



**21. INTERNATIONAL
CONGRESS ON
ANCIENT BRONZES**
20–24 September 2022
Budapest



XXI. INTERNATIONAL CONGRESS ON ANCIENT BRONZES
Budapest, 20-24 September 2022

ORGANISERS

DÁVID BARTUS

EÖTVÖS LORÁND UNIVERSITY

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HUNGARIAN NATIONAL MUSEUM

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PROGRAMME

TUESDAY, 20.09.2022

11:00-	REGISTRATION
13:00-13:30	CONFERENCE OPENING
	SESSION I :LARGE BRONZES CHAIR: KENNETH LAPATIN
13:30-13:55	GUNVOR LINDSTRÖM HELLENISTIC AND PARTHIAN STATUES FROM KAL-E CHENDAR/SHAMI, IRAN - AN UPDATE
13:55-14:20	COLLEEN SNYDER - SETH PEVNICK NEW RESEARCH ON THE CLEVELAND APOLLO
14:20-14:45	ANDREAS G. VORDOS (PRESENTED BY GEORGIANNA MORAITOU) THE ARM OF A LARGE-SCALE BRONZE STATUE FROM AIGIO, ACHAEA, GREECE
14:45-15:10	GEORGIANNA MORAITOU - MAKRIS GERASIMOS - FELERIS PANTELIS - KOUROS GEORGIOS METALLURGICAL EXAMINATION, ELEMENTAL ANALYSIS AND CONSERVATION OF THE LEFT ARM OF A COLOSSAL BRONZE STATUE FROM AIGION AT THE LABORATORIES OF THE NATIONAL ARCHAEOLOGICAL MUSEUM IN ATHENS
15:10-15:30	COFFEE BREAK
	SESSION II: ROME AND ITALY CHAIR: KLARA DE DECKER
15:30-15:55	FEDERICA GROSSI (ONLINE PAPER) BRONZE VOTIVE OFFERINGS FROM THE SANCTUARY OF DIANA IN NEMI
15:55-16:20	MARGHERITA BOLLA (ONLINE PAPER) ROMAN FIGURAL BRONZES FROM THE MANTUA TERRITORY
16:20-16:45	NICOLETTA FRAPICCINI BRONZE CASTING OF LATE ANTIQUITY IN THE MARCHE REGION
16:45-17:05	COFFEE BREAK



SESSION III: GREECE

CHAIR: GEORGIANNA MORAITOU

- 17:05-17:30 **SOPHIE DESCAMPS-LEQUIME - BENOÎT MILLE - PASCALE RICHARDIN**
COPPER, LEAD, IRON AND WOOD: SEALING PIECES OF MARBLE BLOCKS FROM THE
TEMPLE OF APOLLO AT DIDYMA IN THE LOUVRE
-
- 17:30-17:55 **ANDRÁS PATAY-HORVÁTH**
A MODIFIED RECONSTRUCTION OF THE SERPENT COLUMN AT DELPHI
-
- 17:55-18:20 **STEPHANIE STOSS**
HERAKLES FIGHTING THE CENTAUR - A LATE HELLENISTIC CANDELABRUM FROM
EPHESUS
-
- 18:20-18:45 **UTE KLATT**
FESTIVE AMBIENCE FULL OF ATMOSPHERE - ON RARE HELLENISTIC MAGNIFICENT
LANTERNS AND THE ROLE THEY PLAY IN THE BANQUET
-
- 19:30- **OPENING RECEPTION IN THE AULA MAGNA OF THE UNIVERSITY**

WEDNESDAY, 21.09.2022

SESSION IV: POMPEII AND HERCULANEUM

CHAIR: SOPHIE DESCAMPS-LEQUIME

- 9:00-9:25 **KENNETH LAPATIN - ERIK RISSER**
THE DRUNKEN SATYR FROM THE VILLA DEI PAPIRI AT HERCULANEUM: NEW
PERSPECTIVES
-
- 9:25-9:50 **ALESSANDRA GIUMLIA-MAIR - RUTH BIELFELDT (ONLINE PAPER)**
TWO BRONZE LAMPSTANDS FROM POMPEII RECONSIDERED
-
- 9:50-10:15 **SUSANNE BOSCHE (ONLINE PAPER)**
ARTIFICIAL LIGHT, MOTION AND BODY. ON SOME DWARF-LIKE BRONZES FROM
POMPEII
-
- 10:15-10:40 **JOHANNES EBER (ONLINE PAPER)**
EGYPTIAN HORNS AND COLUMNS. BRONZE INCENSE BURNERS FROM POMPEII
-
- 10:40-11:05 **VALERIA MEIRANO**
THE BOMBING OF POMPEII IN 1943: NEW EVIDENCE ABOUT THE BRONZES
-
- 11:05-11:25 **COFFEE BREAK**



SESSION V: BRONZE STATUES FROM THE PROVINCES OF THE ROMAN EMPIRE

CHAIR: NADIN BURKHARDT – AURA PICCIONI

- 11:25-11:50 **NADIN BURKHARDT**
BRONZESKULPTUREN: TECHNIK, AUFSTELLUNG UND WIEDERVERWENDUNG IN DEN
RÖMISCHEN PROVINZEN (INTRODUCTION)
-
- 11:50-12:15 **NORBERT FRANKEN**
NOSTALGIE ODER STATEMENT? ZUR WIEDERKEHR HELLENISTISCHER FORMEN AN
SPÄTRÖMISCHEN BRONZEN
-
- 12:15-12:40 **CLAUDIA SARGE - ULRIKE WOLF (ONLINE PAPER)**
FIRST HIGH ON HORSEBACK, THEN FALLEN LOW - THE STATUE REMAINS FROM
WALDGIRMES AND THE DESTRUCTION OF LARGE BRONZES
-
- 12:40-14:10 LUNCH BREAK
- 14:10-14:35 **TRINIDAD NOGALES BASARRATE (ONLINE PAPER)**
PRIMERA ESTATUARIA OFICIAL EN BRONCE EN LUSITANIA
-
- 14:35-15:00 **DAVID OJEDA NOGALES**
ZWEI MODERNE BRONZEKÖPFE AUS SPANIEN UND IHR ANTIKES VORBILD
-
- 15:00-15:25 **AURA PICCIONI - ROLAND SCHWAB**
RAETIA RESUMED: ROMAN PROVINCIAL BRONZE STATUE FRAGMENTS BETWEEN
ICONOGRAPHY AND CONTEXT
-
- 15:25-15:45 COFFEE BREAK

SESSION VI: PANNONIA

CHAIR: DÁVID BARTUS

- 15:45-16:10 **LÁSZLÓ BORHY**
EIN KOMPLETT ERHALTENER PARADEPFERDEKOPFPANZER AUS DER DONAU BEI
BRIGETIO (KOMÁROM, UNGARN)
-
- 16:10-16:35 **CSILLA SÁRÓ**
ENAMELED FIBULAE FROM BRIGETIO AND KOMÁROM-ESZTERGOM COUNTY
-
- 16:35-17:00 **FERENC FAZEKAS**
BRONZEFUNDE AUS DEM RÖMISCHEN KASTELL LUSSONIUM (PAKS-DUNAKÖMLÓD)
-



17:00-17:25 **ZSOLT MRÁV**
BRONZE FIGURAL DECORATION OF ROMAN PERIOD CARTS AND CARRIAGES IN
PANNONIAN PROVINCES

18:00- BRONZE EXHIBITION AT THE HUNGARIAN NATIONAL MUSEUM

THURSDAY, 22.09.2022

SESSION VII: VESSELS CHAIR: MIKHAIL TREISTER

9:00-9:25 **SILVIA MUSTATĂ - SORIN COCIȘ**
AN ASSEMBLAGE OF METAL OBJECTS FROM ROMAN NAPOCA (CLUJ-NAPOCA, RO)

9:25-9:50 **KLARA DE DECKER**
BRONZE VESSELS FROM CAMPANIA

9:50-10:15 **MIROSLAV VUJOVIĆ (ONLINE PAPER)**
TRULLAE FROM SERBIA

10:15-10:35 COFFEE BREAK

10:35-11:00 **MIKHAIL TREISTER**
ROMAN BRONZE AMPHORAE FROM THE SARMATIAN BURIALS OF EASTERN EUROPE

11:00-11:25 **ORSOLYA HEINRICH-TAMASKA - STEPHEN W. MERKEL (ONLINE PAPER)**
NEW REMARKS TO THE SO CALLED HUNNIC CAULDRONS

11:25-11:50 **STEFAN LEHMANN - TIVADAR VIDA**
DIE SPÄTANTIKE ‚KOVACS VASE‘

11:50-13:20 LUNCH BREAK

SESSION VIII: SMALL BRONZES CHAIR: NORBERT FRANKEN

13:20-13:45 **MARIANA EGRI - MATTHEW McCARTY - AUREL RUSTOIU**
THE BRONZE BUST OF ALEXANDER THE GREAT FROM OARDA-BULZA: AEMULATIO
ALEXANDRI IN A ROMAN PROVINCIAL SETTING?

13:45-14:10 **PHILIP KIERNAN (ONLINE PAPER)**
FIGURAL BRONZES FROM WARESWALD: OLD AND NEW FINDS



14:10-14:30	COFFEE BREAK
14:30-14:55	PÉTER KOVÁCS SMALL FINDS, NEW DISCOVERIES: LINKS BETWEEN THE MIDDLE TISZA REGION AND THE NORTHERN BALKAN IN LIGHT OF OLD AND NEW DATA
14:55-15:20	SABINA VESELI (ONLINE PAPER) TESTIMONY OF EASTERN CULTS IN ALBANIA THROUGH METALWORK
15:20-15:45	FABIENNE KARL THE LOST FORM - MANUFACTURE OF CERAMIC MOULDS

SESSION IX: POSTER SESSION

15:45-17:00	STEFANIE BECHT BRONZECASTING IN ROMAN GERASA
	MONICA GALEOTTI - FRANCESCO CANTINI - FRANCESCO GRAZZI - SIMONE PORCINAI - ANDREA CAGNINI - ANTONELLA SCHERILLO - ANNA FEDRIGO - MARCO FERRETTI - MICHAEL BODE - SONIA MUGNAINI - ANDREA SCALA - MARCO GIAMELLO FROM THE SKIN TO THE HEART OF THE WINGED VICTORY OF BRESCIA: CHARACTERIZATION OF THE "PATINAS" AND ALLOYS OF A MASTERPIECE OF ROMAN STATUARY
	PAULINE ROLLAND RECENT ACQUISITIONS FROM THE BRONZE AGE A NEW ASSET FOR THE NATIONAL MUSEUM OF PREHISTORY (LES EYZIES, FRANCE)
	MIKHAIL TREISTER - NIKOLAY VINOKUROV NEW FIND OF ROMAN MILITARY EQUIPMENT OF THE PERIOD OF THE ROMAN-BOSPORAN WAR OF 45-49 AD FROM THE EASTERN CRIMEA

FRIDAY, 23.09.2022

SESSION X: DO UT DES - NEW APPROACHES TO THE STUDY OF BRONZE VOTIVE OFFERINGS IN THE ANCIENT MEDITERRANEAN CHAIR: ARIANNA ZAPPELLONI PAVIA

9:00-9:25	MARIA CRISTINA BIELLA (ONLINE PAPER) CENTRAL ITALIAN VOTIVE BRONZES: THE RESEARCH POTENTIAL OF GIOVANNI COLONNA'S ARCHIVE
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- 9:25-9:50 **ARIANNA ZAPPELLONI PAVIA**
ANATOMICAL VOTIVE BRONZES IN PRE-ROMAN CENTRAL ITALY
-
- 9:50-10:15 **RAIMON GRAELLS I FABREGAT (ONLINE PAPER)**
ARCHAEOMETRIC CHARACTERISATION OF THE HÉRACLES ITALIC EX-VOTOS FROM THE MAN MADRID
-
- 10:15-10:40 **VANA ORFANO**
OUT OF SIGHT, OUT OF MIND? BRONZE VOTIVE OFFERINGS AS MARKERS AND MAKERS OF COLLECTIVE IDENTITY IN EARLY IRON AGE GREEK SANCTUARIES
-
- 10:40-11:05 **AZZURRA SCARCI**
FRAGMENTATION OF VOTIVE OFFERINGS IN THE SANCTUARY OF OLYMPIA
-
- 11:05-11:25 COFFEE BREAK

SESSION XI: ANALYTICS AND TECHNOLOGY

CHAIR: ANDRÁS PATAY-HORVÁTH

- 11:25-11:50 **FRANCESCO CANTINI - FRANCESCO GRAZZI - SARA CREANGE - JOOSJE VAN BENNEKOM - NIKOLAY KARDJILOV - SAURABH KABRA**
NON-INVASIVE TECHNOLOGICAL STUDY OF SOUTH-EAST ASIAN BRONZES FROM THE RIJKSMUSEUM ASIAN PAVILION, BY MEANS OF NEUTRON IMAGING AND NEUTRON DIFFRACTION
-
- 11:50-12:15 **ANTONIO BRUNETTI - FRANCESCO CANTINI - MATTEO CATALDO - ANNA DEPALMAS - ANNA FEDRIGO - FRANCESCO GRAZZI - ANDERS KAESTNER - MANUEL MORGANO - ANTONELLA SCHERILLO**
IDENTIFICATION OF THE MANUFACTURING PROCESS OF SARDINIAN BRONZE STATUARY: A RESEARCH PROJECT THROUGH NON-DESTRUCTIVE NEUTRON TECHNIQUES
-
- 12:15-13:45 LUNCH BREAK
- 13:45-14:10 **THOMAS M. WEBER-KARYOTAKIS (ONLINE PAPER)**
DEMANDING THE TURTLE'S SHELL? A LITTLE KNOWN HELLENISTIC SCULPTURAL MOTIF OF APOLLON
-
- 14:10-14:35 **OMID OUSBASHI - ZEINAB KHOBROO - ZOYA KHACHATOUR (ONLINE PAPER)**
STUDY ON THE MANUFACTURING PROCESS IN THREE ARMENIAN CHURCH BELL FROM THE MUSIC MUSEUM OF NEW JULFA, ISFAHAN, IRAN
-
- 14:35-15:00 **FRANCESCA MORANDINI - ANNA PATERA - ANNALENA BRINI - STEFANO CASU - SVĚTA GENNAI - ALESSANDRO PACINI - ELISA PUCCI (ONLINE PAPER)**
THE WINGED VICTORY OF BRESCIA. AN UPDATE ABOUT HISTORY AND ORIGIN AFTER THE STUDY AND RESTORATION PROJECT
-



15:00-15:20	COFFEE BREAK
15:20-15:45	ROSEMARY JEFFREYS DEVELOPMENTS IN TECHNIQUES FOR PRODUCING COPPER WIRE IN HELLENISTIC MACEDONIA
15:45-16:10	UWE PELTZ TOOTH FOR TOOTH - THE SHINING WHITE SMILE OF THE LARGE BRONZES
16:10-16:35	ÁDÁM SZABÓ SIGNUM MITHRAE FROM BRIGETIO
19:30-	CONFERENCE DINNER INCLUDING A TWO HOURS BOAT TRIP ON THE DANUBE RIVER

SATURDAY, 24.09.2022

8:30 -	EXCURSION TO KOMÁROM VISITING THE EXCAVATION OF THE ROMAN BATH OF THE LEGIONARY FORTRESS IN BRIGETIO, KOMÁROM
	PLASTER CAST COLLECTION OF MORE THAN 300 ANCIENT AND MEDIEVAL SCULPTURES IN FORT CSILLAG, KOMÁROM
	LOCAL ARCHAEOLOGICAL MUSEUM IN KOMÁROM



ABSTRACTS

SESSION I: LARGE BRONZES

HELLENISTIC AND PARTHIAN STATUES FROM KAL-E CHENDAR/SHAMI, IRAN - AN UPDATE

GUNVOR LINDSTRÖM

DEUTSCHES ARCHÄOLOGISCHES INSTITUT

A project begun in 2021 investigates at least 11 bronze sculptures and two marble sculptures found in the 1930s at Kal-e Chendar in the Shami Valley high up in the Zagros Mountains in southwestern Iran. Although most are fragmentary, these sculptures represent one of the largest caches of Hellenistic and Parthian sculpture in Iran. The project is based on research on one of these statues, namely a larger-than-life portrait of a Hellenistic ruler, the results of which were reported at the Congresses on Ancient Bronzes in 2015 and 2018. In the course of this project, which took into account all the statues of this find complex for comparison, it became apparent that they form two groups in terms of style, casting technique and alloy, a 'Hellenistic' and a 'Parthian' one. The research that has now begun, delayed by the pandemic, aims to reconstruct the sculptures on the basis of the fragments, to classify them stylistically and to investigate the reasons for the technological differences. The paper can hopefully present the first results of this research.

NEW RESEARCH ON THE CLEVELAND APOLLO

COLLEEN SNYDER

THE CLEVELAND MUSEUM OF ART

SETH PEVNICK

THE CLEVELAND MUSEUM OF ART

This paper presents new technical details on the original manufacture and modern reconstruction of the Cleveland Apollo, a near life-size ancient bronze sculpture of the youthful god acquired by the Cleveland Museum of Art in 2004 (<https://www.clevelandart.org/art/2004.30>). Although previous studies have shown the sculpture to be an indirect lost-wax casting, only two metallurgical joins had been clearly identified - one on the right foot of Apollo, and one on the small, separately cast serpent/lizard-like creature. A new and more comprehensive set of x-radiographs taken in 2021, combined with extensive visual analysis (external and internal), will permit a more detailed explanation of the assembly, from wax models through casting, patching, and finishing. Initial readings of the new x-radiographs suggest that the head was cast in a single piece to mid-neck, a previously unclear area of extensive loss and modern repair. Together with radiography, analysis of numerous and varied modern restoration materials will provide a fuller picture of the way the object was more recently re-assembled. Finally, the authors will present a new digital 3-D model of the sculpture, which will be essential for future study,



interpretation, and display. The model, which will eventually be made accessible through the museum's website, might be used to illustrate the locations of ancient joins and patches, for example, as well as modern joins and fills. It could also permit varying reconstructions of the original pose of the sculpture, including the positioning of the non-joining serpentine creature and left hand as well as the missing right arm, hand, and other elements.

THE ARM OF A LARGE-SCALE BRONZE STATUE FROM AIGIO, ACHAEA, GREECE

ANDREAS G. VORDOS

GREEK MINISTRY OF CULTURE AND SPORTS, ARCHAEOLOGICAL EPHORATE OF ACHAEA

The arm of the large-scale bronze statue presented in the current research was handed over in 1951 to the Ephorate of Antiquities in Aigio of Achaia, and constitutes a typical yet exquisite example of Peloponnesian oversized statuary in bronze. The area where the arm was found coincides with the location of the ancient agora, as well as, according to previous excavation works, the place where the temenos of Zeus Soter, patron deity of the ancient polis of Aigion, is located. Based on the surviving fragment/limb, several issues regarding statue typology are further discussed, while its posture is suggested as 'standing in grandeur'. The identification of a divine figure, probably that of Zeus, is supported by the location of discovery and the object it was supposedly holding, combined with the numismatic issues of Aigion depicting the same type of statuary of the supreme god. The dating of the statue in mid Hellenistic years onwards agrees with the scientific analysis of the alloy, carried out in the laboratories of the National Archaeological Museum in Athens.

METALLURGICAL EXAMINATION, ELEMENTAL ANALYSIS AND CONSERVATION OF THE LEFT ARM OF A COLOSSAL BRONZE STATUE FROM AIGION AT THE LABORATORIES OF THE NATIONAL ARCHAEOLOGICAL MUSEUM IN ATHENS

GEORGIANNA MORAITOU

NATIONAL ARCHAEOLOGICAL MUSEUM ATHENS

MAKRIS GERASIMOS

NATIONAL ARCHAEOLOGICAL MUSEUM ATHENS

FELERIS PANTELIS

NATIONAL ARCHAEOLOGICAL MUSEUM ATHENS

KOUROS GEORGIOS

NATIONAL ARCHAEOLOGICAL MUSEUM ATHENS

The bronze arm, belonging to a colossal statue (presented by A. G. Vordos in this Congress), was examined according to prevailing methodology comprising: macroscopic examination, microscopic examination, elemental analysis pXRF, endoscopic examination, x-ray radiography, recording of repairs. It is assumed that the arm was manufactured by the indirect lost wax casting technique and contains an enormous amount of lead (av. 40,15 %), a fact that dates it to the Roman period. The arm was conserved at the Metal Conservation Laboratory of the National Archaeological Museum and is due soon to return to Aigion Museum.



SESSION II: ROME AND ITALY

BRONZE VOTIVE OFFERINGS FROM THE SANCTUARY OF DIANA IN NEMI

FEDERICA GROSSI

INDEPENDENT RESEARCHER

The Sanctuary of Diana in Nemi is one of the most important archaeological sites in central Italy. Thanks to its thick woods and the volcanic lake, the place has always shown a deep connection with nature, of which Diana Nemorensis is a powerful and wild representation. The complex, built on different levels, consisted of three terraces with a main temple and a theatre on the lower one and a nymphaeum on the upper one. There were also other facilities with different functions, but all dating from the VII century BC to the IV century AD. Since 2003, the University of Perugia carried on archaeological excavations in various parts of the Sanctuary, cooperating with both the Soprintendenza of Lazio and, from 2014, the Ludwig-Maximilians Universität of München. A considerable amount of materials has been brought to light from the site, of which metallic objects represent a big percentage, especially talking about bronze artifacts used as offerings. The group of votive bronzes consists of many kinds of objects like vessels fragments, mirrors, knucklebones but, above all, small-casted figurines. The biggest part of them shows gods, heroes and normal human beings - all different in style, clothing and posture - but there are also samples of animal or vegetal offerings. So, aim of this paper will be a deep analysis of all these bronze figurines, primarily to identify the subjects and then to describe their productive techniques. Finally, starting from the contexts of provenance, each one will be studied, described and put in relation with parallels, not only to find a suitable chronology, but also to understand the meaning behind their use in such an important historical and archaeological place.

ROMAN SMALL FINDS FROM THE MANTUA TERRITORY

MARGHERITA BOLLA

ARCHAEOLOGICAL MUSEUM AT THE ROMAN THEATRE, VERONA

In recent years, many discoveries have been made in the country around Castel Goffredo, in the province of Mantua. These are objects mainly in bronze, iron, lead, as they were found with the use of metal detectors. For this reason, the context of provenance is often unknown and the analysis of the finds is difficult. The knowledge of these finds was deepened following the setting up of the new archaeological section of the Museum of Castel Goffredo (MAST), inaugurated in June 2021 with the collaboration of the Archaeological Museum at the Roman Theatre of Verona. The most interesting among them will be presented at the Congress, particularly the figural bronzes, such as the remains of a lararium, including a statuette of Aesculapius, which will be examined in the typological framework of the bronze representations of the god.



BRONZE CASTING OF THE LATE ANTIQUITY IN THE MARCHE REGION

NICOLETTA FRAPICCINI

DIREZIONE REGIONALE MUSEI MARCHE - ANTIQUARIUM STATALE NUMANA

Some archaeological sites in the Marche have returned bronze fragments and tools that document the presence of ancient workshops for the casting of bronze. Often these finds seemed to indicate the presence of workshops for the casting of bronze statues or simple objects, which were found in the same context, dating back to the imperial times. The recent re-examination of the tabula patronatus from Pesaro, the numerous finds from Sassoferrato, the bronze materials from Porto Recanati and, perhaps, the bronze head from Albacina, and other finds, allow us to reconstruct a dense presence of workshops for working bronze dating back probably to late antiquity. These traces return an interesting testimony of the last phase of life of some important cities in this territory and attest to the existence or, perhaps, the persistence of the production of bronze artefacts. This paper intends to illustrate the diffusion of these workshops in the region, inserting them in the local context, still lively and productive in some aspects in late antiquity.

SESSION III: GREECE

COPPER, LEAD, IRON AND WOOD: SEALING PIECES OF MARBLE BLOCKS FROM THE TEMPLE OF APOLLO AT DIDYMA IN THE LOUVRE

SOPHIE DESCAMPS-LEQUIME

MUSÉE DU LOUVRE

BENOÎT MILLE

CENTRE DE RECHERCHE ET DE RESTAURATION DES MUSÉES DE FRANCE

PASCALE RICHARDIN

CENTRE DE RECHERCHE ET DE RESTAURATION DES MUSÉES DE FRANCE

Within the framework of the great excavation carried out in 1872-1873 in Asia Minor, in the region of Miletus, thanks to the patronage of Gustave and Edmond de Rothschild, the archaeologist Olivier Rayet was able to devote a few weeks of his mission to the exploration of the ruins of the temple of Apollo at Didyma on the site of Hieronda. He was helped in his enterprise by the architect, from the Academy of France in Rome, Albert Thomas. In spring 1873, in conditions that the colossal character of the vestiges, partially buried and piled up in a chaotic way, as well as the presence of a village with the houses built on the peristyle of the temple made perilous, the two men recognize the interior arrangement of the naos, explore the pronaos, raise the decoration of the capitals and bring to the day the bases of the ten columns of the principal façade of the building. Nevertheless, they did not neglect the sealing pieces of the marble blocks, found scattered during the excavations, and which, like several architectural elements, were transferred to Paris at the end of the campaign and given to the Louvre Museum. These pieces - copper prisms weighing several kilograms, one of which is stamped, either set in a lead sheath or not, or encased in a copper bucket covered with a lead sheath; a copper bar made up of two truncated pyramids joined at the base; lead cups; wooden dowels, either set in a lead sheath or not; crapaudines; iron staples - were recently found in the storerooms of the Louvre. They are currently being analyzed at the Centre de Recherche et de Restauration des Musées de France (nature and dating of the wood; characterization of the copper and lead).



A MODIFIED RECONSTRUCTION OF THE SERPENT COLUMN AT DELPHI

ANDRÁS PATAY-HORVÁTH

EÖTVÖS LORÁND UNIVERSITY

There are two basic versions for reconstructing the famous victory monument at Delphi. Both the „large and the „small“ reconstructions of the tripod cauldron have been argued recently in detail and certainty is surely beyond our reach. But a brief history of research is presented and the philological arguments in favour of a large cauldron can be definitely refuted. Consequently, the „small“ version is accepted but with a small addition/modification: there must have been an intermediate element (upper part of a column shaft with a capital) joining the serpent heads and serving as a base for the cauldron legs. This part of the monument was made most probably of marble or stone and can definitely account for the position and form of the serpents' bodies and heads. It may also solve the technical and historical problems related to the small reconstruction.

HERAKLES FIGHTING THE CENTAUR - A LATE HELLENISTIC CANDELABRUM FROM EPHESUS

STEPHANIE STOSS

KUNSTHISTORISCHES MUSEUM WIEN

The so-called "Herakles-Kentaurengruppe" with the depiction of the hero fighting a centaur from the Kunsthistorisches Museum Vienna is probably the earliest preserved candelabrum in tree shape in combination with figures. It was found in the course of the Austrian excavations in Ephesus in 1896 in the so-called "Marble Hall" of the Harbour Gymnasium. A reappraisal of archival sources from the 19th century now provides information about old restorations and an eventful object history from the time it was found until today. Scientific analysis (radiography, ultraviolet fluorescence photography, X-ray fluorescence analysis and examination under a scanning electron microscope) helped to locate fractures not visible to the naked eye, making visible the boundaries between original pieces and modern additions. In addition to the reconstructed group, three other bronze fragments from the same site were re-examined and the view previously held by researchers that the fragments represented remains of an identical second bronze group was refuted: The results of metal analysis suggest that one of the three other fragments, a horse's hoof, originally belonged to the now reconstructed group, but was not yet in Vienna at the time of its restoration in 1896. Another human foot and a horse leg indicate that a second group of the same size existed but showed a different motif, perhaps Heracles kneeling on a centaur. The stylistic analysis carried out allowed a new dating to be obtained and the execution of the bronze to be placed in the middle of the 1st century BC. Earlier examples for the composition can be found in the reliefs of the Greek Classical period, a spread of the motif can be found in the Roman imperial period in the sarcophagus reliefs. Before the destruction of the Ephesian Harbor Gymnasium at the end of the 3rd century AD, the candelabrum was installed in the "Marble Hall", whose function can be understood as a multifunctional educational center.



FESTIVE AMBIENCE FULL OF ATMOSPHERE - ON RARE HELLENISTIC MAGNIFICENT LANTERNS AND THE ROLE THEY PLAY IN THE BANQUET

UTE KLATT

INDEPENDENT RESEARCHER

The object of investigation is a small group of probably predominantly Hellenistic lanterns made of brass or bronze. In addition to their distribution and manufacturing technique, their presumed function and role is of particular interest. The assemblage of finds in which they were found suggests that they belonged as precious furnishings to the festive equipment. At first glance it seems surprising that they will have fulfilled their supposedly most important function as light providers rather inadequately. The function assigned to them was thus obviously a different one, in which the effects of the chandelier were skilfully used in conjunction with the quality of its material to create an ambience in which the feast - far beyond mere illumination - could present itself in the desired "true light".

SESSION IV: POMPEII AND HERCULANEUM

THE DRUNKEN SATYR FROM THE VILLA DEI PAPIRI AT HERCULANEUM: NEW PERSPECTIVES

KENNETH LAPATIN

J. PAUL GETTY MUSEUM

ERIK RISSER

J. PAUL GETTY MUSEUM

In advance of the international loan exhibition Buried by Vesuvius: Treasures from the Villa dei Papiri at the Getty Villa in Los Angeles (26 June - 28 October 2019), the Museo Archeologico Nazionale di Napoli (MANN) generously lent the bronze statue of a Drunken Satyr for study, analysis and conservation. Discovered in pieces in tunnels through what has come to be recognized in the outer peristyle garden of the ancient Villa dei Papiri at Herculaneum on July 10, 1754 and restored in 1759 at the Royal Foundry at Portici, the statue was praised as one of the most beautiful bronze statues to survive from antiquity by J.J. Winckelmann and others. This paper provides an overview of the statue's history and presents the results of recent study and analysis that shed greater light on the techniques of its ancient manufacture and the alteration and state of preservation of its sculptural composition at the time of recovery in the 18th century. The authors will also address the nature and extent of the initial and subsequent restorations that can be identified and their ramifications to the appearance and, by extension, the interpretation of the figure. These collective findings allowed for a more comprehensive understanding of the Drunken Satyr and the development and implementation of an extensive and unprecedented stabilization and conservation treatment program that was completed at the Getty prior to the exhibition and the eventual return of the statue to Naples.



TWO BRONZE LAMPSTANDS FROM POMPEII RECONSIDERED

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RUTH BIELFELDT

LUDWIG MAXIMILIAN UNIVERSITY OF MUNICH

Volume 8 of the 'Antichità di Ercolano Esposte' (1792), dedicated to the lamps and lighting equipment from Herculaneum and Pompeii, as well as the first volumes of the Real Museo Borbonico catalogue (1824 and following) feature a series of richly decorated, ostentatious lampstands consisting of tree- or pillar shaped shafts with protruding branches, on which lamps were suspended. Up to now, iconography, technology, production, context, and reception history of this material were never comprehensively studied. In our paper we offer a fresh look at two of the best-known specimens belonging to the Museo Archeologico Nazionale di Napoli (Inv. 72226 and 11114) that we investigated as part of our research project "New Light from Pompeii" (Deutsche Forschungsgemeinschaft). We discuss the data obtained from our technical examination and XRF analyses and evaluate the archaeological evidence on contexts and provenance. The traces of modern manipulation, repair and re-assembly render these objects an interesting case for studying the conservation and restoration practices at Portici and Naples between 1770 and 1820.

DOMESTIC LIGHT, MOTION AND BODY. ON SOME DWARF-LIKE BRONZES FROM POMPEII

SUSANNE BOSCHÉ

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The depiction of dwarf-like figures had a long tradition in Antiquity, with examples surviving from nearly all areas and periods of the ancient Mediterranean. An overview of the known images indicates a concentration of dwarf-like figures in animal fighting and musical and/or theatrical scenes, even though other subjects were sometimes represented. While iconographical studies reveal certain trends of a common iconography, many pieces display both regional and individual influences. Starting from this point of view, the interpretation of those figures can cover a wide range of possible meanings and connotations, including depictions of dwarf-sized human beings, diseases and even caricatures and grotesques (Janni 1978; Dasen 1993; Garmaise 1996). My presentation will focus on several largely unpublished bronze figurines with ithyphallic dwarf-like appearance from Pompeii, today in the Museo Archeologico Nazionale di Napoli (MANN). The figures are part of tintinnabula, where they are combined with lamps hanging from parts of their bodies, or they are themselves oil lamps with their bodies forming the essential parts of the lighting device. Even though the figurines display a high level of similarity, their details reveal considerable variety in terms of compositional scheme, iconographic elements and body posture. Given this, it seems appropriate to treat each of the examples as an individual with its own message and image language - a hypothesis that is confirmed by a glance at similar terracotta objects in the MANN. In my presentation I will focus on both iconographic and interpretive aspects. From an iconological point of view the region surrounding Pompeii provides an interesting regional case study with respect to its specific imagery of dwarf-like figures. Regarding interpretation the combination with light provides good ground for further hypotheses.



EGYPTIAN HORNS AND COLUMNS. BRONZE INCENSE BURNERS FROM POMPEII

JOHANNES EBER

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Ancient bronze censers are mainly known from Phoenician and Etruscan contexts (see e.g. Morstadt 2008, Ambrosini 2002). A few Hellenistic incense burners from Egypt were analysed by Michael Pfrommer in his study on Alexandrian toreutics (Pfrommer 1987). Roman-period bronze censers, however, have not yet been extensively studied. This is surprising, since for instance Pompeii, famously destroyed by the eruption of Mt. Vesuvius in AD 79, offers a large material base of at least 36 mostly unpublished bronze incense burners. In my paper I will focus on so far unstudied bronze incense burners from the Vesuvian city and will examine their form and decorative elements. The analysis of their forms will reveal that many of them combine different morphological elements that mainly can be connected to Hellenistic censers from Egypt and the Levant. Furthermore I will discuss the archaeological contexts of the censers, which were mainly discovered in domestic settings. In some Pompeian houses, such as the Casa degli Amorini d'Orati (VI 16.7), or the Praedia di Giulia Felice (II 4,3-6) religious practices in honour of Egyptian deities are archaeologically attested in form of domestic shrines with depictions of the deities. In view of this, I will ask to what extent the bronze censers with Egyptian forms can be connected with these cult practices. Can the form of the Pompeian censers be seen as further archaeological indicator for the domestic veneration of Egyptian gods in Roman Italy? Or should the objects rather be understood against the background of the Egyptianising fashion of the early imperial period, which is visible for instance in some Pompeian wall paintings and furnishing?

THE BOMBING OF POMPEII IN 1943: NEW EVIDENCE ABOUT THE ROMAN BRONZES

VALERIA MEIRANO

UNIVERSITY OF TURIN

In 1943 Pompeii was the object of tremendous bombardments by the Allied forces, a sad and forgotten page in the history of the ancient city which constitutes a current topic in the light of recent destructions and war damages occurred at many oriental archaeological sites and museums. Together with many Roman constructions, the raids also affected the Museo Pompeiano and consequently caused the destruction of the majority of the objects exhibited in the building. The museum was set up according to modern and innovative approaches, and the damage proved particularly severe and irreparable as the majority of the antiquities kept there were of known provenance and contextualized, but still unpublished. After the end of the second World War, the objects retrieved from the ruins of the building were perceived as hopelessly lost and therefore completely neglected. Among them were hundreds of outstanding bronze artifacts pertaining to different functional categories (e.g. vases, pieces of furniture, lamps, varied instruments, etc.). A project recently started aiming at restoring and studying this bronze material has revealed its potentiality and some unexpected data, e.g. newly attested vase shapes. Being unpublished, these objects allow for the enlargement of our knowledge on Pompeian bronzes concerning morphological and technological issues, and also relating to ancient repair and restoration techniques. The items also bear the traces of their second life: the wounds due to the bombing, of course, but also the cuts and mutilations occurred in their recent history during the second half of the 20th century, when they served as a source of metal and sheets for modern restoration... A tentative re-contextualisation is now in progress in order to re-establish their provenances on the basis of inventories, archive documents and bibliography concerning the museum and its last set up.



SESSION V: BRONZE STATUES FROM THE PROVINCES OF THE ROMAN EMPIRE

BRONZESKULPTUREN: TECHNIK, AUFSTELLUNG UND WIEDERVERWENDUNG IN DEN RÖMISCHEN PROVINZEN (INTRODUCTION)

NADIN BURKHARDT

KATHOLISCHE UNIVERSITÄT EICHSTÄTT-INGOLSTADT

The paper provides an introduction to five papers of bronze specialists who research different aspects of bronze sculpture and bronze objects in the Roman provinces. One aspect will be the bronze production in the sacred area. There was temporary production of statuary and other bronzes in sanctuaries in Roman times like in Gerasa. Other topics include the role of old models in roman statuary bronze production. One main theme will be aspects of production technics and the development of new technics. The Romans acted by all means economical in the extraction of material: the percentage of melted down and re-used scrap metal was high. Roman bronzes show also new production technics and traces of repair for casting faults.

NOSTALGIE ODER STATEMENT ? ZUR WIEDERKEHR HELLENISTISCHER FORMEN AN SPÄTRÖMISCHEN BRONZEN

NORBERT FRANKEN

INDEPENDENT RESEARCHER

Using selected figurative bronzes from the late Roman period, the author examines hitherto overlooked recourse to motifs from Hellenistic art. One focus of the study is devoted to the question of possible reasons for this phenomenon. What was the primary motivation of the obviously wealthy clients? Was it just nostalgia or was it a programmatic reference to bygone times that led to a resumption of Hellenistic motifs in the 4th century AD?

FIRST HIGH ON HORSEBACK, THEN FALLEN LOW - THE STATUE REMAINS FROM WALDGIRMES AND THE DESTRUCTION OF LARGE BRONZES

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ULRIKE WOLF

GOETHE-UNIVERSITÄT FRANKFURT

The remains of the once magnificent golden statue(s) of Waldgirmes - such as the horse's head in the fountain and the fragments by the road /roadside ditch - are impressive testimonies to the damage, denigration, dismantling, and destruction of statues, a phenomenon that is not only known in antiquity. What was the reason for this destruction, and who was responsible for it? Why was the horse's head ritually laid down, whereas large



remains of the statue crushed and seemingly carelessly thrown into the roadside ditch? Waldgirmes is one of the numerous cases where large bronzes were destroyed in the Limes area and its hinterland. The reasons and procedures for the dismantling of statues are diverse, as are the actors involved and the further handling of the large bronzes and their fragments. Can certain destruction practices or the degree of destruction be assigned to individual contexts? The paper will present an analysis of the sculptural finds and context finds from Waldgirmes, comparing them with previously known archaeological traces of destruction along the Limes and its hinterland, and considering/referring to the evidence handed down from ancient written sources.

PRIMERA ESTATUARIA OFICIAL EN BRONCE EN LUSITANIA

TRINIDAD NOGALES BASARRATE

MUSEO NACIONAL DE ARTE ROMANO, MÉRIDA

The province of Lusitania (Hispania) had no marble sculptural tradition of its own before the arrival of Rome. Pre-Roman times were characterised by the use of local materials and a poor figurative tradition, both anthropomorphic and zoomorphic, linked to religious rites of Celtic, Vettonian and Lusitanian tradition. The Roman presence, in the early years of the conquest of Augustus, carried out its public building works in local materials, especially granite and limestone, in what has been called military architecture, as it was associated with the colonising military element. These local materials were covered with stucco to give the works a greater presence. And in these early years of the colonisation of the territory, as there was no marble in use, bronze was used as the official ornamental figurative material. Of this official metal statuary in bronze, often over-gilded, very little remains. Some fragments of parts of statues, pedestals with traces of having held metal pieces and epigraphy alluding to the use of noble metals (gold, silver and bronze) in official public works. Several examples of these statues are presented, relevant to the colonies of Metellinum, Norba and Augusta Emerita, works from their first stage of public monumentalisation, perhaps representing these essential figures in the history of the three Lusitanian Roman colonies in the time of Augustus.

ZWEI MODERNE BRONZEKÖPFE AUS SPANIEN UND IHR ANTIKES VORBILD

DAVID OJEDA NOGALES

UNIVERSIDAD NACIONAL DE EDUCACIÓN A DISTANCIA

The focus of the investigation are two bronze heads that are kept in private collections in Cordoba and Murcia. Both were created by modern sculptors and repeat the same Roman original. This lost model should be a marble portrait of a private person from the Augustan era.



RAETIA RESUMED: ROMAN PROVINCIAL BRONZE STATUE FRAGMENTS BETWEEN ICONOGRAPHY AND CONTEXT

AURA PICCIONI

KATHOLISCHE UNIVERSITÄT EICHSTÄTT-INGOLSTADT

ROLAND SCHWAB

UNIVERSITÄT TÜBINGEN

The title of my presentation, Raetia Resumed," was primarily selected to underline the fact that this research, initially developed during the biennium 2019/2021 at the KU Eichstätt-Ingolstadt, funded by a Forschungsstipendium (research grant) from the Fritz Thyssen Stiftung, is ideally connected with a previous international project (cf. <http://grossbronzenamlimes.de/>) investigating the bronze fragments unearthed along the Limes of the northern Roman provinces. Earlier research on the Raetian fragments was interrupted and subsequently resumed by my project entitled "Römische Großbronzen am Limes - Fragmente im raetischen Raum." During this survey, I had the opportunity to analyze bronze fragments from 25 settlements of various nature in Raetia. This paper will offer a panoramic perspective on these settlements, paying particular attention to several case studies that demonstrate the richness and variety of both the contexts and the fragments themselves. Reconstructions were also attempted for several fragments, and the pieces were analyzed from an interdisciplinary perspective. These fragments yield complex archaeological and historical, iconographical, and chemical data that highlight the complexity of Raetian culture, which was significantly impacted by invasions of Germanic tribes. The case of Künzing exemplifies this, with several interesting pieces and contexts (for instance, the amphitheater) that should be highlighted. Aalen, where the fragments heaped in the aerarium appear to have been primarily intended for recycling, is also significant in this context. However, other settlements, including Mögglingen, Rainau-Dalkingen, Augsburg, and Straubing, are also key to understanding the peculiarities of the province. Raetia was among the provinces most affected by the crisis of the Roman empire during the 3rd c. AD, and these events have left their traces on the fragmentary bronze statues and their contexts.

SESSION VI: PANNONIA

EIN KOMPLETT ERHALTENER PARADEPFERDEKOPFPANZER AUS DER DONAU BEI BRIGETIO (KOMÁROM, UNGARN)

BORHY LÁSZLÓ

EÖTVÖS LORÁND UNIVERSITY

A Roman chamfron, belonging to the so-called "Paraderüstung", found some decades ago in the Danube in the vicinity of Brigetio (actual Komárom, Hungary), was recently bought by the Hungarian National Museum, Budapest. The chamfron, belonging to the middle-sized type, consisting of three parts, was decorated with the usual symbols and deities, which are well known on other pieces of these weapons, dated to the first half of the 3rd century. This piece, which is the most completely preserved chamfron ever found in Pannonia, has parallels in the treasure of Straubing.



ENAMELED FIBULAE FROM BRIGETIO AND KOMÁROM-ESZTERGOM COUNTY

CSILLA SÁRÓ

EÖTVÖS LORÁND UNIVERSITY

The production centers of enameled fibulae can be studied in different ways. Unfortunately, semi-finished or waste enameled fibulae are not known from the investigated area yet. The research can focus to the examination of stylistic similarity, the distribution area, and long-distance connections. Non-destructive and destructive testing technologies can also be useful. According to previous research, an expensive blue material, the so-called 'Egyptian blue' was used in Brigetio and it has been detected in the enamel of one fibula. Is this a single example for its use? Has this fibula truly made in Brigetio? Based on their form and geographic connections, could other enameled fibulae have been made in this archaeological site? I would like to present new information about this topic and examine almost 20 fibulae with blue enamel.

BRONZEFUNDE AUS DEM RÖMISCHEN KASTELL LUSSONIUM (PAKS-DUNAKÖMLÖD)

FAZEKAS FERENC

UNIVERSITY OF PÉCS - TOWN MUSEUM PAKS

Das römische Auxiliarkastell befindet sich im mittleren Limesabschnitt der ripa Pannonica, die Militäranlage wurde auf einem, über die Donau aufragenden Lössplateau gebaut. Die zwischen 1987-2011 systematisch erforschten und in 2021 neu begonnen Grabungen haben eine beachtliche Zahl von Bronzekleinfunde zur Tage gefördert, die eine grosse Diversität aufweisen. Die vorliegende Präsentation versucht einen umfassenden und repräsentativen Überblick über den reichen Material des Militärlagers zu geben. Die Bronzekleinfunde werden in funktionellen-typologischen Gruppen summiert, ausgewählte Fundgruppen werden mit Hilfe der antiquarischen Analyse untersucht und im materiellen Kultur der ripa Pannonica kontextualisiert.

BRONZE FIGURAL DECORATION OF ROMAN PERIOD CARTS AND CARRIAGES IN PANNONIAN PROVINCES

ZSOLT MRÁV

HUNGARIAN NATIONAL MUSEUM

The aim of the study is to present the new results with which recently excavated Pannonian cart and carriage graves have contributed to the research of Roman figural bronzes.



SESSION VII: VESSELS

AN ASSEMBLAGE OF METAL OBJECTS FROM ROMAN NAPOCA (CLUJ-NAPOCA, RO)

SILVIA MUSTATĂ

BABES-BOLYAI UNIVERSITY, CLUJ-NAPOCA

SORIN COCIŞ

INSTITUTE OF ARCHAEOLOGY AND ART HISTORY, CLUJ-NAPOCA

The paper examines a group of metal objects (bronze and iron vessels, lighting devices, a small statue, decorative plates) discovered in the Roman town of Napoca (today Cluj-Napoca), on the site from Victor Deleu Street, during rescue excavations carried out in the 1990`s. The site`s stratigraphy indicates a continued occupancy from the time of Trajan to the abandonment of the province. The site is important because it represents the best-known residential area of the Roman town after the middle of the 2nd century AD. The assemblage of metal objects was identified on a floor belonging to the second stone phase, dated towards the middle of the third century AD. Though part of the objects, namely the metal vessels, have already been published, no comprehensive analysis of the assemblage has been done so far. The discussion will focus on the character of the objects and on the possible interpretations, from recycling of old metal to a household inventory stored and left behind in time of peril.

BRONZE VESSELS FROM CAMPANIA

KLARA DE DECKER

WESTFÄLISCHE WILHELMS UNIVERSITY MÜNSTER

Ancient authors, objects found at the excavations, and wall paintings tell us about the production of bronze vessels in Campania. Preserved in the archaeological evidence are casting moulds for bottoms and handles, found in Capua. Perhaps an additional refinement could be done in Pompeii. Till today in the archaeological evidence there is a lack of ovens, work pits, tools and moulds in large quantities, as well as semi-or unfinished objects, although the results of scientific investigations have led to the conclusion that ore is being shipped regularly from Hispania. There is no doubt that Capua was home to a manufacturing centre for casseroles of bronze (names of the masters on the stamps Petrovsky 1993). This is different with the shapes, closed without horizontal surfaces. But the handles offer the possibility of determining the production centre based on the iconography and ornaments. The patterns are widespread, temporal and spatial. Nevertheless, we can take the numbers and the quality of the execution of some types of the first century AD and assign them to the Campanian region (B 1222, B 1241-B 1242, B 1250, B 1260, C 1000, C 1200, E 2000, E 5000). The number of harnesses is 100-120 pieces per type. The harnesses were produced in three different sizes: small 10-15 cm, medium 15-30 cm and large 30-45 cm. The motifs on the handles are predominantly plants as well as acanthus, palm, ivy, surrounded by bird heads (rarely goat heads or dolphins) and human or animal figures. The simplified production in the first century AD is striking, i.e., reduced partial shapes, only can bodies without feet, handles above and below soldered. A very common motif: the Dionysian group with companions and animals, or the old Silenus, raising a satyr child.



TRULLAE FROM SERBIA

MIROSLAV VUJOVIĆ

UNIVERSITY OF BELGRADE

Casseroles (trullae) are the earliest and best represented Roman bronze vessels found in Serbia and dated since the end of the 1st century BC to the 3rd century AD. Judging from the vessels signed with names of several masters (Norbani, P.C. Polybius and A. Epaphroditus), specimens from the South Italic craft centers were imported since the Claudian era to the end of the 1st century A.D. Findspots of early imperial casseroles represent the oldest provincial urban centers and military camps in Serbia (Sirmium, Singidunum, Viminacium). The reason for this is certainly multifunctional character of casseroles and their use as a part of military equipment. There are also products signed by Gallic masters (Carugenus, Cerealis, Caratus, Dioratus) who successfully sell their products in the Danubian provinces during the second half of the 1st century and early 2nd century A.D. Vessels from the western provinces are generally characteristic for the following epoch (2nd - 3rd century A.D). These specimens, created in the Gallic and Rhine workshops, are primarily decorated with relief or in the technique of polychrome enamel.

ROMAN BRONZE AMPHORAE FROM THE SARMATIAN BURIALS OF EASTERN EUROPE

MIKHAIL TREISTER

INDEPENDENT RESEARCHER

Six intact or fragmented bronze amphorae and one separate handle, which belong to types Tassinari A3212 and A3220, found in the Sarmatian burials, are discussed in detail. In Eastern Europe the finds of such vessels are concentrated in two regions: Thrace and Asian Sarmatia, and one amphora was found in the Trans-Caucasus. The overwhelming majority of amphorae from Pompeii were small in size and vessels higher than 33 cm are extremely rare here. Finds from the Moselle and Lower Rhine regions show a distribution very similar to that from Pompeii. The sizes comparable with the finds from Sarmatian burials (height mainly in the range from 40 to 44 cm) have only 4 (from 60) finds from Pompeii. Therefore, it can be argued that such large amphorae were not typical of either Pompeii, or Western and Central Europe. On the contrary, they predominate in Thrace. More than half of bronze amphorae found in Asian Sarmatia originates from the so-called princely" burials in the Lower Don region of the second half of the 1st - early 2nd century AD and a clear correlation of the finds with the remains of the funeral feasts associated with central female burials in the mounds. Only in Thrace a larger number of bronze amphorae was found (also in relation to the total number of the Roman bronze vessels). The penetration of a relatively large number of amphorae to the nomads gives reason to assume that such vessels were in some demand and that it was not by chance that exactly large amphorae, were brought to Thrace and Sarmatia. Further on the possible ways of penetration in connection with the amphora with punched Latin owner's inscription on the neck from Valovyi-I necropolis near Tanais and the metal composition of the amphorae found in Sarmatia are discussed.



NEW REMARKS TO THE SO CALLED HUNNIC CAULDRONS

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GWZO LEIPZIG

STEPHEN W. MERKEL

DEUTSCHES BERGBAU-MUSEUM BOCHUM

The so called Hunnic cauldrons are widespread known across Eurasia, from the Gobi Desert to France, but are most concentrated in Middle-Eastern Europe along the Danube Valley. The cauldrons were made by several cast elements. During the last years we could investigate some examples by different archaeometric methods. The samples derives from Balatonlelle (HU) and Iľa/Leányvár (SK) were analysed by mass spectrometry to characterise their elemental composition and lead isotope ratios. The preliminary results confirm that they are made of copper, like most known cauldrons of this type, with minor, but variable, concentrations of lead. The compositions suggest that the fragments from Iľa/Leányvár belong to single vessel (6 pieces) and at Balatonlelle, where we have a full preserved example, two types of copper were identified. The lead isotope ratios are highly incompatible with earlier East Asian Han bronze metalwork, from which the Hunnic cauldron form stylistically derives. Instead, the ratios are consistent with 4th-5th century Eastern Roman copper coins (nummi minimi) and Eastern Roman silver plate. The unusual and standardized low-tin alloy of these cauldrons is similar to average Eastern Roman copper nummi minimi of the late 4th century and we suggest that some Hunnic cauldrons may have been made in Europe by recycling of batches of copper coinage. The corpus of analysed cauldrons seems to indicate that this practice may have been widespread and systematic.

DIE SPÄTANTIKE „KOVACS VASE“

STEFAN LEHMANN

ARCHÄOLOGISCHES MUSEUM DER UNIVERSITÄT HALLE-WITTENBERG

TIVADAR VIDA

EÖTVÖS LORÁND UNIVERSITY

The bronze vessel, which is still about 25 cm high today, has been known to researchers since 1996. Also called "Kovacs vase" - after the former owner - the picture frieze shows the youngest known representation of a gymnastic agon so far. The mention of the names of the athletes with accompanying legends are up to now singular.



SESSION VIII: SMALL BRONZES

THE BRONZE BUST OF ALEXANDER THE GREAT FROM OARDA-BULZA: AEMULATIO ALEXANDRI IN A ROMAN PROVINCIAL SETTING?

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The archaeological investigations that have been initiated in 2018 in the area of the villa rustica at Oarda-Bulza (Alba County, Romania) as part of the Apulum Roman Villa Project have unearthed, among other things, a bronze bust of Alexander the Great that is preserved in remarkable conditions. The artefact was found during the systematic field-walking of the site, before the beginning of archaeological excavations, very close to the largest annex of the villa rustica. The villa itself has functioned between the first decades of the 2nd century and the middle or the second third of the 3rd century AD. The mould-cast bust measures almost 18cm and has a flattened loop on the lower edge. An iron shaft was soldered to the back of the bust's base. Both the loop and the shaft indicate that the bronze bust was a decorative fitting of a chariot. Stylistically, the bust seems to be a quite faithful copy of the Azara herm, having a rather elongated face, though with softer features, symmetrically arranged hair-locks and a prominent anastole. It is well-known that a number of Roman emperors favoured the image of the Macedonian king as a symbol of martial prowess, from Augustus to the Severan dynasty and even later, and the martial elites of the empire also sought to imitate or emulate Alexander. The bust from Oarda-Bulza, as well as a few similar finds from other Danubian provinces, seems to suggest that the provincial elites were also interested in this imagery. Therefore, our paper aims to discuss the motivations behind their interest, starting from this particular object and its context of use, and also taking into consideration the wider social and political context from the Danubian provinces in the 2nd and 3rd centuries AD.

FIGURAL BRONZES FROM WARESWALD: OLD AND NEW FINDS

PHILIP KIERNAN

KENNESAW STATE UNIVERSITY

The Roman vicus Wareswald is located near the village of Tholey (Lkr. Sankt Wendel) in the Saarland, Germany. In Roman times, the town was situated on an important conjunction of roads that connected Metz to Mainz and Trier to Strasbourg. The presence of Roman ruins at the site have been known since the 18th century, and the site was extensively plundered for both building material and antiquities in the 19th and early 20th centuries. As a result, Wareswald has furnished bronze artifacts to many European private and public collections. Regular excavations have been conducted there since 2001 by the non-profit company Terrex and have exposed a series of houses, a temple, and a funerary monument. These same excavations have also produced several figural



bronzes, including four statuettes of Mars and a superb bronze dog from the temple area. Both newer and older finds are presented in this paper along with a discussion of bronze assemblages from similar rural vici in Gallia Belgica.

SMALL FINDS, NEW DISCOVERIES: LINKS BETWEEN THE MIDDLE TISZA REGION AND THE NORTHERN BALKAN IN LIGHT OF OLD AND NEW DATA

PÉTER KOVÁCS

DAMJANICH JÁNOS MUSEUM, SZOLNOK

Enamel inlaid bronze brooches of the Late Iron Age are well known in the Balkans, particularly in the Scordisci area, but only a few can be found in the Carpathian basin. These objects are accepted to be important parts of the Scordisci female attire and were transported by different reasons to the Eastern Celtic territories. Until quite recently, five of this type of brooches were known in Hungary, out of which the Middle Tisza Region has only yielded two specimens. In conjunction with the intensive metal detecting in the Middle Tisza Region, number of Late Iron Age bronze objects has increased significantly. Up to now more than a dozen enamel inlaid bronze brooches have been discovered from various sites in Jász-Nagykun Szolnok county. The range of new evidence along with the reinterpretation of earlier data now allow us to form a synthesis regarding these Middle Tisza Region discovered brooches. This presentation introduces the lesser known old and new finds and examines their distribution, date, and context. As a conclusion, it also aims to add more insights into the connection between the Middle Tisza Region and the Northern Balkan during the II-I. c. BC.

TESTIMONY OF EASTERN CULTS IN ALBANIA THROUGH METALWORK

SABINA VESELI

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The presence of eastern cults in Albania is attested through different documents, although not represented as widely as in other parts of the Roman Empire. Their presence is documented by inscriptions of Men, Mithras and Sabazios, by sculptures which represent Bes, by coins and gems which represent Isis, ceramic with representation of Serapis, bronze figurines and reliefs ect. The main subject of this presentation will be the representation of eastern deities in the metalwork from Albania. These depictions represent two Mercury-Thoths, which actually is a Roman god with added eastern attributes; while a relief plaque and a votive hand dedicated to Sabazios represent an eastern god with a certain Romanised iconography. The main aim of this presentation will be an analytical discussion of these artifacts in order to enrich the knowledge for the presence and distribution of eastern cults in Albania through bronze artifacts.

THE LOST FORM - MANUFACTURE OF CERAMIC MOULDS

FABIENNE KARL

LUDWIG MAXIMILIAN UNIVERSITY OF MUNICH

Often the only evidence of the existence of once great bronzes are remains of the manufacturing process. So, what if it would be possible to reconstruct the cast objects by putting together the parts of the mould? A software



developed for joining broken cuneiform tablets could be adapted for this purpose. In order to test this theory, a project on bronzecasting-moulds was launched. Since ancient moulds were not available, it was part of the project to manufacture them. Thus, a series of experiments were conducted in 2019 and 2020. Twelve bronze mirrors were made by lost-wax casting to obtain samples of fragmented ceramic moulds. The work process from a simple wax form to the finished mould was documented and gives a much better understanding of the structure of the mould. This lecture will not only present the results of these experiments but will discuss the step-by-step process, for example which materials were used and do different firing temperatures have an impact on the fragmentation of the moulds. While the focus of the presentation will be on the manufacture, the results of the software adaptation will also be mentioned.

SESSION IX: POSTER SESSION

BRONZECASTING IN ROMAN GERASA

STEFANIE BECHT

KATHOLISCHE UNIVERSITÄT EICHSTÄTT-INGOLSTADT

The first traces of a Roman bronzecasting workshop inside the sanctuary of Zeus in Gerasa have been discovered in the 1990ies. Yet, up to now research is still going on. The poster gives a short overview of the previous work and the current state of the project.

FROM THE SKIN TO THE HEART OF THE WINGED VICTORY OF BRESCIA: CHARACTERIZATION OF THE "PATINAS" AND ALLOYS OF A MASTERPIECE OF ROMAN STATUARY

MONICA GALEOTTI

OPIFICIO DELLE PIETRE DURE, FIRENZE

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This contribution is focused on the investigations carried out on the materials of the Winged Victory (Vittoria Alata), a Roman bronze rediscovered in Brescia in the 19th century. The latest conservation intervention, which started in 2018 and was coordinated by the Opificio delle Pietre Dure (Firenze, Italy), offered a unique opportunity for a thorough study of the statue. Dismantling some parts and removing the filling materials from the interior allowed for new research, which added valuable information to the data gathered in past analytical campaigns. One of the crucial points of the whole work was undoubtedly the study of the constituent materials. For the characterization of the corrosion patinas and the quantitative analysis of the metal alloy it was necessary to integrate complementary investigation methodologies aimed at solving the different challenges (for example the deep corrosion of the metal, the coexistence of natural and artificial patinas, and others) that the study of such a fascinating and complex masterpiece presented. By presenting a poster, we would like to summarize the methodology that includes the analysis of tiny samples and shavings with optical microscopy, FT-IR, SEM - EDS, XRF, ICP-MS and Neutron imaging and diffraction. The results of these investigations provided, as never before, a sharp characterization of the materials and a sound ground for the design of the conservation intervention and the discussion on the construction methods of this wonderful Roman bronze.



RECENT ACQUISITIONS FROM THE BRONZE AGE: A NEW ASSET FOR THE NATIONAL MUSEUM OF PREHISTORY (LES EYZIES, FRANCE)

PAULINE ROLLAND

MUSÉE NATIONAL DE PRÉHISTOIRE, FRANCE

In the last five years, the National Museum of Prehistory has acquired a few but very significant collections from the Bronze and Iron Ages. Among these items, uncovered between the 1950s and the 1970s in the South-West of France, we can mention the dagger from Coux-et-Bigaroque, the armet of Roucadour and the three bracelets from Canaval. Until recently in private ownership, they were very exceptionally exhibited to the public and studied by scholars. An exhibition held at the National Museum of Prehistory will soon bring the spotlight on those amazing collections, that are just revealing their secrets.

NEW FIND OF ROMAN MILITARY EQUIPMENT OF THE PERIOD OF THE ROMAN-BOSPORAN WAR OF 45-49 AD FROM THE EASTERN CRIMEA

MIKHAIL TREISTER

INDEPENDENT RESEARCHER

NIKOLAY VINOKUROV

MOSCOW PEDAGOGICAL STATE UNIVERSITY

The Artezian fortified settlement in the Azov Sea coast of Eastern Crimea perished in a strong fire at the beginning of the Roman-Bosporan war in 46/47 AD. In the homogeneous fire layer of room 4, clogged with combustion products and burned-out utensils from the upper floors of the fortress, along with numerous items of jewelry, vessels made of silver, bronze and glass and their fragments, a heavily burned out (now restored) round bronze plaque, 7.7-7.8 cm in diameter with a hole in the center was found. The plaque is decorated along the edge with a figural frieze, depicting two pairs of animals opposing each other: a dog - a bull, a dog - a wild boar. Besides two animals are running after each other: a lion and a roe deer. The decoration of the plaque from Artezian finds parallels among plaques from the military camps along the limes of Lower and Upper Rhine and Danube. Objects similar in shape depicting animals in circular friezes are also known in the South-Western Crimea. The parallels to the images of the plaque and options of interpreting the function of the piece are considered. If the pair "dog - bull" on the disc from Artezian does not find parallels, then the pair "dog - wild boar" is represented on the frieze of the big silver goblet from Hildesheim. The combination of pairs of opposing animals and animals running after each other finds parallels only on the plaques from Asciburgium and Magdalensberg. Thus, there are reasons to consider the disc from Artezian as an element of Roman military equipment of the first half of the 1st century AD (other finds of this group also originate from settlement), regardless of its function, which can most likely be defined as an element of decoration of the cross-guard of a gladius.



SESSION X: DO UT DES - NEW APPROACHES TO THE STUDY OF BRONZE VOTIVE OFFERINGS IN THE ANCIENT MEDITERRANEAN

CENTRAL ITALIAN VOTIVE BRONZES: THE RESEARCH POTENTIAL OF GIOVANNI COLONNA'S ARCHIVE

MARIA CRISTINA BIELLA

UNIVERSITA DI ROMA "SAPIENZA"

*Small votive bronzes (6th-1st c. BC) are an extremely wide craft phenomenon in pre-Roman Italy. A particular role in this picture is played by the productions linked to the Umbrian-Sabellic area. They were first studied systematically by G. Colonna from the mid-1950s onwards. He published a first volume entitled *Bronzi votivi umbro-sabellici, I - Periodo arcaico* (1970), in which he announced a second volume devoted to the more copious production of the Hellenistic period. This second study was never published, but G. Colonna systematically collected all the available data and compiled them into an archive, which is currently being studied and published. This paper aims to give an initial presentation of the archival fund and its research potential in the field of studies on pre-Roman Italy.*

ANATOMICAL VOTIVE BRONZES IN PRE-ROMAN CENTRAL ITALY

ARIANNA ZAPPELLONI PAVIA

CHARLES UNIVERSITY, PRAGUE

Anatomical votives have largely been considered by scholars in connection with Roman expansion in Central Italy. Within this frame of "Religious Romanization", scholars have largely viewed the presence of the anatomical terracottas of the 4th-2nd cc. BCE as the material manifestation of Roman presence in the religious sphere of the Italian peninsula. On This paper presents the results of from recent and ongoing archaeological studies in Central Italian sanctuaries and reassesses the influence of Rome on local religious traditions.

ARCHAEOMETRIC CHARACTERISATION OF THE HÉRACLES ITALIC EX-VOTOS FROM THE MAN MADRID

RAIMON GRAELLS I FABREGAT

UNIVERSITAT D'ALACANT

The paper presents a study of an extensive group of ex-votos depicting Herakles, unfortunately decontextualized. To the classic work of chrono-typological identification we add in this analysis the archaeometric characterisation (XRF and isotopic analysis).



OUT OF SIGHT, OUT OF MIND? BRONZE VOTIVE OFFERINGS AS MARKERS AND MAKERS OF COLLECTIVE IDENTITY IN EARLY IRON AGE GREEK SANCTUARIES

VANA ORFANO

UCD SCHOOL OF ARCHAEOLOGY, DUBLIN

Through merging insights from the materiality, monumentality, and the memory capacity of the metallic votive offerings, this paper considers the ways in which material culture may have interacted with early Greek society even when the objects in question were out of sight, and the contributions of collective memory in shaping social actions and identities. Overall, this analysis sheds light on aspects of identity building via the interaction of the metal (the material) with the agents (the people) and the landscape (the sanctuaries) in Early Iron Age Greece.

FRAGMENTATION OF VOTIVE OFFERINGS IN THE SANCTUARY OF OLYMPIA

AZZURRA SCARCI

RÖMISCH-GERMANISCHES ZENTRALMUSEUM, MAINZ

Large numbers of fragmented and intentionally destroyed bronze votive offerings from the Geometric and Archaic periods have been retrieved from the sanctuary of Olympia. However, no significant attempt to systematically analyze these objects in order to understand if the phenomenon of fragmentation and destruction was a part of a specific ritual, has been made so far. The proposed paper aims to present the first data from a recent study project on this topic carried out at Römisch-Germanisches Zentralmuseum in Mainz in cooperation with the German Archaeological Institut in Athens.

SESSION XI: ANALYTICS AND TECHNOLOGY

NON-INVASIVE TECHNOLOGICAL STUDY OF SOUTH-EAST ASIAN BRONZES FROM THE RIJKSMUSEUM ASIAN PAVILION, BY MEANS OF NEUTRON IMAGING AND NEUTRON DIFFRACTION

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SAURABH KABRA

STFC, ISIS MUON AND NEUTRON SOURCE, DIDCOT

The study of metal artefacts of historical and artistic interest is based on the knowledge of the constituent materials and their production methods. Multiple scientific studies concerning casting methods of European civilizations have been made while South and Southeast Asian bronze casting methods have been analysed to a lesser extent up to now. Knowledge of materials and manufacturing methods can often provide clues about historical and cultural context and is essential for responsible conservation treatment. Since traditional investigation of metal artifacts often relies on destructive sampling for composition and microstructural information, having diagnostic investigations capable of providing the highest amount of information with a minimum level of invasiveness is of primary importance. This work shows the results related to two hollow-cast bronze statues from the Asian Pavilion of the Rijksmuseum that were investigated by means of both Neutron Imaging - at Helmholtz-Zentrum Berlin (HZB) on CONRAD-2 - and Neutron Diffraction - on ENGIN-X at the ISIS muon and neutron source (Didcot, UK). The statues are a 42 cm high statuette of a Standing Buddha (AK-MAK-193 excavated in Java, ca. 700-800 AD), and a medium size statue 86 cm high e representing Avalokitesvara (AK-RAK-2000-15 retrieved from burial in Thailand, dated ca. 750-900). The goal of this study was to answer some the technological and conservation issues - e.g.: assess the conservation state, evaluate any diffusion of cracking inside the statues; identify interventions of restoration, replacement, or repair of parts of the statues, characterize the alloy microstructure, obtain clues to be able to reveal details of the casting process. Neutron techniques were able to answer in a non-invasive way all the questions and allowed us to obtain sharp morphological details and quantitative information on composition and microstructure that can be easily linked to the manufacturing method.

IDENTIFICATION OF THE MANUFACTURING PROCESS OF SARDINIAN BRONZE STATUARY: A RESEARCH PROJECT THROUGH NON-DESTRUCTIVE NEUTRON TECHNIQUES

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The production of “Nuragic” Bronze Figurines represents a rich historical archive that provides key information about the iconography, the metal production and casting techniques, and on the development of metallurgy in the Mediterranean basin. Since the question about their manufacturing method still remains without definitive answer, the understanding of the Sardinian bronze metallurgy is essential to determine which manufacturing techniques were employed for the production of complex bronze artefacts. For example, complex bronze sculptures, made using lost wax technique, were rarely cast in a single solution: most of the parts of the wax model were moulded separately and then joined, as can be inferred also from a simple visual inspection. Our project is devoted to the identification of metallurgical procedures applied to the production of bronze artefacts of the “Nuragic” Period in Sardinia. We analysed a set of six artefacts, three anthropomorphic statues (a warrior, a priestess and an offering figure), one miniature of a basket and two boat models; all of them appear outstanding concerning the accuracy of their manufacture, the originality of the subjects and the descriptive details. The figurines were made available, for our non-invasive neutron based diagnostic approach, by Museo Archeologico di Firenze, Museo Nazionale Preistorico “L. Pigorini” and by the Sassari Archeological Survey Office. The analyses were performed using neutron tomography (NT) and neutron diffraction (ND). NT allowed to acquire a full 3D volume reconstruction of the statues, thus obtaining important details about casting procedure and connection among the different components. ND provided accurate composition analysis of the metal and details about the microstructure offering information about the casting flow and the applied thermal and mechanical treatments. The measurements were performed on the INES and IMAT instruments at the ISIS neutron and muon source (UK) and on the ICON and BOA instruments at the Paul Scherrer Institut (Switzerland).



DEMANDING THE TURTLE'S SHELL? A LITTLE KNOWN HELLENISTIC SCULPTURAL MOTIF OF APOLLON

THOMAS M. WEBER-KARYOTAKIS

GERMAN-JORDANIAN UNIVERSITY

An iconographic motif of the god Apollo, which has received little attention in science so far, shows him naked with his upper body slightly bent forward. He places his left foot on the omphalos and casually rests his left forearm on his bent thigh. The youthfully unbearded, somewhat lowered head follows in his direction the outstretched right arm, whose hand points to an imaginary object. We encounter this statuary image scheme in 16 small bronzes from southeastern Asia Minor in varying sizes and oscillating qualitative elaboration. According to the evidence of provincial coinage of Asia Minor, the small bronzes reproduce a Mystic or Cilician cult image of the Roman Imperial period. The motif of the stooped stand with a foot placed on an object, however, refers back to the era of early Hellenism. There, the characteristic motif of movement was associated in particular with the art of Lysippus. In the case of the image motif considered here, one must presuppose a group context in order to understand the mythological theme of the model. For the demonstrative postulating gesture of the right arm requires the addition of a reference figure. Hypothetically, this could have been the archetype of the sandal-binding Hermes, whom Christoph von Mosch last identified as part of a Lysippian group on the basis of the turtle to be added under the lifted foot. This group showed Hermes and Apollo competing for the invention of the lyre, for whose resonator Apollo received the shell of the turtle from Hermes. An edited passage in Pausanias' itinerary suggests that such a masterly group was placed within the sanctuary of the Muses at the Helicon near Boeotian Thisbe under the authorship of Lysippus.

STUDY ON THE MANUFACTURING PROCESS IN THREE ARMENIAN CHURCH BELL FROM THE MUSIC MUSEUM OF NEW JULFA, ISFAHAN, IRAN

OMID OUBBASHI

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ZEINAB KHOOBROO

ART UNIVERSITY OF ISFAHAN

ZOYA KHACHATOUR

THE TREASURY OF ARMENIAN MUSIC IN NEW JULFA, ISFAHAN

There are significant number of historical metallic church bells in the Armenian museums and collections in such as the museum of the Vank cathedral and the Music Museum of New Julfa, both in Isfahan. These are collected from different Armenian churches and cathedrals of Iran and are dated back from last four centuries. Due to the long and significant history of Armenians in Iranian from about 400 years ago and their important role in the formation of some industries and arts, study of the production technologies applied with them is a subject of interest for archaeologists, art historians and scientists. Three metallic bells from the Music Museum of New Julfa were selected for a multianalytical study to identify their manufacturing methods by using micro-XRF, scanning electron microscopy-energy dispersive X-ray spectroscopy (SEM-EDS) and metallography methods. The results showed that the bells are produced with a binary tin bronze alloy with 13 to 20 wt.% of tin that can be classified as high-tin bronze alloy. The microstructure of the samples shows a two-phased cast microstructure consisting of the alpha solid solution with significant amounts of interdendritic alpha + delta eutectoid compound and delta phase. Also, it is visible that the bells are cast with the high-tin alloy at first but some evidences of complementary working (probably cold) is visible in their microstructure.



THE WINGED VICTORY OF BRESCIA. AN UPDATE ABOUT HISTORY AND ORIGIN AFTER THE STUDY AND RESTORATION PROJECT

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The Winged Victory (Vittoria Alata) of Brescia is one of the most important Roman bronzes in Italy. Discovered in 1826, it dates back to the 1st century AD. Since the 19th century the statue has undergone multiple conservation interventions. The last one started in 2018 up to 2020. The project was settled with a multidisciplinary approach that made it possible to study and compare the data obtained from the restoration with those deriving from scientific analyzes, humanistic studies and other specialist research. First of all, a complete assessment of the state of conservation of the statue was carried out, with the aim to assess the most suitable solution to operate in the most critical points. In addition, extensive research has been conducted on the history and genesis of this emblematic statue, which has aroused the interest of distinguished visitors and scholars. For the first time after the discovery, it was possible to explore the internal surfaces of the statue and acquire very important data for the technological study of the work. Particular attention was paid to cleaning the surfaces; once the materials accumulated over time were removed, partly residues of past interventions, it was possible to rediscover the beauty of the face, the refinement of the modeling and the high peculiarity of the wings. New technological solutions have been studied for the internal support that replaced the one inserted in the nineteenth century to support the arms and wings of the statue, as it was no longer suitable for guaranteeing the safe conservation of the work. Since October 2020, the Winged Victory has been exhibited in the renovated Capitoline temple in Brescia, where it was discovered in 1826.



DEVELOPMENTS IN TECHNIQUES FOR PRODUCING COPPER WIRE IN HELLENISTIC MACEDONIA

ROSEMARY JEFFREYS

INDEPENDENT RESEARCHER

Copper wire is not often studied because of corrosion problems, but the author found some interesting and relatively well preserved examples from Macedonia (northern Greece) in her study of gilded wreaths from the late Classical and Hellenistic periods. The components of the wreaths included stems to support berries and flowers which were found to be made of copper wire, which was itself sometimes gilded with gold leaf. The wire was produced by a number of different techniques, as can be seen on photographs taken with optical microscopy. Examples of block-twisted and strip-twisted wire were found, and also a third method, possibly transitional between the two, in which a metal strip was wrapped around another piece of metal. On some wreaths, as at Derveni A, the stems were elaborate, consisting of 'branches' and smaller stems and on other, including one from Sedes, spirals were used - all showing sophisticated techniques of metal working. The possible methods for producing these wires will be discussed and illustrated.

TOOTH FOR TOOTH - THE BRIGHT SHINING SMILES OF THE ANCIENT LARGE SCALE BRONZES

UWE PELTZ

STAATLICHE MUSEEN ZU BERLIN

A considerable big part of the ancient large bronzes was not just monochrome bronze-colored. Until the Hadrianic period those statues possessed complex manufactured inlays in the eye-sockets. Lips, nipples up to bleeding wounds were highlighted with red copper. Furthermore have jewelry and other ornaments also been colored with incrustations. Last but not least, the chemical patination of the bronze itself was discussed in last time. Therefore the Craftsmen used a big variety of methods to make the statues appear as life like as possible. A less prominent color accent are the white teeth, which were inserted into the mostly only slightly open mouths. They have been encountered comparatively rarely and our knowledge of the manufacturing process is even narrower. What we know is that tooth inlays were made of silver, bone, ivory or marble and that they were often realized in correlation with the separately made lips. Apparently, the inlays of white teeth on the large scale statues appeared in the early classical period and disappeared at the end of Hellenism, at the latest in the early imperial period. This polychrome moment seems to have been known only to Greek artists. This Presentation focuses on a new art-technical analysis of the already known anthropomorphic bronze Workpieces with white teeth. It also presents a way of structuring the execution in to four central variations as well as a motivating for every one to search in the inside of their heads for hints to the installation of teeth. Furthermore it is also a remarkable facet in the research on the polychromy of the statues.



SIGNUM MITHRAE FROM BRIGETIO

ÁDÁM SZABÓ

HUNGARIAN NATIONAL MUSEUM - UPS LUDOVIKA

Silver coated bronze plate with embossed depictions. A rectangular rope-moulding frames the depictions on the plate. Within the frame, images are displayed in two main image fields. Two parallel lines of rope moulding separate the lower from the upper field. The height of the lower image field is a quarter of the height of the upper. A scene of tauroctony with secondary figures and motifs occupies the greater part of the upper image field. The secondary figures represent the constellations of the Zodiac, while they are also protagonists of the unknown mystery story or myth. In central position we see the tripping bull (Taurus), two-dimensionally depicted on the left-right axis but actually moving diagonally away. The plate was crafted in one of the northern provinces of the empire, where no scorpions live, as the artist had a distorted image of the animal. Judging from the figures of Cautes and Cautopates, depicted with pedum, the place of manufacture is one of the provinces in Illyricum, more precisely in the Central Danube area. But among all places, it most probably is Pannonia, and not primarily because the plate had surfaced there. Seasons weren't as a rule recorded in cult images in the Roman Empire, this is a special feature of the Brigetio plate. Furthermore, the petrogenitus scene inserted into the passage of seasons reflects the system of typical Pannonian sanctuary topography developed in Poetovio (Ptuj, Slovenia) and spread across the province. The seasons are probably displayed owing to an intention to depict local character, while this is also the reason for including the petrogenitus scene, appearing among the seasons in its given place, within a composition with the tauroktonos scene.



XXI. INTERNATIONAL CONGRESS ON ANCIENT BRONZES
Budapest, 20-24 September 2022



CONGRESS VENUES

MAIN CONGRESS VENUE

EÖTVÖS LORÁND UNIVERSITY, FACULTY OF HUMANITIES, COUNCIL CHAMBER

Address:

Múzeum körút 4A

How to get there:

The congress venue is very close to Metro station „Astoria” (Line 2 – red line) and in a short walking distance from Metro station „Kálvin tér” (Line 3 – blue line). Inside the campus, the Building „A” will be on your left, just follow the signs.

WELCOME RECEPTION

EÖTVÖS LORÁND UNIVERSITY, MAIN BUILDING, AULA MAGNA

Address:

Egyetem tér 1-3, First Floor

How to get there:

The Aula Magna is located in the Main Building of the University at Egyetem tér (Egyetem square), it is about 5 minutes walk from the Main congress venue. Go inside the building and follow the signs to the First floor.

BRONZE EXHIBITION

HUNGARIAN NATIONAL MUSEUM, SZÉCHÉNYI HALL

Address:

Múzeum körút 14-16

How to get there:

The Hungarian National Museum is very close to the Main Congress Venue, just one corner to the south, you cannot miss it...

CONGRESS DINNER

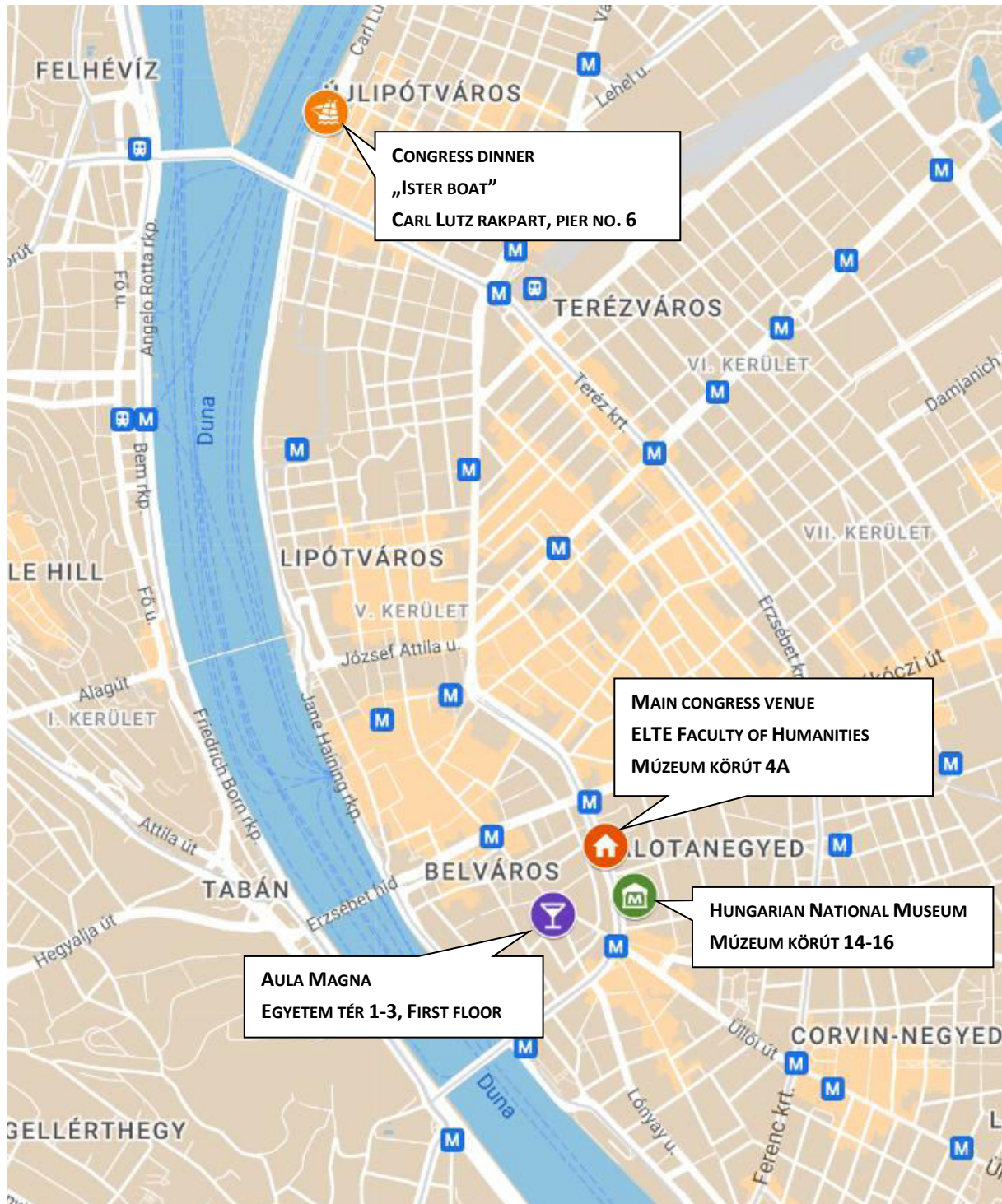
„ISTER” BOAT

Address:

Carl Lutz rakpart (Carl Lutz quay), pier no. 6.

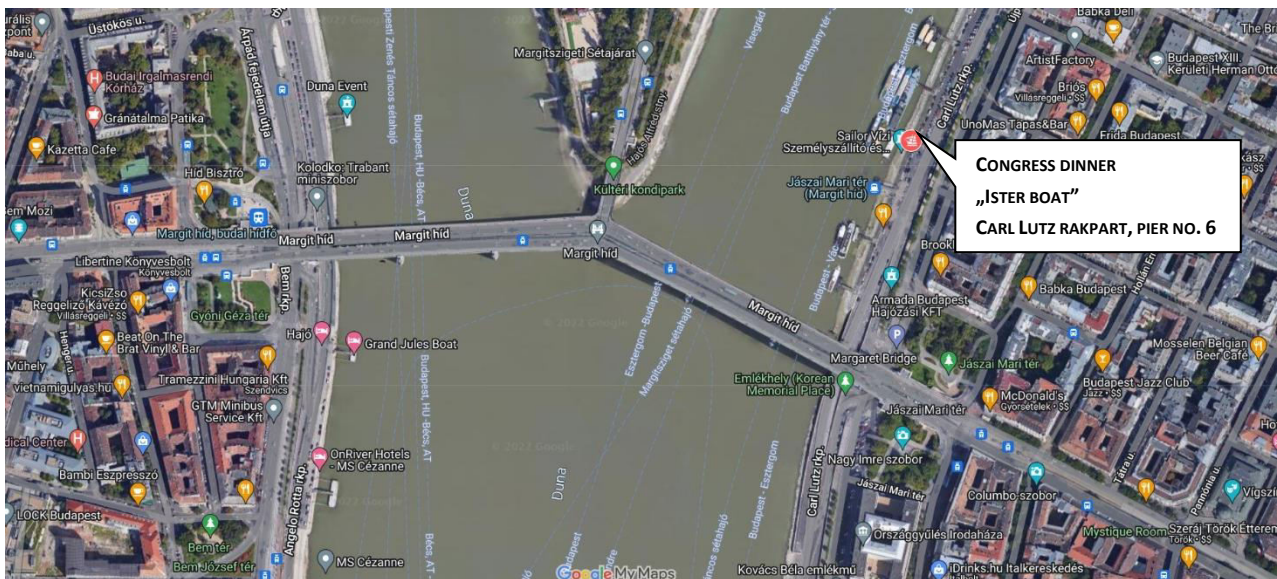
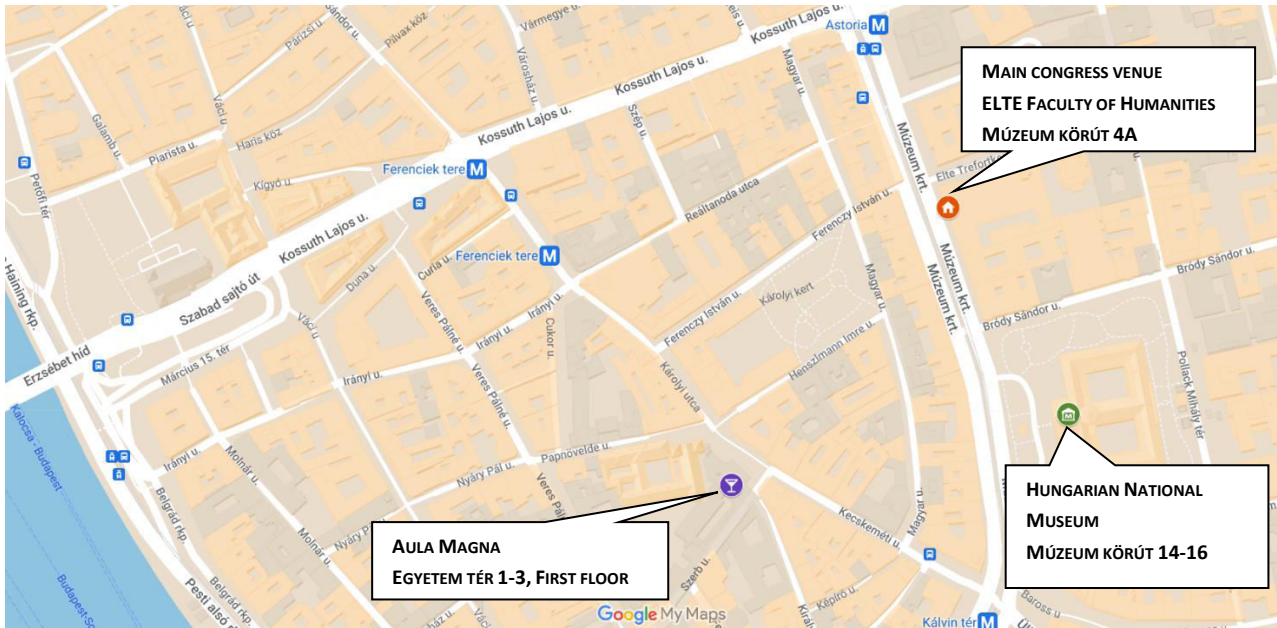
How to get there:

The Congress dinner will be on a boat which departs from Carl Lutz quay. You should take tram no. 2 from Március 15 tér and go to Jászai tér, but getting there and finding the right pier and ship is a bit tricky. We will go together from a meeting point.



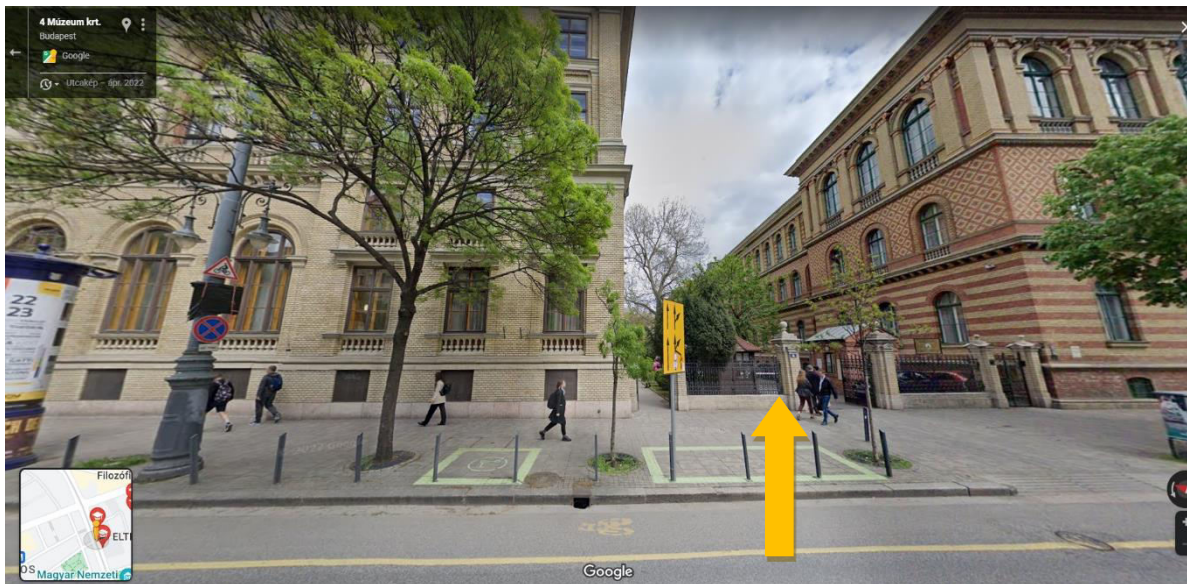


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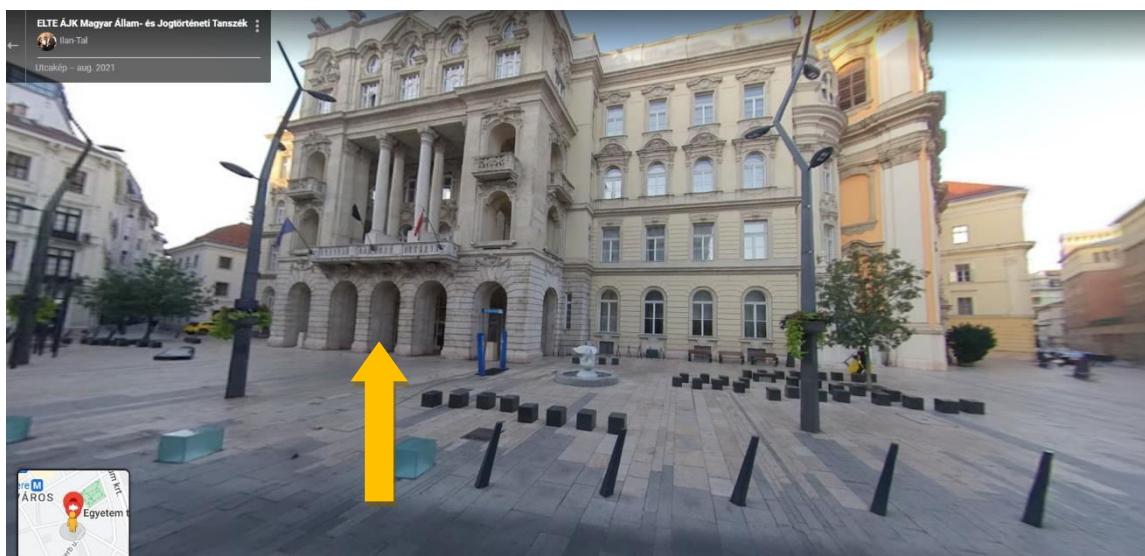




MAIN CONGRESS VENUE



AULA MAGNA

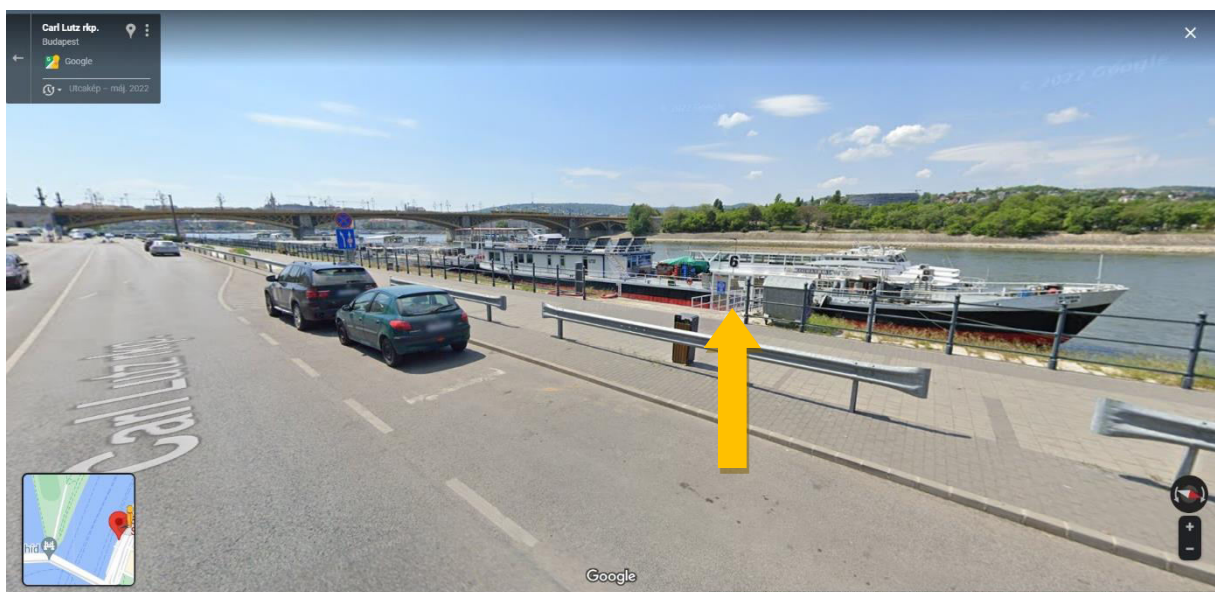




HUNGARIAN NATIONAL MUSEUM



CONGRESS DINNER





WHERE TO EAT

There are dozens of restaurants nearby the Congress venues, these are our favourites:

- **Műhely Egyetem Café** – Main congress venue, opposite to building „A”, basement - daily menu (soup, main dish, sandwiches, cakes, vegetarian options)
- **MINDENEM** - Múzeum körút 10 – daily menu (soup, main dish)
- **Bors GasztróBár** - Kazinczy u. 10 – soups and sandwiches
- **Gettó Gulyás** - Wesselényi u. 18 – starters, soups and stews
- **Halkakas Halbisztró** - Dohány u. 36 – fish restaurant
- **Kőleves Vendéglő** - Kazinczy u. 37-41 – restaurant
- **Véendiák Étterem** - Egyetem tér 5 – traditional restaurant
- **Jaromír a Templomhoz** - Lőrinc Pap tér 4 – slavic style restaurant
- **Bamba Marha Burger Bár** – Rákóczi út 1-3 - burger
- **Donna Mamma** – Rákóczi út 1-3 - pizza
- **Scusi Focacceria** - Bródy Sándor u. 11 - focaccia
- **Vega City** – Múzeum krt. 23. - vegetarian and vegan restaurant
- **Gozsdu udvar** - Gozsdu udvar – various fancy restaurants and bars



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