

IRON AGE RITES AND RITUALS IN THE CARPATHIAN BASIN

**PROCEEDINGS OF THE INTERNATIONAL COLLOQUIUM
FROM TÂRGU MUREŞ**

7–9 October 2011

Edited by
Sándor BERECKI

Editura MEGA
Târgu Mureş
2012

CONTENT

Preface	7
Hrvoje POTREBICA	
Religious Phenomena of the Hallstatt Communities of Southern Pannonia	9
Marcella NAGY-Pál SÜMEGI-Gergő PERSAITS-Sándor GULYÁS-Tünde TÖRÖCSIK	
Iron Age Hoard Found at Ikervár (Vas County, Hungary) in the Western Region of the Carpathian Basin. A Study in the Reconstruction of the Cultic Life of the Hallstatt Period in the Light of Archaeological and Scientific Analyses.....	31
Zoltán CZAJLIK-Géza KIRÁLY-Attila CZÖVEK-Sándor PUSZTA-Balázs HOLL-Gábor BROLLY	
The Application of Remote Sensing Technology and Geophysical Methods in the Topographic Survey of Early Iron Age Burial Tumuli in Transdanubia.....	65
Robert SCHOLTZ	
Scythian Age Burials at Tiszalök.....	77
László SZATHMÁRY	
Scythian Age Human Skeletal Remains from Tiszalök	101
Florin GOGÂLTAN-József-Gábor NAGY	
Profane or Ritual? A Discovery from the End of the Early Iron Age from Vlaha-Pad, Transylvania.....	105
Imola KELEMEN	
The Archaeozoological Analysis of the Animal Bones Discovered in the Early Iron Age Pit at Vlaha-Pad	133
Mircea BABEŞ-Nicolae MIRIȚOIU	
Verlängerte, mehrstufige birituelle Bestattungen im Donau-Karpaten-Raum (5. bis 3. Jh. v. Chr.).....	139
Aurel RUSTOIU-Sándor BERECKI	
‘Thracian’ Warriors in Transylvania at the Beginning of the Late Iron Age. The Grave with Chalcidian Helmet from Ocna Sibiului	161
Peter C. RAMSL	
Late Iron Age Burial Rites in Eastern Austria.....	183
Maciej KARWOWSKI	
An Ithyphallic Celtic Figurine from Oberleiserberg.....	189
Jan BOUZEK	
The North-Western Part of the Carpathian Basin in the Period of Early Celtic Princes	213
Zoltán PILLING-Ferenc UJVÁRI	
Iron Age Settlement and Cemetery from Szeged–Kiskundorozsma. Some New Data on Iron Age Burial Rite at the Southern Part of the Great Hungarian Plain	217
Éva TANKÓ-Károly TANKÓ	
Cremation and Deposition in the Late Iron Age Cemetery at Ludas	249

Gertrúda BŘEZINOVÁ	
The Biritual Cemetery at Šurany–Nitriansky Hrádok, District of Nové Zámky, Slovakia.....	259
Martin FURMAN	
The Interpretative Value of Annular Ornaments for the Study of Early Celtic Populations in the Middle Danube Area.....	273
Gabriela BREZŇANOVÁ	
Reflections of the Contacts between Celtic Communities in North-West Romania and South-West Slovakia in the Grave Inventories	289
János NÉMETI	
Funerary Rites and Rituals of the Celtic Cemeteries in North-Western Romania and a Comparison with the Funerary Discoveries in the Tisza Plain and Transylvania.....	295
Tiberius BADER	
Meine Begegnungen mit den Keltenfürsten: am Beispiel der Fürstengräber von Ciumeşti und Hochdorf.....	303
Paul PUPEZĂ	
The Local Tradition Pottery from the Eastern Carpathian Basin Celtic Graves	317
Dragoș MĂNDESCU	
Killing the Weapons. An Insight on Graves with Destroyed Weapons in Late Iron Age Transylvania	343
Aurel RUSTOIU	
The Celts and Indigenous Populations from the Southern Carpathian Basin. Intercommunity Communication Strategies	357
Marija LJUŠTINA–Miloš SPASIĆ	
Celtic Newcomers between Traditional and Fashionable: Graves 63 and 67 from Karaburma.....	391
Cătălin Nicolae POPA	
‘Till Death Do Us Part’ A Statistical Approach to Identifying Burial Similarity and Grouping. The Case of the Late La Tène Graves from the Eastern Carpathian Basin.....	401
Beatrice S. KELEMEN–Iosif Vasile FERENCZ–Cristian C. ROMAN–Delia M. ROMAN–Oana PONTA–Simon SIMION	
Cremated Human Remains from Hunedoara–Grădina Castelului / Platou. Additional Information Inferred by XRD, FT-IR and SEM/EDX Analyses	413
Andreea DRĂGAN	
Late Iron Age Burials in the Iron Gates Area. A Functional Approach to Funerary Expression in the Late La Tène.....	425
Milica TAPAVIČKI-ILIĆ–Vojislav FILIPOVIĆ	
A Late Iron Age Grave Find from Syrmia	453
Marcin RUDNICKI	
Finds and Context of Șimleul Silvaniei Type Bracelets North of the Carpathians and the Sudety....	461
Horea POP–Zsolt CSÓK	
The Tumuli Necropolis from Șimleu Silvaniei.....	493
Mariana EGRI	
‘A Warrior Never Dies’ The Manipulation of Tradition in Early Funerary Contexts from Pannonia ...	503
Abbreviations.....	531

CREMATION AND DEPOSITION IN THE LATE IRON AGE CEMETERY AT LUDAS

Éva TANKÓ–Károly TANKÓ

MTA–ELTE Interdisciplinary Archaeological Research Group
Budapest, Hungary

vindobona.09@gmail.com
csisztar@gmail.com

Keywords: Late Iron Age, La Tène, human bones, cremated human remains, pyre, cremation process, deposition of ashes, osteological and archaeological analysis

This study presents a summary of results achieved by the anthropological and archaeological comparison of the cremated remains recovered at the Ludas–Varjú-dűlő cemetery. The site represents the burial ground of the Early and Middle La Tène period in Eastern Hungary where the tradition of cremation dominated.

To demonstrate the significance of this work it is necessary to give a short overview of previous research at this point. The first anthropological analysis associated with the Celtic population in Hungary was completed by Nemeskéri and Deák who analyzed remains from fourteen known sites available in the 1950s (NEMESKÉRI–DEÁK 1954, 148–149). ZOFFMANN (2001) published a comprehensive anthropological study of 137 individuals from 35 Celtic burial sites, however – similarly to her previous essays – the primary focus was on the osteological examination of inhumations (ZOFFMANN 1998; 2000; 2002a; 2002b). Besides these studies made in Hungary, anthropological material from several Celtic cemeteries in Slovakia – e.g. Dubník and Maňa – has also been examined in recent decades (VLČEK 1957; DACÍK 1983; JAKAB–VONDÁRKOVÁ 1989). Research took a significant step forward with the analysis of the cemetery of Malé Kosihy. Detailed anthropological analysis was carried out not only on the inhumation burials, but also on 45 cremated burials. Besides age and sex identification, the cremated remain's position within the grave (a single or multiple burial groups) and also the spatial relation between individuals (single or multiple individuals) were examined in detail (JAKAB 1995).

In the Carpathian Basin, scholars chiefly concentrated on inhumations whereas cremated burials received less attention. Meanwhile, in France a new archaeo-anthropological approach has developed, opening up new ways for the analysis of cremated remains. By this new method not only the anthropological characteristics but certain signs of burial rite can also be analyzed on cremated bones (DUDAY ET AL. 2000, 7–29).

The recent archaeological investigation of Ludas provided good potential for the application of the new archaeo-anthropological method. To emphasize the significance of the current study an overview of funerary research will be given concerning the Late Iron Age of the region. Approximately two hundred Celtic cemeteries are so far known in North-eastern Hungary. Only a quarter of these burial grounds have been archaeologically investigated and/or the remains entered into inventories. Smaller or larger scale excavations were carried out only at two dozen cemeteries, among these the excavation of Mátrászólós (1957–1958: PATAY 1972, 353–358), Vác (1969–1974: HELLEBRANDT 1999, 55–146), Ludas (2001–2002:

SZABÓ-TANKÓ 2006) and Sajópetri (2004–2006: SZABÓ 2006, 61–71; SZABÓ ET AL. 2006, 221–225) can be regarded thorough and complete. Although Mátraszólós were investigated more than half a century ago, neither the archaeological nor the anthropological data is available yet from these sites. Hellebrandt in her comprehensive study on the La Tène period in North-eastern Hungary included a few smaller cemetery sections – e.g. Kistokaj, Radostyán, Muhi – (HELLEBRANDT 1999) besides her focus on the large burial ground of Vác. The importance of Hellebrandt's work is undisputable; however, the anthropological analysis of burials is missing from the study. Unfortunately, the published description of burials and drawings are too sketchy to offer reliable information on burial rites. On these grounds therefore a comparative archaeological study based on the funerary record in the region cannot be carried out at the moment due to the imbalance in current data. As opposed to previous research, the excavation at Ludas (SZABÓ-TANKÓ 2006) and Sajópetri (SZABÓ ET AL. 2006) cemeteries were completed by modern, detailed documentation methods creating potential for the new archaeo-anthropological perspective focusing on the La Tène period in this area. The analysis of the remains from Sajópetri is still ongoing whereas the results from Ludas have been published recently (SZABÓ 2012). In the case of Ludas, anthropological data were available from which further information was derived concerning burial practice and funerary rites.

At the site of Ludas–*Varjú-dűlő* a biritual cemetery containing both primary inhumations and cremation burials of the La Tène period was unearthed. The cemetery contained 77 cremations and 5 inhumations (Fig. 1) – a proportion of which corresponds to other La Tène cemeteries recovered in north-eastern Hungary. Across this region, the dual ritual burial tradition dominates the Celtic cemeteries throughout the period. It seems to be a tendency that the number of inhumations is significantly lower than the number of cremations. For instance, at Mátraszólós similarly to Ludas, there were hardly any inhumations documented (PATAY 1972, 353). In terms of burial practice, Vác and Sajópetri is slightly different since here more than one third of the burials were cremated (HELLEBRANDT 1999, 84; SZABÓ 2006, 62).

The skeletal remains recovered from Ludas were very poorly preserved as a result of various chemical reactions in local soils and microbial degradations (MAYS 2010, 23–27). The skeletal remains of only one individual (burial 951) were in suitable condition for anthropological examination as opposed to the numerous cremations on which the archaeo-anthropological method was carried out. Of the 77 excavated cremations, 58 burial remains were proper for osteological analysis. Cremated bone fragments of 19 burials either perished or were in a very poor condition. The examination of seven multiple burials, despite their suitable condition, were limited to the identification of the main anthropological characteristics; the osteological separation of individuals by currently used methods was not possible.

It is important to note that in the case of cremated remains their analysis is

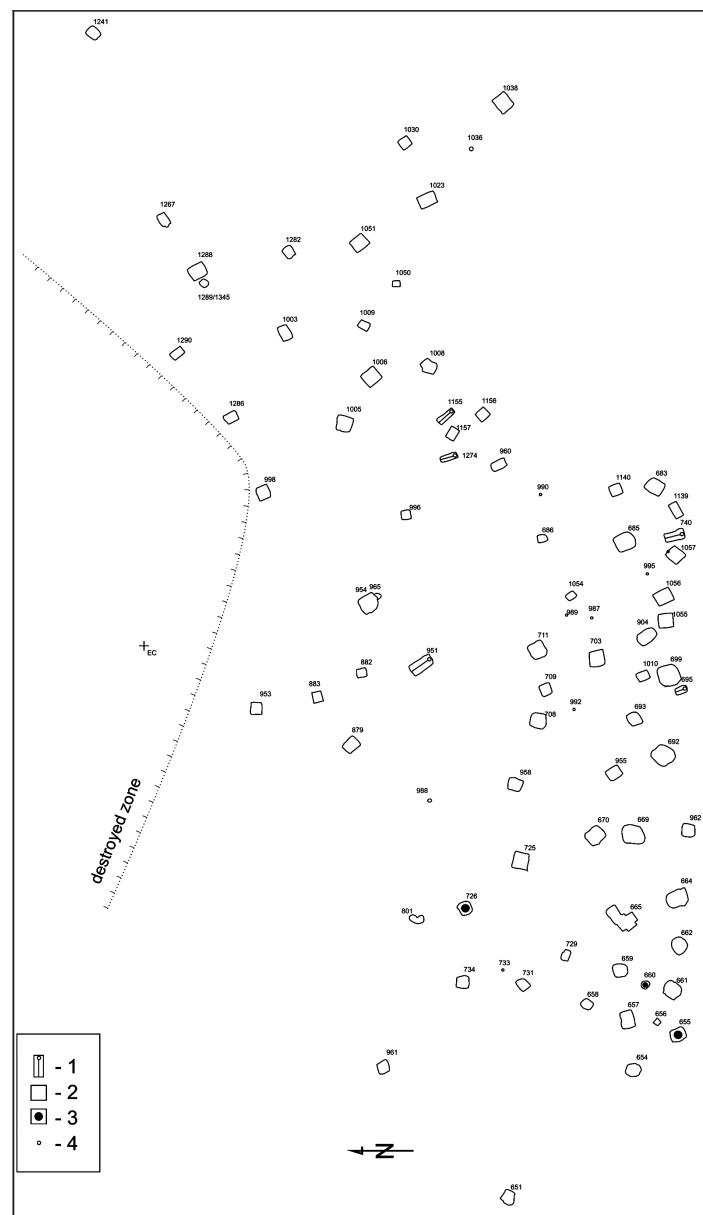


Fig. 1. Ludas–*Varjú-dűlő*. Map of the Celtic cemetery. 1. inhumation; 2. cremation burial; 3. urn grave; 4. destroyed burial.

much more limited compared to inhumations. Although cremated bones are more resistant to chemical processes taking place in soils than inhumations, the determination of age, sex and pathological conditions in most cases can only be estimated. From the point of view osteological analysis, it is of fundamental importance that the remains are excavated, documented and lifted with great caution and thoroughness (for general methodological problems in archaeology see MAYS 2010, 311–322).

The first step in the osteological analysis is the identification of the main skeletal elements (skull, axial skeleton, appendicular skeleton: pelvis, upper and lower limbs) and the conduction of necessary measurements. The condition, colour, fragmentation and deformation of bones are also recorded and by this the compiled dataset could shed light on the final treatment of the body: whether and how the deceased was placed on a funerary pyre, and the method and circumstances of the cremation process. For instance, variation in the colour of cremated bone fragments (of the same skeleton) implies that the pyre was burning with various intensity and the body was exposed to flames of different temperatures. This phenomenon is referred to as heterogenic burning. In contrast, if the bone fragments are uniform in colour – homogenic/homogeneous burning – the whole body was exposed to equal temperatures (MAYS 2010, 324–325). The majority of calcined bone fragments discovered at Ludas were homogeneous whitish-grey or greyish-blue coloured. Cremated remains of variegated, yellowish-brown or black colour – implying heterogeneous burning – were present in significantly lower proportions. Therefore it can be concluded that both heterogeneous and homogeneous burning of dead bodies were practiced at Ludas. This implication is supported further by parabolic signs detected on most of the cremated remains which occur during the initial phase of the cremation process, and by linear cracks appearing as the result of generally higher temperatures. Parabolic cracks develop on relatively low temperatures (200°C) whereas linear cracks evolve by intensive exposure of higher temperatures (700°C) (MAYS 2010 322–323). To further establish the maximum temperature of burning, melted bronze objects found among cremated remains can provide guidance. In a number of burials burnt and melted bronze ornaments indicate temperatures reaching 800–1000°C (the melting point of this copper alloy depends on the tin content. If the tin content is lower than 20% the melting point is around 800–1000°C, TURNER-WALKER 2009, fig. 1/2).

The majority of cremated bones recorded from Ludas was greyish-white coloured, well-fragmented and thoroughly burnt indicating that human remains were manipulated during the cremation process and that of each stage of the procedure was looked after and controlled. It has to be noted here that the level of fragmentation – besides the manner of burning – could have been affected further by the instant collection of hot remains, spraying with cold water or washing. As a result of thermal stress the bones shatter even more (SIGVALLIUS 1993, 122). The majority of cremated bones from Ludas are micro-fragmented, and the average fragment size is around 10 mm. This level of fragmentation makes it considerably difficult to age and sex the remains. To identify the age and sex of individuals the same method was applied for both cremations and inhumations (for the detailed discussion of this method see MAYS 2010, 317–320). During the analysis, signs of trauma and other pathological conditions were also recorded which could hold valuable information on the deceased person's lifestyle.

Following the separation of skeletal elements detailed measurements were taken on fragments associated with each particular bone. Calculations based on these measurements represent the presence of certain anatomic units by percentage. The overall mass of cremated remains generally ranges between 100 g and 200 g and it never exceeds 700 g (Fig. 2, Appendix 1). Analyses carried out in present day crematoriums have shown that the average mass of a cremated mature adult is around 1500–2300 g (TROTTER-HIXON 1974, fig. 1). By comparing these data with the measurements taken on the Ludas remains it can be concluded that only a certain proportion of selected bones were actually placed in the grave.

At this stage of the investigation, further to the anthropological data collection, archaeological information can be derived as well. During the anatomical identification of bone fragments it becomes clear if the remains belonged to one or more individuals. In the case of multiple burials the number and composition of fragments indicate whether the deposition of multiple individuals was carried out intentionally or the remains of more than one individual were accidentally mixed up during the cremation process. Intentional deposition of multiple burials can clearly be identified by the presence of characteristic skeletal elements belonging to numerous individuals (e.g. more than two caput femoris, etc.). Multiple burials can be suspected when along the remains of adults, bone fragments of a child occur, or the age differences of bone fragments are clearly distinctive (e.g. different stages of epiphysis fusions are present).

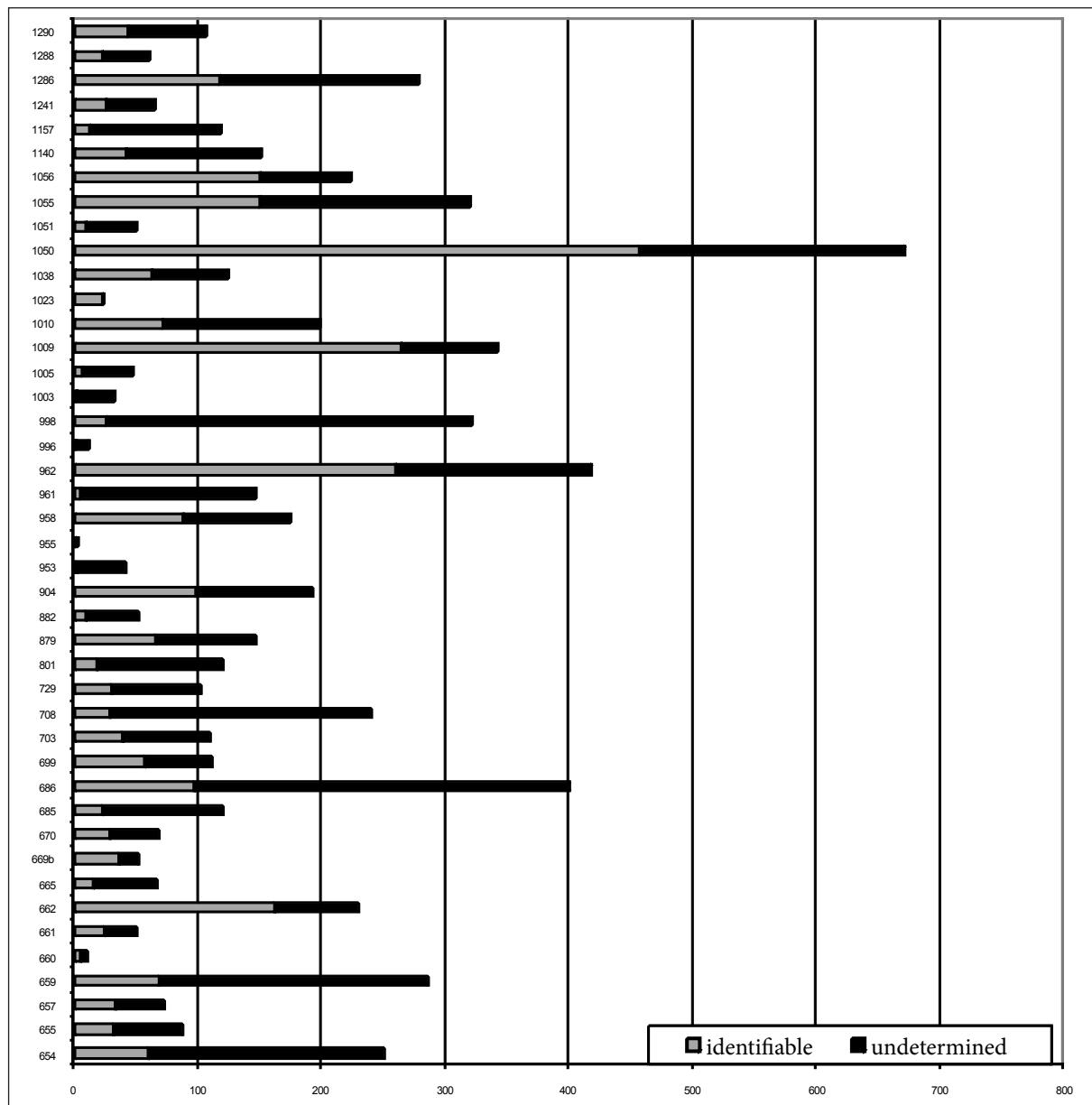


Fig. 2. Mass of cremated human remains (g) in each burial, showing the proportion of anthropologically identified bone fragments.

There were altogether eight double burials documented at Ludas. In two cases the cremated remains of two adults (burial 711, 1009), in five cases an adult and a child (burial 686, 699, 725, 1051, 1267), and in one case a newborn and a child (burial 1139) were placed in the grave together. Sometimes the mass of cremated bone fragments possibly indicate multiple burials; e.g. burial 686: 401 g, burial 711: 646 g, burial 1050: 672 g (Fig. 3, Appendix 1).

Bone fragments belonging to two individuals were mostly mixed and deposited in a little heap in the grave (burials 699, 725, 1051, 1139 and 1267). In burial 699 and 1267 the remains of an adult woman and a child of age Infans I were mixed, moreover, in the case of burial 725, an adult of unidentifiable sex and a child of Infans I were found together. These burials could represent two individuals (mother and child) who were cremated together. In other cases the presence of multiple individuals is supposed by their separate deposition in the grave. From burial 1009, an adult male, and alongside vessel no. 5, an adult female were recovered. In burial 711, near to the cremated remains of an adult female aged around 24, bone fragments of another adult female were documented around bracelet no. 5 (Fig. 3). It has to be pointed out that in this case the bone fragments of the two individuals show signs of exposure to different temperatures which implies that they were cremated on separate pyres. In burial 686, neonatal remains were partly placed in a vessel and were partly mixed with bone fragments of an adult male. It is likely in

this and similar cases that the cremation of these two individuals was carried out on the same pyre. The interpretation of burial 1139 is slightly more problematic as among the neonatal remains, skull fragments of a child aged Infans I were found. The two children could have been cremated together, however, the missing skeletal elements of the older child raises issues for which we have no satisfactory answers yet. Furthermore, in some child burials the total absence of skull bones can be observed. In burial 1267, among the remains of an adult female, cremated skeletal bones of a child were detected, but the infant's skull fragments were not present at all. From burial 1051, among calcined skeletal bones of a child aged around 1 year old, skull fragments of an adult were documented. In this case the mixed remains of the two individuals imply cremation on the same pyre. There is no explanation so far why the skeletal elements of the adult and the skull bones of the child were missing from the grave.

The case of burial 665 is noteworthy as here only the post-cranial bones were present, the remains of the skull were absent. A possible explanation could be that the skull was not placed in the grave, thus was not cremated with the rest of the body in the first place. In inhumations from the La Tène period, post-humus manipulation of bodies has been documented in some cases – e.g. Sajópetri (SZABÓ 2006, 62) –; therefore similar manipulation of bodies during the cremation process cannot be ruled out either. At Ludas, in the case of two cremations, signs of quasi contemporaneous manipulation were detected. The fill of burial 954 was later disturbed and a cooking vessel was placed upside-down in the grave, a similar situation was documented in burial 686. These later interferences did not aim to disturb the remains initially and demonstrate that interaction with the deceased did not stop with the event of burial at all times.

There are some cases when the remains of an individual contained bone fragments of a different person (1038, 1050, 1055 and 1157). Here – as opposed to the above described examples – rather than particular skeletal elements being present, only random fragments of other individuals occur, therefore intentionality can be ruled out. The use of the same location for cremation could explain the appearance of such random bone fragments. Carrying out cremation in a commonly used location, in the so-called *bustum* is well-known from the Celtic world – e.g. Clemency (METZLER ET AL. 1991); Westhampnett (FITZPATRICK 2000, 24–25, fig. 27) –, but at Ludas the existence of a communal funerary location can only be assumed as such structure was not documented. Nevertheless in most cases according to anthropological data it is clear that the cremations were carried out at different locations.

The cremated remains of Ludas were recovered from diverse archaeological contexts. Cremations were generally placed into a rectangular-shaped grave-pit with straight walls and a flat base. The remains were either scattered on the bottom or were piled up in a little heap. This heap of bone fragments could be round, oval or rectangular. The burnt and deformed metal ornaments were found mostly among the human remains, as well as occasionally separately.

By examining the position of the ashes within the grave it can be observed that the remains form either a circle or an oval or a rectangle. It often occurs in Iron Age burials – and at Ludas as well (e.g. burials 655, 660 and 726) – that the cremated bones were placed in a larger bowl or jar functioning as funerary urns. Placement

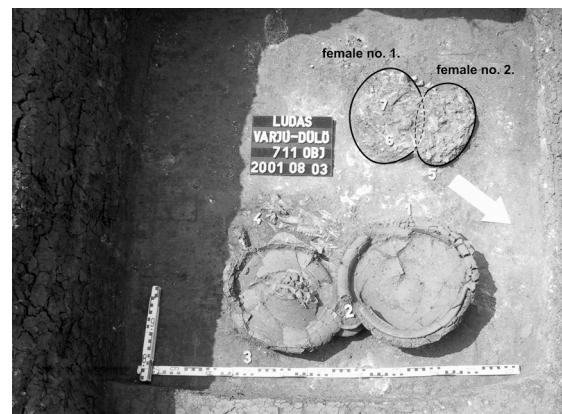


Fig. 3. Position of cremated human remains in grave 711.

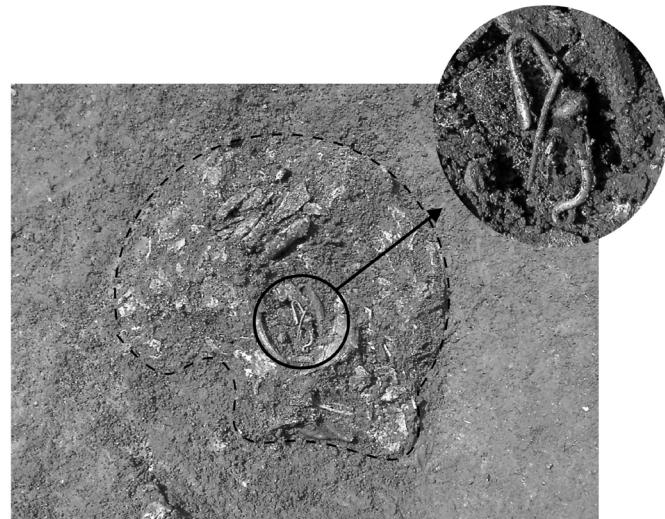


Fig. 4. Unburned bronze fibula on cremated human remains in grave 962.

of human remains in containers (such as a vessel) is also well-known from Iron Age burials. Most recently Le Goff analysed the various forms of cremated bone depositions in the La Calotterie cemetery in Belgium dating to the middle La Téne period. She argues that the remains deposited in circles were originally put into perishable containers, presumably into pouches made of leather or textile (*enveloppe souple* by French terminology). She also mentions examples for rectangular and scattered deposition of ashes (LE GOFF ET AL. 2009, 116–123). Analogues for perishable containers were documented in the cemetery of Ludas as well. By examining the archaeozoological material MÉNIEL (2006, 345–366) has shown that the positions of certain bones imply the use of rectangular containers in graves. On these grounds the employment of perishable containers can be assumed in the Ludas burials with relative certainty.

Ashes deposited in circular heaps were most possibly placed in circular containers, like in wooden buckets, wicker baskets, leather or textile pouches (Fig. 6). In some cases, on top of the heaps of cremated remains, unburnt metal ornaments, chiefly fibulae were recorded (e.g. 962, 1050, 1057, 1157). Since no sign of heat exposure was detected on the fibulae, these objects were unlikely parts of the garment worn during the cremation process. This phenomenon raises the possibility that the remains were placed into textile pouches held together by fibulae (Fig. 4). Rectangular depositions of ashes – similarly to the rectangular deposition of animal bones – were presumably put in wooden containers, e.g. wooden tray, wicker basket, etc. (Fig. 5).

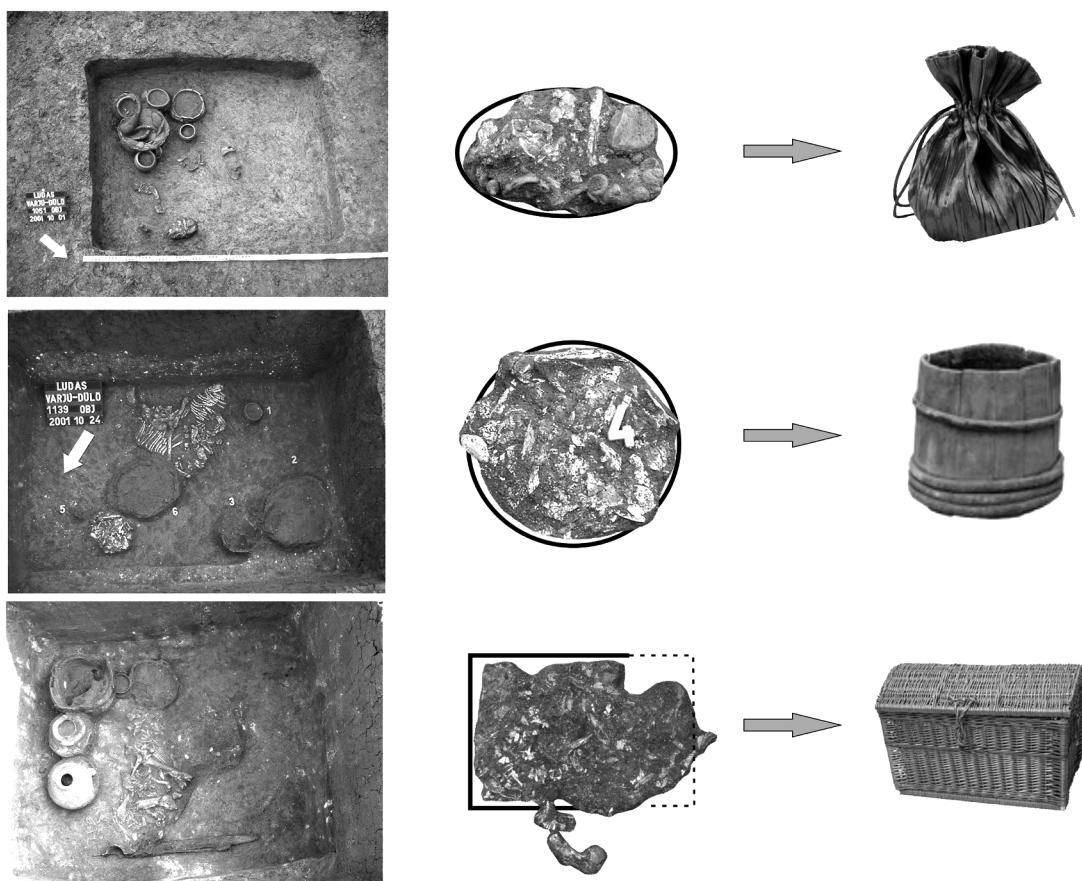


Fig. 5. Examples of deposition of cremated human remains and its hypothetical interpretations.

Within the group of cremations, burial 1282 represents a unique burial practice at Ludas. Here, besides vessels containing food offerings, the majority of burnt bronze objects were collected from the remains of the pyre and were piled in a small heap. A layer consisting of charcoal, cremated human bones and melted bronze ornaments implies that the vestiges of the pyre were scraped into the southern part of the grave (Fig. 6). Similar, a possibly even more intriguing situation was documented in burial 734 where most of the ashes were placed in the eastern side of the grave, outside of the burial wooden box (Fig. 7). In these cases it can be assumed that the pyre was erected directly adjacent to the grave, which after the cremation of the body finished was scraped into the grave.

Finally it is worth noting that burnt animal bones were also found among the cremated human remains. This was the case in the majority of cremation burials excavated at Ludas, however the proportion

of animal bones was very small compared to the human remains. The only exception was burial 686, where a large amount of burnt archaeozoological material was recovered. Burnt animal bones were without exception mixed with cremated human bones in the grave – as opposed to separate food offerings – thus certain animal parts or entire animal were placed on the pyre together with the body.

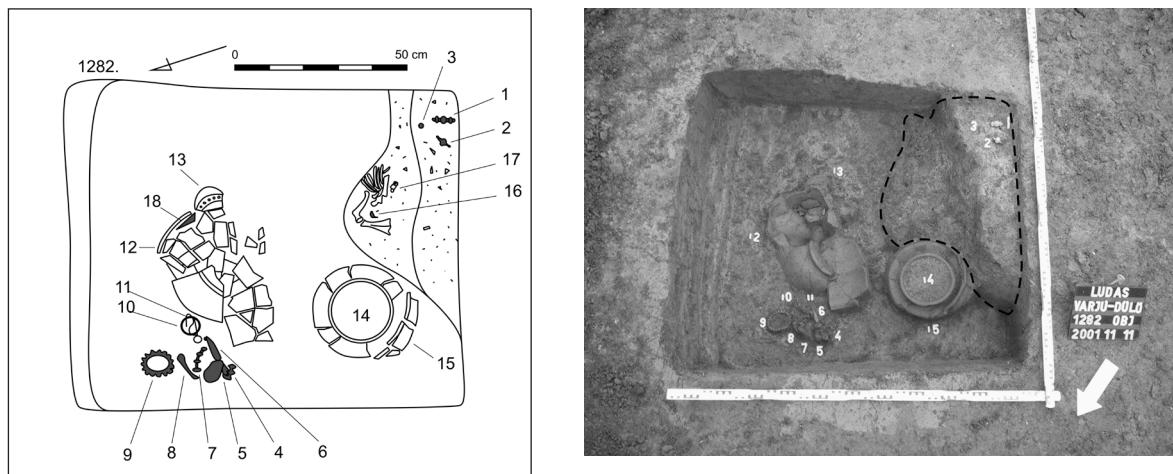


Fig. 6. Ashes with cremated human bones in the south part of grave 1282.

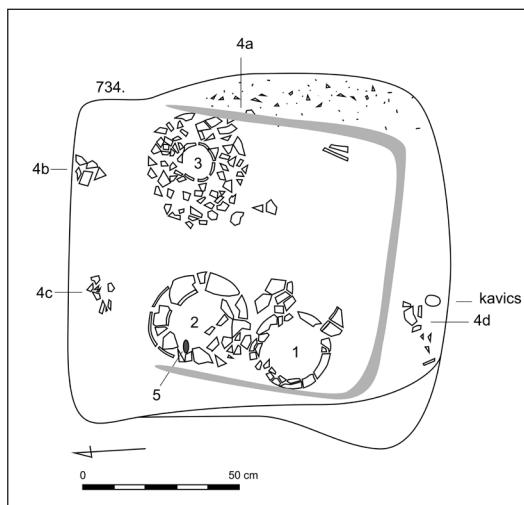


Fig. 7. Cremated human remains outside of burial wooden box in grave 734.

In summary can be concluded that analysis of cremated human remains besides basic physical anthropological information (such as the determination of age and sex) yields data on burial practice and circumstances of deposition. From this point of view archaeo-anthropological results derived from the cemetery of Ludas are unique in the Carpathian Basin. Similar information on other burial grounds from the region is relatively scarce. On the other hand La Tène cemeteries in France examined by the same method are too geographically distant to be suitable comparative analogues for population estimates. By examining the burial rite it became clear that the construction of the cremation process and the ritual circumstances of the burials documented in the cemetery of Ludas are very similar to details recorded in the Bourgogne, Picardie and Champagne-Ardennes Celtic burial grounds (BARAY 2003). In other words, these burials only contained certain skeletal elements demonstrating that cremated human remains were carefully selected from the vestiges of the pyre. Archaeo-anthropological data shows that communal use of cremating locations (fragmented remains of other individuals were mixed with the ashes of the deceased) The diverse position of cremated bones in graves is also intriguing, furthermore there is evidence of temperature control during the cremation process. To compare the data from Ludas with other cemeteries in the Carpathian Basin, more excavations will be necessary where the archao-anthropological approach can be applied. From this point of view the ongoing physical anthropological analysis of the cemetery of Sajópetri-Homoki-szólóskertek will be significant.

Appendix 1

Burial number	Number of depositon	Preservation poor, med=medium, good	Fragmentation mi = micro me = meso ma = macro	Cremation method hom = homogeneous het = heterogeneous	Sex	Identification of sex	Age	Overall bone mass (g)	Mass of identified bones (g)	Percentage of identified bones (%)
995	poor	mi						2,35	0	
996	med	mi		hom		adultus-maturus	13,17	1,18	9	
998	med	mi		hom	male	?	adultus-maturus	321,83	25,74	8
1003	med	mi		hom			adultus-maturus	33,38	1,66	5
1005	med	mi		hom			adultus-maturus	48,78	6,34	13
1006										
1008							undetermined / no available data			
1009	1	med	mi-me	hom	male		adultus-maturus	343	264,11	77
1009	2	med	me	hom	female		adultus-maturus			
1010		med	mi	het	child		infans I	199,49	71,81	36
1023		med	mi	het			adultus-maturus	23,1	22,86	99
1030										
1036b							undetermined / no available data			
1038	poor	mi		hom	female		adultus-maturus	125,37	62,68	50
1050	med	mi		hom	male		adultus-maturus	671,9	456,89	68
1051	med	mi		het	child		infans I	50,41	9,57	19
1054										
1055	med	mi		hom	male		adultus-maturus	320,6	150,68	47
1056	med	mi		hom	male		adultus-maturus	224,3	150,28	67
1057	good	mi-me-ma		hom			adultus	537		
1139	1	med	mi	hom	child		infans I	138		
1139	2	med	mi	hom	child		infans I			
1140		med	mi	hom			adultus-maturus	152,51	42,70	28
1155	poor	inhumation								
1156	poor	hypermi								
1157	med	mi		hom	child		infans I	119,8	11,98	10
1241	med	mi		hom			adultus-maturus	65,88	25,69	39
1267	1	good	mi-me-ma	hom	female		adultus-maturus	526		
1267	2	good	mi-me-ma	hom	child		infans I			
1274	poor	inhumation								
1282	poor	mi								
1286	med	mi-me		hom	male		adultus-maturus	279,63	117,44	42
1288	poor	hypermi-mi		hom	male		adultus-maturus	61,83	22,87	37
1289							undetermined / no available data			
1290		med	mi-me	hom	male	?	adultus	106,76	43,77	41
							Overall mass	9501,85		

References

- BARAY 2003 Baray, L., *Pratiques funéraires et sociétés de l'Âge du Fer dans le bassin Parisien (fin du VII^e s – troisième quart du II^e s. avant J.-C.)*, Paris.
- DACÍK 1983 Dacík, T., Anthropologische Analyse der Skelette an dem keltischen Gräberfeld in Maňa, IN: Benadík, B., *Maňa. Keltisches Gräberfeld*, Nitra, 149–65.
- DUDAY ET AL. 2000 Duday, H.–Depierre, G.–Janin, T., Validation des paramètres de quantification, protocoles et stratégies dans l'étude anthropologique des sépultures secondaires à incinération. L'exemple des nécropoles protohistoriques du Midi de la France, IN: Dedet, B.–Gruat, P.–Marchand, G.–Py, M.–Schwaller, M., *Archéologie de la mort, archéologie de la tombe au Premier Âge du Fer. Actes du XXI^e Colloque International de l'Association Française pour L'Étude de l'Âge du Fer*. Lattes, 7–29.
- FITZPATRICK 2000 Fitzpatrick, A. P., Ritual, sequence and structure in Late Iron Age Mortuary practices in North-West Europe, IN: Pearce, J.–Millett, M.–Struck, M., *Burial, Society and Context in the Roman World*, Oxford, 15–29.

- HELLEBRANDT 1999 B. Hellebrandt, M., *Celtic Finds from Northern Hungary*, Corpus of Celtic Finds in Hungary, III, Budapest.
- JAKAB 1995 Jakab, J., Anthropologische Grundanalyse des birituellen latènezeitlichen Gräberfeldes in Malé Kosihy, IN: Bujna, J., *Malé Kosihy. Latènezeitliches Gräberfeld. Katalog*, Nitra, 183–210.
- JAKAB–VONDÁRKOVÁ 1989 Jakab, J.–Vondárková, M., Ergebnisse der anthropologischen Analyse des latènezeitlichen Gräberfeldes in Dubník, *SlovArch*, 37, 355–370.
- LE GOFF ET AL. 2009 Le Goff, I.–Laperle, G.–Millerat, P.–Culot, A., Le devenir du cadavre incinéré en Gaule Belgique. Méthodes et analyse de cas, *Revue Archéologique de Picarde* 2009, 113–128.
- MAYS 2010 Mays, S., *The archaeology of human bones*, Oxon–New York.
- MÉNIEL 2006 Méniel, P., Les offrandes animales de la nécropole celtique de Ludas-Varjú-dűlő, *ActaArchHung*, 57, 345–366.
- METZLER ET AL. 1991 Metzler, J.–Waringo, R.–Bis, R.–Metzler-Zens, N., *Clemency et les tombes de l'aristocratie en Gaule Belgique*, Luxembourg.
- NEMESKÉRI–DEÁK 1954 Nemeskéri, J.–Deák, M., A magyarországi kelták embertani vizsgálata, *Biológiai Közlemények*, 2, 133–158.
- PATAY 1972 Patay, P., Celtic finds in the mountainous region Northern Hungary, *ActaArchHung*, 24, 353–358.
- SIGVALLIUS 1993 Sigvallius, B., *Death and Burial. Iron Age Cremation from Nine Burial Ground in North Spånga*, Stockholm.
- SZABÓ 2006 Szabó, M., La Tène period cemetery at Sajópetri (Excavation in 2005), *AIH* 2005, 61–71.
- SZABÓ 2012 Szabó, M. (dir.), *Nécropole laténienne à Ludas-Varjú-dűlő*, Budapest.
- SZABÓ ET AL. 2006 Szabó, M.–Guillaumet, J.-P.–Vitali, D., L'occupation celtique de la Grande Plaine Hongroise, *Rapport annuel d'activité scientifique du Centre Archéologique Européen de Bibracte*, 221–225.
- SZABÓ–TANKÓ 2006 Szabó, M.–Tankó, K., Nécropole laténienne à Ludas-Varjú-dűlő, *ActaArchHung*, 57, 325–343.
- TURNER-WALKER 2009 Turner-Walker, G., *A Practical Guide to the Conservation of Metals*, Taipei.
- TROTTER–HIXON 1974 Trotter, M.–Hixon, B. B., Sequential Changes in Weight, Density and Percentage Ash Eight of Human Skeletons from Early Foetal Period through to Old Age, *Anatomical Record*, 179, 1–18.
- VLČEK 1957 Vlček, E., Antropológia keltov na juhozápadnom Slovensku, IN: Benadik, B.–Vlček, E.–Ambros, C., *Keltské Pohrebiská na juhozápadnom Slovensku*, Bratislava. 203–289.
- ZOFFMANN 1998 K. Zoffmann, Zs., Hamvasztásos ritusú kelta temetkezések embertani vizsgálata, IN: Németh, P. G., Kelta temetők Somogy megyében, *SMMK*, 13, 78.
- ZOFFMANN 2000 K. Zoffmann, Zs., Die anthropologischen Funde der am Fundort Somogytúr–Homokbánya freigelegten keltischen Gräber, *ActaArchHung*, 51, 1999–2000, 266–267.
- ZOFFMANN 2001 K. Zoffmann, Zs., Anthropological structure of the prehistoric populations living in the Carpathian Basin in the Neolithic, Copper, Bronze and Iron Age, *ActaArchHung*, 52, 49–62.
- ZOFFMANN 2002a K. Zoffmann, Zs., Az Ordacsehi–Kécsimező lelőhely birituális kelta temetkezéseinek embertani leletei. *SMMK*, 15, 61–64.
- ZOFFMANN 2002b K. Zoffmann, Zs., Adatok a Kárpát-medence keltakori népességének antropológiájához, *AnthrKözl*, 43, 21–26.

List of figures

- Fig. 1. Ludas–Varjú-dűlő. Map of the Celtic cemetery. 1. inhumation; 2. cremation burial; 3. urn grave; 4. destroyed burial.
- Fig. 2. Mass of cremated human remains (g) in each burial, showing the proportion of anthropologically identified bone fragments.
- Fig. 3. Examples of deposition of cremated human remains and its hypothetical interpretations.
- Fig. 4. Position of cremated human remains in grave 711.
- Fig. 5. Unburned bronze fibula on cremated human remains in grave 962.
- Fig. 6. Ashes with cremated human bones in the south part of grave 1282.
- Fig. 7. Cremated human remains outside of burial wooden box in grave 734.

ABBREVIATIONS

<i>ActaAA</i>	Acta Antiqua et Achaeologica, Szeged
<i>ActaArchHung</i>	Acta Archaeologica Academiae Scientiarum Hungaricae, Budapest
<i>ActaArch Carpatica</i>	Acta Archaeologica Carpathica, Academia Scientiarum Polona Collegium Cracoviense, Kraków
<i>ActaArch København</i>	Acta Archeologica, København
<i>ActaB</i>	Acta Bernensia, Bern
<i>ActaMN</i>	Acta Musei Napocensis, Cluj-Napoca
<i>ActaMP</i>	Acta Musei Porolissensis, Zalău
<i>ActaTS</i>	Acta Terrae Septemcastrensis, Sibiu
<i>ActaUL</i>	Acta Universitatis Lodzienensis, Folia Archaeologica
<i>AFN</i>	Archäologische Forschungen in Niederösterreich
<i>Agria</i>	Agria, Annales Musei Agriensis / Az Egri Múzeum Évkönyve (1982), Eger
<i>AIH</i>	Régészeti Kutatások Magyarországon / Archaeological Investigation in Hungary, Budapest
<i>AJB</i>	Das archäologische Jahr in Bayern
<i>Alba Regia</i>	Alba Regia, Annales Musei Stephani Regis, Székesfehérvár
<i>Analele Banatului</i>	Analele Banatului, Muzeul Banatului, Timișoara
<i>AnnalenWien</i>	Annalen des Naturhistorischen Museums in Wien
<i>Angustia</i>	Angustia, Muzeul Carpaților Răsăriteni, Sfântu Gheorghe
<i>AnthrKözl</i>	Anthropológiai Közlemények, A Magyar Biológiai Társaság Embertani Szakosztálának folyóirata, Budapest
<i>Apulum</i>	Apulum, Acta Musei Apulensis, Alba Iulia
<i>ArchAustr</i>	Archaeologia Austriaca, Wien
<i>ArchBaltica</i>	Archaeologia Baltica, Vilnius
<i>ArchBulg</i>	Archaeologia Bulgarica, Sofia
<i>ArchČechách</i>	Archeologie ve středních Čechách
<i>ArchE</i>	Archäologie in Eurasien, Mainz am Rhein
<i>ArchÉrt</i>	Archaeologai Értesítő, Budapest
<i>ArchHung</i>	Archaeologia Hungarica, Budapest
<i>ArchIug</i>	Archaeologia Iugoslavica
<i>ArchKorr</i>	Archäologisches Korrespondenzblatt, Römisch-Germanischen Zentralmuseum in Mainz
<i>ArchKözl</i>	Archeologai Közlemények
<i>ArchPol</i>	Archeologia Polona
<i>ArchRoz</i>	Archeologické Rozhledy, Prague
<i>ArchS</i>	Archäologie in Salzburg
<i>ArhMold</i>	Arheologia Moldovei, Iași
<i>ArhPregl</i>	Arheološki Pregled, Arheološko društvo Jugoslavije
<i>ArhRR</i>	Arheološki radovi i rasprave, Zagreb
<i>ArhVest</i>	Arheološki vestnik (Acta Archaeologica), Inštitut za arheologijo, Ljubljana
<i>Arrabona</i>	Arrabona, a Győri Múzeum Évkönyve
<i>ASF</i>	Archaeologia Slovaca Fontes, Bratislava
<i>ASM</i>	Archaeologica Slovaca Monographiae
<i>AuF</i>	Ausgrabungen und Funde, Nachrichtenblatt der Landesarchäologie
<i>Balanica</i>	Balanica, Beograd
<i>Banatica</i>	Banatica, Muzeul de istorie al județului Caraș-Severin, Reșița
<i>BAR</i>	British Archaeological Reports, International Series, Oxford
<i>BAW</i>	Bayerische Akademie der Wissenschaften, München
<i>BCSS</i>	Buletinul Cercurilor Științifice Studențești, Alba Iulia

<i>Beiträge UFM</i>	Beiträge zur Ur- und Frühgeschichte Mitteleuropas, Weissbach
<i>BerRGK</i>	Bericht der Römisch-Germanischen Kommission
<i>BHAUT</i>	Bibliotheca Historica et Archaeologica Universitatis Timisiensis
<i>BMA</i>	Biblioteca Mvsei Apvlensis, Alba Iulia
<i>BMAK</i>	Biblioteka Muzeum Archeologiczne w Krakowie
<i>BMBistrița</i>	Biblioteca Muzeului Bistrița
<i>BMM</i>	Bibliotheca Mvsei Marisiensis, Seria Archaeologica, Târgu Mureș / Cluj Napoca
<i>BMMK</i>	Békés Megyei Múzeumok Közleménye, Békéscsaba
<i>BMP</i>	Bibliotheca Mvsei Porolissensis, Zalău
<i>BT</i>	Bibliotheca Thracologica, București
<i>CA</i>	Cercetări Arheologice
<i>CAJ</i>	Cambridge Archaeological Journal
<i>Carpica</i>	Carpica, Muzeul Județean de Istorie și Artă „Iulian Antonescu“, Bacău
<i>CCA</i>	Cronica Cercetărilor Arheologice din România
<i>ComArchHung</i>	Communicationes Archaeologicae Hungariae, Budapest
<i>Corviniana</i>	Corviniana, Acta Musei Corviniensis, Hunedoara
<i>Crisia</i>	Crisia, Muzeul Țării Crișurilor, Oradea
<i>CurrA</i>	Current Anthropology
<i>ČUsŠ</i>	Časopis Učené Společnosti Šafáříkovy, Bratislava
<i>Dacia (N. S.)</i>	Dacia, Recherches et découvertes archéologiques en Roumanie, I–XII (1924–1948), București; Nouvelle série (N. S.), Dacia. Revue d'archéologie et d'histoire anciennes, București
<i>DissPann</i>	Dissertationes Pannonicae, ex Instituto Numismatico et Archaeologico Universitatis de Petro Pázmány nominatae Budapestinensis provenientes, Budapest
<i>DMB</i>	Dissertationes et Monographiae Beograd
<i>DolgKolozsvár (Ú. S.)</i>	Dolgozatok az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából, (új sorozat, 2006–), Kolozsvár
<i>DolgSzeged</i>	Dolgozatok, Szeged
<i>EA</i>	Eurasia Antiqua, Deutsches Archäologisches Institut
<i>Ea-online</i>	European archaeology – online (www.archaeology.ro)
<i>ÉC</i>	Études Celtes, Paris
<i>EMÉ</i>	Az Egri Múzeum Évkönyve
<i>EphemNap</i>	Ephemeris Napocensis, Cluj–Napoca
<i>ET</i>	Etudes Touloises, Toul
<i>FAP</i>	Fontes Archaeologici Pragenses
<i>FAPos</i>	Fontes Archaeologici Posnanienses
<i>FHA</i>	Fontes Historiae Antiquae, , Poznań
<i>FolArch</i>	Folia Archeologica, a Magyar Nemzeti Múzeum Évkönyve, Budapest
<i>FÖ</i>	Fundberichte aus Österreich, Wien
<i>FS</i>	Fundberichte aus Schwaben, Stuttgart
<i>Germania</i>	Germania, Frankfurt am Main
<i>Glasnik SAD</i>	Glasnik Srpskog Arheološkog Društva, Beograd
<i>Glasnik ZM</i>	Glasnik Zemaljskog Muzeja Bosne i Hercegovine u Sarajevu
<i>Hierasus</i>	Hierasus, Muzeul Județean Botoșani
<i>HOMÉ</i>	A Herman Ottó Múzeum Évkönyve, Miskolc
<i>HOMO</i>	HOMO, Journal of Comparative Human Biology
<i>IA</i>	Internationale Archäologie, Buch am Erlbach, Espelkamp, Rahden/Westf.
<i>IPH</i>	Inventaria Praehistorica Hungariae, Budapest
<i>ISPRS</i>	International Society for Photogrammetry and Remote Sensing – International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences
<i>Istros</i>	Istros, Buletinul Muzeului Brăilei, Brăila
<i>JAA</i>	Journal of Anthropological Archaeology, Amsterdam
<i>Jahrbuch Liechtenstein</i>	Jahrbuch des Historischen Vereins für das Fürstentum Liechtenstein, Vaduz
<i>Jahrbuch Mecklenburg</i>	Jahrbuch für Bodendenkmalpflege in Mecklenburg
<i>Jahrbuch RGZM</i>	Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz

<i>JahrOM</i>	Jahrbuch des Oberösterreichischen Musealvereines, Linz
<i>JAMÉ</i>	A Nyíregyházi Jósa András Múzeum Évkönyve, Nyíregyháza
<i>JAS</i>	Journal of Archaeological Science, London
<i>JBAA</i>	Journal of the British Archaeological Association
<i>JEA</i>	Journal of European Archaeology, Durham, UK
<i>JPMÉ</i>	A Janus Pannonius Múzeum Évkönyve, Pécs
<i>JRA</i>	Journal of Roman Archaeology
<i>JSP</i>	Journal of Sedimentary Petrology
<i>KÖK</i>	Kulturális Örökségvédelmi Kismonográfiák, Budapest
<i>Közlemények Kolozsvár</i>	Közlemények az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából, Cluj
<i>Litua</i>	Litua, Muzeul Gorjului
<i>MAB</i>	Monumenta Archaeologica Barbarica, Kraków
<i>Marisia</i>	Marisia (V–), Studii și Materiale, Târgu Mureș
<i>Marmatia</i>	Marmatia, Anuarul Muzeului Județean Maramureș
<i>MatArch</i>	Materiały Archeologiczne, Kraków
<i>MatStar</i>	Materiały Starożytnie (i Wczesnośredniowieczne)
<i>MAZ</i>	Mainzer Archäologische Zeitschrift
<i>MBVF</i>	Münchner Beiträge zur Vor- und Frühgeschichte, München
<i>MCA</i>	Materiale și Cercetări Arheologice, București
<i>MFMÉ</i>	A Móra Ferenc Múzeum Évkönyve, Szeged
<i>MittAGW</i>	Mitteilungen der Anthropologischen Gesellschaft Wien
<i>MittAIUAW</i>	Mitteilungen des Archäologischen Instituts der Ungarische Akademie der Wissenschaften, Budapest
<i>MKCSM</i>	Múzeumi kutatások Csongrád megében
<i>MΩΜΟΣ</i>	MΩΜΟΣ, Óskoros Kutatók Összejövetelének konferenciakötete
<i>MPK</i>	Mitteilungen der Prähistorischen Kommision, Viena
<i>MSVF</i>	Marburger Studien zur Vor- und Frühgeschichte, Marburg
<i>NMMÉ</i>	Nógrád Megyei Múzeum Évkönyve
<i>OIAS</i>	Opera Instituti Archaeologici Sloveniae
<i>OJA</i>	Oxford Journal of Archaeology
<i>OpArch</i>	Opuscula Archaeologica, Arheološki zavod, Filozofski fakultet u Zagrebu
<i>ÖAW</i>	Österreichische Akademie der Wissenschaften, Wien
<i>Ősrégészeti levelek</i>	Ősrégészeti levelek / Prehistoric newsletter, Budapest
<i>PA</i>	Patrimonium Apulense, Alba Iulia
<i>PamArch</i>	Památky Archeologické, Praha
<i>PAS</i>	Prähistorische Archäologie in Südosteuropa, Berlin, Kiel, München
<i>PB</i>	Patrimonium Banaticum, Timișoara
<i>PBF</i>	Prähistorische Bronzefunde, München / Stuttgart
<i>Peuce</i>	Peuce, Studii și cercetări de istorie și arheologie, Institutul de Cercetari Eco-Muzeale Tulcea, Institutul de Istorie și Arheologie, Tulcea
<i>Prace Łódz NK</i>	Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi. Seria Numizmatyczna i Konserwatorska
<i>Prace Łódz Arch</i>	Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi. Seria Numizmatyczna i Konserwatorska
<i>Pontica</i>	Pontica, Anuarul Muzeului de Istorie Națională și Arheologie Constanța
<i>PPP</i>	Palaeogeography, Palaeoclimatology, Palaeoecology
<i>PPS</i>	Proceedings of the Prehistoric Society, London
<i>Prilozi IAZ</i>	Prilozi Instituta za arheologiju iz Zagreba
<i>PrzArch</i>	Przegląd Archeologiczny, Instytut Archeologii i Etnologii Polskiej Akademii Nauk
<i>PZ</i>	Praehistorische Zeitschrift, Berlin
<i>PUD</i>	Publications de l'Université de Dijon, Paris
<i>RadMV</i>	Rad Muzeja Vojvodine
<i>RAO</i>	Revue archéologique de l'ouest, Rennes
<i>RAP</i>	Revue archéologique de Picardie, Amiens
<i>RBPA</i>	Regensburger Beiträge zur Prähistorischen Archäologie

<i>RégFüz</i>	Régészeti Füzetek, Budapest
<i>RevBis</i>	Revista Bistriței, Complexul Județean Muzeal Bistrița-Năsăud
<i>RevMuz</i>	Revista Muzeelor, București
<i>RGF</i>	Römisch-Germanische Forschungen, Mainz / Berlin
<i>RGZM</i>	Römisch-Germanisches Zentralmuseum, Monographien, Bonn / Mainz
<i>RoczK</i>	Rocznik Kaliski
<i>Sargetia</i>	Sargetia, Buletinul Muzeului județului Hunedoara, Acta Musei Devensis, Deva
<i>Savaria</i>	Savaria, a Vas Megyei Múzeumok Értesítője, Szombathely
<i>SBA</i>	Saarbrücker Beiträge zur Altertumskunde, Bonn
<i>SBHM</i>	Schriften des Bernischen Historischen Museums, Bern
<i>SCIV(A)</i>	Studii și Cercetări de Istorie Veche (și Arheologie 1974–), București
<i>SHN</i>	Studia Historica Nitriensia
<i>SMA</i>	Studies in Mediterranean Archaeology
<i>SlovArch</i>	Slovenská Archeológia, Nitra
<i>SMMK</i>	Somogy Megyei Múzeumok Közleményei, Kaposvár
<i>SNMB</i>	Sbornik Narodnog Muzeja Beograd
<i>SNMP</i>	Sborník Národního muzea v Praze, řada A – Historie / Acta Musei Nationalis Pragae, Series A – Historia, Praha
<i>SpecNova</i>	Specimina Nova Dissertationum ex Institutom Historico Universitatis Quinqueecclesiensis de Ján Pannonio nominatae, Pécs
<i>SprArch</i>	Sprawozdania Archeologiczne, Kraków
<i>SSUUB</i>	Schriften des Seminars für Urgeschichte der Universität Bern
<i>Starinar</i>	Starinar, Arheološki institute, Beograd
<i>StCom Satu Mare</i>	Studii și Comunicări Satu Mare
<i>StCom Sibiu</i>	Studii și Comunicări, Muzeul Brukenthal, Sibiu
<i>StudioUBB</i>	Studia Universitatis Babeș-Bolyai, series Historia, Cluj-Napoca
<i>Studii</i>	Studii. Revistă de știință și filosofie
<i>Študijné zvesti</i>	Študijné zvesti, Archeologického Ústavu Slovenskej Akadémie Vied, Nitra
<i>Swiatowit</i>	Swiatowit, Rocznik katedry archeologii pierwotnej i wczesnosredniowiecznej Uniwersytetu Warszawskiego
<i>SymThrac</i>	Symposia Thracologica, Institutul Român de Tracologie, București
<i>TAT</i>	Tübinger Archäologische Taschenbücher
<i>Thraco-Dacica</i>	Thraco-Dacica, Institutul de Tracologie, București
<i>UPA</i>	Universitätsforschungen zur prähistorischen Archäologie, Bonn
<i>VAMZ</i>	Vjesnik Arheološkog muzeja u Zagrebu
<i>VDBMB</i>	Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum
<i>VMMK</i>	A Veszprém Megyei Múzeumok Közleményei
<i>VKGLBW</i>	Veröffentlichungen der Kommission für geschichtliche Landeskunde in Baden-Württemberg
<i>VMUFP</i>	Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam
<i>VNMW</i>	Veröffentlichungen aus dem Naturhistorischen Museum, Wien
<i>VSADS</i>	Veröffentlichungen des Staatlichen Amtes für Denkmalpflege Stuttgart
<i>VsP</i>	Východoslovenský pravek, Archeologický ústav Slovenskej Akadémie Vied, Nitra
<i>VTLF</i>	Veröffentlichungen des Tiroler Landesmuseum Ferdinandeum, Innsbruck
<i>VVSM</i>	Veröffentlichungen des Vorgeschichtlichen Seminars Marburg, Marburg-Espelkamp
<i>WA</i>	Wiadomości Archeologiczne, Państwowe Muzeum Archeologiczne, Warsaw
<i>WArch</i>	World Archaeology, Oxford, Oxbow
<i>WFA</i>	Wiener Forschungen zur Archäologie, Wien
<i>WissSchrN</i>	Wissenschaftliche Schriftenreihe Niederösterreich
<i>WMBH</i>	Wissenschaftliche Mitteilungen aus Bosnien und der Herzegowina, Wien
<i>WPZ</i>	Wiener prähistorische Zeitschrift, Wien
<i>WZGK</i>	Westdeutsche Zeitschrift für Geschichte und Kunst
<i>Zalai Múzeum</i>	Zalai Múzeum, Közlemények Zala megye múzeumaiból, Zalaegerszeg
<i>Zborník SNM</i>	Zborník Slovenského Národného Múzea, Bratislava
<i>Ziridava</i>	Ziridava, Muzeul Arad