

WILD BOAR CANINE IMPLEMENTS FROM DRĂGUȘENI*

Adina BORONEANȚ**
Monica MĂRGĂRIT**

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Rezumat: *Scopul prezentei lucrări este de a aduce din nou în discuție colecția de canini de mistreț descoperiți în situl Cucuteni de la Drăgușeni-Ostrov. Cercetările arheologice au fost efectuate de S. Marinescu-Bîlcu și Al. Bolomey între 1970-1974 și 1979-1985. Ansamblul se află în prezent la Institutul de Arheologie „Vasile Pârvan”, Academia Română. Metodologia utilizată a vizat identificarea produselor și subproduselor schemelor operaționale, precum și a tuturor proceselor tehnologice și urmelor de utilizare. De asemenea, am observat modul în care comunitățile Cucuteni au interacționat cu mediul animal, au exploatat resursele sale (în acest caz, mistrețul) pentru a fabrica artefactele prezentate, și uneori, au reintegrat aceste obiecte în ciclul de utilizare. Publicațiile viitoare ale ansamblurilor similare vor contribui decisiv la înțelegerea modalităților de exploatare a mistrețului în perioada eneoliticului, în cadrul culturii Cucuteni.*

Abstract: *The goal of the present paper is to re-discuss the wild boar canine assemblage from the Cucuteni site at Drăgușeni-Ostrov. The archaeological research was carried out by S. Marinescu-Bîlcu and Al. Bolomey between 1970-1974 and 1979-1985.*

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** Adina BORONEANȚ: “Vasile Pârvan” Institute of Archaeology, Romanian Academy, 11 Henri Coandă St., Bucharest, Romania, e-mail: boro30@gmail.com.

** Monica MĂRGĂRIT: Valahia University of Târgoviște, 35 Lt. Stancu Ion St.; Târgoviște; Romania/“Vasile Pârvan” Institute of Archaeology, Romanian Academy, 11 Henri Coandă St., Bucharest, Romania, e-mail: monicamargarit@yahoo.com.

The assemblage is currently curated at the 'Vasile Pârvan' Institute of Archaeology, the Romanian Academy. The methodology used aimed to identify the products and by-products of the operational schemes, as well as all the technological and use-wear marks. Also, we observed the manner the Cucuteni communities interacted with the animal environment, exploited its resources (in this case the wild boar) in order to manufacture the artefacts presented, and at times re-integrated these objects in the cycle of use. Future publications of similar assemblages would make a decisive contribution to our understanding of the exploitation patterns of the wild boar exploitation during the Cucuteni Eneolithic period.

Introduction

The Cucuteni site from Drăgușeni-Ostrov (**Fig. 1**) is located on the Bașeu Plain, on the valley of the Podriga River, ca. 7- 8 km upstream from its flow into the Bașeu River¹. A first stage of the archaeological investigations took place between 1970 and 1974, and a second one between 1979 and 1985, both directed by Silvia Marinescu-Bîlcu and Alexandra Bolomey. The results of the research were published in a series of preliminary excavation reports, studies of the faunal remains and the osseous industry, as well as pottery and human-animal interactions studies². More information was provided by the monograph of the site³. A new approach on the study of the osseous industry was recently published by the present authors⁴.

Twelve years of research uncovered an area of ca. 3200 m² of the total surface of the site estimated at ca 8-9 ha, with trenches cut almost arbitrarily as dictated by the agricultural restrictions at the time⁵. The twenty houses identified were assigned to the only occupational level of the settlement, seen as Cucuteni A4. Other types of features included mainly storage and oven pits (subsequently used as refuse pits), as well as "ritual" pits. Pottery represented the predominant archaeological material. The excavations uncovered a significant number of lithic items (1177 chipped and 151 polished implements, and many debitage pieces) recovered both from secure archaeological contexts and the cultural layer. The ca. 4300 faunal remains indicated the presence of both wild and domestic species, predominantly mammals (3383 remains). Wild boar and deer were the best represented among the wild species, making ca. 95%. Domestic species included cattle, ovicaprids, pig and dog⁶. The osseous industry is represented by bone, antler, and a few wild boar tusk artefacts⁷.

Small finds consisted of anthropomorphic and zoomorphic figurines and various clay items. Four disarticulated fragmented human bones were also recovered from two houses, a pit and the cultural layer, respectively.

¹ MARINESCU-BÎLCU & BOLOMEY 2000, p. 11

² MARINESCU-BÎLCU 1980, 1983, 1989, 1994; BOLOMEY 1980; BOLOMEY & MARINESCU-BÎLCU 1988; MARINESCU-BÎLCU *et alii* 1984.

³ MARINESCU-BÎLCU & BOLOMEY 2000.

⁴ MĂRGĂRIT *et alii* 2020.

⁵ MARINESCU-BÎLCU & BOLOMEY 2000, p. 23, 24, 179.

⁶ BOLOMEY & EL SUSI 2000.

⁷ BOLOMEY & MARINESCU-BÎLCU 1988; MARINESCU-BÎLCU & BOLOMEY 2000; MĂRGĂRIT *et alii* 2020.

Methodology

The studied material was identified in the the "Vasile Pârvan" Institute of Bucharest collections where the osseous artefacts were stored. A file was created for each artefact comprising contextual information (year of excavation, trench, square, depth, and feature - as marked on the pieces), as well as observations on general artefact type category (raw material fragment, waste, blank, preform, finished object) and morphology.

All artefacts were inspected macro- and microscopically using a *Keyence VHX-600* digital microscope at magnifications between 30x and 150x, and images were obtained using the integrated camera of the microscope.

Our typological classification of the finished implements follows that in the *Fiches typologiques de l'industrie osseuse préhistorique*⁸. Analytical criteria for the technological and functional interpretation of the marks were established based on key publications on osseous artefacts⁹.

The present day assemblage

The assemblage studied comprises 17 pieces: four raw material fragments, two blanks, nine finished implements (eight scrapers and one pendant) and two indeterminate pieces (**Table 1, Id# 1-17**).

⁸ E.g. CAMPS-FABRER 1990; CAMPS-FABRER *et alii* 1998; PATOU-MATHIS 2002; RAMSEYER 2004.

⁹ E.g. DAVID 1999; AVERBOUH 2000; MAIGROT 2003; GOUTAS 2004; LEGRAND 2007; LEGRAND & SIDÉRA 2007; PÉTILLON, PLISSON & CATTELAİN 2016; CHOYKE & O'CONNOR 2013; VITEZOVIĆ 2016; ORLOWSKA 2018; GARCIA & GARCIA 2019.

Id.	Context	Type (BoroneaŢ, Mărgărit 2021)	Illustration (BoroneaŢ, Mărgărit 2021)	Type (Bolomey, Marinescu-Bîlcu 1988)	Illustration (Bolomey, Marinescu-Bîlcu 1988)	Illustration Bolomey, Marinescu-Bîlcu 2000)
1	Dr 980, S23, c.9, 0.80m	indeterminate	Piesa 980, Fig. 2/1, 6/n			
2	Dr 985 S31 C.14 0.60-0.80m	raw material	Fig. 2/2			Fig.52/18
3	Dr 1971 S2-S3 Loc 2	raw material	Fig. 2/3			
4	Dr 1973 Loc 9	raw material	Fig. 2/4			
5	Dr 1971 S2-S3 Loc 2	raw material	Fig. 2/5			
6	Dr 1972 S13 Gr 15	blank	Fig. 2/6			
7	Dr 1972 Loc 16	blank	Fig.2/7			
8	DR 971 Gr 5	simple scraper	piesa 29 Fig. 3/1, 4/g			
9	Dr 970 Loc 1	simple scraper	piesa 34 Fig. 3/2, 4/a	scraper	Fig. 9/1, 10/1	Fig. 52/15; 67/11
10	Dr 970 0.60m	simple scraper	piesa 35 Fig 3/3, 4/i	scraper	Fig. 9/4	Fig. 52/17; 67/10
11	Dr 981 Gr 33	pendant	piesa 36 Fig. 3/4, 6/d	pendant	Fig. 9/3	Fig. 52/12; 67/13
12	Dr 981 S25-S26, c.8, 0.50m	simple scraper	piesa 40 Fig. 3/5, 5/d			
13	Dr 973 Loc 10	double scraper	piesa 41 Fig. 3/6			
14	Dr 972 Gr 14	simple scraper	piesa 42 Fig. 3/7, 5/g			
15	Dr 973 Gr 22	simple scraper	piesa 43 Fig. 3/8, 5/a			
16	Dr 1979 Loc 9 Gr 27	simple scraper	piesa 26, Fig. 4/e			
17	Unknown	indeterminate	piesa 25, Fig. 6/k			
18	Dr 970 Gr 4	simple scraper	not in present collection	scraper	Fig. 9/5	Fig. 52/14; 67/12
19	Dr 985 S31	simple scraper	not in present collection	scraper	Fig. 9/2, 10/1	Fig. 52/16; 67/9
20	Unknown	pendant	not in present collection			Fig. 52/13

Table 1. The wild boar tusk assemblage from Drăguşeni (in white, present day collection, in grey, artefacts identified from publications only).

Raw material (4)

The six fragments of tusk (some split longitudinally- **Fig. 2/2-3**) do not display any traces of human modification, but given their size, it is likely they had been kept for future use.

Blanks (2)

The two flat blanks (**Fig. 2/4-5**) were obtained by bipartition in indirect percussion. The debitage plane still preserves the negatives of the active front of the implement used for the percussive actions. The blanks were manufactured from the central area of the tusk which is hollow. The use of the visible area of the tooth (above the mandible) indicates the complete extraction of the tusk from the bone was not necessary.

Scrapers (8) were the only *tools* identified (seven simple and one double scraper) in the present assemblage. They were all manufactured on flat blanks obtained by bipartition in percussion, from the central area of the tusk (n = 4; **Fig. 4/i, Fig. 5/a, d, g**), the tip (n = 2; **Fig. 4/e, g**) and only one item preserved the whole length of the tooth (**Fig. 4/a**).

Simple scrapers (7)

At the scraper preserving the entire length of the tooth (**Fig. 4/a**) the debitage operation was followed by the abrasion of the inferior face (**Fig. 4/b**) and the distal extremity (**Fig. 4/c**). The active front was obtained by scraping on the area towards the proximal end of the tooth (**Fig. 4/d**). The shallow concavity that developed indicates the tool was used only for a short time.

Among the pieces made from the tip of the tooth, one is fractured at the proximal end (**Fig. 4/e**). The debitage edges were regularized by scraping (**Fig. 4/f**). The second piece (**Fig. 4/g**) was fractured at the distal end. The same technique was used to shape the inferior face (**Fig. 4/h**). The active front is indicative of short time use.

At the scrapers made from median area of the tooth the flat blanks were obtained by indirect percussion (**Fig. 4/i; Fig. 5/a; Fig. 5/d**). Abrasion was employed to regularizes the debitage edges and the inferior face (n=1, **Fig. 4/j-k**), the proximal extremity (n=1, **Fig. 5/b**) and the convex edge (n=1, **Fig. 5/e**). Scraping was used along the debitage edge where the active front is located (**Fig. 4/l, Fig. 5/c, f**). The remaining extremity is slightly fractured.

One scraper (**Fig. 5/g**) only was obtained by successive segmentations. The resulting blank was a tooth flake. The piece is fractured at the proximal end. The convex edge was regularized by abrasion (**Fig. 5/h**) while the concave one became the active front and was sharpened by scraping (**Fig. 5/i**).

Double scrapers (1)

One double tool (**Fig. 6/a**) displays two functional areas. The flat blank was made from the distal area of the tooth. The blank was obtained by bipartition in percussion. The inferior face of the tool was abraded (**Fig. 6/b**). Two concave active fronts are visible, most likely used alternately and show extensive usewear. Both extremities fractured probably during use. Light scraping marks (**Fig. 6/c**) still visible on the active ends indicate that the implement had not been sharpened before discard.

Pendant (1)

The item (**Fig. 6/d**) was made from the median area of the tooth, towards the tip. The blank was flat but the subsequent scraping (**Fig. 6/e**) of the inferior face does not allow for the identification of the longitudinal bipartition procedure. The rounded morphology of the extremities was acquired by abrasion (**Fig. 6/f**). Each end displays a circular perforation (**Fig. 6/g-h**) carried out by bifacial, and unifacial rotation, respectively. Technological marks are quite visible indicating the piece had not been in use long. Use wear had started to develop laterally, indicated by the flattening of surfaces and macroscopic lustre (**Fig. 6/i**). Along the convex edge, in the median area were incised 8 notches (**Fig. 6/j**), mostly likely with a decorative purpose.

Indeterminate (2)

Two pieces were too fractured to allow for the identification of the function they served. The first one (**Fig. 6/k**) was made from the mandibular part of the tooth (its middle area), which is hollow inside. One of the extremities displays fresh fracturing. The blank is flat, obtained by bipartition combining grooving (**Fig. 6/l**) and indirect percussion. The inferior face preserved the traces of the scraping (**Fig. 6/m**) employed probably to create the active front. The second item (**Fig. 6/n**) is fractured both longitudinally and transversally. The blank is also flat, with the inferior face shaped by abrasion.

Discussion

1. Presence of wild boar remains at the site

Sus scrofa ferus are adaptable mammals, mostly omnivorous¹⁰. A characteristic of the wild boar dentition is the presence of large, rootless and continuously growing permanent canines (tusks) in males¹¹ only, which serve for defence, finding food and as powerful weapons used against other males during the mating season. When the upper canine is absent, the lower canine can reach an enormous length¹².

Among the faunal remains from Drăgușeni-Ostrovel, 205 fragments were securely attributed to *Sus scrofa ferus*, with a MNI of 8¹³. Other 288 bones were attributed to *Sus scrofa domesticus* based on their small size and various anatomical parameters (MNI 49), while 476 moderately sized fragments were attributed to *Sus* sp, and based on measurement were attributed to pigs resulting from the interbreeding between the wild and the domestic animals. Interestingly enough, no pig bones (wild, domestic or mixed) showed any traces of intentional modification into tools: there were incisions left by the sectioning of the bones and defleshing but no actual processing marks¹⁴. Same body parts were represented both at the domestic and wild species of pig indicating that food-wise, both wild and domestic were treated in identical manner. It follows that the only difference in the treatment of the skeletal bones concerned the teeth.

¹⁰ ARBARELLA *et alii* 2006.

¹¹ SCHMID 1972.

¹² KONJEVIĆ *et alii* 2004.

¹³ MNI was calculated based on fragments (BOLOMEY & EL SUSI 1988, p.162).

¹⁴ BOLOMEY & EL SUSI 1988, p.163.

Mandible parts and teeth of *Sus* sp. are present among the faunal remains and it was observed they were badly damaged in the area of the canines¹⁵.

Limb skeletal remains and spinal parts are also present, indicating the carcasses of the hunted animals were brought to the site complete. It is thus conceivable that the lower canines were extracted in the settlement and processed.

The dimensions of the artefacts studied indicate they were made solely from the tusks of the wild boar and perhaps the mixed breed individuals. No tooth from the domestic pig was used, although such remains were noted among the faunal remains.

In the case of Drăgușeni the number of wild boar tusk pieces used (20 in total, considering the missing ones as well) suggests additional raw material might have been needed, other than the one obtained from the teeth of the MNI of 7. Yet, the number of mixed breed individuals was not taken into consideration

2. The published vs. the present day material

Five tusk artefacts were published and illustrated in the 1988 Marinescu-Bilcu and Bolomey paper¹⁶: a pendant with two perforations, two plates of the same shape with the pendant but not perforated, and four scrapers. Seven wild boar pieces were reported in the text of the monograph¹⁷: a crescent shaped plate with rounded perforated ends (**Fig. 3/4, Table 1, Id# 11**), two similar plates without perforations (**Fig. 2/8, Table Id# 19 and Fig. 2/7, Table Id# 18**) and four tusk fragments used as scrapers¹⁸. A second perforated piece from Drăgușeni was illustrated in the same volume but there is no information on its context (**Fig. 2/6, Table 1 Id# 20**).

The transversal fine striations on the surface of the two unperforated plates were interpreted by the authors of the monograph as marks resulted either from manufacturing or use. It was also noted that the edges of the scrapers exhibited various degrees of usewear¹⁹.

Table 1 also illustrates the correspondence between the artefacts published and illustrated by the authors of the excavations and those in the present - day assemblage. Three of the earlier published artefacts are not part of the present collection.

Our study of the material indicated that the assemblage comprised 7 scrapers (this number includes the two unperforated "crescent-shaped" pieces mentioned in 1988 and 2000). Additionally, we identified the presence of two flat blanks and four fragments of raw material, suggesting that the tools were manufactured at the site. Complementary information was obtained on the manufacturing techniques of the pendant with the double perforation.

We can thus securely state that directly or indirectly, all stages of the tusk tool manufacturing sequence have been documented: acquisition of raw material

¹⁵ BOLOMEY & EL SUSI 2000.

¹⁶ BOLOMEY & MARINESCU-BÎLCU 1988.

¹⁷ Possibly the 1988 paper did not report on all years of the excavation.

¹⁸ MARINESCU-BÎLCU & BOLOMEY 2000; BOLOMEY & MARINESCU-BÎLCU 1988.

¹⁹ BOLOMEY & MARINESCU-BÎLCU 1988, p. 351-352.

(presence of *Sus scrofa ferus* remains among the faunal assemblage, including cranial bones), preparation of blanks (presence of the two flat blanks and of the 6 raw material fragments), manufacture of scrapers with various degrees of wear and occasionally resharpening (the finished scrapers).

3. Archaeological contexts

The 20 specimens published originate in very diverse contexts: houses (6 pieces), pits (7 pieces) and the cultural layer (5 pieces) – see **Table 2**.

Context	Type
Loc 1	simple scraper
Loc 2	raw material x 2
Loc 9	raw material
Loc 10	double scraper
Loc 16	blank
Gr 4	simple scraper
Gr 5	simple scraper
Gr 14	simple scraper
Gr 15	blank
Gr 22	simple scraper
Gr 33	simple scraper, pendant
S23, c.9, 0.80m	indeterminate
S31 c.14 0.60-0.80m	raw material
S? 1970 0.60 m	simple scraper
S25-S26, c.8, 0.50m	simple scraper
S31 C.4, 0.40	simple scraper
unknown	pendant
unknown	indeterminate

Table 2. Distribution of wild boar tooth artefacts by archaeological features.

It is remarkable that the pits contained tools that were still in use, as well as the remaining pendant, which supports the hypothesis suggested by Marinescu-Bîlcu and Bolomey in the 2000 volume that some of the pits were used for other purposes than just depositing waste.

4. Technological aspects

The very first aspect that attracted our attention was the extremely limited range of tool types, with scrapers as the only securely identifiable tool. The second observation regards the exclusive use of flat blanks, caused by the longitudinal exploitation of the tooth. This was not only a technological choice

but it was triggered also by the natural properties of the tooth, which following dehydration fractures longitudinally²⁰. Productivity is higher when using longitudinal debitage: it allows to obtain two similar blanks, both fit for transformation into finished products. Technologically, the main technique employed for the longitudinal debitage was indirect percussion, with only one case which combined grooving and percussion. Transversal debitage was carried out by direct percussion. Alteration of surfaces were made by abrasion and scraping while the active front was shaped by scraping. The combination of these techniques was noted on various items.

In what the functionality of the items is concerned, the tools we called scrapers caused endless discussions. Initially, starting strictly from their morphology, double function was suggested, combining cutting and drilling, and they were called drills with sharp edges²¹. David²² calls them burins. At a later date, scraping tree bark and wood was indicated as their main function²³. The very fresh aspect of the scraping marks made the present authors think of a periodical re-sharpening of the active front, a hypothesis supported by previous ethnographical studies²⁴, indicating that among the human communities in Indonesia, such tools are re-sharpened periodically in order to preserve the angle of the active front.

The use of the wild boar canines to manufacture adornments is justified by aesthetic aspect of the tooth enamel. It is worth noting that the manufacturing procedures for the pendant (other than the perforations) is identical at the two types of implements.

The Drăgușeni tusk assemblage within the wider Cucuteni context

Previous technological studies on Cucuteni wild boar tusk implements focused on the small assemblages from Costești – Cier²⁵ dated to the Cucuteni A2-3 and Berești – Dealul Bulgarului, Galați County²⁶ a Cucuteni A3 site.

A few implements per site were reported from old excavations, such as those at Bodești – Cetățuia Frumușica, Neamț County - a Cucuteni A, A-B and B²⁷, Poinesti, Vaslui County²⁸ - Cucuteni A, Ruginoasa, Iași County²⁹ - Cucuteni A. The only (published) recent finds came from Fulgeriș – La trei cireși, Bacău County, a Cucuteni A3 site³⁰ (**Table 3**).

²⁰ MĂRGĂRIT & BORONEANȚ 2021.

²¹ BARBAZA 1989.

²² DAVID 2000.

²³ MAIGROT 2001, 2005; LEGRAND & SIDÉRA 2007; SIDÉRA 2000, 2008, 2012; MĂRGĂRIT & BORONEANȚ 2021.

²⁴ CHIQUET *et alii* 1997.

²⁵ VORNICU 2014.

²⁶ BELDIMAN *et alii* 2012.

²⁷ MĂTASĂ 1946.

²⁸ VULPE 1953.

²⁹ DUMITRESCU 1933.

³⁰ ȚERNA & ISTINA 2021.

Id.	Site	Scraper	Combination tool	Pendant	Preform	Blank	Raw material	Waste	Indet.	Tool (generic)	Total	Reference	Comments
1	Drăgușeni	9	1	2		2	4		2		20	Marinescu-Bîlcu, Bolomey 2000: Mărgărit, Boroneanț 2021	
2	Costești - Cier	1				4					5	Vornicu 2014b	
3	Berești - Dealul Bulgarului						1			1	2	Beldiman et alii 2012	described as "awl probably for perforating hides"
4	Bodești - Frumușica	1		1							*	Mătasă 1946, Iatcu et alii 2016	tool with perforation, possibly re-used as pendant
5	Bonțești									1	*	Dumitrescu 1933	tool with perforation, reused as pendant
6	Fulgeriș - La trei cireși	3		1	1?			2			8	Terna, Istina 2021	the pendant was previously used as simple scraper
6	Poienești						*			3	*	Vulpe 1953; Lazarovici, Babeș 2015	
8	Ruginoasa			1						1+4	*	Dumitrescu 1933b, Lazarovici, Lazarovici 2012	one point, one tool with perforation, reused as pendant
9	Scânteia-Dealul Bodeștilor			1						1	*	Lazarovici, Lazarovici 2012	similar to an artefact from Ruginoasa

* marks presence or absence of tooth artefacts

Table 3. Wild boar tusk artefacts in the Cucuteni area.

The tool range seems very limited: scrapers only at all sites when the type of tool was specified. This might suggest a well-defined functionality of the tusk scrapers, perhaps scraping wood and tree-bark, as suggested above.

Faunal remains of *Sus scrofa ferus* were recovered from all the sites previously presented, in variable amounts. 96 tools on mammal bones were reported from the mentioned sites but only one point was worked on a *Sus* sp. metapodium, indicating that pig bones (wild or domestic) were deliberately ignored when it came to tool manufacturing and that it was only wild boar tusk that was used, perhaps in a rather opportunistic manner. On the other hand, the size of the tools produced required a certain size of the tusk, and thus the teeth of the domestic species were never used.

Thus, hunting expeditions must have aimed (in addition to procuring meat) at collecting tusks for tools, as only adult males could provide canines as large as those found in the archaeological collections and some of the individuals identified in the faunal assemblages were subadults³¹. The larger/older the animal, the longer the canines. A certain limitation of the available tusk is suggested by the use of complete canines and the continuous re-sharpening of the tools obtained. Moreover, many of the finished items are made on thin blanks, which means they derive from the base of the tooth, indicating the tooth was extracted from the mandible undamaged and complete (as suggested by the damage on the canine area of the mandibles from Drăgușeni). The acquisition of the raw material in the case of the wild boar tooth thus requires an additional effort related to both the hunting of the animal and the obtaining of the raw material.

Indicative of possible constraints regarding the availability of tusk, is the transformation of exhausted tools into pendants. Judging by the published information and illustration, during the Cucuteni culture this occurred at Bodești-Frumușica, Bonțești, Fulgeriș-La trei cireși, Poienești, Ruginoasa and Scânteia.

We can just hope that further studies on the wild boar tusk industry of the Cucuteni will bring additional information and help clarify the still unclear aspects.

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³¹ BOLOMEY & MARINESCU-BÎLCU 1988.

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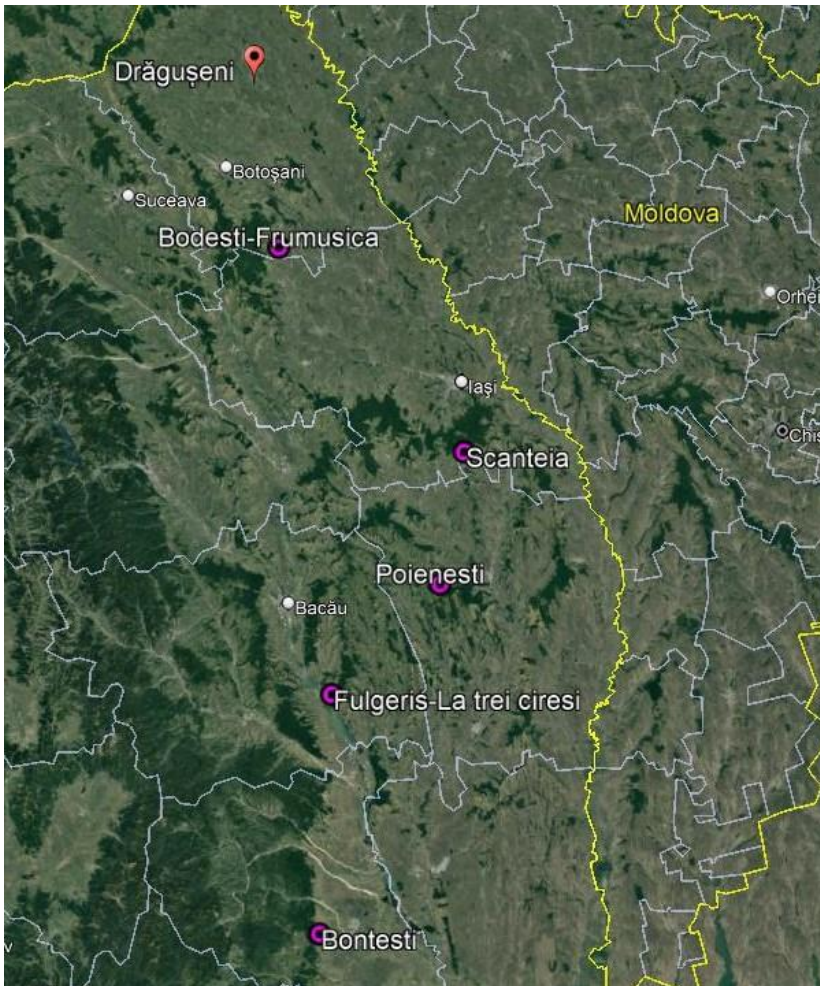


Fig. 1. Map of the sites mentioned in text.



Fig. 2. Tusk artefacts from Drăgușeni. 1: indeterminate piece, Id# 1; 2-4: raw material, Id# 2-4; 5: blank, Id# 6; 6-8 – artefacts no longer in the collection, Id# 18-19 (Id. numbers from Table 1).

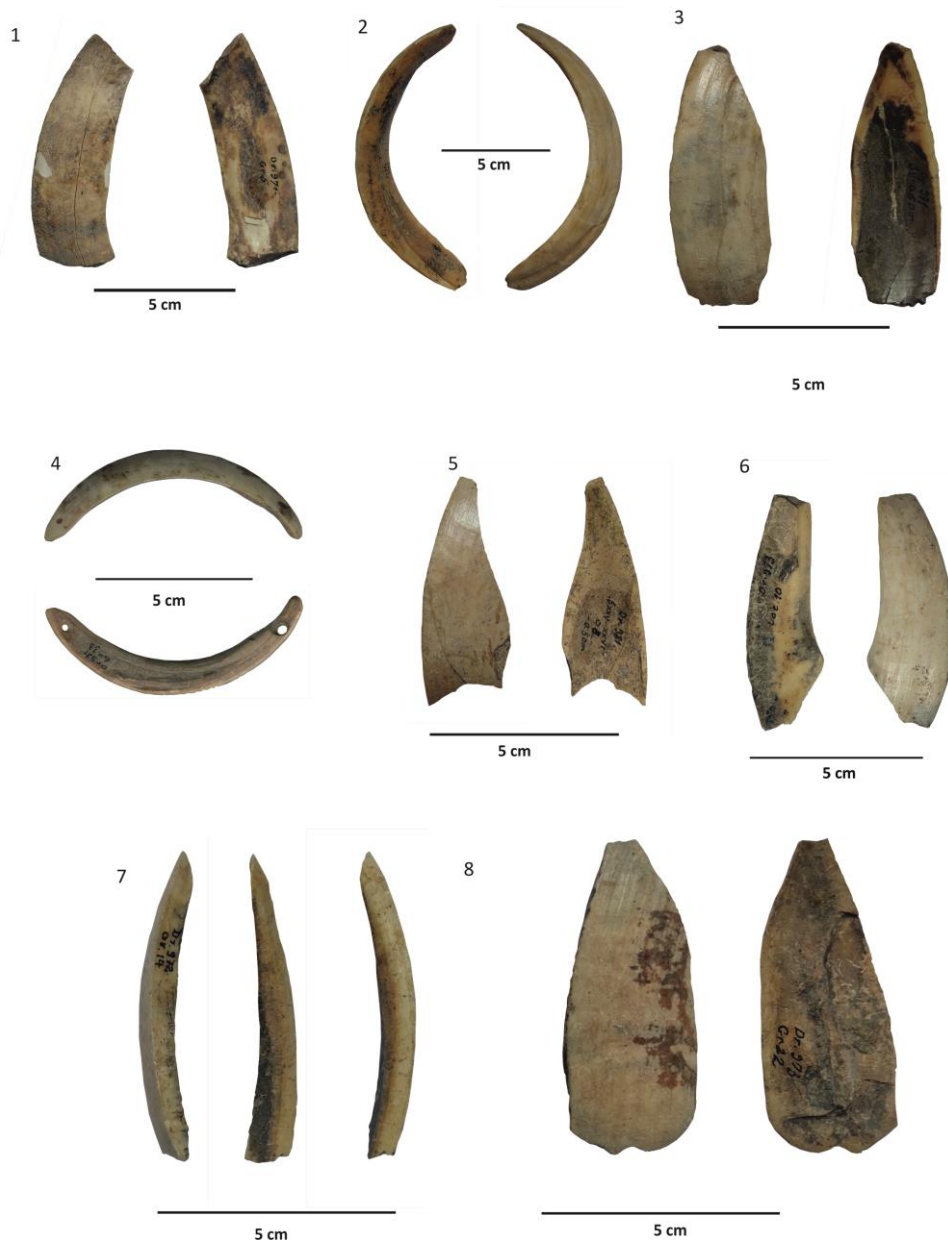


Fig. 3. Tusk artefacts from Drăgușeni. 1: simple scraper, Id# 8; 2: simple scraper, Id# 9; 3: simple scraper, Id# 10; 4: pendant, Id# 11; 5: simple scraper, Id# 12; 6: double scraper, Id# 13; 7: simple scraper, Id# 14; 8: simple scraper, Id# 14 (Id. numbers from Table 1).



Fig. 4: a, e, g, i. scrapers; b-c, j-k. abrasion marks; d, f, h, l. scraping marks.



Fig. 5: a, d, g. scrapers; b, e, h. abrasion marks; c, f, i. scraping marks.

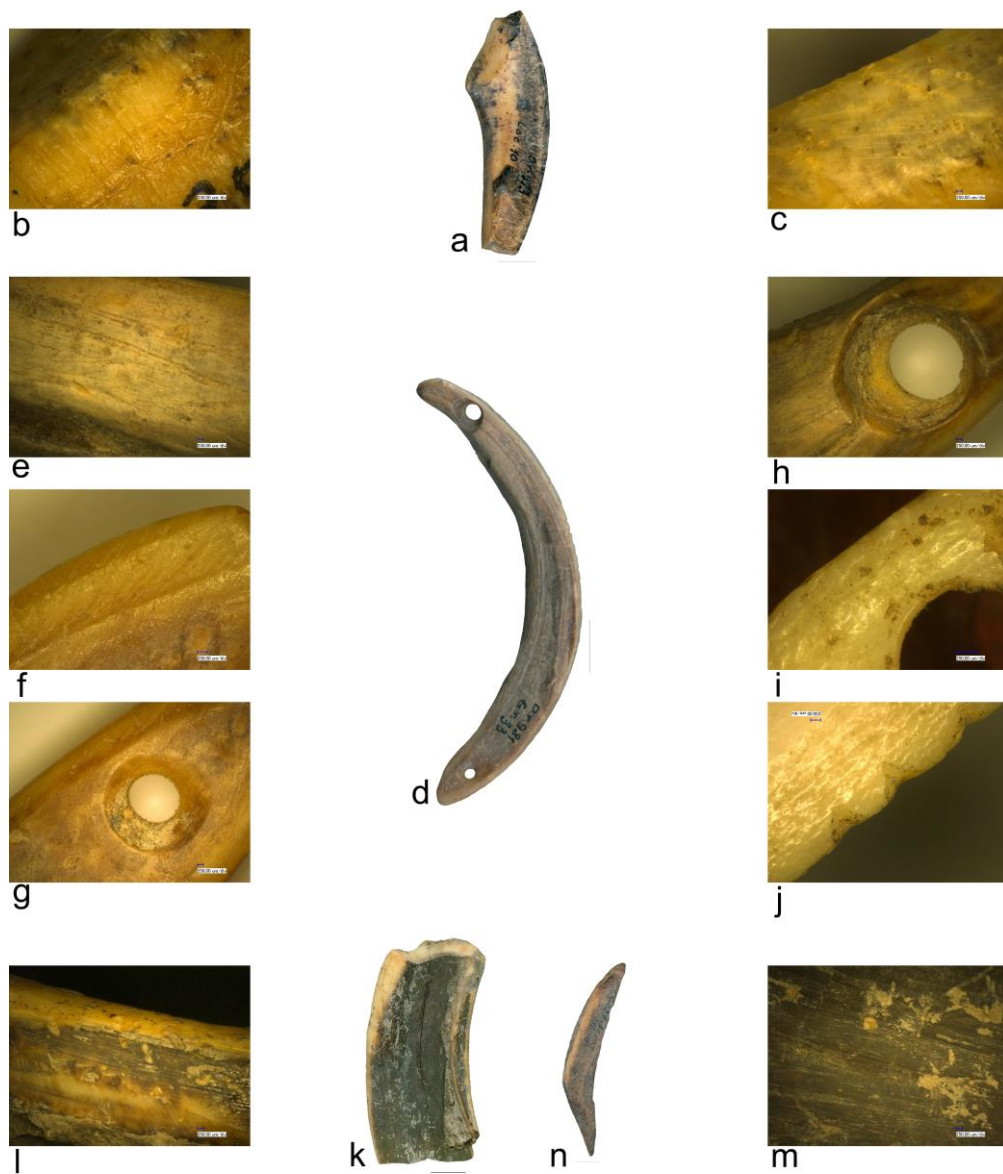


Figure 6: a. scraper; b, f. abrasion marks; c, e, m. scraping marks; d. pendant; g-h. perforations details; i. usewear area; j. decorative notches; k, n. indeterminate; l. grooving marks.