

# New information from old collections. Reevaluation of personal adornments made of hard animal materials from the necropolis of Cernica

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**Abstract:** The study of the personal adornments category proves to be vital for the understanding of individual and the means of treating the body, at Prehistory level. The purpose of this article is to reevaluate adornments made of hard animal materials, present in the Neolithic necropolis of Cernica. This was researched along a period of 13 years (1961-1974), benefiting also of a monograph, which offered a general picture regarding the disposal of the graves and of the funerary inventory from the necropolis, associated to each skeleton. In a first stage our study aimed to identify the raw materials from which were made the personal adornments from the necropolis of Cernica. In a second stage, in the created groups, were established the typological categories. For each of these was followed the reconstruction of the operational scheme and afterwards the identification of the possible usage marks, by a macro and microscopic analysis, which would indicate the use of the artifacts previously to the depositing of the funerary inventory. Most of the pieces from the Cernica necropolis present usage traces, this may mean that they have been worn also during the life of the individuals and consequently they do not constitute a funerary fitting *stricto-senso*. Thus we may assume that they were not created exclusively to be deposited as funerary inventory. Moreover, the fact that they present different usage degrees, in the composite adornments, especially when imitations intervene, prove that the broken and irretrievable pieces have been replaced during the "life time" of the adornment.

**Rezumat:** Studiul categoriei obiectelor de podoabă se dovedește vital pentru înțelegerea individului și a modalităților de tratament ale corpului, la nivelul preistoriei. Scopul acestui articol este de a reevalua podoabele confecționate din materii dure animale, prezente în necropola neolitică de la Cernica. Aceasta a fost cercetată pe parcursul a 13 ani (1961-1974), beneficiind și de o monografie, care a oferit un tablou general al dispoziției mormintelor și al inventarului funerar din necropolă, asociat fiecărui schelet. Studiul nostru a urmărit, într-o primă etapă, identificarea materiilor prime din care au fost confecționate obiectele de podoabă din necropola de la Cernica. Într-o a doua etapă, în cadrul grupelor create, au fost stabilite categoriile tipologice. Pentru fiecare dintre acestea, s-a urmărit reconstituirea schemei operaționale și apoi identificarea posibilelor stigmat de uzură, printr-o analiză macro și microscopică, ce ne-ar indica folosirea artefactelor anterior depunerii ca inventar funerar. Majoritatea pieselor din necropola de la Cernica prezintă urme de uzură, ceea ce poate însemna că au fost purtate și în timpul vieții indivizilor și, în consecință, ele nu constituie un mobilier funerar *stricto-senso*. Deci, se poate presupune că nu au fost create exclusiv pentru a fi depuse ca inventar funerar. Mai mult, faptul că ele prezintă grade diferite de uzură, în cadrul podoabelor compozite, mai ales când intervin imitații, dovedește că piesele rupte și irecuperabile, au fost înlocuite pe parcursul „vieții” podoabei.

**Keywords:** necropolis, personal adornments, technical transformation scheme, use wear, recycling, symbolism.

**Cuvinte cheie:** necropolă, obiecte de podoabă, schema de transformare, uzură, reciclare, simbolică.

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## ◆ Introduction

The study of the adornments object category proves to be vital for the understanding of the individual and of the body treatment modalities at Prehistory level. These objects were made by and for individuals and worn in direct connection with the human body, so that we can consider them its extension (C. Gamble, M. Porr 2005). Beyond the aesthetic impact, which seems secondary in the traditional societies, the personal adornment represents a language, because it transmits clear messages for the members of the same community or for neighboring communities: they are connected to the ethnic belonging, the social position, the sexual affiliation or the affiliation to an age class. Therefore sociologists (J. M. Sanders 2002) underlined the strong binder between adornment, language and genetics. Moreover, when a primary funerary deposit is studied, correlations can be made concerning the sex and age of the bearer, and in the same time traseological nature observations can also be made – if the adornments were exclusively created in order to be deposited in the funerary inventory or were previously worn and in this case there can be identified the attaching manner, by usage marks. By means of the adornments from the funerary environment, we may construct a vision, even though fragmentary, on the nature of the economic choices (the raw material – the acquisition manner – local or foreign) and technological (making modalities) of the respective communities.

Starting from these general considerations, the purpose of this article is to reevaluate the personal adornments made of hard animal materials, present in the Neolithic necropolis from Cernica. This was researched during a period of 13 years (1961-1974), benefiting even from a monograph (E. Comşa, Gh. Cantacuzino 2001), which offered a general picture of the graves disposition and of the funerary inventory from the necropolis, associated to each skeleton. The flaw of this monograph is that we do not have exact determinations of the sex and age of the buried individuals, determinations which would have been extremely important in order to accomplish a dissociation of the inventories on categories of sex and age, a fact which excludes from the very start the advancing of some hypothesis concerning the existence of a social status earned by birth (ex. consistent inventories in the case of children graves).

We had access to the material preserved in the Bucharest Municipal Museum, deriving from 55 graves, from a total of 82 graves, presenting an inventory made of hard animal materials (E. Comşa, Gh. Cantacuzino 2001). The adornments were identified in 67 graves (370 identified adornments) (tab. 5). For the graves of whose inventories we did not had access at, we tried to use the data from the excavation journals, but also from the monograph. Alas, in quite many situations, these are fragmentary, lacking the information regarding the typology of the pieces and the raw materials out of which were made.

As we have already underlined, we considered the personal adornments because they allow a wider array of considerations, not only of technological type, but especially symbolical. We will try a whole new approach, compared to the one adopted in the necropolis monograph, starting from a set of questions:

- Were there used both exotic and local raw materials?
- Did some of the raw materials have a special symbolic significance?
- To a certain type of object corresponds a specific raw material?
- Can we identify a template of the operational schemes, for the typological categories?
- Were these objects created in order to be deposited as a funerary inventory or were also used during the bearer's lifetime?

Starting from these questions, the study intended, in a first stage, to identify the raw materials (tab. 1, tab. 2, tab. 3) from which were made the personal adornments from the necropolis of Cernica. In a second stage, in the created groups, were established the typological

categories. For each of these was followed the reconstruction of the operational scheme and afterwards the identification of the possible usage marks, through a macro and microscopic analysis, which might indicate the use of the artifacts previously to their deposition as funerary inventory.

### ◆ Cultural and archaeological data

The site from Cernica is on a prolongation of the terrace (approx. 10 m height), right of the former river Colentina, subsequently transformed in Cernica lake (E. Comşa, Gh. Cantacuzino 2001, p. 7) (fig. 1). Inside this location were discovered settlements and necropolis (fig. 2), pots and ceramic fragments, anthropomorphous plastics, rings, shell or bone adornments (rings, pendants, beads), pearls made of copper mineral, silex tools, stone axes, which belong to several historical periods: Dudeşti culture (Cernica phase), Boian culture (Bolintineanu and Giuleşti phases); Bronze Age, Glina and Tei cultures (settlements), La Tène Age (settlement), XVI-XVII centuries (settlement and necropolis) (Gh. Cantacuzino 1963a, p. 1-13; E. Comşa, Gh. Cantacuzino 2001, p. 10).

The archaeological researches had a systematic character, being led, between 1960-1974, by Gheorghe Cantacuzino (in the area of the Eneolithic necropolis, but also of the settlement and of the medieval necropolis) and Sebastian Morintz (the one who took care of the research in the Neo-Eneolithic settlements).

The necropolis, in the evolution of the funerary conceptions, was constituted by the absence of the graves next of beneath the dwellings, in a „*reservation of the dead separated from the inhabiting area of the living, a fact which mirrors a remarkable evolution of the funerary conceptions and beliefs in the Neolithic*” (Gh. Cantacuzino 1967, p. 386). This belongs to the community of the dead, from where they were not supposed to return in the community of the living, the foundation of the necropolis being strictly connected to the social and economic development of the prehistoric society (Gh. Cantacuzino 1975, p. 232).

The necropolis, thoroughly researched, stretched on a surface of over 12000 m<sup>2</sup> and included a number of 378 graves, which were discovered both on the high side of the terrace, and on the slopes towards the Cernica lake (Gh. Cantacuzino, S. Morintz 1963, p. 27-28; Gh. Cantacuzino 1967, p. 379; E. Comşa, Gh. Cantacuzino 2001, p. 7-10). Next to these graves, on the researched surface were also identified a series of medieval tombs (Gh. Cantacuzino 1963b, p. 361-394; E. Comşa, Gh. Cantacuzino 2001, p. 10). We must underline that only one grave (M356) was discovered in the settlement of Bolintineanu phase of Boian culture, which was at approx. 80-100 m west of the necropolis (Gh. Cantacuzino 1965, p. 56; 1967, p. 379-400; 1973; File 153, p. 56; File 182, p. 19).

The existence of the two main positions for the deposal of the dead – stretched and fetal, discovered at Cernica, have led to controversial discussions regarding the dating of the necropolis. Thus Gheorghe Cantacuzino and Sebastian Morintz considered that the tombs deposited in stretched on the back position belong to the Bolintineanu phase of Boian culture, and the tombs in which were found the skeletons in fetal positions were attributed to the phase Giuleşti of the same culture (Gh. Cantacuzino, S. Morintz 1968, p. 16). Eugen Comşa believes that the necropolis from Cernica – *Iezerul Monastery* belongs to the phase Cernica of Dudeşti culture and includes the skeletons discovered in stretched on the back position (E. Comşa 1992, p. 31-36; E. Comşa, Gh. Cantacuzino 2001, p. 6, 194-198), and the group of tombs which had the skeletons deposited in fetal position on one side would belong to Boian culture (E. Comşa 1992, p. 31-36; E. Comşa, Gh. Cantacuzino 2001, p. 6, 191-193). Recently, D. Şerbănescu published a date of

6095±35 BP<sup>1</sup> (between 5080-4909 CAL BC - calibration data with probability of 95,5%) obtained on a femur, from an individual buried in the M284 tomb (D. Șerbănescu 2015, p. 119-120).

A characteristic of the necropolis from Cernica was remarked by Gheorghe Cantacuzino, regarding the spatial disposition of the graves, observing an unequal repartition on the field. These ones compose more distinct groups (in center, north and south), being separated by empty spaces, but having towards east and west isolated tombs (Gh. Cantacuzino 1967, p. 381). This fact determined the researcher to assert that to each group of tombs corresponds a social group based on family relations (and the dispersed graves were distributed between these large groups or at the necropolis edge), finding similarities in necropolis belonging to the linear ceramic culture in central Europe and Hungary (Gh. Cantacuzino 1965, p. 47; 1967, p. 381; 1970, p. 55; N. Ursulescu, R. Kogălniceanu 2006, p. 14).

At Cernica there were slight differences regarding the orientation, the funerary inventory, but there were not seen differences regarding the inhumation manner according to age or sex categories. The dead were entombed in stretched or fetal position, but there were also some exceptions – the deposals face down.

### ◆ Funeral inventory

#### *Spondylus*

A various array of adornments, from small cylindrical pearls, to belts elements and massive bracelets, were made of valve of *Spondylus* (tab. 1). A first typological category is represented by bilobed or trilobed pearls (fig. 3/a, fig. 4/a), with triangular section, convex extremities and convex-concave sides. The pieces are endowed with two/three perforations, asymmetrically disposed. For the processing of these pieces, in a first stage, out of the valve was extracted a splinter with a rectangular morphology. Yet we cannot reconstruct the proceedings which accompanied the debitage operation, due to the subsequent technological interventions. The bilobed/trilobed morphology was obtained by oblique cuts, progressively deepened. The lack of the characteristics marks of these cuts seem to demonstrate that the piece's shaping was made in a subsequent stage. The perforation was performed by alternative rotation (the specific marks are still visible), bilateral, holding the tool oblique compared to the piece surface, which determined the flared morphology of the perforation walls. On one of the pieces we were able to identify the abandoning of a first perforation plan, nevertheless illustrating both the technique (rotation), and the fact that, for accomplishing the perforation, the perforation plan was alternatively stroke (fig. 3/c).

The deformation manner of the perforations, towards the inner wall (fig. 3/b, fig. 4/b, c, d), can demonstrate the attaching modality of the piece. We wish to underline the very advanced usage, which manifests, in the case of bilobed/trilobed, by deforming the wall between the perforations, almost until fracture (fig. 3/d), and by a pronounced usage facet, developed parallel to the piece's axe, in the area between perforations, which generated, in some cases, the evolution from a triangular section of the pieces, towards a trapezoidal section. The inner side presents a strong polish and, moreover, the area is very flattened and smooth when touched. One of the bilobed pearls, broken at the perforations level, presents an initial perforation, abandoned, maybe with the purpose of recycling, following the advanced usage of the perforations. We may

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assume that there was a catching system, by sawing the piece. Their disposal at the level of the skull, in some graves (ex. M22), allow us to advance the hypothesis of the existence of a bonnet embroidered with these pieces.

Another important typological category is that of the tubular pearls, with straight profile, parallel rectilinear edges and circular section (fig. 5/a). Neither in this case we cannot identify with certitude, the debitage proceedings. Nevertheless, we personally believe in using sawing at least in a final stage of the debitage. By simple percussion (even though we cannot exclude it), cannot be controlled the fracture manner and, in this case, we observe the need of a quite standardized blank. The pieces' surface was entirely shaped, by an extremely fine polishing. The perforation was executed by bifacial rotation from which resulted the slightly flared walls at both extremities, but the specific marks of this procedure are not visible (fig. 5/c). The extremities morphology is generally strongly rounded, with the appearance of a small concave facet (fig. 5/b, fig. 6/b). Moreover, it seems to correspond, in length, to a flattened and fine surface (fig. 5/d, fig. 6/c). We may assume that this is the area affected by the utilization of the pieces. Another example of usage evolution, in an even more advanced stage, consisted in the total elimination of the matter, on the usage facet (fig. 3/e).

The same technical data are actual also for the fusiform and biconvex pearls (fig. 6), the morphological difference being created by the abrasion procedure. The cylindrical pearls seem to have been segmented out of the tubular pearls (perhaps after fracturing), because their extremities are irregularly cut and the perforations are asymmetrical, reported to the piece's axe, from where the conclusion that they derive from already finished pieces.

The biconvex piece of *Spondylus*, identified at the neck level of the individual deposited in M182 (fig. 7/a), presents a flat facet, with polish and a concavity marked off the facet. The perforation is cylindrical, without rotation marks in the inside (fig. 7/b), but with a strong deformation, which corresponds exactly to the flat usage facet (fig. 7/c, d). Obviously the piece was sawn, the friction generating the appearance of the facet. For that matter, by its massiveness it leads the thought straight to a button. A similar piece derives from M251. The same function seems to have had a piece identified in M186 (fig. 5/e). It is characterized by a biconvex shape, with flat facets. It presents polish and concavities of the extremities on both sides (fig. 5/f, g), from where the conclusion that the thread was passed over both sides.

Quite interesting, in the studies concerning the usage evolution, proves to be the valve of *Spondylus* (fig. 8/a, b), found on the pubic bone of the skeleton from M43. Its form was also created by a method of direct shaping, by abrasion. It presents three perforations, accomplished by rotation, and other two initiated but unfinished (fig. 8/c). The usage is characterized by a strong deformation of the two perforations symmetrically placed, deformation accompanied by the appearance of a depression developed on the superior side (fig. 8/d), between perforations and on the inferior side (fig. 8/e), starting from perforation, towards the extremity. We may thus guess that catching system connected the perforations on the superior side and came out on the inferior side. The depression is well defined, it could not appear but after a prolonged pressure, the piece being strongly used before its deposal in the grave. The specialty literature considers these pieces belt elements (S. Bonnardin 2009), the hypothesis being plausible if we also consider the archaeological context of the discovery.

Typological category	Number of pieces	Grave
Bilobed pearl	92	M4, M9, M22, M29, M34, M38, M43, M48, M75, M87bis, M98, M111, M166A, M178, M182, M188, M194, M196, M251, M256, M292
Trilobed pearl	13	M38, M43, M196, M251, M292
Tubular pearl	34	M4, M9, M29, M38, M75, M98, M101, M111, M112, M182, M186, M196, M303
Fusiform pearl	58	M16, M22, M29, M34, M38, M43, M98, M111, M112, M182, M196, M267, M303, M341, M355
Biconvex pearl	8	M34, M75, M178, M267
Cylindrical pearl	21	M22, M38, M43, M48, M77, M101, M103, M111, M120, M256, M267, M303
Belt element	4	M43, M266, M314
Bracelet	2	M83, M141
Button	3	M182, M186, M251
Indeterminate (due to fracturing)	7	M48, M194

**Tab. 1.** *Spondylus* adornments typology and their disposition in the graves.  
Tipologia podoabelor din *Spondylus* și dispunerea lor în morminte.

On the right arm of the individuals buried in M83 and M141 was placed a bracelet made of *Spondylus* valve (fig. 9/a). For the processing of the bracelet was used the natural form of the valve, preserving an area from the cardinal plateau, with the cardinal teeth and pits, in order to confer a special aesthetic aspect. The edges of the pieces seem to have been debited by percussion, after which the debitage plan was thoroughly abraded (fig. 9/b). On the inferior side, it presents a strong polish, with scratches perpendicular to the extremity, which may have developed subsequently to the utilization (fig. 9/e). At this type of piece important is the recycling procedure, namely the appearance of cracks, developed perpendicular to the two openings – on both sides were made perforations (fig. 9/c, d), by rotation, applied from the superior side. In this manner, the extension of the cracks was stopped, by introducing a thread through the perforations and fixing the cracked parts. In this context, the recycling procedure illustrates the special value of this raw material, which determines its strict management, probably generated also by the acquisition difficulties.

### *Dentalium*

Out of *Dentalium* were made only tubular pearls (47 pieces in M29, M101, M103, M196, M267, M341) (fig. 10/a), due to the anatomical limitations imposed by this scaphopoda's shell. Entire *Dentalium*, collected from the beach have a conic form, quite powerfully curved and their length reach, in accordance with the specie, up to 12 times the maximum diameter (G.T. Pope, Y. Goto, 1993). The unfractured extremities have a smooth, thin, sharp side, which cannot be found

at the samples identified in the necropolis, but they do not have an accentuated curved profile and the extremities are rounded, illustrating a segmentation procedure.

The segmentation of the samples from the necropolis is perpendicular or oblique to the fragment's major axe. It was made by bending or by sawing (the experimental studies have proved that, not rarely the fractured extremities were regularized by abrasion on a coarse surface, like the pieces' entire surface, which led to the blurring of the debitage marks, and of this shell's specific model). At the pieces from M101 we were able to identify hardly visible marks on similar objects. First of all, the segmentation procedure by sawing (fig. 10/b, c) is still visible on a couple of pieces, despite the fact that, subsequently, the pieces' surface was smoothly shaped (fig. 10/d). In the same time, the usage evolution is characterized, like the similar morphological pieces, from *Spondylus*, by the appearance of small concavities at the extremity level (fig. 10/e, f), corresponding to a friction facet (fig. 10/g), with macroscopically polish.

### *Glycymeris*

From this bivalve species was made a single typological group - bracelets (fig. 11/a, b) (13 the samples from M43, M68, M88bis, M166A, M178, M188, M267) – through a transformation method by direct shaping, without the intervention of other debitage methods (like bipartition or segmentation), the applied proceeding being the abrasion. It was applied off the superior side, until the obtaining of a large enough orifice. The same abrasion was applied from the opposite side, only at the level of the teeth. All the samples register, at this very same level, a perforation made by unifacial rotation, and our opinion is that it was accomplished previously to the abrasion proceeding, because we cannot identify the starting point of the rotation procedure. The pieces are quite degraded in surface, this is why we cannot establish is the disappearing of the rotation marks from inside the perforation is due to the usage or the sedimentation processes. One of the bracelets from M166A (fig. 11/a), better preserved, allowed us to underline the abrasion plan, with the specific marks (fig. 11/c), and of an intense usage area, in the superior side of the perforation (fig. 11/d), characterized by a flattened surface, with macroscopic polish and by the disappearance of all the technological marks. It is the testimony of an intense friction with a thread.

### *Bone*

A special object inside this necropolis is a bilobed pearl, made of bone (fig. 12/a). In our opinion, this object imitates a piece of valve of *Spondylus* meaning that the original piece was fractured and, in lack of this raw material, it was replaced with a morphologically identical piece (fig. 12/b, c), from an available raw material. The second element which draws attention upon this piece is the evolution pattern at the perforations level, which led to the fracturing of both perforations (fig. 12/d). The fact that the fracture appeared at the level of the interior wall only sustains once more the hypothesis that the piece was clamped by a sawing system.

In the necropolis from Cernica also appear a series of pieces with a ringlike morphology, about which we believe that served for clamping a coat (fig. 13/a). They were made on flat blank, obtained from the diaphysis of a long bone, large sized mammal, through a method of longitudinal debitage. We cannot reconstruct the proceedings of obtaining the blank, because the entire surface was submitted to the shaping operation, generally by scraping, superposed by abrasion. The perforation presents a cylindrical morphology, resulted from the perforation by rotation, followed by a perforation enlargement by applying an interior scraping (fig. 13/d). The pieces' form was also given by scraping, hardly identifiable, because it was superposed with a new shaping stage, by abrasion (fig. 13/b, c). This type of pieces present a strong macroscopic

polish, especially at the level of the appendix (fig. 13/e), resulted from manipulation which proves that the used area was mostly the inferior half.

Furthermore, in the necropolis appear rings (fig. 14/a), also made of bone diaphysis, large sized mammal, only this time we are dealing with a procedure of bone segmentation, in rings, obtaining thus blanks in volume. At one of the samples we hardly distinguished sawing marks (fig. 14/b), which illustrate that the segmentation took place with the aid of this technique. In a second stage, the pieces' segmentation plan and also the superior side were shaped by abrasion (fig. 14/c, d). The extremities present a strong polish, which led to erasing the usage marks, determined by their utilization previously to the deposal in the grave.

Out of bone were confectioned exceptional pieces, especially through the thorough technique of shaping. One of the samples presents towards the extremity a stylized feminine representation (fig. 15/a). The piece was identified at the end of the right forearm, next to the right hand. It was made of a long bone diaphysis, large sized mammal, through a longitudinal bipartition method, without being able to identify the procedures succession, due to the subsequent interventions. The breasts were detached through a procedure of alternative sawing (fig. 15/b), bifacial, with still visible marks. The buttocks, like the basin, were underlined by a delineation action (fig. 15/c), made of sawing, after which the abdomen and the buttocks in relief were made with a longitudinal scraping (fig. 15/d), which started from the demarcation line. The legs were outlined by the application of grooving (fig. 15/e). Afterwards the surface of the piece was smoothly polished, by polishing (fig. 15/f). The piece presents a strong polish, more accentuated towards the proximal side (at the level of the legs) (fig. 15/g), following an intense manipulation. It might have been a needle for hair or clamping clothes.

A similar piece derives from M191 – made of diaphysis, large sized mammal, having on the superior side a feminine figure, alas fractured (fig. 16/a). We do not know the procedures of obtaining the flat blank. The form was given by scraping (fig. 16/b), very obvious in the lateral areas. On the inferior side, the gluteus area was detached by transversal sawing for the delimitation of the area and afterwards by longitudinal scraping, in order to outline the back of the figurine (fig. 16/c). For suggesting the legs, it was created a longitudinal line by grooving (fig. 16/d). On both sides was applied an abrasion, superposed by an usage macroscopic polish, developed especially at the point level, strongly rounded (fig. 16/e).

Another type of needle, with the extremity modeled under the form of three rhombs (fig. 17/a) was identified in the area between the left scapula and the clavicle of the individual buried in M251. We do not know the procedures of obtaining the blank but, as we are dealing with a flat blank, it was used a method of partition or longitudinal extraction. The model was laid out by sawing, hardly identifiable because the surface was smoothly shaped (fig. 17/b). The point, unfortunately broken, was arranged by longitudinal scraping (fig. 17/c). The perforation was obtained by bifacial rotation (fig. 17/d). The area of intense usage, a result of manipulation, develops towards the point, demonstrating that this is an active part (fig. 17/e). The perforation preserves its technological marks, without usage traces, proving that its role was of esthetic nature.

Between the left elbow and the lumbar vertebra of the individual buried in M144, there was a piece made of bone, unfortunately fragmented, so that we were not able to reconstruct its integral morphology (fig. 18/a). The piece was made of a long diaphysis bone, by longitudinal debitage, without being able to identify the procedures. The form was given by lateral scraping (fig. 18/b), superposed by abrasion along the debitage plan (fig. 18/c). Both sides were regularized by scraping (fig. 18/d), until they became flat. At distal level, a biconical perforation is present, accomplished by bifacial rotation (fig. 18/e). The perforation does not present an



intense usage, because we can still identify the starting point of the perforation and the rotation scratches are quite visible, this is why we consider that the piece was not intensely used.

Typological category	Number of pieces	Grave
Ringlike element	5	M22, M37, M82, M88, M284
Ring	17	M17, M22, M32, M54, M77, M82, M87bis, M88bis, M90, M154, M 244C, M251, M267
Needle (?)	4	M13, M101, M191?, M251
Indeterminate	2	M19, M144

**Tab. 2.** Bone adornments typology and their disposition in the graves.  
Tipologia podoabelor din os și dispunerea lor în morminte.

### *Tooth*

The canines of *Cervus elaphus* have been minimally processed, by the making of a perforation which to allow their attaching (fig. 19/a). The procedure used was bifacial rotation (fig. 19/b), without the previous preparation of the plan to be perforated. When intact, the perforation illustrates usage, meaning that, towards the perforation's superior side is accentuated a totally flattened area, in which the rotation scratches are almost entirely erased. It is probably the area of fractioning with the attached thread.

The teeth of *Sus* sp. were transformed in bilobed pearls, illustrating, like in the case of the bone, the utilization of another raw material, in order to imitate the pieces of *Spondylus* (fig. 20/a). They were made by the tooth's longitudinal bipartition, further on the model being cut, possibly by alternative sawing (marks which are impossible to identify, because of the abrasion of the entire surface). The abrasion (fig. 20/b, c) is applied on the entire surface of the piece and is extremely visible, comparing to the pieces of *Spondylus*. The usage is present, being characterized by the development of a usage area and a deformation at the perforations level, with the blurring of the rotation scratches. The usage evolves in the area between the two perforations, where also develops the facet characterized by the marks disappearance and the appearance of the macroscopic polish (fig. 20/d). But, in general terms, the usage is not as accentuated compared to similar pieces of *Spondylus* (where the deformation is strong, until the fracturing in the area between the perforations) from where the conclusion of their subsequent processing and of replacing the fractured pieces (probably of *Spondylus*), from composite adornments.

Typological category	Number of pieces	Grave
Perforated canine	18	M9, M28, M43, M171, M173, M256
Bilobed pearl	8	M9, M34, M38, M43, M98
Trilobed pearl	1	M48
Pendant	2	M127, M225

**Tab. 3.** Tooth adornments typology and their disposition in the graves.  
Tipologia podoabelor din dinți și dispunerea lor în morminte.

In M127 was identified a pendant of canine of *Sus* sp. (fig. 21/a), alas longitudinally fractured. It was made of a longitudinally bipartitioned blank, seemingly by percussion, with the shape arranging by scraping (fig. 21/b), applied on the inferior side and superposed by an abrasion of final regularizing, present especially at the level of debitage edges (fig. 21/c). The perforation was accomplished by unifacial rotation, off the inferior side (fig. 21/d). The specific marks are quite blurred, a fact which demonstrates its previous utilization.

### ◆ Discussion

*The raw material.* The study of adornments raises numerous questions regarding their symbolical and social value, but also the circulation routes of the different raw materials. The answers to these questions are important in order to analyze why people made personal adornments and placed them in graves and if the different types of adornments have an individual value for the community from Cernica.

No.	Raw material	Number of pieces	%
1	<i>Spondylus</i>	242	67
2	<i>Dentalium</i>	47	13
3	Tooth	29	8
4	Bone	28	8
5	<i>Glycymeris</i>	13	4

**Tab. 4.** Numerical distribution of the differents types of raw materials.  
Distribuția numerică a diferitelor tipuri de materii prime.

Inside the necropolis from Cernica, the adornments made of allogene raw materials (84%), represents the most representative category, other raw materials being used only sporadically, either for the processing of other typological groups, like in the case of the bone (rings, needles) or tooth (pendants of perforated teeth), either to imitate pearls of *Spondylus*, probably because of the difficulty of their acquisition (tab. 4). It is a deliberate option of these communities to use, preponderantly, raw materials imported from great distances, the specialists considering that the distance on which the materials circulate influencing the sense of importance and power, both for the material, and for the individual who distributes or wears them (M. Helms 1988).

It is obvious that in the necropolis inventory from Cernica, the pieces made of valves of *Spondylus gaederopus* are loaded with symbolic connotations, considering their numerical weight. The two valves have different form and thickness (M.A. Borrello, R. Micheli 2004). The left valve (superior), quite smooth, is more rounded, in the shape of a bonnet, having ears on each side of the ligament and a relief of bristles prominently on the entire surface. On the right valve (inferior), more elongated and thicker, are developed concentric disks, in relief. These different morphologic aspects generated constrictions and determined the selection for the processing of a certain type of object, as also suggested by the material presented in this article. The issue of the species origins has not yet been solved: M. Séfériades (1996, 2000, 2010) or P. Halstead (1993) attributes a Mediterranean origin, denying the existence of this species in the Black Sea. In exchange, H. Todorova (2002) or V. Dimitrijević and B. Tripković (2006) speak about the possibility of an origin in the Black Sea. An often encountered practice at a series of Prehistoric communities is that of utilizing fossil species, but the differentiation between live valves and

fossile ones can be made only through isotopic analysis (J. Shakerlton, H. Elderfield 1990; M. Vanhaeren *et alii* 2004). These studies seem to have demonstrated that, at the level of the European Neolithic, were used bivalves deriving from the Mediterranean Sea and not from fossil deposits or from the Black Sea (J. Shakerlton, H. Elderfield 1990; B. Bajnóczi *et alii* 2013). M. Miller (2003) brings other arguments in favor of using fresh valves of *Spondylus*, showing that those gathered from the beach are a lot more fragile and tend to fracture during the fabrication process, unlike those gathered alive.

In the case of an import, the variables which may be invoked are those of a direct import of raw material or of already finished pieces and, in the same time, of a direct exchange or from group to group (*kula* type exchanges – Polynesia ). The archaeological evidences plead for the very existence of some specialized centers in processing valves of *Spondylus*, like the one from Dimini (Greece) (A. Tsuneki 1989). Moreover, we may invoke a similar situation at the populations from the Trobrian Islands (B. Malinowski 1989). The small perforated disks, from which are made the necklaces which circulates in the *kula* exchange system, are fabricated in only two centers. M. Sfériades (2010) considers that, at the level of the European Neolithic, the objects were manufactured in the centers from the Aegean and Adriatic Sea coast, especially from the actual territory of Greece, Montenegro, Albany and Croatia. For other territories, the rarity and importance of this valve compelled the communities to a recycling of the raw material, in the moment the pieces were fragmented – see the case of Hârșova (D. Galbenu 1963) or Omurtag (Bulgaria) (B. Gaydarska *et alii* 2004).

We cannot neglect the great socio-economic or religious importance of this bivalve, considering its pan-European presence at the level of Neo-Eneolithic. It is estimated at approx. 200 the number of the sites having in their inventory objects of *Spondylus*, from the early Neolithic – the cultures Starčevo and Vinča, until 4.300 BC (V. Dimitrijević, B. Tripković 2006). This form remains printed in the collective mentality, so that, maybe considering the difficulty of its acquisition, was copied in clay in Central Europe or in stone (the “big man” grave from Varna) (M. Sfériades 1996). Interesting is also the fact that, according to the map published by H. Todorova (2000), regarding the distribution of the discoveries of pieces of *Spondylus*, they group around the Black Sea area, the Carpathians basin until Central Europe (north Poland and east Germany) and not in the areas from the proximity of this specie’s habitat.

We can invoke a similar situation at the level of the raw materials represented by the valves of de *Glycymeris* and the scaphopoda *Dentalium* (A. Bălășescu, V. Radu 2004). These types of raw materials only confirm the existence of exchange networks between the community from Cernica and the Mediterranean space.

Obviously, the bones and teeth – having a local provenience, had another signification in the symbolic of the community from Cernica and maybe an inferior position to the valve of *Spondylus*, because these raw materials were used inclusively in order to imitate the last one. Still, we wish to insist on the case of the perforated canines of *Cervus elaphus* whose symbolic position seem to have been, at least in certain periods, similar to that of the bivalve *Spondylus* (imported or imitated from other raw materials). Thus, they are often searched by the first modern men in Europe, at the level of Aurignacian (Y. Taborin 2004). Despite their absence in certain areas, in the periods of maxim glacial, they are imported from other areas (M. Vanhaeren, F. D’Errico 2005). Moreover, while they are imitated from other raw materials, like in the case of those of stone and antler in the Swiss Neolithic (J. Schibler 1987) or of bones and antler, in the graves from Polgár-Csőszhalom-dűlő 6 (millennium V BC) (A.M. Choyke 2001). They come from a very ancient, Paleolithic tradition, which was abandoned at the level of the Eneolithic from south

Romania, if we consider the fact that, at least in the case of Gumelnița culture, these perforated teeth do not appear in settlements, nor in necropolis.

*Transformation schemes.* Being a necropolis in discussion, we disposed only of finished pieces, at which a part of the operative chain operations were removed by subsequent interventions. Still we tried to reconstruct the operational schemes which stood at the base of obtaining the adornments. The studied material reveals a great variety of the modalities of transforming the bivalve of *Spondylus*: from bracelets, which make recognizable both the valve's morphology and laterality, to tubular pearls, biconvex pearls, bilobed/trilobed pearls, fusiform pearls, perforated platelets, buttons, starting from which the identification of the anatomic morphology becomes impossible. A. Tsuneki (1989), who studied pearls during fabrication in the site from Dimini (Greece), considers that the pearls were made of the shells' right valve which, according to the same author, fit a lot better to cutting small objects.

The study of the multitude of adornments from *Spondylus* doesn't allow us to establish if, in order to obtain the pearls, was used a transformation scheme by extraction (sawing – for the direct extraction of the future preform) or a scheme which supposed the debitage by successive partition (percussion – in order to obtain splinters closer and closer to the desired morphometry). In the case of the bracelet, it was used a transformation scheme by segmentation, which allowed the conservation of the valve volume (small superposed splinters, covered by subsequent interventions), while the method of debitage by direct shaping appear only in the case of the piece considered a belt element. In the case of the procedures for surface modification, the polishing was the *quasi*-general used technique to produce fine and regulated surfaces. For the procedure of volumes modification, the main technique was perforation, which registers a single variable of execution, namely rotation. Despite the microscope study, the specific marks of a perforation by rotation are visible only in several cases. This is why the specialists assumed the utilization of a technique of *alésage*, destined to regularizing and enlarging the perforation which, finally, creates a perforation with straight walls and a strong smooth aspect (S. Bonnardin 2009). The used equipment was not until now identified. In the case of the bilobed/trilobed pearls, had intervened a second procedure of volume modification: sawing, in order to create the lobes morphology.

The processing of bone rings implied the utilization of a segmentation method of the bone and of obtaining several blanks from a block, by the sawing technique. The shaping stage combined the scraping (interior side) with polishing (exterior side). On the contrary, for the achievement of ringlike pieces, we identified a transformation scheme by longitudinal partition, obtaining a flat blank, in opposition with the blank in volume, specific to the rings of bone. At these pieces, the modification of the volume was made through a perforation by drilling, and of the surface by scraping and abrasion.

The needles made of bone benefited of complex transformation schemes, which supposed, in a first stage, a longitudinal debitage, for obtaining the flat blank. The procedures for the volume modification (the feminine figurine) combined sawing, scraping and grooving, subsequently also intervening a procedure of surface modification, by polishing. For two pieces intervened also the perforation by rotation, for the modification of the piece's volume.

The teeth transformed in pearls suffered the same technological scheme as the similar pearls of *Spondylus*. For the teeth simply transformed in pendants, only a procedure of volume modification intervened, under the form of perforations by rotation.

In the case of the shell of *Dentalium*, because of its natural shape and perforation, presents the advantage of offering predetermined blanks. This is why upon this specie was applied only a transversal debitage, by segmentation, the identified techniques being sawing and flexion.

The valve of *Glycymeris* was modified through a method of direct shaping, with the implication of abrasion as a unique technique for obtaining the blank. It also intervened a perforation procedure, executed by rotation.

The general picture shows us that the techniques and procedures are not too various, they are strongly standardized, inside the same typological groups, but are well adapted to the different types of raw materials, illustrating a good knowledge in their regard. The repetitive elements of the operative chain, present inside the assemblage, illustrate the transmission of knowledge from generation to generation, inside the community which generated them.

*Functional hypothesis.* The obvious morphological homogeneity, established on series, in the production of the different types of adornments from *Spondylus*, and the identification of several samples in an identic context, illustrate that these pieces were caught in composite ornaments, as we were able to identify also in other specialty studies (S. Bonnardin 2008, 2009; E. Lenneis 2007). The constant presence of a high number of rounded edges and with a small concavity, along a facet longitudinally flat and very smooth when touched, at most of the pearls from *Spondylus* or *Dentalium*, may result, probably from the prolonged friction between piece, the attaching thread and the cloth. In the case of the biforated elements (bilobed/trilobed pearls) or of buttons, where the usage is present exclusively between perforations which, moreover, are deformed, in some cases, until fracture, we may assume their sawing. Sawing or a clamping system is recognizable also in the case of the platelet of *Spondylus*, because the usage incision, marking the thread passage, only affect one side of the piece.

The fact that most of the pieces deriving from the necropolis Cernica present usage traces may signify that they were worn during the individuals' lifetime and, consequently, they do not constitute a funerary inventory *stricto-senso*. Moreover, the fact that they present different usage degrees, in the composite adornments, especially when imitations intervene, prove that the broken are irretrievable pieces, were replaced during the "lifetime" pearl. The usage state of the pieces deposited in Neolithic graves was observed also by other specialists (C. Beldiman *et alii* 2008; A. Polloni 2008; M. Sohn 2008; S. Bonnardin 2009).

It is not obligatory that the personal adornments existing in graves to have been worn by the ones with which they were buried. They may be offerings of the relatives, maybe in the context of death special circumstances etc. It is obvious that these adornments had a special signification in the context of the dead' treatment, but we fail to see the specific significations. The exogenous origins of some raw materials, underline their acquisition through a network of relations with the contemporary groups. The preservation of the social networks may be considered as essential for the long term survival of the Prehistoric groups (R. Whallon 2006). Moreover, they offer information regarding the exchange route map from that period, especially for the bivalves of *Spondylus*.

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No. grave	Sexual determination <sup>2</sup>	Raw material	Typology	Number	Disposition on skeleton	Wear traces
M4	F, 16-17 years	<i>Spondylus</i>	Bilobed pearl	1	-	+
			Tubular pearl	2	-	+
M9	F, 45-50 years	<i>Cervus elaphus</i> canine	Tooth	1	Inferior half	?
			Tooth	1	Neck	+
		<i>Spondylus</i>	Bilobed pearl	3	Neck	+
			Tubular pearl	2	Neck	+
M13	Child, 7-8 years	Bone	Needle	1	?	?
M16	M, 25-30 years	<i>Spondylus</i>	Fusiform pearl	1	?	?
M17	M, 40 years	Bone	Ring	1	One of the hands	?
M19	M, 60 years	Bone	Indeterminate	1	Next to the right forearm	?
M22	M, 25-30 years	<i>Spondylus</i>	Bilobed pearl	4	Head level	+
			Cylindrical pearl	1	Head level	+
			Fusiform pearl	1	Head level	+
		Bone	Ringlike element	1	Clavicle	+
			Ring	2	Right hand	+
M28	M, 40 years	Tooth	Perforated tooth	3	Head level	?
M29	M, 30-35 years	<i>Dentalium</i>	Tubular pearl	20	Head level	+
		<i>Spondylus</i>	Bilobed pearl	1	Head level	+
			Tubular pearl	2	Head level	+
M32	F, 40-45 years	Bone	Fusiform pearl	2	Head level	+
			Ring	1	Right hand	+
M34	M, 16-18 years	<i>Spondylus</i>	Fusiform pearl	1	Head level	+
			Biconvex pearl	1	Head level	+
			Bilobed pearl	9	Head level	+
M37	M, 20-25 years	Tooth	Bilobed pearl	1	Head level	+
			Ringlike element	1	Left clavicle	+
			Pearl (?)	1	Head level	?
M38	M, 25-30 years	Tooth	Bilobed pearl	3	Head level	+
			Fusiform pearl	4	Head level	+
			Tubular pearl	5	Head level	+
			Cylindrical pearl	1	Head level	+
			Bilobed pearl	11	Head level	+
		<i>Spondylus</i>	Trilobed pearl	1	Head level	+

<sup>2</sup> Excepting the person buried in M98, determined by A. Soficaru (Romanian Academy, Institute of Anthropology *Francisc J. Rainer*) (we give thanks in this way), the other determinations were taken from R. Kogălniceanu 2009 (F - female; M - male).

M43	?	<i>Spondylus</i>	Trilobed pearl	1	Head level	+
			Bilobed pearl	9	Head level	+
			Cylindrical pearl	4	Head level	+
			Fusiform pearl	12	Head level	+
			Belt element	1	Pubis	+
		Tooth	Perforated tooth	1	Head level	+
			Bilobed pearl	1	Head level	+
		<i>Glycymeris</i>	Bracelet	4	Hands	?
M47	F, 25-30 years	<i>Ostrea edulis</i> (?)	Belt element	1	Left shoulder	+
M48	F, 25-30 years	<i>Spondylus</i>	?	Bead	?	Right shoulder
			Bilobed pearl	2	Neck level	+
			Cylindrical pearl	1	Neck level	+
			Indeterminate pearl	1	Neck level	?
		Tooth	Trilobed pearl	1	Neck level	+
M54	M, 30-35 years	Bone	Ring	1	One of the hands	?
M68	M, 35-40 years	<i>Glycymeris</i>	Bracelet	1	Right hand	?
M70	Child, 8-9 ears	?	Bracelet	1	Right humerus	?
M75	Child, 7-8 years	<i>Spondylus</i>	Tubular pearl	1	Iliac bones	?
			Biconvex pearl	1	Iliac bones	?
			Bilobed pearl	14	Iliac bones	?
M77	F, 18-19 years	Bone	Ring	1	Left hand	+
M82	F, 30 years	<i>Spondylus</i>	Cylindrical pearl	1	Head level	?
		Bone	Ring	2	Hands level	?
			Ringlike element	1	Right clavicle	?
M83	Child, 5-6 years	<i>Spondylus</i>	Bracelet	1	Right hand	+
M87bis	F, 25-30 years	<i>Spondylus</i>	Bilobed pearl	3	Scapula level	+
		Bone	Ring	1	Right hand	?
M88	F	Bone	Ringlike element	1	Right humerus	+
M88bis	Child, 5-6 years	<i>Glycymeris</i>	Bracelet	3	Left humerus	?
		?	Fusiform pearl	1	?	?
		Shell (?)	Pearl (?)	1	?	?
		Bone	Ring	1	Hands level	?
M90	F, 25 years	Bone	Ring	1	Scapula	?
M95	M, 20-25 years	Shell (?)	Pearl	?	Head level	?
M98	M, 40-50 years	Tooth	Bilobed pearl	2	Clavicle and scapula	+
		<i>Spondylus</i>	Bilobed pearl	12	Clavicle and scapula	+

			Fusiform pearl	2	Clavicle and scapula	+
			Tubular pearl	1	Clavicle and scapula	+
M101	F, 25-30 years	Bone	Indeterminate (Needle?)	1	Next tot the right hand	+
		<i>Dentalium</i>	Tubular pearl	22	Neck level	+
		<i>Spondylus</i>	Cylindrical pearl	4	Neck level	+
M103	F, 45 years	<i>Dentalium</i>	Tubular pearl	1	Neck level	+
			Tubular pearl	2	Under mandible and head	?
		<i>Spondylus</i>	Cylindrical pearl	1	Under mandible and head	?
M111	?	<i>Spondylus</i>	Tubular pearl	3	Front level	+
			Fusiform pearl	9	Front level	+
			Cylindrical pearl	3	Front level	?
			Bilobed pearl	1	Front level	?
M112	M, 18 years	<i>Spondylus</i>	Fusiform pearl	1	Next to the skeleton	?
			Tubular pearl	2	Next tot the skeleton	?
M113	M, 35 years	Shell (?)	Biconvex pearl	1	Head level	?
M115B	?, 20-25 years	Shell (?)	Pearl (?)	2	Head level	?
M120	F, 40 years	<i>Spondylus</i>	Cylindrical pearl	3	On the head	?
M127	M, 45-50 years	Tooth	Pendant	1	Next tot the ulna	+
M141	M, 35 years	<i>Spondylus</i>	Bracelet	1	Right hand	+
M144	F, 17-19 years	Bone	Indeterminate	1	Left elbow and lumbar vertebrae	?
M154	?	Bone	Ring	1	In the pit	?
M166A	F, 15 years	<i>Spondylus</i>	Bilobed pearl	2	Head level	+
		<i>Glycymeris</i>	Bracelet	2	Right shoulder	+
M171	F	Tooth	Perforated tooth	9	Head level	?
M173	F, 20-25 years	Tooth	Perforated tooth	?	Neck level	?
M178	M	<i>Spondylus</i>	Bilobed pearl	2	Mandible	+
			Biconvex pearl	2	Mandible	+
		<i>Glycymeris</i>	Bracelet	1	Right humerus	?



New information from old collections. Reevaluation of personal adornments...

M182	F, 25-30 years	<i>Spondylus</i>	Button	1	Neck level	+
			Tubular pearl	3	Neck level	+
			Bilobed pearl	4	Neck level	+
			Fusiform pearl	1	Neck level	+
M186	M, 17-18 years	<i>Spondylus</i>	Tubular pearl	1	Left hand	+
M188	M, 35 years		Button	1	Iliac bone	+
		<i>Spondylus</i>	Bilobed pearl	2	Neck level	?
		<i>Glycymeris</i>	Bracelet	1	Right elbow	?
M191?	?	Bone	Decorated needle	1	?	+
M194	F, 25-30 years	<i>Spondylus</i>	Bilobed pearl	1	Neck level	?
			Pearl (?)	6	Neck level	?
M196	M, 45 years	<i>Dentalium</i>	Tubular pearl	1	Clavicle	+
		<i>Spondylus</i>	Trilobed pearl	2	Clavicle	+
			Bilobed pearl	2	Clavicle	+
			Fusiform pearl	3	Clavicle	+
			Tubular pearl	1	Clavicle	+
M225	M, 50 years	Tooth	Pendant	1	?	?
M236	?	Shell (?)	Pearl (?)	?	Right shoulder	?
M241A	F, 30 years	Shell (?)	Pearl (?)	1	Stern	?
M244C	?	Bone	Ring	1	Right hand	+
M251	F, 45-50 years	Bone	Needle?	1	Between left scapula and clavicle	?
		<i>Spondylus</i>	Ring	1	Right hand	?
			Button	1	Head level	+
			Bilobed pearl	7	Head level	+
			Trilobed pearl	4	Head level	+
		Shell (?)	Cylindrical pearl	?	Head level	?
			Fusiform pearl	?	Head level	?
M256	F, 40 years	<i>Spondylus</i>	Bilobed pearl	?	Neck level	?
			Cylindrical pearl	?	Neck level	?
		Tooth	Perforated tooth	4	Neck level	?
M266	F, 35 years	<i>Spondylus</i>	Belt element	1	?	?
M267	F, 35-40 years	<i>Glycymeris</i>	Bracelet	1	Left elbow	+
		<i>Spondylus</i>	Fusiform pearl	3	Neck level	+
			Biconvex pearl	4	Neck level	+
			Cylindrical pearl	1	Neck level	+
		<i>Dentalium</i>	Tubular pearl	1	Neck level	+
		Bone	Ring	2	Right hand	+
			Ring	1	Left hand	+

M284	?	Bone	Ringlike element	1	Right scapula	?
M292	F, 45 years	<i>Spondylus</i>	Trilobed element	5	Head level	?
			Bilobed pearl	2	Thorax level	?
M303	F, 25-30 years	<i>Spondylus</i>	Cylindrical pearl	1	Neck	+
			Tubular pearl	10	Neck	+
			Fusiform pearl	11	Neck	+
M314	M, 55 years	<i>Spondylus</i>	Belt element	2	Backbone level	?
M340	?	Shell (?)	Pearl (?)	?	Neck	?
M341	F, 55 years	<i>Dentalium</i>	Tubular pearl	1	Between right humerus and forearm	+
		<i>Spondylus</i>	Fusiform pearl	4	Between right humerus and forearm	+
M342	F, 14-18 years	Shell (?)	Pearl (?)	2	Head level	?
M354	M, 25-30 years	Shell (?)	Tubular pearl	?	On the scapula and neck	?
M355	F, 35-40 years	<i>Spondylus</i>	Fusiform pearl	3	Temporal bone	+

**Tab. 5.** Disposition of the personal adornments in the Cernica necropolis.  
Dispunerea podoabelor în necropola de la Cernica.

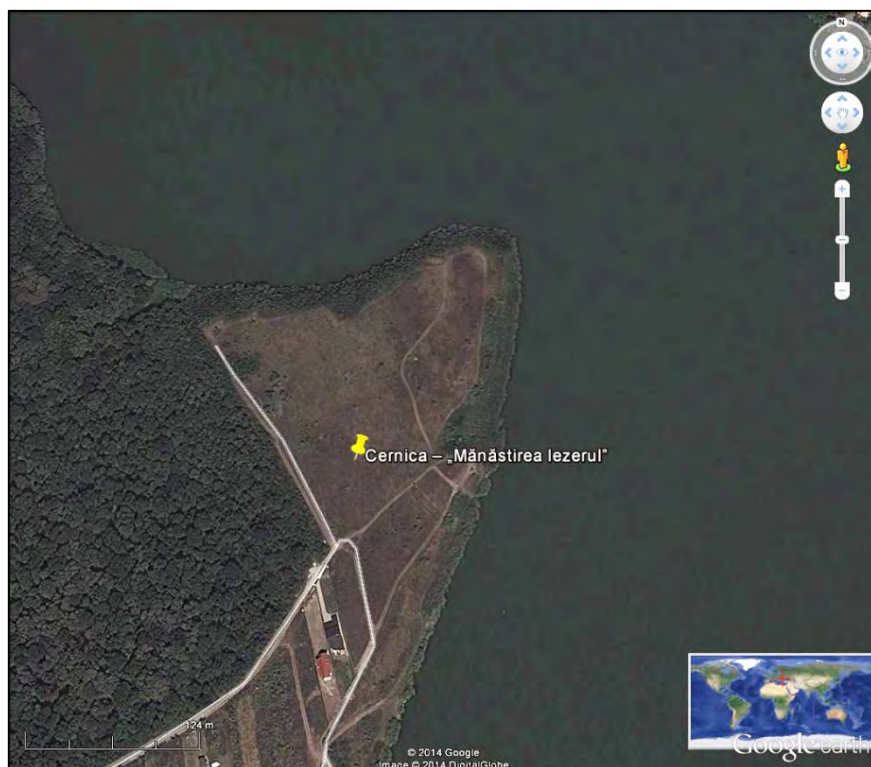
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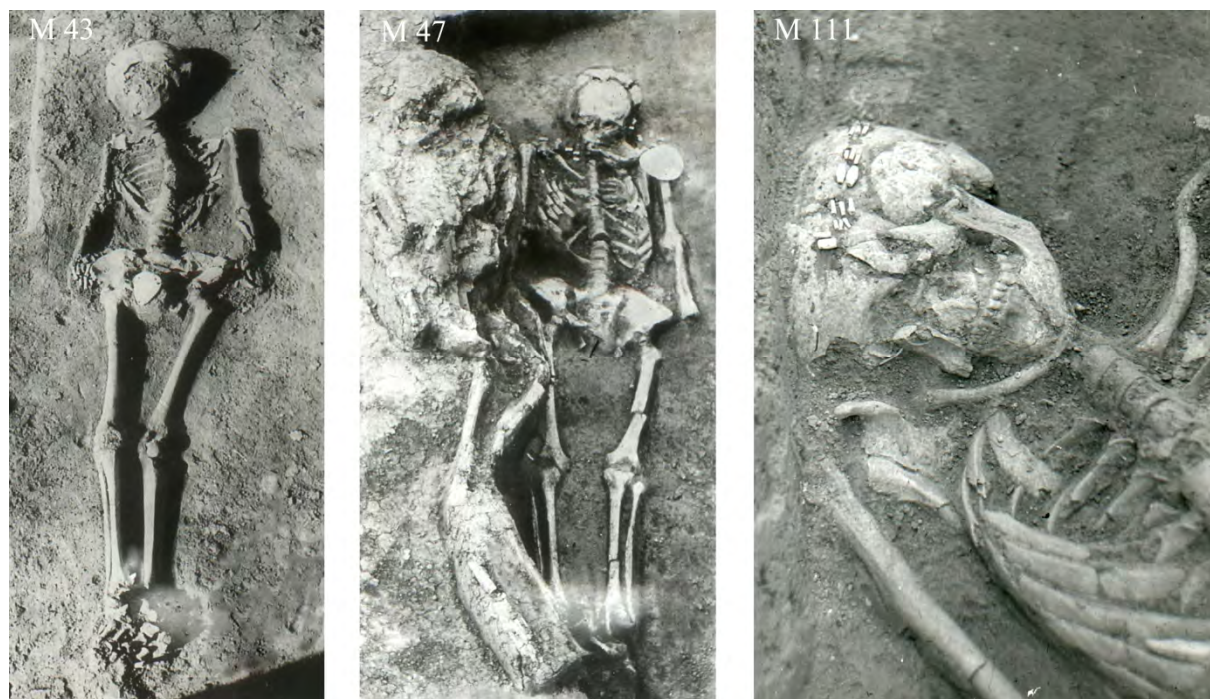
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**Fig. 1.** Location of the necropolis from Cernica.  
Amplasarea necropolei de la Cernica.



**Fig. 2.** Details of the graves discovered in the necropolis from Cernica (photo after diapositives from the Bucharest Municipal Museum).

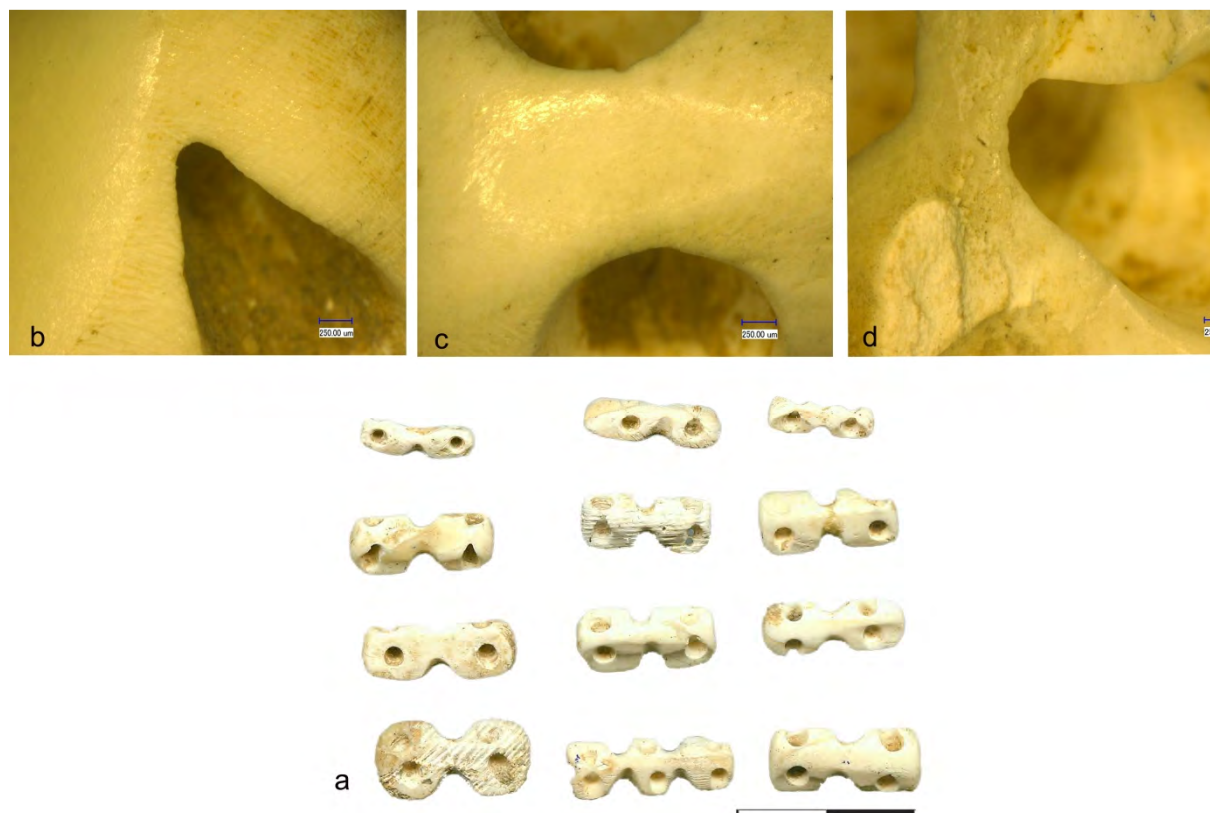
Detalii ale mormintelor descoperite în necropola de la Cernica (foto după diapozitive aflate în colecția Muzeului Municipiului București).





**Fig. 3.** Personal adornments made of *Spondylus*, deriving from M34: a. Bilobed, tubular and biconvex beads; b. Deformation manner of the perforation; c. Unfinished perforation; d. Broken perforation; e. Usage facet on a biconvex bead.

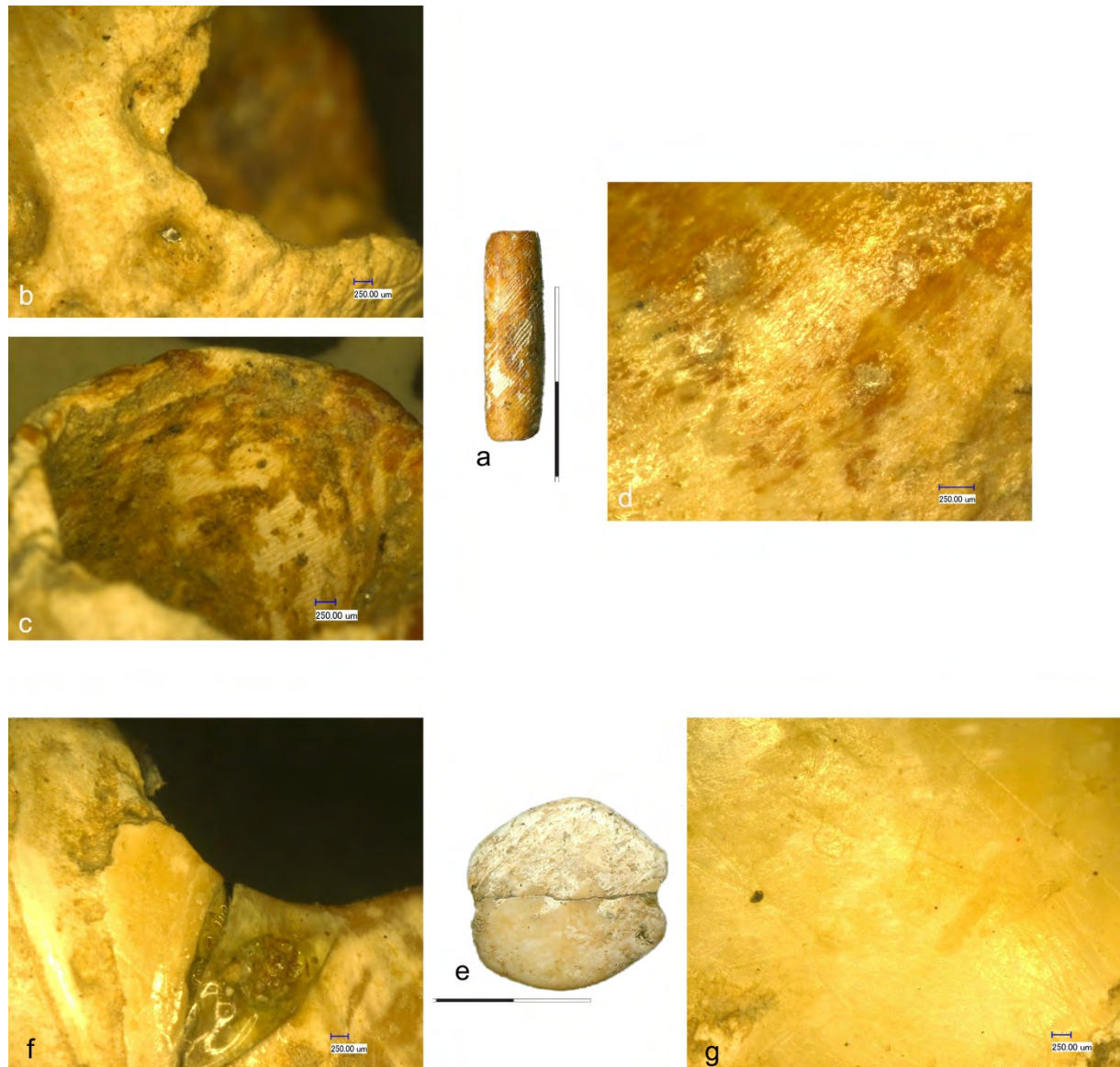
Podoabe confecționate din *Spondylus*, provenind din M34: a. Perle bilobate, tubulară și biconvexă; b. Maniera de deformare a perforației; c. Perforație nefinalizată; d. Perforație fracturată; e. Fațeta de uzură la o perlă biconvexă.



**Fig. 4.** Adornments made of *Spondylus*, deriving from M38: a. Bilobed and trilobed pearls; b, c, d. Deformation manner of the perforations.

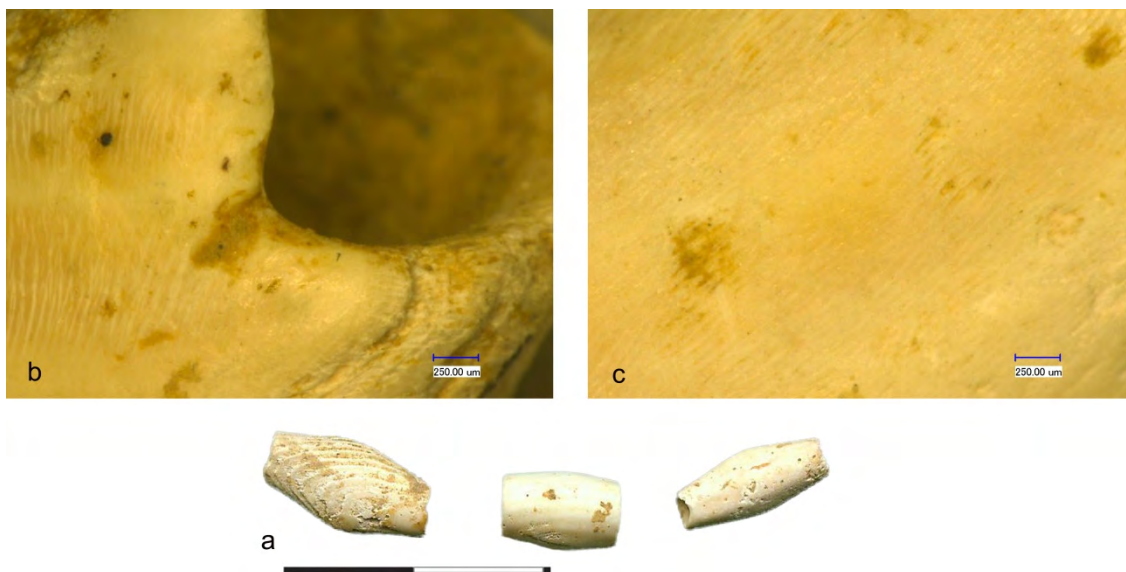
Podoabe confecționate din *Spondylus*, provenind din M38: a. Perle bilobate și trilobate; b, c, d. Maniera de deformare a perforațiilor.



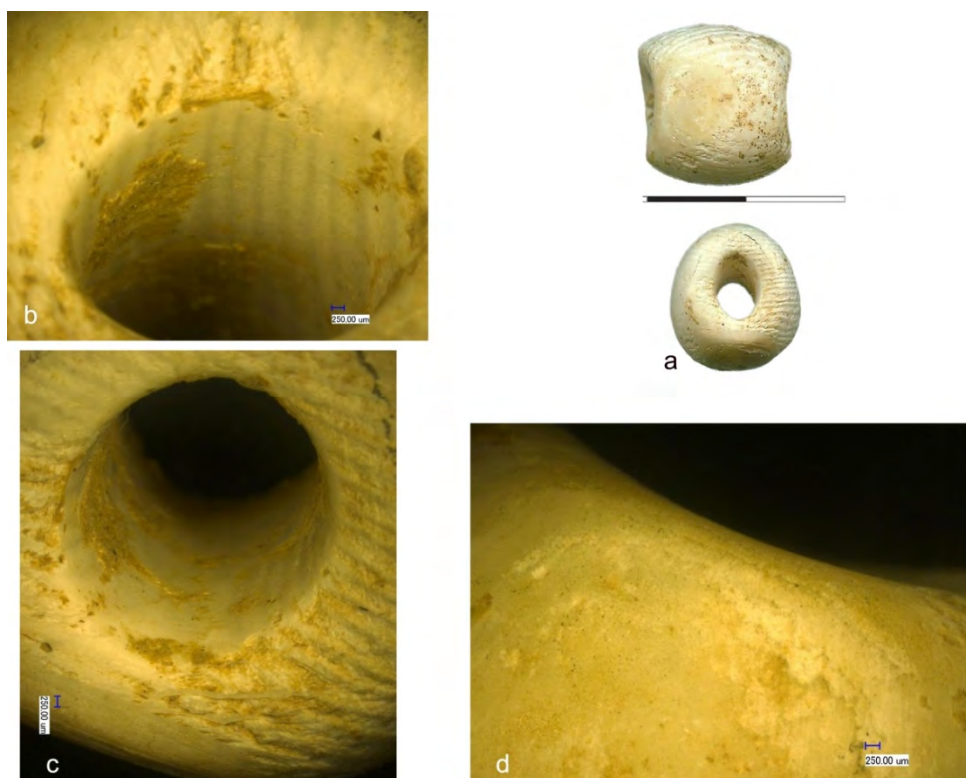


**Fig. 5.** Adornments made of *Spondylus*, deriving from M186: a. Tubular bead; b, f. Small concave facet; c. Detail of the perforation; d, g. Wear traces; e. Button.

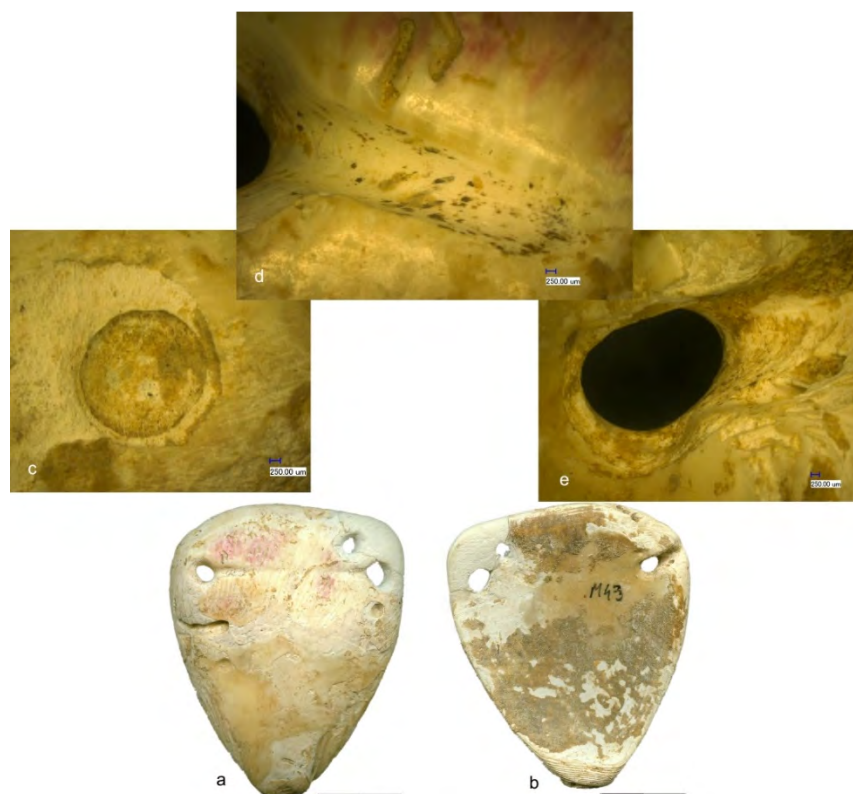
Podoabe confecționate din *Spondylus*, provenind din M186: a. Perlă tubulară; b, f. Fațetă concavă; c. Detaliul perforației; d, g. Stigmate de uzură; e. Nasture.



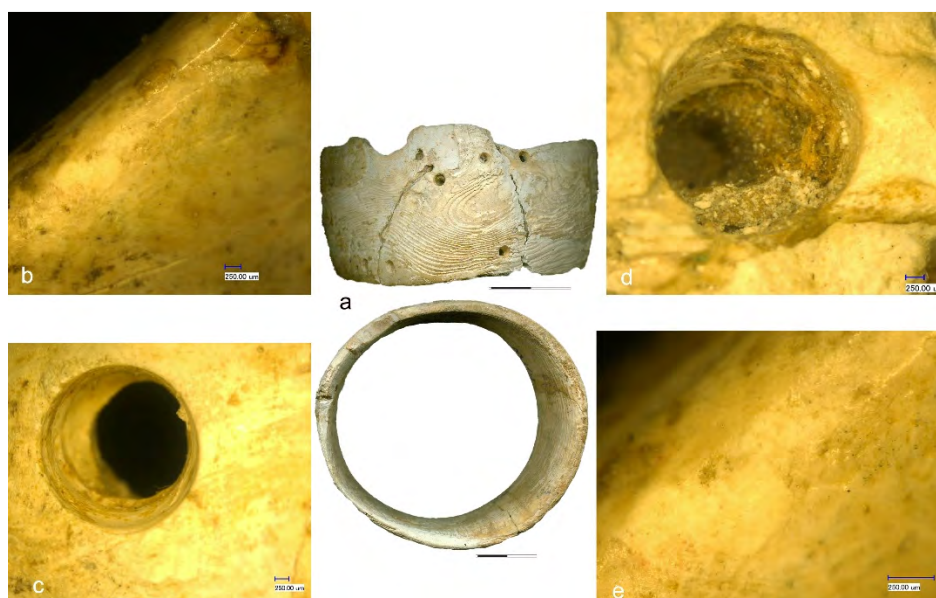
**Fig. 6.** Adornments made of *Spondylus*, deriving from M111: a. Fusiform and biconvex pearls; b. Concave facet; c. Wear traces in surface.  
 Podoabe confecționare din *Spondylus*, provenind din M111: a. Perle fusiforme și biconvexă; b. Fațetă concavă; c. Urme de uzură în suprafață.



**Fig. 7.** a. Button, made of *Spondylus*, deriving from M182; b. Detail of the perforation; c, d. Flat usage facet.  
 a. Nasture confecționat din *Spondylus*, provenind din M182; b. Detaliu al perforației; c, d. Fațeta de uzură.

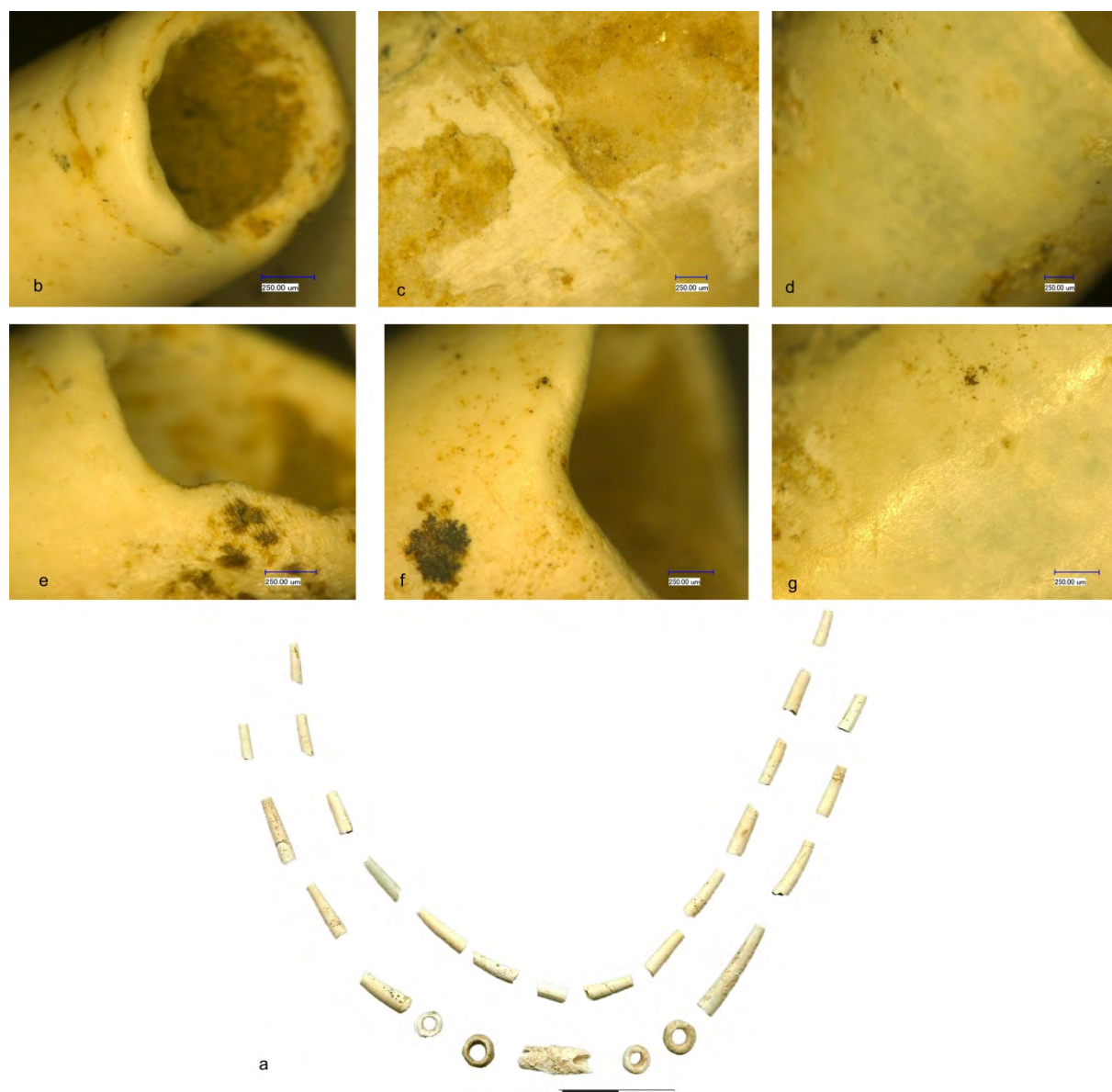


**Fig. 8.** a, b. Perforated platelet of *Spondylus*, deriving from M43; c. Unfinished perforation; d. Depression developed on the superior side; e. Deformation manner of the perforation.  
a, b. Plachetă din *Spondylus*, provenind din M43; c. Perforație nefinalizată; d. Depresiune dezvoltată pe fața superioară; e. Maniera de deformare a perforației.

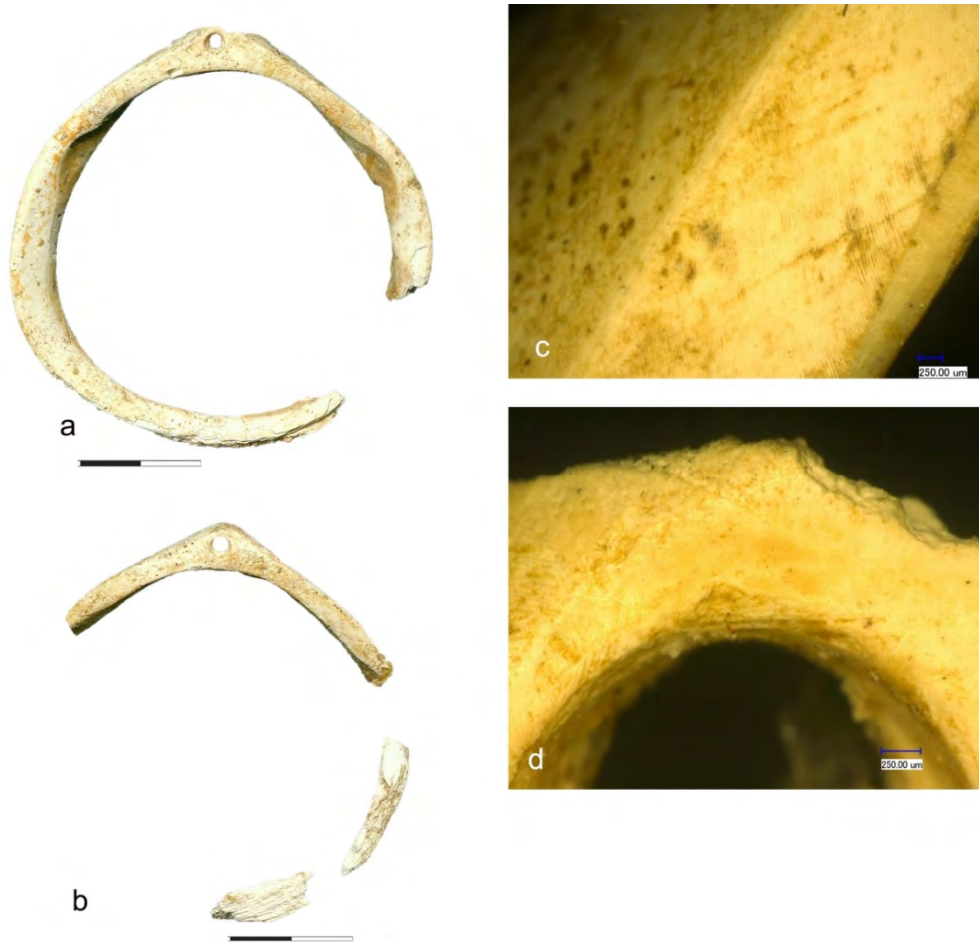


**Fig. 9.** a. Bracelet of *Spondylus* valve, deriving from M141; b. Edge of the piece; c, d. Detail of the perforations; e. Strong polish of the surface.  
a. Brățară din valvă de *Spondylus*, provenind din M141; b. Extremitatea piesei; c, d. Detaliu al perforațiilor; e. Lustru puternic al suprafeței.

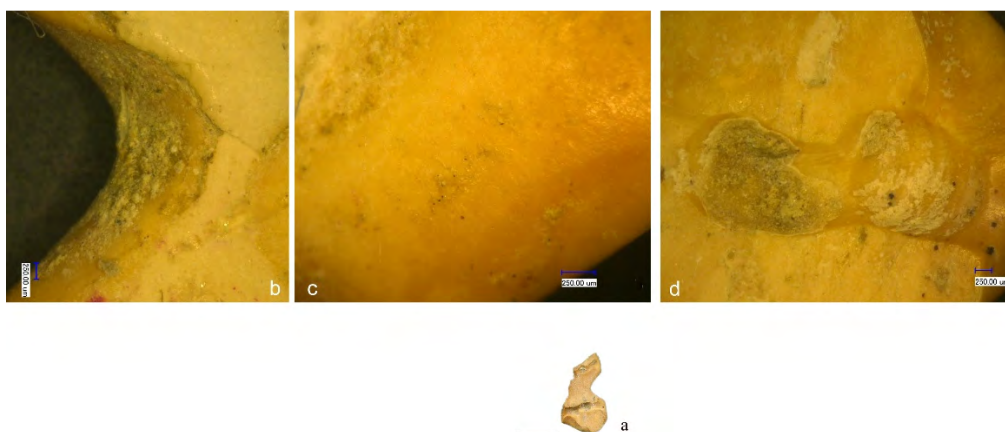




**Fig. 10.** a. Adornments of *Dentalium* and *Spondylus*, deriving from M101; b, c. Segmentation procedure; d. Shaped surface; e, f. Small concavities at the extremity level; g. Flat usage facet.  
a. Podoabe din *Dentalium* și *Spondylus*, provenind din M101; b, c. Procedeu de segmentare; d. Suprafață fasonată; e, f. Mici concavități la nivelul extremității; g. Fațeta de uzură.



**Fig. 11.** a, b. Bracelets of *Glycymeris*, deriving from M166A; c. Abrasion plan; d. Usage area.  
a, b. Brățări din *Glycymeris*, provenind din M166A; c. Plan de abraziune; d. Aria de uzură.



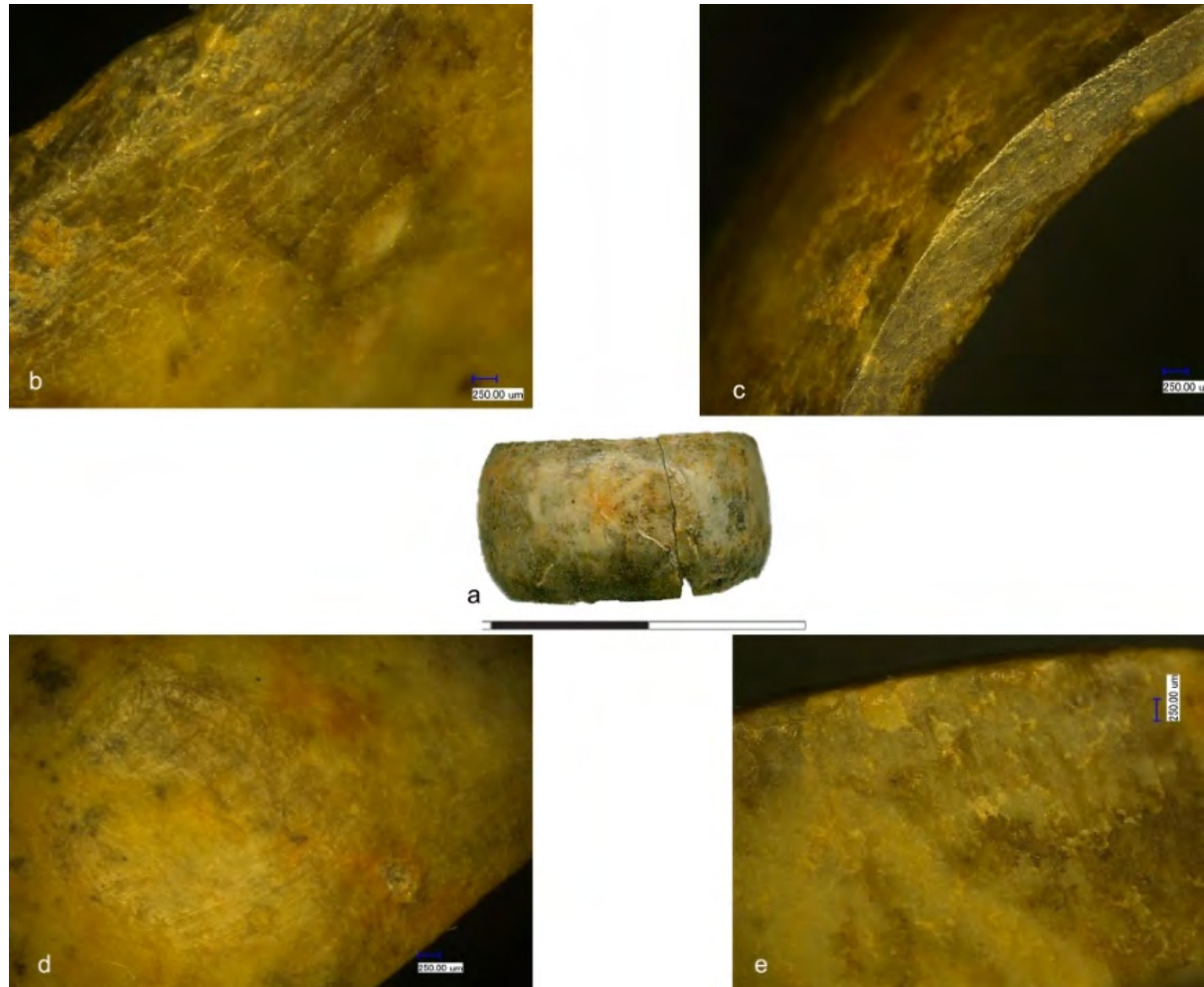
**Fig. 12.** a. Bilobed pearl of bone, deriving from M9; b. Cutting of the shape bead; c. Abrasion of the surface; d. Broken perforation.  
a. Perlă bilobată din os, provenind din M9; b. Tăierea formeii podoabei; c. Abraziunea suprafeței; d. Perforație fracturată.



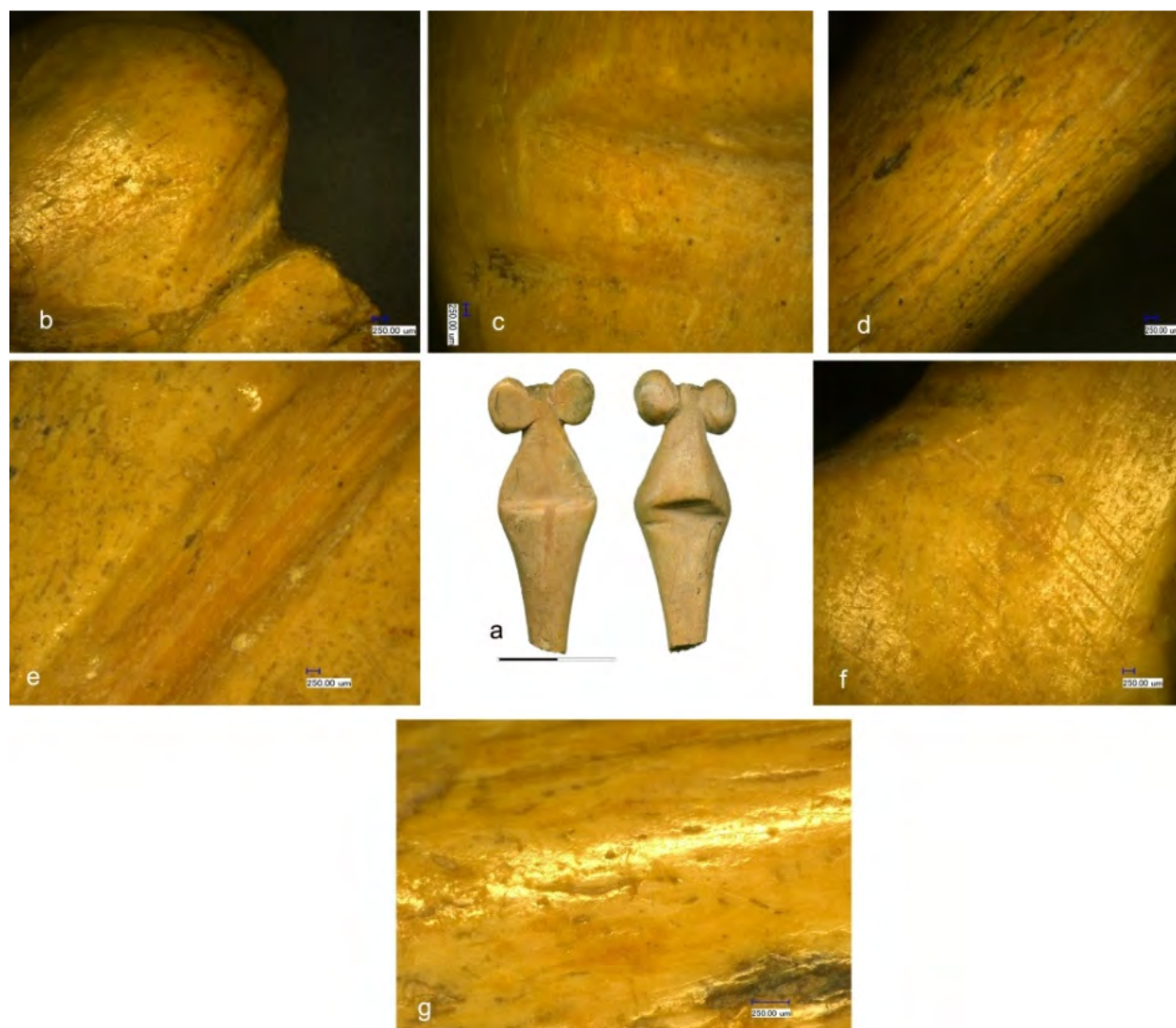
**Fig. 13.** a. Annular piece of bone, deriving from M37; b, c. Abrasion of the surface; d. Detail of the perforation; e. Polish of the surface.

a. Piesă inelară din os, provenind din M37; b, c. Abraziunea suprafeței; d. Detaliu perforație; e. Lustrul suprafeței.





**Fig. 14.** a. Ring of bone, deriving from M90; b. Procedure of segmentation; c, d. Shaping by abrasion; e. Detail inside the ring.  
a. Inel din os, provenind din M90; b. Procedeu de segmentare; c, d. Fasonaj prin abraziune; e. Detaliu din interiorul inelului.



**Fig. 15.** a. Feminine stylized figurine, made of bone, deriving from M101; b. Sawing Procedure; c. Delineating action; d. Longitudinal scraping; e. Grooving procedure; f. Polishing procedure; g. Surface with wear polish.

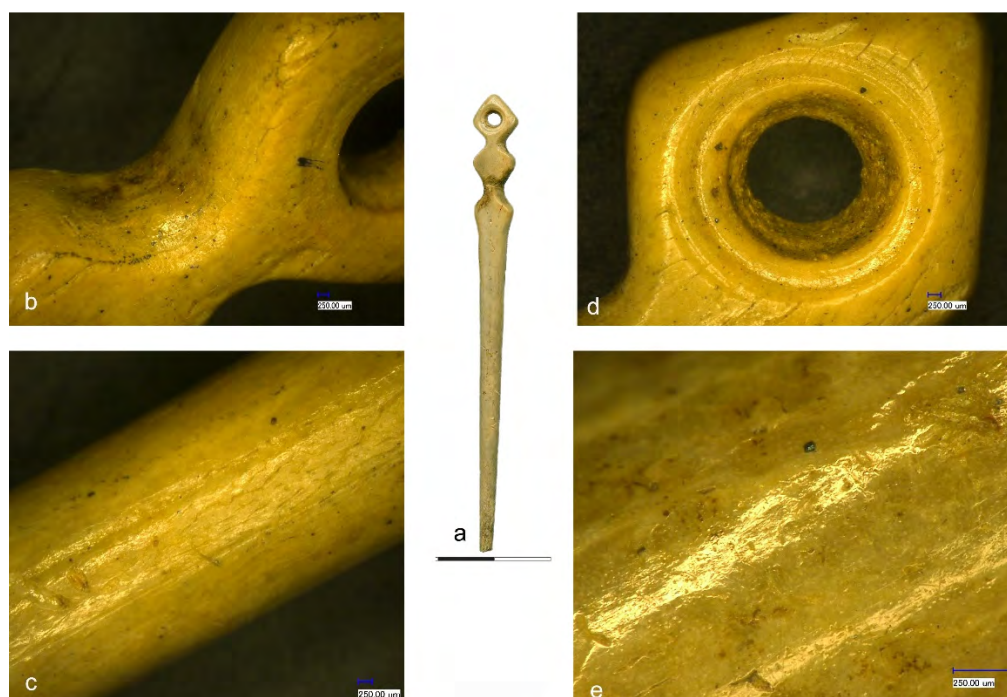
a. Figurină feminină stilizată, din os, provenind din M101; b. Procedeu de segmentare; c. Acțiune de demarcare; d. *Raclage* longitudinal; e. Procedeu de *rainurage*; f. Procedeu de fasonaj; g. Suprafață cu lustru de uzură.





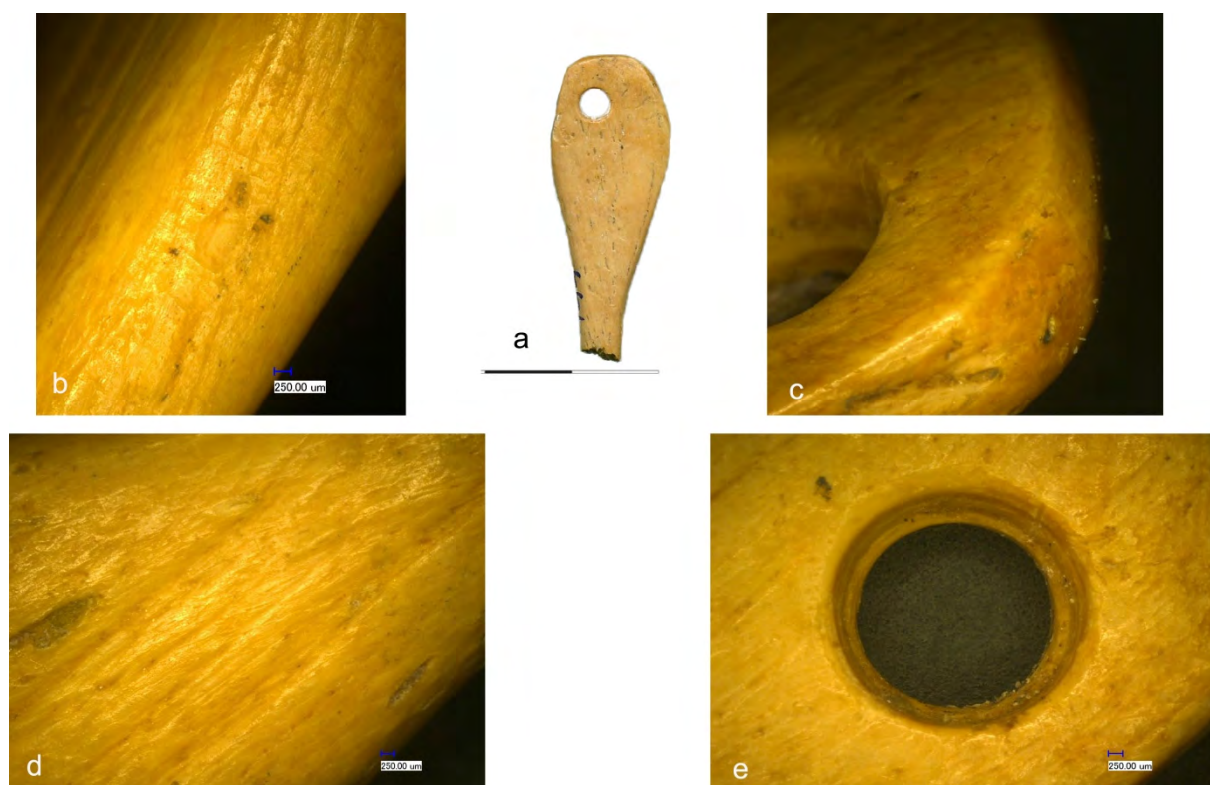
**Fig. 16.** a. Feminine stylized figurine, made of bone, deriving from M191; b. Shaping by scraping; c. Delineation action; d. Grooving procedure; e. Detail of the extremity.

a. Figurină feminină stilizată, din os, provenind din M191; b. Amenajare prin *raclage*; c. Acțiune de demarcație; c. Procedeu de *rainurage*; e. Detaliul extremității.



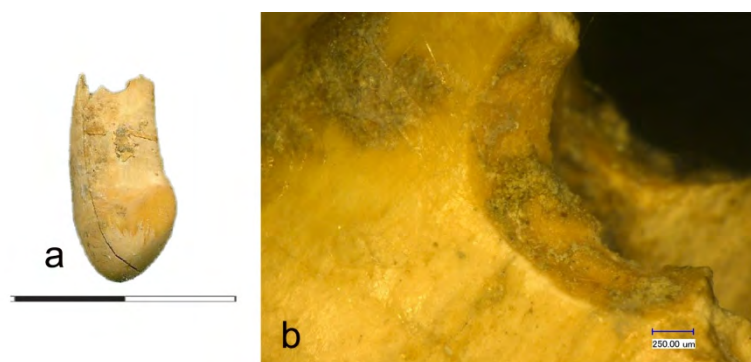
**Fig. 17.** a. Decorated needle of bone, deriving from M251. b. Sawing procedure; c. Longitudinal scraping; d. Detail of the perforation; e. Surface with strong polish.

a. Ac decorat din os, provenind din M251; b. Procedeu de *sciage*; c. *Raclage* longitudinal; d. Detaliu perforație; e. Suprafață cu lustru puternic.



**Fig. 18.** a. Fragmentary bone piece, deriving from M144; b. Scraping and abrasion procedures; c. Abrasion procedure; d. Scraping procedure; e. Detail of the perforation.

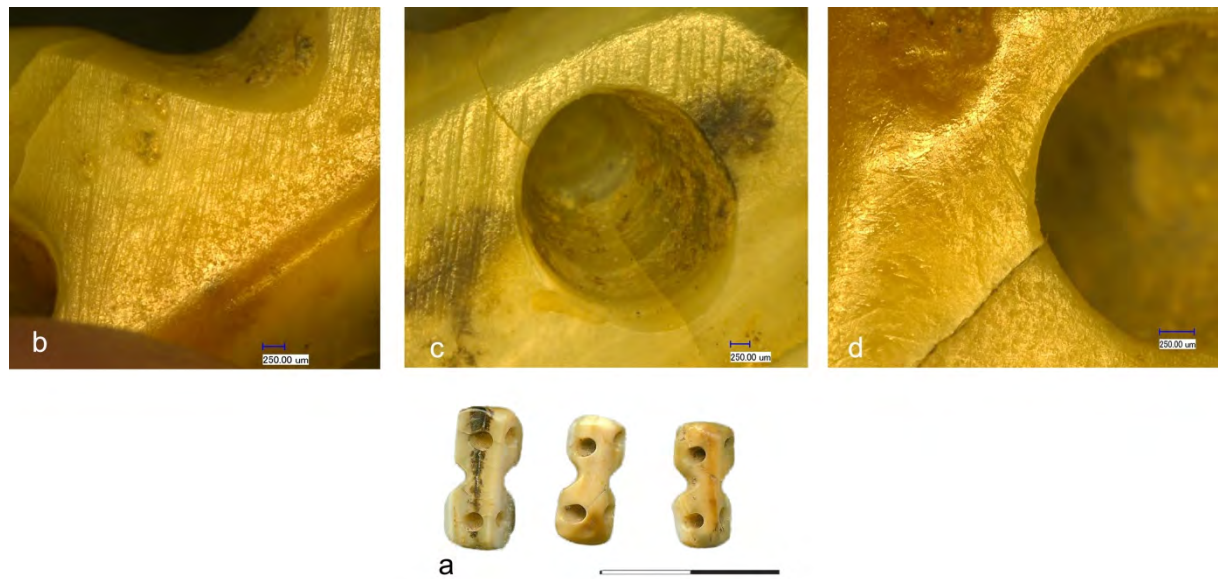
a. Piesă din os fragmentară, provenind din M144; b. Procedee de *raclage* și abraziune; c. Procedeu de abraziune; d. Procedeu de *raclage*; e. Detaliu perforație.



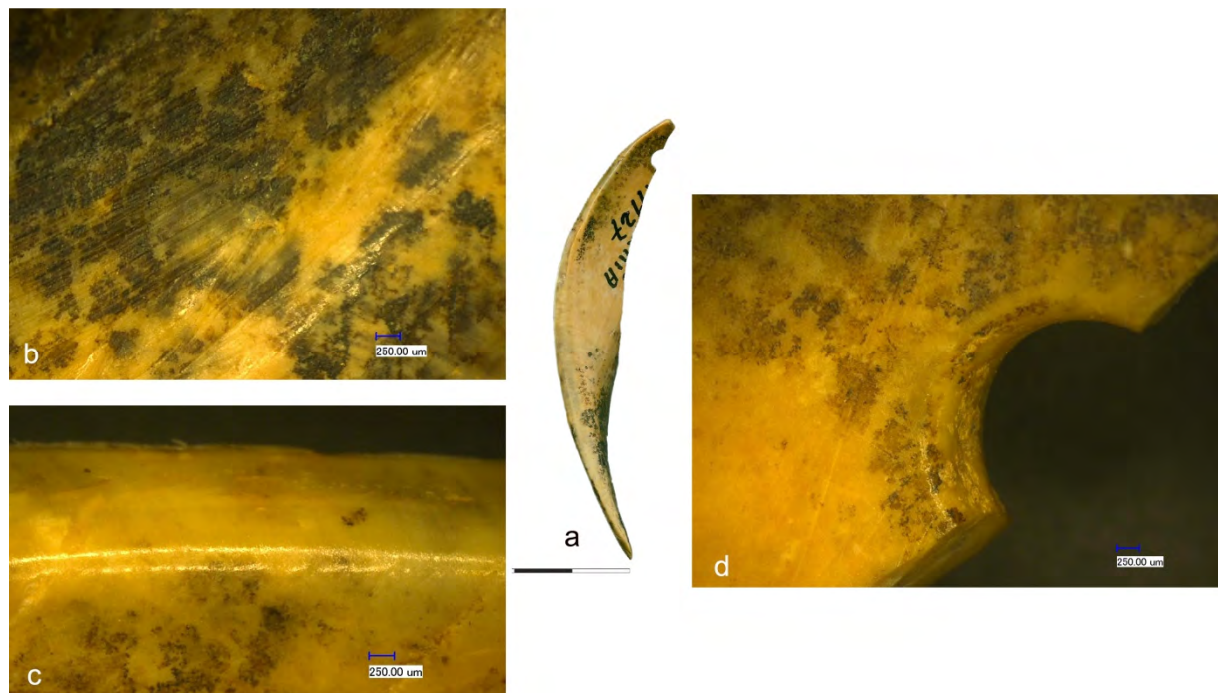
**Fig. 19.** a. Canine of perforated *Cervus elaphus*, deriving from M38; b. Detail of the perforation.

a. Canin de *Cervus elaphus* perforat, provenind din M38; b. Detaliu perforație.





**Fig. 20.** a. Bilobed pearls of tooth, deriving from M38; b, c. Abrasion procedure; d. Macroscopic polish area.  
a. Perle bilobate din dinte, provenind din M38; b, c. Procedeu de abraziune; d. Zona de lustru macroscopic.



**Fig. 21.** a. Pendant of *Sus* sp. canine, deriving from M127; b. Scraping procedure; c. Abrasion of the debitage edges; d. Detail of the perforation.  
a. Pandantiv din canin de *Sus* sp., provenind din M127; b. Procedeu de *raclage*; c. Abraziunea laturilor de debitaj; d. Detaliu perforație.