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Obálka / Cover

Motív „Zázračného dažďa“ zo Stĺpa Marka Aurélia v Ríme. V okienku: fragment terra sigillaty z germánskeho sídliska vo Veľkom Mederi (Rheinzabern, Primitivus I, III podľa určenia K. Kuzmovej).

Motif of the „Miracle rain“ from the Column of Marcus Aurelius in Rome. In the window: fragment of terra sigillata from a Germanic settlement in Veľký Meder (Rheinzabern, Primitivus I, III as identified by K. Kuzmová).

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*28. 06. 1955 – †16. 04. 2022



Klára Kuzmová

Contents

| | |
|---|-----|
| PREFACE | 9 |
| I. TRIBUTES AND REMEMBRANCES | |
| LUBOMÍRA KUZMOVÁ – IVANA KUZMOVÁ | |
| Daughters' Letters of Remembrance | 13 |
| LUCIA NOVÁKOVÁ | |
| Remembering Prof. PhDr. Klára Kuzmová, CSc. Publications and Research Contributions | 15 |
| GERTRÚDA BŘEZINOVÁ | |
| Tracing the Legacy of Klára Kuzmová in the Late La Tène Period Research in Slovakia: A Tribute | 23 |
| II. SCIENTIFIC CONTRIBUTIONS | |
| MIROSLAVA DAŇOVÁ – RADOSLAV ČAMBAL – MAREK BUDAJ | |
| Gold Ring with Roman Gem from Šulekovo (Slovakia) | 31 |
| MIROSLAVA DAŇOVÁ – PETRA DRAGONIDESOVÁ – JÁN RAJTÁR | |
| A Contribution to New Discoveries of Roman Finger Rings in South-Western Slovakia | 35 |
| TOMÁŠ DRAGUN | |
| Settlement near the Church of St. Mary Magdalene in the Context of the Late Antique Gerulata | 39 |
| PIOTR DYCZEK | |
| Figurine of Hermes/Mercury from Novae | 97 |
| MIRIAM JAKUBČINOVÁ | |
| Penannular Brooches From the Early Medieval Hillfort Bojná I-Valy | 105 |
| DOMINIKA MATĚJKOVÁ | |
| Archaeology and Religious Narratives: A Historical Perspective on Roman Catacomb Studies | 119 |
| LUCIA NOVÁKOVÁ – SILVIU MILOIU | |
| Ecocultural Heritage in the Anthropocene: Critical Debates and Integrative Paradigms | 129 |
| LUCIA NOVÁKOVÁ – PETER ROHÁČ | |
| Between Tyranny and Democracy: The Conflicts of the Greek <i>poleis</i> in Sicily (to the 5 th century BC) | 143 |
| JAKUB ONDRÁŠIK – ERIK HRNČIARIK | |
| Minoan Harboursides on Crete: Towards an Identification of Fortifications and Shipsheds in the Protopalatial and Neopalatial periods | 163 |

| | |
|--|-----|
| BANU ÖZDILEK – HASAN ONUR TIBIKOĞLU The Port of Epiphaneia in the Issos Plain. Preliminary Assessments of the Port Investigations at Catabolos/Burnaz | 175 |
| BANU ÖZDILEK – HASAN ONUR TIBIKOĞLU Issos-Epiphaneia Aqueduct and Waterway Studies (2022–2025). A Preliminary Assessment within the Archaeological Research Project | 215 |
| MEYDAN PALALI A Newly Discovered Hunting Kiosk in Antalya – Manavgat Hacıobası Kiosk | 239 |
| ANDREJ SABOV The Settlement Structure of Germanic Settlements on the Great Rye Island: The Case of the Kvetoslavov I Site | 245 |
| ANDREJ SABOV – ZUZANA POLÁKOVÁ Settlement from the Roman Period on Šrobárová Street in Trnava | 259 |
| ONDREJ ŠEDO – RADKA KNÁPEK Xenophon’s Account (Xen.Anab. 4.7.1–14) as a Hint to Interpreting Prehistoric Contexts on Prominent Mountain Peaks: Examples of Refugia in the Northwestern Carpathians | 267 |
| JAROSLAVA SCHMIDTOVÁ North African terra sigillata from the excavation of a villa rustica in Čunovo | 279 |
| GIROLAMO SOFIA Immortal, Though He Lies Under the Ground: Warriors of Himera (Sicily), Common Burials, and Osteobiographies in Anthropology | 289 |
| KAMIL ŠVAŇA Roman Period Finds from North-Eastern Slovakia: Kendice, pri Rybníčku | 303 |
| MURAT TAŞKIRAN Settlement Characteristics of Ancient City Sillyon in the Persian Period | 311 |
| HELENA TŮMOVÁ – ENRICO CIRELLI – JUDIT ZÖLDFÖLDI Marble Provenance in Late Antique Ravenna: Cultural Connections and Commercial Exchange | 321 |
| VLADIMÍR TURČAN On the Urbanism of Germanic settlements in South-Western Slovakia | 331 |
| VLADIMÍR VARSÍK Cífer-Pác – A Late Antique Residence in the Land of the Quadi: From Excavation to Archaeopark | 337 |

Preface

The volume *Anodos – Studies of the Ancient World 17* brings together papers from the international scholarly conference *Connecting People, Sharing Knowledge*, held on 27th–28th September 2024 at the Faculty of Arts of Trnava University in Trnava. The event was dedicated to the life and scholarly legacy of Prof. PhDr. Klára Kuzmová, CSc., an eminent Slovak archaeologist, university teacher, and inspiring personality whose life-long work significantly contributed to the development of Classical Archaeology in Slovakia and to the international academic community. The first section of the volume consists of personal recollections, tributes, and scholarly reflections by colleagues, friends and collaborators, outlining Professor Kuzmová's professional career, her key publications, and methodological approaches. These texts also highlight her ability to connect diverse academic environments, support young scholars, and foster international cooperation between institutions. The following sections present scholarly studies by Slovak and international authors, reflecting the broad thematic scope of the conference. Contributions address topics ranging from ancient urbanism and fortification systems, the analysis of ports and trading centres, material culture, and art-historical research, to settlement studies of Late Antiquity and the Early Middle Ages. Other papers focus on contacts between the Mediterranean and Central Europe, the spread of technologies and craft traditions, and the re-interpretation of well-known archaeological finds in the light of new methodological approaches, including archaeometric and natural science analyses. The diversity of topics and methodological perspectives mirrors the conference's openness to interdisciplinary dialogue and reflects current trends in archaeological and historical research. A common feature of all contributions is the emphasis on deepening our understanding of cultural heritage and interpreting it within the framework of broader historical processes. The publication of this volume would not have been possible without the cooperation of several institutions and the support of the Faculty of Arts of Trnava University in Trnava, grant programmes of the Ministry of Education, Science, Research and Sport of the Slovak Republic, the Slovak Academy of Sciences, and the civic association *Pro Archaeologia Classica*. Our sincere thanks go to all authors, reviewers, and conference participants for their scholarly and personal contributions. We trust that this volume will serve not only as a testimony to the life and work of Professor Klára Kuzmová, but also as a lasting contribution to the advancement of knowledge and international cooperation in the study of the ancient world.

Editor

Trnava, September 2025

Marble Provenance in Late Antique Ravenna Cultural Connections and Commercial Exchange¹

Helena Tůmová – Enrico Cirelli – Judit Zöldföldi

Keywords: marble artefacts, sarcophagi, white marble, provenance determination, petrological and geochemical analyses, Late Antiquity, Early Middle Ages, Ravenna, Classe, Constantinople

Abstract: At the beginning of the 5th century, Ravenna became a *sedes imperii* practically overnight, which led to a rapid increase in building activity and demand for precious materials such as coloured stones and white marble. Thanks to its excellent sea connections through its ports, the city maintained dynamic connections with many Mediterranean centres. The determination of provenance of white marble artefacts from Ravenna and its port in Classe by means of combination of petrological and mineralogical-geochemical analyses, confirms the predominance of materials from the East, in particular from the Marmara Island (Proconnesos). This fact correlates directly with previous assumptions about the importation of sarcophagi and architectural elements to Ravenna from the East and via Constantinople in Late Antiquity.

In Late Antiquity, Ravenna emerged as a significant hub of political and cultural exchange. The origin of white marble artefacts used extensively in local monuments and basilicas in Ravenna have traditionally been attributed to the Eastern Mediterranean, especially to the imperial quarries of Marmara Island (Proconnesos) or other Eastern and Greek quarries: marble has often been broadly labeled as “Greek” or “Eastern” without precise identification (Angiolini-Martinelli 1968; Valenti-Zucchini – Bucci 1968; Farioli 1969; Farioli 1977, 139; Farioli 1983). In the past, only few petrographic or geochemical analyses have been conducted to verify this assumption, so the exact provenance remained unspecified, often based on broad macroscopic assumptions, historical presuppositions, or references in ancient texts, lacking the methodological rigor now standard in provenance studies.

This “Eastern origin” theory is backed by references in ancient texts, such as *Libri pontificalis ecclesiae Ravennatis* by a protohistorian from the 9th century, Andreas Agnellus, who mentions *marmor proconnesis* (*Lib. Pont. Ecc. Rav.* XVII. 26; XXI. 50; XXVI. 76; XXXVIII. 149; LXXVI) in a few specific cases of its use in ecclesiastical buildings linked to Constantinople by the cult of St. Andrew (*Mauskopf-Deliyannis* 2004, 336; Tůmová 2013, 105); e.g. when he describes the *monasterium* of St. Andrew near Ravennate *episcopium* (*Lib. Pont. Ecc. Rav.* L), or when he refers to the act of Archbishop Maximianus (546–557), who had the original columns (of the *ciborium*?) in the church of St. Andrew Major replaced by those of Proconnesian marble (*Lib. Pont. Ecc. Rav.* LXXVI; *Mauskopf-Deliyannis* 2004, 190; *Cirelli* 2008, 100). The widespread distribution of this marble across the late antique Mediterranean further supports this idea. The hypothesis of an “Eastern origin” is also valid for the architectural decoration and the marble construction elements from the Proconnesian workshops on the island of Marmara which were primarily engaged in the production of architectural elements (column shafts, bases, capitals), exported to numerous Mediterranean regions, including northern Italy. Especially in the case of Late Antique capitals, the typological point of view seems to be very useful. At this point we can still rely on the study of N. Asgari, who developed a typology of Corinthian capitals and other architectonic elements preserved *in situ* in the quarries of the Marmara Island (*Asgari* 1988, 115–125; 1992, 73–80). However, the archaeometric approach is indispensable for the identification of white marble.

¹ The work on this paper was supported by the Czech Science Foundation grant No. 23-06403S. We wish to thank the Direzione Regionale Musei dell’Emilia Romagna, the Soprintendenza Archeologia, Belle Arti e Paesaggio per le province di Ravenna, Forlì-Cesena, Rimini, the Arcidiocesi di Ravenna-Cervia and the Fondazione Ravennantica for allowing us to work inside Ravenna’s prestigious monuments.

The importance and longevity of the Proconnesian workshops were due to their relatively lower cost in comparison to other types of white marble, to the easier access from the quarries to the seaports respect of other marble quarries, to the cessation of mining activities at the principal quarries in Asia Minor (e.g. in Aphrodisias, Ephesos) during the studied period (Kollwitz 1956), and – last but not least – to the easy workability of this marble. Only limited recent research has suggested a Thassos origin for a handful of artefacts in Ravenna, using the archaeometric approach (Herrmann – Tykot – van den Hoek 2017, 239–246), but with few exceptions, studies of architectural decoration and sarcophagi have so far been based predominantly on macroscopic observations. Interestingly, there wasn't much talk of white marble from other Eastern quarries or even from the famous Carrara quarries, which would be appropriate given their proximity, widespread use in the Augustean and Iulio-Claudian periods, but which fell into disuse by the end of the 3rd century.

In Antiquity, the term “marble” was not limited to its modern geological definition, which refers specifically to metamorphosed carbonate rocks. Instead, it encompassed a wide range of lithotypes, including igneous and sedimentary rocks such as porphyry, granite, basalt, serpentine, alabaster and breccia. These materials were classified on the basis of their polishability or aesthetic qualities rather than their petrographic composition, although many of these stones were not true marbles from a geological point of view. The etymology of the noun “marble” originates from the Greek verb “μαρμαίρειν”, meaning “to shine, gleam”, highlighting the ancient emphasis on the material's polishability and reflective quality. This perception of marble as a polishable stone held great significance in ancient art, architecture, and trade, where the visual appeal and surface finish of the stone were more the most important aspect. This approach, while not strictly accurate from a geological point of view, influenced study of historical artefacts, especially those linked to ancient trade and cultural exchange in the Mediterranean (cf. *Plin. Nat.* XXXVI, XXXVI; Mariottini 1998, 23–34; Marchei – Pettinau 1998, 118; Karagiourgou 2001; Guasparri 2006; Tůmová 2013, 32). In contemporary scientific literature, this broader, non-geological definition of marble is sometimes maintained, particularly in discussions surrounding ornamental stones. The term “marble” is often applied generically to refer to any type of stone that can be polished to a high sheen, reflecting the ancient perspective that prioritized the aesthetic and functional qualities of these materials. In this study, we have followed a strict geological definition.

A pioneering effort to systematically study Ravenna's sculptural art is represented by the three-volume “Corpus” of Early Christian, Byzantine, and Early Medieval sculpture of Ravenna, published in the 1960s (Angiolini-Martinelli 1968; Farioli 1968; Valenti-Zucchini – Bucci 1968). This comprehensive work provided the first scholarly framework for understanding the chronological development and typological diversity of the stone artefacts, covering the period from the 4th to the 10th century. In the classification of architectural elements in *Corpus*, the materials are categorized into three primary groups: marble, limestone which accounts for only 2.3% of the classified materials, while 13.7% are categorized as unspecified stone. Marble is the dominant material, comprising 84% of the documented

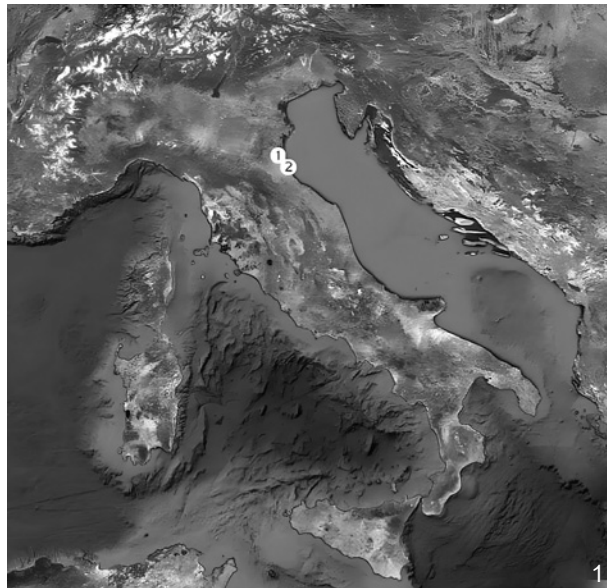
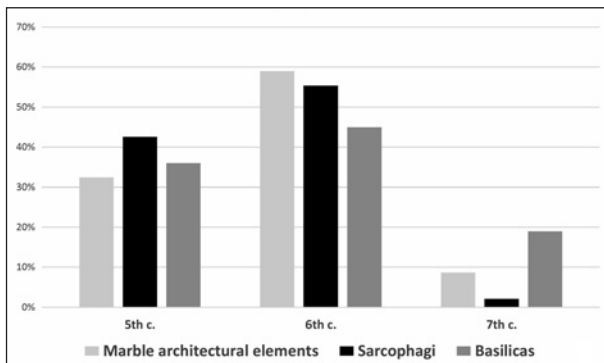


Fig.1. 1 – Ravenna (1) and its port Classis (2); 2 – Ravenna with its waterways located around and across the city until the Middle Ages. Source: *Ravennantica*, tre.digital.srl. Drawing: H. Tůmová, E. Cirelli.



Graph 1. Comparison of the quantity of Ravennate marble artefacts (architectural decorations and elements, sarcophagi) and the construction of basilicas from the 5th to the 7th century. Drawing: H. Tůmová, E. Cirelli.



Fig. 2. River courses around Ravenna from the 1731 map, transformed into a contemporary satellite image. Modified according to Zandrini, Eustachio Manfredi (Tůmová – Cirelli 2024, fig. 11).

extensive reuse of marble and other materials from abandoned buildings in the area was very common. Ornamental stones, white and coloured marble, were highly prized. These artefacts also serve as crucial indicators of the trade networks that supplied the raw or semiworked stone materials, as well as the craftsmanship involved in their production.

The further study of marble artefacts from Ravenna, analyzing them from the stylistic and material point of view, offer invaluable insights into Ravenna's role in the broader trade networks of the Late Antique Mediterranean Sea, demonstrating that Ravenna was actively involved in the synthesis of different artistic traditions, combining Roman, local and regional styles with those of the Eastern Mediterranean, especially of Constantinople. Understanding the provenance of marble artefacts is closely intertwined with the themes of commercial exchange and the long-distance trade networks that connected the Mediterranean world in Late Antiquity. Ravenna's strategic position by the sea and its ports of Classe facilitated these trade interactions within the Mediterranean. Its well-developed infrastructure, comprising inland waterways, navigable canals (Fossa Augusta, Padenna, Flumisellum Padennae, etc., Tůmová – Cirelli 2024, 121–144), ancient roads, and port facilities, along with its strategic links to other Adriatic and southeastern Mediterranean port cities – including Constantinople – was instrumental in facilitating its economic and cultural exchanges (Fig. 2).

Sarcophagi are undoubtedly one of the main pillars of knowledge of Ravenna's sculptural art. In total, we are talking about the group of thirteen sarcophagi decorated with human figures in Ravenna and forty-five

elements. The specific type and origin of the marble are generally not indicated, with a notable exception: 17% of the entries list “Greek marble”, though without specifying a particular quarry or region (Tůmová 2013, 188). The study of the provenance of marble artefacts in Ravenna has only just begun with recent studies aimed at analysing white and white-greyish marble from the site of the Basilica *Beati Severi* with the adjacent monastery in Classe, the ancient port of Ravenna (Fig. 1; Tůmová 2013; Tůmová et al. 2016, 35–46; Tůmová et al. 2021, 50–59).

The marble artefacts – sarcophagi, columns shafts, bases, capitals, *cancelli* (*transennae*, *plutei*), altars, ambones –, and other decorative elements (revetments slabs, *opera sectilia*) of Ravenna's basilicas offer a rich and multifaceted body of material for the study of Late Antique art, particularly in terms of sculptural style, typology, material use and influence of Eastern and Western artistic circuits. The changes in the quantity and variety of stone sculpture in Ravenna from the 5th to the 7th centuries (Graph 1) illustrate important shifts in material acquisition, imported artefacts *versus* existing local artistic production, which increased rapidly after the relocation of the imperial court of Honorius from *Mediolanum* in 402 (Fischer – Lejdegård – Victor 2010, 283), and testify to the city's rise as a centre of political and religious power in the Western Roman Empire and its subsequent integration into Byzantine influence after the devastating Gothic Wars and, in particular, as the seat of the Byzantine Exarchate until 751. However, this demand didn't always mean new materials, as happened in the case of the basilicas of San Vitale and San Apollinare in Classe; exten-

sarcophagi with exclusively symbolic (zoomorphic or floral) decoration. Systematic scholarly interest in Ravenna's sarcophagi dates back to the late 19th century and intensified throughout the 20th century, culminating in more systematic examinations in the latter part of the century. Scholars, using stylistic analysis and comparisons to the artefacts of Eastern origin, hypothesized that certain figural sarcophagi, like so-called sarcophagus of the Pignatta family (Fig. 3), had been imported to Ravenna, before a local workshop for such production was established here, from Asia Minor, particularly via Constantinople (Gerke 1959, 109–121; Deichmann 1969, 292–307; Rizzardi 2004, 263–278 et 2007, 73–82), in the early 5th century. Another example of the imported sarcophagus is that of the archbishop Liberius III, considered to be the oldest one of the Ravenna group (De Francovich 1959, 108, dates it to 378–380) and an import from the East.

The so-called sarcophagus of the Pignatta family is the most monumental Late Antique white marble sarcophagus in Ravenna, dated to the turn of the 4th and 5th centuries, that is, from the period when Ravenna was transformed into a *sedes imperii*. The sarcophagus, like many other Ravennate sarcophagi, is decorated on all four sides, a typical feature of the production of Eastern, Microasiatic workshops and at the same time a distinguishing feature from the Roman production. Even more, the iconography of the right side has a parallel in the narrative of the Apocryphal Gospels (e.g. Protovangel of James 11,1; Pseudo-Matthew 9,2), which were especially popular in the *Pars Orientis* from the 4th century onwards. This scene depicts the Annunciation to Mary. Mary is dressed as a Roman matron, seated on a chair and weaving purple for the temple. The composition and style of the scene are reminiscent of scenes from ancient funerary steles (Tűmová 2021, 289, n. 13). Another quite common feature that links some Ravennate sarcophagi, not excluding the Pignatta sarcophagus, with the Microasiatic production is the semi-cylindrical shape of the lid, for which the Italian term “a baule” has become customary. The style of the figural scenes on the front and sides also alludes to the imperial iconography and the high court style of the Theodosian “Renaissance”, as observed on the sculptural reliefs on the base of the Theodosian obelisque in Constantinople (Fig. 4), but also on various Eastern sarcophagi, such as the well-known sarcophagus from Bakirköy (Archaeological Museum of Istanbul, inv. no. 2462) or the one from Psamathia (Museum für Spätantike und Byzantinische Kunst, Berlin; Deckers 2004, 34, 39). The combination of archaeometric methods, in particular the analysis of the stable oxygen ($\delta^{18}\text{O}$) and carbon ($\delta^{13}\text{C}$) isotope ratios, seems to confirm the Proconnesos origin of the sarcophagus chest, also for the lid. However, it must be mentioned here that the material is heavily weathered and therefore the results of these investigations must be confirmed by means of other, especially strontium isotope analyses.

In some cases, as was customary with architectural decorations and sarcophagi imported from Eastern workshops, marble artefacts were presumably transported in a prefabricated state, then completed locally, either by foreign artisans or by workers from local workshops. Certain architectural elements present on the Ravenna's sarcophagi, such as the architectural compartmention of the composition into niches and arcades con-



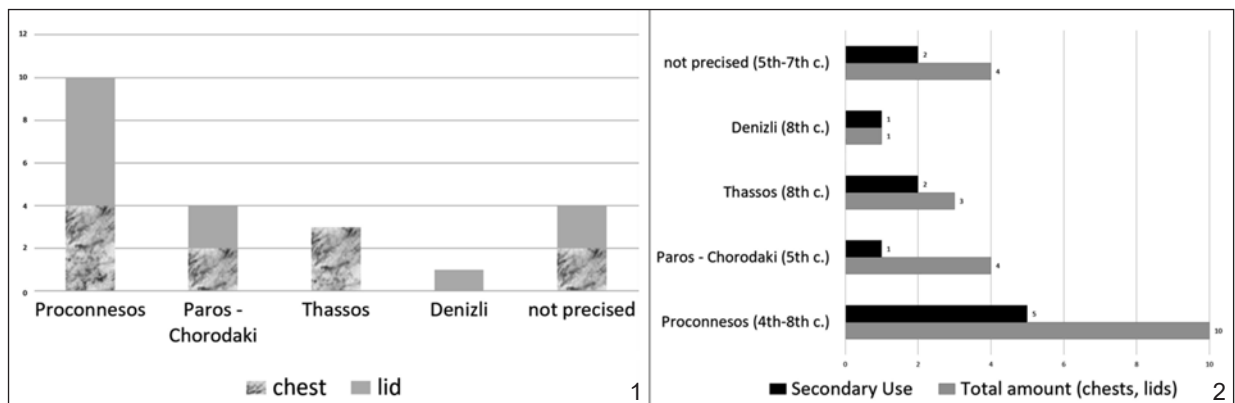
Fig. 3. The front of the so-called Pignatta family sarcophagus, Quadrarco di Braccioforte, Ravenna. Photo: H. Tűmová.



Fig. 4. Base of the obelisk of Theodosius in Istanbul. Photo: H. Tűmová.



Fig. 5. Basilica of San Apollinare in Classe (second half of the 6th century). 1 – view of the exterior; 2 – view of the interior. Photo: H. Tůmová.



Graph 2. 1 – proposed provenance of chests and lids of the 11 sarcophagi from the Basilica of San Apollinare in Classe (Ravenna), determined by petrographic and geochemical methods (Further research is needed to verify the hypothetical provenance from Paros.); 2 – occurrence of different types of marble and frequency of secondary use of sarcophagi from the Basilica of San Apollinare in Classe (Ravenna). Drawing: H. Tůmová, J. Zöldföldi

taining figural scenes, reveal Eastern influences. The basilica of San Apollinare in Classe (Fig. 5), decorated in the latter half of the 6th century, consecrated by the Archbishop Maximianus in 549, currently houses only one sarcophagus with figural decoration, so-called *Sarcophagus of the Twelve Apostles*. Other ten sarcophagi with purely symbolic decorations in the form of architectural frames, following the northern Italian style of the so-called architectural sarcophagi, or decorated with lambs or the *Agnus Dei* in the composition of the *Adoratio Crucis*, peacocks with vine tendrils, or with a simple abstract decoration in the form of crosses, as well as a small Roman sarcophagus without any decoration. As in the case of many Ravenna sarcophagi, the sarcophagi from the Basilica of San Apollinare in Classe were often used secondary, in some cases even repeatedly. In total, 11 elements (chests and lids) were re-used in this way. This phenomenon is evident not only in the reworked decoration and epigraphs, but also in the differences in the marble used. For example, the chest of a sarcophagus is made of a different type of marble compared to the lid of the same sarcophagus (Graph 2: 2).

Petrological and geochemical methods have been used to determine the provenance of the white marble in these sarcophagi, by measuring as many parameters as possible *in situ* and non-destructively: after a macroscopic and microscopic description, the maximum grain size has been determined, which is an important property for the provenance determination. This was done using a watch loupe with fine scale and LED illumination. Portable microscopes were also used. Another very important feature is whether the marble consists of calcium carbonate, the main mineral calcite, or also contains calcium magnesium car-

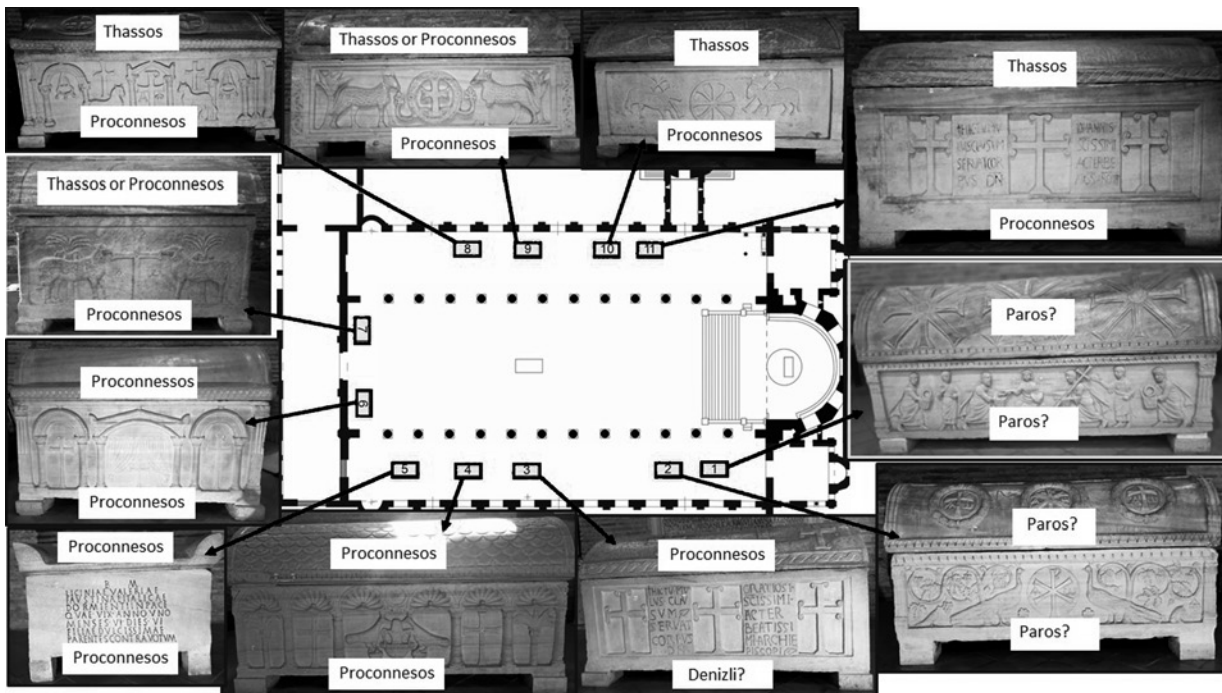


Fig. 6. Layout of the Basilica of San Apollinare in Classe with evidence of 11 sarcophagi (modified according to Deliyannis 2010, 262, fig. 90). Drawing: H. Tűmová.

bonate, the mineral dolomite as an additional mineral. This is important because it is only typical of certain geographical areas. To do this, a portable Raman spectroscope was used, which can non-destructively identify the main minerals in the marble in just a few seconds. The chemical composition was also measured using an X-ray fluorescence analyser. Small samples of drill dust were then taken with a diamond micro-drill for further analyses in the laboratory. Carbon and Oxygen stable isotope analysis – the main method used for this purpose since the seventies of the last century – was carried out on all the samples taken. Carbon and Oxygen stable isotope ratios were determined in the laboratory and compared with more than 10,000 results from around 400 quarries (Zűldfűldi – Hegedűs – Szűkely 2011, 355–361). The marble artefacts from Ravenna show a larger group that matches quarries such as Proconnesos, Thassos and probably Paros, with a few exceptions. Assignment to individual quarries is not easy because of many overlappings and the necessity to choose just the right discriminant factors. The provenance of these sarcophagi has been proposed as coming mainly from the quarries of Proconnesos, as confirmed by petrographic and geochemical measurements carried out at first *in situ* and then by means of the laboratory analyses. However, other quarries have also been identified: Paros-Chorodaki, Thassos and maybe Denizli-Hierapolis, and perhaps also Paros. (Fig. 6; Graph 2: 1).

According to a preliminary evaluation of the results of *in situ* measurements and laboratory analyses, three other sarcophagi from the Cathedral of Ravenna (built during the reign of Honorius, but completely rebuilt in the 18th century by the architect Buonamici) have similar characteristics in terms of the origin of the marble and the practice of their reuse. The origin of the marble used for the chest and lid of the Barbatianus sarcophagus is from one of the Marmara (Proconnesos) quarries. The marble of the Exuperantius sarcophagus also seems to have come from Proconnesos, but it cannot be ruled out that it came from quarries on Thassos. Such a provenance should be confirmed by further analyses planned for the future research. The material of both the chest and the lid of the Rinaldo sarcophagus also comes from Proconnesos. Moreover, both are made of the same material, which suggests that they come from the same quarry, even the same block.

Preliminary observations have led to an interesting interim results, which will have to be confirmed by further analyses, related to the origin of the sarcophagi from the *Basilica Apostolorum* (now San Francesco) in Ravenna: the chests of the sarcophagi of the Rasponi, del Sale families and of „a nicchie“ sarcophagus come from Proconnesos, while the material of their lids seems to be a Thassian marble. The sarcophagus of

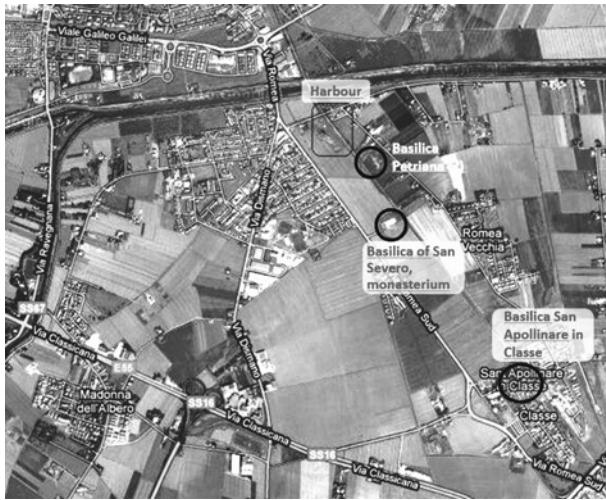


Fig. 7. Map of the ancient port of Classis showing the harbour area and the main basilicas (San Severo, San Apollinare in Classe, and hypothetical location of the Basilica Petriana). Source map: Google Maps. Drawing: H. Tůmová.

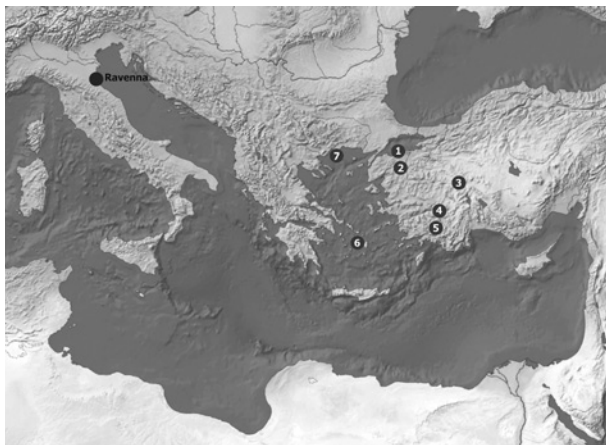


Fig. 8. Map of the proposed source quarries of white marble in Ravenna. 1 – Marmara (Proconnesos); 2 – Balıkesir; 3 – Afyon (Dokimeion); 4 – Denizli; 5 – Göktepe (Muğla); 6 – Paros; 7 – Thassos. Source map: [wikimedia.org/wikipedia/commons](https://commons.wikimedia.org/wiki/File:Map_of_the_Eastern_Mediterranean_region). Drawing: H. Tůmová.

Sant'Isacio in the basilica of San Vitale in Ravenna is a kind of exception to the standard described above. This sarcophagus has completely different characteristics from the other sarcophagi in Ravenna, measured by means of macroscopic observation and non destructive measurements carried out *in situ* (Raman spectroscopy, X-ray fluorescence spectroscopy). The material of the lid is the finest grained marble measured and analysed in Ravenna. The chest of the sarcophagus is also fine- to medium-grained. Sampling and isotopic analyses are planned for the future.

Quantitative analysis reveals that the architectural decoration in Ravenna reached its peak in the 5th and 6th centuries when the city was undergoing massive building activity and the import of stone material was facilitated by the main port of Classe (Fig. 7), but also by smaller piers along the navigable canals, especially the one connecting Ravenna to the Po (*fossa Augusta*). It was a period of great political, economic, and cultural prosperity, a consequence of the fact that Ravenna became a *sedes imperii* in 402. The predominance of marble and architectural elements in the 5th and 6th centuries, which certainly had to be imported, supports the hypothesis that Ravenna's economic situation and commercial activity were intense and developed in that period, often described as a time of dynamic circulation of art and culture within the Adriatic, and corresponding with Ravenna's rise as a significant hub of Mediterranean exchange. The quantitative analysis of stone (marble) cargoes from ancient shipwrecks in the Mediterranean provides evidence that the period of greatest importation of goods from the East occurred directly in the 6th century (Russell 2013, 348, fig. 5). Approximately 85% of the marble architectural elements in Ravenna date from this flourishing time. However, following the end of the 6th century, a sharp decline in marble usage becomes evident: only 6% of the marble can be attributed to the 7th and early 8th centuries, with very few surviving examples from this time. By contrast, there is a modest resurgence in marble usage in the second half of the 8th century and into the 9th century, when 9% of the material originates, coinciding with a revival of building and decorative arts in Ravenna. Notably, even during the decline, marble remained the dominant material for architectural decoration, and no other type of stone completely supplanted it (Tůmová 2013, 189–190).

Ravenna developed not only political, but also artistic relations with Constantinople, where architectural elements and sarcophagi were imported from or *via*. But it was not only with the more distant regions of the Eastern Mediterranean (Aegean islands, continental Greece, Asia Minor) and North Africa that Ravenna maintained intense contacts, but also with the regions of southern Italy and Sicily, and, on the other side of the Adriatic, with the Istrian peninsula and Dalmatia. Connections with Rome by land and with the regions of northern Italy by the waterway of the Po, its tributaries and artificial canals were crucial to the same extent. Close contacts with Constantinople, the capital of the Eastern Roman Empire, influenced Ravenna not only in terms of imported goods and materials, but also in terms of artistic style, for which

Constantinople was an imaginary catalyst. Ravenna's art thus incorporated not only the local and Roman tradition, the tradition of northern Italy and Milan in particular, but also Eastern Roman influences (cf. *Ward Perkins 2000*, 73). Not only the stylistic and typological aspects of the architectural decorations and sarcophagi studied, but also the use of archaeometric methods (petrological and geochemical analyses) confirm the import of material, prefabricated and finished products from Eastern quarries, not only from those on the island of Marmara (Proconnesos), but also from other Eastern ancient quarries on the Aegean islands and in Asia Minor: Thassos, Denizli-Hierapolis, Gůktepe-Muęla, Afyon-Dokimeion or Balıkesir, and probably Paros Chorodaki (Fig. 8).

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Lib.Pont.Ecc.Rav.: Andreas Agnellus Ravennatensis, Liber Pontificalis Ecclesiae Ravennatis. Trad. Holder-Egger, O. 1878. Monumenta Germaniae Historica (Scriptores Rerum Langobardicarum et Italicarum saec. VI–IX), Hanover, 265–391.
Plin. Nat.: Pliny the Elder, Natural History. Translated by H. Rackham. Cambridge – London: 1938–1963.

Bibliography

- Angiolini-Martinelli, P.* 1968: Corpus della scultura paleocristiana bizantina ed altomedievale di Ravenna. I. Altari, amboni, cibori, cornici, plutei con figure di animali e con intrecci, transenne e frammenti vari. Roma 1968.
- Asgari, N.* 1988: The stages of workmanship of the corinthian capital in Proconnesus and its export form. In: Herz, N. – Waelkens, M. (eds.): Classical Marble: Geochemistry, Technology, Trade, NATO ASI Series. Series E: Applied Sciences, Vol. 153, Dordrecht: Kluwer Academic Publisher, 1988, 115–125.
- Asgari, N.* 1992: Observations on two types of quarry-items from Proconnesus: column-shafts and column-bases. In: Waelkens, M. – Herz, N. – Moens, L. (eds.): Ancient Stones: Quarrying, Trade and Provenance, ASMOSIA Colloquium II (ActaALov 4, 1992). Louvain 1992, 73–80.
- Cirelli, E.* 2008. Ravenna: archeologia di una città. Firenze 2008.
- De Francovich, G.* 1959. Studi sulla scultura ravennate: I sarcofagi. Felix Ravenna 28/3, 1959, 5–175.
- Deckers, J. G.* 2004: Theodosianische Sepulkralplastik in Konstantinopel. 380–450 n.Chr. In: Bisconti, F. – Brandenburg, H. (eds.): Sarcofagi tardoantichi, paleocristiani e altomedievali: atti della giornata tematica dei seminari di archeologia Cristiana. Città del Vaticano 2004, 35–52.
- Deichmann, F.W.* 1969: Konstantinopler und Ravennatische Sarkophag-Probleme. Byzantinische Zeitschrift 62, 1969, 291–307.
- Farioli, R.* 1968: I sarcofagi di Ravenna: principali problemi, Corso di Cultura sull'Arte Ravennate e Bizantina 15, 1968, 239–240.
- Farioli, R.* 1969: Corpus della scultura paleocristiana bizantina ed altomedievale di Ravenna. III. La scultura architettonica. Roma 1969.
- Farioli, R.* 1977: I sarcofagi ravennati con segni cristologici: contributo per un completamento del "Corpus" II. Felix Ravenna 4, 1/2, CXIII–CXIV, 1977, 133–159.
- Fischer, S. – Lejdegård, H. – Victor, H.* 2010: The Fall and Decline of the Roman Urban Mind. In: Sinclair, P. J. J. – Nordquist, G. – Herschend, F. – Isendahl, Ch. (eds.): The Urban Mind. Cultural and Environmental Dynamics. Uppsala 2010, 277–294.
- Gerke, F.* 1959: La scultura Ravennate. Corso di Cultura sull'Arte Ravennate e Bizantina, 6, 2, 1959, 109–121.
- Guasparri, G.* 2006: I marmi antichi. Siena 2006.

- Hermann, J. J. – Tykot R. H. – van den Hoek, A. 2017: Calcitic Marble from Thasos in the North Adriatic Basin: **Ravenna, Aquileia, and Milan**. In: Matetić Poljak, D. – Marasović, K. (eds.): ASMOSIA XI: Interdisciplinary Studies on Ancient Stone. Proceedings of the XI ASMOSIA Conference, Split 2015. Split 2017, 239–246.
- Karagiorgou, O. 2001: Urbanism and Economy in Late Antique Thessaly (3rd–7th c. AD): The Archaeological Evidence. Thesis. University of Oxford 2001.
- Kollwitz, J. 1956: Die Sarkophage Ravennas. Freiburg in Breisgau 1956.
- Marchei, M.C. – Pettinau, B. 1998: Bibliografia ragionata: risultati e problemi degli studi sui marmi antichi. In: Borghini, G. (ed.): Marmi antichi. Roma 1998, 117–128.
- Mariottini, M. 1998: La provenienza dei marmi cristallini usati in antico: un problema aperto. In: Pensabene, P. (ed.): Marmi Antichi. II. Cave e tecnica di lavorazione, provenienze e distribuzione, Studi Miscellanei, 31. Roma 1998, 23–34.
- Mauskopf Deliyannis, D. 2004: Agnellus of Ravenna. The Book of Pontiffs of the Church of Ravenna. Washington 2004.
- Mauskopf Deliyannis, D. 2010: Ravenna in Late Antiquity. Cambridge 2010.
- Rizzardi, C. 2004: Ravenna fra Roma e Costantinopoli: l'architettura del V e VI secolo alla luce dell'ideologia politico-religiosa del tempo. *Ocnus*, 12, 2004, 263–278.
- Rizzardi, C. 2007: L'architettura di Ravenna fra V e VI secolo: orizzonti mediterranei. In: Augenti, A. – Bertelli, C. (eds.): Ravenna tra Oriente e Occidente: storia e archeologia. Ravenna 2007, 73–82.
- Russell, B. 2013: Roman and late-antique shipwrecks with stone cargoes. *Journal of Roman Archaeology* 26, 2013, 331–361.
- Tůmová, H. 2013: Il commercio del marmo a Ravenna nella Tarda Antichità. I materiali del complesso di San Severo. Ph.D. Thesis, Faculty of Arts, Charles University, Prague – Università degli Studi di Bologna 2013.
- Tůmová et al. 2016: Tůmová, H. – Augenti, A. – Kuchařová, A. – Cirelli, E. – Přikryl, R.: Late Antique marble trade: new insights obtained from stone artefacts from the San Severo complex (Ravenna, Italy). In: Přikryl, R. – Török, Á. – Gómez-Heras, M. – Miskovsky, K. – Theodoridou, M. (eds.): Sustainable Use of Traditional Geomaterials in Construction Practice. Geological Society. Special Publications, 416. London 2016, 35–46.
- Tůmová, H. 2021: Il programma iconografico di un sarcofago tardoantico di “Pignatta” a Ravenna: *Concordia Apostolorum?* *EIRENE. Studia Graeca et Latina*, LVII, 2021, 287–313.
- Tůmová et al. 2021: Tůmová, H. – Všianský, D. – Cirelli, E. – Frýbort, D. Provenience bílého mramoru z lokality San Severo v Classe (Ravenna, Itálie). *Geologické výzkumy na Moravě a ve Slezsku* 28, 1–2, 2021, 50–59.
- Tůmová, H., Cirelli, E. 2024: Ravenna surrounded by waters. Landscape changes and urban transformation in Late Antiquity. *European Journal of Postclassical Archaeologies* 14, 2024, 121–144.
- Valenti-Zucchini G. V. – Bucci, M. 1968: I sarcofagi a figure e a carattere simbolico. In: Bovini, G. (ed.): Corpus II. Corpus della scultura paleocristiana bizantina ed altomedievale di Ravenna. Roma 1968, 1–66.
- Ward-Perkins, B. 2000: Constantinople, Imperial Capital of the Fifth and Sixth Centuries. In: Ripoll, G. – Gurt, J. M. (eds.): *Sedes regiae* (ann. 400–800). Barcelona 2000, 63–81.
- Zöldföldi, J., Hegedüs, P., Székely, B. 2011: Miss-Marble, an Interdisciplinary Data Base of Marble for Archaeometric, Art History and Restoration Use. In: Turbanti-Memmi, I. (ed.): Proceedings of the 37th International Symposium on Archaeometry, Springer-Verlag. Berlin – Heidelberg 2011, 355–361.



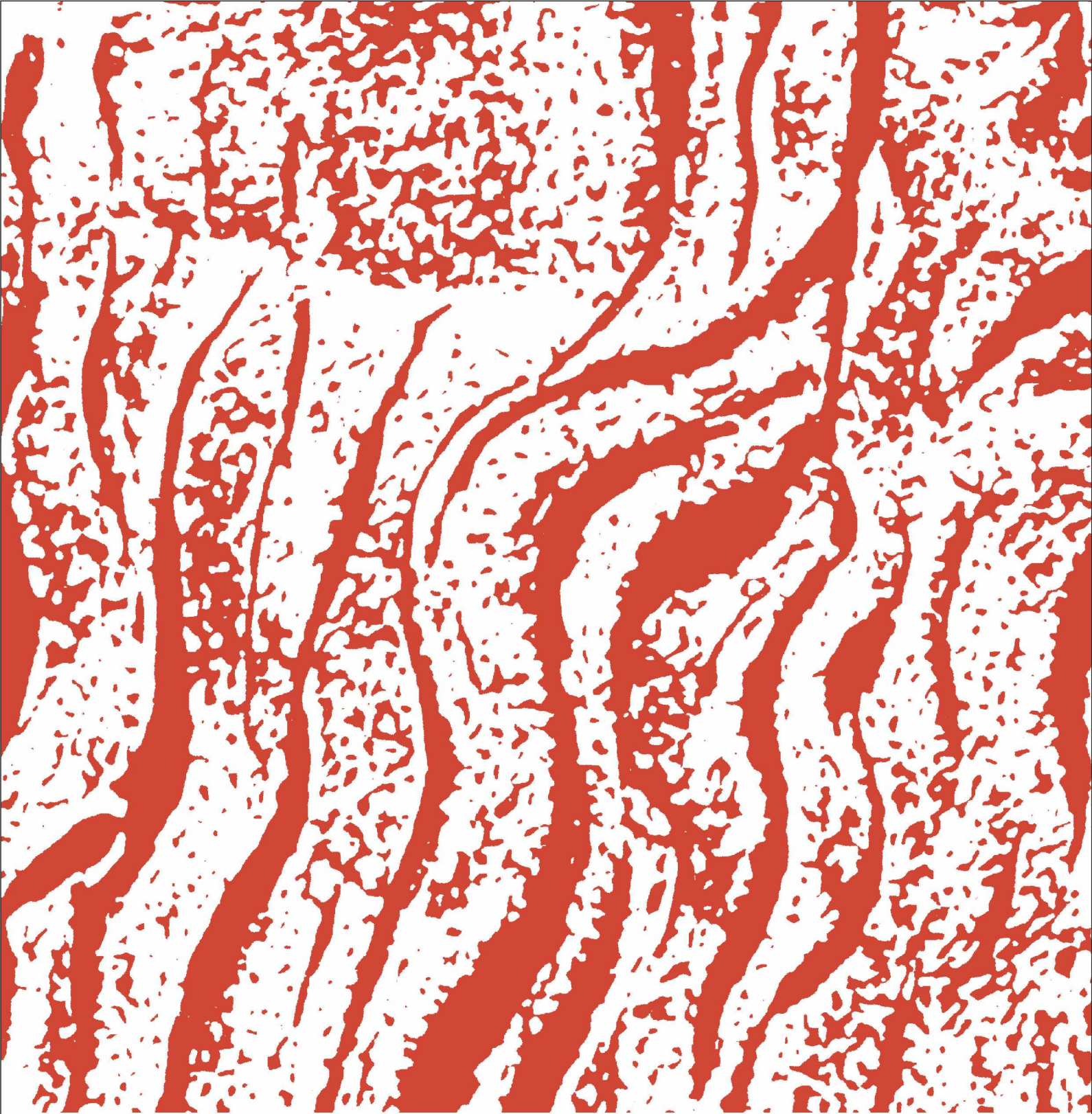
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44. Kuzmová, K. – Novotná, M. (eds.): **Úvod do štúdia klasickej archeológie III.** Trnava 2020, 128 pp. ISBN 978-80-568-0344-8. Online: <http://ff.truni.sk/ucebne-texty/uvod-do-studia-klasickej-archeologie-iii>
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46. Varsík, V. – Kolník, T.: **Cifer-Pác: Eine spätantike Residenz im Quadenland. Teil 1. (Universitätsforschungen zur prähistorischen Archäologie, Band 369.)** Bonn: Verlag Dr. Rudolf Habelt GmbH, 2021.
47. Daňová, M. – Kolon, T. (eds.): **Architectura Archaeologica Antica III: In aqua sanitas. Svet antických akvaduktov a zásobovanie vodou.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2021, 150 s. DOI: <https://doi.org/10.31262/2729-8159/2021>
48. Daňová, M.: **Rímske umenie II: Rímsky šperk. Vysokoškolská učebnica.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2021, 55 s. ISBN 978-80-568-0427-8; ISBN (online) 978-80-568-0408-7.
49. Daňová, M. – Nováková, L. (eds.): **Vtere Felix, Mária: Žiaci svojej profesorky. Zborník vydaný pri príležitosti životného jubilea Dr. h. c. prof. PhDr. Márie Novotnej, DrSc., emeritnej profesorky.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, Katedra klasickej archeológie, 2021, 199 s. ISBN 978-80-568-0249-6.
50. Daňová, M.: **Prsteň na hranici svetov.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2021, 74 s. [online]. ISBN 978-80-568-0409-4.
51. Daňová, M.: **Rings and Gems from the Roman Fort in Iža = Prstene a gemy z rímskeho vojenského tábora v Iži.** Nitra: Archeologický ústav SAV; Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2021, 167 s. (Archaeologica Slovaca Monographiae: Fontes, Tomus 31). ISBN 978-80-8196-048-2.
52. Kiss, A. – Daňová, M.: **Digital Humanities pre historické vedy a archeológiu (II): Základné kroky pre vytvorenie 3D modelu a jeho využitie – manuál (Verzia I).** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2022, 143 s.
53. Daňová, M. – Kolon, T. (eds.): **Architectura Archaeologica Antica V: Život v Neapolskom zálive. Triclinium v rímskych vilách a hodovanie Rimánov.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2023, 156 s.
54. Daňová, M. – Kolon, T. – Dragonidesová, P. (eds.): **Architectura Archaeologica Antica VI: Antické divadlá.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2024. [v príprave].
55. Daňová, M. – Kolon, T. – Dragonidesová, P. (eds.): **Architectura Archaeologica Antica VII: Verejné stavby a urbanizmus verejného priestoru v Malej Ázii.** Trnava: Trnavská univerzita v Trnave, Filozofická fakulta, 2025.



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