

**PRELIMINARY REPORT ON THE NEOLITHIC
ARCHAEOZOOLOGICAL FINDS FROM
ALSÓNYÉK–BÁTASZÉK, HUNGARY**

**ELŐZETES JELENTÉS ALSÓNYÉK–BÁTASZÉK NEOLITIKUS LELŐHELY
ARCHEOZOOLOGIAI LELETANYAGÁRÓL**

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Abstract

Alsónyék–Bátaszék is a significant prehistoric site located in the southern Sárköz region west of the Danube river in Hungary. The area was periodically re-populated between the Early Neolithic and the beginning of the Copper Age reaching its greatest territorial expansion during the Late Neolithic Lengyel culture. Lengyel culture archaeozoological finds, forming the majority of animal remains recovered at the Alsónyék–Bátaszék settlement complex are of utmost importance in interpreting daily life at the site. During the course of investigations carried out continuously since 2011 over twenty thousand animal remains have been inventoried. The aim of this paper is the preliminary summary of this rich Neolithic material.

Kivonat

Alsónyék–Bátaszék neolitikus lelőhely a Dunától nyugatra, a Sárköz déli részén található. Területe a korai neolitikumtól a rézkorig szinte folyamatosan lakott volt. Legnagyobb kiterjedését a Lengyeli kultúra idején érte el. A feltárások során előkerült leletanyag igen nagy részét az archeozoológiai leletek adják. Vizsgálatuk jelentős ismeretekkel szolgál a lelőhelyen egykor élt emberek, így a lengyeli kultúra lakosságának is, a mindennapi életével kapcsolatban. Az állattani leletanyag vizsgálata 2011-től folyamatos, mindezidáig több mint húszezer maradvány meghatározására került sor. Jelen rövid összefoglalás alapját ezen archeozoológiai vizsgálatok eredményei képezik.

KEYWORDS: ARCHAEOZOOLOGY, ALSÓNYÉK–BÁTASZÉK, NEOLITHIC, LENGYEL, ANIMAL EXPLOITATION

KULCSSZAVAK: ARCHAEOZOOLOGIA, ALSÓNYÉK–BÁTASZÉK, NEOLITIKUS, LENGYELI, ÁLLATTARTÁS

The site

The site located in Tolna County between the outskirts of the modern-day settlements of Alsónyék and Bátaszék, west of the Danube river, in the southern Sárköz region. Based on the site survey and other archaeological data, the full extent of the site is approximately 80 hectares. It was excavated between 2006 and 2009 preceding the construction of the M6 motorway (**Fig. 1.**). Several institutions co-operated during the excavation, including the Institute of Archaeology of the Hungarian Academy of Sciences (Osztás et al. 2012).

The landscape and environment

The site is located on the border between the Transdanubian Hills and the Great Hungarian Plain. It is bordered by the rolling Szekszárd Hills on the west and the alluvial plain of the former Danube beds on the east on an elevation above the river's alluvium. The Lajvér stream runs across the centre of the area. Although 19th century Danube River regulations strongly affected the Sárköz region,

their impact on the environment did not exceed the habitat capacity level characteristic of the wild mammalian species living in the area.

Their proportions in the fauna have not changed significantly from the Neolithic to the present day with the exception of aurochs, a species that went extinct by the early Middle Ages in Hungary. The relative stability of the environment is remarkable information that influences the evaluation of hunting and livestock farming of the Neolithic cultures once lived here.

Excavations

During the excavation over an area of nearly 25 hectares more than 10,000 archaeological features were uncovered. Although some finds from later ages were also brought to light, 90 % of the excavated features belong to various periods of the Neolithic: from the Starčevo, through the Central European Linearbandkeramik (LBK), to the Sopot and Lengyel cultures. These archaeological cultures represented by settlement features and graves encompass the entire period of Neolithic.

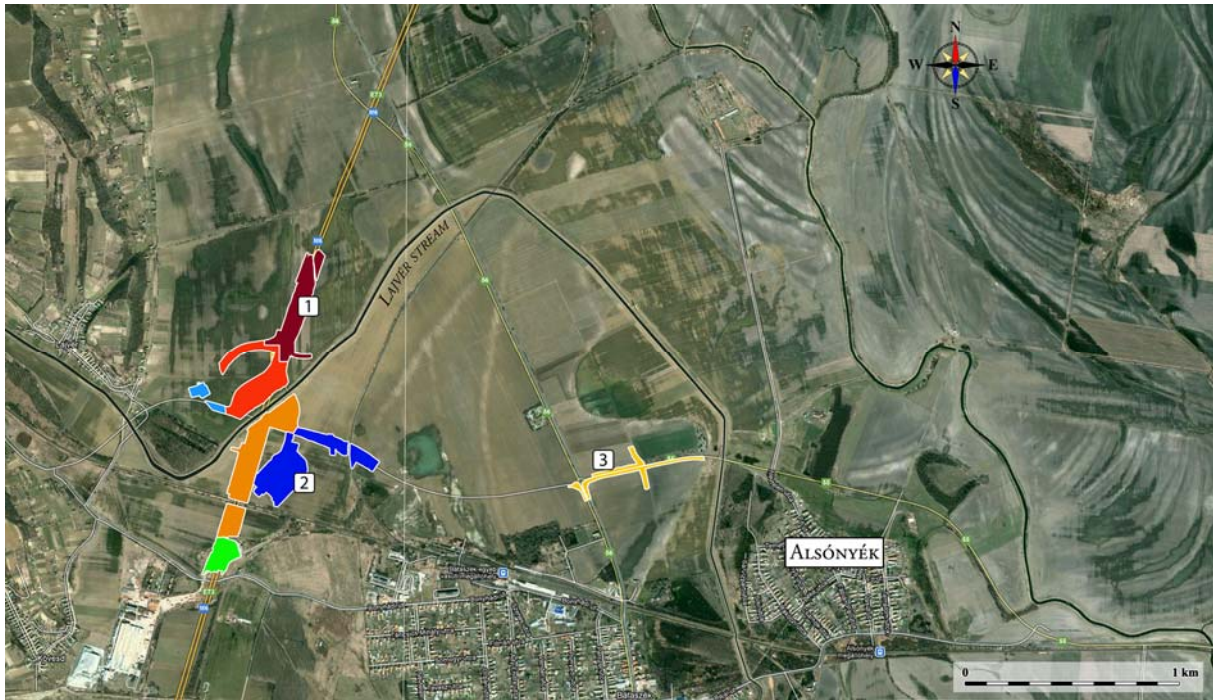


Fig. 1.: Alsónyék - Bátaszék site. 1. Alsónyék - Kanizsa-dűlő, 2. Bátaszék - Mérnökségi telep and 56-os út, 3. Alsónyék - Hosszú-dűlő

1. ábra: Alsónyék - Bátaszék lelőhely. 1. Alsónyék - Kanizsa-dűlő, 2. Bátaszék - Mérnökségi telep and 56-os út, 3. Alsónyék - Hosszú-dűlő

Excavations took place in several working surfaces. The areas excavated between 2008-2009 by the Archaeological Institute of the Hungarian Academy of Sciences were directed by Anett Osztás. They included the sections of the site called Kanizsa-dűlő (northern part) and Mérnökségi telep and 56-os út (south-eastern part). The analysis of archaeozoological finds from these surfaces has been continuous since 2011.

Animal exploitation of the Starčevo culture at Alsónyék–Bátaszék

The Starčevo culture settlement is located in the south-eastern part of the excavated area. Given its extension and the amount of finds this site stands out among the Starčevo culture sites so far excavated in Hungary.

Approximately 500 archaeological features were found, including nearly 100 fireplaces and 30 burials. On the basis of its finds the site was dated to the late period of the Starčevo culture.

Until now only a fraction of the archaeozoological material has been analyzed: this means 600 (N) skeletal parts, which from the number of taxonomically identifiable specimens (NISP) was only 428. Therefore only a few general remarks

can be made concerning animal exploitation by the Starčevo culture community at Alsónyék (**Fig. 2.**).

Game meat played a slightly larger role than the average (44 % of wild, domesticated 56 %) in the diet of the Starčevo culture population at Alsónyék – somewhat different from what has been previously observed. Mostly red deer (*Cervus elaphus*: 19 %) and wild boar (*Sus scrofa*: 14 %) were hunted. Compared to these two large game animals the hunting of aurochs (*Bos primigenius*: 6 %) was insignificant. These three species prefer similar habitats such as floodplain forests, therefore their different contributions to the assemblage are presumably unrelated to their actual proportion in the Neolithic fauna.

Among the domesticated species the remains of cattle (*Bos taurus*: 29 %) dominated, followed by a lesser contingent of sheep and/or goat (*Caprinae*: 19 %). Although pig (*Sus domesticus*: 4 %) is a prolific species, its importance was minimal. On the basis of archaeozoological data it can be supposed that the Starčevo population did not domesticate its livestock from the local wild animals, but adopted a “package” of domesticated animals brought into the Carpathian Basin.

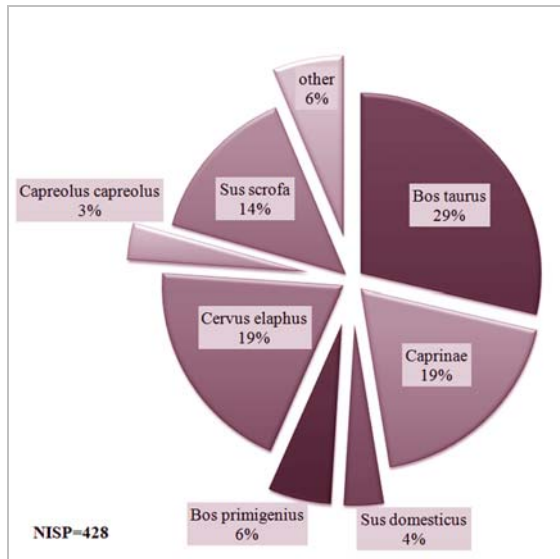


Fig. 2.: The taxonomic distribution of animal remains – Starčevo Culture

2. ábra: Az állatmaradványok fajonkénti megoszlása – Starčevo kultúra

The Central European Linearbandkeramik and the Sopot cultures

The Central European Linearbandkeramik Culture settlement at Alsónyék is the southernmost known LBK site in Transdanubia. The settlement's features (building remains, pits, trenches) were found in approximately the centre of the excavated area.

The Sopot culture site was located some 1 km east away from the large excavation surface (Alsónyék–Hosszú-dűlő). Nearly 20 burials and a possible fortification were excavated here.

Analyzing zoological remains of these two cultures brought to light in Alsónyék is one of the most important tasks for future work. The results of such studies may provide important information about the ancient animal keeping and domestication processes in the Alsónyék–Bátaszék micro region. Currently, however, only a few animal remains were available for study from these periods.

Animal exploitation of the Lengyel culture at Alsónyék–Bátaszék

Over 300 sites of the Lengyel culture has been known in Hungary, half of them in Southern Transdanubia. The site of Alsónyék is located barely 40 km south-east from the present-day settlement of Lengyel which gave its name to the culture. Alsónyék–Bátaszék is regarded the most important Hungarian site of the Lengyel culture. The remains of at least 118 above-ground timber framed buildings could be identified and over 2300 late Neolithic burials came to light from the excavated site.

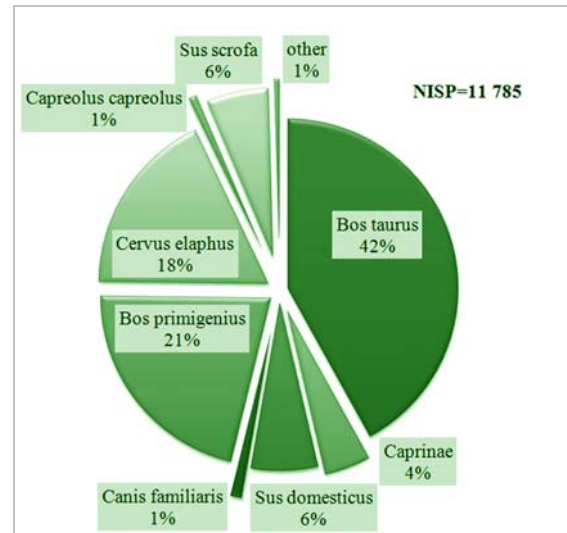


Fig. 3.: The taxonomic distribution of animal remains – Lengyel Culture

3. ábra: Az állatmaradványok fajonkénti megoszlása – lengyeli kultúra

The excavation area called Kanizsa-dűlő is located in the northern section of the site. It cuts across north to south a huge part of the former Lengyel culture settlement, thereby giving a representative sample from thereof.

The analysis of archaeozoological finds recovered from this area during 2008 was finished in the first months of 2013. A total of 19,914 (N) animal remains (represented by 23,476 fragments) were inventoried.

The overwhelming majority of the material (19,124 skeletal parts) came to light from 198 features of the Lengyel culture. Most of these features are large (clay extraction) pits, filled with the household waste of the inhabitants. Typically they were not directly associated with houses.

The zoological finds were not heavily fragmented (88 % of fragment lengths exceeded 5 cm), but only 62 % of the bones were precisely identifiable by species (NISP = 11,785) (**Fig. 3.**).

The proportion between the remains of domestic and wild species was balanced: 54.5 % originated from domestic and 45.5 % from wild animals.

Beef seems to have dominated in the settlement's meat diet, indicative of large-scale cattle (*Bos taurus*) keeping (42 % of NISP). The contribution of other domestic animals to meat provisioning was almost negligible. The sheep and goat (*Ovis aries* / *Capra hircus*) categories together make up only 4 %, while pig remains are only slightly more numerous: 6 %. The bones of dog (*Canis familiaris*) amount to 1 %, although this value is not necessarily negligible considering that these were loose bones unearthed from household waste.

Table 1.: The proportion between the ages of domestic and wild animals**1. táblázat:** A házi- és a vad fajok életkor arányai

Species	infantilis	%	iuvenilis	%	sub-adultus	%	adultus	%	maturus	%	total	%
<i>Bos taurus</i> (Linnaeus 1758)	9	0.4	209	9.7	943	43.6	969	44.8	34	1.6	2164	
Caprinae	3	1.4	49	22.8	87	40.5	75	34.9	1	0.5	215	
<i>Sus domesticus</i> (Erxleben 1777)	6	1.4	171	39.9	173	40.3	77	17.9	2	0.5	429	
(domesticated)	18	0.6	429	15.3	1203	42.8	1121	39.9	37	1.3	2808	100 %
total domesticated	18	0.4	429	8.4	1203	23.6	1121	22.0	37	0.7	2808	55
<i>Bos primigenius</i> (Linnaeus 1758)	1	0.1	50	5.0	317	31.9	607	61.1	19	1.9	994	
<i>Cervus elaphus</i> (Linnaeus 1758)	2	0.2	69	8.3	399	47.8	346	41.4	19	2.3	835	
<i>Capreolus capreolus</i> (Linnaeus 1758)	-	-	9	23.1	12	30.8	18	46.2	-	-	39	
<i>Sus scrofa</i> (Linnaeus 1758)	1	0.2	38	8.9	103	24.2	268	63.1	15	3.5	425	
(wild)	4	0.2	166	7.2	831	36.2	1239	54.0	53	2.3	2293	100 %
total wild	4	0.1	166	3.3	831	16.3	1239	24.3	53	1.0	2293	45
total	22	0.4	595	11.7	2034	39.9	2360	46.3	90	1.8	5101	100 %

Most of the wild animal remains consist of aurochs (*Bos primigenius* 21 %) and red deer bones (*Cervus elaphus* 17 % skeletal bone and 1 % antler). The combined contribution of these two large game species is almost to that of domestic cattle. The proportion of domestic and wild large ruminant may be considered balanced and there is a clear and overwhelming dominance of large ruminants in the nutrition of the inhabitants.

Even the rate of wild boar (*Sus scrofa* 6 %) hunting was relatively high, although it did not rival that of the wild ruminants. The presence of fur-bearing mammals bear (*Ursus arctos*), wolf (*Canis lupus*), hare (*Lepus europaeus*), beaver (*Castor fiber*) and other species, on the other hand, is minimal.

In accordance with the humid alluvial habitat the presence of the European pond tortoise (*Emys orbicularis*) is also noteworthy. Its bone fragments are regularly present among the finds but not in excessive numbers. No marks of processing could be observed on the tortoise remains.

In connection with the fishing is important to note that during the excavations the fish remains were collected only by hand. Very large catfish bones dominate in the smaller Stračevo culture assemblage from Alsónyék. However, mainly smaller species are represented among the fish remains of the Lengyel culture. This difference may simply be cultural or it may result from changes in the marshy environment that impacted on fishing

habits. This latter option seems to be supported by the fact that, although not very large fish bones were found in the large Lengyel culture material of settlement, several harpoons made from antler occurred among the artefacts. Although these weapons can also be used in hunting in bushy undergrowth, their most probable use was fishing. One possibility is that some of the large fish were dismembered on location and their bones never made it into the domestic waste at the site.

Almost one third (N=5772) of all remains could be aged: 0.4 % infantile, 11.5 % juvenile, 41.6 % subadult, 4.8 % adult, 1.7 % mature. In general, the young and immature individuals remain intact in a larger number of cases as large bones from mature individuals tend to be more broken up.

However, considerable differences may be observed between the proportions of various age groups in domesticated and wild species (**Table 1.**). In the case of domestic mammals: cattle were slaughtered mostly at a subadult/adult age. The sheep/goats were usually also killed as subadults, but some younger individuals were also slaughtered. The pigs were eaten in their juvenile/subadult ages and only some survived until their adult age.

In the case of wild animals juveniles were rarely killed: in light of the energy input, the amount of meat needed to be substantial. Of course, in the case of the more than 60 % of the adult age for

hunting aurochs and wild boar there is a question: how much the meat quantity importance raises or how important were other social and conceptual background behind the hunting of these animals. Aurochs trophies must have been highly appreciated as shown by the skull of an indubitably wild bull recovered at the Lengyel culture settlement of Mórággy–Tűzkődomb in Tolna county (Bartosiewicz 2005).

In connection with the mainly subadult/adult age of red deer hunted it must be noted that the tools made from red deer skeletal bone were mostly manufactured from the remains of subadult individuals. The age distribution of roe deer seems to be relatively balanced. The bones equally came from juvenile-subadult and adult individuals. However this species is represented only by a small number of bones in the material.

The composition of an animal body varies broadly by body zones. Each region of the skeleton has different amounts and quality of meat which represent different dietary values (Kretzoi 1968, Uerpmann 1973). Separating bone fragments by body region, the frequency and the ratio of the meat value provides some guidance on the dietary habits of ancient peoples (Vörös 2007). In the present material most of the skeletal parts originated from the fleshiest, meat rich parts of the carcass such as the shoulder and pelvic region and proximal leg segments. In the case of domesticates the head region accounts for a large amount of fragments, more than the meat-rich jaw. In the case of wild animals, the opposite picture emerges: a very small number of skull fragments were found. On the other hand, the less meat rich, distal parts of the leg and foot (“dry limb”) are also represented in the material. Red deer plays a role in this, as most of the tools made of metapodial bones were manufactured from the long and slender metapodia of this species. Future research will further elucidate this phenomenon.

Based on the bone lesions observed in this period, the animals were in a reasonably good condition. From a pathological point of view all anomalies noted fall in line with the known conditions of certain species (e.g. ruminants and pigs had dental problems, ribs of large ruminants often showed minor trauma in the form of cracks or bruising etc.; Bartosiewicz 2008, 18-19).

The bones exposed to a number of taphonomic influences whose comprehensive analysis will be carried out within the context of detailed archaeological information. However, a few points can already be made. The bones were cut or broken into pieces during food preparation. Many of the fragments are comparable to those observed in the present age: for millennia butchering marks have

often reflected the practicality of decision making based on the natural features of the animal skeleton.

The other taphonomic observation is more general in nature, although it reflects the prehistoric way of life at the site. Gnawing marks identified in the material originate from canids and rodents. It was observed that in large and deep pits the deposited material was sometimes integrally colored by organic rot and gnawed by rodents. Animal bones from smaller, shallower pits on the other hand showed more weathering. They also seem to have been more accessible to dogs as is shown by gnawing marks. These two extreme forms of deposition may reflect long term, planned garbage deposition versus periodical cleaning of the surface into small pits and depressions where bone refuse was more exposed to destructive biostratigraphic effects.

From the wide variety of both primary and secondary animal products available to the Neolithic inhabitants of the settlements, bone tool-making is one of the most obvious thanks to the direct artefactual evidence. In the case of manufactured bone (N = 291) species preferences can be rather clearly established: although the total archaeozoological material is somewhat dominated by the remains of domesticated animals, for tool making slightly more wild animal bones were used. The tools were often made from bones of subadult individuals both in the case of domestic as well as wild animals. This picture is determined by the ample use of red deer bone and antler in tool-making. Antlers of hunted individuals and shed antler acquired by gathering were both used in manufacturing objects.

Conclusions and Future Research

The Alsónyék–Bátaszék settlement complex offers a unique opportunity to study a large archaeozoological material from a single geographical environment throughout the entire Neolithic period. This paper is a short summary of the information acquired during the recent analysis of animal remains from the site. The evaluation of the archaeozoological material has been continuous since 2011. So far, research has been focused on the finds of a larger section of the site, called Kanizsa-dűlő which is characterizes in a representative way the Lengyel culture settlement. Keeping livestock and hunting had comparable importance in the life of Alsónyék's Lengyel culture population.

However, morphological characteristics of the identifiable species will also help making an important social archaeological point. The results of the archaeozoological analysis of the Lengyel culture finds show that – in comparison with the findings of the Starčevo culture component of the site – there is a combination between new cultural

trends and a sense of continuity. On the one hand this is because the domestic and wild stocks of cattle and pig were possibly converging in terms of their habitats. On the other hand, there is definitely an advancement in animal keeping. This is exemplified by the group of *Caprinae* whose wild ancestors do not live in Europe.

Based on these observations it is evident currently we are only at the beginning of research. The future directions will need to heavily rely on the multi-faceted analysis of zoological finds.

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References

BARTOSIEWICZ, László (2005): Skull fragment of a late neolithic aurochs (*Bos primigenius* Bojanus 1827) from Mórágý–Tűzködomb (Tolna County, western Hungary). *Alba Regia* XXXIV, 41–44.

BARTOSIEWICZ, László (2008): Description, diagnosis and the use of published data in animal palaeopathology: a case study using fractures. *Veterinarijair Zootechnika* T. 41 (63), 12–24.

KRETZOI, Miklós (1968): La répartition anatomique du matériel ostéologique selon les espèces et les amas de déchets. In: Vera Gábori-Csánk et Miklós Kretzoi: Zoologie archéologique. In: Vera Gábori-Csánk ed.: *La Station du paléolithique moyen d'Érd-Hongrie*. Monumenta Historica Budapestinensia III. Budapest, Akadémiai Kiadó, 230–244.

OSZTÁS, Anett, ZALAI-GAÁL, István, BÁNFFY, Eszter (2012): Alsónyék–Bátaszék - a new chapter in the research of Lengyel culture. *Documenta Praehistorica* XXXIX 377–396.

UERPMANN, Hans-Peter (1973): Animal bone finds and economic archaeology: a critical study of osteoarchaeological method. *World Archaeology* 4/3, February 1973, 307–322.

VÖRÖS, István (2007): Egy archaeozoológiai rekonstrukciós módszer: állatsont maradványok Kretzoi-féle felosztása. *Archeometriai Műhely* 4/1 31–35.