

Aeneolithic osseous materials artefacts discovered in Southern Moldova. The DanubiOs Project

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Abstract: Aeneolithic osseous materials artefacts discovered in Southern Moldova. The Danubios Project.

The Aeneolithic cultures attested in the region of South Moldova do not make an exception regarding the complex use of osseous materials resources that the natural or the man-made environment abundantly offered to the human communities. On this occasion, we present an assemblage of pieces stored in the collection of the History Museum of Galați, resulted from the systematic research carried out during the 5th and 8th decades of the past century by Professor Mircea Petrescu-Dîmbovița at the archaeological site of Stoicani-"Cetățuia" and by Ion T. Dragomir at Berești-"Dealul Bulgarului" and "Dealul Bâzanului" and Suceveni-"Stoborâni". Firstly, we are dealing with two sites dated from Stoicani-Aldeni cultural horizon (cca 3800-3600 BC) studied in detail by Ion T. Dragomir in his doctoral thesis. In this respect, he used the contributions brought by the two sites from Galați County (Stoicani-"Cetățuia" and especially, Suceveni-"Stoborâni"). The last one was almost entirely excavated, being the most important site dated from the above mentioned cultural horizon up to the present. Other two sites belong to the early phase of Cucuteni-Ariuşd culture (phase A3, cca 3500-3300 BC) – Berești-"Dealul Bulgarului" and "Dealul Bâzanului". These brought an important contribution to the clarification of some aspects regarding the genesis of Cucuteni-Ariuşd culture in the South of Moldova. We have to underline the fact that the study of osseous materials industry dated from Cucuteni-Ariuşd culture still is at its beginning and the one dated from the Stoicani-Aldeni cultural horizon has never been studied in detail until now, using the present methodology. In this way, the data that were made accessible by the project financed by the Administration of the National Cultural Fund, "Digitisation of the cultural portable heritage of History Museum of Galați. Collection of Aeneolithic osseous materials artefacts" ("DanubiOs") whose editorial product is the catalogue (Beldiman et alii 2012), brings notable contributions regarding the knowledge of these Aeneolithic manifestations of the communities that lived in the actual space of Romania and in the surrounding areas. The detailed study of the assemblage comprising osseous materials artefacts stored at the History Museum of Galați, coming from important Aeneolithic sites from the South of Moldova, a study that was realised for the first time during the above-mentioned project, brings new contributions to the knowledge of the technical manifestations characteristic for the Stoicani-Aldeni and Cucuteni-Ariuşd (phase A3) communities. It refers to the ways in which the natural resources were used and to the economical and spiritual activities in which this type of pieces can be used. The appliance of an unitary and standardised methodology that is at the same level with the international one, allows us to make some comparisons and to highlight the common elements and the differences between two cultures that are considered to have developed in a direct genetically connection. The digitisation orders and make accessible, in an optimal way, an important quantity of data both to specialists and to the public. The data allows the development of the repertory and of the various analytic approaches through the sets of information that are systematised and made available for the following research that will be done with an identical or at least compatible methodology (<http://www.migl.ro/DanubiOs/eneolithic/index.html>).

Keywords: Berești -"Dealul Bulgarului", Berești -"Dealul Bâzanului", Cucuteni-Ariuşd culture, Danubios, History Museum of Galați, Moldova, osseous materials artefacts, Stoicani-"Cetățuia", Suceveni-"Stoborâni", technology.

Introduction. The DanubiOs Project

The artefacts made from osseous materials (bone, deer antler, teeth, shells) represent an important component of the material and spiritual culture of various Prehistoric communities. The assemblage of these pieces, of a high diversity from all points of view, as well as the special elements considered unique, offer to each archaeological culture a certain specificity that illustrates the complex exploitation of animal resources, both the ones that are taken from the natural environment in various ways (hunting, fishing, gathering) and the ones that result from the continuous process of animal husbandry (cattle, sheep, goats, pigs, horses etc.).

The osseous materials industry has a high importance during the Neo-Aeneolithic because it attests in a suggestive and sometimes, in a unique way, the appliance of some solid technological knowledge, of a high diversity and ingenuity that imply special abilities, the know-how of all the aspects of the raw materials properties and the parameters of the finite product.

The artefacts from osseous materials are directly or indirectly implied in: almost all the subsistence activities; in processing the raw materials necessary in everyday life; in intra- and inter-communities exchanges (often at long distance ones) etc. In the same time, these objects are present in artistic, spiritual or religious activities (production and usage of symbolic elements like the adornments, the anthropomorphic and zoomorphic representations etc.) (C. Beldiman, 2007; C. Beldiman, 2012; C. Beldiman et al., 2012; D.-M. Sztancs, 2011).

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A first version of this article was published in 2012 as a chapter of the catalogue (C. Beldiman et al., 2012, p. 19-22).

We are going to present an assemblage of pieces stored in the collection of the History Museum of Galați, resulted from the systematic research carried out during the 5th and 8th decades of the past century by Professor Mircea Petrescu-Dîmbovița at the archaeological site of Stoicani-“Cetățuia” and by Ion T. Dragomir at Berești-“Dealul Bulgarului”, “Dealul Bâzanului” and Suceveni-“Stoborâni”.

Firstly, we are dealing with two sites dated from Stoicani-Aldeni cultural horizon (cca 3800-3600 BC) studied in detail by Ion T. Dragomir (1983) in his doctoral thesis. In this respect, he used the contributions brought by the two sites from Galați County (Stoicani-“Cetățuia” and especially, Suceveni-“Stoborâni”).

The last one was almost entirely excavated, being the most important site dated from the above mentioned cultural horizon up to the present. Other two sites belong to the early phase of Cucuteni-Ariuşd culture (phase A3, cca 3500-3300 BC) – Berești-“Dealul Bulgarului” and “Dealul Bâzanului”.

These brought an important contribution to the clarification of some aspects regarding the genesis of Cucuteni-Ariuşd culture in the South of Moldova (M. Petrescu-Dîmbovița 1940; 1953a; 1953b; I. T. Dragomir, 1996a-h).

We have to underline the fact that the study of osseous materials industry dated from Cucuteni-Ariuşd culture still is at its beginning and the one dated from the Stoicani-Aldeni cultural horizon has never been studied in detail until now, using the present methodology. In this way, the data that were made accessible by the project financed by the Administration of the National Cultural Fund, “Digitisation of the cultural portable heritage of History Museum of Galați. Collection of Aeneolithic osseous materials artefacts” (“DanubiOs”) whose editorial product is the catalogue (C. Beldiman et al., 2012), brings notable contributions regarding the knowledge of these Aeneolithic manifestations of the communities that lived in the actual space of Romania and in the surrounding areas (<http://www.migl.ro/DanubiOs/eneolithic/index.html>).

At the same time, we have also to underline the constant interest that the former director of the History Museum of Galați, PhD Ion T. Dragomir manifested for the Prehistoric archaeology, for the study of various aspects related to the economy of the Stoicani-Aldeni and Cucuteni-Ariuşd communities, as well as the interest manifested for the assemblages of bone and antler artefacts. These materialised in several articles and studies regarding farming tools (ploughs) and the occupations in which osseous materials pieces were mostly used (I. T. Dragomir, 1996d-g).

The interest for the same pieces now manifests itself at a different level of analysis and

we have been using the necessary technique in order to get new information regarding the complex aspects of the human life in the Aeneolithic.

Repertory. Methodology

The studied assemblage comprises 240 pieces. From these, a number of 187 were selected in order to be included in the catalogue (C. Beldiman et al., 2012). 53 of them were excluded – temporary (from Suceveni-“Stoborăni” assemblage). Those illustrated some identical types of pieces. This solution was imposed by the print characteristic of the catalogue that limited the pages at 230 (with about 130 pages text and 100 plates colour illustrated). The pieces that were not included will be inserted with all their data in the repertory of other scientific papers that will be elaborated in the future.

All the essential, quantifiable data are presented in the tables designed for pieces from every site (tables no. 1-5; chart 1). There is no doubt that the extracted conclusions are limited by the quantitative characteristics of these assemblages. They can only be provisory and they can be subject to review according to new study approaches.

The methodology of study takes into account a detailed analysis and a standard mention of data regarding: raw materials, typology, manufacture techniques (during the stages of debitage, shaping, perforation, shafting, using wires in order to suspend or to sew adornments etc.), use-wear traces, and presumed functionality.

The traceological analysis is constantly used, the macroscopic and microscopic traces of manufacture and use (*tracéologie, use-wear analysis*) are analysed using the modern technique of optical examination (classic microscope - binocular magnifier (zoom x4 – x40) and digital (zoom x10 – x200) – see figs. 47-70).

The data is mentioned in standardised records that also include data of identification of each piece: indicative, type, inventory number and the collection in which the piece is stored, the context of discovery and the culture to which it belongs (C. Beldiman, 2007; C. Beldiman, 2012; D.-M. Sztancs, 2011).

A very important aspect is related to the images, digital photos taken at various scales (general views, details, macro- and micro-

photographs) that illustrate each aspect revealed during the analysis (figs. 1-46). As an important marker of the digitisation, the photographs are included in image banks that allow the examination and the contact with all the aspects of the issues related to the study and to the complex valorisation of the assemblage that was analysed. With the help of these series of images included in general or thematic galleries can be created series of illustrations for various publications and exhibitions (including virtual ones). The Aeneolithic osseous materials artefacts studied in the collection of History Museum of Galați offered the opportunity to create an image bank that comprises more than 5000 various digital images.

The structure of the assemblages is the following: Berești-“Dealul Bulgarului”, N = 79; Berești-“Dealul Bâzanului”, N = 24; Stoicani-“Cetățuia”, N = 16; Suceveni-“Stoborăni”, N = 68 (chart no. 1).

Pieces were recovered both from complexes (pit-houses, huts, pits) as well as from the archaeological layer. The associations of various artefacts in complexes, especially in structures related to habitation, are very important because they illustrates occupations related to the specific processing of the osseous materials in the domestic environment. In this case, we can quote the hut no. 1 from Berești-“Dealul Bulgarului”, a structure that can be considered a closed complex, with a rich inventory that has been entirely recovered by the archaeologists.

Raw materials. Typology

The categories of raw materials that were included in the analysed assemblage refer both to domestic species (cattle, sheep, goat, pig) as well as to wild species (red deer, roe deer, wild boar, hare, fish, and freshwater shells) that were procured by hunting, fishing or gathering from the wild. Among the raw materials that are dominant in the assemblage, we have to mention the long bones of large or small-sized domestic herbivore (cattle, sheep, goat) and red deer antlers. Also, some rare pieces, imported in the settlement were identified. These attest the existence of the exchanges. In this case, we have to mention a Fig. made from a Mediterranean shell (*Glycymeris* sp.?) recovered from the site of Suceveni-“Stoborăni”.

The typological categories (defined according

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No.	Site	Assemblage	Typological Category	Types	Species	Raw materials				Complexes
						Bone	Antler	Teeth	Shells	
1	BRG	79	3	17	6	19	55	5	-	4
2	BRZ	24	2	8	4	8	16	-	-	1
3	STC	16	2	9	5	16	-	-	-	3?
4	SCS	68	5	30	9	59	5	2	2	4
5	Total	187	12	56	24	102	76	7	6	12

Tab. 1- Aeneolithic osseous materials industry from the South of Moldova: general overview.

No.	Site	Complex									Assemblage
		B I	B II	B III	L I	L 1	L 2	L 3	L 4	K Pit	
1	BRG	5	3	2	52	-	-	-	-	-	62
2	BRZ	-	-	-	-	-	-	-	-	24	24
3	STC	-	-	-	-	-	-	-	-	-	-
4	SCS	-	-	-	-	2	1	3	13	-	19

Tab. 2- Aeneolithic osseous materials industry from the South of Moldova: complexes.

No.	Site	Species										Assemblage
		B	OC	S	Crb	Cpr	Ps	P	E	L	Lm	
1	BRG	14	4	4	52	3	-	-	2	-	-	79
2	BRZ	7	-	1	15	1	-	-	-	-	-	24
3	STC	-	7	3	-	-	-	1	4	1	-	16
4	SCS	8	12	16	18	-	5	1	5	2	2	68
Total	4	29	23	24	85	4	5	2	11	3	2	187

Tab. 3- Aeneolithic osseous materials industry from the South of Moldova: species.

Raw material/ Site	BRG	Total	BRZ	Total	STC	Total	SCS	Total
Bone	1-6, 36-40, 66-73	19	17-24	8	1-16	16	14-40, 42-58, 65-67	59
Antler	7-31, 33-35, 41-65, 74	55	1-16	9	-	-	13, 41, 59-61	5
Teeth	32, 76-79	5	-	-	-	-	62-63	2
Shells	-	-	-	-	-	-	64, 68	2
Total	79	79	24	24	16	16	68	68

Tab. 4- Aeneolithic osseous materials industry from the South of Moldova: skeletal elements.

Type/Site	BRG	BRZ	STC	SCS	Total
I A	-	-	-	6	6
I A1	4	-	1	3	8
I A3	-	-	-	1	1
I A6	-	-	1	1	2
I A7	-	-	2	-	2
I A9	-	-	2	-	2
I A10	3	-	10	-	13
I A11	-	-	-	1	1
I A15	-	-	-	1	1
I A16	-	2	-	-	2
I A17	-	-	-	1	1
I A18	-	-	-	1	1
I A19	1	-	-	-	1
I A21	-	-	1	-	1
I A23	-	-	4	1	5
I A25	1	1	-	-	2
I A27	-	-	-	1	1
I A28	-	2	3	2	7
I A32	-	-	-	1	1
I B1	3	1	-	-	4
I B3	-	-	-	1	1
I B4	-	-	-	1	1
I B17	2	-	-	19	21
I B18	1	-	-	-	1
I B19	-	-	-	2	2
I B20	1	-	-	1	2
I F	1	-	-	-	1
I G1	16	1	-	6	23
I G2	8	-	-	3	11
I G8	2	-	-	-	2
II E2	-	-	-	3	3
III A2 c	1	-	-	-	1
III B3	1	-	-	1	1
III B5	-	-	-	1	1
III D1	-	-	-	1	1
III D3	-	-	-	2	2
III J1	-	-	-	1	1
III J2	-	-	-	1	1
IV C2	-	-	-	1	1
V A	16	-	-	-	16
V A1	-	2	-	1	3
V A2	15	13	1	1	27
V A3	13	2	-	2	17

Tab. 5- Aeneolithic osseous materials industry from the South of Moldova: types.

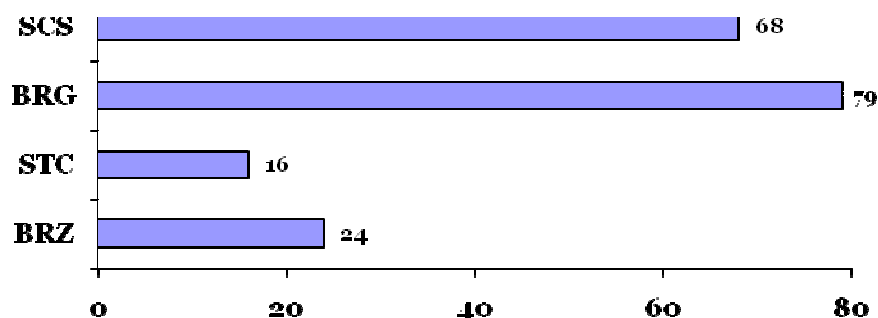


Chart 1- Aeneolithic osseous materials industry from the South of Moldova: sites.

to Beldiman 2007 Typological List) specific for the studied assemblage are: I Tools, II Weapons, III Adornments, IV Hafts; Recipients, V Varia – technical pieces: blanks, raw materials, wastes. The most numerous are tools such as bone awls, scrapers made from caprine and pig ulnas, mattocks perforated or without perforation made from red deer antler. In the specialised Romanian literature, the last mentioned tools are traditionally considered farming tools used by Aeneolithic communities (digging sticks) (figs. 1-46).

The problem of the functionality of massive perforated pieces made of red deer antler (such as I G2) discovered in Aeneolithic sites from Romania still remains un-approached by detailed studies that should take into account large series of artefacts (especially from the same site), with systematic macroscopic and microscopic examination and with well-defined experimental studies. Without a definitive exclusion of their functionality as farming tools, we have to highlight that our observations made in what concerns the pieces included in the assemblage from the History Museum of Galați do not preserve clear traces of use that could be considered as use-wear traces of farming tools (ploughs); they suggest that the active part was used for wood-working (peeling, splitting).

As rare or unique (until now) types, we have to mention the presence in the studied assemblage of awls made from long bones of birds; an awl made of a fish skull bone; scrapers made from pig ulna whose frequency is remarkable in two sites (Berești-“Dealul Bulgarului” and Suceveni-“Stoborâni”); harpoons made of red deer antler that attest a possible manifestation of the Boian culture as a background for the Stoicani-Aldeni cultural horizon; the unfinished pot (small recipient) of

red deer antler; the unique pendant made from a fragment of shell that imitates a red deer residual canine; bone beads that imitates the ones of *Spondylus* and the red deer antler sleeve.

On this occasion, the Typological List Beldiman 2007 was enriched with several new types that were attested for the first time: I A32 (awl made from a scapula fragment); I B17 (scraper made from ulna); I B18 (scraper made from a segment of metapodium); I B19 (scraper made from a segment of radius), I B20 (scraper made from a segment of femur); awls made from long bones of birds; awl made from a skull bone of fish (without a typological code).

Technology of manufacture. Aspects and hypotheses related to utilization of artefacts

The manufacture of the artefacts was done by applying some simple technical procedures that were applied in combination (two or four techniques in a stage of manufacture) and that were adapted to the raw materials properties (dimensions, hardness) and to the morpho-dimensional parameters that were taken into account.

The debitage consisted in direct percussion/chopping, fracture and splitting. Quite frequently, the axial grooving was applied. On the other hand, the transversal cutting was pretty rarely used.

The shaping stage consists in procedures such as: axial scrapping, abrasion, drilling, or in the case of massive objects made of red deer antler, by applying a micro-chain of manufacture that contains: chopping, carving the spongy tissue, rotation with a lithic awl, finishing of the piece using the same lithic tool. The succession of procedures that include the oblique cutting and notching are rare. These are present on objects like red deer antler harpoons.

The use-wear traces (fractures, bluntness, polish, striations etc.) preserved on the surfaces of the studied artefacts suggest their use in activities such as: hide-working (skinning, cleaning, perforating, sewing – awls, scrapers); clay working (polishing tools); lithic materials manufacture (*chasse-lame*); manufacture of vegetal and animal fibres (weaving, knitting); wood-working (peeling, splinting – mattocks of red deer antler); cultivating/harvesting plants (digging sticks, some red deer antler oblique points); hunting/fishing (harpoons); symbolic manifestations (adornments); intra- and inter-communities exchanges (some adornments made from “exotic” raw materials).

The production of osseous materials artefacts has predominantly a household characteristic; it does not sustain the idea of craftsmanship. This fact is proved by the un-standardised parameters of the artefacts and by the inventory of some complexes such as the huts and the pits in which raw materials, debris, blanks and wastes can be found.

Conclusion

The detailed study of the assemblage comprising osseous materials artefacts stored at the History Museum of Galați, coming from important Aeneolithic sites from the South of Moldova, a study that was realised for the first time during the above-mentioned project, brings new contributions to the knowledge of the technical manifestations characteristic for the Stoicani-Aldeni and Cucuteni-Ariușd (phase A3) communities. It refers to the ways in which the natural resources were used and to the economical and spiritual activities in which this type of pieces can be used.

The appliance of an unitary and standardised methodology that is at the same level with the international one, allows us to make some comparisons and to highlight the common elements and the differences between two cultures that are considered to have developed in a direct genetically connection.

The digitisation orders and make accessible, in an optimal way, an important quantity of data both to specialists and to the public. The data allows the development of the repertory and of the various analytic approaches through the sets of information that are systematised and made available for the following research that will be

done with an identical or at least compatible methodology (<http://www.migl.ro/Danubios/eneolithic/index.html>).

Abbreviations

- B – Cattle; Habitation complex (hut) (see the context)
- BRG – Berești-“Dealul Bulgarului”
- BRZ – Berești-“Dealul Bâzanului”
- CIMEC – Institutul de Memorie Culturală, Institutul Național al Patrimoniului, Ministerul Culturii și Patrimoniului Național, București
- Crb – Red deer
- Cpr – Roe deer
- Danubius – Danubius. Anuarul Muzeului de Istorie Galați
- E – Herbivore (indetermined)
- L – Hare
- Lm – Shell
- OC – Sheep/goat
- P – Fish
- Ps – Birds
- S – Pig
- SCS – Suceveni-“Stoborâni”
- STC – Stoicani-“Cetățuia”

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Fig. 1 - BRG 1. Awl.

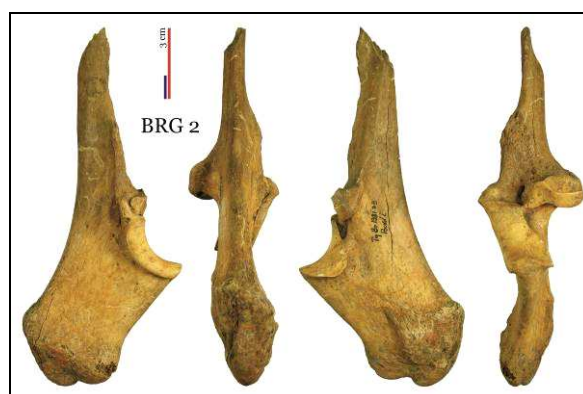


Fig. 2 - BRG 2. Awl made of ulna.



Fig. 3- BRG 9. Antler mattock/axe.



Fig. 4- BRG 10. Antler mattock/axe.



Fig. 5- BRG 15. Antler handle.



Fig. 6 - BRG 16. Antler handle.



Fig. 7 - BRG 27. Antler mattock/axe.



Fig. 8 - BRG 28. Antler.



Fig. 9 - BRG 68. Awl.

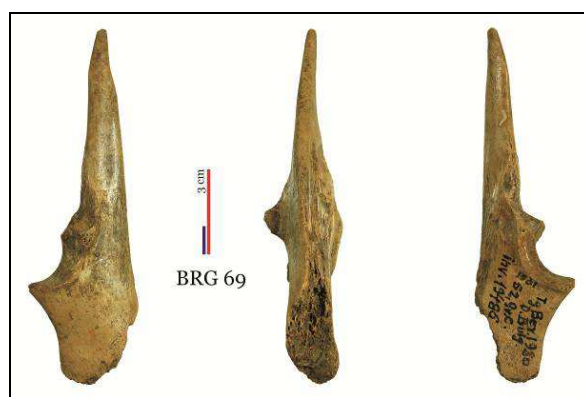


Fig. 10 - BRG 69. Awl made of ulna.



Fig. 11 - BRG 78. Pendant made of wild boar tusk.

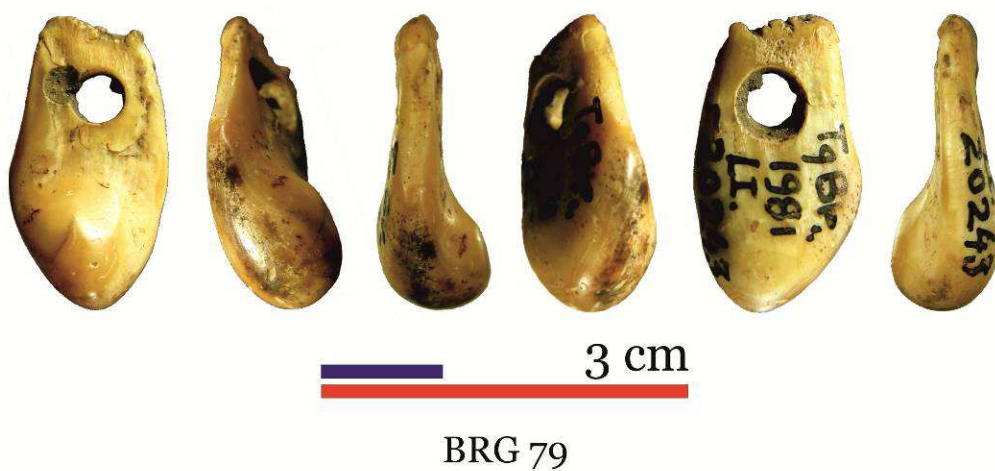


Fig. 12 - BRG 79. Pendant made of red deer residual canine.

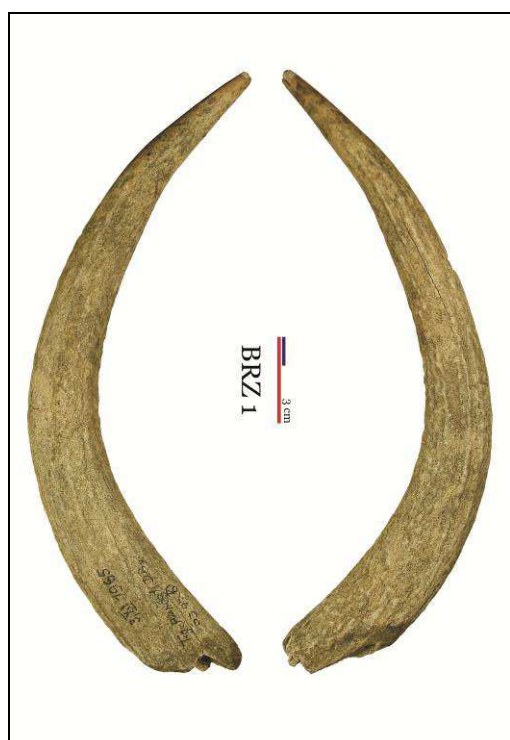


Fig. 13 - BRZ 1. Antler / Digging stick.



Fig. 14 - BRZ 2. Antler / Digging stick.



Fig. 15 - BRZ 15. Antler.



Fig. 16 - BRZ 16. Antler recipient.



Fig. 17 - BRZ 16. Antler recipient.



Fig. 18 - BRZ 17. Awl.



Fig. 19 - STC 7. Awl.



Fig. 20 - STC 8. Awl.

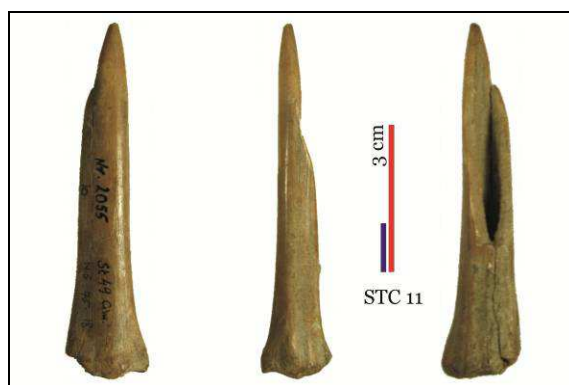


Fig. 21 - STC 11. Awl.



Fig. 22 - STC 12. Awl.



Fig. 23 - STC 14. Awl.



Fig. 24- STC 16. Awl.



Fig. 25- SCS 4. Antler mattock/axe.

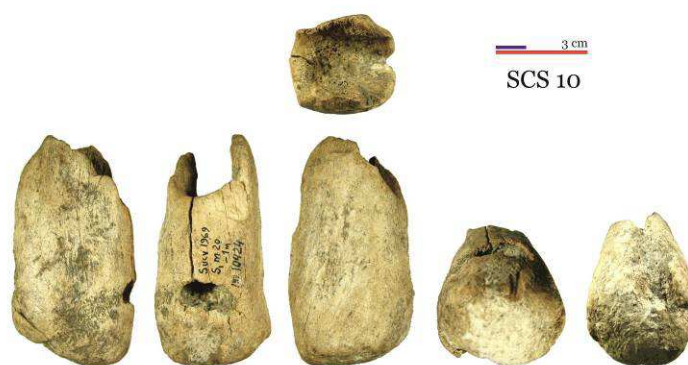


Fig. 26 - SCS 10. Antler mattock /axe.

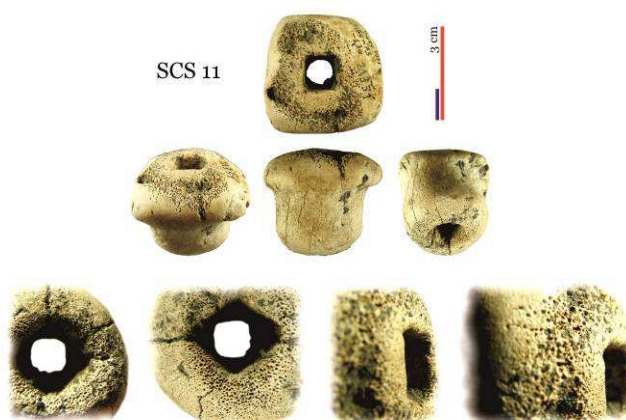


Fig. 27 - SCS 11. Antler sleeve.



Fig. 28 - SCS 12. Antler mattock/axe.

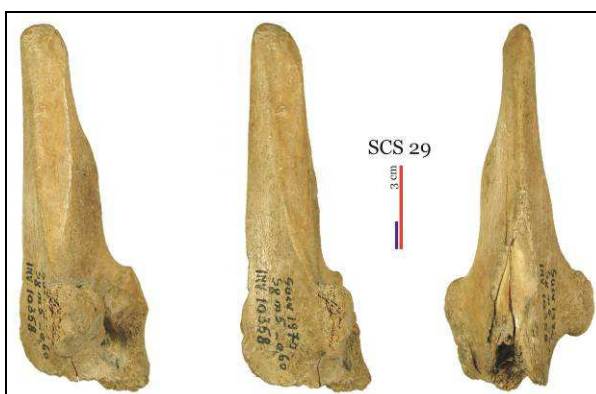


Fig. 29- SCS 29. Awl made of ulna.



Fig. 30 - SCS 30. Awl made of ulna.



Fig. 31 - SCS 37. Awl.



Fig. 32 - SCS 38. Awl.



Fig. 33- SCS 43. Awl.



Fig. 34- SCS 44. Awl.



Fig. 35- SCS 50. Awl.



Fig. 36- SCS 51. Fish bone awl.



Fig. 37- SCS 59. Antler harpoon.



Fig. 38- SCS 60. Antler harpoon.



Fig. 39- SCS 61. Antler harpoon.

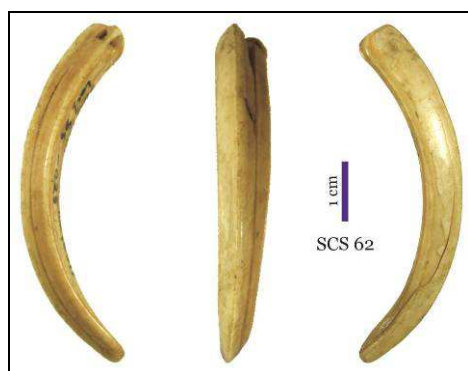


Fig. 40 - SCS 62. Pendant made of wild boar tusk.



Fig. 41 - SCS 63. Plate made of wild boar tusk.



Fig. 42 - SCS 64. Plate made of shell.

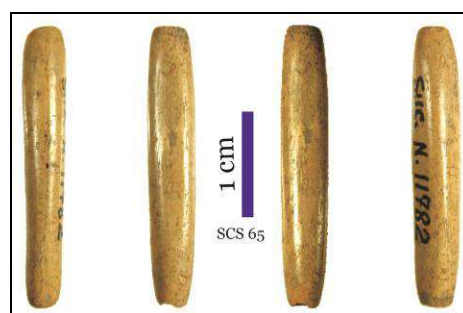


Fig. 43 - SCS 65. Bone bead.



Fig. 44 - SCS 66. Bone bead.



Fig. 45 - SCS 67. Bone bead.



Fig. 46- SCS 68. Pendant made of shell.





Fig. 47 - SCS 50 – detail.



Fig. 48 - SCS 25 – detail.



Fig. 49 - SCS 26 – detail.



Fig. 50 - BRG 1- detail.



Fig. 51 - SCS 4 – detail.

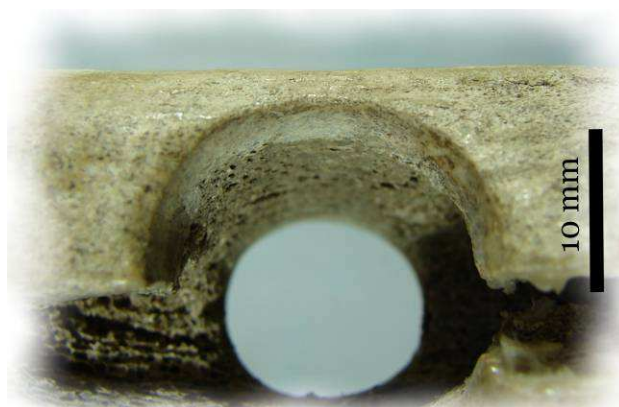


Fig. 52 - SCS 12 – detail.

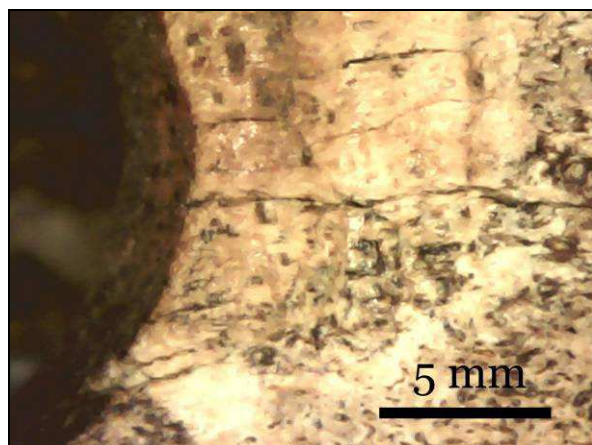


Fig. 53 - SCS 9 – detail.

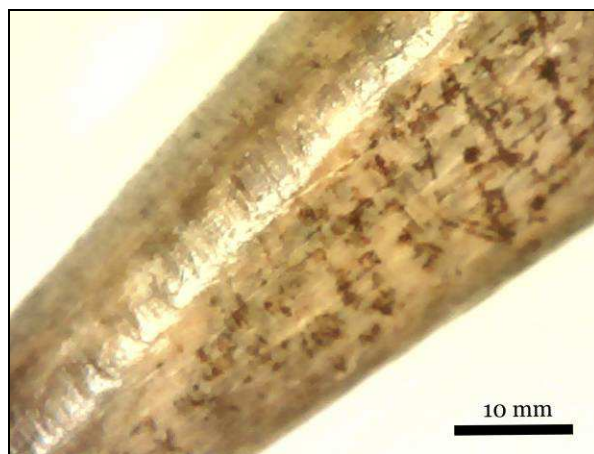


Fig. 54 - STC 5 – detail.

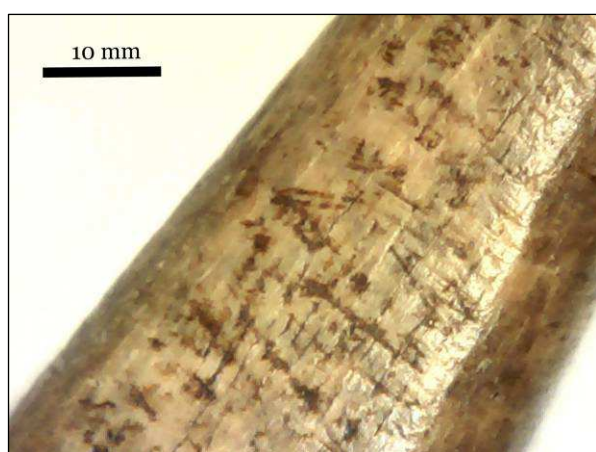


Fig. 55 - STC 5 – detail.

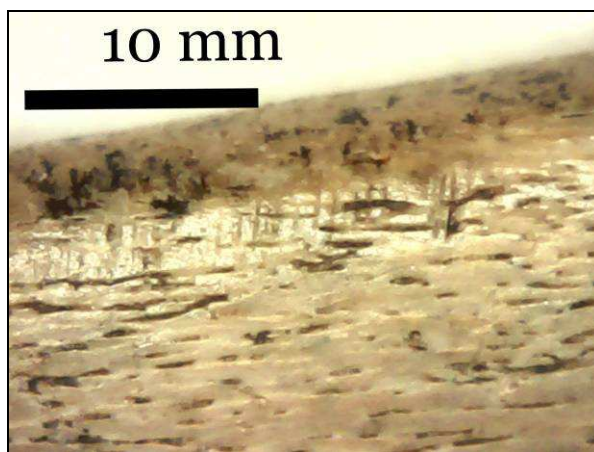


Fig. 56 - STC 5 – detail.



Fig. 57 - BRG 3 – detaliu /detail.

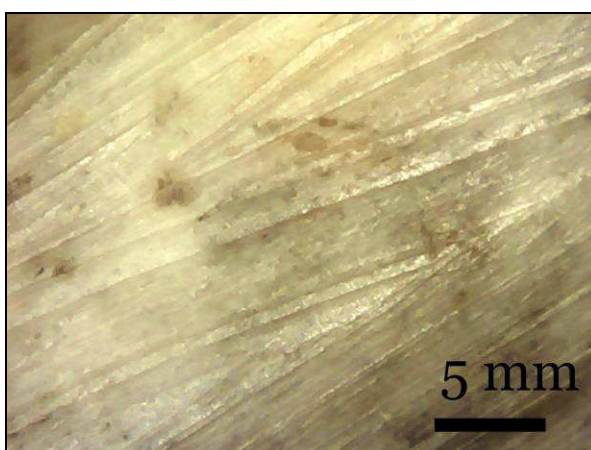


Fig. 58 - BRG 3 – detail.

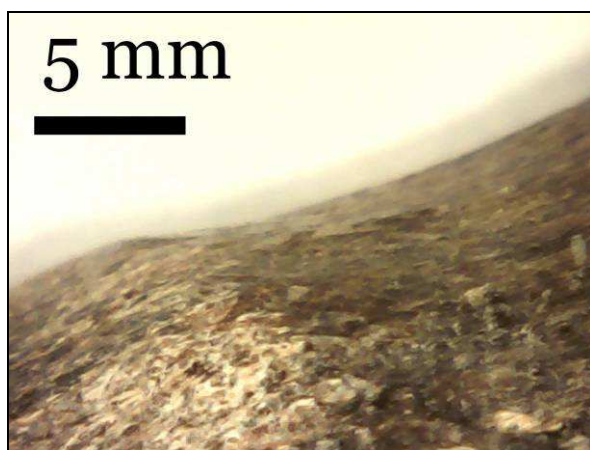


Fig. 59 - BRG 15 – detail.

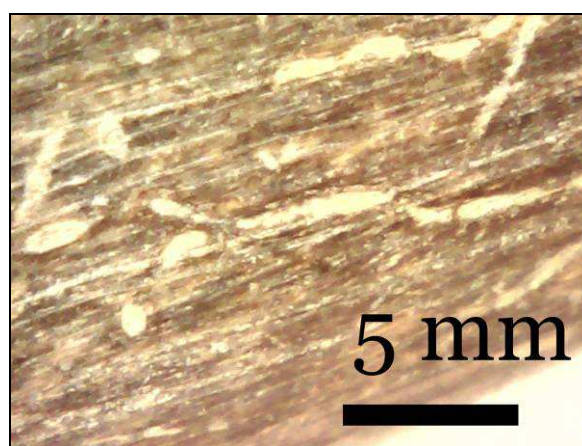


Fig. 60 - BRG 15 – detail.

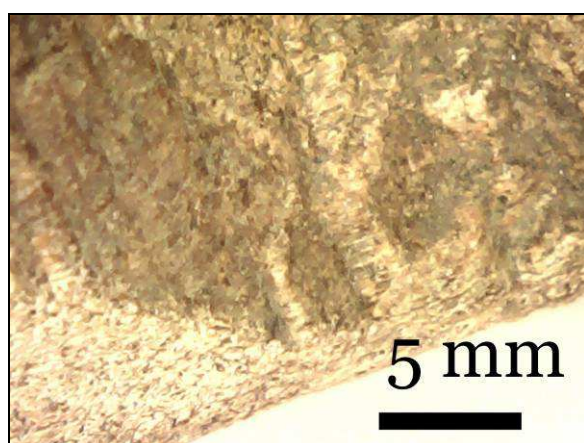


Fig. 61 - BRG 17 – detail.

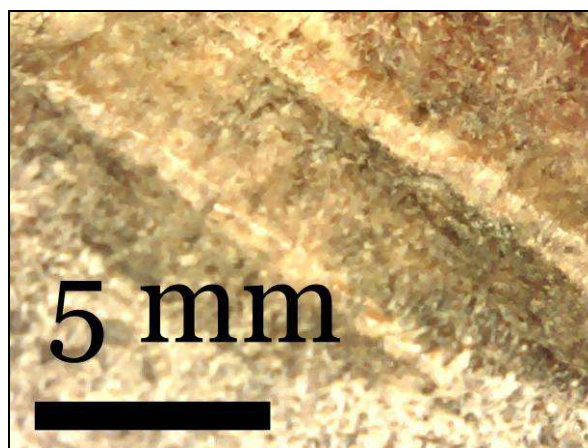


Fig. 62 - BRG 17 – detail.

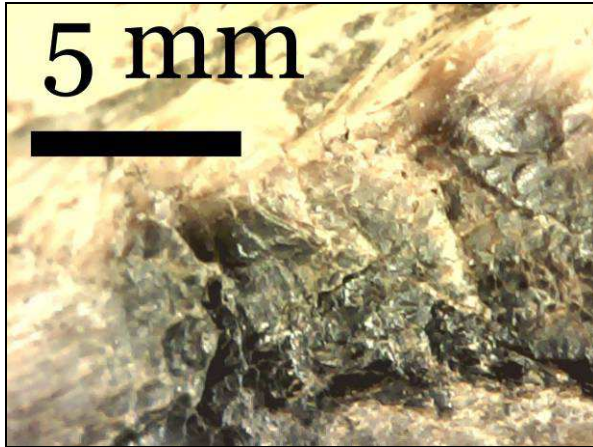


Fig. 63- BRG 44 – detail.

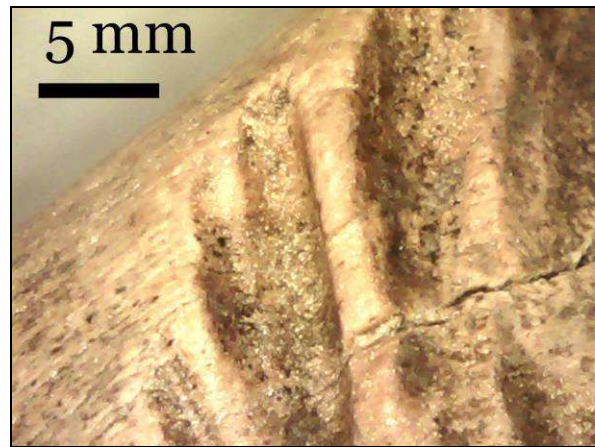


Fig. 64- BRG 42 – detail.



Fig. 65- SCS 68 – detail.

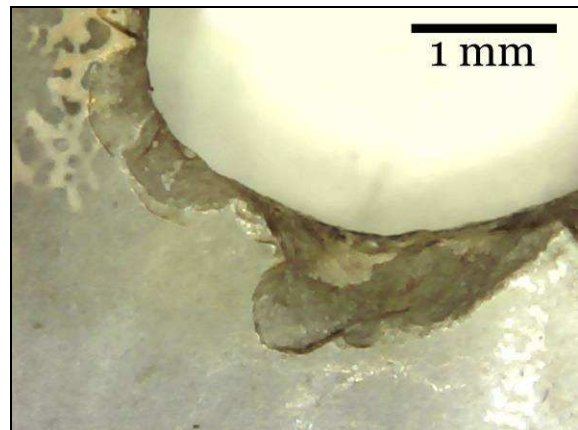


Fig. 66- SCS 68 – detail.

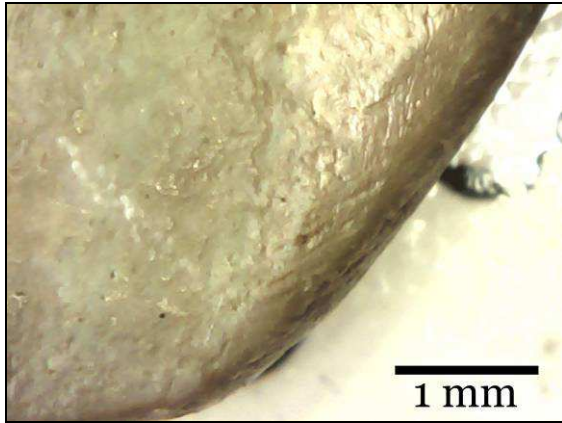


Fig. 67 - SCS 68 – detail.

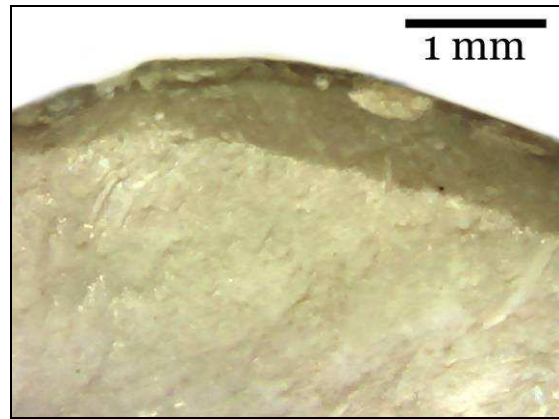


Fig. 68 - SCS 68 – detail.

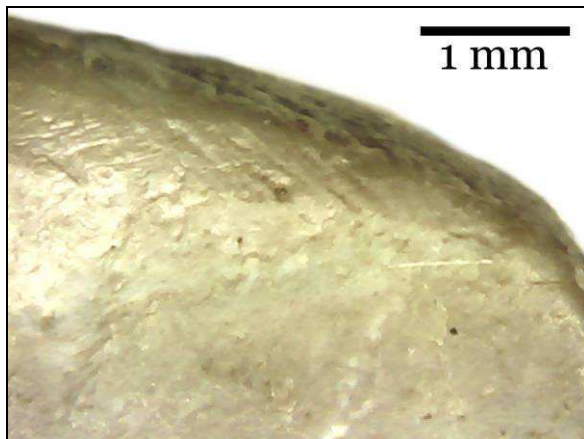


Fig. 69- SCS 68 – detail.

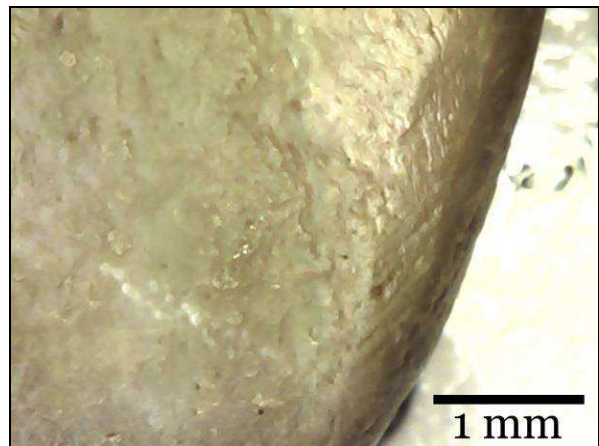


Fig. 70- SCS 68 – detail.