Preface

Few topics in archaeological research are as intensively and controversially debated as fragmented copper-alloy objects and the contexts of their deposition, often in the form of so-called hoards. As early as the transition from the Early to the Middle Bronze Age, »scrap metal hoards« containing such fragmented objects began to appear in Central Europe (Bühl-Ackenbach hoard horizon). These hoards became particularly prevalent during the Late Bronze Age, significantly shaping the archaeological record across vast regions of Europe before seemingly disappearing in many areas at the transition to the Early Iron Age. The suggested motivations behind the deposition of such hoards, which also included intact objects and raw metal (such as copper ingots or »casting cakes«), range from religious offerings to merchants' and founders' hoards intended for recycling or remelting. Given the large number of such hoards in the Late Bronze Age, scholarly debate has often focused on this specific chronological framework. However, similar phenomena and practices can be observed in other regions and periods. Fragmented Cycladic figurines and Viking Age treasure finds containing hack silver and coins are just two of many further examples.

Excavations in major Greek sanctuaries such as Olympia, Delphi, and Samos have also yielded large numbers of copper-alloy objects, many of which have only survived in a fragmented state and bear traces of deliberate destruction. Although these materials primarily date to the Geometric and Archaic periods – a time when the »scrap metal phenomenon« was still widespread across much of Europe – they have rarely been compared with the Bronze Age hoards of Old Europe. This may be due to the relative scarcity of such hoards in Greece during the Late Bronze Age. However, Greek sanctuaries raise a fundamentally similar question: why did such large quantities of copper-alloy objects end up buried rather than being reused or remelted? This question provided the starting point for the research project »Fragmentation of Votive Offerings in the Sanctuary of Olympia – Research on the Background of a Ritual Practice«, conducted at the Leibniz-Zentrum für Archäologie (LEIZA) in Mainz in close collaboration with the Athens Department of the German Archaeological Institute (DAI). Funded by the German Research Foundation (DFG) and running from January 2022 to February 2025[1], this project systematically analysed fragmentation traces on selected material groups, primarily from the Geometric period at Olympia. The research was carried out under the scientific direction of Holger Baitinger through a close collaboration between an archaeologist specialising in metal objects (Azzurra Scarci) and an experienced conservator (Gerhard Stawinoga).

Olympia offers excellent conditions for such investigations, because the large number of objects allows for the identification of recurring fragmentation patterns, while the extensive excavation documentation enables an examination of the spatial distribution of the fragmentation phenomenon within the sanctuary.

1 DFG GZ BA 3197/2-1, project number 466820328. We are grateful to the German Research Foundation for funding the project and its extension (2026–2028), which will allow the second phase to start in January 2026 with a focus on fragmentation in Olympia and other Greek sanctuaries. Our sincere thanks also go to the German Olympia Excavation, and in particular its director, Oliver Pilz, for his unwavering support. Additionally, we extend our appreciation to Nevio Dubbini and Annalisa Maggini (Miningful srls, Pisa) for their contributions to the statistical analyses, as well as to Anja Cramer and Benjamin Streubel (LEIZA) for their valuable advice during the spatial analyses.

To integrate the research results from Olympia into the broader discourse on the fragmentation of copper-alloy finds in European hoards and to provide further insights for future studies, we organised the international conference »An Interdisciplinary Approach to the Practice of Fragmentation in Greek Sanctuaries and Bronze Age Hoards«, which took place from 22 to 24 November 2023 at LEIZA (formerly the Römisch-Germanisches Zentralmuseum) in Mainz. The conference featured 14 presentations exploring the topic from various perspectives and methodological approaches. The keynote lecture, delivered by John Chapman and Bisserka Gaydarska, addressed fundamental aspects of fragmentation as both a material process and a means of connecting people and places. This was followed by a thematic session on the sanctuary of Olympia, in which key aspects of votive offerings in Greek sanctuaries were discussed (contributions by Oliver Pilz, Holger Baitinger, and Azzurra Scarci/Gerhard Stawinoga). In recent years, questions concerning »Fragmentation and Use-Wear Analysis« have gained increasing significance. Contributions on this topic were provided by Matthew G. Knight, János Gábor Tarbay, Botond Rezi, Jan-Martin Skolaut, and Christoph Huth. The subsequent session, »Fragmentation and Metrology«, examined the role of standardised weight systems and the »pre-monetary« functions of Late Bronze and Early Iron Age hoards (with contributions by Giancarlo Lago and Nicola Ialongo). Case studies from eastern France (contribution by Estelle Gauthier and Jean-François Piningre) and Iron Age Northern Europe (contribution by Andreas Rau) were then presented in a session devoted to »Fragmentation and Rituals«, which was closely linked to the Olympia session. Rau's presentation focused on fragmented weapons and armour from sacrificial sites dating to the late Roman and Migration periods. The conference concluded with a contribution by Roland Schwab on archaeometallurgical and material analyses, which also outlined perspectives for future research. Unfortunately, Rau's and Schwab's contributions could not be included in the present volume.

This volume of the conference proceedings thus provides a methodologically diverse and geographically wide-ranging overview of current research on the phenomenon of fragmentation, spanning areas from Great Britain to Southeastern Europe, while also reflecting regional research traditions. The fact that this volume could be published within a relatively short time after the conference is primarily due to the contributing authors, who submitted their manuscripts on time, as well as to the editorial team at LEIZA publishing house, especially Claudia Nickel and Marie Reiter, who carried out the editorial work with great dedication and precision.

We extend our gratitude to the DFG for their financial support, which facilitated the timely publication of this book. Special thanks are due to John Chapman, who generously agreed to read and linguistically revise a substantial portion of the manuscript. We are also grateful to Alexander Sarantis (LEIZA) for his careful linguistic revision of the preface.

We hope that this volume contributes to a more comprehensive understanding of the diversity of fragmentation phenomena in the archaeological record and helps to move beyond the often reductive interpretative framework of »sacred« versus »profane«.

Azzurra Scarci and Holger Baitinger
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