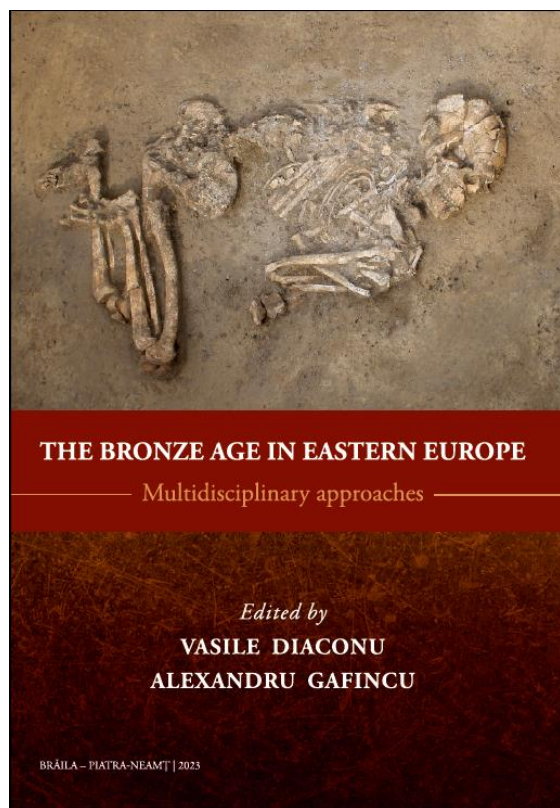


KÖZLEMÉNYEK

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*An unusual book review*

Diaconu, Vasile & Gafincu, Alexandru (eds.): *The Bronze Age in Eastern Europe: multidisciplinary approaches.* Bibliotheca Memoriae Antiquitatis XLII. Editura Constantin Matasă, Brăila – Piatra-Neamț, 2023. 350 p. •

The reviewer's opinion is, of course, biased about this impressive volume celebrating Carol Kacsó on the occasion of his 80th birthday. My very personal review was generated by the fact that I wanted to present a publication that fits into the Bronze Age thematic issue of Archeometriai Műhely (Archaeometry Workshop, AM) and was also centred on archaeometric subjects. During the selection, however, I was also inspired by the fact that I have had more than two decades of close professional relationship with the celebrated scholar who mainly operates around Baia Mare (Nagybánya) and thinks in a much wider area.

The fast and yet demanding editorial work of Vasile Diaconu and Alexandru Gafincu has covered 15 studies on the Bronze Age by 34 researchers

from seven countries (Ukraine, Moldova, Romania, Finland, Hungary, Bulgaria and Germany). In another aspect, analysis of the population regularly buried under burial mounds in the time period in the millennia IV-II B.C. to the North-East of the Black Sea and the Lower Danube and the heritage of the Late Bronze Age of the Carpathian Basin and the Balkans have been published here in high quality and abundant illustrations.

The subjects involved include the following fields: 1.) archaeology of the study region in general: (2 papers); 2.) multidisciplinary studies (3 papers); 3.) site exploration and prospections: (1 paper); 4.) publication of specific objects, typology: (2 papers); 5.) bioarchaeology: (2 papers); 6.) examination of stone objects: (1 paper); 7.) pottery analysis: (2 papers); 8.) analysis of metal objects: (1 paper); 9.) analysis of objects made of bone and teeth: (1 paper).

In the followings I will try to focus on the essentials of the studies by the authors, at the same time referring to recent parallel results achieved by the Hungarian Bronze Age specialists.

Bianca Preda-Bălănică, Marius Cristian Bâsceanu, Bogdan Olariu and their colleagues provide a thorough overview of the burial mounds in the plains of Oltenia in the last half of the IVth millennium BC and the first half of the IIIrd millennium BC (p. 9–59). The article presents new results of interdisciplinary research (conservation, metallographic analyses, ¹⁴C dating of graves, and identification of burial mounds on old maps). According to the relative chronology, these burial sites can be assigned to the Coțofeni and Yamnaya horizons.

Casandra Brașoveanu, Andrei Asăndulesei, Radu Gabriel Pîrnău, and Radu Alexandru Brunchi recorded mostly unexcavated burial mounds in 36 sites in the valley of the Bahluiet River in north-eastern Romania (pp. 61–86). The sites are mainly endangered by agricultural activity. A complex methodological approach, high-resolution geophysical and aerial sensing techniques (magnetometry, electrical resistivity measurement, oblique-axis aerial photography, photogrammetry and LiDAR) was used for the study of these sites. I am not aware of any published examples of the combined and analytical application of the two latter methods from the practice of Hungarian Bronze Age research. From the Hungarian practice, we have evidence on the application of magnetometry in the exploration of the Yamnaya Culture mounds at Hajdúnánás (Horváth & Dani et

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al. 2013). The tumuli of Pécs–Jakab-hegy were mapped using LiDAR (Bertók & Gáti 2014), and more recently, the Százhalombatta Middle Bronze Age tell was investigated by this method, results published by Vicze & Sørensen Stig (2023).

Alin Frînculeasa published from the "Movila Mare" at Smeeni (Buzău), one of the most significant Middle Bronze Age burial mound excavated in Romania in the second half of the 20th century, new research results. The monographic elaboration of the site was published in 2017; the current study was born after that. New radiocarbon data were produced in the ATOMKI (Debrecen, Hungary), supporting and complementing previous studies (p. 87–106). Similar successful elaboration of an even more ancient excavation, the Early Bronze Age mound from Rajka excavated originally in 1871 was undertaken in Hungary by András Figler in 2008.

Vasile Diaconu, Eugen Mistreanu, Angela Simalcsik and two other colleagues have reported on the multidisciplinary (anthropological analysis, dendrological and absolute dating) study of the burials discovered in the tumulus near Brînzarii Noi (Republic of Moldova). On the basis of the grave goods and the burial practice, three graves were associated with the Yamnaya culture, while one grave was associated with the Late Bronze Age Noua culture. The coloured photo of the latter grave was selected for the cover picture of the volume. The archaeological dating was supported by ^{14}C results. In the wood material of one of the Yamnaya burial chambers, ash and oak were identified, which are decisive from the point of view of environmental reconstruction (p. 107–134). In Hungarian technical literature, some environment historical data were published from the Yamnaya period kurgans of Hajdúnánás and Tiszavasvári (Horváth et al. 2013). A much more detailed environmental reconstruction was made in the case of the Yamnaya-age Ecse mound in the Hortobágy (Bede & Sümegei 2016). A complex archaeological geological and landscape ecological analysis of all soil levels of the kurgan was made here for the first time in Hungary, including phytolith studies and pollen processing.

In the paper by Sergiu Popovici (p. 135–144.) one of the burial mounds in Cimişlia belonging to the Belozerka culture (13th century BC) was presented with an interdisciplinary approach (paleo-anthropology, palynology, metal analysis, ^{14}C). As far as I know, none of the Hungarian Late Bronze Age tumulus research studies has achieved such complexity

In the study by Alexandra Comşa (p. 145–158), we get a comprehensive image on specific and non-specific (malaria, syphilis, corns) infections that leave traces on bones from the Bronze Age of

Romania. Hungarian anthropological research has devoted special attention to irregular changes observable on bones since the beginning of the discipline (Kiss et al. 2021). At the same time, I have no information on any specific Hungarian treatment summarizing infections of the Bronze Age.

Ioan Bejinariu published from one of the settlements of the Noua culture in Szilágy county on the Transylvanian highway not only the metal finds but also the zoological material and bone tools as well as a new ^{14}C dating (p. 159–182). The latter piece of information fits well to the dating series presented from the Némethbánya tell site by the author of this review (Ilon 2015).

With the help of a database for ceramics on a Late Bronze Age (Coslogeni culture) settlement in north-eastern Bulgaria, in addition to vessel types, Gabriela Dzhurkowska discussed issues of technology and use of vessels in a "traditional" way (p. 183–214). Lacking such a summary, in my opinion, any kind of instrumental examination would be irrelevant or at least of a floating nature. Her observations fit extremely well to the recent observations by László Gucsi (2023).

The author of this review contributed to the volume by new ^{14}C dates (now, from AMS) from the pit in Górház, containing antler horse bit dated to the 3rd phase of the Urnfield period. The paper also provides a database of Late Bronze Age horse bones from the Western Transdanubian region, and the conclusion drawn accordingly is the following: horse can only be considered here as a prestige animal of an extremely small number of privileged individuals (p. 215–237).

Bogdan Petru Niculică and Ilie Cojocariu presented results of the scientific analysis on a flanged axe dated to the 18–17th century BC obtained by the National Museum of Bukovina from metal detector research activists. Measurements were taken by EDX on three corrosion-free spots: the object was made of pure (non-alloyed) copper. Using stereo microscopy, further important observations could be made (p. 239–261). In Hungary, J. Gábor Tarbay and colleagues apply hand-held XRF almost as a daily routine (Tarbay et al. 2021), complemented with further measurement techniques (NI, TOF-ND, PGAA)

Mykola Ilkiv and Mykola Bodnariuk presented Bronze Age metal objects from Northern Bukovina, Chernivtsi region (Ukraine). Among other things, axes of Fajsz and Kozarac types, and bracelets that can be classified in the Ha A1 period (p. 263–274).

Oliver Dietrich has collected so-called pure hoards ("reine Horte"), containing only one type of object, i.e. socketed axe. The region involved in his

analysis comprised the Eastern Carpathian Basin and the Lower Danube region (p. 275–290).

The paper by Anastasiia Korokhina and Ihor Butskyi has dealt with the final stage of the transformation of the Late Bronze Age Srubnaya culture, the question of the transition to the Early Iron Age, on the basis of the technological analysis of ceramics from a Ukrainian settlement (including nearly 300 specimens). The archaeometrical analysis, however, did not corroborate the technological change during the period of transition. It is more probable that the cultural diffusion could be traced in minor changes of the morphology and the decoration of the vessels (p. 291–319). In Hungary, similar questions were investigated by the same methods but on a smaller sample, and experiments concerning production techniques of graphitic pottery were made (Kreiter et al. 2014).

The study by Monica Mărgărit and Anca-Diana Popescu (p. 321–331) presented an assemblage of finds comprising 10 pieces made of bone and teeth from the Răcăciuni settlement of the Monteoru culture. Their raw material, typology and technology of formation conformed to the general practice followed in this culture. The artefacts were used for household activities or as ornaments, i.e., pieces of attire. The most recent Hungarian study on similar subject was published by Alice Choyke and Zsuzsanna Tóth, on the basis of 462 bone implements from the Százhalombatta tell (Choyke & Tóth 2023).

Daniela Alexandra Popescu, Liviu Gheorghe Popescu, Sorin Ignătescu and Dumitru Boghian performed the microscopic analysis of the thin sections on four Bronze Age stone axes from the archaeological collection of the University of Suceava. Accordingly, three of them have proved to be dolerite while the fourth one was made on microgabbro. As the source of the raw material, the authors suggested the Rarău Syncline (Middle-Northern part of the Eastern Carpathes) as the closest to the site, but they did not exclude other possible source regions (p. 333–345). As for similar Hungarian efforts, let us mention here only two exemplary studies, involving the total stone artefacts of the Budakalász Bell Beaker culture cemetery from Budakalász (Horváth 2013), based on macroscopic characterisation only. In the case of the stone axe recovered from the Vatea culture urn grave from the vicinity of Kiskunfélegyháza, the petrographical description was followed by SEM-EDX and PGAA analyses (Biró et al. 2016). It would be high time to apply similar approaches to more Bronze Age objects. The characterisation and provenancing of raw materials could result in a better understanding and mapping of the network of connections than metal analyses built on less stable

grounds due to melting and reworking (Radivojević et al. 2019. 138).

Finally, the reviewer would like to state that on the occasion of this special volume published in honour of the celebrated scholar, an excellent and progressive collection of scientific studies was achieved for Eastern European archaeology, especially in the field of archaeometry.

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References

- BEDE Á. & SÜMEGI P. (2016): Régészeti geológiai és tájékológiai vizsgálatok tiszántúli halmokon. In: UNGER J. & PÁL-MOLNÁR E. szerk., *Geoszférák 2015*. Szeged, 59–87.
- BERTÓK G. & GÁTI Cs. (2014): *Régi idők – új módszerek*. Archaeolingua Alapítvány, Budapest – Pécs, p. 171
- T. BIRÓ K., SZAKMÁNY Gy., BENDŐ Zs. & KASZTOVSZKY Zs. (2016): Átfűrt kőeszköz töredéke Kiskunfélegyházáról. *Cumania* 27 41–54.
- CHOYKE, A. & TÓTH, ZS. (2023): Worked bones, antler, and tooth in Levels 6–1. In: VICZE, M. & SØRENSEN STIG, M. L. eds., *Living in a Tell: Memory and Abandonment. Százhalombatta–Földvár Phase I (Late Koszider)*. Archaeologia Hungarica 55. – SAX 4. Budapest, 201–215.
- FIGLER A. (2008): Egy elfelejtett őskori halomsír Rajkán. In: ILON G. szerk., *Régészeti nyomozások Magyarországon*. Martin Opitz, Budapest, 105–112.
- GUCSI, L. (2023): Biography of ceramics found in the Late Bronze Age cemetery of Gelej. In: P. FISCHL, K. ed., *Bronze Age Landscape at Gelej. Archaeological researches at Gelej-Pincehát, Gelej-Kanális dűlő and Gelej-Beltelek dűlő*. Universitätsforschungen zur prähistorischen Archäologie 391 Bonn, 339–412.
- HORVÁTH T. (2013): Budakalász M0/12. kora bronzkori lelőhely kőanyaga. Stone implements of the Bell Beaker cemetery from Budakalász, M0/12 site. *Archeometriai Műhely* X/2 141–176.
- HORVÁTH, T., DANI, J., PETŐ, Á., POSPIESZKY, L. & SVINGOR, É. (2013): Multidisciplinary Contributions to the Study of Pit Grave Culture Kurgans of the Great Hungarian Plain. In: HERYD, V., KULCSÁR, G. & SZEVEÉNYI V. eds., *Transitions to the Bronze Age. Interregional Interaction and Socio-Cultural Change in the Third Millennium BC Carpathian Basin and Neighbouring Regions*. Archaeolingua, Budapest, 153–179.

ILON, G. (2015): Zeitstellung der Urnenfelderkultur (≈1350/1300–750/700 BC) in West-Transdanubien. Ein Versuch mittels Typochronologie und Radiokarbondaten. In: REZI, B., NÉMETH, R. & BERECKI S. eds., *Bronze Age Chronology in the Carpathian Basin*. Proceedings of the International Colloquium from Târgu Mureş 2–4 October 2014. Bibliotheca Musei Marisiensis Ser. Archaeologica VIII. Târgu Mureş, 223–296.

KISS V., CZENE A., CSÁNYI M., DANI J., FÁBIÁN Sz., P. FISCHL K., GERBER D., GIBLIN, J. I., HAJDU T., KÖHLER K., MELIS E., MENDE B. G., PATAY R., SZABÓ G., SZÉCSÉNYI-NAGY A., SZEVEÉNYI V. & KULCSÁR G. (2021): Módszerek és lehetőségek a bronzkori közösségek kutatásában – a Lendület mobilitás kutatócsoport biorégészeti elemzési eredményei (2015–2020). *Magyar Régészet* **10:3** 30–42. <https://doi.org/10.36245/mr.2021.3.3>

KREITER, A., CZIFRA, Sz., BENDŐ, Zs., IMRE, E. J., PÁNCZÉL, P. & VÁCZI, G. (2014): Shine like metal: an experimental approach to understand prehistoric graphite coated pottery technology.

Journal of Archaeological Sciences **52** 129–142. <http://dx.doi.org/10.1016/j.jas.2014.07.020>

TARBAY, G. J.; MARÓTI, B.; KIS, Z.; KÁLI, GY. & SZENTMIKLÓSI, L. (2021): Non-destructive analysis of a Late Bronze Age hoard from the Velem-Szent Vid hillfort. *Journal of Archaeological Sciences* **127** 1–25.

<https://doi.org/10.1016/j.jas.2020.105320>

RADIOVOJEVIĆ, M., B. W., ROBERTS, W. B., PERNICKA, E., STOS-GALE, Z., MARTINÓN-TORRES, M., REHREN, T., BRAY, P., BRANDHERM, D., LING, J., MEI, J., VANDKILDE, H., KRISTIANSEN, K., SHENNAN, J. S., & BROODBANK, C. (2019): The Provenance, Use, and Circulation of Metals in the European Bronze Age: The State of Debate. *Journal of Archaeological Research* **27** 131–185. <https://doi.org/10.1007/s10814-018-9123-9>

VICZE, M. & SØRENSEN STIG, M. L. (2023): *Living in a Tell: Memory and Abandonment. Százhalombatta–Földvár Phase I (Late Koszider)*. *Archaeologia Hungarica* 55. – SAX 4. Budapest, 287 pp.