

Hungarian University of Fine Arts Doctoral School

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**THE PREPARATION-TECHNIQUE, EXCAVATION, SYSTEMATIZATION AND
RESEARCH OF WALL PAINTINGS OF THE ROMAN ERA**

Thesis of a Doctoral Dissertation

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I. Topic of the dissertation

The topic of the dissertation is the preparation-technique, the excavation, the systematization and the research of wall paintings of the Roman era.

II. The aim of the dissertation

The aim of the dissertation is to record the knowledge and experience which I gained during the years I spent as a restorer with the excavation, systematization and research of wall paintings of the Roman era. I found it important to produce a summarizing work, since the knowledge required to perform the activity that lies on the border of restoration and archeology is only partly covered by the training provided at the Faculty of Painting Restoration of the Hungarian University of Fine Arts, while the archeology students of the different universities acquire a different segment of the knowledge required.¹

One of the conditions of the professional excavation, systematization and research of wall paintings is to be familiar with the preparation-technique and the materials used for the wall paintings of the Roman era. My aim was therefore to write a chapter about these, using the results of the scientific examinations and the works of two authors of the antiquity, *Vitruvius* and *Pliny the elder*.

I wanted to collect as much examination data regarding the preparation-technique and the materials used in the wall paintings² originating from the Transdanubian area of the Province of *Pannonia* as possible, and to define the possible aspects of their future comparative analysis by presenting the options for their classification.

To enable the elaboration of a future comparative analysis the professional excavation, systematization and research of the wall paintings based on a coherent approach is required. The aim of my dissertation is to provide help in this regard.

III. Structure of the dissertation

The dissertation contains four main chapters, titled:

1. Preparation technique of wall paintings from the Roman era
2. Unearthing and lifting out of wall painting finds
3. Systematization of wall painting finds and assembling fragments together
4. Research of wall painting finds

¹Due to this at certain places in my Dissertation I added explanations to terms that are obvious for restorers to help professionals of other fields, and also the other way around, I added comments to terms that are evident for archeologists. These are mostly placed in foot notes.

²Wall painting finds excavated in the areas of *Aquincum*, Ács–Vaspuszta, Balácapuszta, Balatonfüred, *Brigeto*, *Gorsium*, and *Savaria*.

Chapter 1.

To ensure the professional excavation, restoration and research of the wall painting findings we must be aware of the preparation-technique of the wall paintings of the Roman era, which is discussed in Chapter 1. of this Doctoral Dissertation. This Chapter is based on my own experiences and examination results, on the available literature I processed, and last but not least on the analysis of the writings of two authors from antiquity. When comparing the available information that is based on modern research to those collected in the work of *Vitruvius* in the 1st century B.C., titled “Ten books on architecture” and in the „*Naturalis Historia*” written by *Pliny* the elder in the 70s B.C., several similarities and a few differences can be found. Despite the latter both the work of *Vitruvius*, who was a practicing architect describing the technical knowledge and discerning taste of the era, and the encyclopedic work of *Pliny* the elder are invaluable sources for professionals studying this topic, as it is demonstrated in this chapter.

The chapter basically consists of three parts.

The first part (Chapter 1. 1.) is about the plaster carrying the painting, in which the materials possibly used for their preparation, that is the binders (Chapter 1.1.1.), the fillers (Chapter 1.1.2.) and the additives (Chapter 1.1.3.), the method of preparation of mortar (Chapter 1.1.4.) and of the application of the plaster coats (Chapter 1.1.5.) are summarized. The plasters originating from the area of Transdanubia of the Province of *Pannonia* are discussed in a special subchapter, where their composition and method of development is described in the main text. The studied wall paintings are classified based on these and are listed in the footnotes accordingly (Chapter 1. 1. 6.). This classification, extended by further study results, can serve as a basis for future comparative analyses. The table summarizing the types of filling materials of the *intonacos* is an attachment to the chapter. (Chapter 1. 1. 6. 1.).

In the second part the preparation technique of the painted layers of the wall painting are presented (Chapter 1. 2.). The chapter describing the painting technique in detail (Chapter 1. 2. 1.) is followed by the chapter on the coloring materials (Chapter 1. 2. 2.). Within this those mentioned in the literature sources are discussed in a separate subchapter (Chapter 1. 2. 2. 1.), which is accompanied by a table containing the prices of the coloring materials in the time of *Pliny* the elder. In addition, the current name of the coloring materials are also indicated in the table, as well as the way they were mentioned by *Vitruvius* and *Pliny* the elder. Their composition, the location where they are mentioned in the works by *Vitruvius* and *Pliny* the elder, and whether they are of a natural or artificial origin, are also indicated. The coloring materials indicated in the Table also include coloring materials, the use of which in wall paintings of the Roman times have not been proven by examinations, but which, according to the authors, had been used for wall painting as well.

However, compared to the rich repository of coloring material used for wall painting mentioned by the above two ancient authors, in reality the palette of the masters was probably much more simple. Therefore, in the dissertation after the table a part follows with the generally used coloring materials that are confirmed by examinations (Chapter 1. 2. 2. 2.), discussing the different pigments in separate subchapters. The collection containing the examination results of close to 400 samples taken from the painted layer of wall paintings and from pigment cakes and pellets is contained in an Appendix to the dissertation (Appendix II.).

The compiling and use of this collection enabled the determination of the pigments already identified, and the observation of the painting techniques of the wall paintings originating from the Transdanubia area of the Province of *Pannonia*, which are discussed in a separate subchapter (Chapter 1. 2. 2. 3.). The optical microscopic examination results of the Egyptian blue pigment cakes and paint remains excavated at the area of *Iseum of Savaria* also belong to this part of the dissertation, as part of the Appendix (Appendix I).

The third part of chapter 1 (Chapter 1.3.) contains summaries regarding the preparation and plastering (Chapter 1.3.1.), sketching (Chapter 1.3.2.) and painting (Chapter 1.3.3.) of the wall paintings, and also the observations regarding the wall paintings originating from the Transdanubia area of the Province of *Pannonia*; the information on plastering are discussed in a separate subchapter (Chapter 1. 3. 1. 1.).

Chapter 2.

In the second chapter of the dissertation the unearthing and lifting out of wall painting finds discovered at archeological excavations in Hungary are discussed. These initial processes have great significance, since the properly chosen methods ensure that as much information are obtained as possible from the excavation circumstances of the fragments, and from the wall painting pieces themselves as well. These are also essential concerning the future of the wall painting find, since they greatly affect how the fragments can be assembled, restored, and not the least how much time it requires and what presentable result it leads to.

The first subchapter of this chapter discusses the condition of the painted plasters with a lime binder at the time of discovery (Chapter 2. 1.). In part it discusses the factors affecting the original condition of the wall paintings thanks to the materials used and the preparation-technique (Chapter 2. 1. 1.), and in part the external factors affecting their condition (Chapter 1. 1. 2.).

The subchapter titled “Unearthing and lifting out methods” (Chapter 2. 2.) summarizes the methods, procedures and materials which can be used in most cases of unearthing and lifting out. It is divided into four parts: first the factors determining the selection of the methods (Chapter 2. 2. 1.), then the requirements regarding the materials to be used (2. 2. 2.) are discussed. The temporary gluing and the materials required for the lifting out of the cracked fragments in one piece (Chapter 2. 2. 3.), and the temporary embedding of the cracked surfaces and materials that can be used for this (Chapter 2. 2. 4.), are discussed in separate chapters. The description of the methodology refined during the excavations may facilitate the professional unearthing and lifting out of the wall painting finds, the appropriate documentation of all these (Chapter 2. 3.), and the protection packaging (Chapter 2. 4.).

If the wall painting fragments were excavated properly the location of each fragment or surface and their relative positions at the time of unearthing can be recalled and reconstructed in theory.

Chapter 3.

In the third chapter the aspects of systematization (Chapter 3.1.) and assembling (Chapter 3.2.) of the excavated wall painting fragments are presented, including practical advice that are based on personal experiences.

It is specifically emphasized how important it is to perform systematization and assembling, if the excavation was documented properly, in a way that the information relating to the unearthing of each fragment can be linked to the fragment during the entire work processes.

Chapter 4.

Chapter 4 of the Dissertation describes the research of the wall painting finds, typically not from the aspect of methodology, but rather providing a guideline regarding what is worth examining and why, and how the direct results can help us in drawing more extending conclusions.

The first section of the basically two-section chapter emphasizes how important the accurate observation and documentation of the circumstances of unearthing of a wall painting find are in achieving this goal (Chapter 4. 1.).

The second section summarizes the information that can be gained by the studying and the examination of the wall painting finds, from the aspect of preparation-technique (Chapter 4. 2.), separately discussing the examination of plaster (Chapter 4. 2. 1. 1.), the painted layer (Chapter 4. 2. 1. 2.) and the painted surface (Chapter 4. 2. 1. 3.).

In addition to the planning of the steps of restoring, during the research and examination of wall paintings information that are useful or essential for the archeologists and architects, and also for the professionals of history of arts and stylistic research, are also gained. In addition to providing information about the decoration of an ancient building, in several cases the wall paintings also provide information about the building that supplement the results of archeological observations and researches.

IV. Main results of the Dissertation

By writing the dissertation a summary is presented which introduces the preparation-technique and the detailed description of the materials used in Roman wall paintings, which is not available in Hungarian or in any other language.

The collection and assessment of data about the preparation-technique and the materials used in part of the Roman wall paintings originating from Transdanubia have been started. As the result of the long lasting collection work a table containing the pigment examination results regarding the painted layers of wall paintings originating from the Transdanubia area of the province of *Pannonia*, close to 400 items, was created that could be further extended. The classification options necessary for future comparative analyses have been defined, and based on the available information the different wall paintings have been systematized accordingly.

The drafting of the information that can be gained by the research of wall painting finds throws light on why the examination of wall paintings is important, and why it would be worth to be done in a manner that enables the comparison of the results.

By discussing the above, which is supplemented by the presentation of methods and tools recommended during the excavation, lifting out, documentation and packaging of the wall painting finds hopefully I can enhance the professional excavation, handling and research of Roman wall paintings.

V. Publications of the author in connection with the topic of the Dissertation

Harsányi–Kurovszky 2000

Harsányi E. – Kurovszky Zs.: *Beszámoló a Komárom/Szőny–Vásártéren feltárt mennyezetfestmény restaurálásáról* [Report about the restoration of a ceiling painting excavated at Komárom/Szőny market place (Site: Komárom/Szőny–Vásártér)]. in: A római kori falfestészet Pannoniában [Roman Wall-painting in Pannonia]. ActaArchBrig Ser. 1. Vol. 1. (Budapest-Komárom 2000), 107–116

Harsányi–Kurovszky 2001

Harsányi E. – Kurovszky Zs.: *A falkép–töredékek előkerülése és kiemelési rendszere* [The discovery and the lifting out system of the wall-painting fragments] pp. 22., *A mennyezetfestmény szerkezete* [The reconstruction of the ceiling composition] pp.: 23-26, *Ókori geometrikus szerkesztés nyomai a szőnyi mennyezetfestményen* [Markings of ancient geometrical construction on the ceiling painting of Szőny] pp.: 69–73, *A feltárt töredékek összeállítása, restaurálása és bemutatása*. A mennyezetfestmény készítés–technikája [The reassembling, restoration and the presentation of the lifted out fragments. The technics of preparation of the ceiling painting] pp.: 93-100 in: L. Borhy: *Pannoniai falfestmény* [Wall-painting of Pannonia], (Enciklopédia Kiadó, Budapest, 2001) 1–148

Harsányi–Kurovszky 2002

Harsányi, E. – Kurovszky Zs.: *Traces of Geometric Construction on the Second Century A. D. Roman Ceiling Composition of Szőny* in: *ActaArchHung* 53 (Akadémiai Kiadó, Budapest, 2002) 151–169

Harsányi–Kurovszky 2002a

Harsányi E. – Kurovszky Zs.: *Tác/Gorsium. Egy feltárt helyiség falfestményeinek restaurálása* [Restoration and theoretical reconstruction of the wall-paintings of a little room excavated in Tác/Gorsium] in: *MSZ* 2002/2. (KÖH, Budapest, 2002) 137–140

Harsányi–Kurovszky 2002b

Harsányi E. – Kurovszky Zs.: *A Komárom/Szőny–Vásártér 2. szám alatt feltárt római falfestmény feltárása, összeállítása és restaurálása* [Excavation, Reassambling Restoration of a Roman wall-painting found under the

house No 2. of Komárom/Szőny–Vásártér] in: MSZ 2002/2. (KÖH, Budapest, 2002) 55–57

Harsányi–Kurovszky 2003

Harsányi E. – Kurovszky Zs.: *Theoretical Reconstruction of a Room from the 3RD Century AD., Excavated in Gorsium, Based on Information Gathered during the Excavation and the Restoring Process of the Wall-Painting Fragments (Preliminary Report)* in: ARegia XXXII. (Székesfehérvár, 2003) 41–48

Harsányi–Kurovszky 2004

Harsányi E. – Kurovszky Zs.: *Komárom/Szőny–Vásártér I. számú épület I. helyiségeinek falfestményei, Mikroszkópos és röntgen diffrakciós vizsgálatok* [Microscopic and XRD examinations of the wall-paintings from the 1. room of building 1. at Komárom/Szőny–Vásártér] (A MAOE iparművészeti tagozatának restaurátori kutatási támogatása) dokumentáció (2004)

Harsányi–Kurovszky 2004c

Harsányi, E. – Kurovszky, Zs.: *Traces of Geometric Construction on the Second Century A.D. Roman Ceiling Composition of Komárom/Szőny–Vásártér* in: Plafond et voûtes à l'époque antique (ed: Borhy L., Pytheas kiadó, Budapest, 2004) 245–253

Harsányi–Kurovszky 2007

Harsányi, E. – Kurovszky, Zs.: *Theoretical reconstruction of a Room in Gorsium/Herculia, Area Sacra mid IIIrd century A.D.* in: Circulación de temas y sistemas decorativos en la pintura mural antigua (ed: Guiral Pelegrín, C., Zaragoza, 2007) 411–414

Harsányi–Kurovszky 2010

Harsányi E. – Kurovszky Zs.: *Az I. számú épület falfestményei: A mennyezetfestmény szerkezete* [Wall-paintings of building No.I: The structure of the ceiling painting] in.: Borhy L. – Harsányi, E. – Kovács L. O. – Kurovszky, Zs. – Magyar M. – Paetz Gen. Schieck, A. – Pásztókai Sz. J. – Számadó E.: *Római Kori Falfestmények Brigetióból* [Roman Wall-paintings of Brigetio], ActaArchBrig, Ser. I. Vol. 3., (ed.: Borhy L.–Számadó E., Komárom, 2010) 30–32

Harsányi–Kurovszky 2010a

Harsányi E. – Kurovszky Zs.: *A III. számú épület (Komárom/Szőny-Vásártér 2.) falfestményei* [Wall-paintings of building No.III (Komárom/Szőny-Vásártér 2.)] in.: Borhy L. – Harsányi, E. – Kovács L. O. – Kurovszky, Zs. – Magyar M. – Paetz Gen. Schieck, A. – Pásztókai Sz. J. – Számadó E.: *Római Kori Falfestmények Brigetióból* [Roman Wall-paintings of Brigetio], ActaArchBrig, Ser. I. Vol. 3. (ed.: Borhy L.–Számadó E., Komárom, 2010) 95–102

Harsányi–Kurovszky 2011

Harsányi E. – Kurovszky Zs.: *Falfestményleletek feltárása, kiemelése, megőrzése* [Unearthing, lifting out and preservation of wall-paintings] in: Régészeti

kézikönyv II. [Archaeological Exposition II] DVD,
(Magyar Régész Szövetség, Budapest, 2011)

Harsányi–Kurovszky 2012

Harsányi E. – Kurovszky Zs.: *Előzetes beszámoló a Komárom/Szőny , Vásártér 2. szám alatti családi háznál feltárt római kori falfestményről* [Preliminary report on the roman wall-painting found at 2 Vásártér, Komárom–Szőny (Brigetio)] in: FiRKÁK II. [Conference publications II. of the Young Roman Age Researchers] (ed.: Bíró Sz.–Vámos P., Mursella Régészeti Egyesület, Győr 2012) 477–491

Harsányi–Kurovszky 2013

Harsanyi, E.– Kurovszky, Zs.: *Mural of the Early Iseum of Savaria* in: Hungarian Archaeology, E- journal 2013 Autumn
<http://www.archaeolingua.hu/>

Harsányi–Kurovszky 2014

Harsányi E. – Kurovszky Zs.: [Falfestményleletek feltárása, kiemelése, megőrzése] [Excavation, lifting out and preservation of wall-paintings] in.: FiRKÁK III. [Conference publication III. of the Young Roman Age Researchers] (ed.: Balázs Péter, Savaria Megyei Hatókörű Városi Múzeum, Szombathely, 2014) 103–112

Harsányi–Kurovszky 2014a

Harsányi E. – Kurovszky Zs.: *Savaria korai Iseumának falfestményei* [Murals of the Early Iseum of Savaria] in: FiRKÁK III [Conference publication III. of the Young Roman Age Researchers] (ed.: Balázs Péter, Savaria Megyei Hatókörű Városi Múzeum, Szombathely, 2014) 51– 66.

Harsányi–Kurovszky 2015

Harsányi E. – Kurovszky Zs.: *Falfestménytöredékek az Iseumból és környékéről* [Wall-painting fragments from the Iseum and surroundings] in.: A savariai ISIS szentély, kiállítás katalógus [The Isis sanctuary of Savaria, exhibition catalog] (Iseum Savariense, Régészeti Múzeum és Tárház, Szombathely, 2013) 75–88

Harsányi–Kurovszky 2015a

Harsányi E. – Kurovszky Zs.: *Wall paintings of the early Iseum of Savaria, Pannonia* in: XI International Conference of AIPMA: Context and meaning (ed: S. T. A. M. Mols and E. M. Moormann) Kiadás alatt.

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Harsányi E. – Kurovszky Zs.: *Murals of the earlier Iseum of Savaria* in: Iseum 60 konferencia kötet (Iseum Savariense, Régészeti Múzeum és Tárház, Szombathely) Kiadás alatt.

Harsányi–Kurovszky–Kovács 2003

Harsányi E. – Kurovszky Zs. – Kovács L. O.: *Az Augustus templomtól dél–keletre feltárt újabb falfestmények* [Recently excavated wall-paintings South-East from the

temple of Augustus] in: MSZ 2003/2 (KÖH, Budapest, 2003) 168–171

**Harsányi–Kurovszky–Kovács
2007**

Harsányi E. – Kurovszky Zs. – Kovács L., O.: *First Results of the Restitution of a Wall-painting from a Peristyle in Brigetio at Site Civil Town II.* in: Circulación de temas y sistemas decorativos en la pintura mural antigua (ed: Guiral Pelegrín, C., Zaragoza, 2007) 407–410.