their inner surface is black and well-polished. One piece from the ritual pit (PI. 158) is decorated with engraved and relief ornament. The shoulders are decorated with a three-line band. On the body of the vessel there is an incised decoration - triangles. A relief horizontal protrusion is attached to the shoulders.

The drinking cups are black-polished, thick-walled, with well-shaped neck, a sharply widened belly and a bent-in bottom of conical shape. They differ from one another by the size and shape (PI. 158 ${ }_{1-3}$ ).

Among materials revealed in layer $B_{1}$, one group of fragments of ornamented pottery is distinguished. They belong to small-sized vessels. Due to fragmentation, it is not possible to restore the shapes of these vessels. One sherd belongs to a small three-partite vessel. It is fired brown, with a black inside, and a frieze composed of dotted linear ornament on the neck. All the remaining fragments of this group are black polished, fired in one layer, thin-walled, delicately decorated with an engraved ornament. They belong mainly to small-sized three-partite vessels. Fragments decorated with grooved ornament (PI. 153; Fig. 135) are distinguished by a particularly high level of surface polishing.

The faceless fragments of walls should be noted separately, which are decorated with irregularly directed comb-like patterns (PI. 153; Fig. 135). The vessels are fired brownish-dark grey colour.

Pan-shaped, side-grooved stationary vessels are represented by fragments (PI. 1533). They are fired grey or yellow. A narrow horizontal relief ornament is evidenced on the fragment of the body (Fig. 134 ${ }_{3}$ ).

Clay lids are round-shaped (PI. 154). They are of one type, but of different sizes. They are black
glossed, with a depression in the centre.
A stand, in the shape of a vessel's neck, is thickwalled, fired pink, and unpolished (PI. 1562).

The hearths. Clay wares are represented by a large round hearth with lugs. It was inserted in the centre of floor of the house (Fig. $97{ }_{2}$ ). The hearth was placed into a pit dug in the floor and was fired on the very same spot. That is why it has only the inner surface and a wide moulded edge, which is slightly raised from the floor level. The hearth was heavily damaged by a later pit and had three lugs preserved. According to the analogical find in the layer $B_{2}$ and to the arrangement of the preserved lugs, it had four of them in its time. The hearth is made of coarsegrained clay, which has chaff and small pebble fragments mixed in. The surface is cleanly plastered with pure clay and is polished. The hearth shows traces of a long-lasting fire.

In addition to the stationary hearth, in the $\mathrm{B}_{1}$ layer fragments of relatively small portable hearths of the same type were found in large numbers (PI. 156 ; Fig. 136). On the bottom of the ritual pit a lug of the stationary hearth and two lugs of a portable one were found (PI. 159 ). The portable hearths are of different sizes. They have the same build, with a hole on the bottom (PI. 156). The hearths are burnt pink or yellowish, some are brown engobed. Traces of red paint are often preserved on the lugs. Grooved ornamentation is also often attested on the outer surface of the portable hearths. A bowl-like vessel embedded in a specially dug hollow in the floor seems to be the simplest type of portable hearths (PI. 154 ${ }_{8}$ ). It is made of coarse-grained clay, fired pink. Its inner surface is red painted.

## Stone items

The stone items of the layer $B_{1}$ consist mainly of the material found on the bottom of ritual pit №17 (PI. 159; ; Fig. 136). A sickle inlay made of brownish flint was found here, retouched on both sides. There were found a boat-shaped stone of the hand grinder and a pestle stone, as well.

## Bone items

In the ritual pit №17, one bone arrowhead was found. It is biconical, with faceted blade and a tang. The arrowhead seems to be unfinished. There were found a drill made of a long bone, as well as a tip of horn specially sawed off (PI. 159 ${ }_{6}$; Fig. 136).

## Layer $\mathrm{B}_{2}$.

From the settlements discovered on Tsikhiagora, the settlement destroyed by fire is especially clearly defined. It is included in the second layer of the level B. The fire destroyed buildings, but, at the same time, it burnt certain parts, turned the clay into bricks and the wood into coal. The ruins were preserved intact under the thick layer. This gives us grounds to reconstruct plans of the buildings, their construction, to reveal some details, and understand principles of planning.

The layer is located directly below layer $\mathrm{B}_{1}$. It has been revealed over the entire area excavated by us, and the remains of three buildings have been studied (PI. 137).

Building №1 is located in the north-western part of the excavated area, in the $14^{\text {th }}, 15^{\text {th }}, 39^{\text {th }}, 40^{\text {th }}, 64^{\text {th }}$, $65^{\text {th }}$ squares (Pl. 136, 138. Fig. 98-106). It represents a two-room building plastered with clay on wood frame, with an area of $66 \mathrm{sq} . \mathrm{m}$. ; the facade is oriented to the south.

The structure was completely covered with the $20-30 \mathrm{~cm}$ thick ruins of a wall, collapsed on the floor. The ruins are brick-coloured, light red in some places. The northern, eastern and southern walls of the burnt building, lying down over the rooms, are terribly destroyed. Here the large parts of the wall lay almost unmoved, with imprints of thin parallel wickerwork canes. Fragments with imprints of a pole surrounded with wickerwork are also preserved.

The thickness of the wall of the building was 2025 cm ; round cross-sectioned poles were inserted into it in rows. Nowadays only pits dug for poles are preserved. In some of them charred ends of poles are preserved. The original diameter of the pits, and therefore the poles, was $5-7 \mathrm{~cm}$, while the distance between them reached $16-18 \mathrm{~cm}$. The hollows were $20-25 \mathrm{~cm}$ deep. Some poles were specially cut, given tetrahedral section. Around the ends of the poles the imprints of the rods were preserved. The wooden frame made of rods plaited around the poles was plastered on both sides with a number of layers of clay, of which the outer layer is distinguished by a finer structure and a thinner daubing. The walls of the building are preserved at a height of $15-20 \mathrm{~cm}$. It could be assumed that the original height of the walls was more than 2.5 m . Considering the fact that their ruins reached the centre of the building, the wall daubing went rounded into the upper layer of
that of the floor. The base of the wall was strengthened from outside with sand and clay. The floor of the building represented a multi-layered, $10-12 \mathrm{~cm}$ thick solid daubing.

The central chamber of building №1 represents a quadrangular room with strongly rounded corners, measuring $7 \times 6 \mathrm{~m}$. In the centre of the room, a rectangular pit for the central pole was cut into the floor. The dimensions of the hole are $30 \times 20 \mathrm{~cm}$; its height is 40 cm . The pit was surrounded by cobblestones. At a distance of 15 cm to the south of the pit, a clay hearth was daubed into the floor. Its diameter is 92 cm . The hearth has round lugs (PI. 136; Fig. 104). It is oriented towards the entrance. A 10 cm wide low groove surrounds the hearth. On the inner side of the hearth there are four big and one small lugs, directed towards the centre. Their ends are slightly raised. The distance between a pair of the lugs turned towards the entrance is greater than that between the rest of lugs. The fifth lug is placed on the opposite side. The smaller one has indentations on both sides that should represent the eyes. The hearth, which is 25 cm deep, is half filled with ashes and the burnt bones of small cattle (sheep). The surface of the hearth is polished, badly cracked, and has a dark brownish colouring.

Between the hearth and the pole pit, a radiant circle is engraved on the floor, which is supposed to represent the depiction of the sun or another solar sign. It is damaged by the pole pit of the upper layer.

To the north-west of the pole pit, at a distance of 1 m , under a pile of pottery, an image of an unknown nature was found engraved on the floor, as well as a hollow (dm-10 cm) for placing in a vessel.

Along the northern wall of the central chamber a 10 cm high and 60 cm wide elevation is arranged. Its ends pass along the side walls, too. Due to this, it turns in a wavy manner. The elevation is plastered with a mixture of small-sized pebbles and clay. Fragments of a broken stationary hearth were revealed in the filling of this elevation.

The elevation has a glistering surface. This could be the result of special daubing and firing. Nothing similar was noticed on the floor of the structure, although its surface was quite well compacted into a thin layer. A 5 cm wide strip of red paint was drawn along the edge of the embankment and at the base of the wall, which was preserved here and there (Fig. $105_{2}$ ).

On the remaining section of the elevation, the
length of which is 2 m , an ash pile was recorded. The pile had the shape of a truncated cone, 40 cm in diameter. From above, it is plastered with a thin layer of clay. The daubing is circular, so the middle part of it is not plastered. The plastering is painted in an intense red colour. Three small drinking cups turn upside down were arranged with it (PI. 136), and ten clay vessels were found on the elevation itself and on the floor, near them. In one of the vessels (Pl. 161. Fig. 141) a biconical, 8 cm long bone arrowhead was found (PI. 136), while in another one (PI. 161 ${ }_{6}$. Fig. 138) a flat, 21 cm long bronze dagger with a shaft was placed (PI. $163_{5}$; Fig. 140).

A trapezoidal chamber ( $6 \times 5 \mathrm{~m}$ ) with rounded corners annexed the central chamber of building № 1 from the south. The floor of this chamber is 10 cm lower than that of the floor of the central one and is connected to it by a 10 cm high clay step. The chamber has two elevations along the eastern and western walls (PI. 136, 138; Fig. 982).

The eastern elevation is 50 cm wide and 7 cm high. It is heavily damaged by pits of the upper layers. Two piles of ashes ( $\mathrm{dm}-30 \mathrm{~cm}$ ) were found on the surviving part of the elevation. They are 30 cm apart from one another. Small drinking cups turned upside down were placed two by two. A tub was arranged among them. Charred grains (wheat and barley) were found on the elevation in abundance, as well as three flint inlays, composing a complete sickle (PI. 163 ${ }_{8}$; Fig. 100, ).

A large pile of pottery sherds was found by the elevation, on the floor of the chamber. There were up to ten pots and mugs in this pile. One ornamented vessel (PI. $160_{2}$ ) draws particular attention, which contained a flint arrowhead and a sickle insert (Fig. 140), a horn fragment, and a small, round, black cobblestone with a white eye. Vessels were found both on the floor and quite high above the floor in the ruins of the wall. The impression is made that part of the vessels fell off the wall during the demolition. We can presume that there was a wooden shelf (or shelves) running along the wall, on which the vessels were arranged. The east elevation had an extension to the south wall, on which a large pitcher-shaped jar had been attested. After the cleaning, it was found out that the pitcher-shaped jar was embedded in a specially made hollow.

The elevation of the western wall was almost completely preserved. The width of the elevation is 50 cm , the height reaches $8-10 \mathrm{~cm}$. It has an exten-
sion to the southern wall, the height of which is 6-8 cm . Two hollows for embedding vessels were made on it; a large pitcher-shaped jar was placed in one of them (PI. 136; Fig. 98, 99, 106).

Five vase-type vessels were found on the western elevation, the heels of which were daubed on the elevation. The ash piles, which were revealed on the northern and eastern elevations and are generally known from the settlements of the Kura-Araxes culture, represent the heel of just such vase-type vessels. The upper part of vessel is attached to the heel. The walls are shaped of thin, weakly fired clay and ashes. The walls consisted of a layer of $3-4 \mathrm{~mm}$ thick pure clay, between which there were two layers of pure ashes of the same thickness. The vessels were seemingly unfired, and specially made for some ritual. The fire, that destroyed the building, slightly baked and hardened them, giving us the possibility of recording it. The diameter of this vessel is 50 cm , the height was preserved at $10-15 \mathrm{~cm}$. Inside the vessel, wheat and barley were attested. The abundant grain scattered on the elevation, it seems, was thrown from this vessel. The vessels are painted red, and for the heels an especially intense colour is used (Fig. $100_{2}$, 101, 102, 103). Small drinking cups were placed upside down near them. From the north, with the first group three cups were placed, with the second one - three ones, with the third group - two cups, with the fourth -4 , with the fifth -1 (PI. 162). Pots and tubs were placed between the daubed vessels. It is interesting that one half of a large, stationary, panshaped vessel was found on this elevation, while its other half was placed on the northern elevation of the central room of the very same building (Pl.164 $)$.

Flint sickle inserts were also found on this elevation, which compose one sickle.

On the floor of the chamber, near the southern part of the western elevation, there are three hollows for placing vessels in. Vessels were embedded in two of them. Up to forty big and small clay vessels were found in this chamber in total (Pl. 136; Fig. 98 ${ }_{2}$, $\left.99_{1}, 137-144\right)$. Some images were engraved on the floor, just as in the main chamber. One of the images near the western shelf reminds us of a swastika.

The abundance of plaster in building № 1 implies fairly high walls. In some places, the internal daubing of the wall was observed, with traces of red stripes.

In both chambers of the building, at the floor level and in the plasters, medium-sized flat stone tiles were observed, which evidently had fallen from
above during the destruction of the building (PI. 136; Fig. 98). It is possible for us to presume that the flat stones performed some function in the construction of the roof.

The floor and elevations in the building were deliberately plastered with pure clay multiple times. Seventeen cases of such renovations were identified. The floor was black (from smoke). It is possible that this was a result of the fire, but it would be more correct to presume that the floor was specially smoked, because all seventeen renovations had a black colour on top.

Building № 1 had an entrance from the south. The clay on wood frame of the southern wall of the building is continuous. Thus, the entrance was of stepped over type. A one meter wide corridor was built at the southern wall. Its $15-20 \mathrm{~cm}$ wide walls were built in the same manner as the building. The entrance to the corridor is from the east side. In the corridor, by the southern wall of the building, a thick wooden beam was placed on the stones, serving as a step (PI. 136-138. Fig. 106 $)$ ).

Building №1 is built on a rather strong (25-30 cm thick) clay square, which is prepared specially. Underneath it a layer of black fossilised humus is evidenced.

In the $89^{\text {th }}$ square, the remains of a household structure were excavated. On an area of $4 \times 4 \mathrm{~m}$, a floor plastered with clay was recorded, on which a 10 cm thick grain layer was found. A thick layer of plaster passed onto it from above. The shape of the structure is unclear. It may have been either circular or rectangular with strongly rounded corners.

Building №2 was excavated in the $115^{\text {th }}, 116^{\text {th }}$, $140^{\text {th }}, 141^{\text {st }}$ squares. It consists of two chambers (PI. 137, 139; Fig. 107-109). The width of the walls of the building is 20 cm . The walls are preserved at a height of $10-15 \mathrm{~cm}$. It is built in a wattle and daub manner. The entire building was covered with a thick layer of daub from the collapsed walls. The traces of wattle are well preserved on the daub. The floor of the building is specially plastered with pure clay.

The main chamber of the building is quadrangular in shape ( $6 \times 6 \mathrm{~m}$ ), with rounded corners and walls. Only the northern wall, separating the two chambers, is straight.

In the centre of the main chamber of building №2, a circular stationary hearth was placed into the floor. The walls of the hearth are daubed onto the floor. Its diameter is 90 cm . The hearth is 25 cm deep, with
four lugs on the inner side (PI. 139; Fig. 107, 108). Pure ash was found in the hearth.

To the south of the hearth, at a distance of 50 cm , the remains of a central pillar, rectangular ( $15 \times 10$ cm ) in shape, were attested.

Around the hearth and pole, on the floor, the remains of seven carved beams were found. The poles are quadrangular, $10 \times 10 \mathrm{~cm}$. They were arranged radially and, it appears, constituted a roofing structure (PI. 139). During the fire, the roof collapsed first, and then the walls followed.

The back, southern wall of the main chamber was followed by a 10 cm high elevation made of clay. Only the south-eastern part of the elevation survived, since the southern wall and shelf were located on the slope of the hill and were washed away. Flint sickle inlays, pottery sherds, and fragments of two portable hearths were found on the elevation (PI. 1664).

Fragments of several clay vessels were found on the floor of the chamber, and a large amount of grain was found near the eastern wall.

The second chamber is the front room of building №2. It is of rectangular shape $-5.5 \times 3.2 \mathrm{~m}$. Elevations surround the eastern, western, and southern walls, at a width of 40 cm , height 10 cm . There is a small shelf or step ( $80 \times 60 \mathrm{~cm}$ ) of the very same height, made in the western part of the northern wall.

An opening, 70 cm wide, which connects the two chambers, is left in the wall that divides the two chambers (Fig. 107).

In the north-eastern corner of this chamber, two clay vessels, a small bull figurine made of clay and three sickles of different sizes were discovered. Even wooden sockets were recorded, in which flint inlays were placed (PI. 139, 166; Fig. 108 2 , 109, 145-147).

Building №2 had an entrance from the north.
Building №2, in its planning and construction, almost replicates building №1, though building №1 seems grander in terms of its inventory.

According to the planning, the entrances of these two structures are set facing one another.

A fragment of building №3 was excavated in the $41^{\text {st }}$ and $42^{\text {nd }}$ squares. The southern wall, 4 m long and 20 cm wide, and the eastern one, 90 cm long and 30 cm wide, were revealed. This wall is included within the unexcavated area. The walls were preserved at a height of $20-25 \mathrm{~cm}$. They were built of wood frame and were plastered on both sides with clay (Fig. 110). The building was burnt. Under the plasters, a floor
plastered with clay was found, on which a thick layer of pure ashes was recorded. In the $41^{\text {st }}$ square, in the western part of the structure, at a distance of 10 cm from the wall, a clay ring was found carved on the floor ( $\mathrm{dm}-35 \mathrm{~cm}$ ). The walls of the ring are $2-3 \mathrm{~cm}$ thick, and $3-4 \mathrm{~cm}$ high. The inner part of the ring was recessed and filled with ashes (PI. 137).

Fragments of pottery were found on the floor of the building.

The space in front of the building was well paved with clay.

The same $B_{2}$ layer includes the road or path revealed in the $65^{\text {th }}, 66^{\text {th }}, 67^{\text {th }}$ squares, moving in the E-W direction. It was recorded at a length of 7.5 m . The road is 1.2 m wide. It was paved with large flat cobblestones and coated over with a $3-4 \mathrm{~cm}$ thick layer of clay. The clay surface was covered with soot, apparently, as a result of the fire that destroyed the buildings of this layer. The path is $10-15 \mathrm{~cm}$ higher than the general level.

The path seems to be directed to the entrance of building №1, and the entrances of buildings №2 and №3 are directed towards this path (PI. 137).

## Layer $\mathrm{B}_{2}$

## Pottery

The pottery finds of the settlement $B_{2}$ represent a large complex, the constituent groups of which characterise the household and ritual vessels of separate buildings (PI. 160-169; Fig. 137-152). Part of it is represented by whole pieces. They are hand-made, delicately, in layers, from clay of various thickness and structure. There are identified both thick-walled, coarse-grained clay vessels, and thin-walled ones of a clear structure.

The surface of the vessels is mostly polished, sometimes from the inside as well. We have also found unpolished pieces. With few exceptions, the vessels have black, brownish, or red colouring. There are pieces that are fired pink and polished black. The lining is mostly pink or grey. We should take into account that the majority of the pottery turned up in strong fire and their colouring has changed, completely or partially.

Graphical forms are widely used to decorate the vessels. They are mostly incised. We have also found grooved-bulging ornaments, different types of relief ornament. Decoration with black or red paint is rare
(Fig. 148).
As for the pottery shapes, they are more diverse.
The pitcher-shaped jars. It is mostly the bases of these large vessels that have survived in the buildings, placed in specially prepared hollows. The upper part of pitcher-shaped jar was found in the household pit (PI. 1692). The vessel is made layer by layer, awkwardly. Its surface is polished black, while the lining is pink. The pitcher-shaped jar is distinguished by its flaring mouth, wide neck, and wide body. Judging by the analogues of the bases that have been found, it should have had a lower part of a sharply narrowed, conical build and a small flat base. Two large handles are attached to the shoulder.

The pots are large, single-handled or two-handled, with flaring and wide mouth (PI. $161_{2}, 162_{3,5}$, $164_{3}, 165_{5}, 169_{1}$; Fig. 1394, 142) and neck, with a bulging ribbed belly or a three-part body, with a narrow flat base. The handles are attached on the mouth and neck. The surface is fired brown or red, on a pink or black lining.

A pot, narrow-necked, single-handled, is found in building №1 of layer $\mathrm{B}_{2}$ (PI. 161. Fig. 1411). It is characterised by a non-sharp three-part body, a high and strongly protruding neck, and a wide flared mouth. A large, narrow-holed handle is attached on the shoulder. The vessel is fired pink, without a lining and it has a "muddy" shard.

The jug (khelada) type vessels are characterised by a quite sharply separated three-part body, a wide neck extended towards the shoulder, and a flaring mouth. A tall, ribbon-type handle is attached to the neck and shoulder. One (PI. 160 ; Fig. 140 $)$ jug is encircled by three thin stripes made of grooves on the shoulder, and below it, triangles formed by three-line incised dotted lines on the body around the vessel, in which various graphical signs are drawn in. These signs are not repeated and, undoubtedly, they had some meaning. The second jug of this type is smaller and unornamented (PI. 1632; Fig. 140).

Two pieces of these jugs (PI. 160 ${ }_{3,4}$; Fig. 143) are distinguished from the rest of Kura-Araxes products by their shape and the quality of the surface processing. Both have a well extended wide neck broadened towards the shoulder and a flaring mouth, a sharp edge on the transition from the neck to the belly, a swollen stomach, a narrow base and a slightly indented base. A large, ribbon-type handle is attached onto the neck and shoulder. It is relatively thickwalled, fired black, in two layers, on a lining of the
same colour. The surface is also well-polished.
The tubs are single-handled and two-handled. Identified are high and low single-handled tubs (PI. $161_{3,4}, 163_{4}, 167_{2,3}$; Fig. 138, 139). They have a widely flared mouth, an extended neck, a conically narrowed bottom, and a flat base. The handle is attached between the mouth and the belly. Almost all of them are fired brown and polished, and the inner surface is black and specially polished. There are pink-fired pieces, too.

A separate group of single-handled tubs consists of pieces with wavy indentations on the sides and three-barrelled handles (PI. 1654, 168 ${ }_{5,6}$; Fig. $139_{3}$, 145,149 ). The tubs are fired black or pink, in a single layer, and they are unpolished. A fragment of a nar-rowed-mouth piece with a semispherical handle is fired pink, and unpolished, can be attributed to the very same group.

The two-handled tubs in layer $\mathrm{B}_{2}$ are characterised by their large sizes. The pieces found in building № 1 (PI. $161_{5,6}$; Fig. 138) are distinguished by their very wide flaring mouth, extended neck, a low, slightly rounded body, a conically narrowed base, and a slightly bent in bottom. Large handles are attached onto the body. The outer and inner surfaces are polished well, the outer surface being polished brown, while the inner surface - black polished. A vessel of this type found in building №2 is fired black. It is well polished on a grey lining (PI. 166 $6_{1,3}$; Fig. $145_{3}$ ). The small-sized vessel (Pl. 166; Fig. 146) is of a well-defined three-part shape, with a sharply defined neck, in the middle of which a groove runs through, and with a wide flaring mouth. Two semispherical false handles are attached to the body. There are small protrusions on the edge of the mouth. Around the vessel, an ornament encircles the body - a graphic (incised) dotted line pattern. On one side a threeline, rhythmically repeated pattern creates triangles, while on the other side rhombs are made by the combination of such dotted lines.

Small cooking-pots with a three-part body (Pl. $160_{1}, 164_{1}, 167_{1}, 168_{8}$; Fig. 137 ) represent one of the characteristic pottery shapes of this layer. They have a wide, extended neck, with a flaring spiky mouth; a sharply extended belly and a sharply narrowed bottom with a slightly bent-in base. Jagged backed and oval-sectioned handles are attached to the mouth and shoulders. Generally, all of these types of vessels are decorated with very clear and delicate a grooved-bulging and engraved ornament.

Bands made of grooves on the shoulder of the vessel or an engraved ornament in the form of a narrow frieze with the filling elements consisting of net-like hatching, spotted geometric figures (triangles, cells, etc.) are often met. Sometimes under these kinds of friezes or bands meanders with volutes, chevrons and grooved-bulging ornaments are added.

The mugs mostly consist of wide-necked, nar-row-bottomed pieces (PI. $162_{2}, 163_{3}, 165_{3}, 168_{3}$; Fig. 143,147 ). They are characterised by a low neck, a protruding belly and a narrow base. The handle is attached to the mouth and shoulders. The mugs are fired pink, on a black or brown-pink lining. An incise-lined ornament is attested: a rather deeply grooved band on the shoulders and below, on the body, patterns made of dotted lines. There is also an incised ornament.

There are two mugs of a different appearance found in building №2. One is characterised by a wide base (PI. $165_{1}$; Fig. $147_{2}$ ) and the other by an extended neck, a spiky mouth, a low swollen body, and a narrow base. The handle is attached to the neck and shoulders (PI. 165). It is fired black, well-polished, on a black lining.

Bowls, narrow-mouthed (PI. 1676), thin and thickwalled are mostly fired pink and are unpolished.

The drinking cups are mostly polished black, thick-walled and of one type, although some differences can be noticed between them in size and build. The majority of the pieces have an extended neck, with a sharply widened belly and an indented base (Pl. 162, $163_{1}$; Fig. 144). The surfaces of the drinking cups are specially polished while the inner surface is awkwardly polished and haphazardly evened out.

Of interest is a pan-shaped ritual vessel (dm 80 cm ) found in building №1 (Pl. $164_{2}$; Fig. 137). It seems that the vessel has been attached to the floor stationarily, as its base is unfired, while the vertical walls are fired to a grey colour. There were found fragments of the vessel with a heel, as well as sherds of vertical walls of the same type of vessel.

Also, on the elevation of building №1, a specially plastered stationary vase type ritual vessel was found, the bottom of which is represented by the so-called "ash pile". Pure ashes are coated by a thin layer of pure clay and painted red. A bowl-like vessel is attached to it. The walls of the vessel are made of thin layers of pure clay ( $4-5$ layers), with thin layers of ashes between them. Most likely, these layers of ashes are the remains of weaved baskets that give
hardness to the unfired pottery vessel. The surface is painted red. Grain was placed inside (Fig. 100-103). These vessels were unfired. They were specially made to perform some kind of ritual. This vase-shaped vessel was observed at Tsikhiagora only thanks to the fact that the buildings of the $\mathrm{B}_{2}$ layer were destroyed by a strong fire, and the fire slightly burned and hardened them.

A round lid of clay, fired black, polished, with a surface decorated with relief grooves is of interest, too (PI. 167 ; Fig. 150).

In addition to the engraved and grooved-bulging ornaments characteristic of layer $\mathrm{B}_{2}$, we have found thin-walled, black-polished pottery sherds, which are adorned with a relief ornament, a well-moulded horizontal protrusion (PI. 160), two perforated knobs on the side of the small bowl (Fig. 150), and a small vessel with a body corrugated with deep flutings (PI. 1682).

The hearths. Clay products are also represented by the large sized round hearths with protrusions daubed in the floor of the main room of the buildings. Two such hearths are found in the layer (PI. 137, $1644_{4}$ ). The hearths are placed in the pits dug out in the floor and they are burnt in place. That is why they have only one, inner surface and a moulded wide edge, which is slightly set up the floor level. The hearths are made of coarse-grained clay, which has chaff and fine pebble shards mixed in. The surface is cleanly plastered with pure clay, and it is polished. Hearths show traces of long-term exposure to fire, which is manifested in the burning of the shard, but, at the same time, no traces of smoke can be seen on them.

In addition to the stationary hearths, small mobile ones of the same type were found in this layer. They are bowl-shaped, with a hole on the bottom (PI. $166_{4}$; Fig. 147). The hearths are fired red or yellowish.

In this layer, in building №2, a zoomorphic clay figurine (a bull) was found - that of a bull (Pl. 166; Fig. 147).

## Metal

Only one metal item was found in this layer, namely, a bronze dagger. It is 21 cm long, flat, shafted, heavily corroded. The dagger was found in building №1 (Pl. $163_{5}$; Fig. 140). The dagger was made from a copper-arsenic alloy (Cu: $94,0 \pm 0,3 \%$; As: 5,2 $\pm$ $0,08 \%$; Fe: $0,70 \pm 0,06 \%, \mathrm{Sb}: 0,10 \pm 0,05 \%$ ).

## Stone items

The stone industry appears to be quite advanced. Low-grade brownish flint was used for production of tools and weapons, from which sickle inserts and arrowheads ware also made. The sickle inserts are trapezoidal in shape and are distinguished by their large size $(6 \times 3 \mathrm{~cm})$. They are produced by retouches on both sides. The edges show traces of works done. Each sickle consisted of three or four such inlays (PI. $166_{5}$; Fig. 147). The large size of the sickle inserts is characteristic of the archaeological sites of Shida Kartli (Inner Kartli).

Two flint shafted arrowheads were found in building №1 of this layer (PI. 163; Fig. 140).

In addition to the above-mentioned, there were found the boat-shaped upper stones and large lower stones of the usual type of hand grinder, pestle stones, spheroidal grinding stones, etc.

## Bone items

In the building N 1 of layer $\mathrm{B}_{2}$ one bone arrowhead was found. It is biconical, with a long ( 8 cm ), round shaped blade and surface and a tang (PI. 163 ${ }_{6}$; Fig. 141).

## Layer $\mathrm{B}_{3}$.

This layer was attested in the $41^{\text {st }}, 42^{\text {nd }}, 66^{\text {th }}$, $67^{\text {th }}$ squares. The remains of a rectangular building ( $5.5 \times 5.5 \mathrm{~m}$ ) with rounded corners were excavated. The remains of the western, northern and eastern walls were preserved (PI. 140). The walls are 20 cm thick. The western wall was accompanied by an elevation (width 60 cm , height 7 cm ). The elevation was completely covered with pottery shards (Fig. 111). The floor of the building was plastered with clay. To the east of the elevation, at a distance of 1.3 m , the pit of a central pole was revealed. It is rectangular in shape $(45 \times 25 \mathrm{~cm}), 60 \mathrm{~cm}$ deep. The building was not burnt.

Layer $\mathrm{B}_{3}$ also includes the fragment of the floor recorded in the $89^{\text {th }}$ square and the stationary hearth placed in it, which is heavily damaged by later pits. The hearth is 70 cm in diameter, without a protrusion, with an unusually wide, 9 cm daubed curb. The border was decorated with deep relief grooves. It was painted red (PI. 171 $1_{8}$; Fig. 153).

## Pottery

The pottery from the layer $B_{3}$ is scanty and fragmentary. This is explained by the fact that the mentioned layer is traced over a relatively small area and that it is badly damaged. Despite the scantiness, the material is quite diverse. The clay vessels are of relatively average size. They appear to be of highly differentiated forms. There are found graphically ornamented shards and also one painted pottery sherd. Black, brown or grey fired pieces with pink or grey linings prevail. The vessels are handmade, made of pure clay. It is distinguished by medium-thickness or thin walls and by the symmetry of forms.

Pitcher-shaped jar type vessels are represented by sherds with handles, as well as fragments of bottoms. The handles have meniscus-like holes, spheroidal and upraised handles (PI. 170 ${ }_{3}$ ), and bases ( PI . $171_{7}$ ). This type of pottery is fired black, well-polished, with a pink lining.

The pots with a narrow neck are represented by a neck fragment with traces of painting on the neck (PI. $171_{2}$; Fig. 153). The vessel itself was fired in grey-ish-dark grey colour. A stripe of black paint encircled the base of the neck. The same goes well for a pot with spheroidal upraised handle fragment (Fig. 153) with a meniscus-shaped hole, which has a groove from the top of the handle. This groove encircled the entire vessel.

Two-handled and one-handled wide mouthed large pots and one-handled small cooking-pots are represented by handle fragments (PI. 170). The vessels are fired brown or pink on a well-polished, light-coloured lining. Jagged backed handles are attached to the mouth and shoulder.

The three-part-body vessels are represented with medium-sized pots and drinking cups. Two of them are fired black and well-polished. One fragment (PI. 170 . Fig. 152) is fired brown, on a pink lining, and it is decorated with a graphic ornament. The ornament is made with clearly drawn, rather deep, free lines. On the body of the vessel, triangles are formed of three-striped lines, in which graphic signs are drawn
in . This fragment is analogous to the jug found in layer $\mathrm{B}_{2}\left(\mathrm{Pl} .160_{2}\right)$, which is adorned with the same ornament.

The tub-type vessel is represented by a fragment of the three-branched handle (PI. 1704).

The bowls are represented by pink or grey fired fragments.

The drinking cups (PI. 171 ${ }_{3}$ ) are sharply moulded, wide-mouthed, with an extended neck, a conical bottom, and twisted base. It is shaped awkwardly with an uneven thickness. The surface of the drinking cups are specially polished, while the inside is awkwardly and hurriedly evened out. One cup (PI. 1714 ) stands out from typical drinking cups with a flat bottom and a single handle. It is a small mug.

In the discussed layer fragments of small-sized and thin-walled vessels were found. They have no lining. These sherds are fired black and specially polished. These fragments are very clean and delicately engraved, ornamented with incised lines. There were evidenced simple, dotted-lines, two- or three-striped dotted lines, or rhombs composed of the combination of two such dotted lines (Fig. 152). More complicated compositions are also evidenced (Pl. 170).

The pottery is represented by a fragment of a round lid (PI. 1711), too. It is black-polished, with pink lining, and a central depression. It has a spiky edge. Noteworthy is a red-fired fragment of a movable hearth with a lug (PI. 1716).

The $B_{3}$ layer lies directly atop the layer of fossilised humus. It is $15-20 \mathrm{~cm}$ thick. It is the oldest layer of Tsikhiagora, heavily damaged by buildings of layer $B_{2}$, because clay squares, which sunk to the humus, have been prepared as foundation for the large building of this layer [19, pp. 8-43].

The layer of the Early Bronze Age was extended over the entire area of the hill and was damaged by the pits of the upper layers and during the insertion of pitchers, so the material of this period were found out of context in the upper layers (PI. 172; Fig. 154). Different types of stands deserve attention (PI. 173; Fig. 155).

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112. Tsikhiagora. Achaemenid period layer. Pit №7, Level B. 1-10. Pottery., 12. Bone arrowhead. 1317. Pit №8, pottery.
113. Tsikhiagora. Achaemenid period layer. Pit №9, pottery.
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155．Tsikhiagora．Early Bronze Age，layer B1，pottery．
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161．Tsikhiagora．Early Bronze Age，layer B2，struc－ ture №1．pottery．
162．Tsikhiagora．Early Bronze Age，layer B2，struc－ ture №1．pottery．
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168．Tsikhiagora．Early Bronze Age，layer B2，pottery．
169．Tsikhiagora．Early Bronze Age，layer B2，pottery．
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171．Tsikhiagora．Early Bronze Age，layer B3，1－7．pot－ tery．8．Stationary hearth．
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173．Tsikhiagora．Early Bronze Age layer，stands and wheel model，clay（no context）．

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## ロபذJMJd0 PLATES


Map showing the location of Tsikhiagora










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| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11233 \end{array}$ | Tsikhiagora | Bone | 6.49 | 43 | 4025+/-28 | Pit 79 <br> Level A | $\begin{array}{\|l} \hline 2574(15.5 \%) \\ 2556 \mathrm{BC} \\ 2544(49.0 \%) \\ 2488 \mathrm{BC} \\ 2482(3.7 \%) \\ 2476 \mathrm{BC} \end{array}$ | $\begin{aligned} & 2622(5.9 \%) 2598 \mathrm{BC} \\ & 2584(89.6 \%) 2468 \mathrm{BC} \end{aligned}$ | -18.5 | 6.7 | Kura-Arax, second part of III Millennium BC |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11234 \end{array}$ | Tsikhiagora | Bone | 3.95 | 43 | $3983+/-27$ | pit 78 <br> Level A | $\begin{aligned} & 2566 \text { (37.4\%) } \\ & 2531 \mathrm{BC} \\ & 2495(30.8 \%) \\ & 2468 \mathrm{BC} \end{aligned}$ | 2574 (95.4\%) 2460BC | -21.5 | 1.7 | Kura-Arax, second part of III Millennium BC |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11237 \end{array}$ | Tsikhiagora | Bone | 11.85 | 43 | 4180+/-28 | pit 17 Level B1 | $\begin{aligned} & 2878 \text { (14.7\%) } \\ & 2855 \mathrm{BC} \\ & 2808(38.5 \%) \\ & 2750 \mathrm{BC} \\ & 2724(15.1 \%) \\ & 2700 \mathrm{BC} \end{aligned}$ | $\begin{aligned} & 2886(21.6 \%) 2836 B C \\ & 2818(72.4 \%) 2666 B C \\ & 2648(1.5 \%) 2636 B C \end{aligned}$ | -19.3 | 7.1 | Kura-Arax, first half III Millennium BC. |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11236 \end{array}$ | Tsikhiagora | Dentine | 6.5 | 43 | 4180+/-27 | Level B2 | $\begin{array}{\|l} \hline 2878 \text { (14.4\%) } \\ 2856 \mathrm{BC} \\ 2807 \text { (39.4\%) } \\ 2750 \mathrm{BC} \\ 2722 \text { (14.5\%) } \\ 2701 \mathrm{BC} \end{array}$ | $\begin{aligned} & 2886(21.6 \%) 2836 B C \\ & 2818(72.6 \%) 2666 B C \\ & 2647(1.3 \%) 2636 B C \end{aligned}$ | -19.6 | 7.5 | Kura-Arax, first half III Millennium BC. Approx. 2900 BC |

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## CULTURAL-CHRONOLOGICAL PROBLEMS OF THE MULTI-LAYERED SITE OF TSIKHIAGORA

The study of the cultural layers of Tsikhiagora attested to the fact that archaeological materials from the site are dated to the period from Early Bronze Age up to the Hellenistic period.

The general cultural-chronological scheme of this period obtained today for the territory of Eastern Georgia:

1. Early Bronze Age - the second half of the $4^{\text {th }}$ millennium $B C-3^{\text {rd }}$ millennium $B C$.

Kura-Araxes culture - second half of the $4^{\text {th }}$ millennium $B C$-first half of the $3^{\text {rd }}$ millennium.
Culture of early barrows/ Martkopi, Bedeni -second half of the $3^{\text {rd }}$ millennium BC.
2. Middle Bronze Age, First half of the $2^{\text {nd }}$ millennium $B C$.

Trialeti culture.
3. Late Bronze-Early Iron Age, second half of the $2^{\text {nd }}$ millennium- $7^{\text {th }}$ century $B C$

Lchashen-Tsitelgorebi, Samtavro and other cultures.
4. Early Classical/Achaemenid Period, $6^{\text {th }}-4^{\text {th }}$ centuries $B C$
5. Hellenistic/Post-Achemenid period, $3^{\text {rdd }} 1$ 1tt centuries $B C$

The period of formation of the Kingdom of Kartli/lberia.

With the publication of the materials of Tsikhiagora according to the epochs, we will try to figure out the significance of this monument, specifying the chronology in the light of new data and to discuss some problems that are relevant in Georgian archaeology.

## EARLY BRONZE AGE

In the second half of the $4^{\text {th }}$ millennium B.C.- $3^{\text {rd }}$ millennium B.C. in the Southern Caucasus, Eastern Anatolia, north-west Iran, and the East of the North Caucasus, the Kura-Araxes, or the Transcaucasian archaeological culture is widespread. The Early Bronze Age Kura-Araxes culture is considered as a single cul-tural-historical event, but with its local peculiarities. The difference between the local varieties was revealed in the topography of the settlements, the architecture of the structures and building technique, some elements of material culture, etc. [50; 72; 75; 82; 105; 107].

In the middle of the $3^{\text {rd }}$ millennium B.C., in the Southern Caucasus, specifically, in Eastern Georgia, the stable character of the Kura-Araxes culture was disrupted, which, among other reasons, must have been prompted by the appearance of new northern and southern elements. A new burial rite spread in this time - grandiose individual barrow type burials, putting in barrow a carriage for the deceased, big changes are felt in social relations, etc. In the early kurgans, two groups are distinguished: "Martkopi" and "Bedeni". The Kura-Araxes culture and the early barrows are discussed as successive stages, and among the barrows, the Bedeni group is considered to be later [51; 52; 107]. This scheme of staged development is acceptable, though the relationship between the monuments of the Kura-Araxes culture and the kurgan monuments and the early kurgans/ barrows themselves shows us a more complicated picture, which is expressed in the materials of construction layers dated to the later stage of the stratified settlements, shaping the Kura-Araxes culture. The Tsikhiagora site is among them [19].
***
The above described materials allow us to shape some generalisations regarding the settlement. Levels B and A of the Early Bronze Age, with their 5 cultural layers, as we will try to clarify below, are indicators of an uniform development of the Kura-Araxes culture in Shida (Inner) Kartli. Despite the fact that there exists a difference between levels B and A, they belong to the same Kura-Araxes culture, and in general the different stages of the life of a settlement can be judged. In this way, we will try to discover the most typical peculiarities of the life of the settlement and shape the general picture of its development.

However, along with this, it should be taken into account that this judgement is based on incomplete material, since only a small part (approximately one tenth) of the monument has been excavated.

The settlement of Tsikhiagora is built on a specially selected natural hill, in an advantageous place from the point of view of agricultural development. The existence of the Kura-Araxes cultural layer was confirmed over the entire area of the hill. A relatively small area has been studied - 300 sq . m in the south-western part of the hill, where five cultural layers were attested. This fact does not exclude the possibility of the existence of earlier layers in other parts of the hill, if they were not settled at the same time.

As for the five studied cultural layers, they, except the $B_{2}$ layer, give us a rather scanty information about the types of buildings and principles of planning. Nevertheless, it is clearly seen that the buildings do not repeat the planning of those from other layers. Thus, in all five layers of the settlement different types of planning are evidenced.

The construction technique also changes. The buildings of the lower, $\mathrm{B}_{3}$ and $\mathrm{B}_{2}$ layers are constructed of wattle-and-daub technique, plastered with clay on both sides. The walls of the building in layer $B_{1}$ are built of cobblestones and mud-bricks, while those of layers $A_{2}$ and $A_{1}$ are represented by clay paved floors and a fragment of a clay wall in layer $\mathrm{A}_{1}$.

The construction of walls with wattle-and-daub, plastered on both sides with clay, which is characteristic of layers $B_{3}$ and $B_{2}$ of Tsikhiagora, is the main building tradition of the Kura-Araxes culture in the Shida Kartli region [64, pp. 113-149]. Round buildings with wattle-and-daub walls and a flat roof are characteristic of level D of Khizanaant Gora [14, p. 44]. The typical building of the upper C and B levels is of a different type. It is elongated, with rounded corners. Walls are plastered on both sides with clay, and a roof is flat. This type of building, it seems, appears in Shida Kartli at a definite stage of the development of the Kura-Araxes culture, and from then on it becomes the leading type of building in this area[50, p. 97]. On Khizanaant Gora, the process of the development of this type of building can be observed [14, p. 46].

The buildings [46, PI. VI-XXII] excavated in the layers of Shida Kartli settlements, particularly the
well-studied levels C and B of the Kvatskhela settlement, are completely developed. They are of a definite type. Their plan has already passed a long way of development, reaching a stable position. Despite some archaic peculiarities (rounded corners, one main supporting column - "central pillar", the roundness of the roofing beams, usage of wattle), the buildings are characterised by two parts, a quadrangular shape, a flat roof with a central opening, a corridor and complicated constructional parts [46, p. 45].

The $B_{2}$ layer of Tsikhiagora (PI. 136-139) gives us grounds to discuss the planning of the village and types of buildings. During planning, the dominant winds are taken into account. They blow from east to west and conversely, that is why the buildings are oriented either to the north or to the south.

Despite the fact that only two buildings were completely excavated and one was partially studied, it seems possible to us to assume that the buildings of the settlement were arranged in districts, grouped with a specific construction. Building № 1 should be such a construction (Pl. 136). This is suggested by its exceptionally rich interior, a corridor which the other two buildings do not have, and the fact that the path that ran through the settlement directs right towards the entrance of building №1, while buildings №2 and №3 are 5-6 metres away from the path (PI. 137).

The buildings themselves are large, two-room constructions covering an area of up to 70 sq. metres. They are elongated, with rounded corners, with thatched walls plastered with clay on both sides, a flat roof, a supporting column in the centre of the central room, and with a rounded heart with protrusions emedded into the floor in front of it.

The construction of the building took place in a certain manner: the foundation of the building was prepared - a platform composed of 20 cm thick horizontal layer of pebbles and clay. The frame of the wall was built - the plaited rods attached to the pole, and a supporting column was erected. After that, the floor and walls are plastered with clay layer by layer. The walls are plastered on both sides, and a flat roof is made of earth.

As I. Kikvidze has noted, if the types of residential buildings spread at the sites of the Kura-Araxes culture in Shida Kartli have anything in common with one another, these are: the structural unity, the construction of the walls with wattle-and-daub technique, the flat earth roof resting on the central pole,
and the arrangement of a stationary hearth with lugs in the centre of the room [14, p. 46].

Buildings of layer $B_{2}$ of Tsikhiagora reveal a particular similarity to those of layer $B_{1}$ of Kvatskhelebi [46, PI. VI-VIII] and seem to represent their development. The buildings of Tsikhiagora are distinguished by their big sizes. A narrow corridor in front of the building, characteristic of constructions at Kvatskhelebi, is bigger and turns into a second room at Tsikhiagora. At the same time, construction and building types do not change, a natural development takes place.

Some differences are noticed in planning, too. If a common principle of planning has been attested among the other Kura-Araxes type settlements of Shida Kartli, this is a dense housing of the village, between the building defences and other considerations are determined to allow the circulation of air is [14, p. 44]; And truly, the buildings of Kvatskhela are quite closely arranged [46, PI. IV]; The layout of the Tsikhiagora buildings is more spread out, the distance between buildings reaches 5-7 metres, and their planning leaves the impression of it being more orderly. This, too, is probably an indicator of the later development of the planning principles of the settlements of Shida Kartli, belonging to the Kura-Araxes culture.

Remains of just one building (PI. 135) were excavated in the layer $B_{1}$, so the only thing that can be said about the planning is that the building seems to have been oriented with the entrance to the north, to resist the constant winds. The building itself consists of a quadrangular room with a round, stationary hearth with protrusions, placed in the centre. Attention is drawn to the fact that it is built of cobblestones and adobe. Thus, the construction tradition changed drastically. Though it is true that the use of cobblestones and mud-bricks in constructions is not unknown to the Kura-Araxes settlements of Shida Kartli, they fulfil just an auxiliary function in the buildings made of wattle-and-daub [46, p. 45]. As for the $B_{1}$ layer of Tsikhiagora, here constructions of wattle-and-daub, of which the buildings of the $B_{2}$ layer present an excellent example, are not visible at all. If we take into account the fact, that the $B_{2}$ layer was destroyed by a strong fire, and the floor of the $B_{1}$ layer building was erected directly on the ruined plasters of the $B_{2}$ layer, the change of the construction tradition seems to be probably changed due to the change of the population.

The $B_{1}$ layer has no development on Tsikhiagora.

It seems to be abandoned．This settlement ceases to exist for a certain time，and then it starts functioning again．Thus，two cultural layers of level A are created．

In layer $A_{2}$ ，only fragments of clay floors mixed with pebbles were recorded，while in layer A，（PI．133， 134），if we judge by the clay floors observed around the stationary hearth，the inhabited layer consisted of large buildings．Unfortunately，their shape is un－ clear．Clay is used as construction material．A frag－ ment of a clay wall was identified（PI．134）．It is possi－ ble that mud－bricks have also been used．

The settlement of layer $A_{1}$ appears to be aban－ doned，and the Kura－Araxes type settlement of Tsikhiagora ceases the existence．

The majority of the artefacts of the Tsikhiago－ ra settlement consist of pottery，which is very di－ verse，both in terms of shapes and ornamentation． It should be noted that multiple opinions have been expressed in the special literature about the development of pottery of the Kura－Araxes culture． The scheme of periodization，which was developed on the basis of stratigraphic data，the evolution of shapes and ornaments from simple to complex，tak－ ing into account connections with previous，subse－ quent and neighbouring cultures looks convincing ［71，pp．115，116；48；29，p．90］．

In accordance with what has already been mentioned，several stages are distinguished in the Kura－Araxes culture．The sites of the so－called Didube－Kiketi series belong to the early stage．They are characterised by simple－shaped clay vessels with a cylindrical neck，rounded or egg－shaped body，and handles of semispherical shape．They are fired yel－ lowish－dark greyish－brownish，decorated with sim－ ple incised patterns，hollows，knobs，a pair of oblique relief strips，the relief double spiral，etc．The so－called ＂spectacle－like＂spiral motif is especially characteris－ tic．

The majority of the vessels of the next stage are black－polished，and with a pink lining．The body of the vessels is biconical；the shape of the handles and the manner of attachment become diverse．The body of the vessel acquires a biconical shape，the build of the handle，and the manner of its shaping，becomes more diverse．Certain changes are evidenced in the ornament－the relief＂spectacle－like＂spiral is now represented by variants of double spiral．The zoo－
morphic，geometric，and other types of ornament rendered by incising and reliefs are comparatively complicated．

The ornament of the last period is even more com－ plicated．It can be with a relief，of a grooved－bulging shape，engraved－incised or notched，and made by other methods．Spiral，zoomorphic，and geometric motifs are still met，which are now more diverse and encircle the entire body of the vessel．The leading one is the three－part shape of the vessel，although rounded and biconical vessels still existed［29，p．90］．

Pottery of the level B of the Tsikhiagora settle－ ment belongs to the group of the last，third period． The main features of this pottery is the three－part shape of vessels，the engraved，mostly incised line ornamentation，which is often combined with a plas－ tic，grooved－bulging ornament，especially on small－ sized vessels．The main motifs of the ornamentation are geometric shapes and the spirals combined with it．

The pottery of all three inhabited layers of level $B$ is mostly homogeneous；especially the material of the lower， $\mathrm{B}_{2}$ and $\mathrm{B}_{3}$ layers represent a single com－ plex．The majority of it is represented by the shapes characteristic of the Shida Kartlian variant of the Ku－ ra－Araxes culture［46，PI．IV；14］and should depict their development．From the settlements studied in Shida Kartli，the materials of the Kvatskhelebi settle－ ment find many things in common with the materi－ als of the lower layers of Tsikhiagora．

First of all，the traditional shapes of Kura－Arax－ es pottery in Shida Kartli should be noted，which are represented in Tsikhiagora．These are：wide－ mouthed，two－handled and single－handled pots， narrow－necked，single－handled pots，high and low one－handled tubs，drinking glasses widened in the middle，etc．

Wide－mouthed，two－handled and one－han－ dled，large，and narrow－necked single－handled pots are represented in abundance in level C of the Kvatskhelebi settlement［46，PI．IV ${ }_{392-407}$ ］．They are characterised by a biconical shape of the body，while at Tsikhiagora this type of vessel has a less sharp， three－part shape，a rib not on the belly，but rather on the transition from it to the bottom．This type of pottery，both at Kvatskhelebi and Tsikhiagora，is un－ ornamented，with rare exceptions．

High and low single－handled tubs are one of the most characteristic shapes in the Shida Kartli pottery complex．They do not change shape during their
long existence. Tubs are present in the C and B levels of Kvatskhelebi[46, PI. IV ${ }_{368-375,119-121, ~ 130-132}$ ], in the Sachkhere burials [48, PI. XXI], in the lower layer of Beshtasheni cyclopean fortress [71, p. 116] etc.

Side-indented tubs with three-branched handles are not widespread. This type of vessels, with a semispherical handle, has been found in layer D of Khizanaant Gora [14, PI. XXVI] and in Ozni [66, PI. 18]. It is all the more interesting that we find this type of pottery with a three-branched handle, except of Tsikhiagora, layer $\mathrm{B}_{1}$ of Kvatskhelebi [46, PI. IV ${ }_{175,176}$ ].

However, what brings the lower layers of Tsikhiagora closer to the upper $B_{1}$ layer of Kvatskhelebi is the three-part shape of the vessel [46, PI. IV ${ }_{139-144,146-}$ ${ }_{150}$ ] and the decoration with a grooved-bulging ornament [46, PI. IV ${ }_{138}$ ].
B. Kuftin has already noted that the grooved-bulging ornament is characteristic of the southern regions of the Kura-Araxes culture [71, p. 116].The grooved-bulging ornament and the three-part shape of the pottery are considered to be the most characteristic signs of the southern variant of the Ku-ra-Araxes culture, the sites of the Ararat Valley [50, p. 124].

The clay vessels discovered in the settlements of the Ararat Valley are very peculiar. The black-polished pottery is characterized with light colour inner surface and the three-part shape. The development of this pottery complex went in its own direction; it palpably differs from the pottery shapes established at the developed stage of the Kura-Araxes culture of Shida Kartli, which is mainly characterised by a jagged outline [50, p. 124]. The difference can be seen not only in the shape of the vessel, but in the nature of decoration, too. A grooved-bulging ornament, which is mainly placed on the front side of the vessel, is characteristic of the monuments of the Ararat Valley and its neighbouring areas. The ornament is predominantly of a geometric nature, where the spiral also holds one of the leading roles. We have found grooved, engraved and other types of ornaments as well, where the leading ones are again geometric motifs [85, p. 108].

The monuments of the Ararat Valley - Shresh-Blur, Echmiadzin's Kül-Tepe, and others [90] - are characterised by a grooved-bulging ornament; engraving is less used. In Shengavit, by contrast, an engraved ornament is more common, sometimes in combination with a relief. Here, especially at the later stage, geometric forms, engraved ornaments reach a high
development [85, PI. XXIII]. The Karnut-Shengavit complex [55].

It should be noted that the variant of the KuraAraxes culture, present in the Ararat Valley, is widespread. At the later stage of flourishing, this culture was spread all over a territory, covering the entire mountain range of today's Armenia and its adjacent regions, first of all Eastern Anatolia [50, p. 141]. Kvemo Kartli, especially its plain, is under its influence. Here, in the vicinity of Shulaveri, at the studied sites - Kaitmaz and the "Ruined Hill" (Dangreuli Gora) - remarkable pottery finds were attested. They are close to the clay vessels spread further south, in the Ararat Valley, in terms of both shape and the nature of decoration [34, pp. 135,136]. Similar pottery was attested at the Shulaveri settlement II, too [75, p. 160].

The territory of modern Azerbaijan, adjacent to Kvemo Kartli, evidently, was also included into the sphere of the south-western, Ararat Valley variant of the Kura-Araxes culture. This became particularly evident during the study of the Babadervish hill in the Khazakh region. The pottery found here show similarities with Shengavit type monuments, especially in terms of the nature of decoration. Here, too, we find a similar engraved, grooved-bulging ornament, as well as a combined ornament obtained as a result of the merging of both forms [67]. In Trialeti pottery decorated with a similar ornament is found in the complex III of the lower layer of the Beshtasheni cyclopean fortress [71, PI. CXX; 66, PI. 34 214 ].

In Shida Kartli (Inner Kartli), this southern influence appeared in the period of level B of Kvatskhelebi, which, as we have already mentioned, was expressed by the appearance of three-part pottery and hollow-bulging ornamentation. However, the Shida Kartli (Inner Kartli) variant of the Kura-Araxes culture was of such a developed form that the southern influence did not cause sharp changes in the way of life, architecture and building techniques, as well as, in the main components of the material culture. The Shida Kartli (Inner Kartli) variant of the Kura-Araxes culture, enriched by the impulses brought from the southern regions of this culture, rises up to a new level of development. This was reflected in the materials from the layer $B_{2}$ of Tsikhiagora. This concerns both the architecture, which has already been mentioned, and pottery production. If in layer $B_{1}$ of Kvatskhelebi, the three-part shape of the vessels is not yet established and is mainly represented by vessels of smaller size, in the pottery of the layers of
$B_{3}$ and especially $B_{2}$ of Tsikhiagora, the rather sharply distinguished three-part shape is already the leading type of vessels. Small-sized pottery shapes (PI. 160,167 . Fig. 137) have also been attested. They reveal resemblance in terms of shape and especially the nature of the ornament (an engraved band, and plastic, grooved-bulging ornament) - reveals the resemblance to the Shengavit-type sites of the Ararat Valley [90, p. 84,85], and the settlements of Kvemo Kartli, Kaitmazi and the "Destroyed Hill" (Dangreuli Gora) [34, pp. 135,136], but the majority of the pottery shapes is a result of the development of traditional Shida Kartli pottery, decorated with the same traditional engraved, mostly incised, ornament.

During the discussion of the level B pottery of Kvatskhelebi, the researchers noted that the general appearance of the pottery, especially the outline, already reminds us of the Early Bronze Age pottery, namely, those found in the kurgan burials of Trialeti. This impression is strengthened even more by the geometric patterns stamped around the body of the vessel, which are mainly made according to one scheme - a number of concentric lines around the joining point of the neck and belly and below it a dotted line face. The ornament is quite sharp and rhythmic, but it also has its independent elements. With these peculiarities of the ornamentation the level $B$ vessels differ from those found in level $C$. This is especially clearly visible in the materials from layer $B_{1}[46, p .35]$. The graphic ornament of the Kura-Araxes culture holds a leading place in the ornamentation of finds from the early kurgans. A certain general style of ornamentation can be noted in them [8, p. 22].

From this point of view, attention is drawn to the jugs and mugs found in building №1 of layer $\mathrm{B}_{2}$ of Tsikhiagora. This type of pottery is typical of early kurgan burials. For example, the jug (PI. $160_{2}$. Fig. 140 ), by its shape is very close to the jugs found in the XIII and XIX kurgans of Trialeti [71, p. 105, Fig. 112, 113]. However, the jugs found in the kurgans are of a more developed appearance, with a more sharply defined three-part body and a complex ornamentation. The same can be said about the type of mugs (PI. $163_{3}$. Fig. 143), which is evidenced in Tsikhiagora and stands typologically close to the mugs characteristic of the early kurgans of Trialeti, namely, to those found in kurgan XXIV [71, p. 105, Fig. 114].

One group is distinguished among the early kur-
gans of Trialeti, the pottery finds of which are close to those of Kura-Araxes culture in terms of both shapes and ornamentation. This group is composed of barrows IV, XIII, XIX, and XXIV [64, p. 264; 8]. In our opinion, the pottery shapes from layer $B_{2}$ of Tsikhiagora correspond to those from barrows.

As we have noted during the description of the material, in the same $\mathrm{B}_{2}$ layer's building № 1 , two jugs (PI. $160_{3,4}$. Fig. 143) stand out, which differ from the other Kura-Araxes products by shape and quality of surface finishing. We can relate these jugs to the one [48, PI. XIV ${ }_{6}$ ] from burial №2 of the kurgans of Sachkhere in Nacherkezevi, excavated in 1955, which was found together with an axe with its backside hanging down and a dagger with a tang. O. Japaridze ascribes this burial to the early group, but jugs of this type reveal a closer resemblance to the pottery found in kurgan №1 of Martkopi [52, pp. 12-19]. They are characterised by quite well-developed shapes. In terms of clay and surface processing, they have more in common with the pottery of the early kurgans of Martkopi than with the clay vessels discovered together with them. It seems that in the time of the existence of the $B_{2}$ layer of the Kura-Araxes settlement of Tsikhiagora, the sites of the Martkopi stage of the kurgan culture coexisted with it.

In the pottery finds of the $\mathrm{B}_{1}$ layer of the Tsikhiagora settlement, although the main pottery shapes and the character of the ornamentation do not change, a whole row of different signs are observed, which are not found in the lower, $\mathrm{B}_{2}$ and $\mathrm{B}_{3}$ layers. In the ornamentation, an incised-lined and engraved ornament prevails; a frieze made of an engraved, notched, and dotted ornament on the neck of the vessels (Pl. 153), which looks very much like the ornament of Babadervish, is evidenced [75, Fig. 44, 126]. A band of engraved, incised, dotted and linear ornament is attested on the neck of the vessels, with incised hatched triangles applied on it (PI. 153; Fig. 134). A small-sized, low, moulded bowls are a novelty of pottery production (PI. $154_{3}, 158_{4,8}$ ). This type of pottery is characteristic of the more southern regions of the development of the Kura-Araxes culture, for the monuments of Eastern Anatolia [93, pp. 189, 197], which C. Barney assigns to the second period of the Early Bronze Age.

The grooved-bulging ornament is attested not only on small-sized vessels, but also on large-sized pitcher-shaped jars (Pl. 153; Fig. 128). The similar ornament is attested in Eastern Anatolia, in lait-
si, a settlement of the Igdir Valley [93, p. 191]. The pitcher-shaped jars, sometimes with complex relief patterns, are known from Karazi [95, pp. 412, 413], Large-size unornamented pitcher-shaped jars, similar to the pieces represented in layer $\mathrm{B}_{1}$, are characteristic for the sites of North-eastern Anatolia (Fig. 128, 129).

Of special interest is a small group of pottery, found in layer $\mathrm{B}_{1}$, which is not characteristic of the Kura-Araxes culture, and has not been found in the lower layers. These are jar-shaped vessels (PI. 155) which have unpolished, thick-pile surface, in some cases with a comb-like, irregularly grooved surface (PI. 153; Fig. 135). Such pottery is characteristic of the Bedeni layer of the Berikldeebi settlement [35, pp. 39, 40, Fig. 2] and was found in the main burial of kurgan №3 of the Bedeni culture of Martkopi [52, pp. 40-44]. A fragment of a thin-walled, black-glossed jug, and a fragment of cylindrical neck of a smallsized vessel (PI. 153) found in this layer should also belong to the Bedeni culture, which is distinguished by a particularly high level of surface polishing.

It seems that during the age of the existence of the $B_{1}$ settlement layer, the stable character of the development of the Shida Kartli variant of the Ku-ra-Araxes culture was disturbed, which was manifested by a change in the tradition of construction and the appearance of new signs in the material culture. If we take into account the fact, that the previous $B_{2}$ layer was destroyed by a strong fire, we can presume that these changes should not have happened in a peaceful way. However, it seems that these changes were due to the processes taking place within the tribes carrying the Kura-Araxes culture, possibly due to their movement from the territory of Eastern Anatolia to the north, to the region of Shida Kartli. The appearance in the $B_{1}$ layer of Tsikhiagora of the pottery, which is characteristic of the Bedeni culture, indicates to the fact that in the period of its existence the Bedeni culture begins to appear in Shida Kartli and comes into contact with the Kura-Araxes culture.

The settlement of the $B_{1}$ layer of Tsikhiagora did not persist. It was abandoned by the population. Life ceased on the hill. As a result, a $3-4 \mathrm{~cm}$ thick sterile layer was created. The Tsikhiagora hill appears to be settled once again by tribes carrying Kura-Araxes culture and the settlement's level A is formed, with two settlement layers and ritual pits.

At Tsikhiagora the materials of level A differ drastically from those of the lower, B level. First of all,
this is relevant to the general appearance of pottery. The typical Kura-Araxes pottery finds from level A, which represent $60-70 \%$ of the total number of vessels found in this level, is characterised by a much lower level of surface polishing than those of level $B$, especially in layer $A_{1}$. It is fired black on a pink lining, unornamented, sometimes massive, with semispherical handles (PI. 148; Fig. 113), and often leaves a more archaic impression than its stratigraphic data and accompanying material indicate.

Despite the fact that there is a certain difference noticed between the materials of the $A_{2}$ and $A_{1}$ layers, they can be discussed together due to their main features.

The pits which belong to level A are divided into two groups. The pits №4, 18, 19, 68, 11, and 15 (PI. 141; Fig. 112) are united into the first group. They are united by cylindrical shape, uniformity of filling, stratigraphic conditions. It was observed that the pits of this group were cut into layer $\mathrm{A}_{1}$. Therefore, the pits of the first group represent the latest stratigraphic level of the Early Bronze Age layer of Tsikhiagora. The pits of the second group are characterised by abundance of material. They are bell-shaped, cut directly from level A. It is difficult to connect them with the layers, but we considered it possible to assign pits №77, 78, and 81 (PI. 142-147) to layer $\mathrm{A}_{2}$, while the pits №5, 69, 79 (PI. 141) are connected to layer A.

In the pottery of level $A$, as we have already mentioned, mainly unornamented vessels are represented. Mostly smaller vessels are ornamented. The grooved-bulging ornament is present only in one case, together with an engraved décor on the vessel fragment №77, found in a ritual pit (PI. $147{ }_{3}$; Fig. 114 2 . In the second case an ornament, characteristic of the late stage of the typical Kura-Araxes culture (PI. 146; ; Fig. 118), is attested. It is made of awkward rough grooves, which are not characteristic of the traditions of this culture. The rest of the fragments have either a sharply incised linear ornament along with engraved patterns, or finely engraved ones (PI. $142,146_{2-4}, 149,151$; Fig. 114, 117, 120, 121). The types of ornaments, presented on this pottery, are typical of the early kurgan period of Trialeti, which represents an inseparable part of the later stage of the Kura-Araxes culture.

Among pottery finds of the level A, attention is drawn to that group of vessels, bodies of which are specially plastered with wet clay (PI. $141_{5}, 143_{3,5}$,
$145_{2,4,6}, 150_{14}, 151_{4,11,12}$; Fig. 123, 124). Regardless of the shape and size of the vessels, they have a smooth neck and pile body (as a result of daubing with wet clay). The ornament is attached horizontally on the shoulder, parallel to the mouth. These are mainly a relief, notched strip, or a protrusion. A similar ornament is also present on smooth-surfaced vessels (PI. $141_{79}, 143_{1,2,4}, 145_{5}, 149_{8}$ ). Of interest is a fragment of the black-polished vessel from the $A_{1}$ layer, on which engraved ornamental patterns characteristic of the early Trialeti kurgans and a relief horizontal protrusion decorated with notches are attested together (PI. 149 ; Fig. 121).

Ornamentation with a relief, incised band or protrusion is not characteristic of the Kura-Araxes culture. It has appeared on the later stage of this culture. In Kakheti, a part of the pottery finds from the lower layers of the Ilto settlement is decorated with a relief notched band around the shoulders of the vessel [62, p. 50; Fig. 10,11]. Vessels decorated with similar ornaments were found in Samtskhe-Javakheti, on the "Rabat" of Zveli and in Lodobana [29, $\mathrm{Pl} .30_{5}$, $31_{8,9}$. Jar-shaped vessels with relief notched stripes are also known on the Bedeni type monuments [8, p. 91]. Similar materials were found in Natsargora of Khashuri, in the layer which contains Kura-Araxes and Bedeni type pottery [30, $\left.\mathrm{PI} . \mathrm{I}_{17}, \mathrm{II}_{3}\right]$.

Outside Transcaucasia, the pottery finds from some archaeological sites of Dagestan are particularly close to our materials. They are also handmade, plastered with wet clay, with handles or lugs on the upper part of the body [69, p. 20]. Nail-like or round notches in one row encircle the shoulder, parallel to the mouth. Often, in the same place, a notched relief strip encircles it. Similar pottery is also characteristic of the Gunib necropolis and Upper Gunib settlements, where it is presented together with small-sized vessels of a Kura-Araxes manner [70, p. 150].

Pottery of this group of level A of Tsikhiagora find particularly close parallels in Dagestan itself, namely among the materials of Velikent and Kayakent [81, pp. 93-97]. In the upper layers of these settlements, together with the pottery of the Kura-Araxes culture, which represent the majority of the materials, clay vessels with clay-plastered surface were found. They have a smoothed neck and a relief ornament on the shoulders, with a notched or grazed band, or a protrusion. A similar ornament is characteristic of jar-like vessels. Similar vessels were found in a pottery kiln
excavated at the Velikent settlement [68, pp. 127129, PI. III ${ }_{1-3}, \mathrm{IV}_{1-3,6}$ ].

Due to the absence of the above-discussed pottery in Transcaucasia and the districts located south of it, it is considered, by M. Gajiev, to have been developed locally, right in Dagestan. Earlier, based on the stratigraphy of the Velikent settlement, the opinion was expressed by R. Munchaev that jar-shaped vessels with characteristic relief-incised ornament appeared in Dagestan on a later stage of the Ku-ra-Araxes culture. He connected them with impulses coming from European cultures [81, p. 97]. Later, he considered the discussed pottery to be a continuation of the local traditions existing before the Ku-ra-Araxes culture, and considered it the most characteristic sign of the north-eastern local variant of the mentioned culture [82, p. 189].

Until the Tsikhiagora excavations, pottery with plastered surface was not known in the Southern Caucasus, while jar-shaped vessels and ornamentation with notched stripes, as we have mentioned above, are attested on the sites of the later stage of the Kura-Araxes culture. In recent years, analogous pottery was found in Azerbaijan, in Mentesh-Tepe [98, p. 124]. In Shida Kartli, the appearance of similar pottery in level A of the Tsikhiagora settlement can have two explanations: either the north-eastern variant of the Kura-Araxes culture reached this region, which is less acceptable; or more likely, we are dealing with a general event of the final stage of the Ku-ra-Araxes culture: the approach of a foreign wave not only into the North-Eastern Caucasus, but also into Transcaucasia. But it was not spread in Transcaucasia, while it penetrated widely into the North-eastern Caucasus, was established there and even developed later, in the Middle Bronze Age [59, pp. 62-73]. Therefore, the discovery of similar pottery in level A of Tsikhiagora is significant for the gradual determination of this level; it is connected with the upper layers of Velikent and other sites of its circle. It is also worthy to note, that in the catacombs of Velikent, together with the above-mentioned pottery, typical black-polished Bedeni clay vessels were found, which are considered to be imported [58, pp.7-9].

Based on the data from Tsikhiagora, we can presume that this rough-surfaced pottery should belong to the Bedeni cultural circle.

As for the second group of rough-surfaced vessels - the ones with comb-like striped grooves - their belonging to the Bedeni culture seems to be doubtless.

As it has already been mentioned, similar pottery is characteristic of the Bedeni layer of the Berikldeebi settlement [35; 47; 61]. It was found in the barrows of the Bedeni culture, too. The data of the barrows excavated in Kvemo Kartli are especially important for us. In kurgan №5, in one complex, pottery characteristic of early barrows of Trialeti and Bedeni type vessels were evidenced [49], while in kurgan №9, pottery of the Kura-Araxes culture is presented in one complex together with Bedeni type pottery and metal weapons. Fragments of grooved-striped pottery were evidence there, too [49]. Here, too, there is a picture similar to that of level A of Tsikhiagora.

In level A of Tsikhiagora, pottery with a comb-trace-like, grooved-striped surface can be found both in the layer ( $\mathrm{PI} .150_{12}$ ) and in the pits of the second group (PI. $142_{3}$ ). It represents the main material of the pits of the first group. In these pits, together with the mentioned pottery, fragments of typical Bedeni-like black-polished small-sized pottery were found (PI. 141).

It seems that the materials of level A reflected the period of the coexistence of Kura-Araxes and Bedeni cultures. Keeping in mind the fact, that the pits of the first group represent the latest stratigraphic layer of the Early Bronze Age in Tsikhiagora, we can conclude that, the development of Kura-Araxes culture ends with the $\mathrm{A}_{1}$ layer at the mentioned site, as well as probably in the whole Shida Kartli region, while the Bedeni culture continues its existence.

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For the dating of the Early Bronze Age layer of Tsikhiagora, the chronology of both the Kura-Araxes culture and the early kurgans should be taken into consideration, since they were mostly discussed separately.

The questions of the chronology of the Kura-Araxes culture were touched upon by almost all researchers who worked on the study of this culture, and it is mainly placed within the frames of the second half of the $4^{\text {th }}$ millennium B.C. and the $3^{\text {td }}$ millennium B.C. [75, pp. 178, 179; 90; 107]. Despite the fact that there were many attempts to create a common chronological scheme, none of them has been accepted until now. This, probably, is explained by the fact that Ku-ra-Araxes culture is spread over a large territory and different regions are studied unevenly. In addition to this, multi-layered, stratified sites are not well stud-
ied in Transcaucasia, while it is stratigraphic data that should provide us with a solid basis for a chronological scheme.

In Georgian archaeology a chronological scheme has been established, according to which the KuraAraxes culture dates back to the second half of the $4^{\text {th }}$ millennium B.C.-the first half of the $3^{\text {rd }}$ millennium B.C., and its upper date is $24^{\text {th }}$ century B.C. [46, pp. 58, 59; 48, p. 120; 35, p. 11].

It is important for us to date the kurgan culture. So far B. Kuftin has dated them to the $24^{\text {th }}-22^{\text {nd }}$ centuries B.C. on the basis of the analysis of the early group of Trialeti barrows and materials from Sachkhere [73, p. 75]. O. Japaridze distinguished the earlier and later groups based on the well-dated metal inventory found in the Sachkhere burials, which were dated to 2400-2200 and 2200-1900 B.C. [48, pp. 194, 195] and thus achieved precise dating of the early kurgans. In his fundamental work dedicated to the kurgan culture of Trialeti, E. Gogadze defined the date of the early kurgans as 2300-2000 B.C. [8, p. 38]. A. Javakhishvili singled out two groups among the early barrows of Trialeti. The first group (barrows IV, XII, XIII, XIX, and XXIV) he attributed to the late stage of the Kura-Araxes culture of the Early Bronze Age, defining their upper date as the $24^{\text {th }}$ century B.C. The second group singled out by him (barrows XI, XXV, XLVI of the Bedeni culture - Z. M.) was attributed to the early stage of the kurgan culture of Trialeti of the Middle Bronze Age. A. Javakhishvili considered this group and the monuments related to it as a separate culture, naming it a transitional stage, and placed it chronologically between the Kura-Araxes and Trialeti cultures $-23^{\text {rd }}-22^{\text {nd }}$ centuries B.C. [64, pp. 264268]. G. Gobejishvili generally dated the kurgans of Bedeni to the second half of the $3^{\text {rd }}$ millennium-the beginning of the $2^{\text {nd }}$ millennium B.C. [7, p. 133]. The accepted date for the kurgans of Martkopi is the $24^{\text {th }}$ $-23^{\text {rd }}$ centuries B.C. [52]. Sh. Dedabrishvili attributed the lower three layers of the Ilto settlement to the last stage of the Kura-Araxes culture of the Early Bronze Age and to the first chronological stage of the Middle Bronze Age. It was dated to the turn of the $3^{\text {rd }}-2^{\text {nd }}$ millennia [62, p. 63].

At the present time, two groups are identified among the early kurgans. These are: the "Martkopi" group, which includes the Martkopi, Trialeti and Samgori barrows, according to the traditional chronology, dated back to the middle of the second half of the $3^{\text {rd }}$ millennium B.C.; and "Bedeni" group -
dated back to the end of the $3^{\text {rd }}$ millennium B.C. and the beginning of the $2^{\text {nd }}$ millennium B.C. [52].

Thus, the Kura-Araxes culture and the early kurgans are discussed as successive stages already by B. Kuftin. Moreover, among the kurgans, the Bedeni group is considered to be of a later period. This scheme of gradual development is acceptable, but the relationship between the Kura-Araxes sites and the kurgans and even between early kurgans reveals a more complicated situation.

Some of the researchers tried, rather reasonably, to connect the early kurgans with the construction levels of the later stage in the settlements of the Ku-ra-Araxes culture [75, p. 62; 62, p. 95; 29, pp. 108, 109]. However, this issue became particularly disputable in Shida Kartli, as a result of the study of new stratified settlements. The fact of the coexistence of Kura-Araxes and Bedeni pottery was attested at "Natsargora" of Khashuri' [30; 31], while in the Kareli region, on the settlement of Berikldeebi, a Bede-ni-type layer was revealed just above that of the early Kura-Araxes period (Khizanaant Gora level E) [47; 61].

In our opinion, the later period of the development of the Kura-Araxes culture in Shida Kartli was reflected most clearly in the materials of the Early Bronze Age of Tsikhiagora. All five of its cultural layers, as we had tried to show, are even later than the $B_{1}$ layer of Kvatskhelebi, which until now was considered to be the latest one of the Kura-Araxes culture in Shida Kartli. It was considered that this culture ceased to exist after the $\mathrm{B}_{1}$ layer of Kvatskhelebi [19]. According to the traditional chronology, level B of Kvatskhelebi belongs to the mid- $3^{\text {rd }}$ millennium B.C., and its upper limit does not surpass the $24^{\text {th }}$ century [46, p. 59; 19].

It is fairly considered that the Kura-Araxes culture is well studied in Shida Kartli. The chronological scale of its development, based on the stratigraphy of standard sites, such as Kvatskhelebi [46] and Khizanaant Gora [14], includes almost all stages of the Kura-Araxes culture. This scale is generally accepted. The data of the settlement of Tsikhiagora and other recently studied sites complete this scale to an extent and made some corrections into the chronology. We consider it possible to shape a cultural-chronological picture of the development of Shida Kartli from
the Eneolithic period up to the Middle Bronze Age, on the grounds of old and new stratigraphical data.

The Eneolithic layer directly preceding the Ku-ra-Araxes culture is the lower one of Berikldeebi, which is dated back to the first half of the $4^{\text {th }}$ millennium B.C. It should be noted that this layer does not seem to have a genetic connection with the Ku-ra-Araxes culture.

Kura-Araxes culture:
Stage I - Level E of Khizanaant Gora; Kura-Araxes layer of Berikldeebi.

Stage II- levels D, C, B of Khizanaant Gora, level C of Kvatskhelebi.

Stage III - level B of Kvatskhelebi; layers $\mathrm{B}_{3^{\prime}} \mathrm{B}_{2}$ of Tsikhiagora.

Stage IV - as in stage I of Bedeni; Tsikhiagora layer $B_{1}$ - level A.

Bedeni stage II - the Bedeni layer of Berikldeebi. [19, p. 64; 77].

On the Tsikhiagora settlement of the Early Bronze Age there are represented the $3^{\text {rd }}$ and $4^{\text {th }}$ stages of the development of Kura-Araxes culture in Inner Kartli.

For the $3^{\text {rd }}$ stage characteristic are: the continuation of the construction traditions of the previous stage, the sameness of settlement planning and building types, which will find development at the end of this stage in the form of the buildings of layer $B_{2}$ of Tsikhiagora. It can be said that towards the end of this stage III, traditional architecture of Shida (Inner) Kartli reaches the peak of its development.

The level B layers of stage III of Kvatskhelebi and $B_{3}$ and $B_{2}$ layers of Tsikhiagora, as well as layers of the previous stage, represent a typical settlement of sedentary farmers. The main materials revealed in the construction layers are represented by farming tools - flint sickle inserts, hand grinders, grain storage vessels and samples of the grains themselves.

Among the pottery finds the difference is felt more acutely, which gives us the possibility to separate stage III from the previous one. Characteristic features of stage II are: the biconical shape of vessels, the paucity of graphical ornamentation around the middle of the body with a sharp rib, and its individual character, appearing towards the end of period II, in layer $\mathrm{C}_{1}$ of Kvatskhelebi. Stage III is characterised, along with large-sized, thick-walled vessels, by
the appearance of sturdy, thin fabric, well-polished black-surfaced vessels of relatively clear structure; a higher quality of firing; greater differentiation of the general shape and parts of the vessels, mainly of a three-part shape; a developed type of graphic ornament that creates uninterrupted, rhythmic, ornamental bands. A great proximity, both in the pottery shapes and in the style of ornamentation, is evidenced in the materials of early barrows, which exist in the areas surrounding Shida Kartli in this period - in Trialeti, Kvemo (Lower) Kartli, and Kakheti. A grooved-bulging ornament appears at this stage, which was truly uncommon for the pottery complex of Shida Kartli.

The changes in the development of the Shida Kartli variant of the Kura-Araxes culture, on its stage III, should have been brought in by the impulses coming from the south, where the three-part shape of the vessels and the grooved-bulging ornaments are characteristic of the Ararat Valley version of the Kura-Araxes culture. However, it seems that these influxes originated not directly from the Ararat Valley, but from the Kvemo (Lower) Kartli plain and the adjacent territory of modern Azerbaijan, where the influence of the Ararat Valley is so clearly evident at Kaitmaz, Dangreuli Gora (Ruined Hill), Baba Dervish, that should be assumed the relocation of the population. Shida (Inner) Kartli is connected to these regions through the Kura Valley. The fact that only cultural impulses had a place in Shida (Inner) Kartli, and not the migration of southern Kura-Araxes tribes, is apparent in the stable character of life, the fact that no changes are observed in neither traditional architecture, nor the main components of the pottery. Quite the opposite, enriched with the new influxes, the Shida Kartli variant of the Kura-Araxes culture rises to a higher stage and reaches its highest level of development at the end of the stage III, during the period of the existence $\mathrm{B}_{2}$ layer in Tsikhiagora. The development of the Shida Kartli variant of this culture stopped in this very period. But the Kura-Araxes culture continues its existence on the territory of Shida Kartli.

Stage IV is the period of the destabilisation of the Kura-Araxes culture in Shida Kartli and possibly in the entire Caucasus. There is the possibility of the relocation of tribes, carrying the Kura-Araxes culture. In Shida Kartli, the rather sharp changes which were brought in by the newly arrived tribes were reflected in the materials of the $B_{1}$ layer of Tsikhiagora

- the construction of quadrangular buildings made of stone and adobe, some peculiarities of pottery. These changes give us grounds to suppose that this wave came from the south, perhaps from Eastern Anatolia. What was the reason, which caused the relocation of the Kura-Araxes tribes and cultural crisis, is difficult to say. It is possible that these developments were connected with the appearance of a new, Bedeni culture, in Transcaucasia, some signs of which appeared at the beginning of stage IV, in layer $\mathrm{B}_{1}$ of Tsikhiagora.

Stage IV of the Kura-Araxes culture of Shida Kartli is stage I of the Bedeni culture at the same time, as these two cultures co-existed in the region during the highlighted period. It seems that the period of coexistence was long-lasting. The B1 layer of Tsikhiagora is its beginning, while the level A belongs to the final part of stage IV and it represents the end of the existence of the Kura-Araxes culture in this region and the establishment of the Bedeni culture.

Stage II of the Bedeni culture in Shida Kartli is represented by the Bedeni layer in Berikldeebi and is a transitional step from the Early Bronze Age to the Middle Bronze Age [19, pp. 64-66].

## Absolute chronology

At one time (in 1994), the traditional chronological schemes and a small number of radio-carbon dates for sites of the Kura-Arax were used for dating the Early Bronze Age layer of Tsikhiagora. Stage III was dated to the $24^{\text {th }}-23^{\text {rd }}$ centuries B.C., while stage IV - to the $22^{\text {nd }}-21^{\text {st }}$ centuries B.C. [19, p. 64; 77, p. 75; 101, p. 67].

For Tsikhiagora's layer $\mathrm{B}_{2}$, we had a $\mathrm{C}^{14}$ date -2900 B.C. $\pm 110$ years (TB-831), which was considered to be too early and inappropriate for the existing traditional chronology. Thus, it was not taken into account.

During the past thirty years, a considerable number of radiocarbon date have accumulated from the sites of Eastern Georgia, from both the settlements and the burial mounds, which have clarified the chronological position of many monuments [90; 91; 107]. New dates of Tsikhiagora were added to these data.

In 2021 at D-REAMS Radiocarbon Dating Laboratory (Weizmann Institute of science. Rehovot, Israel) samples from Tsikhiagora were measured for

| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11233 \end{array}$ | Tsikhia－ gora | Bone | 6.49 | 43 | 4025＋／－28 | Pit 79 <br> Level A | $\begin{array}{\|l} \hline 2574(15.5 \%) \\ 2556 \mathrm{BC} \\ 2544(49.0 \%) \\ 2488 \mathrm{BC} \\ 2482(3.7 \%) \\ 2476 \mathrm{BC} \end{array}$ | $\begin{aligned} & 2622(5.9 \%) 2598 \mathrm{BC} \\ & 2584(89.6 \%) 2468 \mathrm{BC} \end{aligned}$ | －18．5 | 6.7 | Kura－Arax，second part of III Millennium BC |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11234 \end{array}$ | Tsikhia－ gora | Bone | 3.95 | 43 | $3983+/-27$ | pit 78 <br> Level A | $\begin{aligned} & 2566 \text { (37.4\%) } \\ & 2531 \mathrm{BC} \\ & 2495(30.8 \%) \\ & 2468 \mathrm{BC} \end{aligned}$ | 2574 （95．4\％）2460BC | －21．5 | 1.7 | Kura－Arax，second part of III Millennium BC |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11237 \end{array}$ | Tsikhia－ gora | Bone | 11.85 | 43 | 4180＋／－28 | pit 17 Level B1 | $\begin{aligned} & 2878 \text { (14.7\%) } \\ & 2855 \mathrm{BC} \\ & 2808(38.5 \%) \\ & 2750 \mathrm{BC} \\ & 2724(15.1 \%) \\ & 2700 \mathrm{BC} \end{aligned}$ | $\begin{aligned} & 2886(21.6 \%) 2836 B C \\ & 2818(72.4 \%) 2666 B C \\ & 2648(1.5 \%) 2636 B C \end{aligned}$ | －19．3 | 7.1 | Kura－Arax，first half III Millennium BC． |
| $\begin{array}{\|l\|} \hline \text { RTD } \\ 11236 \end{array}$ | Tsikhia－ gora | Dentine | 6.5 | 43 | 4180＋／－27 | Level B2 | $\begin{array}{\|l} \hline 2878 \text { (14.4\%) } \\ 2856 \mathrm{BC} \\ 2807 \text { (39.4\%) } \\ 2750 \mathrm{BC} \\ 2722 \text { (14.5\%) } \\ 2701 \mathrm{BC} \end{array}$ | $\begin{aligned} & 2886(21.6 \%) 2836 B C \\ & 2818(72.6 \%) 2666 B C \\ & 2647(1.3 \%) 2636 B C \end{aligned}$ | －19．6 | 7.5 | Kura－Arax，first half III Millennium BC． Approx． 2900 BC |

radiocarbon dating by the Prof．Elisabetta Boaretto．
We can date Level $B$ to the $28^{\text {th }}-27^{\text {th }}$ centuries B．C．， and level $A$ to the $26^{\text {th }}-25^{\text {th }}$ centuries B．C．

The new radiocarbon dates of Tsikhiagora are sig－ nificant because the appearance of the Bedeni cul－ ture and its coexistence with the Kura－Araxes culture were chronologically uncertain．

## Conclusions

In the central part of the Southern Caucasus，the process of culturogenesis at the end of the Early Bronze Age appears to be complex and multi－facet－ ed．The fact that the Kura－Araxes culture continues its existence on this territory after the appearance of

Martkopi and Bedeni cultures，gives us the capability to consider this event as a new stage in its evolution－ ary development．On the other hand，the innova－ tions are so substantial that this process represents a more stimulated cultural transformation，when a new culture is being established on a local basis un－ der the influence of external influxes［78］．

The stratigraphic data of the Tsikhiagora settle－ ment and the new radiocarbon dates allow us to suppose the initial period of this cultural transforma－ tion in the first half of the $3^{\text {rd }}$ millennium B．C．It is im－ portant during the study of the synchronisation with other cultures and the genesis of the Bedeni culture．

## MIDDLE BRONZE AGE

By their construction, the kurgans of Tsikhiagora were similar to Samtavro burial No. 243 with the cromlech. The diameter of this cromlech is 10 m . The whole area surrounded by the cromlech was paved with large and small cobblestones. One of the clay vessels found there (clay vessel №3) is close to the pottery from the Tsikhiagora kurgan in terms of both shape and manufacturing technology. It is dated to the $17^{\text {th }}-16^{\text {th }}$ centuries B.C. [10, pp. 33-34, PI. I $\mathrm{I}_{1,3}$ ].

In Shida (Inner) Kartli, in the multi-layered settlement of Berikldeebi analogous pottery was found in a consigned burial dated to the Middle Bronze Age (burial №3) [35. pp. 38-39. PI. VII ${ }^{3}$ ].

Thus, taking into account the parallels, we can date the Tsikhiagora barrows to the end of the Middle Bronze Age $-17^{\text {th }}-16^{\text {th }}$ centuries B.C. The stratigraphic location of the barrows supports this dating. The kurgans are arranged over the Early Bronze Age layer and their pits are cut into it, while on top of the mound the Late Bronze Age layer was attested. In one case, the clay mound erected for kurgan was used as the floor of a Bronze Age construction [11].

The existence of Middle Bronze Age mounds in Tsikhiagora indicates to the fact that this residential area was abandoned at this period. This fact strengthened the assumption, expressed on the grounds of the reconnaissance works, that in Shida Kartli, during the Middle Bronze Age, people no longer settled on the hills. The use of the hills as residential areas is renewed in the Late Bronze Age [22, p. 192].

## LATE BRONZE AGE

Two construction levels have been attested at the Tsikhiagora Late Bronze Age settlement. On the first level, the remains of buildings №№ 1,2 , and 3 have been attested, which reveal a great similarity with the settlements excavated in the Shida Kartli area (construction horizons of Katnalikhevi II, Tskhinvali Natsargora II, III, and Mchadijvari II) in terms of construction and the interior arrangement. The pottery found at the Tsikhiagora settlement is made of well-processed clay, fired evenly; the vessels are mostly thin-walled. Except of a couple of vessels, all of them have a well-polished surface and are decorated with various kinds of engraved ornaments. Wave-like ornamentation predominates, as well as triangles filled with hatched, mesh-like and dot patterns, relief and grooved simple bands (PI. 122-127. Fig. 87-93). In structure №3, a fragment of a small figurine of an animal, supposedly a horse, was found, which had a piercing hole in its hind limbs, seemingly to fasten an axle (PI. 128). The parallels of this artefact are the horse and onager figurines found at burial II of Tserovani, which also have holes on their limbs. Models of wheels made of clay were found in the same burials of Tserovani.

Chamber №4 was revealed in the second construction level of the Late Bronze Age settlement of Tsikhiagora. In it a big-sized pot was found, which was made of coarse-grained, sandy clay. On the surface of the vessel very thin concentric lines are evidenced (traces of a wheel), while the whole body is decorated with relief and grooved bands (PI. 128. Fig. 94). It belongs to the so-called Baiburt type vessels.

The constructions of the Levell of the Late Bronze period (№1, 2,3 ) are dated to the $13^{\text {th }}-12^{\text {th }}$ centuries B.C. and belong to the Samtavro (Shida Kartli) cultural circle. The remains of structure № 4 of the level II are dated to the $15^{\text {th }}-14^{\text {th }}$ centuries B.C [12].

## EARLY CLASSICAL/ACHAEMENID AGE

## For the dating of the Achaemenid layer of Tsikhiagora

The analysis of the materials found in the Achaemenid layer of Tsikhiagora revealed that the materials of this layer finds close parallels with those from the III-II horizons of the Khovle settlement, I-III horizons of Narekvavi, Nakhidrebi Chala and Arukhlo I site. The corresponding layers of these last two sites are fragmentary. That is why the stratigraphy and excavated material of Tsikhiagora, Khovle, and Narekvavi should define the date of the materials found there

The starting date of Khovle III period is defined as the turn of the $7^{\text {th }}$ century B.C. [23, p. 73], while the last third of the $6^{\text {th }}$ century B.C. is considered as the last phase [23, p. 94]. According to the Greek black-figured cup [23, pp. 48, 77, 94], bronze arrowheads [23, pp. 48-49, 75-77], beaked jugs [23, pl. LIV, $702_{2}$-s], a jug with a tube [23, p. 44, pl. LVII, 1004=1005s], the handle of a jug decorated with "knobs" [23, p. 45, pl. LIV-1047s] found in the Khovle horizon III, Khovle period III should be defined by the end of the $6^{\text {th }}$ century-mid- $5^{\text {th }}$ century B.C. As for the Khovle period II, its last phase is well-defined at the turn of the $5^{\text {th }}-4^{\text {th }}$ centuries B.C. [23, pp. 78-79]. If we also take into consideration the fact that "... a large part of the structures, built in stage III, continue to exist on stage II" [23, p.41], we would not be mistaken if we date the stages III and II to the end of the $6^{\text {th }}$ century-beginning of the $4^{\text {th }}$ century B.C. [21].

Three construction horizons were identified on the Narekvavi settlement. Horizon I is dated to the end of the $6^{\text {th }}$-the beginning of the $5^{\text {th }}$ century [9, p. 95]. The date of horizon II is defined as the $6^{\text {th }}$ century B.C. [9, p. 97], and the end of the $8^{\text {th }}$ century B.C. - the beginning of the $7^{\text {th }}$ century B.C. is considered as the lower date of horizon III [9, p. 98].

The dates of the Narekvavi settlement are obtained on the basis of the stratigraphy, analysis of the obtained materials, and $\mathrm{C}^{14}$ data. It is noted, as a result of the analysis of the material, that "the clay products attested in the third construction horizon basically repeat the main signs of the vessels of the construction horizon II" [9, p. 97]. It is also noted that no typological differences are defined among the pithoi of horizons I-III [9, p.46]. It can thus be said that the construction horizons I-III of the Narekvavi set-
tlement represent one cultural layer, in which three construction levels are identified. The data of $\mathrm{C}^{14}$ shapes the following picture: for horizon I-2430 $\pm 40$, i.e. 480 B.C. [9, p. 95]; for horizon II - $2490 \pm 50$ B.C., i.e. 540 B.C., $2495 \pm 60$, i.e. 545 B.C. [9, p. 97]; for horizon III - 2450 $\pm 50$ B.C., therefore 500 B.C. [9, p. 98].

If we take into account the proximity of the materials from construction levels I-III of the Narekvavi settlement and the $\mathrm{C}^{14}$ data, according to which the Narekvavi settlement is placed between $2430 \pm 40$ and $2495 \pm 60$ (therefore approx. 545-480 B.C.) and if we also take into account that the Narekvavi necropolis stopped functioning in the $5^{\text {th }}$ century B.C., the period of the functioning of the Narekvavi settlement (levels I-III) should be dated to the $6^{\text {th }}$ century and mid- $5^{\text {th }}$ century B.C., while the construction level I should be attributed to the end of the $6^{\text {th }}$ centu-ry-first half of the $5^{\text {th }}$ century B.C.

Three construction levels (A, B, C) could be identified in the Achaemenid layer of Tsikhiagora, on the grounds of the situation revealed in the results of archaeological excavations. Three construction levels of the Achaemenid layer were attested under the front yard of the granary (Hellenistic layer) included in the temple complex. Two levels are also evidenced in squares 38-42, 63-67, 88-92, and 113-117. In this section of the hill, the Achaemenid and Hellenistic layers are separated by a 0.3-0.5 m thick layer of black soil, which practically does not contain any archaeological material. In the Achaemenid layer, a road or a square made of big cobblestones and the remains of structures were excavated (PI. 100-102), which are damaged by some pits revealed in this section (№13, 15-20). The pits themselves are covered by a layer of the Hellenistic period. Some other pits (№2, 9, 10, 12, 14) are also covered with this very layer. The layer of the Achaemenid period is damaged by pits (№49, 50, and 51) of the Hellenistic time. The unnumbered pits posted on the table are also of this age.

The level A was excavated (PI. 100, sq. 82-83) at a depth of 0.2 m below the level of the yard in front of the temple granary (PI. 103). The "large public structure" revealed under the floor of the temple and the granary belong to this level.

The Level B (PI. 100) includes the materials revealed at a depth of 0.6 m from the level of the front yard of the granary (sq. 82-83) (PI. 104), as well as those evidenced under the floor of the room (bakery) excavated in the yard of the temple (sq. 147,148), in the excavated room (PI. 107, 109), under the floor of
the bakery (sq. 66) (PI. $105_{8,9}$ ) and in front of the mill (sq. 614, 615) on the lower level (PI. $105_{10-13}$ ).

The level B includes some of the pits (№1, 7, 13, 15) that are cut from this level.

Level C (PI. 100) was revealed at a depth of 1.2 m below the level of the yard (sq. 82-83) (PI. 105 $1_{1-7}$ ), under the refectory (PI. 106, 108 1.8 ), on the level of the road (square) paved with cobblestones, in sq. 42 (Pl. $108_{9-13}$ ), sq. 67 (PI. $110_{7.8}$ ), sq. $92\left(\right.$ Pl. $\left.110_{2.6}\right)$, sq. 115 (Pl. 110 ) materials identified at the level of the cobblestone square; sq. 90-92, 115, 117 a road or a square arranged with cobblestone dug in squares (PI. 101, 102, 118); pits №2, 5, 6, 14.

Level $A$ is well dated by the fragment of the painted jug (PI. 103 ${ }_{6}$ ), which stylistically and technologically is analogous to the type II painted pottery of the Achaemenid and post-Achaemenid periods of Kartli and dates back to the middle and second half of the $4^{\text {th }}$ century B.C. [83, pp.77-79; 20; 26].

Level $B$ should be dated to the second half of the $5^{\text {th }}$ century B.C. and the beginning of the $4^{\text {th }}$ century B.C. according to the parallel materials (see above) and the stratigraphy of the Achaemenid layer of Tsikhiagora. This date is also supported by the bone arrowhead found in pit №7 (PI. 112 12 ). Arrowheads of this type are found in the Near East; in Scythia they are a rarity [65, p. 73]. They are mainly known from the Southern Caucasus [18; 9; 54] and are dated back to the $5^{\text {th }}-4^{\text {th }}$ centuries B.C. and more so the $4^{\text {th }}$ century B.C. [18, p. 113]. Of interest are the fragments of jugs with tubes found at this level, too (PI. $105_{13}$, 1154 ). Vessels of this type appear from the $5^{\text {th }}$ century B.C. The early pieces consist of large-sized jugs, while the later ones are small-sized [83, p. 58]. The Tsikhiagora pieces belong to this very last group.

Level $C$ is dated to the end of the $6^{\text {th }}$-first half of the $5^{\text {th }}$ century B.C. on the grounds of the parallel materials (see above) and the stratigraphy. For dating level C, the so-called Scythian arrowheads found on the cobble-stone road (square) have a definite significance ( $\mathrm{Pl} .118_{6,7}$ ). These arrowheads belong to the group of three-lobed, short socketed ones, which were widespread in Scythia in the end of the $6^{\text {th }}-4^{\text {th }}$ century. In the same period it is found in the Near East [65, p. 72]. A. Melyukova dates the analogous arrowheads to the $6^{\text {th }}-5^{\text {th }}$ centuries B.C. $\left[79, ~ p l .7_{1-7}\right]$.

The oil lamp (PI. 1084) and pot or pan-pot (PI.
$\left.108{ }_{5}\right)$, found in the level C, deserve attention. Their bases are decorated with obliquely notched ornament, which is characteristic of the previous period and is rarely found at the sites of Kartli, dated to the $5^{\text {th }}-4^{\text {th }}$ centuries B.C ${ }^{1}$.

The discovery of vessels with notched bases at level C also indicates that the red-fabric pottery discovered here belong to the earliest samples of this group of pottery from Kartli [21].

The appearance of red-clay pottery in Kartli from Achaemenid Iran is assumed to be dated to the $5^{\text {th }}$ century B.C. [56, p. 91; 83; 25]. So far, the only site where red-fabric pottery was attested in an earlier layer, is horizon IV of the Khovle settlement [23, pp. 38-39], where analogous materials appeared in the last phase of period IV [23, p. 71]. If we accept the end of the $6^{\text {th }}$ century B.C. and the first half of the $5^{\text {th }}$ century B.C. as the date of Khovle stage III, then we should date the end of Khovle period IV to the second half of the $6^{\text {th }}$ century B.C. or, more likely, in its last third; the appearance of red-fabric pottery should also be considered from this period, as a result of the northern expansion of Achaemenid Iran in the last third of the $6^{\text {th }}$ century B.C. [25; 27]. It is significant that the Greek pottery starts to penetrate into Kartli (Avlevi, Rustavi, Khovle, Atskuri) at this very period [15; 23, pp. 48, 77, 99; 22, p. 193]. It's possible that the appearance of imported Greek pottery, together with the spread of some new elements into Kartli, was the result of interactions with the Achaemenid world. Supposedly, Greek pottery reached the eastern regions of the southern Caucasus by land routes, passing along the Kura River.

Thus, the stratigraphic data and analysis of the material from the Achaemenid layer of Tsikhiagora gives the possibility of a differentiated dating of the Achaemenid layer:

Level A - middle and second half of the $4^{\text {th }}$ century B.C.

Level $B$ - the second half of the $5^{\text {th }}$ century B.C. and the beginning of the $4^{\text {th }}$ century B.C.

Level $C$ - the end of the $6^{\text {th }}$ century B.C. - the first half of the $5^{\text {th }}$ century B.C. [21, p. 52].

## The character of the Achaemenid layer

Characterising Tsikhiagora site, G. Tskitishvili has noted: "After the Early Bronze Age, life stopped on the hill for a long while. It was resettled in the last

[^5]centuries of the $2^{\text {nd }}$ millennium B.C. Later, until the turn of the old and new eras, life on Tsikhiagora does not stop, but the essence of the hill changes. Around the $6^{\text {th }}$ century B.C., the population descends from the hill to the lowlands and settles in a village-like settlement to the east and north of the hill. From now on, the hill is an object of worship for the village. The remains of the foundations of a large, supposed$l y$, public building have been preserved in the construction horizon dated to the $6^{\text {th }}-5^{\text {th }}$ centuries B.C. The building was destroyed during the construction of a large complex of the later period" [40, pp. 169171].

We also share G. Tskitishvili's idea that Tsikhiagora has become a cult centre in a certain period. This event should be related to the appearance of a layer dated to the Achaemenid period on Tsikhiagora. This might happen at the time, when on the level $C$ of the layer belonging to the Achaemenid period, a road or a square is arranged, made of large flat cobblestones ${ }^{2}$. Its cult character is probably also indicated by a pit set in it, where donated items seem to be placed (PI. 118). The pits cut next to it should also be for cult purposes, where, together with clay vessels, ashes and coal, parts of unique stationary hearths or altars were found ${ }^{3}$.

A fragment of the bell-like base may belong to the Achaemenid layer of Tsikhiagora (PI. 119). It was found in the western part of the hill, in the area adjacent to the stone paved road or square [2, p. 87]. This fragment of the base should belong to a distinctive structure (palace, temple) of the Achaemenid period. If we concur on the cult character of the hill in this period, we can assume that a cult structure stood here in the Achaemenid period.

The fragment of the bell-shaped base is dated to the post-Achaemenid-Hellenistic period, the end of the $4^{\text {th }}$ century B.C.-beginning of the $3^{\text {rd }}$ century B.C. [3, p. 10]. It is thought to belong to another structure, which is older than the temple complex.

The double-protome capital of Tsikhiagora is
discussed in relation to this base. The protome was found in the temple, in room №10, at a height of 1.5 $m$ from the floor, in the pile of the ruined mud-brick walls. Despite the fact that it was considered as an architectural detail of the temple by G. Tskitishvili from the beginning, an opinion was expressed that it does not belong to the temple and it is connected to an earlier, different structure [3, pp. 10-11].

In the analysis of the base, it is noted that "by its volume, it is much closer to the prototypes the leaves carved on its body are analogous to the samples legitimised in Persepolis" [38]. Along with this, the distance from the prototypes of the dou-ble-protome capital is emphasised [37, p. 11]. On these grounds the base was dated to the Hellenistic period (end of the $4^{\text {th }}-3^{\text {rd }}$ century B.C.) [56, p. 65; 3, p. 10; 38, p. 39]. Thus, the base is analogous to the Achaemenid prototypes, while the capital is far away from them. This should also indicate to the chronological difference.

No matter how the issue of the dating of the dou-ble-protome capital from Tsikhiagora is decided, it seems to us that the capital would not be in the Hellenistic period temple without any function. Its place should be found in the construction of the temple. The fact that the capital was in a visible place in the Hellenistic period could be indirectly indicated by the jet pendant found in the rich burial excavated at "Sakaraulo Seri", which represents a model of the double-protome capital (Fig. 45).

It seems to us $t$ more appropriate to relate the base with the Achaemenid layer, and to connect the capital with the Hellenistic layer [21].

The burial ground, contemporaneous of $B$ and C levels of the Achaemenid layer, was recorded on the summit located 800 m away from the hill, on the "Kasraant Lands". The burial-ground of "Dachrilebi", which is contemporaneous of the Achaemenid layer A, is closer to the Tsikhiagora hill, locating in 350 metres away from it. On this territory burials appear from the middle of the $4^{\text {th }}$ century B.C., soon the burial ground of "Kasraant Lands" was abandoned.

2 A parallel of it is revealed on the Tsikhiagora site itself. On the original level of the yard of the temple complex of the upper, Hellenistic layer a similar elongated square paved with medium-sized cobblestones was excavated, which is directed towards the western entrance of the main temple (PI. 100). The function of this square is not yet defined.
3 They had been attached to an uneven ground, not to a paved floor. This is attested by their bases. These hearth-altars have the shape of an elongated rectangle and are bordered from three sides (PI. 116, $111_{11}$ ). They were obviously connected with fire. If we judge by the degree of the fire effect, they should not be intended for long-term usage. The impression is shaped that they were hurriedly shaped directly on the ground, in the open air. It is possible that fire rituals were performed on them, and afterwards they were placed in a pit, which was dug specially for rituals.

From the beginning of the $3^{\text {rd }}$ century B.C., the burial ground moved to "Sakaraulo Seri", closer to the temple complex, at a distance of 100 m from it.

The settlement at the foot of the Tsikhiagora hill appeared at the beginning of the $6^{\text {th }}$ century B.C. The first settlement seems to have been built up to the east and south-east of the hill. The settlement existed in this territory until the end of the $4^{\text {th }}$ century B.C. From the beginning of the $3^{\text {rd }}$ century B.C., the settlement moves further west and it occupies the southern slope of the "Sakaraulo Seri"; a burial appears on the summit of the hill ridge. From the $2^{\text {nd }}$ century B.C., the settlement spreads to the east and southeast and reaches the left bank of the river Shavtskala. This settlement existed until the $4^{\text {th }}$ century A.D. [40, p. 171].

All of the above said gives us grounds to suggest that Tsikhiagora gains a cult character in the Achaemenid period and this tradition continues into the Hellenistic period.

On the territory of Kartli, apart from the already discussed monuments, up to twenty settlements of the Achaemenid period are known, which were revealed in a result of surveys and small-scale excavations.

The materials discovered in the Achaemenid layer of Tsikhiagora gave possibilities to distinguish three stages of this epoch, which correspond to three construction levels [21].

As a result of the analysis of the archaeological materials from Tsikhiagora, Khovle and Narekvavi, it appears a whole series of new developments were
recorded in Kartli of Achaemenid period, which demands a new understanding of the cultural-historical situation of Kartli of this epoch.
G. Tskitishvili thought that the Tsikhiagora "complex should have been built ...by Azo. He was the Eristavi of the part of Kartli conquered by Iran", which "according to the old Georgian chronicles, Alexander the Great ... made him the ruler" [42, p. 25]. He would also note that ".. today's Shida Kartli went beyond the conquests of the Achaemenid Empire and that it remained outside the boundaries of the Roman empire". "Despite this, Herodotus says that the Persian state extended up to the Caucasus".
J. Gvetadze and G. Tskitishvili expressed the opinion that Achaemenid Persia has spread its influence to Kartli during the time of Artaxerxes I (462-424 B.C.) [42]. J. Gvetadze assumed that the unification of Kartli into the $18^{\text {th }}$ satrapy took place during the time of Artaxerxes II (405-358 B.C.) [6]. Some scholars thought that Tsikhiagora was one of the centres of this satrapy [84, p. 69, 71].

In our opinion, the idea expressed by G. Narimanishvili is more appropriate. He supposes that Kartli fell into the sphere of political interests of Iran at the end of the $6^{\text {th }}$ century B.C., during the reign of Darius I. However, Kartli has never been a part of the empire and the Achaemenids ruled Kartli through the local aristocracy. The northern border of the $18^{\text {th }}$ satrapy passed near Karajamirli, Sari-Tepe and Beniamin [27]. The territory up to the Caucasus ridge to the north of this strip was governed by the local ruler of Mtskheta.

## HELLENISTIC/POST-ACHAEMENID PERIOD

The Hellenistic/post-Achaemenid period is very important for us, because the Georgian historical tradition connects this age with the formation of the state of Kartli/lberia. Written sources are scarce. The rather vague references of the Georgian chronicles "The Life of Kartli" and "The Conversion of Kartli" require some support with archaeological materials. All the sites whose data allow us to judge on the material or spiritual culture of that period are important.

The Tsikhiagora temple complex represents an unique site for the study of the history and culture, thanks to the level of its preservation. Therefore, it is important to clarify the issues of its chronology and essence.

In G. Tskitishvili's opinion, due to its geographical location, Georgia has been at the junction of two cultures (Eastern and Western) from the earliest times, and the influence and fusion of these two cultures can be clearly seen in this very temple complex.

The discovery of an Achaemenid-type column capital once again expresses the close connections of Eastern Georgia with the Achaemenid world at that time. This should not be contradicted by the identification of letters and signs of Greek origin from Asia Minor on the tiles of Tsikhiagora, because as is known, the Achaemenid kingdom, the first in history, united a large part of the cultural world of that time, and it conditioned the mixture of the culture of the Achaemenid state, in which the Greek element made a large contribution [42; 110].

Of the Tsikhiagora layers that dated to the Classical period is considered to be the most important one. Its depth reaches 4 m . A unique temple complex of the Hellenistic period belongs to this layer, which in G. Tskitishvili's opinion, dates to the end of the $4^{\text {th }}$ century B.C.-the mid-3rd century B.C., while in our opinion it is dated to the beginning of the $3^{\text {rd }}$ century B.C.-the mid-2 ${ }^{\text {nd }}$ century B.C. [21, p. 47]. The Hellenistic layer of Tsikhiagora consists of 8 construction levels. Levels III-VIII belong to the period of the existence of the temple complex. The last stage of the functioning of the temple complex is connected to the level III. The period of the ruining of this level coincides with the spread of black-fired, "mir-ror-like-surfaced" ceramics in Kartli (such vessels also appeared in level III), which is defined by the beginning of the $2^{\text {nd }}$ century B.C.-the first half of the $1^{\text {st }}$ century B.C. [83, p. 59]. The date of this type
of pottery was established through the study of materials and stratigraphic data of Samadlo, Nastakisi, Dedoplis Mindori, Uplistsikhe, and Tsikhiagora, as well as the analysis of the material found in the corresponding layers [56, p. 85; 83, p. 63]. Such ceramic materials were found in large numbers in levels I and II of Tsikhiagora. We should assume that the temple complex of Tsikhiagora was destroyed in the middle of the period of the spread of "mirror-like-surfaced" pottery, in the middle of the $2^{\text {nd }}$ century B.C. A horizon contemporaneous of the last stage of the temple's functioning (levels IV-VIII) was excavated, which was still associated with the temple. We have found a small amount of "mirror-like-surfaced" pottery in levels IV-V, while levels VI-VIII consist of "Samadlo style" painted ones, which are dated according to the imported pottery found in the lower Hellenistic layer of the Samadlo [56, p. 43-47, Pl. IX] to the beginning of the $3^{\text {rd }}-2^{\text {nd }}$ centuries B.C. [83, p. 60, 83; 26, p. 2]. The date of the construction of the Tsikhiagora temple complex is determined by the "Samadlo style" painted pottery at the beginning of the $3^{\text {rd }}$ century B.C. [28]. The date of the destruction is confirmed by the new radiocarbon date of the grape pips found in the burnt cellar - RTD 7824, 2107 $\pm 20$ BP, 193-86 BC (84.2\%) [92, p. 65].

The cult of the sun and fire is confirmed to be spread in ancient Georgia from the Early Bronze Age, but, according to G. Tskitishvili, this temple must have been built under the influence of neighbouring Iran (of the Zoroastrian religion). "The only one thing that we can add is the existence of ovens (for flat bread) for common temple services, while in residential buildings both here and in the entire Eastern Georgia at that time only traditional (Khovle-type) bakeries are widespread, while the ovens followed the Iranian temple type, and they baked bread in them, like in Iran, for the parishioners who came for holidays in the refectory. Even the magi (priests) living in the temple complex had an ancestral oven for everyday needs. We think that the local cult of the sun and fire merged with the ritual of the Iranian deities of the same type, and the "reformed" cult needed the bakery of the very type which was used in Iran for the ritual bread" [42].

The Tsikhiagora temple complex, from the architectural point of view, was studied by G. Kipiani. He noted its closeness to Iranian fire temples (both early and modern) [38].
K. Khimshiashvili notes that there are some dif-
ficulties connected with the interpretation of the temple. Although it definitely shows a number of signs, associated with Iranian fire temples, there is one moment that practically excludes the connection of this structure with a traditional Zoroastrian temple. Specifically, the problem is that"an iron knife and burnt bones of a sheep" were found on the high altar erected in the yard in front of the temple, and on one of the altars found in the cellar included in the complex, the burnt horns of a goat were found. It is inconceivable that the followers of the traditional Zoroastrian (Mazdean) religion would perform a sacrificial ritual and place a body (meat), that is considered impure, near a holy fire. This circumstance fundamentally contradicts the traditional identification of this structure (and this complex entirely) as a Zoroastrian fire temple [45].

Despite this, in his opinion, Tsikhiagora can still be associated with fire temples, so great are the structural similarities. The sacrifice described above can probably be explained by the still undeveloped character of the Zoroastrian religion in the Hellenistic period. As is noted, not sacrificing an offering is characteristic of traditional, orthodox Zoroastrianism. It is possible, that there existed some strong local tradition in Georgia, according to which sacrifice was continued, with the burning of a sacrificial sheep or goat.

While describing the temples of this period studied in Georgia, it is noted that a group of temples, having one and the same character of planning, clearly stands out. Specifically, these are Tsikhiagora, Ghartiskari, Samadlo grounds, Nastakisi, and two-columned complex in Uplistsikhe [45].

The temples that are distinguished in a group are united by the following signs: a square cella, which is surrounded by corridor-like chambers on two sides; the entrance to the cella, cut into the middle of the facade wall; in front of the temple there is a yard enclosed by a high fence, in which the entrances are placed in the side walls; an altar, which arranged in the centre of the yard (as it is, for example, in Tsikhiagora and possibly two-columned hall in Uplistsikhe).

In Tsikhiagora and in the two-column hall of Uplistsikhe (therefore in the temples where the walls have survived at a considerable height) windows have been cut into the cella from the corridor-like side chambers.

The remains of pithoi were found in four cases in the chamber located to the right of the facade side.

From the general description, the structural similarity between these temples and the well-known Iranian fire temples is evident, where the necessary components are: a square cella, around which are either corridors surrounding it from the outside or corridor-like elongated chambers, walled yards with altars in front of the temple (for example, the fire temples near Susa, the Oxus temple at Takht-I Sangin) [108; 109].

Nevertheless, it is presumed that in the cases of Tsikhiagora, Ghartiskari, Samadlo Lands, Nastakisi and the two-column hall of Uplistsikhe, we are dealing with a regional type of fire temple, because, despite the structural unity, there are also significant differences between the described temples and Iranian ones.

The above described group of temples has not several protruding small-sized chambers, which are located on both facade sides of the square cella. These chambers represent "Ateshgahs" - a storage place of permanent (inextinguishable) fire. These chambers are "one of the most essential components of the inner functional structure of Iranian fire temples".

There are no known cases among the Iranian fire temples, when, as in the mentioned temples (Tsikhiagora, Uplistsikhe two-column hall), the side chambers (corridors) opened into the square hall (into the cella) with windows. However, it is also possible that this is just a result of poor preservation of the most of the Iranian fire temples.

Finally, in all the mentioned temples, except Ghartiskari, the roof of the main (square) hall is set not on four columns, which is canonical for Iranian fire temples, but on just one (Tsikhiagora), or two columns (the two-column hall of Uplistsikhe), or they did not have freestanding columns at all (Samadlo grounds, Nastakisi).

In addition, it appears that the geographical distance of the Southern Caucasus, and Georgia in particular, from the Zoroastrian centres of Iran played an important role [45].

The study of the temple complex of Tsikhiagora showed that in the ritual there were used fire, red wine, bread (baked in an oven), and sacrifice of small cattle. The question arises as to what type of fire was lit in this temple, or to which deities the said temple was dedicated. It is impossible to give an exact answer to this question at the current level of our knowledge.

We can conclude that, in the kingdom of Kartli/ Iberia, despite the undoubtedly strong influence of Iranian culture, there was religious syncretism with local traditions [76]. Generally, such a situation is more characteristic of the Hellenistic period.

## Conclusion

Based on the analysis of the materials obtained as a result of the almost thirty years long study of Tsikhiagora using new dating methods, we were given the capability of covering many issues in a new way. The stratigraphy and chronology of the monument were specified.

As a result, we received the following sequence of cultural layers and levels of Tsikhiagora:

Layer I - Early Bronze Age settlement, 2 levels, with 5 construction horizons.
$28^{\text {th }}-25^{\text {th }}$ centuries B.C.
Layer II - Middle Bronze Age kurgans.
$17^{\text {th }}-16^{\text {th }}$ centuries B.C.

Layer III-Late Bronze Age settlement - 2 levels. $15^{\text {th }}-12^{\text {th }}$ centuries B.C.

Layer IV - Early Antique/Achaemenid age - 3 levels. The end of the $6^{\text {th }}$ century- $4^{\text {th }}$ century B.C.

Layer V - Hellenistic/Post-Achaemenid age, 8 building levels. $3^{\text {rd }}-1{ }^{\text {st }}$ centuries B.C. (Levels 3-8-temple complex. $3^{\text {rdd }}$ 2 $^{\text {nd }}$ centuries B.C.).

The materials of all layers of Tsikhiagora are so diverse and are connected with so many problems of different ages that it is impossible to discuss them in one paper. The main aim of this publication is to present this very interesting monument as a whole.

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## Nana Rusishvili

## PALAEOETHNOBOTANICAL INVESTIGATION OF "TSIKHIAGORA"*

The cultic temple"Thikhiagora" dated to the $4^{\text {th }}-3$ rd centuries BC is situated at the village of Kavtiskhevi, Kaspi region [Tskitishvili G. 1976:60-61]. The palaeoethnobotanical material is evidenced in the room No 10 of the templar complex as well as in the mill and the cellar. The Fossil botanical material is identified at the Early Bronze settlement near the templar complex.

Remains of vegetation, mixed with ash are found on the floor level in Room No. 10 of the templar complex. Charred grains of wheat, barley, millet, as well as seeds of grape, peas and weeds, are identified after sifting of ash layers (Table 1).

Wheat is heterogeneous in the find. According to morphological features, three groups of grains are distinguished. The first group includes grains with very small width (value "B") and comparatively bigger height (value" $T$ "). Average length of grains equal 5.42 mm , width -1.24 mm . Ratio L/B values equal 4.37. Such ratio is characteristic of a einkorn wheat (Triticum monococcum L.) (Table 2). Basic features of the species are: small width, protuberant ventral portion, and, compared to width, bigger height (value~ T ~) (Fig. 1a). Index 100 T/B of a domesticated einkorn wheat always exceeds $100 \%$. In the given case it equallse 200,81\%.

In this fraction were also found grains, characterized with smaller width. Compared to Triticum monococcum, their height was smaller as well (see Table 2), while their ventral portion were less protuberant. On the basis of these features, they resembled wild einkorn wheat (Triticum boeoticum).

Grains of other different morphological type are included into the second group. Their average length equalls 6.19 mm . In comparison with Triticum monococcum their width is greater, while their height is smaller (see Table 2). According to these features, they resemble emmer wheat (Triticum dicoccum Schubl.) and wheat of Triticum timopheevi Zhuk. They are oblong, sharpening towards their apical and basal portions (Fig. 1 b). Taking into consideration all these features, as well as their presence
in the mixture together with domesticated einkorn wheat, they could be attributed to the type of an already cited Triticum dicoccum-timopheevi. Triticum timopheevi corresponds to chelta zanduri in Georgian. It belongs to a tetraploid ( $2 n=28$ ) hulled wheat. Its areal is narrow and its contemporary crops are known only in western Georgia [Dekaprelevich L.L. 1938:33-57; Menabde V.L., Eritsian A.A. 1960:731736].

Grains of the third group have shorter length (5, 02 mm ), in comparison with Triticum monococcum and Triticum dicoccum-timopheevi. Average width equals 2.02 mm (see Table 2). Grains are humpbacked, and asymmetrical, vibrion is of pointed shape and noticeably protuberant, ventral grove is not deep (Fig. 2c). Grains of this type are attributed to wheat macha (Triticum macha Dek. Et Men.). Chelta zanduri (Triticum timopheevi) in commu-nity with gvatsa zanduri (Triticum monococcum) creates the so-called zanduri population. Other sorts of wheat are often met in this population [Dekaprelevich L.L; Menabde V.L. 1932:3-35; Menabde V.L. 1948:43-47; Menabde V.L., Eritsian A.A. 1942: 23-830].

In the collected sample, taking into consideration quantity of grains, the bulk of the grains are represented by Triticum dicoccum-timopheevi (60, 95\%), Triticum monococcum constituts 26, 89\%, Triticum boeoticum - 5, 71\% and Triticum macha-6, 35\%.

Thus, similarly to the Digomi settlement, we once again encountered with the Zanduri population, however, it is dated to a much later period.

The Zanduri population was identified in the palaeobotanical material of the Digomi settlement dated to the late Bronze Age. At Tsikhiagora, like in Digomi, the bulk of the material is represented by Triticum dicoc-cum-timopheevi. Both sites are located on the territory of eastern Georgia. Presumably, the population under discussion occupied much greater areal in the past.

According to the recent palaeobotanical data, T.timopheevi has been faund at the Neolithic and Bronze Age sites of Western Greece, as well as in Austria, at the site dated to the Late Bronze Age.

[^6]These data are noteworthy, extending the areal of zanduri [Jons G., Valamoti S., Charles M. 2000:133146].

Bulk of finds in building No. 10 is comprised by grains of barley and millet. Grains of barley are elongated and narrow. Their ventral grooves at the basal portion are narrow, widening towards their apical portion, and their dorsal portion are flat (Fig. 1d). Grain body is symmetrical, insignificantly varying according to its size. On the basis of these features, it could be concluded that barley belonged to a hulled two-rowed variety (Hordeum distichum L.).

In addition, spikelet of wild barley is found in the sample. It is noteworthy that, its middle spikelet is in sedentary position, while lateral spikelet has legs and axis of triplet, and is trimmed with fluff (Fig. 2f). On the grounds of these peculiarities, the triplet is attributed to wild barley (Hordeum spontaneum C. Koch).

Millet was not mixed with wheat and barley. It is found in glued clots of mass, in its pure kind, without admixtures. It seems that separately gathered harvest of millet has been kept there. Scales cover grains, and remains of panicles are encountered among them. Grains are of average sizes, elongated. Their length reaches 2.54 mm , and width $-1,83 \mathrm{~mm}$. On the basis of its sizes, morphological type, and structure of panicle, it is attributed to ordinary millet (Panicum miliaceum) (Fig. 1e).

Three grape seeds and a pea seed were identified in the mixture of cereal grains. Sizes of grape seeds are displayed on Table 3. Seeds of grapes were of medium size. They are sack like, having rounded shape. Their stalk is distinctly expressed, widening towards basal portions. Chalaza is round-shaped and concaved. It is located in the middle of a seed body. A ventral seam on the top of the seed is located in a cavity; lateral grooves on the abdominal portion are narrow, stretching in parallel directions. Relying on seed sizes, length of a stalk and L/B ratio discovered grape seeds should be attributed to a cultivated type of Vitis vinifera L.

Pea seed (Fig. 1g) should be attributed to a cultivated species of Pisum sativum. Seeds diameter reaches $5,0 \mathrm{~mm}$, length of its rib was $2,0 \mathrm{~mm}$. Seeds of weeds are presented among cultivated plants. Following species were differentiated in the finds: Secale segetale (Zhuk.), Roshew., Lithospermum arrense L., Lolium sp., Bupleurum rotundifolium L., Conringia orientalis (L.) Andrz., Cirsium arvense L. Scop., Rumex sp., Galium sp.

Amount of weed seeds was considerable; therefore material could be characterized as weedy. Vegetation remains are discovered in the
vicinity of the cultic temple at the so-called «mill». The place in question is named sol since a lot of flour-grinders are found there. Charred grains are found there in a vessel for preservation of grains. The following plant species are identified in the material obtained from the flour-grinding premises: Triticum aestivo-compactum, Triticum dicoccum, Triticum macha and seeds of weeds (see Table 3).

Triticum aestivo-compactum prevails in the find, corresponding to $78,49 \%$ of the find. Its grains are of small size. Its average length reaches $4,65 \mathrm{~mm}$, width $-2,91 \mathrm{~mm}$, and height $-2,07 \mathrm{~mm}$. The ratio of length towards width corresponded to 1.60 (see Table 3). According to external appearance grains are swollen, evidently being effected by fire. Embryo is also swollen, noticeably protruding. On the whole, shape and sizes of grains are characteristic of bread wheat (Triticum aestivo-compactum) (Fig. 3a).

The grains of emmer wheat (Triticum diccocum) comprised $15,74 \%$ of finds. According to their sizes (see Table 3) and their morphological features (Fig. 3d), they do not diverge from aforementioned features of the species in question.

The grains, attributed to wheat of macha, corresponded only to $5,83 \%$. In comparison with already described grains of this type, they are more elongated. Their average length equals $5,62 \mathrm{~mm}$, width $2,56 \mathrm{~mm}$. and height- 2.42 mm . They are wider than grains of the emmer wheat. The grains attributed to wheat of macha are distinguished from the first two species by their bigger height (see Table 3). They have asymmetrical shapes tha are exposed on a cross-section of grains. Their dorsal portions are hunchbacked and their basal parts are narrow. Embryo was noticeably protruded; fluff was noticeable on its apical part (Fig 3e).

Thirteen grains of rye are identified in finds. Their average length equals $5,1 \mathrm{~mm}$, width $-1,73 \mathrm{~mm}$, height $-1,7 \mathrm{~mm}$. These grains are of medium size and narrow. Relying on these features, they more resembled Secale segetale.

Besides rye, the following species of weedy plants are identificated: Lolium sp., Galium sp., Aegilops sp. and Cephalaria syriaca Schrad. Weeds are represented with charred grains and seeds, while Aegolops sp. - with a rachis segment of ear.

Out of weeds, Cephalaria syriaca was especially
noteworthy."Makhobeli» is its Georgian equivalent name. Local population uses grains of this species as admixture for wheat. Wheat flour with admixture of Makhobeli obtains blueish color. Bread baked from its flour do not become stale for a long period of time and is characterized with pleasant aroma [3, pp 219-156].

It is quite possible that the discovery of Makhobeli together with wheat is not accidental and that baking of bread with its admixture is a very ancient baking usage, being utilized already in the 4th-3th centuries $B C$.

According to the composition of species, vegetation remains identified in the vessel for preservation of grains were similar to those found in the mill. As in the previous case, here the bulk of the material ( $68.99 \%$ ) is reprezented by bread wheat (Triticum aestivo-compactum). According to morphological features and sizes (see Table 3 ), grains are identical with wheat existing in the mill.

In finds Triticum dicoccum corresponds to 27.59 $\%$, while wheat macha- to $3.42 \%$. Thus, according amount (see Table 1) and sizes (see Table 2) and morphology of discovered wheat species, material found in the mill and the vessel is identical, and, very likely, belongs to one and the same harvest.

Together with grains of cerials, seeds of following weeds are presented in the vessel: Lolium sp., Secale segetale, Galium sp., Cephalaria syriaca and polygonum sp. (see Table 1), i.e. the composition of species found in different localities is more or less similar.

The find in question is noteworthy pertaining remains of wheat ears too. Two rachis segments of Triticum aestivum connected to each other in twos are found (Fig. 3b). Three ears of macha wheat type are also found. Ears on scales are trimmed with fluff which is a characteristic feature for the species in question. A stem of the ear could be broken in the same way as in the case of the emmer wheat, i.e. stem segments are attached to the base of the ear by their upper ends (Fig. 2). Whole grains are extracted from one ear. According to their shapes, they resembled grains of macha type wheat except that they are too small. It is possible that it represents the farthest apical part of the ear.

Three grape seeds are discovered in the vessel. They have pear-like shape. Their blunt-pointed stalks are perfectly expressed, widening towards their base. Chalaza is salient, slightly displaced towards the upper third of the grain. The seed seam is straight and not deep. Lateral grooves were stretched in parallel
directions (Fig. 3c). Average length of grape grains equaled $4,3 \mathrm{~mm}$, width $-2,7 \mathrm{~mm}$, length of the stalk $-1,2 \mathrm{~mm}$. Judging by length of the stalk and indices, the grains belonged to a cultivated variety of grapes though their fruits were too small (Table 4). It was evidenced by small sizes of their grains.

Charred grains are found on the floor level of the room called «marani" located not far from the mill. The English for "marani" is a wine-cellar. Following species of cereals are identified in the wine-cellar: emmer wheat, einkorn wheat and Triticum aestivo-compactum type, hulled barley and rye. Hulled wheat was represented with spikelet fork as well.

In contrast to the previous case the emmer what represents the bulk of the finds (84, 87\%). Einkorn wheat, macha type Triticum aestivo-compactum and hulled barley are representing as admixture insignificant quantity (see Table 1).

Table 3 represents sizes and indices of discovered grains. Relying on these data and their morphology, they correspond to characteristics of the discussed species. One grain of rye, which is discovered in the winecellar, is narrow and long, and resembls Secale segetale (see Table 3).

In the vicinity of the cultic temple, excavations of a settlement dated to the Early Bronze Age (3rd millennium $B C$.) are carried out. Grains of barley are revealed there in a clay vessel. Their amount approximately reaches 5000 cm 3 . Barley is represented by mixture of naked and hulled types. Average sample is chosen for calculation of perecentage correlation of varieties of the finds in question. Hulled barley constitutes bulk of the find ( $90,10 \%$ ), while naked barley - only $9,90 \%$ t (see Table 1 ).

Compared to grains of hulled barley, grains of naked barley were larger. Average length of pellicled barley was $5,72 \mathrm{~mm}$, while grains of naked barley were 4; 68 mm in length (see Table 3). These varieties of barley could be distinguished according to a shape of abdominal groove. In case of hulled barley, it is narrow at its basal portion, widening towards apical portion (Fig. 3f). Abdominal groove of naked barley is equally narrow along its whole length (Fig. 3 g ).

Subsequently, it could be concluded that wheat of the zanduri population was grown in the antique period on the territory of the village Kavtiskhevi. It was represented by the following species: Triticum monococcum, Triticum dicoccum-timofeevi and Trit-
icum macha.
Besides the zanduri population, emmer wheat and population of bread wheat were grown on the site under discussion. Utilization of makhobeli as an admixture for wheat implies that a technology of bread-baking in Georgia originates from ancient times. Out of cereals, together with the sited species of wheat and barley, ordinary millet was also grown.

Mixture of hulled and naked species of barley found in layers dated to the 3rd millennium BC. serves as a poof of the intensive agriculture at the settlement under discussion.

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## FIGURES:

1 - Carbonised grains of Triticum monococcum (a); Triticum dicoccum-timopheevi (b); Triticum macha (c); Hordeum vulgare (d); Palicum miliaceum (e); spikelet of Hordeum spontaneum (f); pea seed (g).
2 - Spikelet and grains of wheat macha.
3 - Triticum aestivo-compactum (a); carbonized rachis fragments of Triticum aestivo-compactum (b); grape seeds (c); grain of emmer wheat (d); grain of Triticum macha (e); Hordeum vulgare (f); Hordeum nudum (g).

Table 1
Species composition of vegetable remains from Kavtiskhevi

| Location of finds | Species | Quantity of grains and seeds |  |
| :---: | :---: | :---: | :---: |
|  |  | number | \% |
| Tsikhia-Gora Room No 10 | Triticum dicoccum-timopheevi <br> Triticum monoccum <br> Triticum macha <br> Triticum boeoticum <br> Hordeum distichun <br> Hordeum spontaneum <br> Vitis vinifera <br> Pisum sativum <br> Lolium sp. <br> Secale cereale ssp.segetale <br> Lithospermum arvense L. <br> Bupleurum rotundifolium L. <br> Conringia orientalis Andz (L.) <br> Cirsium arvense L. <br> Rumex sp. <br> Galium sp. | $\begin{array}{\|l} \hline 192 \\ 85 \\ 20 \\ 18 \\ 24000 \\ 1 \\ 3 \\ 1 \\ 1 \\ 18 \\ 5 \\ 4 \\ 134 \\ 56 \\ 7 \\ 16 \end{array}$ | $\begin{aligned} & 60.95 \\ & 26.98 \\ & 6.35 \\ & 5.71 \\ & 100 \end{aligned}$ |
| Tsikhia-Gora Mill (Flaur-grinding mill) | Triticum aestivo-compactum <br> Triticum dicoccum <br> Triticum macha <br> Lolium sp. <br> Galium sp. <br> Aegilops sp. | $\begin{array}{\|l} 269 \\ 54 \\ 20 \\ 24 \\ 7 \\ 1 \end{array}$ | $\begin{aligned} & 78.43 \\ & 15.74 \\ & 5.83 \end{aligned}$ |
| Tsikhia-Gora Mill Vessel for grams | Triticum aestivo-compactum <br> Triticum dicoccum <br> Triticum macha <br> Triticum aestivum <br> Triticum macha <br> Vitis vinifera <br> Lolium sp. <br> Secale cereale ssp. segetale <br> Cephalaria syriaca <br> Rumex sp. <br> Galium sp. | 1150 460 57 2 3 2 55 6 158 2 4 | $\begin{aligned} & 68.99 \\ & 27.59 \\ & 3.42 \end{aligned}$ |
| Tsikhia-Gora Wine-cellar | Triticum dicoccum <br> Triticum monoccum <br> Triticum macha <br> Triticum aestivo-compactum <br> Spikelet fork of hulled wheat <br> Hordeum vulgare <br> Secale cereale ssp. segetale | $\begin{array}{\|l} \hline 230 \\ 9 \\ 20 \\ 10 \\ 3 \\ 2 \\ 1 \end{array}$ | $\begin{array}{\|l\|} \hline 84.87 \\ 3.32 \\ 7.38 \end{array}$ |
| Settlement dated to the 3rd millennium BC Cultural layer | Hordeum vulgare <br> Hordeum vulgare v. nudum | $\begin{aligned} & 346 \\ & 38 \end{aligned}$ | $\begin{aligned} & 90.10 \\ & 9.90 \end{aligned}$ |

Table 2

## Sizes Of Charred grains from Tsikhia-Gora

| Place of find | Species | Length L |  |  | Width B |  |  | Height T |  |  | Indices |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Aver. | Min. | Max. | Aver. | Min. | Max. | Aver. | Min. | Max. | L/B | B/L\% | T/L\% | T/B\% |
| Room No 10 | Triticum monoccum | 5.42 | 4.8 | 6.0 | 1.24 | 0.8 | 2.0 | 2.49 | 2.0 | 3.0 | 4.37 | 22.88 | 45.94 | 200.81 |
|  | Triticum dicoccum Timopheevi | 6.19 | 4.5 | 7.0 | 1.96 | 1.5 | 2.0 | 2.18 | 2.0 | 2.6 | 3.16 | 31.66 | 35.22 | 111.22 |
|  | Triticum macha | 5.02 | 5.5 | 5.4 | 2.02 | 2.0 | 2.3 | 2.12 | 2.0 | 2.4 | 2.49 | 40.24 | 42.23 | 104.95 |
|  | Triticum boeoticum | 5.58 | 4.9 | 6.0 | 1.09 | 0.4 | 1.3 | 2.03 | 1.8 | 2.3 | 5.13 | 19.51 | 36.32 | 186.21 |
|  | Hordeum distichun | 6.60 | 5.0 | 0 | 2.35 | 2.0 | 3.0 | 1.80 | 1.5 | 2.0 | 2.81 | 35.61 | 27.27 | 76.60 |
|  | Panicum miliaceum | 2.54 | 2.1 | 3.0 | 1.83 | 1.2 | 2.3 |  |  |  |  |  |  |  |
| Mill | Triticum aestivocompactum | 4.65 | 4.0 | 5.3 | 2.91 | 2.5 | 3.2 | 2.07 | 1.9 | 2.3 | 1.60 | 62.63 | 44.55 | 71.13 |
|  | Triticum dicoccum | 5.14 | 4.8 | 5.7 | 2.3 | 2.0 | 2.7 | 2.31 | 2.0 | 2.5 | 2.23 | 44.79 | 45.02 | 100.51 |
|  | Triticum macha | 5.62 | 5.1 | 6.0 | 2.56 | 2.3 | 3.0 | 2.42 | 2.3 | 2.5 | 2.20 | 45.55 | 43.06 | 94.53 |
|  | Secale cereale ssp. segetale | 5.1 | 4.7 | 5.6 | 1.73 | 1.3 | 2.0 | 1.7 | 1.2 | 2.0 | 2.95 | 33.92 | 33.33 | 98.27 |
| Powed from vessel | Triticum aestivocompactum | 4.65 | 4.0 | 5.5 | 2.91 | 2.5 | 3.3 | 2.11 | 1.9 | 2.4 | 1.60 | 62.51 | 45.30 | 72.48 |
|  | Triticum dicoccum | 5.29 | 5.0 | 6.0 | 2.13 | 2.0 | 2.3 | 2.06 | 1.9 | 2.3 | 2.49 | 40.23 | 38.97 | 96.87 |
|  | Triticum macha | 5.78 | 5.2 | 6.1 | 2.85 | 2.5 | 3.1 | 2.57 | 2.2 | 3.0 | 2.03 | 49.51 | 44.46 | 90.18 |
|  | Secale cereale ssp. segetale | 5.28 | 5.0 | 5.5 | 1.96 | 1.5 | 2.2 | 1.85 | 1.5 | 2.1 | 2.66 | 37.60 | 35.37 | 94.07 |
| Wine cellar | Triticum dicoccum | 5.28 | 4.9 | 6.0 | 2.22 | 2.0 | 2.9 | 2.25 | 2.0 | 2.5 | 2.38 | 42.07 | 42.53 | 101.09 |
|  | Triticum monoccum | 5.14 | 4.8 | 5.5 | 1.73 | 1.5 | 1.9 | 2.36 | 2.1 | 2.5 | 2.98 | 33.58 | 45.99 | 136.96 |
|  | Triticum macha | 5.81 | 5.5 | 6.3 | 2.76 | 2.3 | 3.2 | 2.56 | 2.1 | 2.5 | 2.11 | 47.42 | 38.82 | 81.87 |
|  | Triticum aestivocompactum | 4.88 | 4.5 | 5.2 | 2.92 | 2.5 | 3.2 | 2.08 | 1.9 | 2.3 | 1.67 | 59.84 | 42.62 | 71.23 |
|  | Hordeum vulgare | 5.65 | 5.1 | 6.2 | 2.8 | 2.6 | 3.0 | 1.9 | 1.8 | 2.0 | 2.02 | 49.56 | 33.63 | 67.86 |
|  | Secale cereale ssp. segetale | 6.5 |  |  | 2.0 |  |  | 1.5 |  |  | 3.1 | 30.77 | 23.08 | 75.0 |
| Settlement of Early Bronze Age | Hordeum vulgare v. nudum | 4.68 | 4.5 | 5.0 | 2.28 | 1.8 | 2.5 | 1.75 | 1.5 | 2.0 | 2.05 | 48.72 | 37.39 | 76.75 |
|  | Hordeum vulgare | 5.71 | 5.0 | 7.0 | 2.88 | 2.3 | 3.3 | 1.89 | 1.6 | 2.3 | 1.98 | 50.44 | 33.10 | 65.63 |

## Table 3

Sazes of grape seeds from room No. 10

| Sees No. | Length | Width | Stalk length | Ratio L/B |
| :--- | :--- | :--- | :--- | :--- |
| 1 | 4.5 | 2.8 | 1.5 | 1.61 |
| 2 | 4.2 | 2.5 | 1.0 | 1.68 |
| 3 | 5.0 | 6.0 | 1.2 | 1.67 |
| Aver. sizes | 4.57 | 2.77 | 1.23 | 1.65 |

Table 4
Sizes of Grape seeds from the vessel for grains

| Seeds No. | Length | Width | Length of the stalk | Index |
| :---: | :---: | :---: | :---: | :---: |
|  | L | B |  | L/B |
| 1 | 4.5 | 3.1 | 1.2 | 1.45 |
| 2 | 4.3 | 2.5 | 1.3 | 1.72 |
| 3 | 4.1 | 2.5 | 1.1 | 1.64 |
| Average sizes | 4.3 | 2.7 | 1.2 | 1.59 |



1 - Carbonised grains of Triticum monococcum (a); Triticum dicoccum-timopheevi (b); Triticum macha (c); Hordeum vulgare (d); Palicum miliaceum (e); spikelet of Hordeum spontaneum (f); pea seed (g).


2 - Spikelet and grains of wheat macha.


3 - Triticum aestivo-compactum (a); carbonized rachis fragments of Triticum aestivo-compactum (b); grape seeds (c); grain of emmer wheat (d); grain of Triticum macha (e); Hordeum vulgare (f); Hordeum nudum (g)

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[^0]:    
    

[^1]:    

[^2]:    1 Tsikhiagora and its adjacent territory are divided into sectors ( $100 \times 100 \mathrm{~m}$ ), and the sectors are divided into squares $-4 \times 4 \mathrm{~m}$. The

[^3]:    
    

[^4]:    
    
    
    
    
    
    
    
    

[^5]:    1 Opinions have been expressed that the so-called archaeological materials of the epoch of widespread mastering of iron were found at the beginning of the $5^{\text {th }}$ century B.C. [83, pp. 8, 84-85], as well as in the $4^{\text {th }}$ century B.C. [9, p. 153].

[^6]:    * Iberia-Colchis 2010 \#6 pp. 159-167

