

## RECENSION: THE ARCHAEOLOGY, HISTORY AND ETHNOGRAPHY OF THE PRECIOUS AND NON-FERROUS METALS IN THE CARPATHIAN BASIN

**BÉLA TÖRÖK<sup>1</sup>**

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*This conference proceedings, published in 2021, is a representative selection of studies from two workshops which discussed the bronze working and archaeology as well as contemporary technologies and techniques of non-ferrous and precious metals, with a specific multidisciplinary focus. At the conferences, archaeologists, historians, experts of ethnography, technology, and natural sciences presented case studies and comprehensive thematic presentations covering a very broad time span, as well as the results of research on various aspects of the non-ferrous and precious metal culture of the Carpathian Basin.*

“*The Material Culture in the Carpathian Basin*” is the title of the publication series of the *Workgroup of the History of Crafts* and the *Workgroup of Industrial Archaeology and Archaeometry of Regional Committee of Veszprém* of the Hungarian Academy of Sciences. The sixth volume of this series is a volume of studies on non-ferrous and precious metals, their material culture, material appearances, related techniques and technologies, and the examinations of objects. The intention, expressed more than twenty years ago, to take a complex, interdisciplinary approach involving archaeology, technical and social history, ethnography and archaeometry focusing, after clay, wood, iron, bone and leather, and textiles, on non-ferrous and precious metals. Of course, one could use the term ‘niche’, but on one hand, the word’s impact has unfortunately diminished even in the world of reviews, and has become almost clichéd, and on the other hand, the real merit of the volume does not really lay in this, since we can find complex examinations of industrial archaeological sites and finds, including in the case of the metal types mentioned, predominantly in the form of case studies in Hungarian literature, in an increasing number of museum yearbooks, conference proceedings, jubilee publications and other academic publications. The intention of the editors (*Fruzsina Cseh, Viktória Kiss and János Szulovszky*) is to be commended instead because they tried to present a collection covering as broad a spectrum as possible in terms of historical times and related disciplines, which is not an easy task, since they could only deal with the manuscripts submitted. The difficulty of the task is easy to see if one considers how the material characteristics, the techniques and the social role of bronzeworking can change over the centuries and how it can differ from the field of precious metals (gold and silver).

In the volume, 13 of the 16 papers are based on presentations given at the conference with the same title in November 2018. The other three papers are based on the 2016 scientific meeting entitled “*Bronze Art from Prehistory to the Middle Ages. Workshop on the possibilities for the study of archaeological and historical bronzes*”.

*Mária Bondár* summarises the diversity of Late Bronze Age metalworking in her paper. With a focus on the Baden culture in the Carpathian Basin, she succinctly organises the related research history, the key sites, and the finds. A particular merit of the study is that, despite the relatively few material analyses, it presents a detailed summary of the related archaeometric results and the manufacturing aspects that can be derived from them. The archaeometric line is also strengthened by the Appendix under the name of *Anett Mihácz-Pálfi*, reporting on the microscopic examination of the Late Copper Age bracelet from Balatonlelle. *Gábor Ilon*’s study is also comprehensive, summarising the sites and finds of Bronze Age moulds in the Carpathian Basin and the results of research related to the technology. *Mária Fekete* and her colleagues examine an object type - chains and chain links - from the tumulus of Regöly, which is of outstanding importance in several respects and dates for the 7th century BC. This time, terminology is to be understood literally, since the main part of the publication is devoted to the metallographic (optical microscopic and

<sup>1</sup> Director, Institute of Metallurgy of the University of Miskolc, e-mail: [bela.torok@uni-miskolc.hu](mailto:bela.torok@uni-miskolc.hu)

scanning electron microscopic) study of the chain links, as well as to the description, use and interpretation of the social and religious role of the chains recovered from the tumulus. The detailed communication by *Ferenc Molnár* and his colleagues is based specifically on the results of material analyses. The chemical composition and microstructural characteristics of Iron Age bronze anklets and bracelets were investigated using wavelength dispersive microprobe and electron microscopy, and the results were compared with samples from the Czech Republic. The paper by *Zsófia Masek* and *Péter Barkóczy* discusses the archaeological aspects of Hunnic copper cauldrons and the metallographic analysis of the Ócsa cauldron fragment, its compositional and structural characteristics, and its technical properties. The paper also reports on previous studies of the object type.

From this point, with a nearly thousand-year-long jump in time, the other 11 studies of the volume are about research projects focusing on early modern and modern times. It goes without saying that social, industrial and technical history and ethnography are given prominence but the number of material studies are unfortunately reduced as archaeological accounts are added – only one paper is based on them – though that would not be a matter of course. *Judit Benda*'s work is about the 15<sup>th</sup>-century copper- and goldsmith workshops of Buda. In addition to the historical aspects based on written and archaeological sources, the material remains of a goldsmith workshop in Buda (stone moulds, engraved stone embossing folders, leaf-decorated pieces and gilded jewellery) are presented. *Szilvia Gyöngyösi* and her co-authors present a paper on the production technique of bronze cannons used in Hungary in the 16<sup>th</sup> and 17<sup>th</sup> centuries. The study focuses on the casting technology by a cannon foundry, excavated by *István Ringer*, from the time of *György Rákóczi I*, and on the analysis, including scanning electron microscopy and energy dispersive spectrometry, of samples taken from cannon fragments from Dombóvár and Sárospatak. The complexity of *Lilla T. Erdei*'s study is not so much on the connection between related fields of research but rather on the interconnection of technologies of different types of materials, namely metalworking and textileworking. As a rarely researched but very interesting field, the paper presents the characteristics and uses of metallic thread lace in both men's and women's dresses and in 17<sup>th</sup> and 18<sup>th</sup> century home furnishings and church textiles. *Éva Gál*'s article can be considered a case study from the geographical point of view, as it details the history and aspects of the jewellery industry in Pécs from the 14<sup>th</sup> century to the mid-20<sup>th</sup> century. The study follows the local aspects of the profession on the basis of the historical sources, basically from the aspect of guilds. The paper also includes a detailed table of the guilds of Pécs and the related sources. *Gabriella Vida*'s work is based on the results of a statistical processing of inventories from Veszprém, Tata, and Keszthely from the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, with a focus on tin vessels. The research focuses basically on the raw material of the vessels (mainly tin) in the three towns, in the periods 1770–1800 and 1810–1820. *Emőke P. Szalay* examines the relationship between the goldsmith's craft of Debrecen and Reformed Christian ecclesiastical art, and presents the typical representatives of the persisting 16<sup>th</sup> and 17<sup>th</sup> century goods (bowls, chalices, cups, plates, pots) by object type, highlighting their production's links with Debrecen. *Evelin Kovács*'s work is also set in Debrecen, but the author focuses on the social and economic situation of the city's non-ferrous metalsmiths (brazers, coppersmiths, tanners, etc.). In addition to the presentation of written sources, the role of craftsmen in the industry, their socio-economic opportunities (e.g. housing, taxation) and, last but not least, the professional network and contemporary hierarchy were discussed. A short communication by *Imre Gráfik*, which introduces non-ferrous metal objects from the online catalogue of tin objects of the Budapest Museum of Ethnography and the author's catalogue of artefacts entitled "Guild relics", leads us into the world of guilds. In his study, *János Szulovszky* gives an illustrative picture of the situation of the precious and non-ferrous metal industry in Hungary in 1892 in social and geographical terms. It shows the number of craftsmen and the proportion of workshops in each sector on several maps, demonstrating the role and importance of each region and district in the metalworking industry. *Zoltán Nagy*'s paper is indirectly related to metalworking, as it focuses on lead oxide (litharge), examining its role in pottery industry in the 18<sup>th</sup> and 20<sup>th</sup> centuries. Nevertheless, the study goes into detail on the subject, covering socio-economic and technical historical as well as ethnographic aspects. From a technical point of view, it is impressive that the reader is also introduced to different glazing recipes as appearing in

written sources, by geographical location. The volume concludes with a study by *Fruzsina Cseh*, providing a concise but comprehensive social and ethnographic overview of the representatives of the Hungarian copperworking craft from the 20<sup>th</sup> century to the present day. The paper discusses the artisanal and folk artisan aspects of the craft, the basic principles of the work processes, tools, and products.

The proceedings volume, with English summaries, will be of interest to a wider professional group in Hungary. Such a volume has long been much needed to ensure the interdisciplinarity represented by the volume to become translated into more and more examples of active and effective cooperation, not only in theory but also in practice. In most of the studies represented in the volume, it is essential that archaeologists, historians, ethnographers and archaeometrical experts should understand each other's professional language at its core.