

## LA TÈNE BONE AND ANTLER ARTEFACTS FROM BRATISLAVA – ZLATÉ PIESKY<sup>1</sup>

Erik HRNČIARIK

**HRNČIARIK, Erik. Laténske kostené a parohové predmety z lokality Bratislava – Zlaté Piesky.** V porovnaní s predošlými dejinnými obdobiami je na počiatku laténskeho obdobia badať výrazný úbytok výskytu kostenej a parohovej industrie. Až na konci stupňa LT C postupne sledujeme nárast výrobkov a dochádza k ich opätovnému využitiu najmä v domácnostiach, pri spracovaní koží a textilu, výrobe keramiky, šperkárstve a pod. Počas záchranného archeologického výskumu na stavbe hypermarketu Tesco v Bratislave na Zlatých pieskoch sa podarilo preskúmať väčšiu časť laténskeho sídliska. Osobitné miesto medzi nálezmi na sídlisku patrí početnej skupine opracovaných kostí a parohov. Celkovo sa podarilo identifikovať 15 kusov opracovaných parohov a 2 kostené výrobky, ktorých analýza je predmetom predloženého príspevku.

**Kľúčové slová:** kosť, parohovina, doba laténska, Bratislava, drobné nálezy

**Keywords:** bone, antler, La Tène period, Bratislava, Small finds

In the end of the Iron Age, the Middle Danube region saw a significant change in the ethnic composition of its population. From the second half of the 5<sup>th</sup> century BC, the area was gradually settled by Celtic tribes. Later, in the Late La Tène period, its favourable position at the crossroads of long-distance roads attracted the Boii tribe, who raised an oppidum on the Bratislava castle hill. Several settlements were established in the larger hinterland of the oppidum (*Bazovský/Čambal 2012, 185*). One of them is the settlement at Zlaté Piesky (*Kuzma/Hrnčiarik 2004, 116*), where a notable concentration of worked bones and antler was recorded during an archaeological excavation.

Throughout history, bone and antler were, along with wood and stone, important materials used for the production of a wide range of everyday objects. Compared with other raw materials, bone has specific properties such as elasticity, hardness and fissility. Artefacts produced from bone and antler are often called bone and antler industry. Antler, and in particular bone, were easily accessible materials, since they mostly derived from “waste” related to the provision of food. Bones were obtained when people processed meat or prepared meal from it, while antler was obtained from hunting or by gathering.

Some authors (e.g. *Březinová 1995, 9*) also assign horn to this group. Due to its nature, however, horn survives rarely and we have no La Tène finds of horn products from the territory of Slovakia. Horn differs from both bone and antler not only when it comes to its structure, but also to the technique of its working. While bone and antler were worked by similar techniques, horn working techniques were slightly different. When horns were cut off the animal, they had to be boiled because their inside is formed of cancellous tissue that is greasy. After boiling, the layer of grease between the two layers of horn dissolved and the inner layer was easily pulled out. Then the horn was abraded, scraped and ground. Once

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smooth, it was polished with animal fur. Due to these differences, my work does not deal with artefacts made of horn.

Bone and antler working techniques have not changed significantly since prehistoric times. They are relatively simple techniques, and are attested in Slovakia in the Early and Middle Bronze Age (*Furmánek/Veliačik/Vladár 1991, 133-239*), in the Early (*Paulík 1955, 447-449*) and Late (*Březinová 2014, 191-198*) Iron Age, in the Roman period (*Hrnčiarik 2018, 135-141*) as well as in the Middle Ages (*Slivka 1984, 377-429*).

The most common bones for working were the long bones, with the joint parts cut away. After bone marrow was removed (usually during boiling), the cylindrical semi-finished product was worked into the desired shape by various saws and knives. Then it was cut into plates, which could be further fastened together or just decorated. A cylindrical worked bone with a thoroughly treated surface was discovered for instance in Slovenský Grob. *R. Čambal (2011, 106, 107)* assumes that it could be an unfinished dice of the elongated type, with the characteristic decoration missing. Among prehistoric tools, however, there were often ones made of bones broken off lengthwise, which included the joint. They were pointed on one end and served as awls or, in the case of needles, as handles. However, we must bear in mind that our knowledge of the extensiveness of bone and antler industry is negatively affected by our ability to distinguish these materials from other animal bones, as their surface is only slightly worked. In the La Tène period, bone artefacts were mostly made from the bones of domestic animals, yet there are also rare finds of products made from bones of game such as birds (*Březinová 2014, 191*).

Antler, like bone, was worked with a variety of saws, axes and knives into a semi-finished product suitable for further use. Most commonly, however, the tines were cut off and the antler was drilled with a hole or hollowed out. Antlers like these were then used as handles of various tools such as knives and awls. Antler used most commonly in the Central-European area came from the roe deer (Lat. *Capreolus capreolus*) and the red deer (Lat. *Cervus elaphus*), but also from elk (Lat. *Alces alces*).

Bone and antler are relatively hard materials which, unlike wood, do not decompose fast. It was very important that they were sufficiently degreased before working. The remains of grease on the surface could damage the tissue, which would reduce the quality of the entire product. In the past it was assumed that fat was removed from these materials with substances such as sorrel leaves or by soaking the bones in milk (*Hrubý 1957, 188*). Today, however, it seems that longer boiling was enough to degrease the bones (*Hrnčiarik 2017, 20-22*). When treated by heat, these materials (antler in particular) become so soft that they can be easily worked with a knife. Heat does not damage their inner structure and, when cooled, the bone and antler take on their original hardness and elasticity (There are a number of experiments how to prepare antlers like *Šefčíková 2003, 109-115*).

Compared to other periods, bone and antler industry is relatively rare in the settlements from La Tène period. We do not have in Slovakia graves from LT C/D, therefore they do not come from cemeteries (*Březinová 1995, 12*).

In the Early La Tène period, there is a significant decline in the occurrence of bone and antler industry compared with the previous period. Bone and antler hardly disappeared from use but they had likely become marginal materials. Moreover, as already suggested, the low degree of working of these finds means that they are hard to distinguish from other bones. At the same time, the use of these materials (especially antler) as parts of various tools (agricultural utensils in particular) diminishes, and they are replaced with the more durable and robust iron. It is first at the end of the LT C stage that we see a gradual increase in bone and antler products used in the household, in leather and textile working, pottery production, jewellery making etc. Bone and antler artefacts are mostly found at oppida, and much less in the structures of Late La Tène settlements. This is one of the reasons why they are rarely dealt with in Slovakia. The most complex treatment has been given to the area

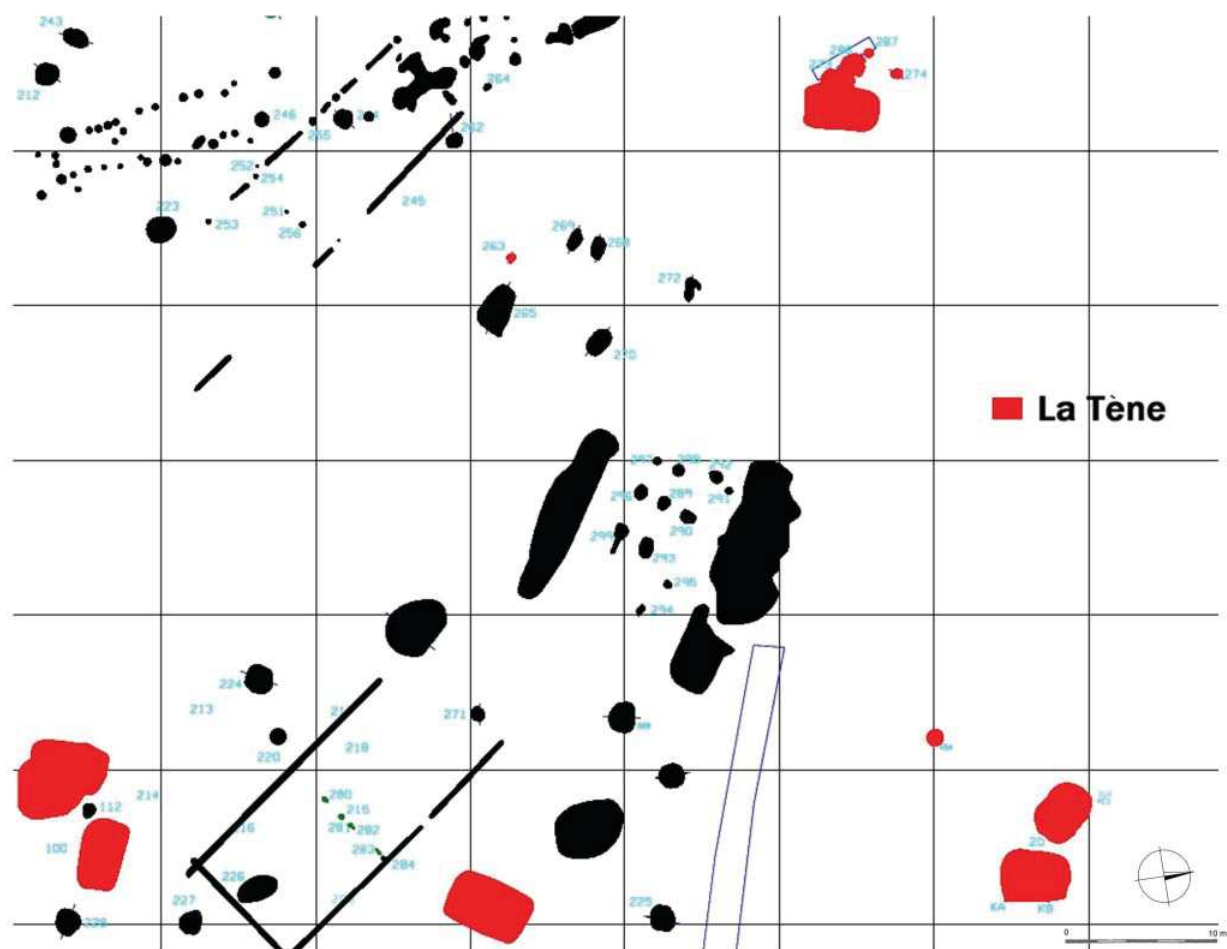


Fig. 1. Bratislava – Zlaté Piesky. La Tène settlement features marked with red color.  
Author: E. Hrnčiarik, I. Kuzma

along the Nitra river. Thanks to G. Březinová, the settlement at Nitra-Šindolka received a separate treatment (Březinová 1995, 9-15). The author later published a study containing a more detailed evaluation of the use of bone and antler in the Nitra area, where she included the finds from Chrenová II and Mikov dvor (Březinová 2014, 192-194). The distribution and use of these products in the area of oppida have received only a marginal treatment so far (e.g. Vrtel 2012, 175-176). The area of Morava has been researched more extensively, for instance by D. Melichar, whose Bachelor's thesis provides a good overview of the typology of these products (Melichar 2015).

In terms of function, the preserved artefacts can be divided into several groups. One of the groups consists of working artefacts. It contains various awls and pins made of bone (e.g. Pieta/Zachar 1993, fig. 100: 4) but also pointed antler tines, which were used mostly in textile working. Other items in this group are long bones (most commonly ribs) with one side serrated, for instance those found at the location Zámeček in Šurany (Březinová 2010, Tab. 8: 9). These objects are sometimes interpreted as tools used for breaking flax stalks, but in my opinion, they could also be weaving beaters (for Roman ones see e.g. Gostenčnik 2010, 149-157). Hollow bones may have been used as needle cases (e.g. Březinová 1995, Tab. 1: 4). Another group consists of various handles which were fitted with an iron blade to form awls, knives and other tools (fig. 2: 7). The third group is typical of the oppidum period, and contains an array of ornaments, for instance in the form of pins (Březinová 2014, Pl. 1: 3) or pendants (Březinová 2014, Pl. 1: 10). A separate group of bone and antler artefacts from the territory of Slovakia consists of finds either distributed from the Roman Empire or crafted

under its influence, for example bone styluses found in Bratislava (Vrtel 2012, fig. 273). Finally, there are also elongated dice with incised signs on the surface (Vrtel 2012, 268).

At Zlaté Piesky, a large part of a La Tène C settlement (fig. 1) was investigated in a rescue archaeological excavation during the construction of the Tesco hypermarket. Only the northern part of the settlement was excavated, but it clearly extended further south. In total, 13 structures were unearthed, of which six can be defined as the remains of dwellings and seven as storage pits and pits of unknown function. Neither the orientation nor the arrangement of the living structures constituted a regular system. The huts were identical when it came to their construction; the remains of postholes situated on the shorter sides, and a clay bench on the longer side, were unearthed in all of them. Of the seven pits, six were smaller structures with oval or circular ground plans. The La Tène structures were in superposition to one another only in two cases (structure 273 was sunken into structure 150, and structure 18B was sunken into structure 18A) but their fills came from the same period. The finds in the structures consisted mostly of pottery. Common pot forms predominated, but there were also situlae, bottle shapes and footed bowls. The finds of graphite fragments and the presence of graphite in sherds suggest a local production despite the fact that no structures for pottery production were discovered. The same is true for iron making; the abundant finds of iron slag suggest domestic forging. However, the excavation did not yield any agricultural utensils, nor any woodworking tools. Other finds from the site include fragments of brooches, a fragment of a cobalt blue glass bracelet with one rib (Haevernick type 6), and a fragment of aromatic resin, which was probably used as frankincense (Kuzma/Hrnčiarik 2014, 116, 117). Since finds that would enable an accurate dating are missing, the dating relies mostly on the pottery, which dates the settlement to the LT C1 or LTC1/C2 stage.

A special place among the finds from the settlement at Zlaté Piesky is occupied by a large group of worked bone and antler (fig. 2). In total, there are 15 pieces of partially worked roe and red deer antlers, and two worked animal bones. Interestingly, all of them derive from La Tène structures, despite the fact that Neolithic, as well as Early and High Medieval settlements have been recorded on the site. The antlers were found in both the La Tène huts and settlement structures. The majority of antler finds bear only traces of primary, roughworking (fig. 2: 4-9). On the surface they have cut-marks from a saw and traces of a knife or a bigger chopping tool (fig. 2: 3). In most cases, the finds are the remains of long antlers, with the tines cut away. However, the tines themselves have also survived. There are two interesting examples from structure 455 (one of them fig. 2: 8), which bear traces of a lengthwise cutting of the antler. Most of the worked antlers are assumed to be semi-finished products, whose function can hardly be determined. It can only be assumed in two cases. The worked antler from structure 130 could be an unfinished handle from a larger object, or a semi-finished product intended for further cutting into plates (fig. 2: 7). The shaved and worked tine with a drilled hole from structure 18 probably served as a handle of a knife or another iron object, perhaps an awl.

Worked bones are very hard to distinguish among the skeletal material, and only two from this site have been identified. Both are bone fragments with a pointed end, and may have been used as awls or needles (fig. 2: 1, 2). It is not possible to determine from which animal or how the bones were made. Awls served to pierce various materials, most commonly textiles and leather, so that they could be sewn together more easily with a needle (Melichar 2015, 14).

The finds of worked bone and antler from the La Tène settlement in Bratislava-Zlaté Piesky do not have a particular artistic value, but they constitute one of the largest collections of semi-finished products from the La Tène period unearthed so far in Slovakia (for comparison, only six pieces were found in Nitra-Šindolka). Their number suggests the existence of a smaller domestic workshop where they were worked. However, bone and antler working in the La Tène period was not a specialised craft, but rather an auxiliary production activity taking place either in a smithy or in a woodworking workshop, since the working techniques as well



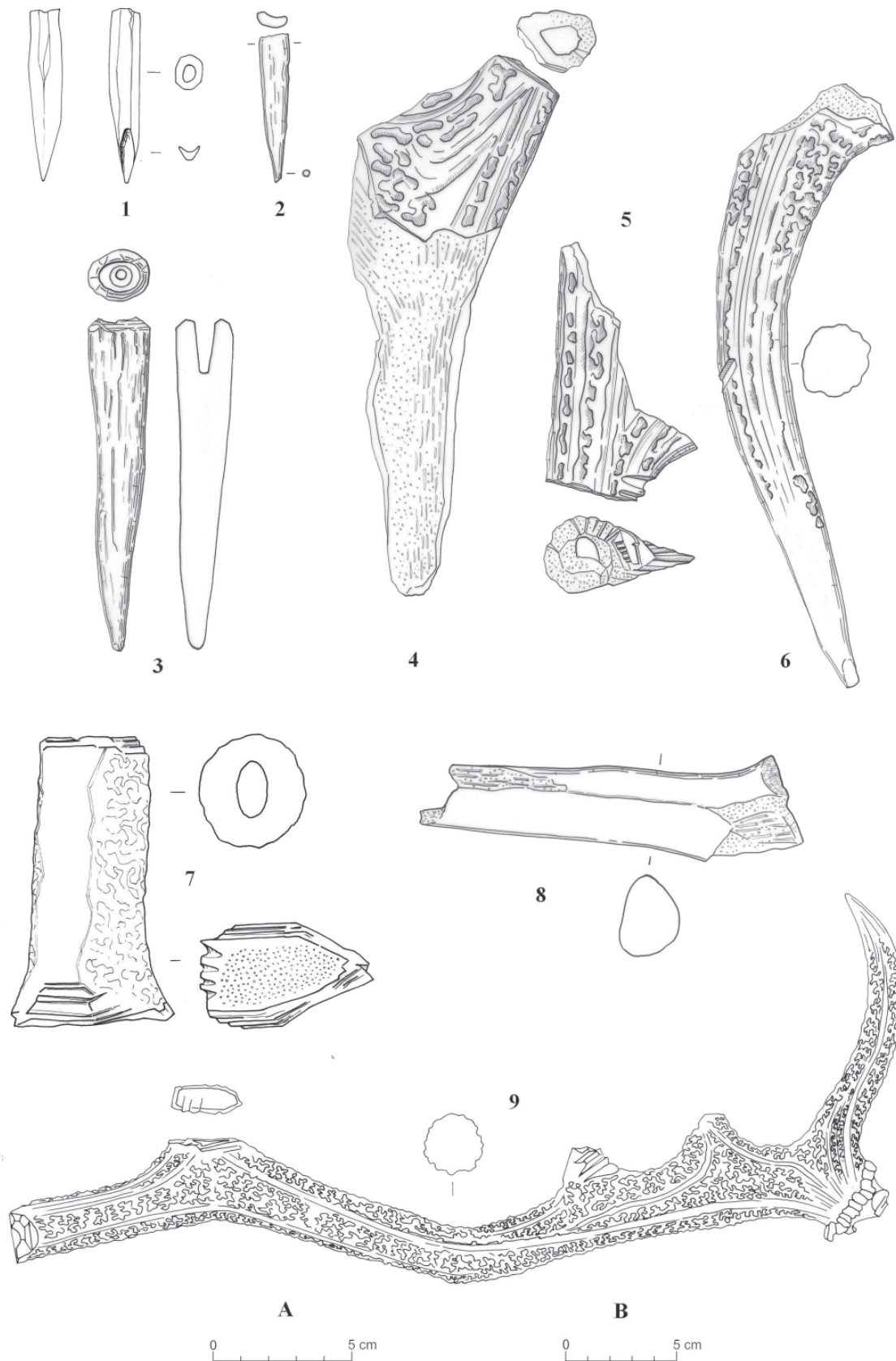


Fig. 1. Bratislava – Zlaté Piesky. Bone (1, 2) and antler (3-9) artefacts.  
Scale: A - 1-8; B - 9

as tools are similar for both crafts. In my opinion, however, these finds may even be partially worked antlers, which were gathered and stored for further distribution or sale outside the settlement, for instance at the oppidum, where they may have been worked further into desired shapes. Finally, what is also interesting is the dating of these finds to the LT C stage – the period when the use of bone and antler in the Celtic environment is only slowly beginning to spread again.

#### BIBLIOGRAPHY

- Bazovský/Čambal 2012* – I. Bazovský/R. Čambal: Širšie zázemie bratislavského oppida. In: J. Šedivý/T. Štefanovičová (zost.): *Dejiny Bratislavy 1*. Bratislava 2012, 185-189.
- Březinová 1995* – G. Březinová: Kostená a parohová industria z laténskeho sídliska Nitra-Šindolka. *Studia Historica Nitriensia* 3, 1995, 9-15.
- Březinová 2010* – G. Březinová: Sídlisko z neskorolátenskej polohy Zámeček v Šuranoch, Nitrianskom Hrádku. In: J. Beljak/G. Březinová/V. Varsik (eds.): *Archeológia barbarov 2009 - hospodárstvo Germánov. Sídliskové a ekonomické štruktúry od neskorej doby laténskej po včasný stredovek*. Nitra 2009, 113-130.
- Březinová 2014* – G. Březinová: La Tène Bone and Antler Artefacts from Nitra. In: S. Berecki (ed.): *Iron Age Crafts and Craftsmen in the Carpathian Basin: proceedings of the international colloquium from Targu Mures*. Targu Mures 2014, 191-198.
- Čambal 2011* – R. Čambal: Sídliskové objekty zo strednej a neskorej doby laténskej v Slovenskom Grobe. *Zborník Slovenského národného múzea 105 - Archeológia* 21, 2011, 83-114.
- Furmánek/Veliačik/Vladár 1991* – V. Furmánek/L. Veliačik/J. Vladár: *Slovensko v dobe bronzovej*. Bratislava 1991.
- Gostenčnik 2010* – K. Gostenčnik: Ribs as a Raw Material in Roman Bone Artefacts from Virunum (Southern Austria). In: A. Legrand-Pineau (Hrsg.): *Ancient and Modern Bone Artefacts from America to Russia*. Oxford 2010, 149-157.
- Hrnčiarik 2017* – E. Hrnčiarik: Bone and Antler Artefacts from the Roman fort at Iža. Nitra – Trnava – Komárom 2017.
- Hrnčiarik 2018* – E. Hrnčiarik: Quadian bone and antler industry from Slovakia (1. - 5. century AD). *Quaternary International* 472, 2018, 135-141.
- Hrubý 1957* – V. Hrubý: Slovanské kostěné předměty a jejich výroba na Moravě. *Památky archeologické* 48, 1957, 118-213.
- Kuzma/Hrnčiarik 2004* – I. Kuzma/E. Hrnčiarik: Výskum na stavbe hypermarketu TESCO v Bratislave. *Archeologické výskumy a nálezy na Slovensku v roku 2003, 2004*, 116-121.
- Melichar 2015* – D. Melichar: Kostěná a parohová industrie v době latěnské na Moravě. Rkp. bakalárskej práce. Masarykova univerzita. Brno 2015.
- Paulík 1955* – J. Paulík: Parohová a kostená industria z mladohalštatskej osady pri Seredi. *Archeologické rozhledy* 7, 1955, 447-449.
- Pieta/Zachar 1992* – K. Pieta/L. Zachar: Mladšia doba železná (laténska). In: T. Štefanovičová (zost.): *Najstaršie dejiny Bratislavy*. Bratislava 1993, 143-209.
- Slivka 1984* – M. Slivka: Parohová a kostená produkcia na Slovensku v období feudalizmu. *Slovenská archeológia* 32, 1984, 377-416.
- Šefčíková 2003* – M. Šefčíková: Experimentální výroba kostěných a parohových předmětů v pravěku. *Rekonstrukce a experiment v archeologii* 4, 2003, 109-115.
- Vrtel 2012* – A. Vrtel: Keltské oppidum v Bratislave. In: J. Šedivý/T. Štefanovičová (zost.): *Dejiny Bratislavy 1*. Bratislava 2012, 164-179.

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## RESUMÉ

### Laténske kostené a parohové predmety z lokality Bratislava – Zlaté Piesky

Na laténskom sídlisku zo staršieho stupňa LT C1, až z prelomu LT C1/C2 na lokalite Bratislava – Zlaté piesky (obr. 1) sa počas záchranného archeologického výskumu podarilo zachytiť pozoruhodnú koncentráciu opracovaných kostí a parohoviny, ktorých analýza je cieľom predloženého článku. Kosť a parohovina boli počas rôznych dejinných období popri dreve a kameni dôležitým materiálom, ktorý dopĺňal surovinovú základňu pre výrobu najrôznejších predmetov dennej potreby. Avšak v dobe laténskej patrí kostená a parohová industria v porovnaní s inými časovými obdobiami k pomerne zriedkavejším nálezom.

Na skúmanom sídlisku sa podarilo objaviť 15 kusov čiastočne opracovaných srnčích a jeleních parohov. A minimálne dve opracované zvieracie kosti. Parožie sa nachádzalo tak v laténskyh obydliah ako aj sídliskových objektoch. Väčšina z nálezov zhotovených z parohu nesie len stopy po prvotnom „hrubom“ opracovaní. Na ich povrchu možno rozoznať zárezy po píлке a stopy po noži alebo väčšom nástroji na sekane. V prevažnom počte prípadov ide o zvyšky dlhého parožia, z ktorého boli orezané výčnelky. No zachovali sa aj samostatne orezané výčnelky. Medzi nálezmi parožia sú zaujímavé dva kusy z objektu 455 (jeden z nich na obr. 2: 8), na ktorých povrchu je vidieť stopy aj po pozdĺžnom orezávaní parohu. Vo väčšine prípadov nájdených opracovaných parohov možno predpokladať, že ide o polotovary, pri ktorých nemožno určiť ich funkciu. Túto možno predpokladať len u dvoch exemplárov. V prípade opracovaného parohu (obr. 2: 7) z objektu 130 sa dá uvažovať, že šlo o nedokončenú rúčku väčšieho predmetu, no nemožno vylúčiť, že ide len o polotovar, pripravený na ďalšie orezávanie do doštičkovitej formy. Orezaný a upravený výhonok parohu s vyhlbenou dierou v strede z objektu 18 (obr. 2: 3) mal zas pravdepodobne slúžiť ako násada na nôž alebo iný kovový predmet – šidlo? V osteologickom materiáli je len veľmi ťažké identifikovať opracované kosti. Zo skúmanej lokality sa podarilo identifikovať len dve (obr. 2: 1-2). V oboch prípadoch sú to zlomky kostí so zahroteným koncom, ktoré mohli slúžiť ako šidlá alebo ihly. Šidlá slúžili na prepichovanie rôznych materiálov, aby ich bolo možné ľahšie zošit' ihlou.

Nálezy opracovaných parohov a kostí z laténskeho sídliska v Bratislave – Zlatých Pieskoch nemajú výraznú umeleckú hodnotu. Ide však o jeden z najpočetnejších súborov polotovarov z laténskeho obdobia, aký sa na Slovensku doposiaľ podarilo objaviť (napríklad v Nitre – Šindolke ich bolo len 6 kusov). Vzhľadom na ich množstvo by sme na lokalite mohli predpokladať menšiu domácu dielňu na ich spracovanie. Opracovanie parohu, ale aj kosti však nemožno v laténskom období považovať za špecializované remeslo a išlo skôr o vedľajšiu produkciu či v kováčskej dielni alebo v dielni na spracovanie dreva, keďže techniku opracovania, ako aj nástroje majú tieto odvetvia veľmi podobné. Podľa môjho názoru však v prípade týchto nálezov nemožno vylúčiť, že ide o čiastočne opracovanú parohovinu, ktorú niekto zbieral a uskladňoval pre ďalšiu distribúciu, prípadne predaj mimo územia sídliska, kde ich ďalej opracovali do potrebných foriem. V neposlednom rade je tiež zaujímavé datovanie týchto nálezov do stupňa LT C, teda do obdobia, keď sa ešte len opätovne postupne rozvíja ich využitie v keltskom prostredí.

### Obrazová príloha

Obr. 1. Bratislava – Zlaté Piesky. Laténske osídlenie na polohe vyznačené červenou farbou. Autor: E. Hrnčiarik, I. Kuzma.

Obr. 2. Bratislava – Zlaté Piesky. Kostené (1, 2) a parohové (3-9) artefakty. Mierka: A – 1-8; B – 9.

doc. Dr. phil. Erik Hrnčiarik  
Katedra klasickej archeológie FF, Trnavská univerzita v Trnave  
Hornopotočná 23, 918 43 Trnava, Slovenská republika  
erik.hrnčiarik@truni.sk