

ARCHAEOZOOLOGICAL FINDS FROM ERNEI - “QUARRY”

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The archaeological site is located east of the road leading from Tîrgu-Mureş to Reghin, on the left bank of the Mureş River, between 320 and 340 metres above the level of the Black Sea. The place referred to by the villagers as “the Quarry” belongs to the village of Ernei and is situated just outside the entrance to the village on the south side.

Today the Mureş River flows at a significant distance from the site, but in earlier centuries it was much closer, as evidenced not only by the crusts beneath the archaeological layers but also by maps of the region dating from the 18th and 19th centuries. Apart from the Mureş River, other water resources included Sós-patak (Salt Creek) in the south and the spring at a place called Búdöstó (Smelly Lake) to the north-east of the site. The name of the creek points to the existence of a salt-water spring, indispensable for animal husbandry.

Processing of the excavated animal bones took place between 20 and 24 July 2004. The majority of the 1374 fragments examined (1176 pieces) can be dated precisely, with the largest number of bones dating from the Bronze Age, followed by the Goths and lastly by early Iron Age remains (see fig. 1).

In order for animal bone matter to be considered sufficiently representative of a given period, at least 500 precisely datable fragments would be necessary. This number, however, is not reached even in the largest Bronze Age find, not to mention the much smaller quantity found among the Goths and at the early Iron Age settlements. The smaller a find, the greater the potential distortion in the ratios they suggest, and therefore the conclusions we may draw from them must also be treated with greater caution.

From the *Bronze Age* settlement there were 743 pieces. Their distribution is as follows:

Domestic animals:

cattle	sheep and/or goat	pig	horse	dog
245	78	48	38	1

Wild animals:

roe deer	rabbit
1	2

Aquatic animals:

pike	carp family	frog	clam	fish
1	2	9	3	8

Other:

snail	bird	large mammal	small mammal	human
37	4	178	78	8

The pre-eminence of cattle is a feature of most ancient periods, cultures and peoples. The reason for this lies in the multiple uses which the animal serves, for everything from the meat and milk, through its usefulness as a draft animal to its skin, horns and bones, makes it a beast of many uses. It is therefore not surprising that at this site as well, cattle rank highest in the order of importance among the domestic animals. They are followed by small ruminants, pig and horses. Although not considered livestock in the usual sense of the word, dogs are also classed among domestic animals - albeit represented here by only a single fragment.

For two of the cattle bones it was possible to identify sex¹ and calculate wither height²; the data show that one was an ox and the other a bull, and both animals were 119 cm in height. Already during the Copper Age, people had discovered that castrating a bull provided them with a much calmer animal that was better suited to bearing the yoke and had juicier meat. Of course these two fragments cannot be taken as characteristic of the entire find's sex ratio, but although no other bones were found that might help establish the sex of the animals, it may be assumed that the large majority of the herd consisted of cows. Although given the period, we must consider the possible presence of aurochs; the find did not yield any bones that appear to have belonged to the modern cow's wild ancestor.

The ratio of small ruminants and pig is often a function of the features of local physical geography. Generally speaking whole it could be said that the former are happier in hilly, drier environments while pig, which need more water, tend to prefer more humid spots. Because kitchen waste typically consists of chopped-up fragments, intact bones of these species were also rarely found. Although, according to Sándor Bökönyi³, it was the Bronze Age that had pig of the largest size, approaching that of modern pigs, not a single bone from this site makes it possible to determine wither height. As regards small ruminants, only one such bone was found, indicating the wither height⁴ of the animal was 61 cm.

It was from the Bronze Age onwards that the potential uses of sheep's wool began to be discovered. The importance of sheep and its products must be the reason why the bones of mature animals constitute such a large proportion of the remains (see fig. 3).

Domesticated horses first appeared in the Carpathian basin during the Copper Age, and became more widespread only from the Bronze Age. In light of this, it is surprising that our find yielded such a large number of their remains. On one fragment of a tibia, traces of a cut may be observed, although this neither proves nor disproves that these animals were eaten. No measurable, intact bone was found among them.

The dog bone is a fragment of a jawbone, which does not reveal anything of the animal's function, whether as guard dog, hunting dog or sheepdog, or possibly even as a source of food. For there is ample archaeological evidence from earlier periods of antiquity that dog meat was eaten, and according to Bökönyi⁵ it was some time during the Bronze Age that this practice was abandoned.

The proportion of wild animals is relatively small, with a total of only two rabbit metatarsal bones having turned up, as well as a deer antler shed that had been collected without killing the animal. It may be considered fortunate (as well as the result of

¹ Nobis 1954.

² Calkin 1962.

³ Bökönyi 1974.

⁴ Teichert 1975a.

⁵ Bökönyi 1974.

careful manual collection) that a relatively large number of fish bones have survived, for given their fragility; these are much more easily damaged than other bones. Moreover, the bones of smaller fish often go unnoticed due to their tiny size. As regards the frog bones found (which, with one exception, are the remains of one incomplete skeleton), it is impossible to determine whether they are contemporary with the other bones, since frogs have a particular predilection for digging themselves into deeper (even archaeological) layers, and when they die their bones end up among the other remains in that area.

The eight human bones found came from five different pits. Two belonged to a young child. There were various bone fragments of which it was impossible precisely to determine the species. The bones that fall within the size range of cattle - horses - deer, and which are in all likelihood the remains of some members of these species, have been included in the category of large mammals. In the case of small mammals, these have been classified as “pig - small ruminants”. Likewise in the case of the bird remains, the species is/are unknown.

Six worked bone tools were found on the site. Of these, one was an awl made of the distal (lower) end of a small ruminant’s tibia, a common form in the Bronze Age. Two scrapers were made of cow bone: one from a rib and the other shaped from splinters of long bone. We also found a pig fibula (splint-bone), on the sharper end of which there were traces of wear, but the precise function of the object is unclear.

Similarly, nothing further is known about an object formed out of a flat bone of a large-hoofed animal of uncertain species; on this item too, only a few small signs of wear point to its use. One of the tools is made of the distal part of a cow shoulder blade, on which the edge of the round articular surface was scalloped all around (see photo 1).



Photo 1. Scalloped shoulder blade

Early Iron Age (57 pieces)

cattle	horse	pig	sheep and/or goat	large mammal	snail
33	2	5	7	10	1

The few bone fragments datable to the early Iron Age are of relatively little informational value. There are bones of all the major domestic animals, with the greatest number being of cattle, followed by small ruminants and pig, and then horses.

The fact that the more than half of the relatively small number of Iron Age bones come from cattle suggest that the species also played a predominant role among the local Gáva culture. In the case of the other domestic animals, the small number of remains (which allow us only to establish the presence of these species) makes it impossible to determine their order of importance.

No long bones useful for determining wither height were found. Nor were we able to observe any marks on the bones made by slaughter, skinning or burning; based on their composition, the bones may be presumed to come from kitchen waste. An exception to this would be the horse bones, for in that case we are dealing with various large and small fragments of the skulls of at least two individuals. The interpretation of these finds may point either to cultic sacrifice, or the remains may simply have been "rubbish" other than kitchen waste.

Sântana de Mureş culture, Goths (377 pieces)

cattle	horse	sheep and/or goat	sheep	pig	dog
109	45	43	1	29	1

hamster	goose	clam	snail	large mammal	small mammal	human
2	1	1	13	86	43	1

Among the material belonging to the Gothic layer, the dominance of cattle remains is striking. Unusually, the number of horse bones exceeds that of small ruminants by only a single fragment. However, the total of 232 precisely identifiable bone fragments is too low to allow us to draw any far-reaching conclusions from the relatively large number of horses. The next largest group that of sheep and/or goats is also "multifunctional"; except for wearing the yoke and adding the use of their wool, their functions correspond to those of cattle. Pig with their "purely" primary utility (meat, bones and sinews) come last among the livestock categories. Perhaps the low ratio can be attributed to the notable absence of wild animals (hamsters, like frogs, might also have dug themselves into these archaeological layers at a later date), but it is also possible that hunting was negligible or even played no role whatsoever in the lives of this people.

The find yielded several intact long bones that enabled us to calculate wither height⁶. The 43 excavated horse bones are the remains of at least four different individuals. Five metapodia make it possible to calculate the size of the animals, but of these, three bones are likely from the same animal. The wither heights obtained are: 126, 135 and 136 cm, values that correspond more or less to the average height of

⁶ Kiesewalter 1888.

Germanic horses. One of the metapodia had been made into a skate, with the more protruding bits of joint ends on the convex side having been trimmed off in an effort to make them level with the central, or medial, part of the bone. The tool itself, as the signs of heavy wear on the surface demonstrate, enjoyed a long period of use.

In addition to these, two other bones make it possible to calculate size: one is a pig's ankle bone, on the basis of which the animal can be determined to have had a wither height of 83 cm⁷, which makes it a distinctly large specimen, while the other is a sheep's metapodia, on the basis of which the animal, at 65 cm⁸, falls within the medium-sized category.

Besides the aforementioned bone skate, another worked bone object was found on the site: a small slab carved out of the long bone of a large-sized animal of indeterminate species (see photo 2). Unfortunately, the function of the object is unknown.



Photo 2. Bone slab

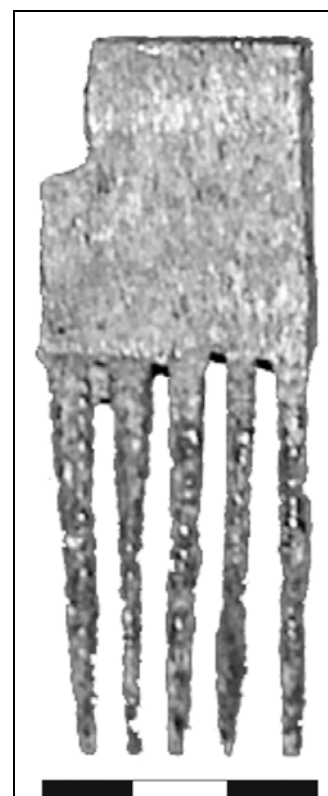


Photo 3. Comb

Probably the most important objects from the site are the fragment of the bone or antler comb (photo 3) with only five teeth kept and the goose bone-made needle-tube (photo 4).

The first one is a frequent artefact of the epoch while the second one appears rarely in sites from the period of migrations. On the edges of the tube one can observe the marks of the caps, which left a thin engraved line.

⁷ Teichert 1975b.

⁸ Teichert 1975a.



Photo 4. Needle tube

In this case as well, the majority of the bones appear to come from kitchen waste.

Other (197 pieces)

cattle	horse	pig	sheep and/or goats	chicken	dog	rabbit	large mammal	small mammal	clam	snail
66	6	8	37	3	2	1	27	44	1	2

This category comprises bones the origins of which are questionable, or which cover diverse periods. For this reason, even if they convey any information, they cannot be interpreted in the absence of dating.

* * *

In spite of the fact that none of the bones datable to the various periods attains the number we consider to constitute a statistical foundation (500 pieces), nevertheless the bone fragments from the two most important periods do furnish rather important data. There are as yet very few archaeological publications about Transylvanian excavation sites, and therefore every piece of information about animal husbandry and exploitation in the various periods of antiquity is extremely important.

There are considerable parallels among the forms of animal husbandry in the three periods: in each one, cattle are by far the most important domestic animals, the ranking among the other traditionally meat-providing animals (sheep/goats, pigs) is also similar, and in each case there are only a small number of wild animals. The reason for this is no doubt the geographical surroundings, which did not change significantly enough over a matter of a few centuries as to influence even animal husbandry.

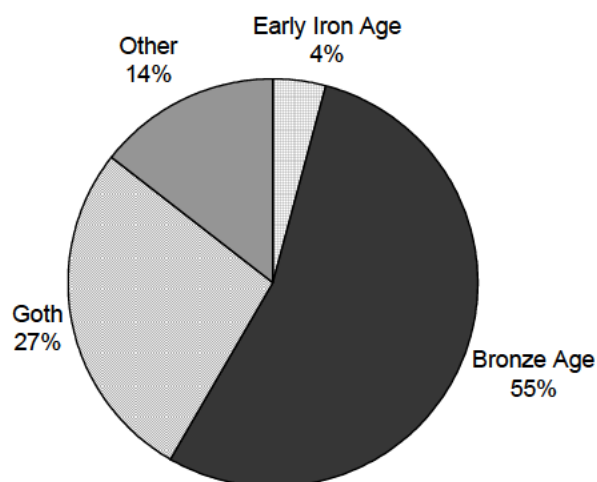


Figure 1: Distribution of animal bones by era

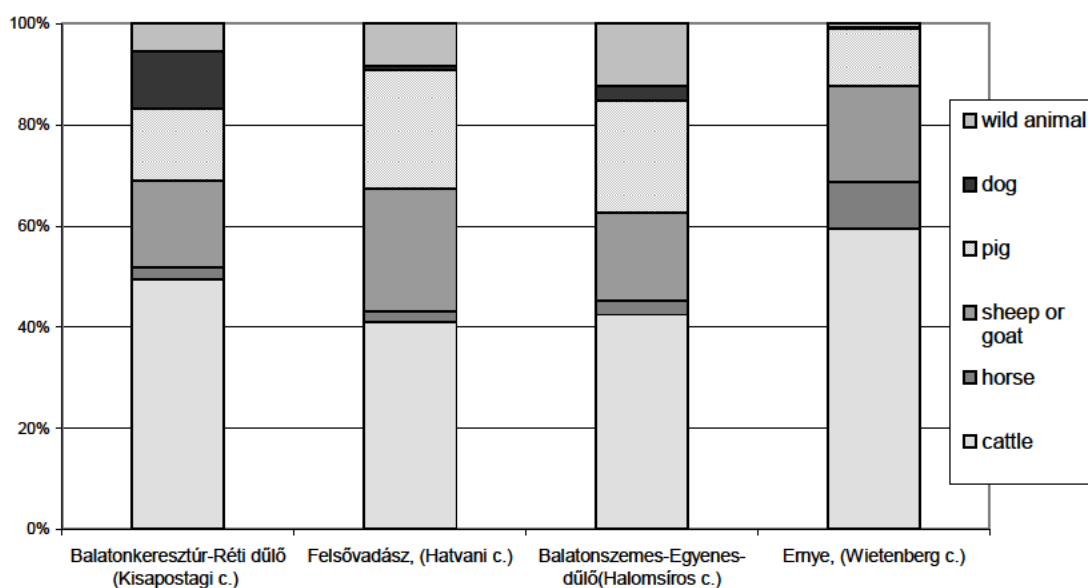


Figure 2: Distribution of the major animal species over four Bronze Age sites

We compared the finds at Ernei with three Hungarian Bronze Age sites that had a comparable amount of fragmentary material. The first site can be dated to the early Bronze Age, the second and third to the late Bronze Age. When comparing the ratios of the animals, the discrepancies become obvious: the large proportion of horse remains in the material found at our site, and on the other hand, the evident lack of dogs or wild animals. The reasons behind these discrepancies may be cultural or life style differences

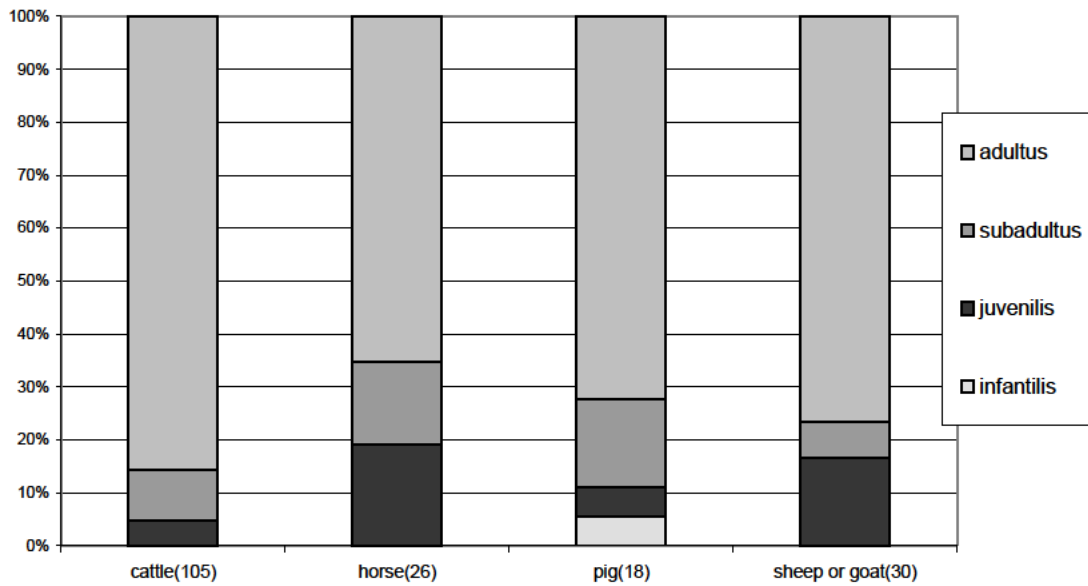


Figure 3: The major animal species of the Bronze Age, broken down by age

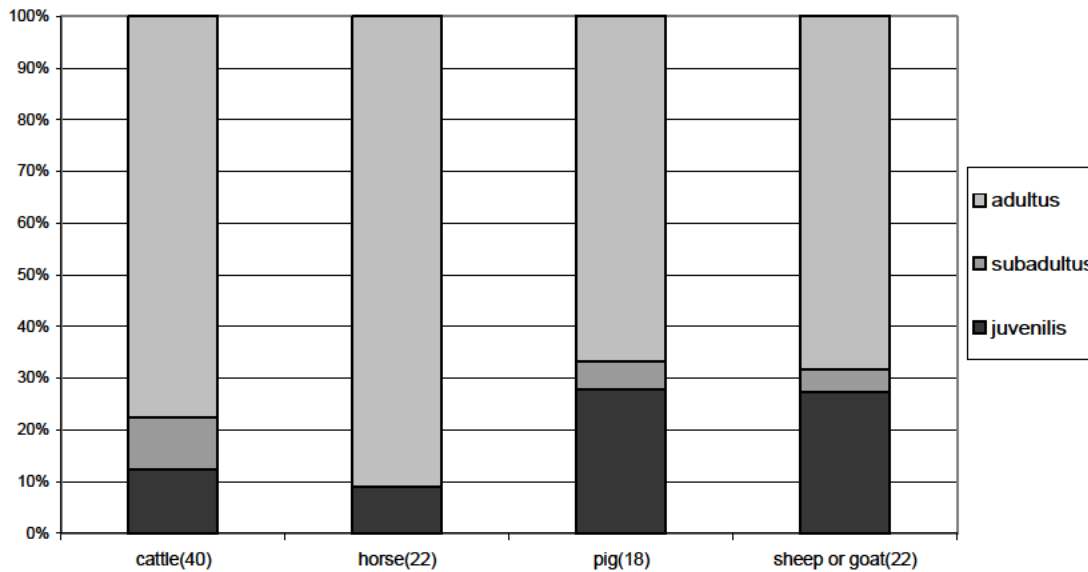


Figure 4: The major animal species in the period of the Gothic migrations, broken down by age

Based on the tables above, it can be seen that the vast majority of bones in both periods come primarily from adult (*adultus*) animals and to a lesser extent from mature (*subadultus*) or young (*juvenilis* or *infantilus*) individuals. This suggests that the animals were kept mainly for their secondary uses (milk, pulling heavy loads, wool, etc.), which for the most part only adult animals can provide, and their meat seems to have been of only secondary importance.

On account of its geographical features, the residential terrace, inhabited since the Bronze Age, was as advantageous to agricultural peoples as to those engaged in animal husbandry. The oldest, Bronze Age layer of the multilayer settlement at Ernei makes this a source of valuable data about the life style of the people of the Wietenberg culture; its Iron Age layer sheds light on the distinctiveness of the Gáva culture, while the finds dating from the migration-era settlement provide a glimpse of the Goths' way of life. There is still little known about the fauna of any of the three eras, since it is only in recent years that collaboration between archaeology and archaeozoology has become popular. An overall picture of the fauna of these eras will emerge only as the number of archaeozoological studies increases.

ANNEXES

Combined fauna list

SPECIES	NUMBER OF FRAGMENTS	%
Domestic cattle <i>Bos taurus</i> L. 1758	453	57.3
Horse <i>Equus caballus</i> L. 1758	92	11.6
Sheep <i>Ovis aries</i> L. 1758	1	0.1
Sheep or goat <i>Caprinae</i> Gray 1852	126	15.9
Domestic pig <i>Sus domesticus</i> Erxl.1777	90	11.2
Dog <i>Canis familiaris</i> L. 1758	4	0.5
Chicken <i>Gallus domesticus</i> L. 1758	5	0.6
Goose <i>Anser domestica</i> L. 1758	1	0.1
Domestic animals	772	97.6
Roe deer <i>Capreolus capreolus</i> L. 1758	1	0.1
Hare <i>Lepus europaeus</i> Pall. 1778	3	0.4
Hamster <i>Cricetus cricetus</i> L. 1758	4	0.5
Wild animals	8	1
Pike <i>Esox lucius</i> L. 1758	1	0.1
Other carp family <i>Cyprinidae</i>	2	0.2
Frog/toad <i>Anura</i> sp.	9	1.1
Fish and amphibians	12	1.4
Identifiable	791	100
Large mammal <i>Mammalia</i> indet.	301	
Small mammal <i>Mammalia</i> indet.	144	
Bird, unidentifiable <i>Aves</i>	2	
Fish, unidentifiable <i>Pisces</i>	8	
Human <i>Homo sapiens</i>	9	
Snail	53	
Clam	5	
Total	1374	

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