

ARCHAEOZOOLOGICAL ANALYSIS OF THE SAMPLE ORIGINATED FROM THE PIATRA FRECĂȚEI SITE (XI-XIITH CENTURIES)

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Abstract. During the excavations carried out during 1999-2002, at Piatra Frecatei site (on the place of old Beroe settlement) was found materials dated in XI-XII centuries. Beroe settlement was on the Danube River bank, 3 km from the village of Ostrov (Tulcea County). Archaeozoological sample consists of 3923 remains, of which three belong to the human (*Homo sapiens*), 86 to the birds, 316 to the fish, and the rest to the mammals (3518). The presence of mammal remains illustrates two important activities of the Beroe population: hunting and animal husbandry. Most of the mammals remains belong to the domestic one (56.75%); in this group, species with the highest representation is cattle (*Bos taurus*) (32.72% of the total mammal remains), followed by sheep-goat (*Ovis aries* / *Capra hircus*) and domestic pig (*Sus scrofa domesticus*), with similar percentages. Other species of domestic mammals identified are: horse (*Equus caballus*), donkey (*Equus asinus*) and cat (*Felis domesticus*), each with lower proportions of 1% in the group of mammals. Wild mammals also have a significant share (43.25%), which is an indication that hunting was an important occupation for the inhabitants of this settlement. Identified species are: red deer (*Cervus elaphus*), wild boar (*Sus scrofa ferus*), roe deer (*Capreolus capreolus*), hare (*Lepus europaeus*), fox (*Vulpes vulpes*), wolf (*Canis lupus*), beaver (*Castor fiber*) and aurochs (*Bos primigenius*); red deer and wild boar have the highest proportion in the group of wild mammals.

Keywords: faunal remain quantification, archaeozoology, animal resources, Beroe, hunting, animal husbandry.

Rezumat. Analiza arheozoologică a eșantionului provenit din situl de la Piatra Frecăței (secolele XI-XII). În cursul săpăturilor arheologice derulate în perioada anilor 1999-2002 în situl de la Piatra Frecăței (pe locul cetății Beroe) s-au găsit materiale datate în secolele XI-XII. Cetatea Beroe se află pe malul Dunării, la 3 km de comuna Ostrov (județul Tulcea). Eșantionul arheozoologic analizat este constituit din 3923 fragmente, dintre care trei aparțin omului (*Homo sapiens*), 86 păsărilor, 316 peștilor, iar restul mamiferelor (3518). Prezența resturilor de mamifere ilustrează două activități importante pentru populația de la Beroe: creșterea animalelor și vânătoarea. Cea mai mare parte a resturilor provenite de la mamifere aparțin celor domestice (56,75%), în cadrul acestui grup, specia cu cea mai bună reprezentativitate fiind vita (*Bos taurus*) (32,72% din totalul resturilor de mamifere identificate), urmată de ovicaprine (*Ovis aries/Capra hircus*) și porcul domestic (*Sus scrofa domesticus*), cu ponderi asemănătoare. Alte specii de mamifere domestice identificate sunt calul (*Equus caballus*), măgarul (*Equus asinus*) și pisica (*Felis domesticus*), fiecare având proporții mai reduse de 1% în cadrul grupului mamiferelor. Mamiferele sălbatice au și ele o pondere însemnată (43,25%), aceasta fiind un indicator al faptului că vânătoarea reprezenta o ocupație importantă pentru locuitorii acestei așezări. Speciile identificate sunt cerbul (*Cervus elaphus*), mistrețul (*Sus scrofa ferus*), căpriorul (*Capreolus capreolus*), iepurele (*Lepus europaeus*), vulpea (*Vulpes vulpes*), lupul (*Canis lupus*), castorul (*Castor fiber*) și bourul (*Bos primigenius*); proporția cea mai ridicată o au cerbul și mistrețul.

Cuvinte cheie: cuantificare resturi faunistice, arheozoologie, resurse animale, Beroe, vânătoare, creșterea animalelor.

Introduction

In the archaeological site Piatra Frecăței (toponym Beroe) were identified archaeological materials from several periods: the first and second Iron Age, Early Roman (I-III centuries), Roman-Byzantine (IV-VII), early medieval (XI-XII centuries).

Beroe fortress lies on the Danube River, 3 km south of the village Ostrov (Tulcea county), on a cliff about 30 m. During archaeological research in 1998 was found numismatic material indicating that settlement housing was resumed at the beginning of the eleventh century; settlement has ended existence since 1122, at the Cumans attack. During excavations conducted in 1999-2002 were found archaeological materials dated XI-XII centuries (Cronica, 2000-2003).

The main information provided by archaeozoological analysis are the identification and description of animal species that human population from Beroe came in contact; establishing the relations between this population and animal species identified (hunting, fishing, animal husbandry) and estimate the animal exploitation strategies; estimate the distribution areas of some mammals or modification in time of spreading areas, under the human impact.

Material and methods

Analysed faunal material was collected during archaeological excavations conducted in 1998, 2001 and 2002 are dated as belonging to the XI-XII centuries. In 1998 were collected bone fragments from section S1, squares: C1, C5, C6, C7, C8, C11, C12, C20, C21, C22, C25, C26, C27, and C28. Faunal material collected in 2001 came from section VI, squares: C3, C4, C5, and C6. In 2002 the faunal material was collected from sections VIb, VIIb, VIIc Vic, and VIIc. Archaeozoological sample consists of 3923 faunal remains, represented by bones, teeth and antlers.

The archaeozoological study was achieved in the Laboratory of Animal Morphology, Faculty of Biology, Iași. The study methods consisted of anatomical, taxonomical, and taphonomical identification, data quantification (by NISP – number of identified specimens and MNI – minimal number of individuals).

Results and Discussion

Although faunal remains came from different archaeological complexes were added together in a single sample of 3920 fragments because all the complexes belong to the same historical period. The fragments belong to fish, birds and mammals (Fig. 1, Table 1). Beside those, three other fragments of human (*Homo sapiens*) were found, but they were not analysed in the present study. Most of the remains (89.7%) belong to the group of mammals (this percentage includes 1568 fragments that could not be determined until species level); due to the high degree of fragmentation, these 1568 pieces (represented by fragments of skull and various bones long and wide, fragments of vertebrae and ribs) could not be assigned to a particular species, but they come from mammals both domestic and wild.

Domestic mammal species identified are: cattle (*Bos taurus*), sheep/goat (*Ovis aries* and *Capra hircus*), pig (*Sus scrofa domesticus*), horse (*Equus caballus*), donkey (*Equus asinus*), dog (*Canis familiaris*) and cat (*Felis domestica*). The largest share has cattle (32.6% from the totality of identified mammals). Sheep/goat group and pig have similar frequencies, such as number of remains (11.6% for sheep/goat and 10.9% for pig), and the minimum number of estimated individuals (15.2% for sheep/goat and 16.4% for pig). Horse, donkey, dog, and cat have small frequencies (less than 1% for each species).

Wild mammal remains are very numerous in the sample, representing 43.25% of the total identified mammals. Wild mammal species identified are: red deer (*Cervus elaphus*), wild boar (*Sus scrofa ferus*), roe deer (*Capreolus capreolus*), hare (*Lepus*

europaeus), fox (*Vulpes vulpes*), wolf (*Canis lupus*), beaver (*Castor fiber*) and aurochs (*Bos primigenius*). Red deer (25% NISP) and wild boar (17% NISP) have the highest proportion from wild mammals. List of identified species is diverse and indicates the exploitation of forest, steppe and aquatic biotopes (Stanc, 2009).

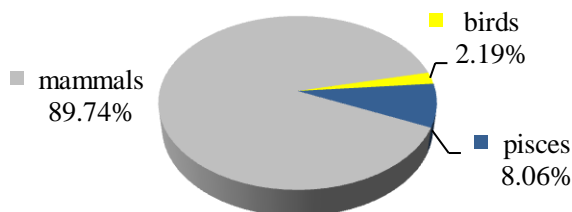


Figure 1. Distribution of faunal remains.

Table 1. Quantification of the faunal remains (NISP – number of identified specimens, MNI - minimum number of individuals).

Species	NISP	%	MNI	%
<i>Bos taurus</i>	636	32.67	33	20.12
<i>Ovis aries / Capra hircus</i>	226	11.61	25	15.24
<i>Sus scrofa domesticus</i>	214	10.99	27	16.46
<i>Equus caballus</i>	17	0.87	3	1.83
<i>Equus asinus</i>	2	0.1	1	0.61
<i>Canis familiaris</i>	7	0.36	2	1.22
<i>Felis domestica</i>	2	0.1	1	0.61
Total domestic mammals	1104	56.7	92	56.1
<i>Cervus elaphus</i>	488	25.06	35	21.34
<i>Sus scrofa ferus</i>	331	17	27	16.46
<i>Capreolus capreolus</i>	11	0.56	3	1.83
<i>Lepus europaeus</i>	3	0.15	2	1.22
<i>Vulpes vulpes</i>	3	0.15	1	0.61
<i>Canis lupus</i>	1	0.05	1	0.61
<i>Castor fiber</i>	5	0.26	2	1.22
<i>Bos primigenius</i>	1	0.05	1	0.61
Total wild mammals	843	43.3	72	43.9
Total identified mammals remains	1947	100	164	100
Fish	316			
Birds	86			
Unidentified mammals remains	1571			
Total sample	3920			
<i>Homo sapiens</i>	3			

Red deer is a species whose spreading area narrowed in recent centuries at the Carpathian area, but he was often in early second millennium AD in Dobruja territory. Two other species are beaver and aurochs, and they were present in the area at the beginning of the second millennium AD. The high percentage of wild mammal remains (mainly red deer and wild boar) is an indicator of the hunting importance for Piatra Frecăței population, during the XI-XIIth centuries.

The medieval site of Piatra Frecăței yielded 86 avian remains that represent 2.2% of the whole bone assemblage (Table 2). Domestic hen was the most frequent species among birds by 61 remains (71%) and 13 individuals (59.1%). In addition to domestic hen, cormorant, whooper swan, goose, duck, white-tailed eagle, coot and rook were identified. The environmental characteristics of these birds would suggest that fowling was practiced along the Danube, in the direct vicinity of the site. Avian meat- and egg provision seem to have been based on poultry keeping at the medieval site of Piatra Frecăței. Goose also could have been exploited for its feathers which may have been used for many purposes such as lining, writing, painting, lubricating, etc. The few remains assigned to wild birds indicated that, contrary to fishing, hunting and gathering, fowling did not play an important role even as a seasonal activity (Gal & Stanc, 2012).

Table 2. Quantification of bird remains (Gal & Stanc, 2012).

Species scientific name	Vernacular name	NISP	MNI
<i>Gallus domesticus</i>	Domestic hen	61	13
<i>Phalacrocorax carbo</i>	Cormorant	1	1
<i>Cygnus olor</i>	Mute swan	7	1
<i>Haliaeetus albicilla</i>	White-tailed eagle	1	1
<i>Fulica atra</i>	Coot	2	1
<i>Corvus frugileus</i>	Rook	2	1
<i>Anser anser/Anser domesticus</i>	Greylag goose/Domestic goose	10	2
<i>Anas platyrhynchos/Anas domestica</i>	Mallard/Domestic duck	2	2
Total		86	22

Fish remains are 8.06% of the sample. Fishing was an important occupation for the inhabitants of Piatra Frecăței medieval settlement. There were identified pike (*Esox lucius*), common carp (*Cyprinus carpio*), catfish (*Silurus glanis*) and zander (*Stizostedion lucioperca*).

Conclusions

Animal husbandry was primary occupation at Piatra Frecăței settlement. The livestock was dominated by cattle (*Bos taurus*), followed by sheep/goat (*Ovis aries/Capra hircus*) and pig (*Sus scrofa domesticus*).

Bird species identified are large cormorant, swan, rook, white-tailed eagle, domestic hen, coot.

Remains of wild mammals have a significant share (43.25%), which is an indicator that hunting was a major occupation for the inhabitants of this settlement; red deer has the largest share among wild mammal species identified.

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References

- Cronica, 2000-2003. *Cronica Cercetărilor Arheologice din România, Campaniile 1999-2002*.
<http://www.cimec.ro/Arheologie.htm>
- Gál, E., Stanc, S., 2012. Bird bone remains from the 11th-12th century settlement of Piatra Frecăței (Dobruja, Romania). *7th Meeting of the Bird Working Group (BWG) of ICAZ*, Iași, Romania, 27th August - 1st September 2012: 36-37.
- Stanc, S., 2009. *Arheozoologia primului mileniu d.Hr. pentru teritoriul cuprins între Dunăre și Marea Neagră*. Editura Universității „Al.I.Cuza” Iași.