

## NEOLITHIC ANIMAL HUSBANDRY IN THE TOLNAI-SÁRKÖZ REGION ON THE BASIS OF THE ARCHAEOZOOLOGICAL FINDS FROM THE ALSÓNYÉK-BÁTASZÉK ARCHAEOLOGICAL SITE

ÉVA ÁGNES NYERGES<sup>1</sup> – ANNA ZSÓFIA BILLER<sup>2</sup>

The Alsónyék-Bátaszék archaeological site is located in the southwestern part of the Tolnai-Sárköz micro-region on the right bank of the Danube and on the border of the two towns that give it its name.<sup>3</sup> This area that is bisected by the Lajvér Stream in a southwest to northeast direction is bounded to the west by the Szekszárd Hills and to the east by the flood plain of the former course of the Danube River, which has served as an important transportation route since prehistoric times. On the basis of the field walks and the archaeological data, the extent of the entire site is ca. 80 ha, of which about 25 ha, containing nearly 15,000 objects, was examined during the excavations conducted between 2006 and 2009. Although relics from later periods also came to light, 90% of the excavated features are from the Neolithic Central European linear pottery culture, the Starčevo culture, as well as cemetery and settlement features of the Sopot and Lengyel culture.<sup>4</sup>

The present report aims at providing a rough sketch of Neolithic farming through the methods of archaeological zoology, focusing on the lifestyle and animal husbandry of the communities that once lived in the area.

Several institutions worked together at the site, divided up amongst the terrain sections at the excavations. In the present phase of research the basis of the archaeozoological examinations at the site is comprised of the zoological finds from the excavations performed in 2008-2009 by the Hungarian Academy of Sciences, Research Center for the Humanities, Archaeological Institute (excavation leaders: Anett Osztás and István Zalai-Gáál). Territorially, this site includes the Alsónyék-Kanizsa-dűlő area in the north and the Bátaszék-56-os út and the Bátaszék-Mérvénységi telep sections to the east-southeast (Fig. 1).

Burial and settlement features of the people of the **Starčevo culture** that appeared in the area at the beginning of the Neolithic Period (ca. 5800–5505 cal BC) came to light in the greatest density at the Mérvénységi telep section of the site (ca. 500 archaeological features).<sup>5</sup>

On the basis of the zoological finds discovered and the archaeozoological evaluations per-

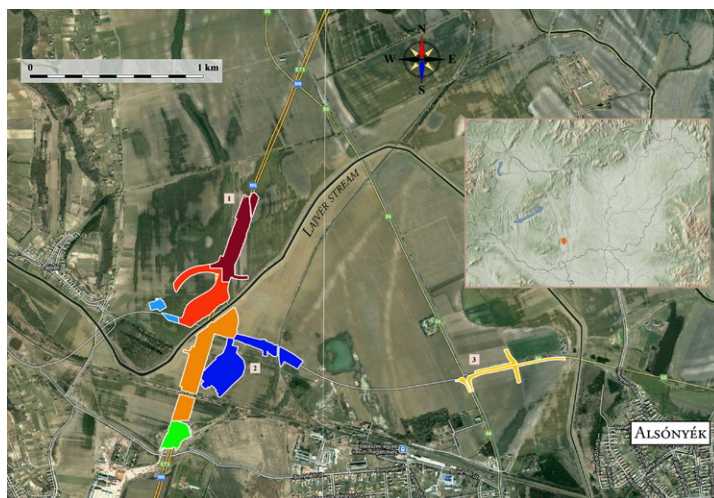


Fig. 1: Alsónyék-Bátaszék. The site and its excavated areas.

1. Alsónyék-Kanizsa-dűlő

2. Bátaszék-Mérvénységi telep and Bátaszék-56-os út

3. Alsónyék-Hosszú-dűlő (after Rassmann et al. 2015, Fig. 4)

<sup>1</sup> Hungarian Academy of Sciences, Research Center for the Humanities, Archaeological Institute

<sup>2</sup> Aquincum Museum and Archaeological Park

<sup>3</sup> Marosi, Sándor – Somogyi, Sándor: *Magyarország kistájainak katasztere (Inventory of Hungarian Micro-Regions)* (Budapest, 1990), 53.

<sup>4</sup> Osztás et al. 2012, 377; Rassmann et al. 2015, 2.

<sup>5</sup> Bánffy, Eszter – Marton, Tibor – Osztás, Anett: Early Neolithic Settlement and Burials at Alsónyék-Bátaszék. In: Kozłowski, Janusz Krzysztof – Raczky, Pál (eds.): *Neolithization of the Carpathian Basin: northernmost distribution of the Starčevo/Körös Culture* (Kraków, Budapest, 2010), 39–49.

Rassmann, Knut – Mischka, Carsten – Furholt, Martin – Ohlrau, René – Radloff, Kai – Winkelmann, Kay – Serlegi, Gábor – Marton, Tibor – Osztás, Anett – Oross, Krisztián – Bánffy, Eszter: Újkőkori lelőhelyek nagyfelületű geomágneses felmérése Magyarországon (Large Scale Geomagnetic Surveying of Neolithic Sites in Hungary). *Magyar Régészet (Hungarian Archaeology)* (online magazine), 2015 summer, 4.

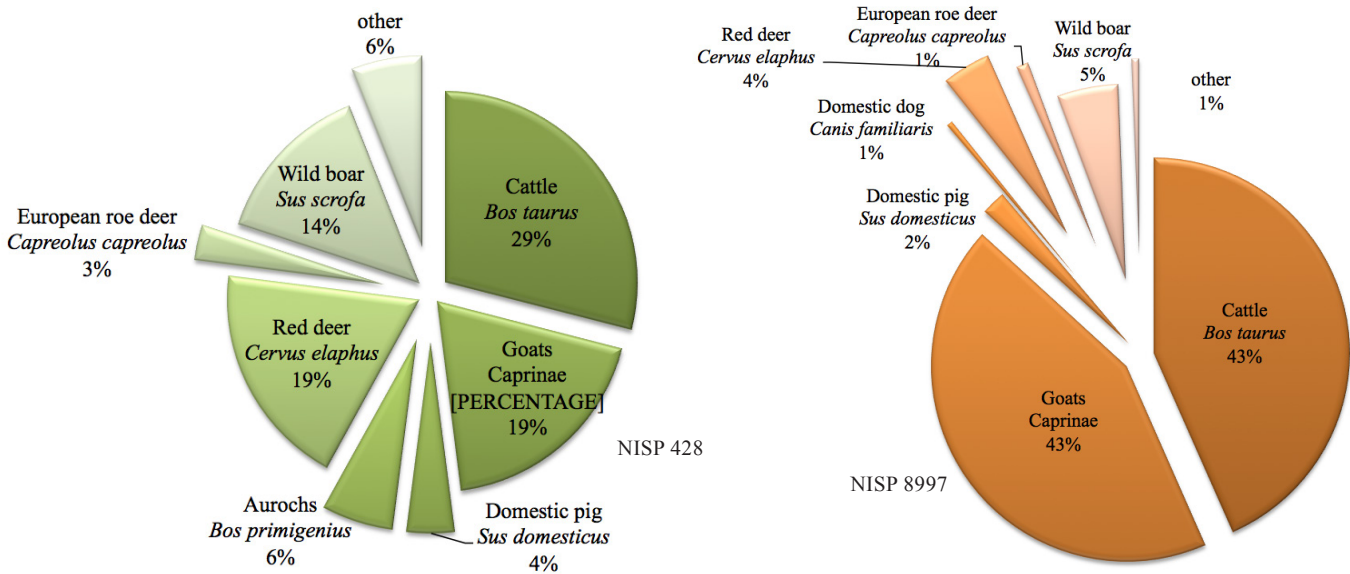


Fig. 2: Taxonomic distribution of animal remains – Starčevo culture, different stages of the examinations (Alsónyék-Kanizsa-dűlő: NISP 428, wild 44%, domesticated 56% – archaeozoological data by É. Á. Nyerges; Bátaszék-Méternökségi telep és 56-os út: NISP 8957, wild 11%, domesticated 89% – archaeozoological data by A. Zs. Biller)

formed on them at their various levels of processing to this point, the ratio of remains from domesticated and wild species vary widely (Fig. 2). However, there are consistent data as well, the most accentuated of which that can be pointed out is perhaps the ratios of characteristics of bone morphology. Considering the morphometrical characteristics between the smaller domesticated and the more powerful, wild forms with a larger stature amongst the remains of aurochs (*Bos primigenius*) and domesticated cattle (*Bos taurus*) belonging to the Bovini tribe, as well as domesticated pigs (*Sus domesticus*) and wild boars (*Sus scrofa*), which were of course capable of breeding with one another, skeletal sections with transitional forms are essentially missing from the fragments. Therefore it can be hypothesized that when the population settled the area they brought with them all of their livestock (including pigs), and during husbandry kept their domesticated animals separated and protected from their wild counterparts, preventing interbreeding.

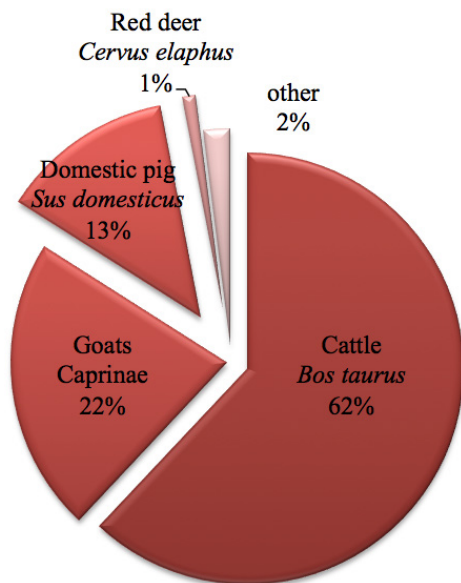
During the time of the Starčevo culture a wetter, marshy/swampy natural environment divided by gallery forests and bountiful meadows can be presumed in the area of the Alsónyék-Bátaszék site on the basis of the environmental demands of the specific wild species. In addition to the presence of big game, the existence of this environmental mosaic is also supported by the remains of smaller mammals – for example European hares (*Lepus europaeus*), wildcats (*Felis silvestris*), beech martens (*Martes foina*), European badgers (*Meles meles*), red foxes (*Vulpes vulpes*), and Eurasian beavers (*Castor fiber*) – and of wild bird fauna – for example common buzzards (*Buteo buteo*), western capercaillies (*Tetrao urogallus*), Eurasian coots (*Fulica atra*), mallards (*Anas platyrhynchos*) and mute swans (*Cygnus olor*).

Fishing also played a major role in feeding the population, and the remains of wels catfish that were often 2-3 meters long are common in the find materials as well (Fig. 3).

At approximately the central section of the excavated area it was possible to identify structures related to roughly 50 buildings from the **Central European Linearband-**



Fig. 3: Vertebrae of wels catfish (*Silurus glanis* Linnaeus 1758) (photo by M. Vindus)



	Cattle <i>Bos taurus</i> (Linnaeus 1758) n=31	Goats <i>Caprinae</i> n=19
juvenilis young	52%	32%
subadultus preadult	3%	5%
adultus adult	45%	58%
maturus senior	-	5%

Fig. 4: Taxonomic distribution of animal remains and distribution of age among the remains of cattle and *Caprinae* – Central European Linearbandkeramik Culture (NISP 218, wild 3%, domesticated 97% – archaeozoological data by A. Zs. Biller)

**keramik Culture** (ca. 5365–4860 cal BC).<sup>6</sup> The archaeozoological examinations related to the culture have just begun with the cataloguing of the zoological finds from the Bátaszék-56-os út section. However, the results up to this point fully correspond to the observations made during the selection of animal bone samples necessary for other scientific examinations related to the reconstruction of the site.<sup>7</sup>

On the basis of the ratios of the remains of wild (3%) and domesticated (97%) animals, hunting can be assessed as just an occasional activity in the life of this population, which was following an agricultural life-style. The quite high ratio of remains of young individuals is conspicuous (Fig. 4). In the case of the cattle in fact, a portion of the calves were slaughtered right after weaning. This may even indicate the utilization of the milk, since the presence of the calf stimulates the production of milk, or in other words milking and the nursing of the calf also work together well in combination.

The ratio of young individuals slaughtered was also high in the case of sheep (*Ovis aries*) and domesticated goats (*Capra hircus*) belonging to the subfamily *Caprinae*, but here just about a half were fully grown individuals that were better suited for secondary utilization. Therefore, in connection with these species it may be considered that more emphasis was placed on the utilization of their wool or fur instead of their milk.<sup>8</sup>

On the basis of the relative ratio of the number of features of the settlement and the low number of zoological finds from within them it can be hypothesized that cultivation of crops was more important than raising livestock in the economy of the population. However, further scientific examinations are necessary to verify this.

In relation to Neolithic cultures within the context of the micro-region under study it is also necessary to touch briefly upon the animal husbandry of the **Sopot culture** (ca. 5200–4680 cal BC).

About 1-1.5 km to the east of the large, contiguous excavation area of the Alsónyék-Bátaszék site can be found the Alsónyék-Hosszú-dűlő site containing settlement features from the Sopot culture – 20 burials and the traces of a possible fortification.<sup>9</sup>

<sup>6</sup> Osztás et al. 2012, 379; Rassmann 2015, 4.

<sup>7</sup> More fully detailed in: [The Times of Their Lives \(TOTL\) project](#)

<sup>8</sup> Rast-Eicher 2005, 119–121.

<sup>9</sup> Excavation by the Wosinsky Mór County Museum, 2008–2009, excavation leader: Ódor, J. G.; Rassmann et al. 2015, 6.

The only archaeozoological data available related to the Alsónyék Sopot culture site are from the observations made during the course of selecting animal bone samples necessary for other scientific examinations. Their numbers are not sufficient to make a comprehensive evaluation.

The large number of remains from wild species with large statures and powerful builds was conspicuous in the finds that were examined, which may indicate an increase in the importance of hunting. At the same time, the unbroken ribcage remaining from a half a side of cattle carefully placed underneath the head of the deceased discovered in one of the burials also shows the significance of domesticated livestock.

There are more than 300 known sites of the Late Neolithic Period **Lengyel culture** in Hungary. Due to the 9,000 archaeological features – including the remains of the foundations of 123 post framed houses and about 2,300 burials – at Alsónyék-Bátaszék (ca. 4750–4300 cal BC), located just 40 km to the southeast of the town of Lengyel that gave the culture its name, it can be considered unique amongst the Lengyel culture sites.<sup>10</sup>

The settlement and burial features from this culture emerged in large numbers from the entire excavation site, while appearing in the greatest density in the northern (Alsónyék-Kanizsa-dűlő) section. So far during the archaeozoological examinations of this section of the site 19,124 animal remains have been evaluated that have come from 198 features belonging to the Lengyel culture,<sup>11</sup> providing a detailed profile of the farming, animal husbandry, hunting fishing and eating habits of Alsónyék-Bátaszék's former Lengyel culture population.

The archaeozoological data from the time of the Lengyel culture – in comparison with the period of the Starčevo culture – show a somewhat drier environment, although even so we must imagine a gallery forest environment with abundant wildlife divided in places by marshy areas, which provided an ideal location for extensive animal husbandry. In all likelihood it is due to these environmental conditions that the consumption of meat played a significant role in the nutrition of the population.

62% of the 19,124 animal remains from the examined area, in other words 11,785 fragments (NISP<sup>12</sup>), could be precisely identified according to species (Fig. 5). Wild and domesticated animals were consumed in a nearly equal ratio. Large scale raising of cattle was characteristic, alongside which the presence of other domesticated animals can be considered insignificant.

90% of the cattle were slaughtered after reaching 3 years of age, so the cows survived even up to their second or third lactation period. The possibility of the utilization of the milk and consumption of dairy products generally arises in connection with domesticated ruminants. This question has an even better foundation in the examination of the lifestyle of the Alsónyék-Bátaszék Lengyel culture, due to the fact that many individuals in their burials were infected with tuberculosis.<sup>13</sup> However, in the archaeozoological find materials from

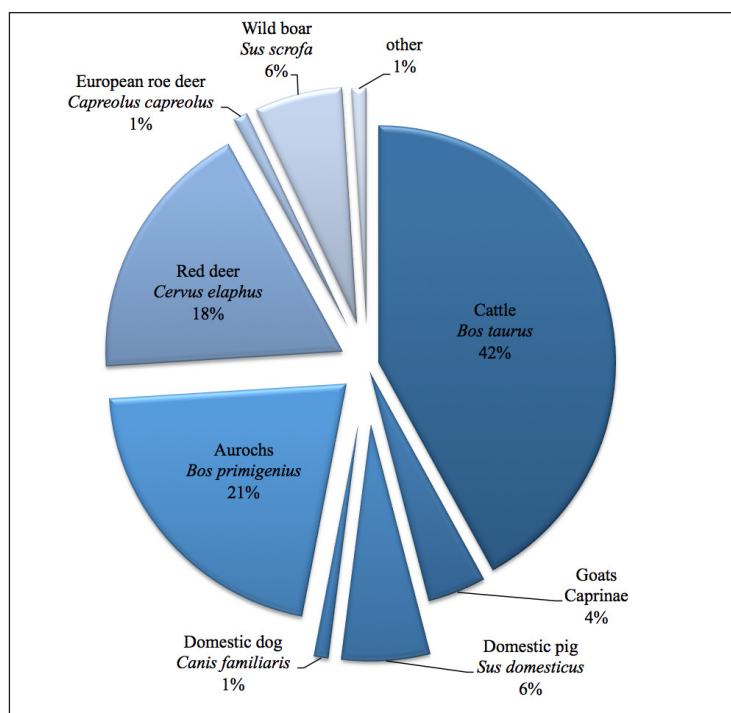


Fig. 5: Taxonomic distribution of animal remains – Lengyel culture (NISP 11.785, wild 47%, domesticated 53% – archaeozoological data by É. Á. Nyerges)

<sup>10</sup> Osztás et al. 2012, 380, 392; Rassmann et al. 2015, 4.

<sup>11</sup> Nyerges 2013; 2015.

<sup>12</sup> NISP: The number of identifiable bone specimens (number of remains that allow the species to be identified).

<sup>13</sup> Köhler et al. 2013.

the culture examined to this point it has not been possible to observe lesions that also appear in the bones of animals that can be connected with TBC. On the basis of the age ratios of the slaughtered cattle it is also the importance of the meat of the animals – as well as possibly the value of the entire herd – that must be considered.

80% of the stock of sheep and goats were slaughtered after they reached 30 months of age. Therefore, on the basis of their age it is possible to conclude the possibility that the milk as well as the fur or wool was utilized. The remains of Caprinae make up just 4% of the zoological find materials from the settlement, which would suggest they were kept on an occasional basis. At the same time, our scope only includes the animal remains that were brought into the settlement. The former environment indicated by the bones of wild animals may have been quite favorable for extensive animal husbandry as well. The pastures that can be found at various ground levels may have provided sufficient nutrition for the entire year to wandering herds of sheep and/or goats. If the main reason for the raising of these species was provided by the opportunity for secondary utilization, the remains deposited in the settlement through the consumption of meat would not suggest the proper ratio of their prevalence in husbandry.

Amongst swine it was primarily individuals that were of piglet or shoat age (81%) that were consumed, and only rarely mature hogs that were suitable for breeding. Of the domestic mammals bred for meat, it is generally characteristic that a portion of the offspring of pigs, as the most prolific breeders, is slaughtered when they are young.

Remains of domestic dogs (*Canis familiaris*) were also found in small quantities in the settlement, which from the standpoint of their physiques, with slender frames and a small/medium stature, they can be categorized as coming from individuals that were herders or hunting dogs. At the same time the role played by the species in the life of the Lengyel culture community may have been greater than that indicated by the number of remains discovered. During burials of the members of the community – besides auroch trophies and the tusks/jawbones of wild boars – it was also relatively common to place dogs next to the deceased<sup>14</sup> (entire individuals or just the decapitated head of the dog).

The majority of wild animal remains are made up of skeletal fragments of aurochs and red deer (*Cervus elaphus*). The combined number of bone remains from these two big game species is essentially equal to that of the cattle. Clearly, the predominance of the consumption of large ruminants was characteristic in the diet of the population.

Of the other species, the hunting of wild boar can be reckoned to a smaller extent. However, skeletal remains of furry mammals – brown bears (*Ursus arctos*), grey wolves (*Canis lupus*), European hares and Eurasian beavers – only appeared occasionally in the find materials.

For the most part they only took down fully grown game. This may be connected with the greater amount of meat that could be obtained, while at the same time in the case of the over 60% proportion of aurochs and wild boar butchered at a mature age a further motivation can be hypothesized. On the basis of the remains uncovered from the burials, these two species of game also played a prominent role in funerary rituals.

In the Alsónyék-Bátaszék Lengyel culture archaeozoological find materials it was possible to observe a wide range of body sizes in the case of both domesticated and wild species. The reason for this (supporting the existence of extensive animal husbandry) is seen in interbreeding that can be shown on the basis of the overlapping values for the measurements of the dentures and skeletal bones between the domesticated and wild stocks of animals. At the same time, in the Caprinae subfamily (given that wild sheep and wild goats do not live in this part of Europe) the increase in measurements for portions of the skeleton can instead be considered the result of certain breeding processes.

The wooded and forested environment broken up by marshy areas indicated by the wild mammal species also certainly provided a home for abundant birdlife, there were, however, only a few fragmentary skeletal bones found from goose or duck species (Anseriformes). Since it cannot be determined whether these

<sup>14</sup> Zalai-Gaál et al. 2011: Zalai-Gaál, I. – Gál, E. – Köhler, K. – Osztás, A.: „Ins Jenseits Begleitend”: Hundemitbestattungen Der Lengyel-Kultur von Alsónyék-Bátaszék. *ActaArchHung* 62 (2011), 29–74.

are individuals belonging to permanently resident, (temporary) nesting or migratory species there is no possibility to determine in which season they were killed.

Of the aquatic sources of protein, only the consumption of fish – wels catfish (*Silurus glanis*), northern pike (*Esox lucius*) and carp species (Cyprinidae) – can be clearly attested.

All throughout the excavations the collection of finds was performed by hand. While the majority of fish remains in the zoological materials from the Early Neolithic Starčevo culture were made up of quite large wels catfish bones, in the case of the Late Neolithic Lengyel culture it was mainly the skeletal remains of smaller individuals of smaller species – common carp (*Cyprinus carpio*) and northern pike – that were found, with the larger fish essentially only indicated by the remains of minor bones. In addition to cultural differences, this variation may also have been caused by the modified fishing techniques due to the reduction of the wetlands in the area. This is reinforced by the fact that while the bones of large fish were not really discovered in the refuse of the Lengyel settlement, many hooks (made from wild boar tusk) able to land large fish and harpoons (carved from deer antler) that could also have been used for fishing were discovered in the finds (Fig. 6). Thus, it can be hypothesized – much like in the case of big game – that the fishermen of the Lengyel culture dressed the larger fish where they were caught, so only the bones in the cuts of meat that were brought back are seen in the materials collected from the settlement. This possibility is also supported by scientific examinations. According to the isotope analyses performed on the anthropological remains the consumption of fish by the Lengyel culture population was essentially similar to that of the Starčevo culture inhabitants.

This Neolithic group of archaeological sites located on the border of the Szekszárd Hills and the flood plain of the former channel of the Danube River shows a diverse use of the animals present in the environment of these cultures. While the significance of the meat of wild and domesticated animals in the diet changed between the different periods, in every case we can also see the effect of the natural environment on the prehistoric lifestyle. This site at the border of two regions provided an abundance of data for the economic practices of the individual communities.



Fig. 6: Harpoons made of red deer antler – different stages of production (photo by M. Vindus)

#### RECOMMENDED LITERATURE

BARTOSIEWICZ, LÁSZLÓ – GÁL, ERIKA

*Shuffling Nags, Lame Ducks: The Archaeology of Animal Disease*. Oxford, 2013.

KÖHLER, KITTI – MENDE, BALÁZS GUSZTÁV – PÓSA, ANNAMÁRIA

A tuberkulózis megjelenése a Dunántúl kései neolitikumában. The Emergence of Tuberculosis in Late Neolithic Transdanubia. *Magyar régészet/Hungarian Archaeology*, 2013 nyár/summer.

NYERGES, ÉVA ÁGNES

Preliminary Report on the Neolithic Archaeozoological Finds from Alsónyék-Bátaszék, Hungary (Előzetes jelentés Alsónyék-Bátaszék neolitikus lelőhely archeozoológiai leletanyagáról). *Archaeometry Workshop* 10 (2013)/3, 209–214.

NYERGES ÉVA ÁGNES

Újkőkori állathasznosítás Alsónyék-Bátaszék településen (Neolithic Animal Exploitation at the Settlements of Alsónyék-Bátaszék, Hungary). In: Körösi, Andrea (ed.) *Sziürkék, rackák, mangalicák (Hungarian Grey Cattle, Racka Sheep and Mangalica Pigs)*. Conference publication: Nemzetközi Konferencia Matolcsi János Tiszteletére (International Conference in Honor of János Matolcsi). Budapest, 2015, 201–207.

OSZTÁS, ANETT – ZALAI-GAÁL, ISTVÁN – BÁNFFY, ESZTER

Alsónyék-Bátaszék: A New Chapter in the Research of Lengyel Culture. *Documenta Praehistorica* 39, (2012) 377–396.

RAST-EICHER, ANTOINETTE

Bast Before Wool: the first textiles.

In: Bichler, Peter – Grömer, Karina – Hofmann-de Keijzer, Regina – Kern, Anton – Reschreiter, Hans (eds.) *Hallstatt Textiles: Technical Analysis, Scientific Investigation and Experiment on Iron Age Textiles*. BAR IS 1351. Oxford, Archaeopress, 2005, 117–135.