

RECENZIE

Karina Grömer – Alexandra Krenn-Leeb – Michaela Binder (Hrsg.): Prähistorisches Gold. Mitteilungen der anthropologischen Gesellschaft in Wien 154. Wien 2024. 364 pp. ISSN 0373-5656.

The gold artefacts discovered in Mycenae, Perşinari, Tufalău (Cófalva), Troy, Varna, Velem-Szt. Vid, and Villenna, as well as the world of the pyramids and the royal tombs of Ur, have been raising general and professional interest in the treasures of prehistory since the last decades of the 19th c. (*Catalogue Varna* 1989; *Karo* 1933; *Leusch et al.* 2015; *Mozsolics* 1950; 1965–1966; *Ruiz-Galvez* 1995; *Troja* 1996; *Vulpe* 1995). Other related, important findings include the gold sheet breastplate and other gold accessories retrieved from an undisturbed Etruscan tomb at Cerveteri Regolini-Galassi and the related workshop in 1841 (*von Hase* 1995, fig. 3), as well as the Scythian gold jewellery and fittings found in the princely kurgans of Aržan and Pazyryk (*Menghin et al.* Hrsg. 2007).

The recent decades witnessed the release of numerous books on gold in prehistory, focusing on mining, processing, related trade, social and symbolic meaning, and more. Let me cite a few arbitrary examples from international scholarly literature.

The publication of *Prehistoric Gold in Europe* marked the outset of a new research era (*Morteani/Northover eds.* 1995). The continuation is just as worthy of praise: the two-volume *Metalle der Macht – Frühes Gold und Silber* (*Meller/Risch/Pernicka Hrsg.* 2014) crowned an immense endeavour, the bilingual catalogue of the exhibition *Gold and Bronze. Metals, Technologies and Interregional Contacts in the Eastern Balkans during the Bronze Age* (*Haag et al.* Hrsg. 2017; *Popov/Dimitrova eds.* 2017) is an unforgettable read, while the *Searching for Gold. Resources and Networks in the Bronze Age of the Eastern Balkans* (*Jung/Popov eds.* 2024) is a long-needed and fundamental work. All three books are exquisite demonstrations of the organising power and capacity of scholarly institutions in Vienna (OREA and Kunsthistorisches Museum), also reflecting, in my opinion, the pivotal role the one-time centre of the former Austro-Hungarian Empire still plays in research today.

Another remarkable event represents the next milestone in this new era. On 18th August 2023, the Österreichische Bundesbahnen (ÖBB) officially donated a Late Bronze Age gold treasure discovered during railway construction works on the outskirts of Ebreichsdorf in 2019–2020 to the Kunsthistorisches Museum. The occasion was

marked by the publication of a prestigious volume titled *Gold. Die Geschichte des Goldfundes von Ebreichsdorf* (*Grömer/Binder/Krenn-Leeb Hrsg.* 2023). At about the same time, the same researchers also published a major (22-page) popular scientific study in a double issue of *Archäologie Österreich* (*Grömer/Binder/Krenn-Leeb* 2022; 2023). Additionally, an international symposium on gold artefacts in Europe in the 2nd and 1st millennium BC and the related issues of research, organised in collaboration between several institutions, was held in the Kunsthistorisches Museum on 18–20th August 2023. The presentations were published with exemplary speed by December 2024 in the 154th issue of *Mitteilungen der anthropologischen Gesellschaft in Wien*, the Museum's journal. This publication is the focus of this review.

The editors of the thematic volume (and authors of the introductory chapter) were Karina Grömer, Michaela Binder, and Alexandra Krenn-Leeb. The 33 studies, authored by 65 researchers, cover sites in 12 countries and are supplemented by an independent general technological overview in one of the papers. The distribution of countries is telling and reflects the strong and lasting connection between Bulgarian and Austrian research. 10 studies focus on sites in Austria, surpassing Bulgaria (7), Germany (4), Germany and Poland (1), Bohemia and Moravia (3), as well as France, Hungary, Scotland, Slovakia, Slovenia, Ukraine, and Romania (1 on each).

The first part, with five studies, revolves around the main topic of the conference, the Ebreichsdorf treasure. In the second part, three papers from Bulgaria focus on the provenance of gold and the local mines. The seven contributions in the third part discuss topics related to the processing of gold ore and gold. The fourth part comprises detailed presentations of various Bronze Age gold treasures in five studies. The fifth thematic unit includes nine papers on special gold artefacts. The volume concludes with four studies in the sixth part on gold in the Iron Age.

Thirteen contributions have a single, and twenty more have more than one author – understandably, since the latter usually involve instrumental scientific raw material and technological analyses (albeit some of the former also include such results).

The following review reflects my personal opinion of the volume. Accordingly, it does not follow its original structure (as presented above) and does not include a comprehensive and unified evaluation of every part.

What I miss from this otherwise exquisite volume is a study on the gold mines in the Garam Valley in Slovakia, the Prešov (Eperjes)-Tokaj Mountains, the area of Baia Mare (Nagybánya) and the Apuseni (Bihar) Mountains in Transylvania in western Romania, and Bor and Majdanpek in Serbia. The closest one in focus is a thorough and exceedingly interesting paper by Tomáš Zachar on the spiral natural gold ores known as *aurum vegetabile*, associated with the Piliny culture in Eastern Slovakia, but even that cannot fill the void. The three mentioned natural deposits in the Carpathian Basin are fundamental for research since they include the most prosperous gold resources in medieval Europe before the discovery of America and were certainly exploited already in prehistory (Lehrberger 1995, fig. 1). Moreover, some material analyses in the book identify the provenance of the studied items as one of these deposits.

The material of the Erbreichsdorf treasure could be linked, even if only with some caution, with the secondary alluvial gold deposits on the southern slopes of the Slovakian Ore Mountains (see the study by Ernst Pernicka and Moritz Numrich on pages 41–43). For an excellent new overview of this topic, see the *Prospektionen der Goldlagerstätten Žitava- und Grantal bei Zlaté Moravce* by J. Garner (2021). On the other major mining region in the Carpathian Basin, the ‘Gold Triangle’ consisting of Baia de Arieș (Offenbánya), Orăștie (Szászváros), and Hălmagiu (Nagy-Halmágy) in Transylvania, see H. I. Ciugudean’s (2012) *Ancient gold mining in Transylvania. The Roșia Montană – Bucium area*. Had they been invited to contribute to this volume, the authors of these studies would have certainly provided reliable summaries of their respective study areas; besides, such collaboration could be another excellent opportunity for personal communication between them and other contributors, including colleagues in Bulgaria.

Even if published only in Hungarian, several early studies, now almost completely forgotten, are worth reintroducing into research on gold deposits and mines in Transylvania. These include geological papers (Szabó 1873), a summary of decades of observations by the mine inspector (Weisz 1891), and early elemental composition analyses (Molnár 1873).

Moreover, the entire topic could have been discussed from a broader perspective, akin to the scope of the study on the gold items retrieved from the 14th-c. BC Uluburun ship, published by D. D. Klemm 2005, which surveyed all possible parallels from Nubia through Anatolia to the Carpathians. Albeit our knowledge of the gold sourced from the mines he mentioned has improved considerably in the

decades since this publication, his approach nonetheless remains exemplary.

The volume that is the focus of this review also holds a wealth of new information on ‘old’ discoveries. Carola Metzner-Nebelsick and Ernst Pernicka discuss two 8th-c. BC hoards found in the last decades of the 19th c. in Mikhaľkiv, Ukraine. By applying analyses involving micro-invasive laser ablation and QICP-MS, they identify the elemental composition of the gold artefacts in these treasures and reveal that they were made from the same material. Next, they compare them with two Mikhaľkiv-Dalj-style gold objects obtained from the antiquities market, only to reveal a difference between their materials. The study also discusses the symbolism incorporated in these objects and the social position associated with the attire that included such accessories (pp. 193–206).

Another noteworthy study by Herald Meller and his colleagues (pp. 229–240) sets a bowl found at Germany in 1909 in the limelight. Elemental composition analysis has revealed that the material of the vessel contains a relatively high proportion of silver (15–20%) and an unusually high proportion of copper (4–20%); the latter, along with the visibly heterogeneous structure of the material, are indicators of deliberate alloying. The paper also mentions the gold cup discovered at Bistrița-Dealul Târgului in northern Transylvania; however, the authors did not venture to reassess the 2018 evaluation of this find by Florin Gogăltan, albeit such an addition would have been greatly welcome and could help fill the void left by the lack of topics related to the gold of Transylvania in the volume (Gogăltan/Marinescu 2018, 53–70).

Several case studies present relatively new discoveries in detail. Obviously, the firsts to be mentioned revolve around the Erbreichsdorf treasure. This gold find assemblage, weighing 708 g, consists of the remains of a gold sheet drinking vessel, a two- and an eight-part set of spiral coils, a ball of gold thread, and three long pieces of gold wire (Alexandra Krenn-Leeb, fig. 1; Robert Linke/Birgit Bühler, fig. 1; Ernst Pernicka/Moritz Numrich, fig. 1; Kayleigh Saunderson/Karina Grömer, fig. 1). The images show the artefacts from different angles, providing another evidence of the attention of the editors.

The pieces of the Erbreichsdorf treasure – all finished products – were found in an Urnfield Period settlement and dated to 1200–1000 BC. They had been deposited perhaps as part of a ritual ceremony. The diverse instrumental analyses yielded a wealth of information on the traces related to their making, decoration, and more, including material composition. The material of the drinking vessel

differs from the rest: its alloy contains a relatively high proportion of silver (20%) and copper (almost 6%; see Robert Linke/Birgit Bühler, pp. 27–36). The gold thread may have belonged to two types of textile and a textile band; according to the authors, textiles interwoven or embroidered with gold came in fashion around 1100 BC (Kayleigh Saunderson/Karina Grömer, pp. 49–58).

Gold finds associated with textiles from fourteen sites (including five new ones) from the 14th–9th c. BC, respectively, in the National Archaeological Collection in München (Archäologische Staatssammlung München) could be classified into three categories: threads, sheets, and tubes (Ina Schnee-bauer-Meissner/Heiner Schwarzberg, pp. 289–300). The collection holds 1 to 1000 pieces from each site. Workshop districts could be outlined based on the SEM analysis of the production traces, while the inclusions in the material yielded information on raw material type and the extent of melting (p. 298). The gold threads of the approximately 1000-piece Urnfield Period find assemblage from Hohenaschau could be separated into three distinct clusters associated with three different textiles (p. 291, Tab. 1; pp. 292, 293, Fig. 2; 3; 8).

The impressively thorough and comprehensive collection of 189 gold wire spirals from 54 sites, compiled by Regine Maraszek (pp. 261–270), must be mentioned here, as the Ebreichsdorf treasure also contains some such items. The study provides an overview and reassessment of the distribution, classification, chronology, contexts, functions, and interpretation of this find type, which is primarily associated with the Lausitz culture and the Baltic region but is also found throughout Europe. A comparative analysis of gold and bronze double-wire spirals completes the discussion.

The two studies by Violetta Reiter are also noteworthy. The first, co-authored with Robert Linke, presents in detail an assemblage of seven gold double wire spirals with a total weight of 34.9 g, dated to the Reinecke's BD–HA1 period, discovered during a rescue excavation in Leithaprodersdorf, Burgenland, in 2005 (pp. 283–288). Their material contains, on average, $75.7 \pm 2.1\%$ gold, $13.0 \pm 1.4\%$ silver, and $1.3 \pm 0.9\%$ copper. The site is near Ebreichsdorf, and the artefacts in the two deposits represent identical types. Therefore, as part of the evaluation of the Ebreichsdorf treasure, the spirals of this assemblage were also subjected to SEM analysis, revealing a high degree of similarity between the production technology and material composition of the two. Violetta Reiter supposes that in the Early Urnfield Period, several waterways in the region (Fischa, Leitha, Piesting, Schwarza) were also places of offering.

Another study by her presents Grave 160 of Steyr-Hinterberg, a Reinecke's BD–HA1 burial excavated in 1999 and re-discovered in 2020 (pp. 301–308). The paper includes an anthropological evaluation, radiocarbon dates, and the results of the SEM-EDX elemental composition analysis of the gold wire found in the grave (87.7% gold, 12.3% silver). The radiocarbon date is an important addition to the meagre data pool of the period in Eastern Austria and corroborates the absolute chronology emerging from such data in Western Transdanubia.

The Ebreichsdorf treasure is the second gold deposit from the era in the Vienna Basin in Eastern Austria; the first was found at Rothengrub. Four additional Urnfield Period gold treasures are known from the Salzkammergut region (Arikogel, Buchberg, Halstatt, and Koppental), reflecting the pivotal economic role of the salt mines in Hallstatt. Detailed descriptions of two are included in the volume: the deposit from Buchberg is a relatively new discovery (Martin Gamon et al., pp. 171–180), while Hoard 5 of Bad Aussee has been known since 1994 but has never been published in detail before (Maria Windholz-Konrad, pp. 181–192).

Szilvia Guba and her colleagues present the results of PIXE and XRF analyses of 25 gold artefacts, classified into three categories, discovered at five sites in Northern Hungary over the past fifteen years (pp. 119–128). The objects in Group 3, comprised of finds from the Koszider Period, were made of a material with a relatively low gold content (76%) and barely any copper (0.1%). Readers may find it difficult to interpret the round orange symbol in the Cu : Au G1 group in Fig. 5, as it is not resolved in the legend (p. 125).

The Gessel treasure was unearthed in Northern Germany more than a decade ago, in 2011. It has been the focus of several publications since then, but the most thorough and comprehensive study is the one by Daniel Neuman and his colleagues in this volume (pp. 161–170). The find assemblage, with a total weight of 1.7 kg, consists of 117 gold artefacts and six bronze pins, making it one of the biggest such hoards in Central Europe. It was removed *en bloc*; thus, its original structure could be recorded using 3D CT scanning. The radiocarbon data obtained from the string with which the pins were bundled corresponds to Period III of the Nordic Bronze Age. The results of the technological and material composition analyses are expected to be published in the next stage of research.

A treasure of four gold double-wire bracelets weighing 630.28 g was discovered near two Urnfield Period highland settlements, Domašov and Šternberk, Central Moravia, in 2019. Based on the

provenance analysis carried out by Ernst Pernicka, the material of the jewellery likely originates from the southern slopes of the Slovakian Ore Mountains, an area with gold and tin deposits (Jaroslav Peška, pp. 271–282).

Metal detectorists discovered an Early Urnfield Period hoard on the outskirts of Şişeşti, near the Iron Gate, Romania, in the spring of 2021. The evaluation of the find assemblage has revealed that the connection networks outlined by the bronze weapons and tools, as well as the gold and bronze jewellery, are different (Nikolaus Boroffka/Marian Neagoe/Oana Neagoe, pp. 207–216).

The gold foil sheet covering the Urnfield Period diadem, a marker of exceptional social position, found in Opava at the end of 2022 weighs 56.5 g. Elemental composition analysis has revealed that the material contains a relatively high amount of silver (14%) and a significant amount of copper (1%; Matěj Kmošek/Stanislaw Stuchlík/Nikola Suhejová, pp. 241–249).

Two studies focus primarily on production-related traces and technology, albeit their scopes differ greatly in both time and space. The one written by Barbara Armbruster summarises decades of advancements in the research of Bronze Age bronze, silver, and especially gold vessels in Western, Central, and Northern Europe (pp. 217–228). The other, a work by Marina Kalpachka and Petya Penkova, examines the gilding of 4th–3rd-c. BC silver artefacts – likely the products of local Thracian craftspeople or imported goods – from Bulgaria (pp. 251–260).

No study on gold threads in the volume mentions the 9.1 g clew comprising two different gold yarns, found in Gurnitz in Carinthia, likely in a hoard (Gleirscher 2014, 138, fig. 1).

Although in his thorough study on the diverse ways of storing pre-processed gold, Albrecht Jockenhövel briefly refers to the topics of early currencies, standardised weight systems, and scales (pp. 89–100), these would be worth an independent study by, for example, Nicola Ialongo, Giancarlo Lago, or Lorenz Rahmstorf. Obviously, this field also encompasses the issues of exchange and trade of gold raw materials and products, as well as the related networks. Such studies include material composition analyses using a handheld XRF device by Szathmári *et al.* (2024) of artefacts from Central and Southern Europe and Great Britain, as well as the Early Bronze Age finds from Arildskov in Denmark, by C. Rassmann (2025). Another related

and interesting topic is the royal tombs of Ur, where the osmium isotope patterns of certain materials indicate that the gold was obtained from natural gold deposits in the territories of today's Iran and Afghanistan (Schwall *et al.* 2024). The networks related to the procurement, processing, and trade of metals in the vast area from the Aegean and Egypt to Scandinavia are intertwined with those of amber (Vandkilde *et al.* 2024), glass beads (Bellintani/Angelini 2020), and certain objects (e.g., single-edged razors; Kaul/Frei/Reiter 2024).

Some other finds are also missing from the topics: the Early Urnfield gold foil remains found in Bled in Slovenia (Turk 2012) and especially their symbolism, and the still unpublished find of almost 2000 gold spirals coiled on textile strings, dated to Period V of the Nordic Bronze Age, which was discovered in Boeslunde (Zealand) in Denmark.*

The last part of the volume focuses on the Iron Age. For me, the most exciting paper amongst the ones arranged here is the one by Christiane Eluère, presenting the grave of an adult man buried with several gold items and a metal vessel, which is currently the westernmost known specimen of Hajdúböszörmény-type situlae (pp. 309–317). The gold torque, bracelet, and pin of the man weigh a total of 130.5 g; they were made from different materials. As for the dating of the feature, although I believe the earliest 8th c. BC in Western Transdanubia, my primary research area, corresponds to the final phase of the Urnfield Period, I accept the author's opinion that this time in the West equates the HC period. It must be noted, however, that the parallels cited from the Carpathian Basin represent a rather long interval.

The Early Iron Age gold finds from Southwestern Germany (Birgit Schorer/Gerd Stegmaier, pp. 319–328) and Stična in Slovenia (Anja Hellmuth Kramberger, pp. 341–349), as well as the Celtic ones from the area of Salzburg (Holger Wendling, pp. 329–340) belong to centuries of which my knowledge is unsuitable for a reliable in-depth evaluation; however, all three studies seem to add novel data and findings to the pool of information on their respective periods.

Another point where the volume feels lacking is the discussion of the symbolism of vessels and clothing accessories (except for the one on the Stična find), as well as elaborations on the social role of gold, especially in the context of representation and power – such as the exemplary summary by C. Metzner-Nebelsick 2013.

* I learned about this discovery from a letter by Flemming Kaul in December 2015. I am grateful for the information. For more about this treasure, please visit <https://www.thehistoryblog.com/archives/37420> and <https://www.thisiscolossal.com/2015/07/archaeologists-unearth-trove-of-2000-mysterious-gold-spirals-in-denmark/> [23. 2. 2025].

Finally, a succinct statement by major figures in provenance studies must be cited here: ‘There is currently no technique of direct provenancing in metallurgy comparable to geologically distinctive lithics such as obsidian (e.g., Tykot 2002) or jadeite (Pétrequin et al. dir. 2012)...’ (Radivojević et al. 2019, 138). No wonder that the provenance of most gold objects presented in the volume could only be determined vaguely, if at all.

I also feel it necessary to highlight the concentration of gold treasures in the period in focus in Transdanubia (Western Hungary), my primary research area. Some deposits have been well-known worldwide for a long time – the ones from Velem (Ilon 2015; Mozsolics 1950), Ság Hill (Ilon 2024; Mozsolics 1950), and Várvolgy-Nagyláz-hegy (Mozsolics 1981; Müller 2013) – while others are new, including one discovered at Somló Hill (Tarbay et al. 2024) and a still unpublished hoard found by Attila Mrenka in Sopron-Burgstall in 2023. Based on reliable information, most of these have been recovered from highland settlements; however, little is known about their material composition and the provenance of their raw materials – leaving us with several gaps in our knowledge to fill.

The volume concludes with permanent columns: two book reviews and a summary of the most important events of the Anthropologisches Gesellschaft in Wien.

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Vladimír Turčan: Antické okná zo Stupavy. Najstaršie svedectvo zemetrasenia na Slovensku. Zamerané na predmet 3. Slovenské národné múzeum. Bratislava 2024. 70 strán. ISBN 978-80-8060-566-7.

Ludské spoločnosti žili vždy v krajine, v ktorej na ich vývoj vplývali rôzne prírodné sily. V archeológii nevieme vždy tieto sily postihnúť, napriek tomu je zrejme, že s nimi musíme počítať. Typickým príkladom sú zemetrasenia, ktoré často predpokladáme, ale málokedy nám archeologické metódy práce umožňujú ich identifikáciu.

Archeoseizmológia nepatrí medzi mladé archeologické metódy, jej počiatky môžeme hľadať už vo vykopávkach Arthura Evansa (1928) na Kréte alebo pri výskumoch Clauda Schaeffera (1948)