A C T A M V S E I A P V L E N S I S

APULUM LI
series *ARCHAEOLOGICA ET ANTHROPOLOGICA*

CARPATHIAN HEARTLANDS
Studies on the prehistory and history of Transsylvania in European contexts, dedicated to Horia Ciugudean on his 60th birthday

NUCLEUL CARPATIC
Studii privind preistoria şi istoria Transilvaniei în context european, dedicate lui Horia Ciugudean la aniversarea a 60 de ani

Edited by /
Volum îngrijit de:

Nikolaus Boroffka
Gabriel Tiberiu Rustoiu
Radu Ota

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APVLVM

LI

series *ARCHAEOLOGICA ET ANTHROPOLOGICA*

ALBA IULIA

MMXIV

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revista.apulum@yahoo.com
www.mnuai.ro; www.muzeuluniriialba.ro; www.anuarulapulum.ro

ISSN – 1013-428X
ISSN – 2247 – 8701
ISSN-L – 2247 – 8701

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ALBA IULIA 2014

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Horia Ciugudean

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MICROSCOPY OF PREHISTORIC SYMBOLIC ARTEFACTS. WIETENBERG ZOOMORPHIC ANTLER PLATE DISCOVERED AT ŞOIMENI, HARGHITA COUNTY

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Abstract. The article presents the data related to the Wietenberg culture in the site as well those issued from the microscopic analysis of an very special and unique artefact belonging to Wietenberg culture discovered at Şoimeni – "Dâmbul Cetăţii", Harghita County. It is an entire zoomorphic plate (red deer protome?) made of a fragment of red deer antler. The artefact was recovered during the 2013 excavation campaign. The study was done using a unitary methodology (Beldiman 2007) which takes into account all quantifiable data of the artefact. The piece was extensive examined using an optical microscope (x10 – x40) and a digital one (x10 – x400); photos taken (general views, detailed views, and microscopic views) were added to the previous image database. The study aims to reconstruct the manufacturing chain of this unique artefact and to highlight the possible use-wear traces in order to state some hypotheses regarding its functionality. For this type of approach, the use of microscopic analysis is essential and can lead to unique conclusions.

Key words: microscopy, osseous materials industry, red deer antler plate, symbolism, Transylvania, Wietenberg culture.
Cuvinte cheie: cultura Wietenberg, industria materiilor dure animale, microscopie, placă de corn de cerb, simbolism, Transilvania.

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* The contribution of Dan Lucian Buzea to this work was possible with the financial support of European Social Fund, Operational Programme Human Resources Development 2007 - 2013, Priority no. 1 "Education and training in support for growth and development of the knowledge society", Key Area of Intervention 1.5 "Doctoral and post-doctoral research support" Title: *"MINERVA - Cooperation for elite career in PhD and post doctoral research", ID POSDRU 159/1.5/S/137832.*

The archaeological site.

The prehistoric settlement of Şoimeni is placed at 8 km northeast of Miercurea-Ciuc and at 1-1.5 km northeast of *Şoimeni* village (*Csíkcsomortán*), Păuleni-Ciuc comm., Harghita County, in the area called "*Dâmbul Cetăţii*" („*Várdomb*").

The "*Dâmbul Cetăţii*" archaeological site is located in the western area of Ciuc Depression at eastern slopes of the Ciuc Mountains, on a natural promontory which is sheltered by the higher hills that surround it. The altitude of the place is 846 m. The site is placed at about 6 km east of the nowadays Olt River and about 7 km southwest of the Ghimeş Pass and the spring of the Trotuş River. Vlăhiţa Pass is also nearby and it connects (through the Harghita Mountains) Ciuc Depression with the Târnava Mare River Valley, in the centre of Transylvania **(Fig. 1/1**).

The importance of settlement derives from its placement in a strategic area which controlled one of the roads that connects Moldova and Transylvania regions.

At south, the settlement is naturally bordered by the steep and deep slope (about 70° - 80°) of the Remetea River Valley, one of the Olt River tributary (in the riverbed, the elevation is 810 m). A smaller stream flows at the north of the settlement, in its close proximity; it is a tributary of the Remetea River (**Fig. 1/2**).

Access to settlement from the west is possible only by a narrow hill side, which has a width of about 15 m. In this area of the site, the traces of three trenches and two earthen walls can be seen. They represent traces of the old Prehistoric fortification of the settlement.

Nowadays, it can be seen that the settlement is surrounded by a high earthen wall which has the shape of a "horseshoe". There are also traces of a ditch which nowadays is covered with earth. The elements of a double system of fortification (wall doubled by fortification ditches) were used in order to assure a maximum protection of the inhabitants of this prehistoric fortification built of earth, stone and wood.

Initially, on the place where the settlement was established there was a natural promontory. It had an oval shape and it was three meters tall. This place offered good defence conditions, due to the fact that the access in the settlement was easily controlled.

The settlement has an oval shape with a maximum length of 90 m (east-west) and a width of 60 m (north-south). The plateau of the mould on which the site is placed presents a slight slope to the south. Therefore, the north side and especially the south wall are strongly flattened. The north side of the wall slipped inwards so that the inner slope of the wall is so smooth that transition from the wall to the inner part is barely noticeable (except for its eastern sector).

Although, the slope of the wall is strongly accentuated from the outside (about 80^{o}).

The southern wall slipped outwards, on the slope of the Remetea River valley and consequently, on the south side of the settlement, the wall is barely noticeable. In the east – south-eastern part, between the wall and the ditch, a quasi-circular terrace is intercalated. Its dimensions are 14 x 20 meters and its high is about 1 m. Until now, the archaeological excavations at "Dâmbu Cetăţii" did not confirm that this terrace was specially designed in Prehistoric times for building houses.

The settlement is both natural and anthropic fortified. In the western, northern and eastern areas, the settlement is fortified with a wall and a "horseshoe"-shaped ditch[1].

The earthen wall which fortified the settlement during the Bronze Age practically restricted the habitable area of the site. Thus, the living space of approximately 5,400 square meters (60 x 90 m) used during *Cucuteni-Ariuşd* culture (V-IV millennia BC), it got to about 2,200 square meters living area (32 x 70 m) during *Costişa-Ciomortan* culture and, later, during *Wietenberg* culture.

The area on which the settlement is placed belonged from an administrative point of view to Păuleni-Ciuc comm. and Şoimeni village. Due to the fact that *Şoimeni* village (*Csíkcsomortán*) is closer to the archaeological site, since from the first excavations, Zoltán Székely used the Hungarian denomination of the village, but with a Romanian spelling *Ciomortan* instead of *Csomortán* (*Csíkcsomortán*)[2].

History of the research.

The Prehistoric fortified settlement of Şoimeni was first mentioned in the archaeological literature during the second half of the 19th century. With that occasion, the first topographical and technical descriptions were provided. The name of the place frequently appeared as *Cetate/Dealul Cetăţii/Movila* (*Vár/Várdomb*/*Várhegy*)[3].

Balázs Orbán mentioned important information about the settlement in his classical work dedicated to the land inhabited by the Székely communities[4]. During the Interwar period, Al. Ferenczi provided the first scientific description of the site. Using the field information, geographical position of the site ("*Dâmbul Cetăţii*") etc., and the site was included in the catalogue of the Dacian

[1] Székely 1971; Székely 1988; Székely 1997; Cavruc 1999, p. 14-41; Cavruc 2005, p. 81-123; Buzea 2012a; Buzea 2012b; Whitlow *et alii* 2013 – with previous bibliography.
[2] Székely 1971; Székely 1988 – with previous bibliography.
[3] Cavruc 1999, p. 14-41; Cavruc 2005, p. 81-123; Buzea 2012a; Buzea 2012b; Whitlow *et alii* 2013 – with previous bibliography.
[4] Orbán 1869, p. 22.

fortresses from Transylvania. It was considered that the fortress was part of the defensive system of Dacian fortifications from Ciuc Depression[5].

Shortly after that mention, Márton Roska wrote about the ceramic fragments dated from the Bronze Age discovered there[6].

The first extensive excavations were carried out by the Székely Museum of Ciuc from Miercurea-Ciuc, together with the National Székely Museum of Sfântu Gheorghe, being coordinated by Zoltán Székely. During the three archaeological campaigns carried out in 1956, 1960 and 1967, five sections/trenches (S. I-V) and three square surfaces (C. A-C) were excavated. The dug surface was about 160 square meters.

The excavations led to the following conclusions: the Aeneolithic Ariuşd (*Cucuteni-Ariuşd*) communities inhabited the place for the first time; they organised the territory for the first huts to be built there. During the Final Aeneolithic, the Coţofeni communities established there and during the Bronze Age, the *Ciomortan* and *Wietenberg* ones lived at Şoimeni – "*Dâmbul Cetăţii*". The earthen wall which surrounds the settlements and which was strengthen with palisade was made by a community which followed to the *Ariuşd* one and lived during the Bronze Age. From an archaeological point of view, this fact is proven by the black soil which was used in order to build the wall, earth which had been taken out from the *Ariuşd* layer and which contained *Ariuşd* potsherds (painted ceramics specific for the Aeneolitic period), as well as traces of the pillars which were dug in this layer. The layer corresponding to the Bronze Age also overlaps the inner side of the earthen wall.

The most important result of these researches was the discovery of a cultural aspect which was unknown until then in Transylvania. This new cultural aspect was introduced in the specialised literature like *Ciomortan culture* (starting from the Hungarian name of Şoimeni village: *Csikcsomortán* in Romanian official administrative variant at that time) and this was chronologically dated from the Middle Bronze Age[7].

During 1967-1999 the archaeological site from "*Dâmbul Cetăţii*" was not extensively approached. The archaeological discoveries done by Zoltán Székely were considered long time as benchmarks for all the archaeological papers which deal with the Prehistoric communities from the current territory of Romania because they introduced a new archaeological culture in this field: *Ciomortan culture* which was considered as specific for the Middle Bronze Age in Ciuc Depression.

[5] Ferenczi 1938, p. 290-296.
[6] Roska 1942, p. 59.
[7] Székely 1971; Székely 1988 – with previous bibliography.

Actually many aspects related to the settlement of "Dâmbu Cetăţii" remained unsolved due to the low extent of the research carried out by Zoltán Székely – only 3% of the surface of the settlement was excavated – and due to the summary and selective publication of the results of these archaeological excavations. Thus, the layers from Aeneolithic up to Final Aeneolithic were barely approached. The chronological connection between *Ciomortan* and *Wietenberg cultures* were not clearly defined: if there were two different layers or there was a single one. Without having a well-defined layer, the existence of two levels dated from the Bronze Age was assumed and consequently, the *Wietenberg* layer was considered posterior to the *Ciomortan* one[8].

Another problem is the way in which *Ciomortan* culture is represented. This is because of the selective publication of the ceramics – the fine pottery decorated with shaded triangles or filled with stitches have been considered since then emblematic for this culture.

The published illustration gave the impression of important similarities between the ceramics specific for *Costişa* culture which is characteristic for Central eastern region of Romania (the regions of Moldova, on the opposite side of the Eastern Carpathians). Thus, some researchers admitted that *Ciomortan* culture is an aspect of *Costişa* culture[9].

After 1990 when the settlement from "*Dâmbul Cetăţii*" started to be poached by the treasure hunters, the researchers became again interested in the situation of this very important site. Fortunately, a part of the archaeological materials which were discovered during the unauthorised excavations got into the patrimony of the Eastern Carpathians National Museum of Sfântu Gheorghe, Covasna County.

The ceramic was analysed by Valerii Kavruk, expert in Prehistoric archaeology. The statistical analysis took into account the clay composition and the ornamentation of the pots. According to these, the materials were dated from the Middle Bronze Age, more precisely to *Costişa-Ciomortan* and *Wietenberg* cultures (the 3rd – the 2nd millennia BC). These were documented in the area of Ciuc Depression for this Prehistoric stage[10].

1999-2013 Archaeological research. Wietenberg Culture.

The researches begun in 1999 consisted in the excavation of some large surfaces divided in squares of 2 x 2 m with the purpose of obtaining clearer stratigraphic registrations. During the first archaeological campaigns squares of 4 x 4 m were dug in various areas of the site (**Fig. 1/2**).

[8] Cavruc 1999; Cavruc 2005 – with previous bibliography.
[9] Cavruc 1999; Cavruc 2005; Munteanu 2010 – with previous bibliography.
[10] Cavruc 1999, p. 14-41; Cavruc 2005, p. 81-123; Buzea 2012a; Buzea 2012b; Whitlow *et alii* 2013 – with previous bibliography.

Wietenberg culture (the name after German toponym for "*Dealul Turcului" – "Turk's Hill*" which is placed near Sighişoara, Mureş County) originates in the centre of nowadays Transylvania. Starting from that area, it spread in the south-east and east of Transylvania. It is dated from 1900-1800/1500 BC.

The settlements of *Wietenberg* communities were placed in high areas such as: hills or high terraces close to the rivers; some of these were fortified (Racu and Şoimeni, Harghita County; Racoş, Braşov County), while others were open sites (Feldioara, Braşov County; Reci, Covasna County). The frequent ritual complexes and cremation necropolises are characteristic for this culture[11].

Metallurgy was one of the fields in which *Wietenberg* population excelled. The archaeological researches brought to light various deposits of bronze weapons and tools, of votive axes, fragments of gold jewelleries (for example: Ţufalău, Covasna County). The large quantity of weapons (daggers, axes, arrowheads, spear heads) discovered in deposits as well as within the settlements and necropolises proves the warrior characteristic of these communities.

Targeting to take the control of the most important strategic areas from the Eastern Carpathians, the *Wietenberg* communities got in south-eastern Transylvania where they occupied the previous *Costişa* settlement from Şoimeni – "*Dâmbul Cetăţii*". Whether they defeated and drove out those who previously had lived within the fortification (*Costişa* culture communities), or they reached the area after the previous group had left, these people reorganized the space of the settlement; they build huts on the inner slope of the former earthen and stone wall.

The remains of the *Wietenberg* culture discovered at Şoimeni – "*Dâmbul Cetăţii*" are in large quantity. These are dated from the early period of the culture which probably may be characteristic for the period in which these had come in the Ciuc area.

In this stage of the research, the dating of the culture here is about 1800 - 1600 BC. The most important traces of *Wietenberg* community were discovered on the inner part of the wall, in the eastern and north-eastern part of the settlement.

The *Wietenberg* community repaired the old fortifications of the settlement from "*Dâmbul Cetăţii*" (built during *Costişa-Ciomortan* phase) and built several huts among five of them with similar elements of constructions were identified and researched until now (Huts 7 – 10, 32). We can notice also

[11] Horedt 1960, p. 106-137; Boroffka 1994; Ciugudean 1996; Cavruc 2005; Munteanu 2010, p. 213-218.

that four ritual complexes and several pits were excavated there (**Fig. 2/1-2; Fig. 3/1-2**).

The huts dated from *Wietenberg* culture were placed on the inner side of the wall, the distance between them being of 0.4-0.6 m. Due to the small depth at which these were found (between 0.3 and 0.6 m from the surface of the actual ground), the huts were surprisingly well preserved. Initially, during excavation, large areas with unworked stones were discovered above the huts. After removing the stones, the traces of fallen walls were revealed. These corresponded to the rectangular perimeters of the huts.

The huts appeared in the shape of agglomerations of burnt daub with traces of poles and wattle, but also with flat sides. After the inventory of the huts was researched and removed, it has been noticed that these were slightly deepened in the slope of the wave and they had about 3 x 4 m. At the floor level, every household had circular or oval earthen hearths (one, two and three hearths in each hut) and pits pillars arranged mainly at the housing ends.

All these observations allowed us to reconstruct the plan of huts and building sequences in a quite accurate manner. The place where the huts were supposed to be built was initially flattened by excavating in the wall slope up to 0.30 m depth. Fixing the pillars was the next stage. Consequently, the walls made of pillars and wattles were fixed of these.

The wooden structure was covered with clay, well-mixed with water, sand and chaff. It is hard to say how the roofs of these huts were made. Given the fact that over the rubble of the walls there were agglomerations of stones, we may assume that the roofs were made of organic materials such as reeds or straw and they were supported on transversal wooden bars. The huts were warmed by hearths; as the ethnographic studies suggest, the floors and the walls might have been covered with hides or woollen carpets.

The archaeological material discovered in these huts is very rich. Whole or broken clay pots as well as numerous potsherds, tools made of stone, bone, antler, shell or bronze were discovered under the rubble of the walls. Several ritual and funerary complexes could be dated also from the *Wietenberg* culture[12].

The hut 32 was discovered in 2007 in S. I and partially excavated until 2013. It is oriented towards north-west/south-east; its dimensions are of about 4.5 x 3 m. It was discovered in the old humus layer, which had a thickness of 0.2 m, at a depth of about 0.3 to 0.8 m from the actual ground. The hut was built on the flatted wall made of clay, earth and stones which fortified the settlement during the Early Bronze Age. Large quantities of stones of various shapes and

[12] Cavruc, Rotea 2000, p. 155-171; Comşa 2000, p. 173-176; Cavruc, Buzea 2002; Kavruk *et alii* 2008; Kavruk *et alii* 2012.

dimensions were discovered at the superior side of the hut. Its perimeter was underlined by these stones and several potsherds.

In 2007, the hut was excavated on a surface of 4 x 1 m, at a depth of 0.5 m. The side of the hut from the top of the wall was dug in the mantle of the earthen wall. The upper part contains a mixture of stones with several potsherds and daub. A hearth was discovered at the depth of 0.8 m. The hut was preserved on this level.

During 2012 campaign, a hearth was discovered (Hearth no. 1) at floor level, on the western part of the hut. Its daub was well-finished and it is preserved on a surface of about 0.4 x 0.6 m. The hearth was probably circular and the burnt part was about 0.13 m thick[13].

Excavations carried out in 2013 revealed the fact that hut no. 32 is larger than it was previously supposed: the length of his wall is 6 m and it is oriented north-west – south-east while the short sides are about 4 m. Four pillar pits were discovered at the ancient ground level; they were part of the infrastructure of the complex (**Fig. 2/1-2; Fig. 3/1**)[14].

A fragment of a burnt beam made of wood, very well-preserved which was discovered on the floor of the burnt hut offered a C^{14} date from 1830-1680 BC[15].

Osseous materials industry at Şoimeni – "Dâmbul Cetăţii". General overview.

The archaeological excavations carried out during 1999-2013 campaigns in the Prehistoric site from Şoimeni – "*Dâmbul Cetăţii*", Harghita County (code PCD) offered the opportunity of recovering an assemblage of artefacts made of osseous materials belonging to *Cucuteni-Ariuşd*, *Jigodin*, *Costişa-Ciomortan* and *Wietenberg* cultures. It was recovered from the three Aeneolithic layers as well as from the ones dated from the Bronze Age, both from complexes (pits, huts) and from archaeological layers.

The assemblage contains the largest repertory of artefacts dated from *Cucuteni-Ariuşd* culture from Transylvania and the single repertory of artefacts dated from *Wietenberg* culture which were analysed according to the current exhaustive methodology of the domain[16].

[13] Buzea 2012a; Buzea 2012b – with previous bibliography.
[14] Kavruk *et alii* 2014.
[15] Whitlow *et alii* 2013, p. 38.
[16] Buzea, Lazarovici 2005 – with previous bibliography; Beldiman, Sztancs 2012a; Beldiman, Sztancs 2012b.

Data regarding the artefacts dated from *Cucuteni-Ariuşd* (discoveries from 1999-2010) were presented for the first time in a study which was published in 2010[17].

The assemblage that we have studied until now comprises 108 artefacts[18]. All of them are preserved in the collections of the Eastern Carpathians National Museum of Sfântu Gheorghe, Covasna County. Their status of conservation is good and very good. This fact allowed us to quantify in optimal conditions all the aspects required by the complex study of the pieces. Our approach supposed a systematic examination of all artefacts using an optical microscope (x10 – x40) and a digital microscope (x10 – x400)[19].

The osseous materials artefacts recovered from Şoimeni – "*Dâmbul Cetăţii*" site during 1999-2013 archaeological campaigns comprise 19 pieces dated from the Bronze Age. Among these a piece belong to *Jigodin* culture, a piece is dated from *Costişa* culture and 17 from *Wietenberg* culture. Most of the artefacts are bone awls made of long bones of large and medium-sized herbivores.

Within the artefacts dated from *Wietenberg* culture, we should underline the preference for long awls made of fragments of large herbivore bones and the use of red deer antler in order to manufacture perforated oblique points (in specialized literature traditionally known as mattocks, axes, adzes). Another important piece is a fragment of a (probably) circular red deer plate, intentionally and intensively burnt in order to obtain a compact black metallic aspect and which was engraved with geometrical ornamentation. It could be connected with some kind of solar symbolism which was very frequent at this cultural and chronological level[20].

The typological analysis of the osseous materials industry from Şoimeni – "*Dâmbul Cetăţii*" allowed us to add new types of objects for *Wietenberg* culture. The symbolic pieces should be mentioned here: the *Dentalium* beads, the (probably) circular red deer antler plate and *the zoomorphic plate made of red deer antler*. The two last ones have never been identified before within the discoveries of osseous materials artefacts from the site or from any other *Wietenberg* sites.

Despite its relatively small quantity of pieces, the osseous materials artefacts assemblage from Şoimeni – "*Dâmbul Cetăţii*" offers new benchmarks from a typological, palaeo-technological, cultural and chronological point of

[17] Sztancs, Beldiman 2010a.
[18] Sztancs, Beldiman 2010a; Sztancs, Beldiman 2010b; Sztancs, Beldiman 2011a; Beldiman *et alii* 2010; Beldiman *et alii* 2012; Beldiman *et alii* 2013a; Beldiman, Sztancs 2012a; Beldiman, Sztancs 2012b; Beldiman, Sztancs 2013; Beldiman, Sztancs 2014.
[19] Beldiman 2007; Beldiman *et alii* 2012a – with previous bibliography.
[20] Sztancs, Beldiman 2012d; Beldiman, Sztancs 2013; Beldiman, Sztancs 2014.

view. These allow the complex and extensive approach of the manifestations of civilisation and culture of the communities that lived during the Aeneolithic and the Bronze Age times in Transylvania[21].

Zoomorphic red deer antler plate.

During 2013 archaeological campaign a unique piece was discovered within the inventory of hut 32. It is a zoomorphic plate made of red deer antler which is preserved in very good conditions of conservation.

The piece has the following features: provisory code in general catalogue of the osseous material artefacts assemblage: PCD/IV 3 – 2013; collection preservation: Eastern Carpathians National Museum of Sfântu Gheorghe; inv. no. 18294; context: 2013 S. I Square L/1 Complex / Hut 32; dating: *Wietenberg* culture, the IInd phase, cca 1830-1680 BC[22].

This is a massive zoomorphic plate (protome) made of red deer antler (*compact tissue*). The piece is entirely preserved and has a very good status of conservation (**Figs 4-9**).

The raw material is a fragment of a red deer beam taken out from the basis of the crown, preserving the bases of the two crown tines and a fragment of beam (**Fig. 21**).

The general shape as a three-cusped artefact is determined by the raw material which was used, with a concave-convex curvature in section – the superior side is concave, the lower one, convex; it has an inferior, vertical part and two superior, oblique, less wide parts. The last two of them are quite similar in terms of shape and dimensions – convex ends, convex planes.

By transforming the raw material, the manufacturer wanted to obtain an object which was symmetrical in a vertical plane. This symmetry is mostly due to the morphology of raw material which was especially chosen for this purpose.

The general aspect of the piece suggests apparently an unfinished zoomorphic plate, without any details or ornamentation. But it is clearly not a blank for an undefined piece. There are no traces to sustain the hypothesis of fixing with fibres.

The plate/protome probably represents a stylized red deer head made of red deer antler as a symbolic substitute for a symbolic animal. The symbolic value of raw material is essential as well as the morphology of the object.

[21] Beldiman, Sztancs 2013; Beldiman, Sztancs 2014.

[22] In-field documentation and the photographs taken during the archaeological research were done by Dan Lucian Buzea and Björn Briewig. The photographs of the artefacts were taken by Corneliu Beldiman; the drawings belong to Eva Délczeg from Eastern Carpathians National Museum of Sfântu Gheorghe.

The creative, imaginative intervention of the manufacturer is obvious: the fragment of antler was extracted corresponding from a morphological point of view to the symbolic purpose.

The piece partially preserves the anatomical morphology of the raw material. The superior side is anatomically concave and the lower side is convex, instead of its technical transformation. The texture of the superior side presents the unchanged anatomic curvature, the anatomical aspect being partially preserved. On the superior side there are discontinuous concretions, tight, brown, of sandy texture (cemented sediment) (**Figs 5, 9**).

The inferior side mostly preserves the spongy tissue (thick of 0.3-10 mm) which was shaped by chopping. The ends are convex and the sections of the elongated parts and of the ends are flat-convex; the surfaces are faceted by applying the technique of chopping using a metal tool with a fine, well-sharpened blade, (probably a bronze axe) (**Figs 6, 9**).

The ends preserve short, overlapped planes of chopping; the edges also preserve long, overlapped planes of chopping on both sides (**Figs 7-8**).

The conventions of description are the following: superior side, inferior side, proximal end; proximal part; medial part; distal part_1; distal part_2, distal end_1, distal end_2, right edge, left edge, left edge/distal end_1, right edge/distal end_2 – see also abbreviation list (**Fig. 10**).

The dimensions of the artefact are (in mm) (**Fig. 23/1**): L tot 126.23; L EP – base PD_1 and PD_2 96.48; width max 134.67; EP 43.91/12.04; PP 50.66/12.76; PM 57.46/10.87; PD 82.50/9.83; PD_1 (left): L 64.31; base 44.14/11.18; PM 33.09/12.89; PD 31.57/13.35; ED 29.84/14.13; PD_2 (right): L 61.63; base 45.08/10.98; PM 35.36/11.69; PD 31.75/12.83; ED 28.41/13.66; L chopping planes EP/FS 3-4.20; L chopping planes ED/FS (ED_1 şi ED_2) 4.5-9.10; L chopping planes ED/FI 10-14; L chopping planes PD/FI (edge) 18-22[23].

The extensive microscopic study of the surfaces (**Figs 11-20**) allowed us to observe the following:

1. there are series of fine, parallel striations produced by the fine, well-sharpened metallic blade of the tool used for this purpose (probably a bronze axe) (**Fig. 7/1-2,4; Figs 11-17**); **2.** there are specific traces of stopping the blade in its active movement in contact with the surface of the piece; these traces allow us to identify the direction in which the chopping procedure was applied (**Figs 12, 18-20, 23/2**); **3.** in certain sectors of the piece surface, the chopping planes are overlapped; these allow certain observations and conclusions regarding the sequence of application the shaping procedures: A chopping the sides, B chopping the edges, B chopping the ends (**Figs 22-23/2**); **4.** there are superficial traces of bluntness and polish on the superior side, edges of the piece and on

[23] Beldiman *et alii* 2013a; Beldiman, Sztancs 2014.

both sides of the ends; these traces are well-marked, especially on the edges inferior side (**Figs 18-19**); they probably resulted by handling the piece; there are no traces produced by fixing the piece on a support, but this hypothesis is not excluded[24].

The presence of bluntness traces may indicate the usage of the piece and consequently, we may advance the hypothesis of a finite shape and not an intermediary one, or a blank as the apparently unfinished shape may suggest.

The débitage targeted the extraction of a beam segment and the proximal segments of the crown tines (**Fig. 22/1-2**). The shaping offered the final aspect of sides edges and ends (**Fig. 22/3-9**).

This procedure may have continued by shaping the superior side, the edges and the ends by abrasion and scraping. Due to these procedures, the anatomic surfaces and the chopping facets were removed. Consequently, the uniform convex aspect resulted[25]. The device of fixing could have used perforations which had had the role of retaining the thread. This stage of manufacture was not applied, the piece preserving the aspect of chopping.

All the procedures were done by well-applied chopping. The manufacturer presented strong ability for these operations, a sense of symmetry and a routine in this domain which probably had been trained through wood processing.

The archaeological pieces made of red deer antler illustrate the manner of chopping which was also currently applied for wood. Because the wood artefacts are not preserved, this fact represents a scientific added value for this kind of organic objects.

The morphology of chopping traces (**Figs 5-20**) indicated the application of the techniques on a wet raw material; it might have been soaked especially for facilitating the technical procedures.

The débitage was done by direct percussion/chopping and direct percussion/splitting with the purpose of extracting a beam segment and the proximal segments of the crown tines.

The splitting for extracting the compact tissue followed.

The sequences of raw material processing were:

1. detaching the crown tines by chopping the circumference on about 5 cm of base and fracture (**Fig. 22/1**); **2.** extracting the beam segment with the crown tines by chopping applied on the beam circumference at a distance of 7 cm at the base of the crown and fracture (**Fig. 22/2**); **3.** splitting the beam segment (**Fig. 22/3**); **4.** extracting the beam fragment (**Fig. 22/3**); **5.** shaping the sides by chopping applied from the distal end to the proximal one (**Fig. 22/4-5; Fig.**

[24] Microphotographs of the piece were taken by Corneliu Beldiman.

[25] This type of details of shaping/finishing are also preserved on the fragment of plate made from a red deer antler which was also discovered at "Dâmbul Cetății" and dated from Wietenberg culture – see Beldiman *et alii* 2012b, p. 104, 248, pl. 34; Beldiman *et alii* 2013a.

23/2); **6.** shaping the edges by bidirectional chopping, from the distal end to the proximal one and from the proximal end to the distal one; at the distal part, between the two elongated parts, on the inferior side, the chopping was applied bidirectional: ED_2 → ED_1 on the right edge of ED_1 and ED_1 → ED_2 on the left edge of ED_2; **7.** shaping the edges on both sides by chopping in two directions: ED → EP at EP and EP → ED at ED_1 and ED_2 (**Fig. 22/6-9; Fig. 23/2**).

The plate could have been fixed on a mobile support (object made of metal, wood, leather, textile etc.) or on a wall, pillar etc. It also could have been used as a workable object[26].

The dating of the hut also assures the indirect dating of the analysed piece. It is dated from 1830-1680 BC, being the first piece made of osseous materials belonging to *Wietenberg* culture which was precisely dated and among the rare Prehistoric pieces of osseous materials from Romania[27].

Analogies.

So long, no analogies were identified for this piece; it seems to be a unique one.

Animal with a symbolic value which has documented since the early Prehistory, the red deer generated myths and various representations over time, as the manifestations of material culture such as artefacts of common use (tools, weapons) or symbolic ones (perforated residual canines, other adornments, decorated non-utilitarian artefacts etc.). They are presented in Romania since the Upper Paleolithic (27-25 millennia BP)[28].

During all Prehistoric or ancient cultures, the red deer symbolism existed in a way or another. This species supplied food and very appreciated raw materials such as: hides, sinews, bones, antlers, teeth. From a magical and symbolic point of view, it was perceived as a symbol of life, authority, virility, rebirth etc.[29].

Pieces with a powerful symbolism and magic, the red deer teeth (the residual canines, especially) are important hunting trophies appreciated till nowadays[30].

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[26] Beldiman, Sztancs 2014.
[27] Whitlow *et alii* 2013, p. 38.
[28] Beldiman 2004a; Beldiman 2004b; Beldiman 2007 – with previous bibliography; Beldiman, Sztancs 2005; Beldiman, Sztancs 2006; Beldiman, Sztancs 2008; Beldiman, Sztancs 2009; Beldiman, Sztancs 2012a; Sztancs 2011; Sztancs *et alii* 2009; Sztancs *et alii* 2010; Sztancs, Beldiman 2005; Sztancs, Beldiman 2011b.
[29] Moldovan 2009 – with previous bibliography.
[30] Beldiman 2004a; Beldiman 2004b; Beldiman 2007; Beldiman 2012a – with previous bibliography.

Various symbolic artefacts are made of red deer antler. These are frequently decorated with geometrical ornamentation. Pendants, bracelets, various plates, sleeves, axes etc. are only some of the pieces made of red deer antler[31].

Two other rare artefacts made of red deer antler were discovered at Şoimeni – "*Dâmbul Cetăţii*": a unique idol made of red deer antler dated from *Cucuteni-Ariuşd* culture[32] and a fragment of a red deer plate (probably a circular one); his intense metallic black colour was obtained through a controlled burning process; it has an ornamentation done by excision and engraving; it is dated from *Wietenberg* culture[33].

Within the Bronze Age cultures, there are symbolic representations of the animals such as zoomorphic protomes made of clay. In a recently published work a detailed approach of the symbolism related to animals can be found. It also takes into account the red deer within *Wietenberg* culture[34].

As analogies for red deer antler plate/protome from Şoimeni – "*Dâmbul Cetăţii*", we may mention the artefacts made of clay (figurines and protomes) discovered at Reghin and Jabeniţa, Mureş County dated from *Wietenberg* culture, the III[rd] phase[35]. Other protomes made of clay representing herbivores and birds dated from the Bronze and Iron Ages were discovered at Sighişoara-"Wietenberg", Lechinţa de Mureş, Mureş County; Şimleu Silvaniei, Derşida, Rîpa, Sălaj County etc.[36].

Conclusion.

The archaeological excavations carried out during 1999-2013 campaigns in the Prehistoric site from Şoimeni – "*Dâmbul Cetăţii*" offered the opportunity of recovering an assemblage of artefacts made of osseous materials belonging to *Cucuteni-Ariuşd*, *Jigodin*, *Costişa-Ciomortan* and *Wietenberg* cultures.

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[31] Beldiman 2000; Beldiman 2002; Beldiman 2007 – with previous bibliography; Beldiman *et alii* 2010; Beldiman, Sztancs 2004; Beldiman, Sztancs 2014; Beldiman *et alii* 2012c, p. 59, 202, pl. 129; Aldea 1973; Dumitrescu 1974; Chidioşan 1980; Rişcuţa 1995; Andriţoiu, Rustoiu 1997; Popa, Ştefu 2009; Popa, Simina 2004; Lascu, Gheorghiu 2009; Ciută, Ciută 2013; Popescu 2013 – with previous bibliography. For the antler artefacts in Second Iron Age in Romania see: Beldiman 2011; Beldiman 2012b; Beldiman *et alii* 2012d; Beldiman *et alii* 2012e; Beldiman *et alii* 2013b; Beldiman *et alii* 2013c; Beldiman *et alii* 2013d; Beldiman *et alii* 2014; Ferencz, Beldiman 2102– with previous bibliography.

[32] Beldiman *et al.* 2010; Beldiman *et alii* 2012a; Sztancs 2011; Sztancs *et alii* 2009; Sztancs *et alii* 2010; Sztancs, Beldiman 2010b.

[33] Beldiman *et alii* 2012b, p. 104, 248, pl. 34.

[34] Moldovan 2009 – with previous bibliography.

[35] Moldovan 2009, p. 295-299.

[36] Dumitrescu 1974; Chidioşan 1980; Boroffka 1994; Andriţoiu, Rustoiu 1997; Moldovan 2009, p. 295-299 – with previous bibliography.

The studied assemblage comprises 108 artefacts. All of them are preserved in the collections of the Eastern Carpathians National Museum of Sfântu Gheorghe, Covasna County. Among these 17 pieces are dated from *Wietenberg* culture. Most of the artefacts are bone awls made of long bones of large and medium-sized herbivores.

There were quantify in optimal conditions all the aspects required by the complex study of the pieces. The approach supposed a systematic examination of all artefacts in optical microscopy.

The typological analysis of the osseous materials industry from Şoimeni – "*Dâmbul Cetăţii*" allowed us to add new types of objects for *Wietenberg* culture. The symbolic pieces should be mentioned here: the *Dentalium* beads, the (probably) circular red deer antler plate and *the zoomorphic plate made of red deer antler*. The two last ones have never been identified before within the discoveries of osseous materials artefacts from the site or from any other *Wietenberg* sites.

A unique zoomorphic plate/protome was discovered within the inventory of hut 32 during 2013 archaeological campaign. This is a massive three-cusped artefact, a plate (protome) made of red deer antler (*compact tissue*). The piece is entirely preserved and has a very good status of conservation.

The vertical symmetry is mostly due to the morphology of raw material which was especially chosen for this purpose. By transforming the raw material, the manufacturer wanted to obtain an object which was symmetrical in a vertical plane. The creative, imaginative intervention of the manufacturer is obvious: the fragment of antler was extracted corresponding from a morphological point of view to the symbolic purpose.

The extensive microscopic study of the surfaces allowed us to notice the traces of manufacture and wear and to propose the sequences of shaping. All the procedures were done by well-applied chopping. The manufacturer presented strong ability for these operations, a sense of symmetry and a routine in this domain.

The *Wietenberg* osseous materials artefacts assemblage from Şoimeni – "*Dâmbul Cetăţii*" offers new benchmarks from a typological, palaeo-technological, cultural and chronological point of view. These allow the complex and extensive approach of the manifestations of civilisation and culture of the communities that lived during the Bronze Age times in Transylvania[37].

[37] English version by Diana-Maria Sztancs.

Abbreviation list

C. – square surface
Comm. – commune
ED_1 – distal end_1
ED_2 – distal end_2
EP – proximal end
FI – inferior side
FS – superior side
Inv. no. – inventory number
L – length
L tot – total length
Max – maximum
MD – right edge
MD/PD_2 – right edge/distal part_2
MS – left edge
MS/ PD_1 – left edge/distal part_1
PCD – Şoimeni/Păuleni-Ciuc
PD_1 – distal part_1
PD_2 – distal part_2
PM – medial part
PP – proximal part
S. – Section (Trench)

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Fig. 1. Şoimeni – "Dâmbul Cetăţii". **1** Location of the site. **2** The site – general view from west.

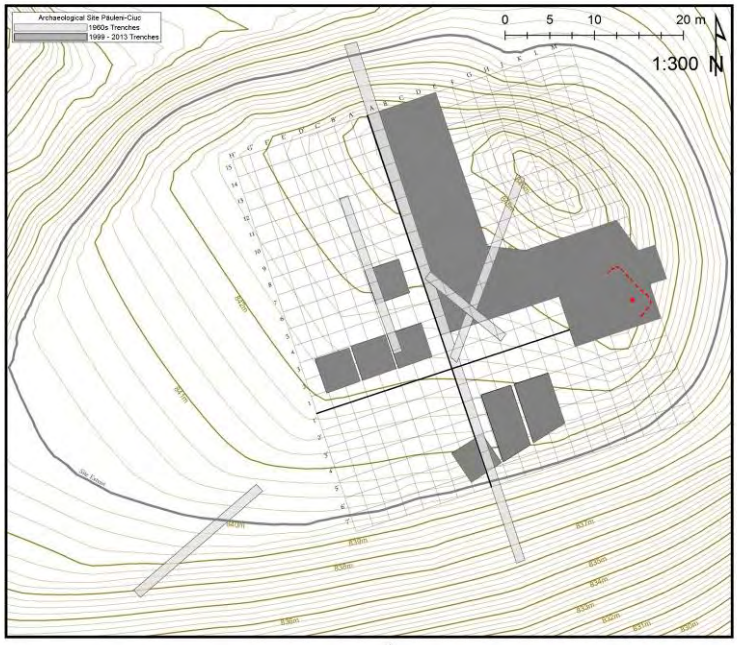

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Fig. 2. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. **1** Plan of excavations (1999-2013). Location of Bronze Age complexes (Hut 32 and Complex 51/Pit 324). **2** Hut 32, aspects of 2013 excavations, north view.

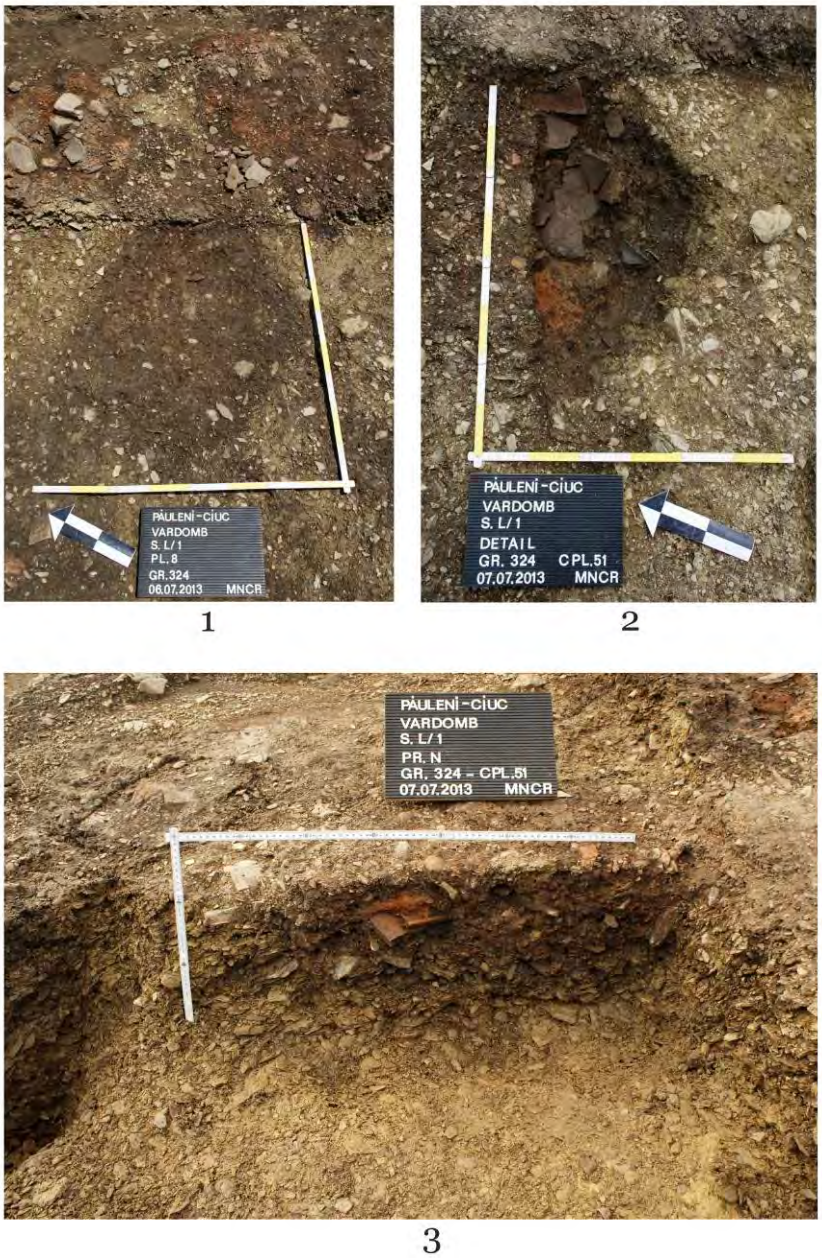

Fig. 3. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Complex 51/Pit 324. Aspects of 2013 excavations. **1** Plan no. 8. **2** Section. **3** North profile.

Fig. 4. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. **1-3** Zoomorphic antler plate – general view.

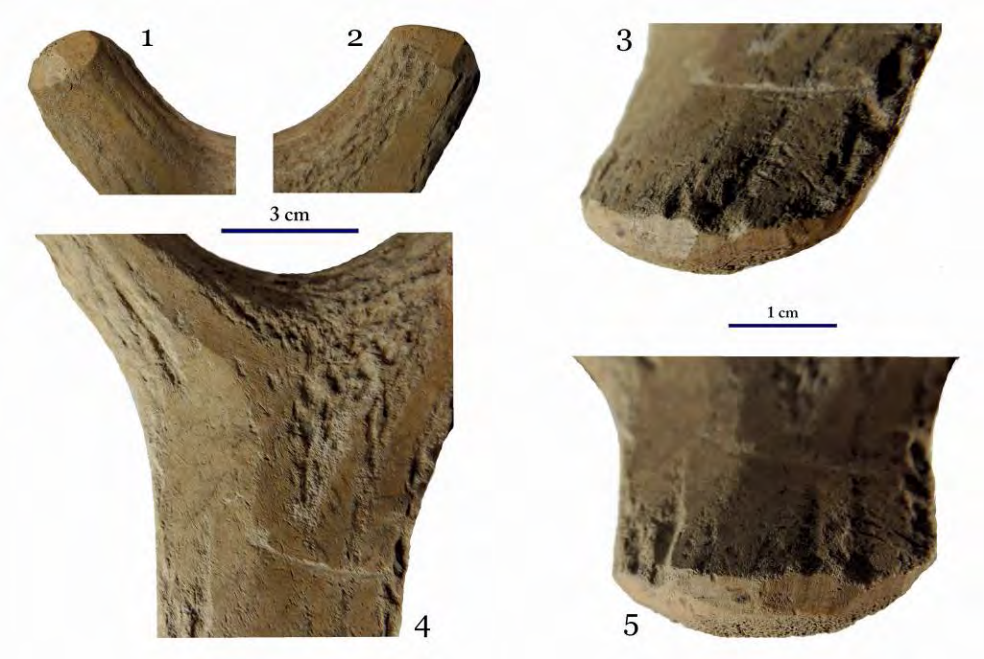

Fig. 5. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. **1-3** Zoomorphic antler plate – details. **1** Distal part 1. **2** Distal part 2. **3, 5** Proximal part and proximal end. **4** Mesial and distal part.

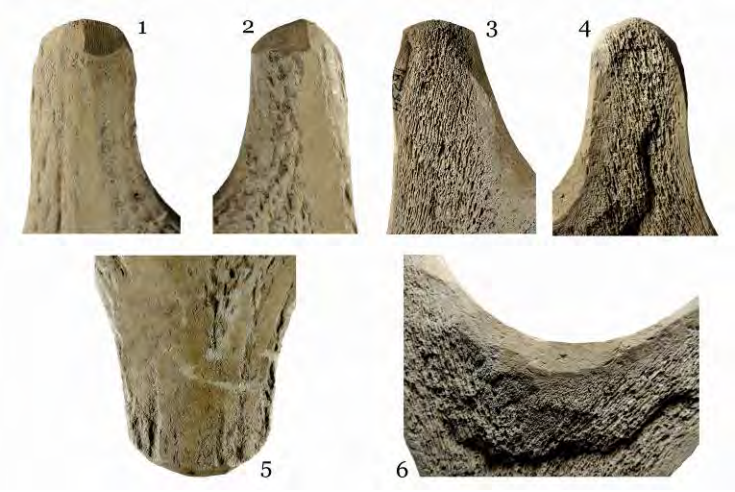

Fig. 6. Şoimeni – "Dâmbul Cetății". Wietenberg Culture. **1-3** Zoomorphic antler plate – details. **1** Distal part 1/Superior side. **2** Distal part 2/Superior side. **3** Distal part 1/Lower side. **4** Distal part 2/Lower side. **5** Proximal and mesial part/Superior side. **6** Distal part/Lower side.

Fig. 7. Şoimeni – "Dâmbul Cetății". Wietenberg Culture. **1-3** Zoomorphic antler plate – details. Traces of shaping (chopping). **1** Distal end 1. **2** Distal end 2. **3** Distal part/Superior side. **4** Proximal end. **5** Proximal and mesial part/left edge. **6** Distal part/Lower side.

Fig. 8. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. **1-3** Zoomorphic antler plate – details. Traces of shaping (chopping of edges). **1** Right edge/Distal part 2. **2-3** Left edge/distal part 1. **4** Distal part.

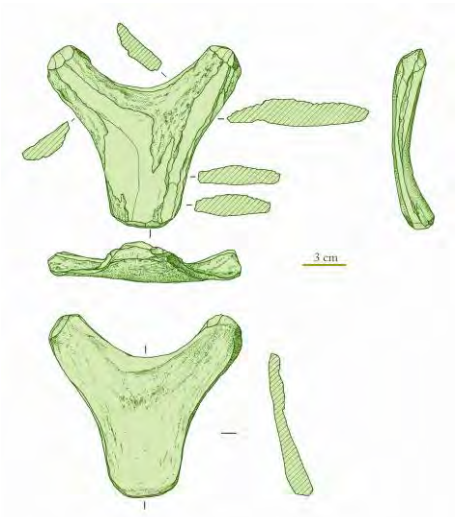

Fig. 9. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. **1-3** Zoomorphic antler plate – drawing.

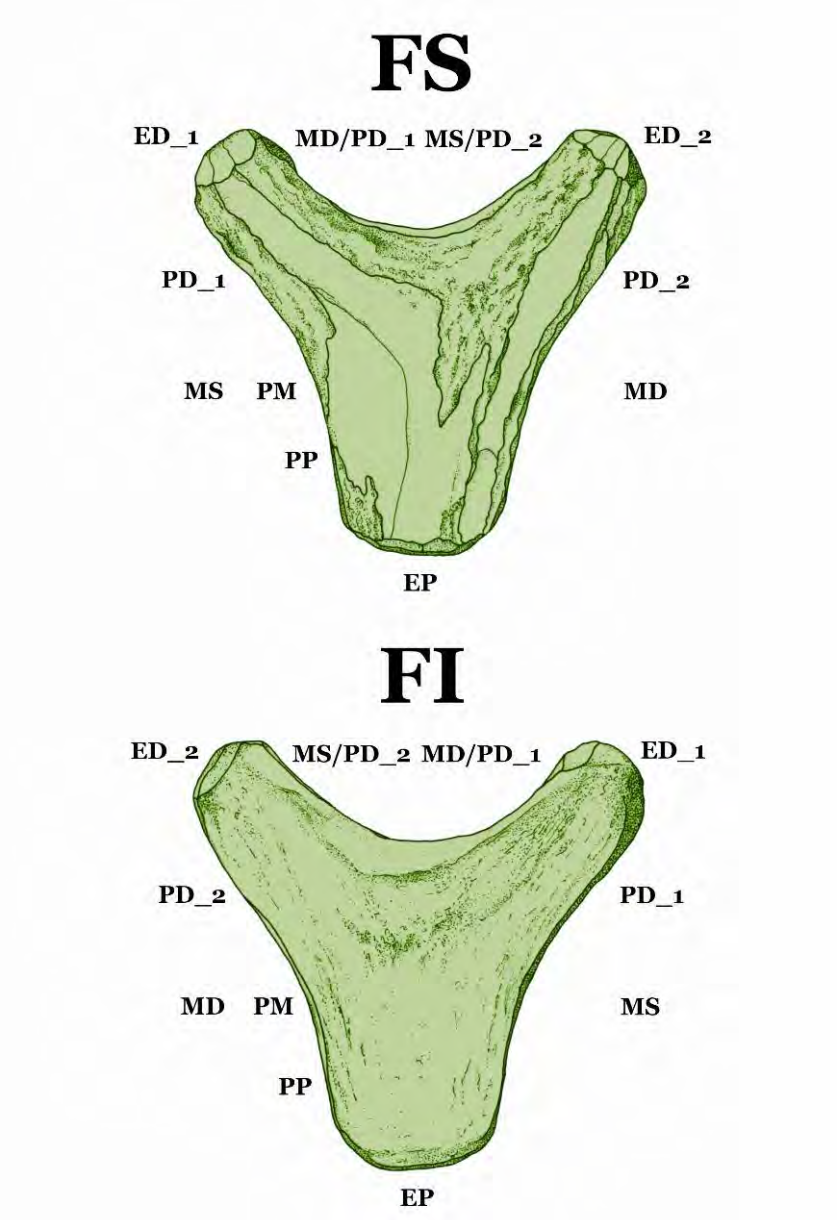

Fig. 10. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate. – terminology of description.

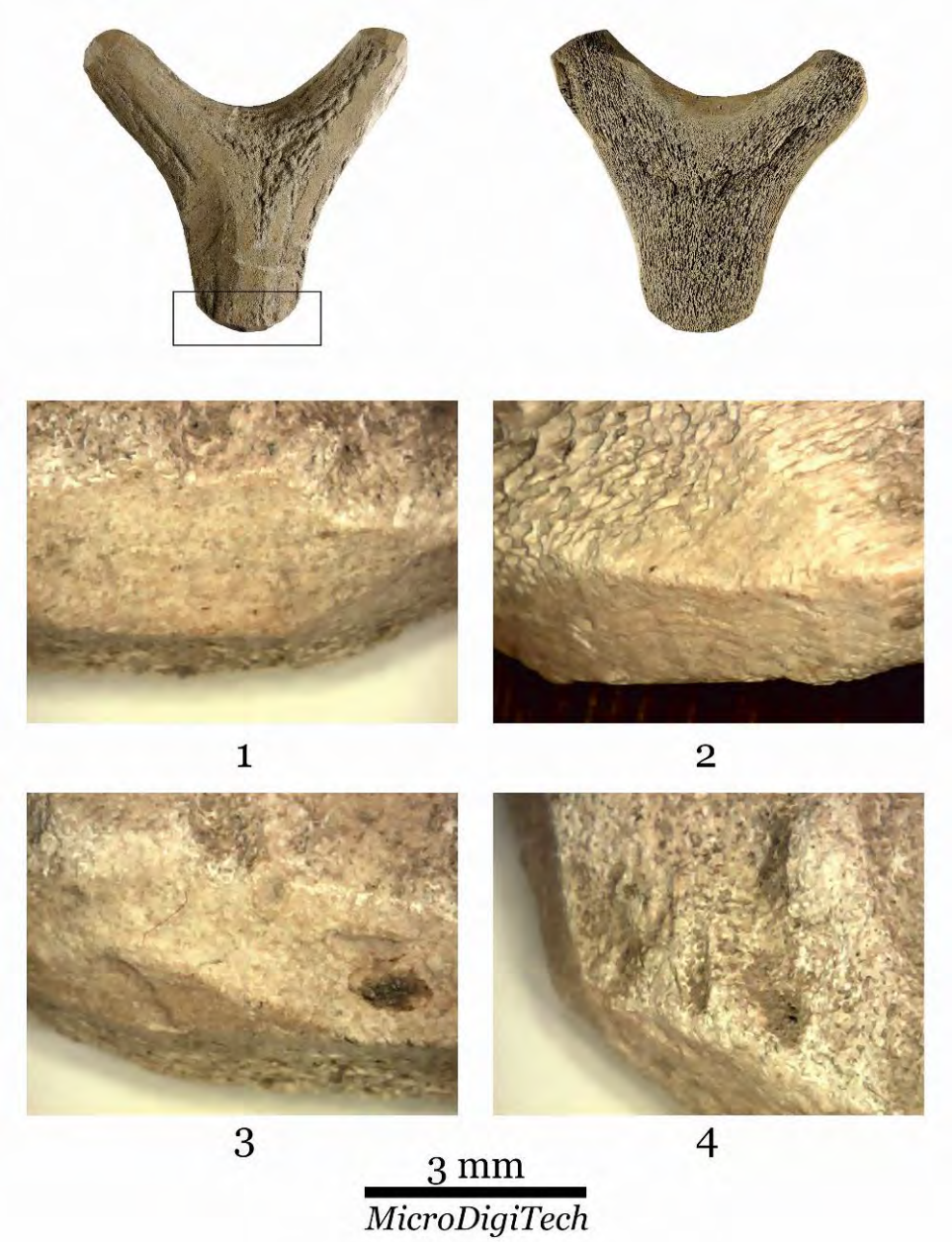

Fig. 11. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-4** Proximal end.

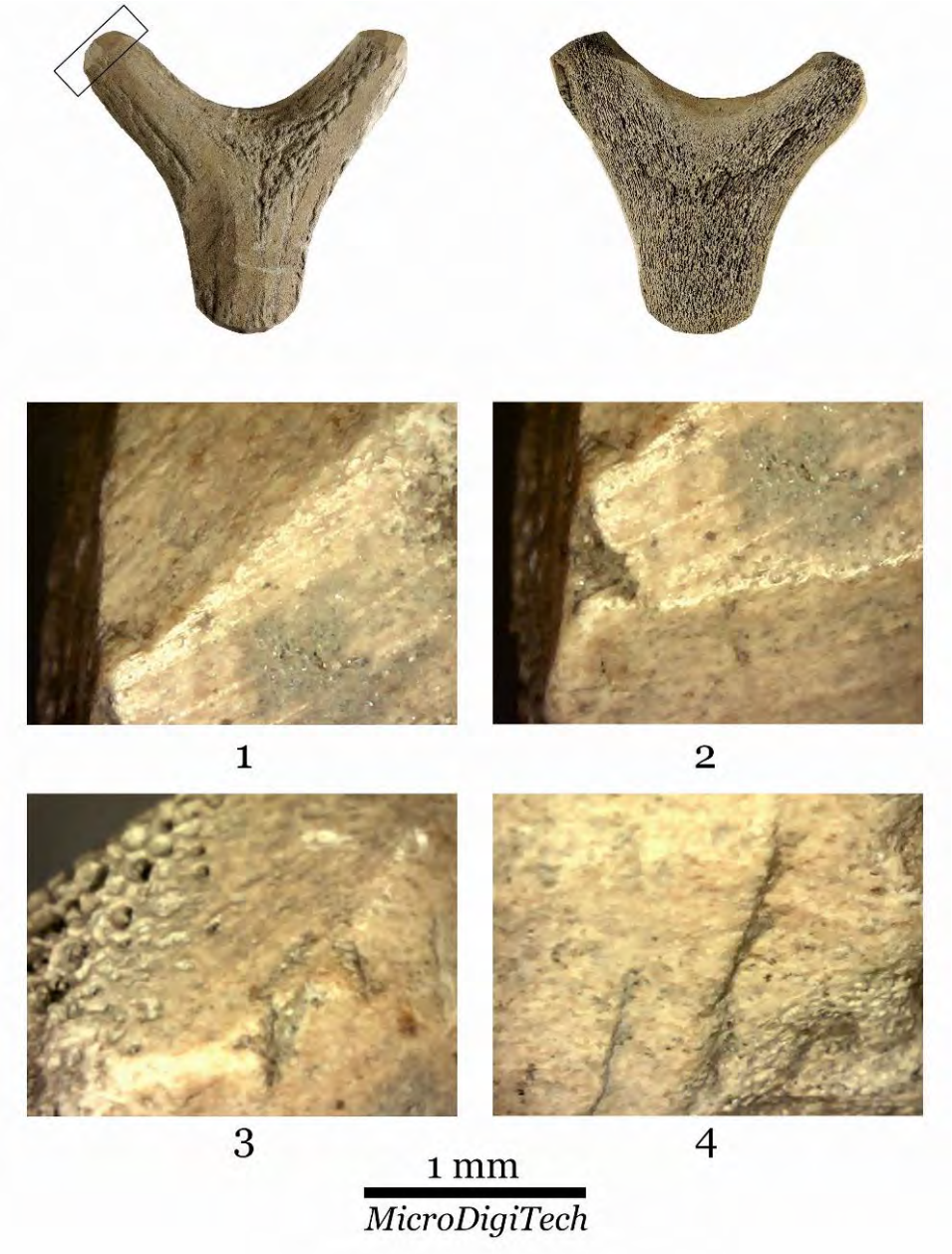

Fig. 12. Șoimeni – "Dâmbul Cetății". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-4** Distal end 1/Superior side.

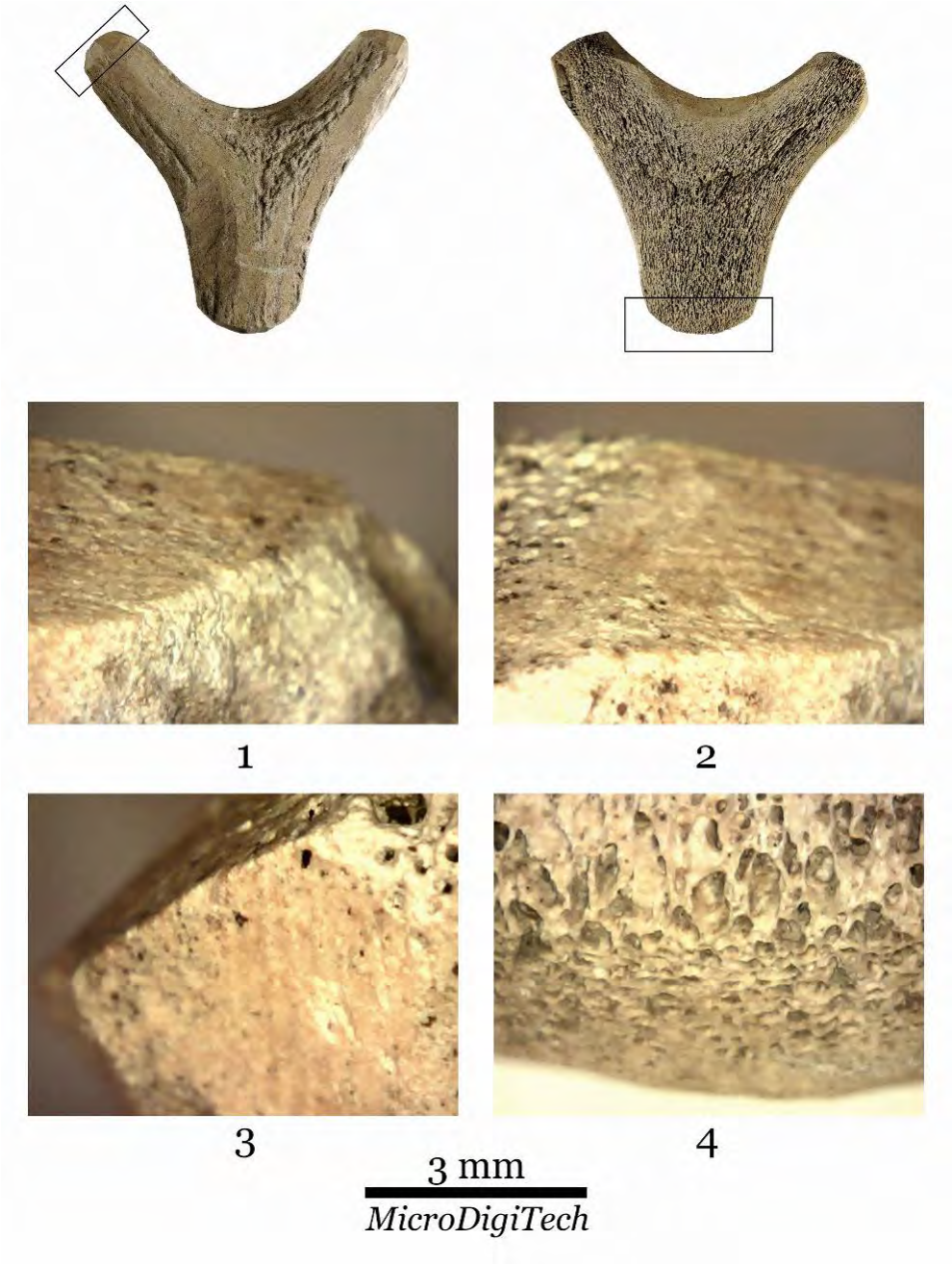

Fig. 13. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-3** Distal end 1/Superior side. **4** Proximal end/Lower side.

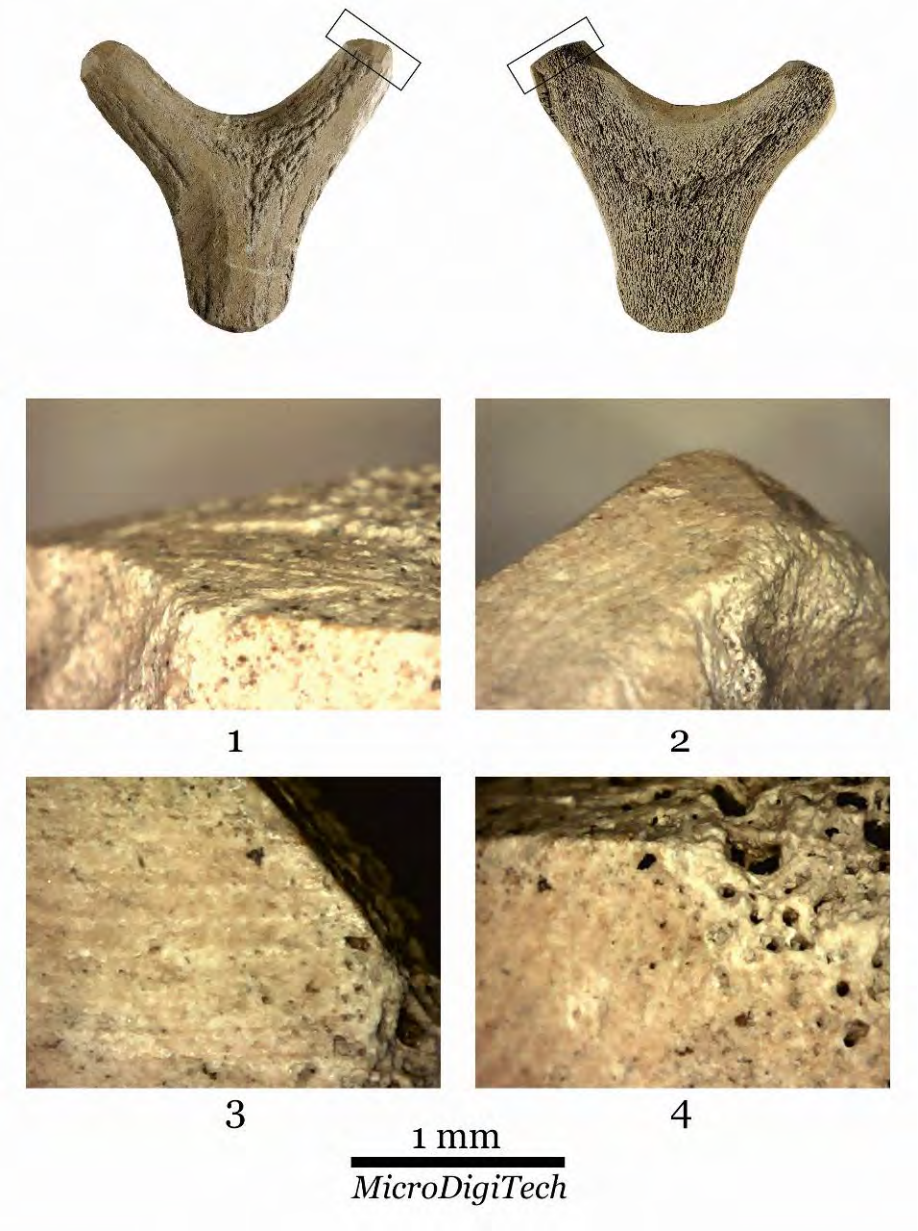

Fig. 14. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-2** Distal end 1/Superior side. **3-4** Distal end 2/Superior side.

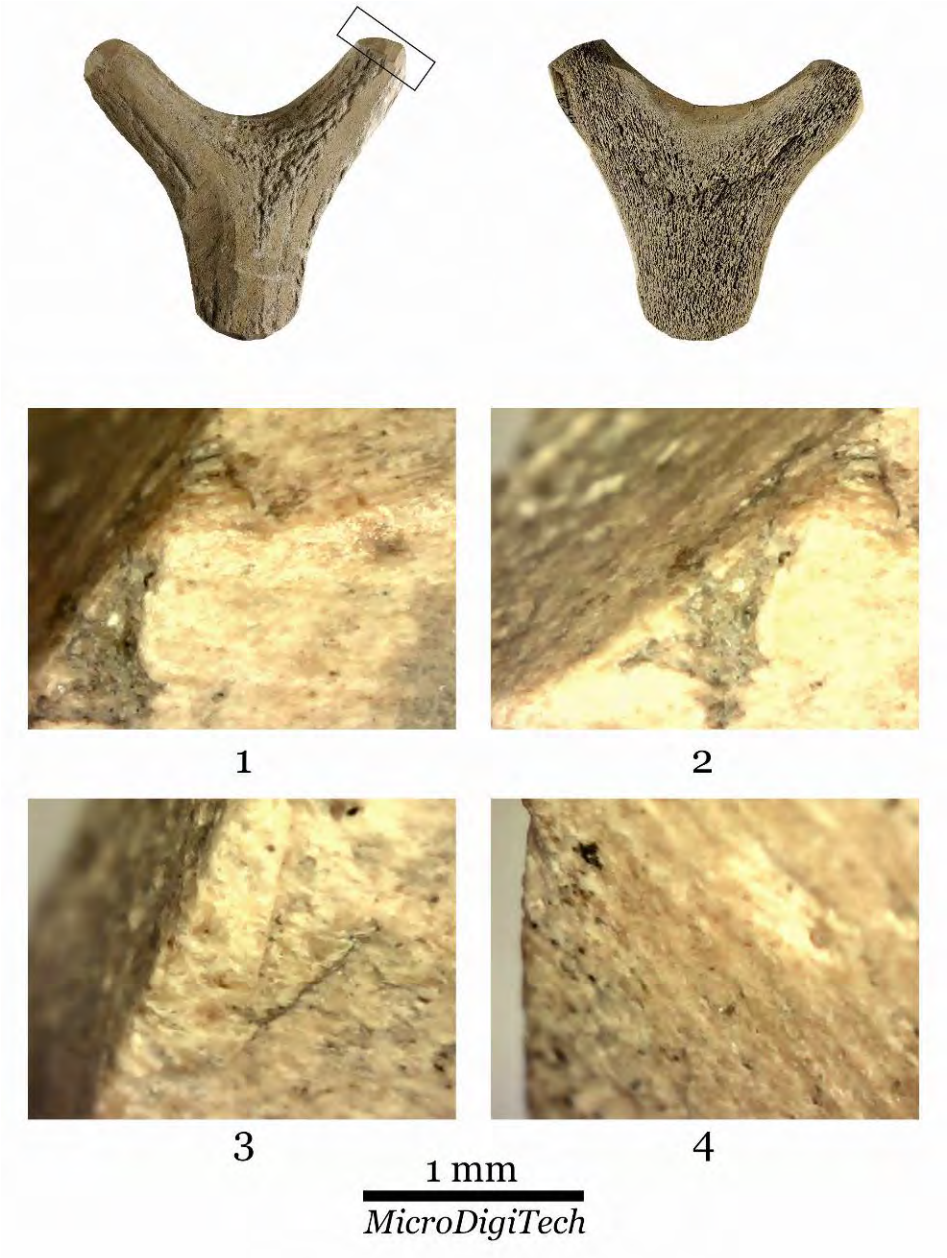

Fig. 15. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-4** Distal end 2/Superior side.

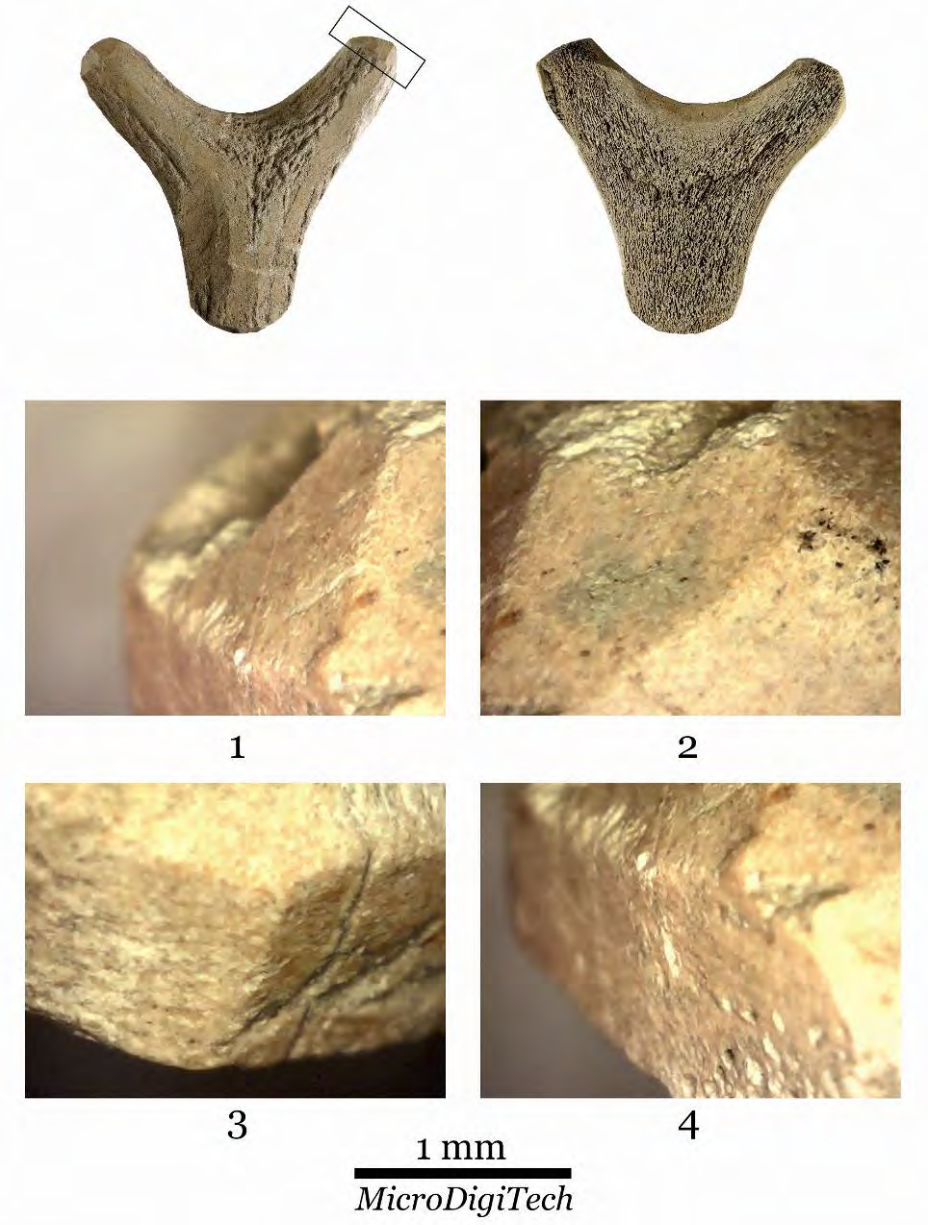

Fig. 16. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-4** Distal end 1/Superior side.

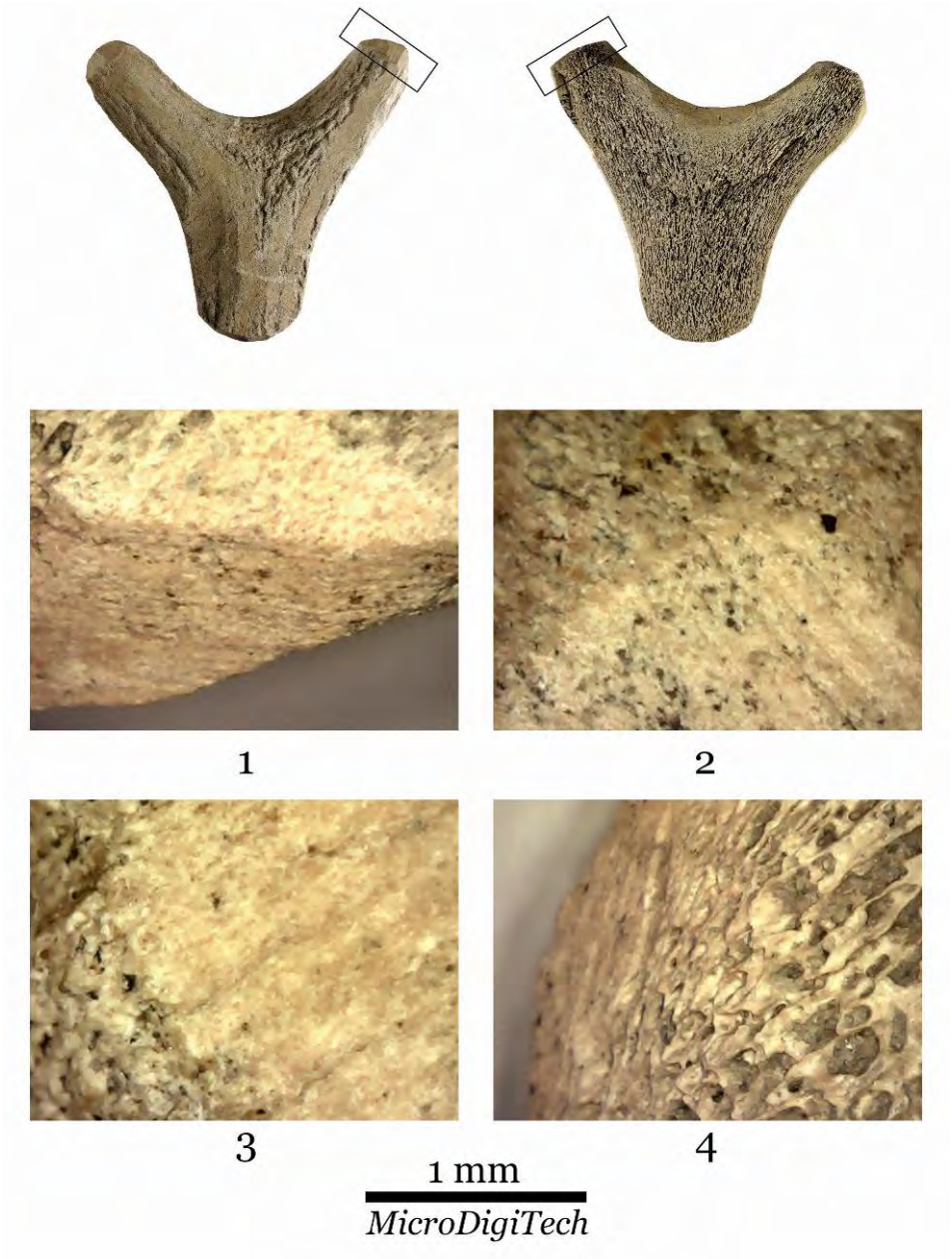

Fig. 17. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. **1-3** Distal end 2/Superior side. **4** Distal end 2/Lower side.

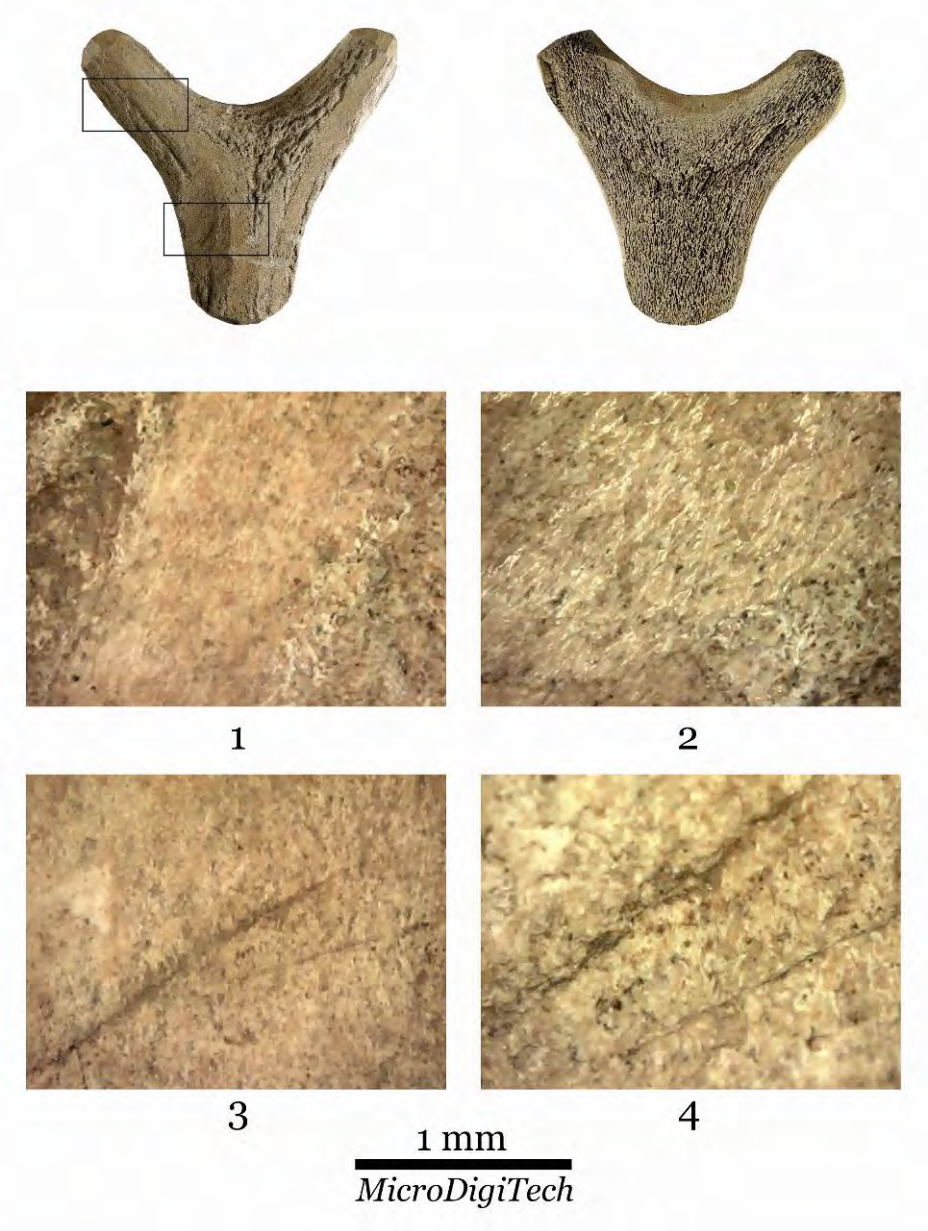

Fig. 18. Şoimeni – "Dâmbul Cetății". Wietenberg Culture. Zoomorphic antler plate – microphotographs. Traces of shaping (chopping) on superior side. **1-2** Distal part 2. **3-4** Mesial part.

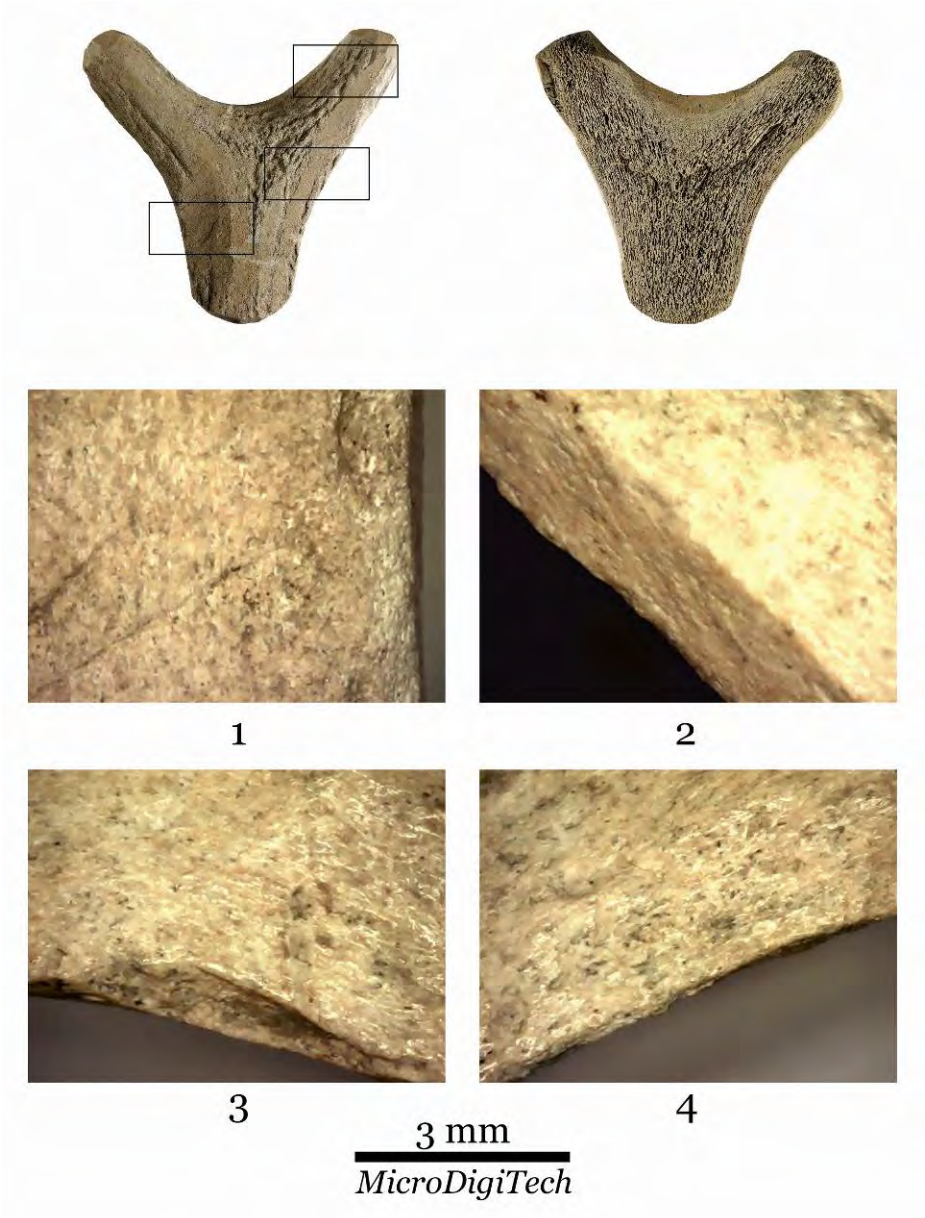

Fig. 19. Şoimeni – "Dâmbul Cetății". Wietenberg Culture. Zoomorphic antler plate – microphotographs. Traces of shaping (chopping) on edges. **1** Distal part 2/Left edge. **2** Mesial part/Left edge. **3-4** Mesial part/Left edge.

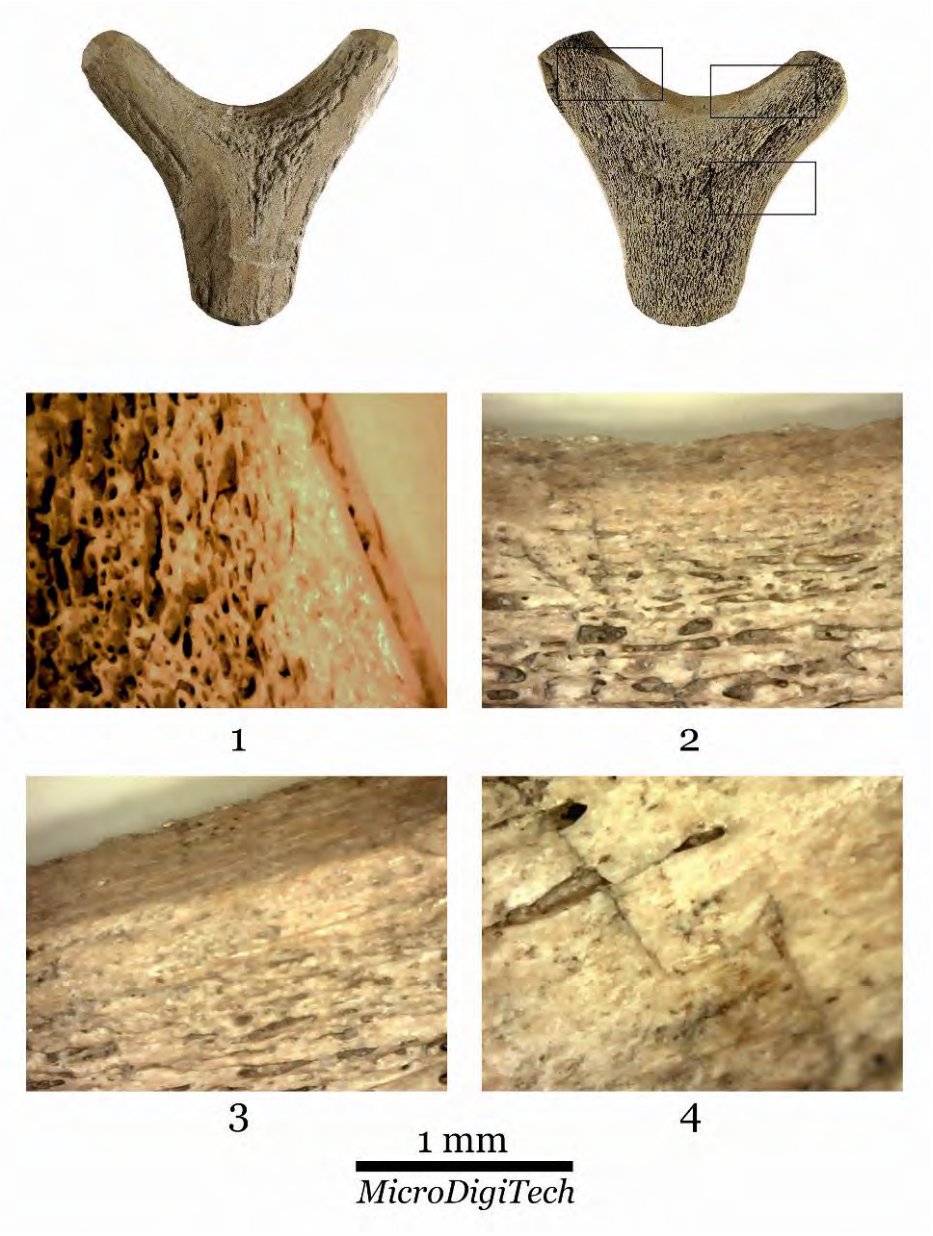

Fig. 20. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – microphotographs. Traces of shaping (chopping) on edges/mesial part. **1** Left edge. **2-4** Distal part.

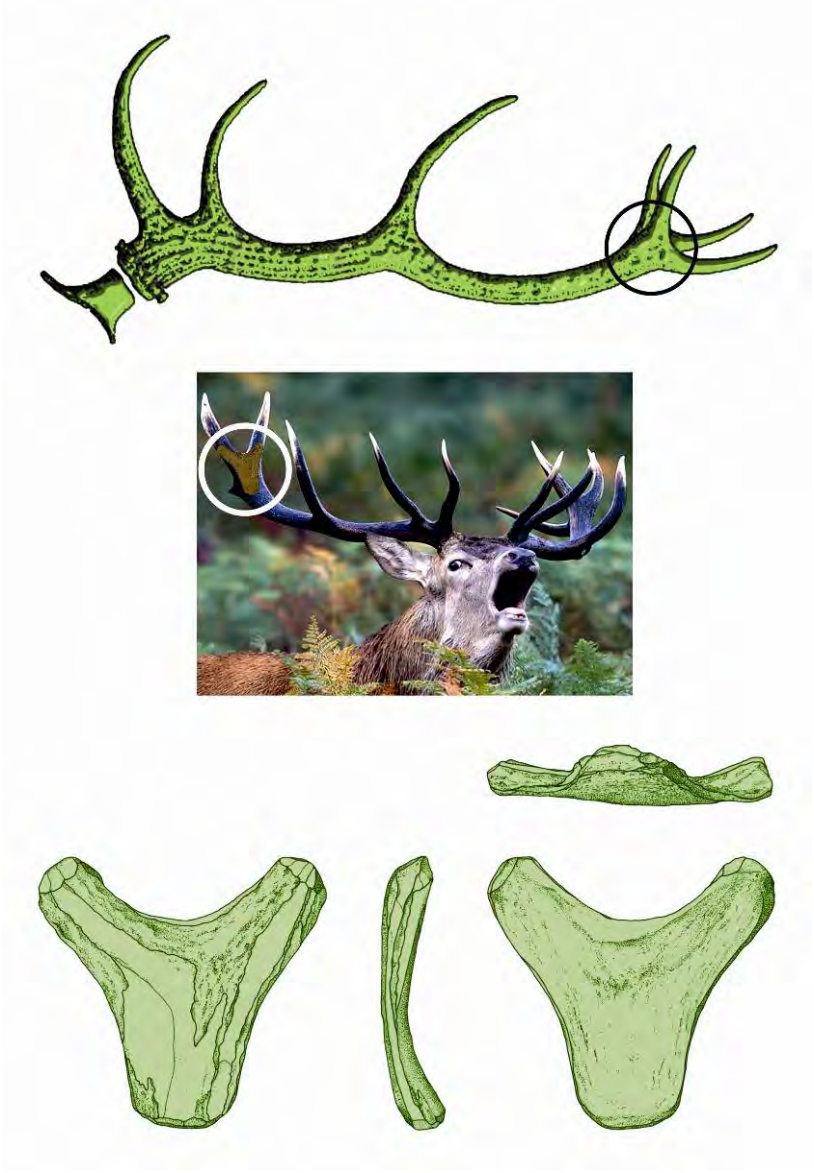

Fig. 21. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorp hic antler plate. Origin of raw material. Red deer antler, right beam. Photo after http://www.telegraph.co.uk/_earth/_earthpicturegalleries/_8059147/ Locking-antlers-red-deer-stags- during- the-annual- autumn-rutting-season-in-Britain. html.

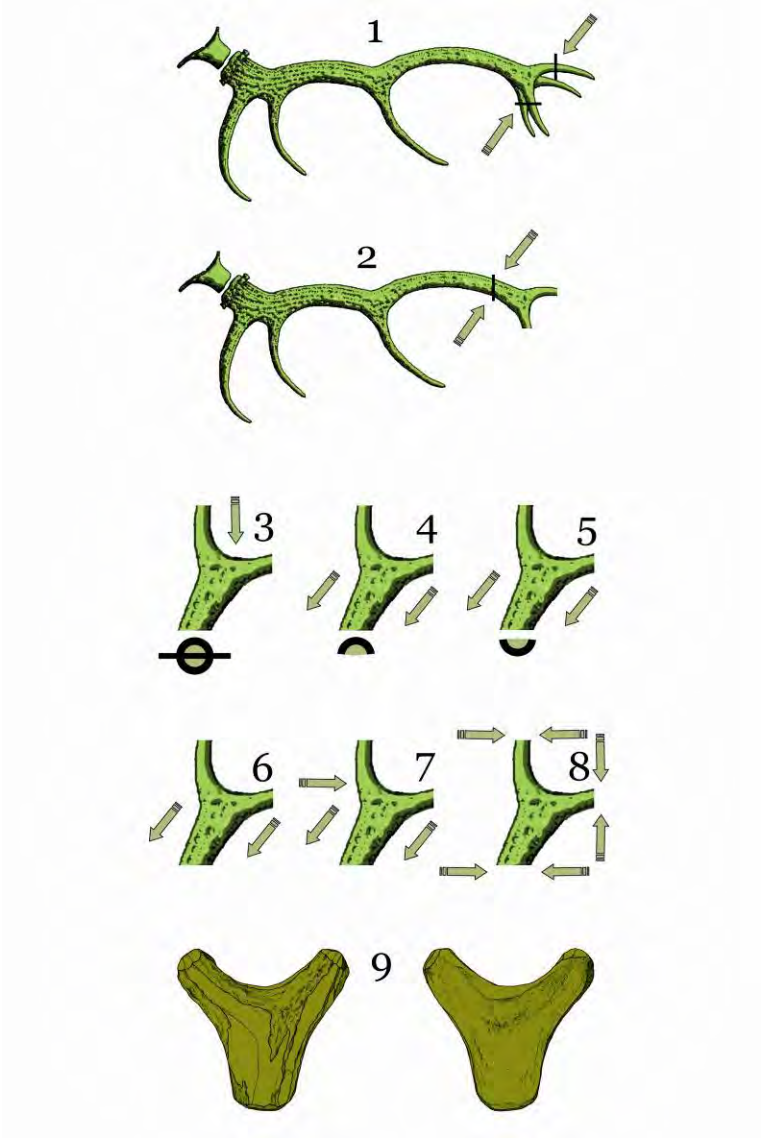

Fig. 22. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate – stages of the manufacturing chain, hypothetic reconstitution. **1** Detaching of crown tines. **2** Detaching of a beam segment. **3** Splitting a segment of beam. **4** Shaping by chopping on the superior side (*compact tissue*). **5** Shaping by chopping on the lower side (*spongy tissue*). **6** Chopping of edges. **7-8** Chopping of ends. **9** Final stage.

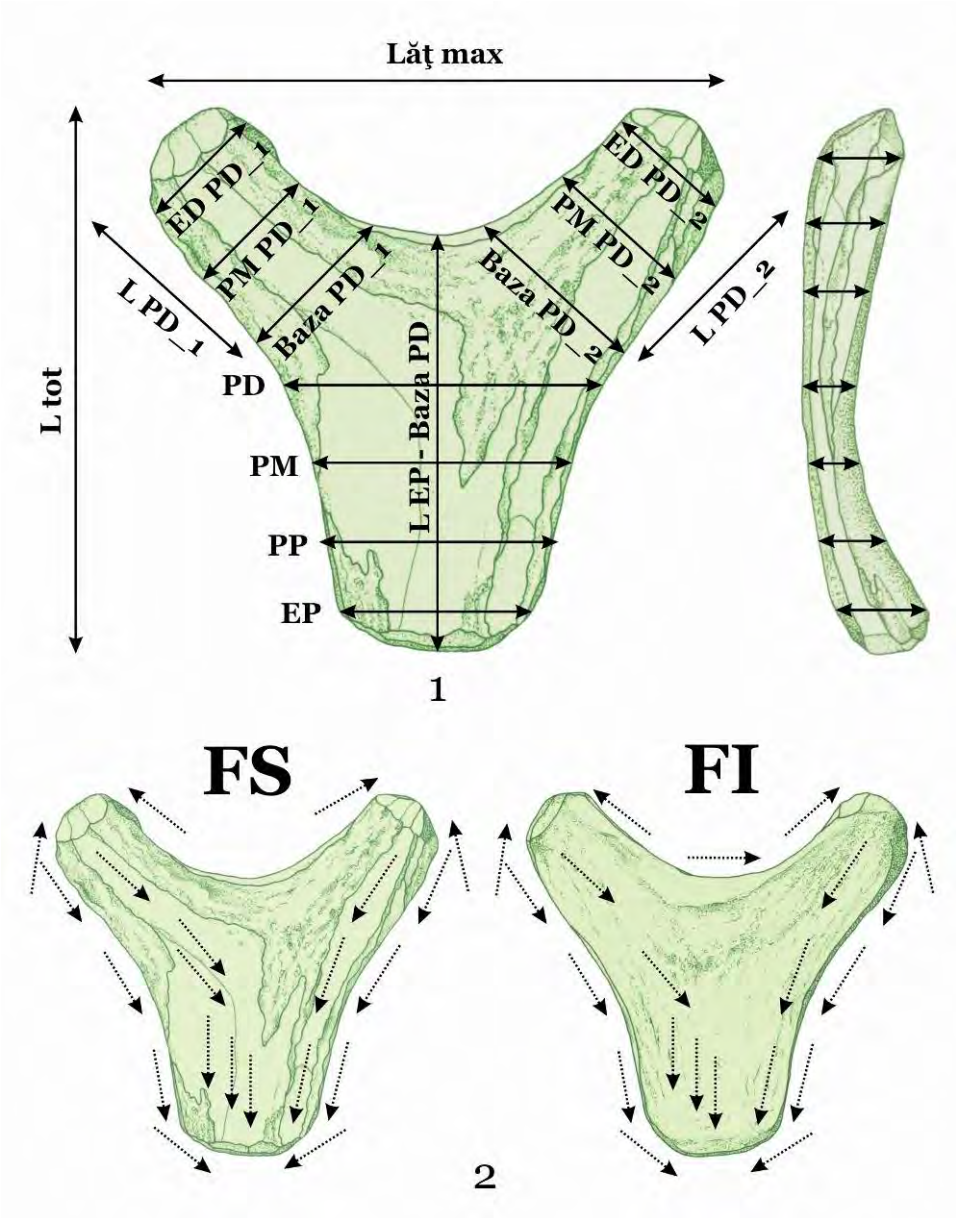

Fig. 23. Şoimeni – "Dâmbul Cetăţii". Wietenberg Culture. Zoomorphic antler plate. **1** Dimensional parameters (see *Dimensions*). **2** Shaping of superior and lower sides – orientation of motions, hypothetic reconstitution.

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