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STATUS OF ANIMALS IN FUNERARY RITUALS  
OF FOUNDERS AND USERS OF CEREMONIAL  
CENTRES OF THE YAMPIL BARROW CEMETERY  
COMPLEX(4TH/3RD-2ND MILLENNIUM BC).  
A ZOOARCHAEOLOGICAL PERSPECTIVE.

ABSTRACT

This study discusses the issue of ‘animal deposits’ in funerary practices of early barrow communities settling the Black Sea steppe and forest-steppe in the 4rd/3rd-2nd millennium. The focus of analytical studies is directly on the Yampil Barrow Cemetery Complex situated along the left bank of the Dniester, between the Murafa and Markivka rivers, or what is the Yampil Region (Vinnitsa *Oblast*) now. The chorological system developed by N.Ya. Merpert in his “Yamnaya Cultural-Historical Area” places this area within the Southwestern Variant (between the Southern Bug and Danube rivers) as the Yampil (Podolia) territorial centre. From the perspective of the research programme exploring the ‘bio-cultural border land between the West and East of Europe’, the Yampil Barrow Cemetery Complex is of special

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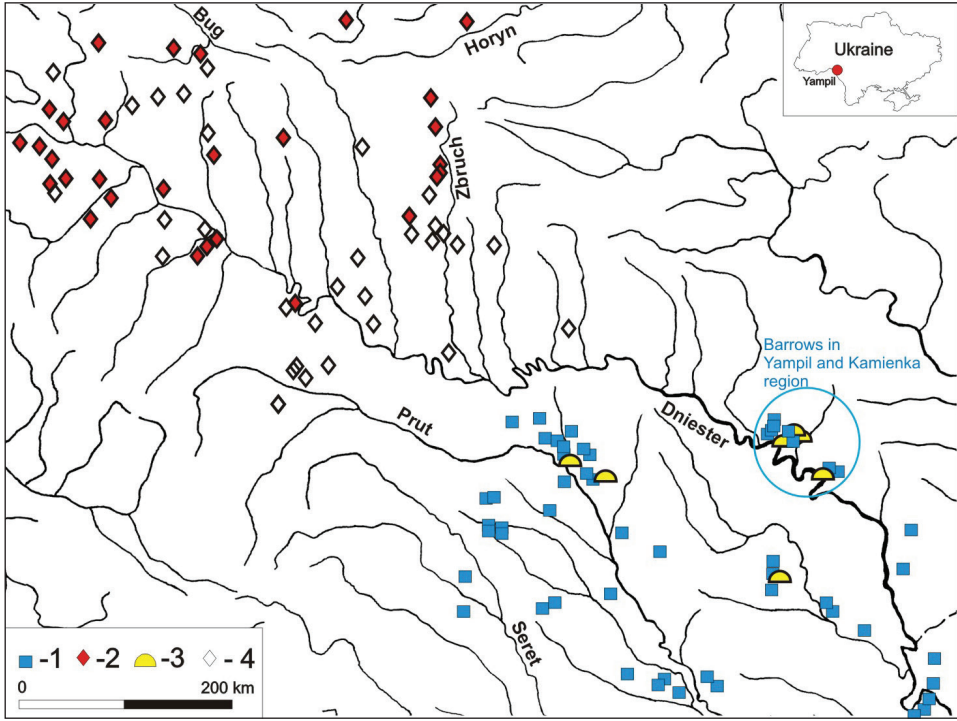


Fig. 1. Location of Yampil and Kamienka ceremonial centres, and barrows of the Yamnaya culture, Corded Ware culture, and Late Eneolithic groups of the Podolia Plateau and adjacent areas. Legend. 1 – barrows and barrow groups of the Yamnaya culture; 2 – barrows and barrow groups of the Corded Ware culture; 3 – Eneolithic barrows; 4 – barrows of undetermined cultural attribution, dated to the 3rd millennium BC [after Włodarczak 2014b, revised]

scholarly interest because of its western most location on the Dniester route of exchange for cultural patterns developed by communities settling the drainage basins of the Black and Baltic seas. The investigations followed the excavations of 23 barrows between 1984 and 2014.

**Key words:** Eneolithic, Yamnaya culture, Catacomb culture, Babyno culture, Noua culture, Globular Amphora culture, Corded Ware culture, barrows, funerary deposits, ‘animal deposits’

## INTRODUCTION

The *Yampil Barrow Cemetery Complex* (YBC or YBCC) refers to the area with ‘barrow architecture’ located along the left bank of the Middle Dniester and its tributaries (between the Murafa and Markivka), or what is the Yampil Region (Vinnitsa *Oblast*) in modern administrative division (Fig. 1). Barrows of this Complex were built on “the substratum of typical *chernozem*, showing characteristics typical of pedogenic conditions prevailing in the transition zone of the subboreal belt with a temperate climate, displaying marked continental characteristics and supporting steppe vegetation” [Bednarek, Jankowski 2014: 279].

Still used with just minor amendments, N. Ya. Merpert [1974] places the “Yamnaya Cultural-Historical Area”, often referred to as the *Yampil (Podolia) territorial centre*, within the *Southwestern Variant* (between the Southern Bug and Danube rivers), which formed the northwest boundary of the Yamnaya culture circle [Merpert 1974; Rassamakin, Nikolova 2008: Fig. 1; Ivanova, Toshev 2015: 378; see Heyd 2011].

Until the 1980s, this area remained inaccessible for archaeological reconnaissance. Starting from 1984, during seven fieldwork seasons of field work (1984, 1985, 1986, 1988, 1991, 1992, 1993), 16 barrows were investigated [Potupczyk, Razumow 2014, with references to other literature describing the detailed results]. The results became a baseline for the Polish and Ukrainian *Yampil research project* initiated in 2010, with the focus on the ‘Yampil section’ of ‘the bio-cultural borderland between the West and East of Europe’ [Koško *et al.* 2014]<sup>1</sup>.

From the perspective of the research programme exploring the ‘bio-cultural borderland between the West and East of Europe’, the *YBC* is of special scholarly interest because of its westernmost location on the Dniester route of exchange for cultural patterns developed by communities settling the drainage basins of the Black and Baltic seas. For the 4th/3rd-2nd millennium BC, the research interests remain focused on relationships between the Central European sub-circle of the Corded Ware culture (CWC) and the Black Sea populations of the Late Eneolithic and Early Bronze Age [Włodarczak 2014a; 2014b]<sup>2</sup>. In the context of these relationships, study of rituals involving animals, including specifically funerary rituals, are of particular significance. However, the extent to which this specific area of ceremonial and thanatological processes has been explored is far from satisfactory (*see* Chapter 1).

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<sup>1</sup> Successive grants awarded by the National Science Centre and current grant no. 0108/NPH3/H12/82/2014 awarded by the National Programme for the Development of Humanities. The grants were, among other things, for scheduled excavation work between 2010 and 2014 (The Yampil Expedition), which covered seven barrow cemeteries and provided a vast body of evidence on burials containing ‘animal deposits’, as well as for follow-up studies comprising zooarchaeological identification [Zhuravlov 2013; 2014; Yanish 2012]. Fully scoped studies including taphonomic evaluation were, however, prevented for organizational reasons.

<sup>2</sup> *See*: Koško [2014] for references to extensive literature

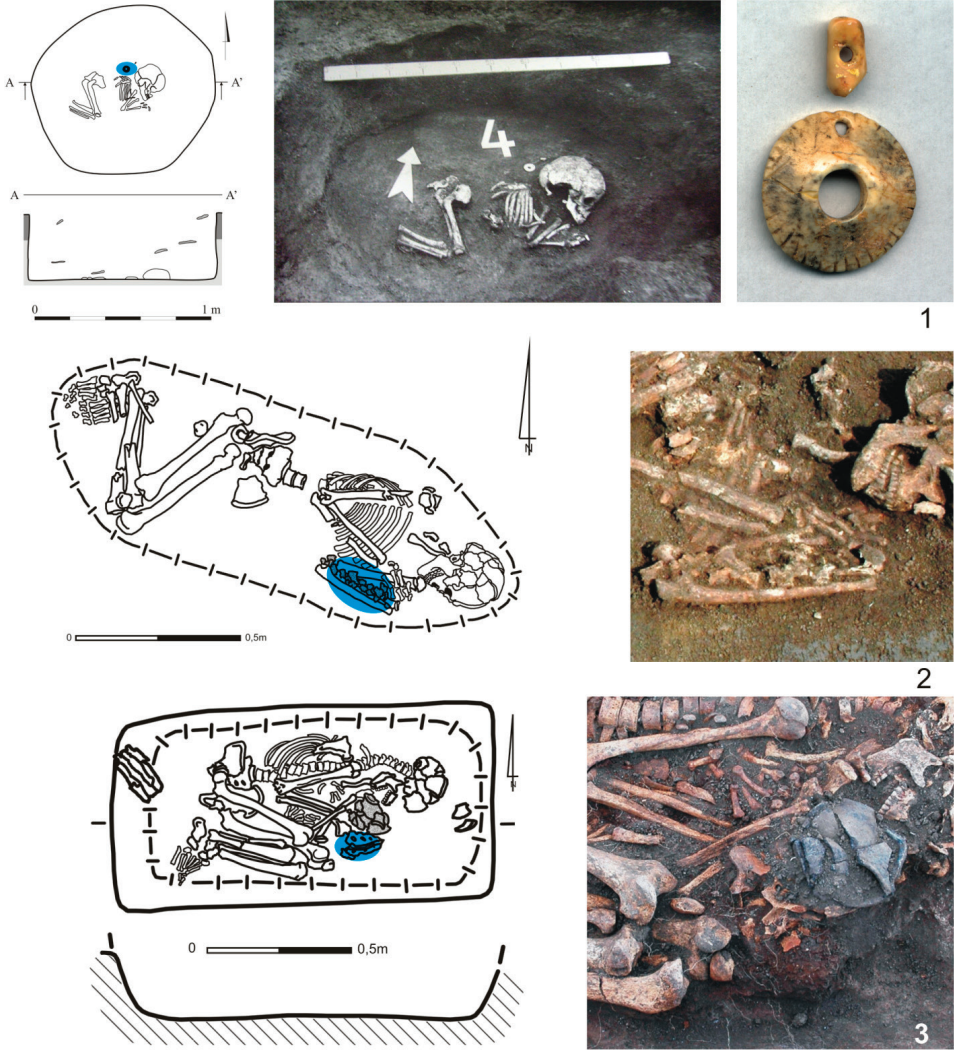


Fig. 2. Location of animals bones (= blue): 1 – Severynivka, barrow 1, grave 4; 2 – Pidlisivka, barrow 1, grave 5; 3 – Porohy, barrow 3A, grave 5

Thirty years of archaeological exploration of the YBC have revealed a number of instances of animal bones having been placed in grave chambers attributed to Eneolithic or ‘Early Bronze’ ‘barrow cultures’ (Late Eneolithic; Yamnaya culture – YC; Catacomb culture – CC; Babyno culture – BC; Noua culture – NC). These discoveries, however, have not triggered to date any interdisciplinary projects. The paper presents the results of first archaeological and zooarchaeological studies of these assemblages (*see* Chapter 2 and 3).

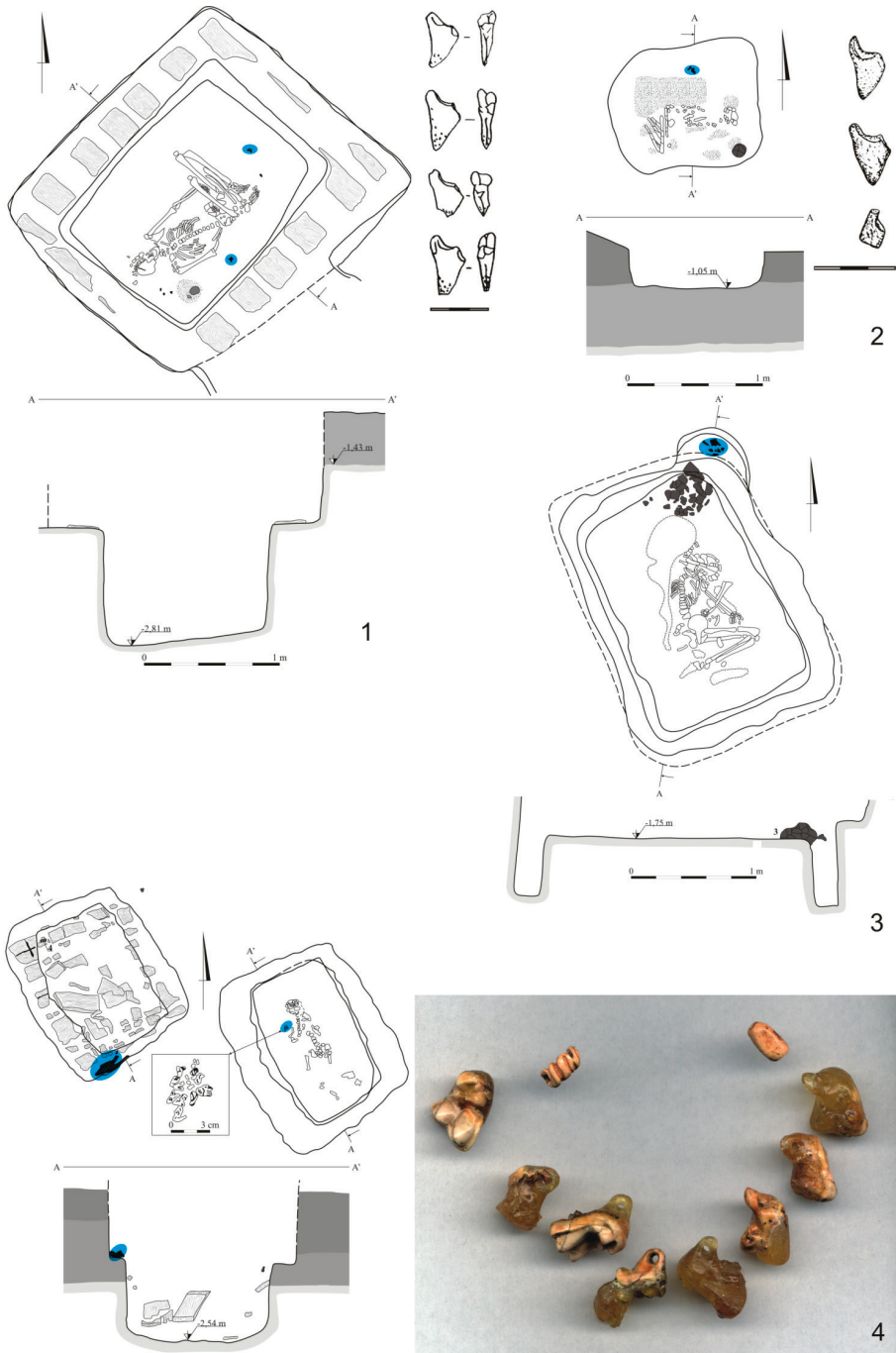


Fig. 3. Location of animals bones (= blue): 1 – Dobrianka, barrow 1, grave 4; 2 – Dobrianka, barrow 1, grave 6; 3 – Porohy, barrow 4, grave 8; 4 – Pysarivka, barrow 3, grave 2



In case of eight burial chambers (ca. 12% of all of 59 graves), the analysis involved merely a summary of notes from fieldwork carried out in the years 1984-1994<sup>3</sup>. The following materials were recorded: ‘goat cranium’ (Pysarivka 3/2), three instances of animal bones (Dobrianka 1/4; 1/6; 1/8), and three instances of hypothetical ‘animal bones’ (Pysarivka 1/1; 3/1 and Severynivka 2/12). It should be noted that ‘animal deposits’ and ‘animal teeth’ are frequently considered two distinct categories in the literature, including the study referred to above, with the latter being classified as artefacts or components of ‘amulets’ or ‘teeth necklaces’ (Severynivka 1/4, Fig. 2: 1, Pysarivka 3/2 Fig. 3: 4 specimen described as “deer tooth”). Overall, we thus have nine identified uses of ‘animal bones’, which means that 20.5% of the above-mentioned 44 graves from the YBC contained ‘faunal material’ (see Chapters 2 and 3). However, although these findings add some insight, they can hardly be deemed to carry any special heuristic value.

Somewhat different evidence was brought to light between 2010 and 2014 as a result of the joint Polish and Ukrainian project investigating 7 barrow cemeteries (*The Yampil Expedition*). It revealed 13 ‘animal deposits’, which were subjected to a zooarchaeological examination [Zhuravlov 2013; 2014; Yanish 2012; Klochko *et al.* 2015a, 2015b, 2015c, 2015d]. However, more comprehensive analysis, including taphonomic studies, has not been completed to date (Chapters 1 and 2).

Despite the limited scale of the hitherto completed studies, it is evident that the YBCC data examined so far offers an opportunity to significantly enhance our understanding of funerary practices, including ‘animal deposits’, of ‘early barrow’ communities (4rd/3rd-2nd millennium BC) or, more specifically, an important group inhabiting the northwest borderland on the Middle Dniester route for transmitting cultural beliefs from the Black Sea Region to the Baltic Sea drainage basin (territory of the Globular Amphora culture – GAC and Corded Ware culture – CWC).

The aim of this study is to explore the nature of the ‘animal component’ in rituals performed by YBCC communities. The focus is on funerary rituals involving animals. A wide range of issues such as animal species preferred for rituals, sex and age of these animals, as well as a number of other variables pertaining to the use of particular animal species, including methods of slaughtering, post-slaughter processing, and practices related to meat preparation, and consumption, are addressed. Special attention is paid to the character of deposition of animals and its fragments. It needs to be stressed that the scale of analysis and comparability of the achieved results will depend on the volume and quality of empirical evidence available for analysis. Further, the goal is to identify changes in the above-mentioned practices over time.

Recognizing the origin of ‘animal deposition’ practices (Chapter 4 and 5) remains an important objective of the study from the standpoint of the ‘bio-cultural

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<sup>3</sup> Zoo-archaeological analysis was prevented by destruction of the osteological material by fire in the warehouse of the Vinnitsa Regional Museum [Harat *et al.* 2014].

borderland between the West and the East of Europe'. This is particularly so in terms of their reference to the funerary traditions of 'Central European' communities of the Baltic Sea drainage basin, especially GAC groups (*see* Chapter 6).

1. 'ANIMAL DEPOSITS' IN 'BARROW CULTURES' OF THE BLACK SEA REGION IN THE 4TH-2ND MILLENNIUM BC.  
AN OVERVIEW

The overwhelming majority of graves attributable to 'Pontic-Caspian' 'barrow cultures' was investigated in line with a narrowed conception of history as archaeometric measurement, fostered in the 19th and first half of the 20th century, or during conservation campaigns carried out according to Leonid Brezhnev's economic and political plan of transforming steppes into lands with productive agriculture. Both research models did not see osteological evidence as 'particularly preferable'. This does not mean, however, that until the late 1980s or early 1990s, when the 'conservation perspective' prevailed in investigating funerary features of the aforesaid communities, no significant zooarchaeological observations were made as side notes to descriptions of different categories of data, including their typological or taxonomic classification. It should be noted, however, that we are still suffering from glaring gaps in the comprehensive presentations of this research.

Studies on 'animal deposits' in Late Eneolithic and Early Bronze Age funerary practices in the 'Pontic-Caspian' steppe and forest-steppe (4th-2nd millennium BC) carried out to date may be divided into the following three phases:

(a) Faunal materials gathered as described above were for the first time systematically interpreted from the perspective of Indo-European studies by J.P. Mallory in his *In Search of the Indo-Europeans* programme [1989], which included a series of works on animal, fish, and bird species present in 'Indo-European Mythology'. J.P. Mallory recognized the ritual significance of different animal species. In subsequent studies, he gave the picture of how they manifested themselves in funerary practices of 'barrow communities' of the steppe and forest-steppe of the Black and Caspian seas [Mallory 1981; 1982; 1984; 1989; 1991]. He further attempted to place them in the context of 'Indo-European Mythology'.

(b) L.V. Subbotin in the early 1990s presented an overview of funerary contexts of animals in the Budzhak steppe/forest-steppe zone (Northwest Black Sea Coast, which is particularly close to our area of interest), with reference to studies on "economic and production activity of Yamnaya and Catacomb tribes" [Subbotin 1993]. Subbotin's findings in the Budzhak zone are worth highlighting here in the following three points:

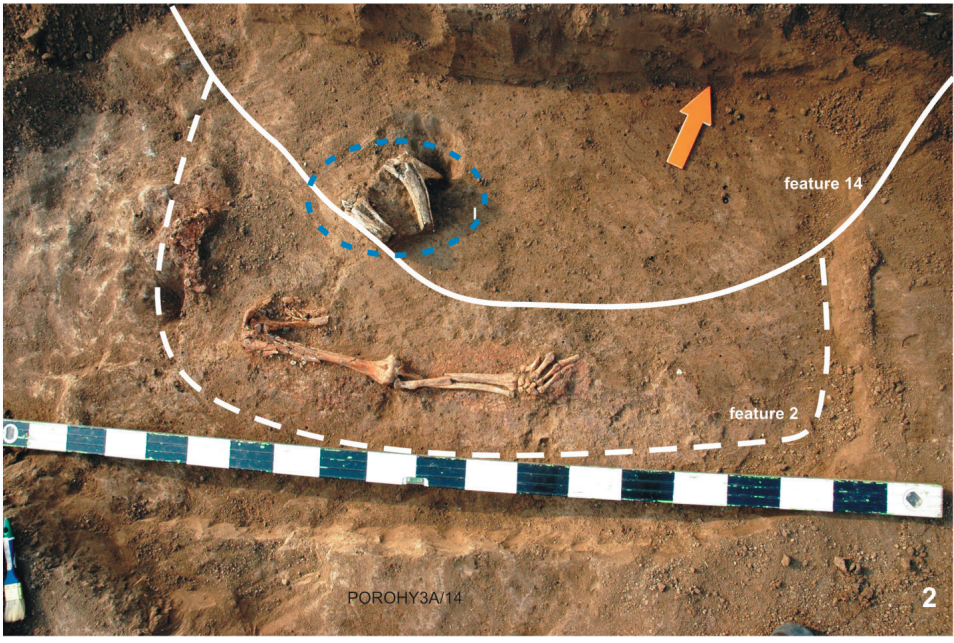
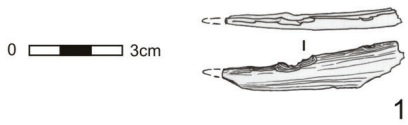
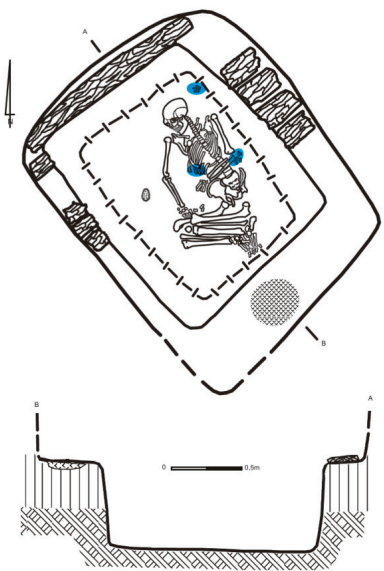


Fig. 4. Location of animals bones (= blue): 1 – Porohy, barrow 3A, grave 10; 2 – Porohy, barrow 3A, feature 14



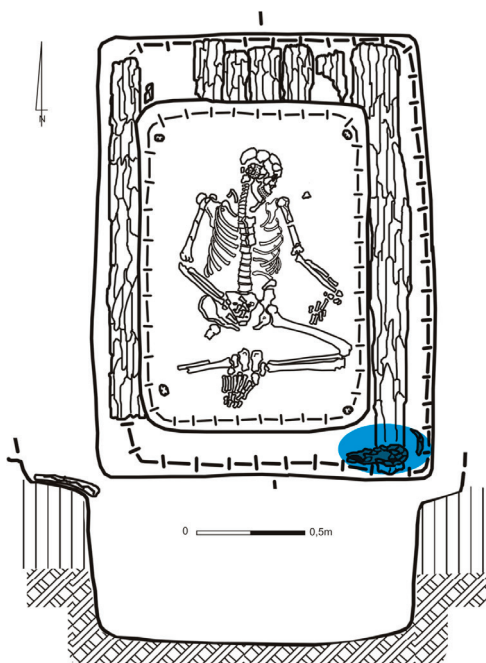


Fig. 5. Location of animals bones (= blue): Porohy, barrow 3A, grave 11

- predominance of ‘deposits of domestic animals’ such as sheep (14), including 11 *astragali* (ankle bones used for game), cattle (6), horse (5), goat (1);
- a few bones of wild animals red deer (1), aurochs (1) and birds (1);
- no ‘fish deposits’ [Subbotin 1993: 9-11].

It is worth reiterating that ‘animal deposits’ and ‘animal teeth’ were classified as two separate categories, with the latter seen as artefacts or components of ‘amulets’ or ‘teeth necklaces’. The use of ‘animal teeth’ in funerary rituals of the Northwest Black Sea Coast is clearly detectable already in the Late Eneolithic, when they occur in the association with other groups of ‘animal evidence’ (deer antler axe-hammers, or deer depictions on tombstones) for funerary rituals [Patokova 1979: 109-110 (wolf and dog teeth pendants), 48, Fig. 19: 7 (stone slab from Usatovo); Patokova *et al.* 1989: 102]. This might justify why this type of evidence is actually an inspiration for a separate sub-programme aimed at investigating ‘deposits of animal bone artefacts’ (or ‘deposits of artefacts made from animal bones’). In this perspective, of particular significance are materials of the *Mamay-Gora Barrow Cemetery Complex*, which yielded ‘pendants’ made from wolf, red deer and *Rutilus frisii* (fish species, member of the *Cyprinidae* family) teeth [Andrykh, Toshev 2009: 214-216].

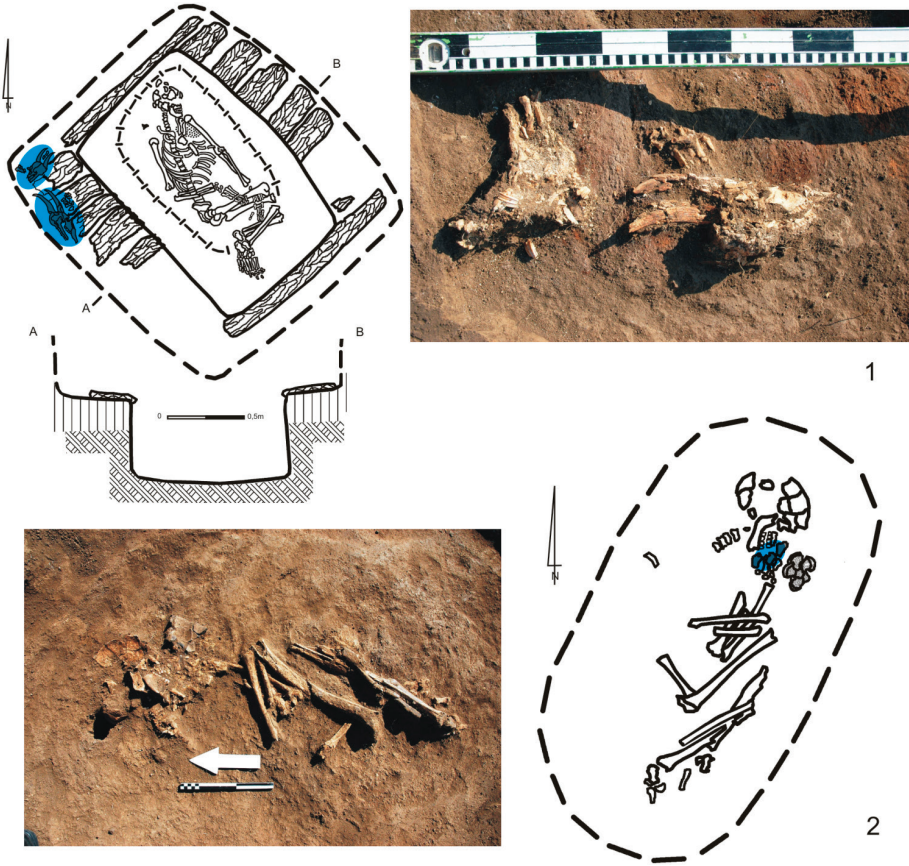


Fig. 6. Location of animals bones (= blue): 1 – Porohy, barrow 3A, grave 17; 2 – Porohy, barrow 3A, grave 22

(c) New phase in studies on ‘animal deposits’ marks the comprehensive archaeological and zooarchaeological research by N.V. Rosiakova, summarized in her PhD dissertation: “Funerary assemblages with animal bones from Timber grave culture cemeteries of the cultural and historical community of the Samara sub-region on the Volga River” [Rosiakova 2015].

In short, as of today there is no comprehensive multi-dimensional analysis of the role of ‘animal deposits’ in funerary practices of ‘early barrow’ communities. The work carried out to date was largely focused upon their economic and adaptive significance rather than the semiotics of rituals, with orthogenetic and topogenetic analysis of the rituals in a broader context of the “Circum-Pontic culture circle” [Klochko, Koško 2013; Koško 2013; 2014; Włodarczak 2014a].

Table 1

A number of identified and unidentified specimens from different cultures and sites of the Yampil barrow cemetery complex

Chronology/ Sites	Encolithic	Yamnaya culture	Babyno culture	Noua culture	Unidenti- fied	Total	
	NISP	NISP	NISP	NISP	NISP	NISP	%
Dobrianka 1		8				8	2,17%
Klembivka 1			2		40	42	11,38%
Pidlisivka 1	11		28	1		40	10,84%
Porohy 3A	45	206		11		262	71,00%
Porohy 4		1				1	0,27%
Prydnistryanske IV		1				1	0,27%
Prydnistryanske III	1					1	0,27%
Pysarivka 3		12				12	3,25%
Severynivka 1			2			2	0,54%
Total	57	228	32	12	40	369	100,00%
%	15,45%	61,79%	8,67%	3,25%	10,84%	100,00%	

## 2. MATERIALS AND METHODS

### 2.1. FAUNAL MATERIALS

Archaeological and faunal data, which form a primary set of evidence to evaluate ‘animal deposits’ from the YBCC, originate from the following four sites (or, more broadly, from the excavated components of *ceremonial centres*): Pidlisivka 1, Porohy 3A, Klembivka 1, Prydnitryanske 1 [Klochko *et al.* 2015a; 2015b; 2015c; 2015d]. In addition, it is supplemented by ‘on-site zooarchaeological observations’ recorded in 1984-1993 conservation reports, with their subsequent re-analysis on the basis of available photographic documentation (Dobrianka 1, Porohy 4, Pysarivka 3 and Severynivka 1) [Harat *et al.* 2014; in addition to the analysis by A. Marciniak]

Overall, we examined 22 deposits containing animal remains or grave goods made of animal bones. The deposits originate from the following 11 sites: Dobrianka 1 (Fig. 3: 1, 2), Klembivka 1, Pidlisivka 1 (Fig. 2: 2), Porohy 3A (Fig. 2: 3; 4; 5, 6), Porohy 4 (Fig. 3: 3), Prydnitryanske 1-III, Prydnitryanske 1-IV, Pysarivka

1, Pysarivka 3, Severynivka 1, and Severynivka 2. They represent the following cultural units: EN (Late Eneolithic: groups of the Tripolye culture – phase CII), YC, BC and NC (Table 1). The most numerous are materials attributed to the YC. These are 13 deposits of animal bones, accounting for 50% of the entire examined assemblage. Materials representing the other three cultural units are considerably less numerous. Eneolithic and BC sites are represented by three deposits, while the NC attribution is ascertained for just two recorded deposits of animal bones.

Faunal material recovered in 1984-1993 has not been quantitatively examined. Figures describing animal bones are only available for features investigated between 2010 and 2014. The assemblage consists of 369 fragments in total, including 26 fragments originating from the Eneolithic, 57 fragments from the Eneolithic or Yamnaya culture (Porohy 3A, feature no. 2/14- Fig. 4: 2), 228 fragments from the Yamnaya culture, 32 fragments associated from the BC, 12 fragments associated with the NC, and 40 culturally unattributed fragments from Klembivka.

Despite the constraints indicated above, we found that the data so far documented for the YBCC offer an opportunity to significantly advance our understanding of funerary practices, including ‘animal deposits’ of ‘early barrow’ communities (4rd/3rd-2nd millennium BC) or, more specifically, the group occupying the northwest borderland situated on the Middle Dniester route for transmitting cultural ideas from the Black Sea Region to the Baltic Sea drainage basin (territory of the GAC and CWC).

## 2.2. RESEARCH METHODS

The analysed faunal materials have been systematically studied by three researchers.

A majority of the the osteological material has been identified by Ukrainian researchers, Yevheniya Y. Yanish and Oleh Zhuravlov, as a part of inter-institutional cooperation between the Adam Mickiewicz University in Poznań and Institute of Archaeology, National Academy of Sciences of Ukraine [Yanish 2012; Zhuravlov 2013-2014].

For taphonomic analysis, Arkadiusz Marciniak received the faunal material recovered from only four features (2, 11, 14 and 17) at the YC site of Porohy 3A. Other materials presented in this study were not available for taphonomic analysis. In several cases, in addition to systematic taphonomic study, the work by Marciniak resulted in re-examination of earlier findings, including identification of species or anatomical parts. As a result, all faunal materials discussed in this article were systematically examined in terms of a wide range of zooarchaeological and



taphonomic variables taking into consideration their fragmentation and generally a bad state of preservation.

The completeness of the material from the aforementioned four YC features was not reliably proven. In case of any discrepancies as to the number of bones between the current study and the Yanish's analysis, it was decided to stay by the results of the latter. This decision was primarily due to very poor condition of the faunal material, as indicated by a considerable degree of its fragmentation. Bone fragmentation is due to an advanced stage of bone mineralization resulting in reduced bone density. Advanced calcification of osteological materials makes any mechanical contact with them during transport, handling, or examination inevitably further exacerbate fragmentation. Furthermore identifications of small ruminant as belonging to goats made by Y.Y. Yanish were adopted without revision, although the material available for re-analysis prevented confirmation of such identifications.

As mentioned above, Arkadiusz Marciniak was provided with an access to faunal materials from only four features at Porohy 3A. They were thoroughly examined for the range of variables, such as species identification, body part distribution age, sex, and taphonomic modifications (cuts, breakages, traces of intentional processing). For identification purposes, every bone fragment was examined for anatomical, taxonomic and taphonomic characteristics, using reference collections of basic domestic species.

In the adopted analytical procedure, studied variables were recorded in the table in the following columns: Species, Age, Sex, Anatomical Part. They were then supplemented by a range of taphonomic observations, such as: Fragmentation, Breakage, Burning, and General Taphonomy.

The primary methods for determining the age at death comprise epiphyseal fusion and dental eruption/wear patterns. In addition, there are also other methods, such as development of horn cores in ruminants or antlers in cervidae. The first method compares the fusion stage and fusion timing determined based on actualistic studies [Silver 1969]. The other method relies on the assumption that, for a specific species and specific teeth (usually molars or premolars), eruption time may be relatively precisely determined [Silver 1969], and that there is a strong correlation between a degree of enamel wear and age of an animal [e.g. Payne 1973; Grant 1982].

Every faunal assemblage from an archaeological site is first of all shaped by taphonomic factors [Lyman 1994]. They include in particular slaughtering process, butchering and subsequent food related practices. They leave a range of traces attributable to subsequent stages of carcass dismemberment and the meat preparation and consumption. These may include burning, fragmentation caused by carcass processing and marrow/fat extraction, and cut marks [Seetah 2006]. Butchering practices leave numerous traces on bones related to their subsequent stages, such as: skinning, disarticulation, filleting, marrow processing, and consumption [Binford 1981: 106].

The next step in the taphonomic analysis involved the examination of bone fractures. The observable shape and character of fractures, which is an outcome of actualistic studies [Binford 1978; 1981; 1984; Lyman 1994], makes it possible to distinguish their distinct forms indicative of their origin. The analysis also covered taphonomic factors of the biostratigraphic stage [Marciniak 1996], including specifically bone weathering [Behrensmeyer 1978].

The following quantitative methods for the analysis of faunal remains were used: NISP (Number of Identified Specimens) and MNE (Minimum Number of Elements) [Grayson 1984; Lyman 1994; 2008; Reitz, Wing 2008]. NISP describes the number of specimens in each assemblage identified to a species, or, if such identification is not possible, to a genus or family and to an anatomical part. NISP values are usually given for particular species or entire animal bone assemblage. NISP is easy to determine as it requires counting bones identified to a particular species. NISP values are cumulative, which means that NISP values determined for various archaeological contexts are adding up and may be examined together. The restrictions of the method involve the interdependence [Grayson 1984, 23-4; Lyman 2008, 36-8]. It rules out a possibility of determining a number of individuals contributing to recorded faunal remains. This is primarily due to the high degree of fragmentation affecting most animal bone assemblages derived from archaeological sites. Moreover, NISP may be affected by the varying number of skeletal elements in different species.

To eliminate irremovable restrictions of the NISP method, MNE was also calculated. MNE is particularly useful for recognizing differences in body parts representation. The MNE method avoids counting the same skeletal element or fragment twice, which means that it is not affected by bone fragmentation. To calculate MNE, remains with the same anatomical and taxonomic identification are compared to find fragments that are known to come from two different skeletal elements/fragments. Such attribution may be made by matching fragments and looking for anatomical overlaps, by comparing age at death, sex, size, etc.

### 3. ANALYSIS OF ANIMAL DEPOSITS DERIVED FROM CEREMONIAL CENTRES OF THE YAMPIL BARROW CEMETERY COMPLEX

#### 3.1. SUMMARY ANALYSIS

The faunal material subject to analysis comes from the burial contexts of nine sites identified as ceremonial centres of the YBCC (Table 1). It should be noted that it is very unevenly distributed across these cemeteries.

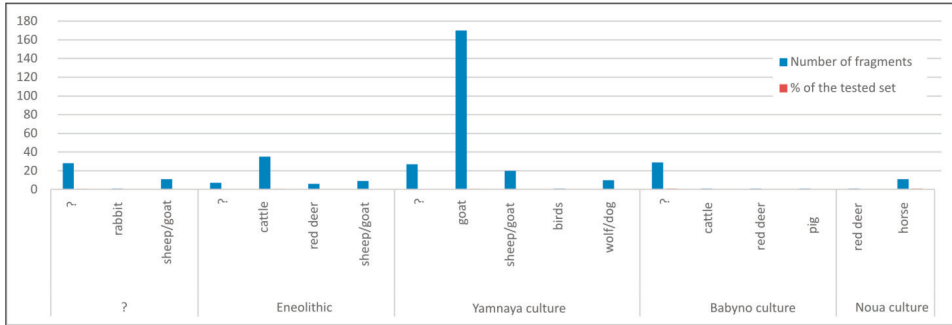


Fig. 7. Species composition at sites of different cultures of the Yampil barrow cemetery complex

The most numerically abundant is osteological material from the site of Porohy 3A, which yielded 262 bone fragments accounting for 71% of the studied assemblage. Faunal material from Klembivka 1 (NISP=42; 11.38%) and Pidlisivka 1 (NISP=40; 10.84%) is also relatively abundant. The other six sites, i.e. Pysarivka 3, Dobrianka 1, Severynivka 1, Porohy 4, Prydnistryanske III and Prydnistryanske IV, yielded 1 to 12 bone fragments each, thereby only slightly contributing to the overall number of bone fragments in the assemblage.

It should be highlighted that ‘animal deposits’ in the YBCC are not ‘ritually extended’ to include ‘grave goods’ made from other raw materials (non-osteological). The only exception is pottery fragments recorded in grave 2 within the *ceremonial centre* of Pysarivka 3.

Material derived from six of the nine examined sites represents just one cultural unit (Table 1). Two sites yielded material attributed to three cultures. As we have already mentioned, the most numerically abundant osteological material was recovered from the site of Porohy 3A, which yielded YC, NC and Eneolithic material, with the YC material predominating. The site of Pidlisivka 1 yielded BC, NC and Eneolithic material, with the BC material being most abundant. The available empirical material has not allowed any cultural attribution of features discovered at Klembivka 1. Material from one of the features has been, however, identified as belonging to the BC.

### 3.2. ENEOLITHIC

In the studied animal bone assemblage, Eneolithic material i.e. belonging to *founders of Yampil ceremonial centres*, are represented by just 57 bone fragments.

T a b l e 2  
 Eneolithic features with animal bones at sites of the Yampil barrow cemetery complex. Species composition and body part representation

Species	Cattle				Sheep/Goat				Red deer			Unidentified	Total		
	skull	long bone	horncore	unidentified	Species sub-total	metacarpal	tibia	unidentified	Species sub-total	skull	horncore			Species sub-total	
Anatomical part															
Pidisivka I				11	11				0			0	0	11	19,30%
Porohy 3A	2	5	17		24	1	2	6	9	1	5	6	6	45	78,95%
Prydnistryanske III					0				0			0	1	1	1,75%
NISP					35				9			6	7	57	100,00%
%					61,40%				15,80%			10,50%	12,30%	100,00%	



Table 3

Yamnaya features with animal bones at sites of the Yampil barrow cemetery complex. Species composition and body part representation

Species	Anatomical part/sites	Dobrianka 1	Porohy 3A	Porohy 4	Prydnistryanske IV	Pysarivka 3	NISP	%
Goat	skull		65				65	
	phalanx I		9				9	
	phalanx II		6				6	
	phalanx III		4				4	
	lower tooth		2				2	
	upper tooth		7				7	
	sacrum		2				2	
	vertebra		1				1	
	horncore		48				48	
	tooth		16				16	
	rib		1				1	
	jaw		1				1	
	unidentified		8				8	
	Sub-total							170
Sheep/goat	skull					1	1	
	phalanx II		3				3	
	phalanx III	8	3				11	
	tibia		1				1	
	metacarpal		3				3	
	horncore					1	1	
	Sub-total							20
Wolf/dog	tooth					10	10	
	Sub-total						10	4,39%
Birds	unidentified			1			1	
	Sub-total						1	0,44%
	unidentified		26		1		27	11,84%
	Total		206	1	0	12	228	100,00%

They originate from four features, two of them discovered at Porohy 3A, one at Pidlisivka 1, and one at Prydnitryanske III (Table 2). The overwhelming majority of the faunal material is identified to cattle (NISP=35; 61.4%). In addition, sheep/goat and red deer remains are also recorded (Fig. 7). It is worth noting that the feature at Pidlisivka 1 yielded nothing but cattle bones, while all of the three species were represented in the features at Porohy 3A (Table 2). Our analysis of faunal remains allowed us to recognize anatomical distribution of bones attributed to the three animal species identified in the Eneolithic features (Table 2). What is worth noting is that the anatomical distribution pattern in sheep/goat differs significantly from that in cattle and deer. For sheep/goat, nothing but long bone fragments were present, while for deer and cattle, there were cranial fragments and antler as well as cranial fragments and horncores, respectively. These significant differences should be linked to different ceremonial treatment of the two animal species. These observations should be, however, taken with caution, given the size of bone assemblage available for our analysis.

### 3.3. YAMNAYA CULTURE

As we have already mentioned, the YC faunal material is most numerically abundant in the group of four cultural units attributable to users of ritual centres of the YBCC. In total, 228 bone fragments from the following five sites (*ceremonial centres*) were recorded: Dobrianka 1, Porohy 3A, Porohy 4, Prydnitryanske IV and Pysarivka 3. The fragments were recovered from nine features, including three from the sites of Dobrianka 1 and Porohy 3A, and one from each of the other sites (Table 3). Most numerous are bones of small ruminants (NISP = 190), accounting for nearly 85% of the animal bone assemblage discussed in this study (Fig. 7).

As far as the five sites are concerned, the most numerically abundant material comes from Porohy 3A, accounting for over 90% of the YC material (Fig. 7; Table 3). Material from the other four sites is considerably less numerous. Porohy 4 and Prydnitryanske IV yielded only single bones. What is worth noting is that bones of small ruminants constitute the largest group within the studied assemblage. Such bones were recognized at three of the five sites under examination. The significant share of goat bones in the Porohy 3A material is remarkable (NISP – 170; 82,52%). Attention should also be paid to the significant share of dog/wolf bones from Pysarivka 3. Two sites with the smallest number of bones yielded bird bones (Porohy 4) and an unidentified bone (Prydnitryanske IV).

Our detailed analysis of the Porohy 3A material allowed us to calculate the Minimum Number of Elements (MNE). Feature 11 contained fragmented maxil-

Table 4

Babyno features with animal bones at sites of the Yampil barrow cemetery complex. Species composition and body part representation

Site \ Species	Cattle	Pig	Red deer	Unidentified	NISP	%
<b>Klembivka 1/1</b>	1	1			2	6,25%
<b>Pidlisivka 1/5</b>				28	28	87,50%
<b>Severynivka 1/4</b>			1	1	2	6,25%
<b>NISP</b>	1	1	1	29	32	100%
<b>%</b>	3,13%	3,13%	3,13%	90,63%	100,0%	

lary bones together with a number of caprine mandible teeth. Both the type and number of these bones permitted us to derive the MNE value of 2. Consequently, we were able to recognize that the feature contained remains of at least two individuals. Our analysis of sheep/goat phalanges from feature 17 permitted us to derive the MNE value of 6. A number of right and left phalanges from the north west part of the feature allowed us to determine that the bones belonged to one individual. As far as phalanges discovered elsewhere within the feature are concerned, it is likely that the identified remains belonged to at least two individuals. Furthermore, we were able to determine the MNE value of 1 for both the sheep/goat mandibles and the sheep/goat horncores from the same feature.

Anatomical analysis of 228 osteological remains from the YC features allowed us to reveal a very specific body part distribution pattern (Table 3). For small ruminants (NISP=189), cranial fragments (NISP=65), horncores (NISP=49) and teeth (NISP=25) predominate. These are followed by bones of an axial skeleton, including vertebrae and sacrum. It is worth noting a substantial share of phalanges (NISP=33). Long bones are almost totally missing, except one tibia. It should be underlined that the tibia bears traces of human processing, so it may be considered a finished or semi-finished tool. All of the ten dog/wolf bone fragments recovered from Pysarivka 3 are molars (Fig. 3: 4). One hundred and thirty-two bone fragments from Porohy 3A have been sexed, with a roughly similar number of males and females. Other faunal remains are of indeterminable sex.

The publication of material from conservation work reports ritual remains found in features 4 and 6 at Dobrianka 1 [Harat *et al.* 2014: 61]. Regrettably, the author (Valentina Zahorujko) fails to specify criteria used for such specific identification. The horncore recovered from feature 2-14 at Porohy 3A has traces of human processing and use. It is conceivable that it might have served as a tool. Regrettably, the available archive material does not offer any further details. Feature 2 at Pysarivka 3 yielded sheep/goat cranial and horncore fragments [Harat *et al.* 2014: 118-121]. Both fragments were found in the southern part of the pit. The

Table 5

Noua features with animal bones at sites of the Yampil barrow cemetery complex. Species composition and body part representation

Species Site	Red deer		Horse			Total	
	humerus	Species subtotal	sacrum	tail vertebrae	Species subtotal	NISP	%
<b>Podlisivka 1</b>	1	1			0	1	8,33%
<b>Porohy 3A</b>		0	6	5	11	11	91,67%
<b>NISP</b>	1	1	6	5	11	12	100,00%
<b>%</b>		8,33%			91,67%	100%	

cranial fragment was found lying face down in such a way that the horns would be pointing northeast. The goods deposited inside the pit included a dog/wolf tooth necklace as an amulet.

#### 3.4. BABYNO CULTURE

The BC materials are represented by as few as 32 bone fragments (Table 4). They were recovered from the following three sites: Klembivka 1, Pidlisivka 1 and Severnyivka 1. The material from Pidlisivka 1 (NISP=28; 87.5%) is most numerically abundant. Unfortunately, none of the BC bone fragments from this site has been identified to species (Table 4). Overall, species attribution from this culture was done for just three bone fragments identified as cattle, pig, and red deer. The red deer bone was actually a perforated tooth, accompanied by an oval buckle made of bone unidentifiable to a species.

#### 3.5. NOUA CULTURE

The NC material is least numerically abundant in the group of the four cultural units discussed in this study. The material consists of as few as 12 fragments, accounting for just 3.25% of the studied assemblage. The fragments were recovered from two features at Porohy 3A and one feature at Pidlisivka 1 (Table 5). All bone fragments from Porohy 3A come from horse, while the bone fragment from Pidli-



sivka 1 comes from red deer (Table 5). The remains of horse consist solely of a sacrum and a caudal vertebra. The preserved fragment of the red deer bone belongs to a humerus (Table 5).

#### 4. 'ANIMAL DEPOSITS' OF THE YAMPIL BARROW CEMETERY COMPLEX FROM THE PERSPECTIVE OF ANALOGOUS MATERIAL AND TOPOGENETIC REFLECTIONS FROM THE NORTHERN BLACK SEA REGION

Our aim in this chapter is to identify a transformation of ritual norms involving 'animal de-posits' (discussed in Chapter 4), which have been documented in the YBCC, and set it in the broader spatial and cultural context. This will primarily include the 'non-Yampil' forest-steppe (Podolia – see Chapter 5.1) and steppe (Budzhak steppe – see Chapters 5.2 and 5.3) of the Middle Dniester Area, with 'Yamnaya-Catacomb' funerary rituals identified on the North Black Sea Coast or in Ciscaucasia (Chapter 5.4) (Fig. 1).

##### 4.1. DNIESTER FOREST-STEPPE PERSPECTIVE OF PODOLIA BARROWS

As far as YC graves are concerned, which represent a predominant type of *Yampil barrows*, the number of burials containing animal bones (including artefacts made from animal bones) is small: such burials are recorded only in 9 of 76 features (11.8%). A number of such burials for the entire *Podolia zone*, comprising such barrow complexes of the forest-steppe on the left or right bank of the Dniester river as Yampil, Kamienska, Mocra or Tymkove, is even smaller (7.1%).

It is striking that tools are only incidentally recorded: in addition to graves 2 and 3A/10 at Porohy (Fig. 4: 1), tools were present only in barrows at Oknița, sub-district of Kamienska (awls from graves 6/5 and 7/8, a pin from grave 4/1, and an object of an unidentified function from grave 4/4 at Oknița) [Manzura *et al.* 1992: 116, Fig. 14: 5; 117, Fig. 15: 3; 123, Fig. 21: 4; 131, Fig. 29: 7]. When we look at the entire Northwest Black Sea Coast, we see that although bone tools were not an inseparable element of grave goods, they tended to be more frequent and more diversified in the steppe ('Budzhak') zone [Subbotin 2003: 92-102]. A similar incidental occurrence is demonstrated for bone ornaments, which were present only in one grave of the *Yampil-Podolia YC*, i.e. feature 3/2 at Pysarivka (Fig. 3: 4).

They comprised pendants made from dog/wolf molars. Although this specific type of pendant is known from the YC and CC graves [Shaposhnikova *et al.* 1986; Bratchenko 2001: 79, Fig. 5: 7], it does not fall within the category of ‘universal’ forms (such as dog/wolf canine tooth pendants, or bag- or butterfly-shaped pendants made from deer teeth) widespread across the Eurasian steppe and among Central European cultural groups of the Final Eneolithic.

What is remarkable about the *Yampil burials* attributable to the YC is the presence of small ruminant remains, such as goat crania in the graves at Porohy (features 3A/11, Fig. 5 and 3A/17, Fig. 6: 1) and Pysarivka (feature 3/2, Fig. 3: 4) or the distal limb bones of sheep/goat in the graves at Porohy (feature 10, Fig. 4: 1) and Dobrianka (features 1/4 and 1/6 – Fig. 3: 1,2). As for Dobrianka, these were only third phalanges. In addition to astragali (so far not discovered in any of the *Podolia barrows*), there were caprine limbs in the YC graves of the Ingul zone [Shaposhnikova *et al.* 1986: 21] as well as on the Middle Ingulets [Melnik, Steblina 2013: 49] and in the Lower Dnieper Region [Nikolova *et al.* 2011: 148]. The limb bones were present in graves of the late phase of the YC [Fomenko 2004: 49] and Ingul CC [Fomenko 2005: 51], being particularly numerous east of the Sea of Azov [Andreeva 2009: 109, 110].

In all of the three cases, sheep/goat limb fragments recovered from the *Yampil graves* were deposited on the bottom of burial pits, with two instances having been placed next to the elbow of the deceased. In contrast, goat crania were placed on the pit step, right beneath the timber roof of the burial chamber.

Animal bone deposits (sacrificial meat) occurred rarely in the context of the *Podolia YC graves*: if they did, the bones were placed next to the burial pit (feature 1/8 at Dobrianka) or above the skeleton, within the burial chamber (feature 7/5 at Oknița; grave 1/13 at Mocra). Animal sacrifices, involving whole or parts of carcasses, were parts of the ritual recorded for Northwest Black Sea Coast in the Eneolithic (Usatovo group of the Tripolye culture) as well as in the Early Bronze Age. The similarity of recorded practices makes some believe that there is a link between the YC customs and the older Eneolithic belief systems [Razumov *et al.* 2016: 190].

The discovery of a pig mandible in grave 3/4 at Mocra is unique [Kashuba *et al.* 2001-2002: 215]. The grave also contained a vessel, which exhibited features typical of the Global Amphora culture [Szmyt 2013: 96], whose communities manifested increased occupational activity also in the Podolia Region. As pig mandibles are a typical element in ritual practices of the GAC [Wiślański 1966: 43], the discovery at Mocra may be indicative of yet another piece of evidence for ‘Central European influences’ in the YC [Szmyt 1999; 2000; 2009].

## 4.2. DNIESTER FOREST-STEPPE PERSPECTIVE OF BUDZHAK BARROWS

It is by no means easy to reveal the meaning or character of the achieved results without reference to ‘animal deposits’ recorded for the *Budzhak community*, for which the forest-steppe of the Middle Dniester Area is sometimes referred to as the ‘*specific territorial group*’ [Ivanova, Toshev 2015: 362].

This goal cannot be satisfactorily achieved due to a limited number of empirical data, as already indicated in Chapter 2. Just two of the published results of the archaeologically investigated barrows of the *Budzhak zone* present a relatively satisfactory set of archaeological and faunal data comparable to those for the YBCC. These two publications were published Evgenij V. Yarovoy and his associates: *Barrows of the Budzhak Steppe* and *Barrows of the Eneolithic – Bronze Age of the Lower Dniester Area* [Chabotarenko *et al.* 1989; Yarovoy 1990].

The first book published in 1989, reports ‘animal deposits’ unearthed in 11 graves from the following four *ceremonial centres*:

Balaban (barrows/graves: 13/18=YC; 21/5=YC?);

Ursoaya (barrows/graves: 3/6=YC; 3/11=CC; 3/12=YC);

Kirkaeshty (barrows/graves: 5/2=YC);

Khadzimys (barrows/graves: 2/1=BC; 2/8=BC; 2/12=BC; 2/15=BC; 2/17=YC)

In the *centres* of Balaban, Ursoaya, and Kirkaeshty, ‘animal deposits’ (N=11) occurred in 21.56% of all investigated graves (N=51 graves from the YC, CC or BC). They appeared pre-dominantly in YC burials (N=6; accounting for 11.76% of the total assemblage) and for 18.75% of all YC graves (N=32). These were followed by BC burials with the share of 7.84% of the total assemblage (N=4), accounting for 30.77% of all BC graves (N=13) and CC burials with the share of 1.96% of the total assemblage (N=1), accounting for 16.67% of all CC graves (N=6).

Published in 1990, the second book mentions ‘animal deposits’ only in one feature with complex ‘deposits’ and in 19 graves from the following three *ceremonial centres*:

Novye Raskaetsy (barrows/graves: 1/12=CC; 1/27=BC; 1/30=BC; 2/1=YC)

Purcari (barrows/graves: 1/21=EN-Usatovo; 1/27=BC; 2/13=EN-Usatovo; 3/1=EN-Usatovo; 5/7 = BC)

Olaneshty (barrows/graves: 1/4=CC; 1/5=BC; 1/7=BC; 1/17=BC; 1/18=BC; 1/19=BC; 1/32=YC; 4/2=BC; 8/1=BC; 8/7=YC; 14/ =CC).

In the *centres* of Novye Raskaetsy, Purcari and Olaneshty, ‘animal deposits’ occurred in 22.22% of all investigated graves (90 graves from the EN-Usatovo, YC, CC and BC). Predominant were BC burials with a share of 12.23% of the total assemblage (N=11 graves), accounting for 32.35% of all BC graves (N=34). They are followed by few burials of other cultures (3 graves each); however, they differ in terms of the frequency of ‘animal deposits’ in each of the cultural units: EN-Usatovo =100% (N=3), YC=9.09% (N=33), CC=15% (N=20).

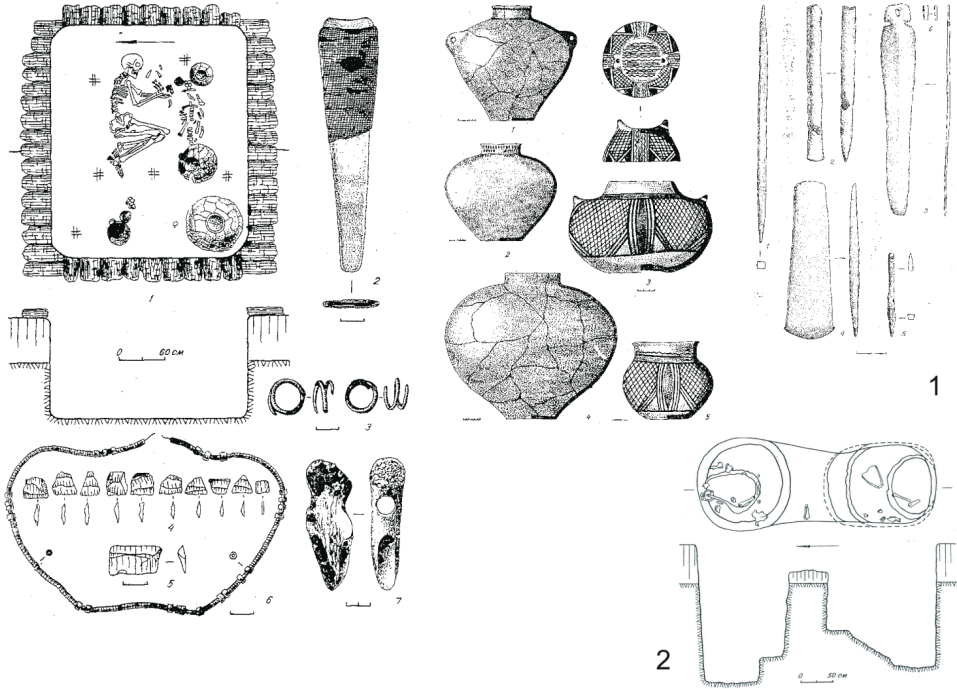


Fig. 8. Purcari, barrow 1, grave 21 (Moldova). Usatowo group ceremonial centre with a complex composition of ‘animal deposits’: 1 – grave 21 and grave goods; 2 – cult feature [after Yarovoy 1990]

The comparative analysis of the *Podolia zone* and *Budzhak zone* reveals that the number of ‘animal deposits’ in funerary contexts is doubled for the Lower Dniester Area, i.e. Budzhak steppe, especially in the BC period. It is worth noting an increased number of grave goods, in particular bone buckles.

4.3. INTERPRETATIVE CONTEXT OF THE BUDZHAK CEREMONIAL CENTRES WITH COMPLEX ‘ANIMAL DEPOSITS’: PURCARI-GLINOYE TYPE

Of particular significance for the *Budzhak zone*, is the Eneolithic feature from the Usatovo group or phase CII of the Tripolye culture with a *complex ‘animal deposits’*. It was recorded as a central (foundation) burial at Purcari, southern Moldova. It is defined as ‘ritually atypical’ because of the complex character of ‘animal deposits’ [Yarovoy 1990: 62-70].



What makes the feature distinctive is the fact that the ‘animal deposits’ originated from a complex ritual cycle that involved (a) burial pit (foundation burial in a barrow of ‘an adult’ with clearly detectable skeletal pathologies who was accompanied with a very rich array of grave goods; in terms of a social hierarchy, it may be interpreted as ‘a princely burial’); and (b) close vicinity of the burial pit (Fig. 8).

**a.** A complete dog skeleton with its head to the south, was placed on wooden logs of the roof. A caprine articulated skeleton without a cranium was deposited approximately 1 m away from arm bones of the deceased adult, along the longer axis of the burial pit. Next to the left arm of the deceased, there was a hoe made from a young red deer’s antler. On the head of the deceased, there were approximately 200 beads made from bird spongy bones (and 25 larger jet beads). Moreover, the deceased was buried with: 8 metal objects made of ‘arsenical bronze’, including a dagger, a knife, an axe, an awl, a perforator, ornaments and 5 vessels.

**b.** Approximately 2 m east of the burial pit, a ‘ritual pit’ was identified. The spectacles-shaped pit included two cavities and contained cranial fragments, limb bones, a pelvis and an astragals of a young horse, large tibias belonging to one young and one old bull, and bones of one sheep/goat, all placed at various depths.

Any in-depth insight into the *ritual cycle* outlined above is prevented by unavailability of (taphonomic and ‘isotopic’) analysis of the faunal material. What we can say at this stage is that we are dealing here with an *elite ritual* rooted in the Late Eneolithic tradition, involving deposition of birds as well as domesticated and wild mammals in graves, either inside or outside sacrificial pits. Research on the barrow at Glinoye in the Lower Dniester Area carried out by Razumov opens up a new opportunity for studying this type of ‘animal deposits’ [Razumov *et al.* 2016]. Thus, the *Purcari-Glinoye type* rituals urgently require a dedicated research project.

## 5. DONETS AND CISCAUCASIAN INSPIRATIONS

Stanislav N. Bratchenko pointed out that the 3rd millennium BC witnessed the practice of depositing distal limb segments and heads of sheep, goat and cows in graves. Such practice is recorded on the Anatolian plateau as well as in features datable to the early phase of the Catacomb culture in the Ciscaucasian, Don and Donets Regions [Bratchenko 2001: 56]. In the Ciscaucasian zone, such practice can be traced back to the Eneolithic, while in the Novotitorovka culture, it manifests itself in nearly 50% of all burial features [Trifonov 1991; Gey 2000]. According to S.N. Bratchenko [2001: 73], the distribution of this particular component of

the ritual accompanied the spread of other characteristic traits of the Ciscaucasian zone.

It is also west of the Dnieper where caprine distal limb segments occurred in graves attributed to the Catacomb culture, in particular in its early phase [Kaiser 2003: 228]. Largest concentrations of such deposits come from the Dnieper zone. Animal crania and mandibles are less often deposited in the graves of the western Catacomb culture [Kaiser 2003: 227, Fig. 84: 2]. It was most probably under the influence of this early Catacomb culture that similar elements became present among grave goods of the late phase of the YC in the Lower Dniester and Lower Bug zones, as well as at the Ingulets River, in Crimea and in the Lower Dnieper Area [Shaposhnikova *et al.* 1986: 21]. Associated with the late phase of the YC, the finds from Dobrianka and Porohy are currently regarded as a unequivocal manifestation of the eastern practices in the funerary ritual in the forest-steppe of the Northwest Black Sea Coast. The finds are indicative of relations the YC communities had with the Southern Bug Area [Klochko *et al.* 2015d; Ivanova 2015].

The similar context and possibly roughly the same chronological horizon are shared by animal astragali, which occurred in the graves of the YC and CC of the Northwest Black Sea Coast [Ivanova 2001: 92-93]. Not yet discovered in any Podolia feature, astragali are usually considered to have been used for gaming [Yarovoy 1985] or divination [Ivanova 2001: 92]. They came with the whole set of new elements whose importance in funerary practices grew at the end of the 1st half of the 3rd millennium BC. It is likely that the presence of astragali was also a sign of the aforementioned 'Donets and Ciscaucasian insights'.

## 6. FUNERARY RITUALS WITH ANIMALS IN THE CONTEXT OF CORDED WARE AND GLOBULAR AMPHORA CULTURES FROM THE BALTIC ZONE

When the above-described uses of animals at funerary rituals are compared with those in the Central European CWC and late phase of the GAC, significant differences become clear. It is particularly in the CWC that the frequency of graves with bone or antler tools is considerable. This is especially evident at the cemeteries of the CWC in Lesser Poland (Małopolska), where bone and antler objects were inseparable elements of the tool inventory present in graves, in particular those of adult males. Such tool types (chisels, awls with preserved hafts, tools made from wild boar tusks, antler wedges, and retouching sticks) are rarely encountered in graves attributed to the Yamnaya culture of the Northwest Black Sea Coast. These comprise major elements of the tool set, being a typical category of grave goods.

The CWC ritual did not see the custom of depositing whole or parts of carcasses. Essential to the GAC rituals, the practice of placing the remains of cattle, pigs and small ruminants next to the remains of the deceased disappeared in the CWC. Moreover, deposition of grave goods became restricted to the bottom of burial pits/catacombs.

As outlined above, the differences between the zones subject to our comparison appear to be so distinct due to a pronounced dominance of empirical materials datable to the late phase of the CWC. In the earlier phase (marked by the construction of most of the Final Eneolithic barrows: generally from 2800 to 2600 BC), funerary behaviour as regards ‘animal deposits’ were clearly less standardized. They were also less recognizable, because of the dearth of empirical material. At this stage, the dominant rituals find parallels in the steppe/forest-steppe zone. They were well manifested in barrow 1 at Miernów [Kempisty 1967]. It contained a dog burial placed next to the burial pit<sup>4</sup>. The deceased were accompanied by various bone artefacts, such as tools, ornaments or insignia.

Hence, the differences between the ‘Central European’ ritual tradition with the use of ‘animal deposits’ of the early phase of the CWC and the similar ritual practices of the Late Eneolithic and beginning of the Early Bronze Age in the northern Black Sea Area are, therefore, less prominent.

#### FINAL REMARKS

Funerary practices of the *early barrow Dniester communities* reveal a multidimensional character of animal deposition. They seem to originate from three intertwined distinct traditions:

- ‘Post-Eneolithic tradition’– characterized by the deposition of bird remains as well domestic and wild mammals in graves, hearths, or sacrificial pits, or outside thereof within the barrow structure;
- ‘Eastern tradition’– deposition of selected anatomical parts of domestic animals (mainly goats and sheep), primarily associated with the late phase of the YC and CC;
- Reception of practices characteristic of the GAC in Central Europe.

In the rituals of the CWC in Central Europe, the use of animal remains in funerary practices does not seem to have played any significantly role, although some elements find surprising parallels in the Baltic Sea zone. Among the parallels, there is a rare custom of depositing dog skeletons in graves (with nearly a total absence of sacrifices of whole carcasses of other animal species), recorded both

<sup>4</sup> For a similar arrangement, *see*: barrow no. 1 at Tudorovo, Budzhak zone [Melnyk, Steblyna 2013].

for the CWC in Lesser Poland (Małopolska) [Włodarczak 2006] and for the early CC [Kaiser 2003: 228]. While the significance of animal use in funerary rituals was considerably less pronounced in the CWC compared to the Black Sea culture circle, a omnipresence of bone objects (mainly ornaments) is noticeable. Artefacts such as pendants made from dog/wolf canine teeth or bag shaped pendants made from deer teeth were present in both cultural zones and seem to prove the existence of shared cultural beliefs.

*Translated by Piotr T. Żebrowski*

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