FAUNAL REMAINS IDENTIFIED IN SITE OF FRUNTIȘENI (VASLUI DISTRICT) BELONGING TO STOICANI-ALDENI CULTURAL ASPECT. FIELD MISSION 2013

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ABSTRACT: *The sample of faunal remains was collected during field mission 2013, from a section dug in a Stoicani-Aldeni settlement (Vaslui District). The identified mammals are both domestic (Bos taurus, Ovis aries, Capra hircus, Ovis aries/Capra hircus, Sus domesticus, Canis familiaris) and wild (Bos primigenius, Cervus elaphus, Capreolus capreolus, Sus ferus, Lepus europaeus, Meles meles, Vulpes vulpes). The domestic mammals were killed for meat or kept for breeding, while the wild ones were hunted for meat supply and for skin or fur.*

KEYWORDS: *mammals, domestic, wild, livestock, breeding.*

Rezumat. *Resturile faunistice analizate au fost prelevate în cadrul săpăturii din 2013, dintr-un sit aparținând aspectului cultural Stoicani-Aldeni (județul Vaslui). Speciile de mamifere identificate apațin atât animalelor domestice (Bos taurus, Ovis aries, Capra hircus, Ovis aries/Capra hircus, Sus domesticus, Canis familiaris), cât și celor sălbatice (Bos primigenius, Cervus elaphus, Capreolus capreolus, Sus ferus, Lepus europaeus, Meles meles, Vulpes vulpes, Canis lupus). Animalele domestice au fost ucise pentru carne sau ținute pentru reproducere, pe când cele sălbatice au fost vânate pentru a suplimenta resursele de carne ți pentru blana acestora.*

CUVINTE-CHEIE: *mamifere, domestic, sălbatic, șeptel, reproducere.*

INTRODUCTION. CONTEXT.

Fruntişeni archaeological site (Fig. 1), point Fântâna babei Ștefana is located at 500 m from the village Fruntişeni (Vaslui), on the south-eastern hill Pârlitura. The site existence in this area has been announced by two locals in 2006, these two gathering from the perimeter of the site some pottery fragments which were later handed to the specialists from The Museum "Vasile Pârvan" in Bârlad[1].

By the summer of 2013, regular field work conducted in the area, allowed the recovery of large quantities of pottery, fragments of female anthropomorphic statuettes, stone and bone tools have enabled specialists to attribute to – based on specific typologies – the site the cultural aspect Stoicani- Aldeni[2]. The excavation is carried out from a section (S1) with dimensions L = 20 m and L = 2m, oriented EV. The orientation section was imposed by both the availability perimeter and slope orientation[3].

The section intersected a hearth, at a depth of -0.35 m in the west (upstream), and in the east (downstream) an accumulation of household waste including bone fragments mixed with pottery fragments,

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1 Rotaru et al. 2006.

2 Rotaru 2009.

3 Prociuc et al. 2013.

fragments of female anthropomorphic statuettes, stone and bone tools. In the profile section was identified one level of housing and the household waste accumulation seeks current morphology of the land. The thickness of this layer decreases from 1m upstream, near the house at 35 cm downstream. Given the situation on the ground it can be assumed that household waste was dumped directly onto the ground outside the home, and not in a hole specially designed for this[4].

Fig. 1. Location of the Neolithic site of Fruntișeni

The osteological material consists of scrap assigned to the following domestic mammalian species: *Bos taurus, Ovis aries, Capra hircus, Sus. Domesticus, Canis familiaris*, and wild: *Bos primigenius, Cervus elaphus, Capreolus capreolus*, *Sus ferus, Canis lupus, Vulpes vulpes, Meles meles, Lepus europaeus*. The material also includes remains of mollusks, fish, reptiles and birds.

MATERIAL AND METHODS

In order to assess the completeness of the database all the faunal remains were examined and registered. Anatomical and taxonomical identifications were associated with NR (Number of Remains) or NISP (Number of Identified Specimens), MNI (Minimum Number of Individuals) their calculated percentages following the specific methodology used in archaeozoology[5]. The assemblage was not sieved, which may have caused the lost of small animals bones.

RESULTS AND DISCUSSIONS

Table 1. Number of faunal remains (NR), minimum number of individuals (MNI) and their corresponding percentage from Neolithic site of Fruntișeni

Taxa	**NR**	**%**	**MNI**	**%**
Bos Taurus	176	15.30	13	10.08
Ovis aries	112	9.74	16	12.40
Capra hircus	174	15.13	37	28.68
Ovis aries/Capra hircus	153	13.30	13	10.08
Sus s. domesticus	132	11.48	25	19.38

[4] Prociuc et al. 2013.

[5] Udrescu et al. 1999; van den Driesch 1976; Payne 1971, 1973, 1985; Prummel, Frisch 1986; Fernandez 2002; Halstead et al. 2003; Gudea, Stan 2011, 2012; Prummel 1987a, 1987b, 1988a, 1988b; Forest 1997; Schmid 1972; Ducos 1968; Grant 1982; Payne 1973; Helmer 2000; Horard-Herbin 1997.

Canis familiaris	3	0.26	1	0.78
Total domestic mammals	**750**	**65.22**	**105**	**81.40**
Bos primigenius	27	2.35	3	2.33
Cervus elaphus	84	7.30	8	6.20
Capreolus capreolus	28	2.43	4	3.10
Sus s. ferus	37	3.22	4	3.10
Lepus europaeus	7	0.61	2	1.55
Meles meles	2	0.17	1	0.78
Vulpes vulpes	1	0.09	1	0.78
Canis lupus	3	0.26	1	0.78
Total wild mammals	**189**	**16.43**	**24**	**18.60**
Bos taurus/Bos primigenius	96	8.35		
Sus s. domesticus/Sus s. ferus	115	10.00		
Total mammals	**1150**	**100.00**	**129**	**100.00**
Mollusca	**127**			
Pisces	**2**			
Reptilia	**2**			
Aves	**2**			
Total identified	**1283**			
Total unidentified	**1800**			

The faunal remains sample consists of 1283 bone fragments assigned to wild and domestic mammals, but also to mollusks, reptiles and birds (Table 1). Almost all the bones were found as fragmentary piece, thus there are few complete bones. From a total of 1150 pieces belonging to mammals, only 939 were taxonomically identified. Out of total a number of 82 pieces show a different processing stage from chaîne opératoire.

The quantification step revealed different proportion of MNI, thus the domestic mammals are predominant (Table 1). On first place is *Capra hircus* (37 MNI), *Sus domesticus* (25 MNI), *Ovis aries* (16 MNI), *Bos taurus* (13 MNI) and *Canis familiaris* (1MNI).

Bos taurus (cattle) ranks the first place as NR (176), but on the fourth place as MNI (13). The skull skeleton contains fragmentary mandible and upper jaw fragments with teeth (13%), isolated teeth (9.7%) and horns (1.7%). The post-cranial skeleton is better represented, but gathers only fragmentary bones which did not allow us to estimate the withers high. Many of these species bones have cut marks on their surface as results of slaughtering process, skinning, carcasses dismemberment, jointing and defleshing[6]. The slaughtering ages were estimated on teeth wear[7] and bones fusions[8] as shown in Fig. 2.

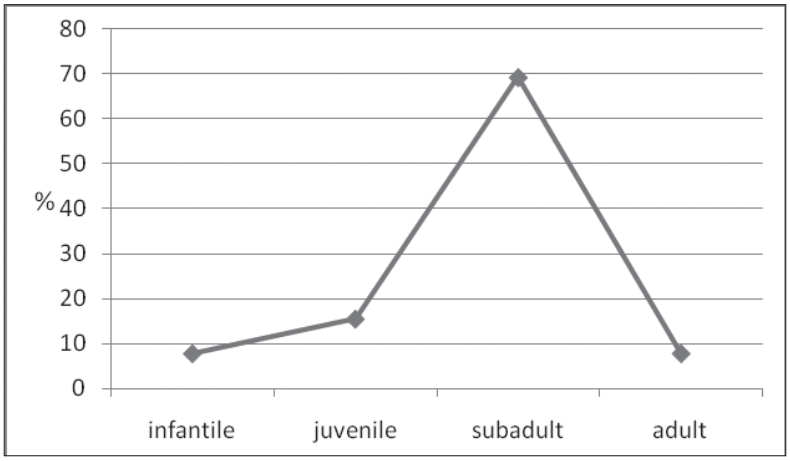

Fig. 2. The slaughtering ages curve for Bos taurus individuals

[6] Prociuc, Codrea 2015.
[7] Grant 1982.
[8] Forest 1997.

This curve underlines that most of these individuals, young specimens, were slaughtered for meat (infantile, juvenile and sub adult) and the adults were raised for their secondary product (milk and strength) and breeding.

Ovis aries (sheep). This taxa occupies the third place in the site's paleoeconomy with 16 identified individuals. The skull bones (isolated teeth, mandibles and upper jaw with teeth) are less than the post-cranial bones. A complete astragalus and a calcaneum allowed us estimating the withers high using the Teichert's coefficients (1975), for the astragalus the calculated value is 63.9 cm and for calcaneum the value is 72.2 cm.

The slaughtering curve calculated for these individuals shows that most of individuals (infantile and juvenile) were killed for the fresh meet, the sub adults, adults and mature specimens were grown for their secondary products (milk, wool) and for breeding, to supply their livestock (Fig. 3).

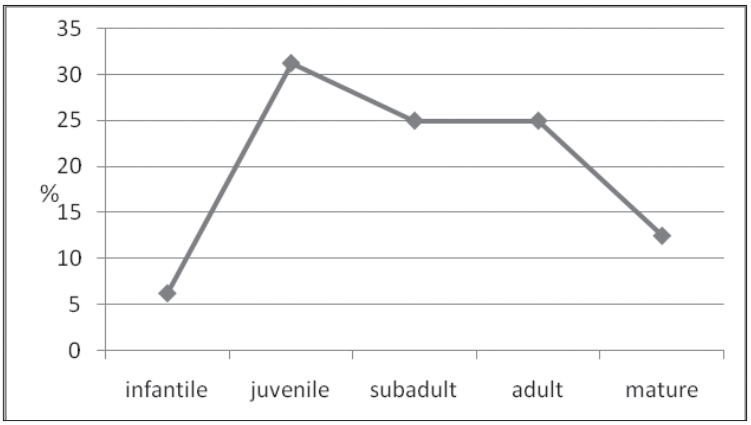

Fig. 3. The killing curve for *Ovis aries* individuals

Capra hircus (goat) taxon is described by 37 MNI. Most of the individuals were identified because of a great number of mandibles[9] and horns. The skull skeleton is better represented than the post-cranial skeleton. Thus, 35% are mandibles with teeth, 14% are horn, 10% isolated teeth and 2% are skull fragments. The horns type is scimitar, *aegagrus* type, specific for females[10] and very common for the Neolithic period in the east and south-east Romania[11]. A complete metacarpal allowed wither high estimations (Schramm's coefficients, 1967)[12] of 60.8 cm. The killing curve (Fig. 4) exhibits that the young specimens (infantile, juvenile) were slaughtered for meat and the subadults, adults and mature were grown, as in the case of *Ovis aries*, for milk and wool and breeding for livestock supply.

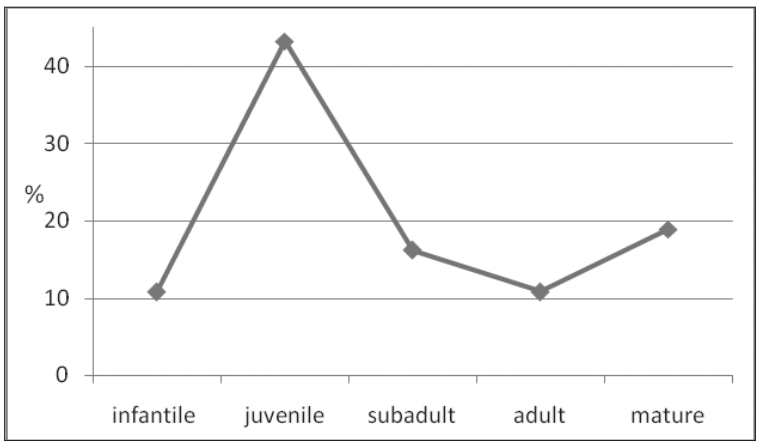

Fig. 4. The killing curve for *Capra hircus* taxa

[9] Gillis et al. 2011.
[10] Kobryn et al. 1991.
[11] Bălăşescu et al. 2005.
[12] Udrescu et al. 1999.

Sus domesticus (pig) occupies the second place in the paleoeconomy ranking with 25 identified individuals. The skull skeleton contains mandibles and upper jaws (36%), skull fragments (2%). Few complete bones (astragalus and calcaneum) afford the withers high estimation (Teichert's coefficients, 1990)[13], thus the appreciated values are 75.5 cm and 65.9 cm for astragalus, and 73.2 for calcaneum. The assessed slaughtering curve (Fig. 5), exhibit that the specimens were killed when they reached the maximum body mass. A reasonable explanation for that small number of subadults and adults individuals is that they were raised for livestock supply.

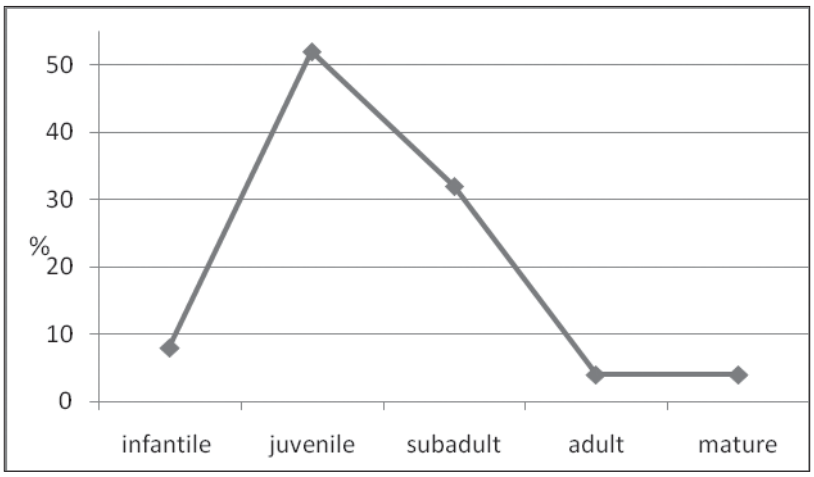

Fig. 5. Slauthering curve for *Sus domesticus*

Canis familiaris (dog) has 3 remains assigned to 1 individual (one right fragmentary mandible, one right maxilla and a complete femur). The identified specimens were estimated as adults due to the presence of the permanent dentition on maxilla and mandibles and different use wear stages observed on teeth. The complete femora allowed us to estimate the withers high around 48.6 cm using Harcourt's (1974) coefficients.

Bos primigenius (aurochs) reaches the third place in the wild mammals rank. The bone number allowed us to identify 3 adults/mature individuals. All the bones are complete merged. The low number of bones entails insufficient information about this taxon from Neolithic period.

Cervus elaphus (red deer) conquers the first place in the wild mammals rank with the 8 identified individuals. The skull skeleton consists of mandibles with teeth, isolated teeth and fragments of horns. Some complete bones enabled the wither high estimation following the Godynicki's coefficients for metacarpal[14] and Wilkens's coefficients[15] for calcaneum, thus for metacarpal the value is 127.63 cm and for calcaneum we have three values 137.8 cm, 108,55 cm and 128.05 cm.

Capreolus capreolus (roe deer) is situated on second place, together with *Sus ferus* regarding the indentified individuals (4). Due to the teeth wear and the completed merge of the bones we estimated the individuals as adults.

Sus ferus (wild boar). We estimate 4 individuals as mature 2 male and 2 female, the difference between the two them is based on the tusk characteristics. The complete bones afford the withers high estimation according to Teichert's coefficients, therefore the values for astragalus are 92.4 cm and 91.28 cm and for metacarpal the value is 100.9 cm.

Lepus europaeus (rabbit) has 7 remains assigned to 2MNI. It is possible that this species might be hunted for meat or for its fur which was used for clothes.

[13] Udrescu et al. 1999.
[14] Chaix, Méniel, 1996.
[15] Wilkens 2002.

Meles meles (badger) has only 2 remains assigned to 1MNI. In some cases the presence of this animal in the settlement could be random since he could dig a tunnel as shelter post sedimentation, and he could die there[16].

Vulpes vulpes (fox) has only one bone assigned an ulna. This taxon together with *Meles meles* is present in almost all the settlements.

Canis lupus (wolf). To this taxa were assigned 3 bone fragments (one right mandible, one o left fragmentary mandible and an ulna) allocated to 1 individual. We can claim that this species was killed for fur or because he threatened people's animals.

Sus domesticus/Sus ferus is the note for the Suinae remains that could not been distributed to one specific taxa. For the same reason we use the notation for *Bos taurus/Bos primigenius* regarding the Bovidae remains and *Ovis aries/Capra hircus* for sheep/goath.

CONCLUSIONS

Past studies regarding the Stoicani-Aldeni communities about faunal remains are only a list with the identified taxa. This work is a complex study about one settlement belonging to this community and a piece of puzzle in the reconstruction of their lifestyle.

The high number of domestic mammals remains shows that the main activity with an important impact in the community paleoeconomy is the animal breeding. The domestic mammals were grown especially for meat but also for their secondary products and livestock supply. The exceed of goat/sheep remains might suggest a nomadic community, traveling short distances providing food for their animals. In this context the pig remains suggest sedentariness, but the low quantity of remains can confirm our theory about short distance migration.

The hunting activity occupies a second place in the paleoeconomy ranking being practiced for keeping the livestock steady. Furthermore the big mammals were killed for skins and fur as raw material for clothes[17]. The high number of red deer remains shows that this species had a large occurrence being the source of an active hunting. Thereby the red deer and the wild boar are very important paleoenvironmental markers specific for wooded surroundings.

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[16] Prociuc, Codrea 2014.

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