

# Marble and Sculpture at Lepcis Magna (Tripolitania, Libya): a Preliminary Study Concerning Origin and Workshops

---

Musso, Luisa; Buccino, Laura; Bruno, Matthias; Attanasio, Donato; Prochaska, Walter

Source / Izvornik: **ASMOSIA XI, Interdisciplinary Studies on Ancient Stone, Proceedings of the XI International Conference of ASMOSIA, 2018, 481 - 490**

Conference paper / Rad u zborniku

Publication status / Verzija rada: **Published version / Objavljena verzija rada (izdavačev PDF)**

<https://doi.org/10.31534/XI.asmosia.2015/02.32>

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:123:128871>

Rights / Prava: [In copyright](#) / [Zaštićeno autorskim pravom.](#)

Download date / Datum preuzimanja: **2024-07-12**



Repository / Repozitorij:

[FCEAG Repository - Repository of the Faculty of Civil Engineering, Architecture and Geodesy, University of Split](#)





# ASMOSIA XI

Interdisciplinary Studies on Ancient Stone

## PROCEEDINGS

of the XI ASMOSIA Conference, Split 2015

Edited by Daniela Matetić Poljak and Katja Marasović



Interdisciplinary Studies on Ancient Stone  
Proceedings of the XI ASMOSIA Conference (Split 2015)

Publishers:

ARTS ACADEMY IN SPLIT  
UNIVERSITY OF SPLIT

and

UNIVERSITY OF SPLIT  
FACULTY OF CIVIL ENGINEERING,  
ARCHITECTURE AND GEODESY

Technical editor:  
Kate Bošković

English language editor:  
Graham McMaster

Computer pre-press:  
Nikola Križanac

Cover design:  
Mladen Čulić

Cover page:

*Sigma shaped mensa of pavonazzetto marble from Diocletian's palace in Split*

ISBN 978-953-6617-49-4 (Arts Academy in Split)

ISBN 978-953-6116-75-1 (Faculty of Civil Engineering, Architecture and Geodesy)

e-ISBN 978-953-6617-51-7 (Arts Academy in Split)

e-ISBN 978-953-6116-79-9 (Faculty of Civil Engineering, Architecture and Geodesy)

CIP available at the digital catalogue of the University Library in Split, no 170529005

Association for the Study of Marble & Other Stones in Antiquity

# ASMOSIA XI

## Interdisciplinary Studies of Ancient Stone

Proceedings of the Eleventh International Conference of ASMOSIA,  
Split, 18–22 May 2015

Edited by  
Daniela Matetić Poljak  
Katja Marasović



Split, 2018

**Nota bene**

All papers are subjected to an international review.

The quality of the images relies on the quality of the originals provided by the authors.

# CONTENT

<b>PRESENTATION</b> .....	15
<b>NECROLOGY: NORMAN HERZ (1923-2013) by Susan Kane</b> .....	17
<b>1. APPLICATIONS TO SPECIFIC ARCHEOLOGICAL QUESTIONS – USE OF MARBLE</b>	
Hermaphrodites and Sleeping or Reclining Maenads: Production Centres and Quarry Marks <i>Patrizio Pensabene</i> .....	25
First Remarks about the Pavement of the Newly Discovered Mithraeum of the Colored Marbles at Ostia and New Investigations on Roman and Late Roman White and Colored Marbles from Insula IV, IX <i>Massimiliano David, Stefano Succi and Marcello Turci</i> .....	33
Alabaster. Quarrying and Trade in the Roman World: Evidence from Pompeii and Herculaneum <i>Simon J. Barker and Simona Perna</i> .....	45
Recent Work on the Stone at the Villa Arianna and the Villa San Marco (Castellammare di Stabia) and Their Context within the Vesuvian Area <i>Simon J. Barker and J. Clayton Fant</i> .....	65
Marble Wall Decorations from the Imperial Mausoleum (4 <sup>th</sup> C.) and the Basilica of San Lorenzo (5 <sup>th</sup> C.) in Milan: an Update on Colored Marbles in Late Antique Milan <i>Elisabetta Neri, Roberto Bugini and Silvia Gazzoli</i> .....	79
Sarcophagus Lids Sawn from their Chests <i>Dorothy H. Abramitis and John J. Herrmann</i> .....	89
The Re-Use of Monolithic Columns in the Invention and Persistence of Roman Architecture <i>Peter D. De Staebler</i> .....	95
The Trade in Small-Size Statues in the Roman Mediterranean: a Case Study from Alexandria <i>Patrizio Pensabene and Eleonora Gasparini</i> .....	101
The Marble Dedication of Komon, Son of Asklepiades, from Egypt: Material, Provenance, and Reinforcement of Meaning <i>Patricia A. Butz</i> .....	109
Multiple Reuse of Imported Marble Pedestals at Caesarea Maritima in Israel <i>Barbara Burrell</i> .....	117
Iasos and Iasian Marble between the Late Antique and Early Byzantine Eras <i>Diego Peirano</i> .....	123

Thassos, Known Inscriptions with New Data <i>Tony Kozelj and Manuela Wurch-Kozelj</i> .....	131
The Value of Marble in Roman <i>Hispalis</i> : Contextual, Typological and Lithological Analysis of an Assemblage of Large Architectural Elements Recovered at N° 17 Goyeneta Street (Seville, Spain) <i>Ruth Taylor, Oliva Rodríguez, Esther Ontiveros, María Luisa Loza, José Beltrán and Araceli Rodríguez</i> .....	143
<i>Giallo Antico</i> in Context. Distribution, Use and Commercial Actors According to New Stratigraphic Data from the Western Mediterranean (2 <sup>nd</sup> C. Bc – Late 1 <sup>st</sup> C. Ad) <i>Stefan Ardeleanu</i> .....	155
<i>Amethystus</i> : Ancient Properties and Iconographic Selection <i>Luigi Pedroni</i> .....	167
<b>2. PROVENANCE IDENTIFICATION I: (MARBLE)</b>	
Unraveling the Carrara – Göktepe Entanglement <i>Walter Prochaska, Donato Attanasio and Matthias Bruno</i> .....	175
The Marble of Roman Imperial Portraits <i>Donato Attanasio, Matthias Bruno, Walter Prochaska and Ali Bahadır Yavuz</i> .....	185
Tracing Alabaster (Gypsum or Anhydrite) Artwork Using Trace Element Analysis and a Multi-Isotope Approach (Sr, S, O) <i>Lise Leroux, Wolfram Kloppmann, Philippe Bromblet, Catherine Guerrot, Anthony H. Cooper, Pierre-Yves Le Pogam, Dominique Vingtain and Noel Worley</i> .....	195
Roman Monolithic Fountains and Thasian Marble <i>Annewies van den Hoek, Donato Attanasio and John J. Herrmann</i> .....	207
Archaeometric Analysis of the Alabaster Thresholds of Villa A, Oplontis (Torre Annunziata, Italy) and New Sr and Pb Isotopic Data for <i>Alabastro Ghiaccione del Circeo</i> <i>Simon J. Barker, Simona Perna, J. Clayton Fant, Lorenzo Lazzarini and Igor M. Villa</i> .....	215
Roman Villas of Lake Garda and the Occurrence of Coloured Marbles in the Western Part of “Regio X Venetia et Histria” (Northern Italy) <i>Roberto Bugini, Luisa Folli and Elisabetta Roffia</i> .....	231
Calcitic Marble from Thasos in the North Adriatic Basin: Ravenna, Aquileia, and Milan <i>John J. Herrmann, Robert H. Tykot and Annewies van den Hoek</i> .....	239
Characterisation of White Marble Objects from the Temple of Apollo and the House of Augustus (Palatine Hill, Rome) <i>Francesca Giustini, Mauro Brilli, Enrico Gallochio and Patrizio Pensabene</i> .....	247
Study and Archeometric Analysis of the Marble Elements Found in the Roman Theater at Aeclanum (Mirabella Eclano, Avellino - Italy) <i>Antonio Mesisca, Lorenzo Lazzarini, Stefano Cancelliere and Monica Salvadori</i> .....	255



Two Imperial Monuments in Puteoli: Use of Proconnesian Marble in the Domitianic and Trajanic Periods in Campania <i>Irene Bald Romano, Hans Rupprecht Goette, Donato Attanasio and Walter Prochaska</i> .....	267
Coloured Marbles in the Neapolitan Pavements (16 <sup>th</sup> And 17 <sup>th</sup> Centuries): the Church of <i>Santi Severino e Sossio</i> <i>Roberto Bugini, Luisa Folli and Martino Solito</i> .....	275
Roman and Early Byzantine Sarcophagi of Calcitic Marble from Thasos in Italy: Ostia and Siracusa <i>Donato Attanasio, John J. Herrmann, Robert H. Tykot and Annewies van den Hoek</i> .....	281
Revisiting the Origin and Destination of the Late Antique Marzamemi 'Church Wreck' Cargo <i>Justin Leidwanger, Scott H. Pike and Andrew Donnelly</i> .....	291
The Marbles of the Sculptures of Felix Romuliana in Serbia <i>Walter Prochaska and Maja Živić</i> .....	301
Calcitic Marble from Thasos and Proconnesos in Nea Anchialos (Thessaly) and Thessaloniki (Macedonia) <i>Vincent Barbin, John J. Herrmann, Aristotle Mentzos and Annewies van den Hoek</i> .....	311
Architectural Decoration of the Imperial Agora's Porticoes at Iasos <i>Fulvia Bianchi, Donato Attanasio and Walter Prochaska</i> .....	321
The Winged Victory of Samothrace - New Data on the Different Marbles Used for the Monument from the Sanctuary of the Great Gods <i>Annie Blanc, Philippe Blanc and Ludovic Laugier</i> .....	331
Polychrome Marbles from the Theatre of the Sanctuary of Apollo Pythios in Gortyna (Crete) <i>Jacopo Bonetto, Nicolò Mareso and Michele Bueno</i> .....	337
Paul the Silentiary, Hagia Sophia, Onyx, Lydia, and Breccia Corallina <i>John J. Herrmann and Annewies van den Hoek</i> .....	345
Incrustations from Colonia Ulpia Traiana (Near Modern Xanten, Germany) <i>Vilma Ruppiniè and Ulrich Schüssler</i> .....	351
Stone Objects from Vindobona (Austria) – Petrological Characterization and Provenance of Local Stone in a Historico-Economical Setting <i>Andreas Rohatsch, Michaela Kronberger, Sophie Insulander, Martin Mosser and Barbara Hodits</i> .....	363
Marbles Discovered on the Site of the Forum of Vaison-la-Romaine (Vaucluse, France): Preliminary Results <i>Elsa Roux, Jean-Marc Mignon, Philippe Blanc and Annie Blanc</i> .....	373
Updated Characterisation of White Saint-Béat Marble. Discrimination Parameters from Classical Marbles <i>Hernando Royo Plumed, Pilar Lapeunte, José Antonio Cuchí, Mauro Brillì and Marie-Claire Savin</i> .....	379

Grey and Greyish Banded Marbles from the Estremoz Anticline in Lusitania <i>Pilar Lapuente, Trinidad Nogales-Basarrate, Hernando Royo Plumed, Mauro Brilli and Marie-Claire Savin</i> .....	391
New Data on Spanish Marbles: the Case of <i>Gallaecia</i> (NW Spain) <i>Anna Gutiérrez García-M., Hernando Royo Plumed and Silvia González Soutelo</i> .....	401
A New Roman Imperial Relief Said to Be from Southern Spain: Problems of Style, Iconography, and Marble Type in Determining Provenance <i>John Pollini, Pilar Lapuente, Trinidad Nogales-Basarrate and Jerry Podany</i> .....	413
Reuse of the <i>Marmorata</i> from the Late Roman Palatial Building at Carranque (Toledo, Spain) in the Visigothic Necropolis <i>Virginia García-Entero, Anna Gutiérrez García-M. and Sergio Vidal Álvarez</i> .....	427
Imperial Porphyry in Roman Britain <i>David F. Williams</i> .....	435
Recycling of Marble: Apollonia/Sozousa/Arsuf (Israel) as a Case Study <i>Moshe Fischer, Dimitris Tambakopoulos and Yannis Maniatis</i> .....	443
Thasian Connections Overseas: Sculpture in the Cyrene Museum (Libya) Made of Dolomitic Marble from Thasos <i>John J. Herrmann and Donato Attanasio</i> .....	457
Marble on Rome's Southwestern Frontier: Thamugadi and Lambaesis <i>Robert H. Tykot, Ouahiba Bouzidi, John J. Herrmann and Annewies van den Hoek</i> .....	467
Marble and Sculpture at Lepcis Magna (Tripolitania, Libya): a Preliminary Study Concerning Origin and Workshops <i>Luisa Musso, Laura Buccino, Matthias Bruno, Donato Attanasio and Walter Prochaska</i> .....	481
The Pentelic Marble in the Carnegie Museum of Art Hall of Sculpture, Pittsburgh, Pennsylvania <i>Albert D. Kollar</i> .....	491
Analysis of Classical Marble Sculptures in the Michael C. Carlos Museum, Emory University, Atlanta <i>Robert H. Tykot, John J. Herrmann, Renée Stein, Jasper Gaunt, Susan Blevins and Anne R. Skinner</i> .....	501
<b>3. PROVENANCE IDENTIFICATION II: (OTHER STONES)</b>	
Aphrodisias and the Regional Marble Trade. The <i>Scaenae Frons</i> of the Theatre at Nysa <i>Natalia Toma</i> .....	513
The Stones of Felix Romuliana (Gamzigrad, Serbia) <i>Bojan Djurić, Divna Jovanović, Stefan Pop Lazić and Walter Prochaska</i> .....	523
Aspects of Characterisation of Stone Monuments from Southern Pannonia <i>Branka Migotti</i> .....	537

The Budakalász Travertine Production <i>Bojan Djurić, Sándor Kele and Igor Rižnar</i> .....	545
Stone Monuments from Carnuntum and Surrounding Areas (Austria) – Petrological Characterization and Quarry Location in a Historical Context <i>Gabrielle Kremer, Isabella Kitz, Beatrix Moshhammer, Maria Heinrich and Erich Draganits</i> .....	557
Espejón Limestone and Conglomerate (Soria, Spain): Archaeometric Characterization, Quarrying and Use in Roman Times <i>Virginia García-Entero, Anna Gutiérrez García-M, Sergio Vidal Álvarez, María J. Peréx Agorreta and Eva Zarco Martínez</i> .....	567
The Use of Alcover Stone in Roman Times ( <i>Tarraco, Hispania Citerior</i> ). Contributions to the <i>Officina Lapidaria Tarraconensis</i> <i>Diana Gorostidi Pi, Jordi López Vilar and Anna Gutiérrez García-M.</i> .....	577
<b>4. ADVANCES IN PROVENANCE TECHNIQUES, METHODOLOGIES AND DATABASES</b>	
Grainautline – a Supervised Grain Boundary Extraction Tool Supported by Image Processing and Pattern Recognition <i>Kristóf Csorba, Lilla Barancsuk, Balázs Székely and Judit Zöldföldi</i> .....	587
A Database and GIS Project about Quarrying, Circulation and Use of Stone During the Roman Age in <i>Regio X - Venetia et Histria</i> . The Case Study of the Euganean Trachyte <i>Caterine Previato and Arturo Zara</i> .....	597
<b>5. QUARRIES AND GEOLOGY</b>	
The Distribution of Troad Granite Columns as Evidence for Reconstructing the Management of Their Production <i>Patrizio Pensabene, Javier Á. Domingo and Isabel Rodà</i> .....	613
Ancient Quarries and Stonemasonry in Northern Choria Considiana <i>Hale Güney</i> .....	621
Polychromy in Larisaeon Quarries and its Relation to Architectural Conception <i>Gizem Mater and Ertunç Denктаş</i> .....	633
Euromos of Caria: the Origin of an Hitherto Unknown Grey Veined Stepped Marble of Roman Antiquity <i>Matthias Bruno, Donato Attanasio, Walter Prochaska and Ali Bahadır Yavuz</i> .....	639
Unknown Painted Quarry Inscriptions from Bacakale at <i>Docimium</i> (Turkey) <i>Matthias Bruno</i> .....	651
The Green Schist Marble Stone of Jebel El Hairech (North West of Tunisia): a Multi-Analytical Approach and its Uses in Antiquity <i>Ameur Younès, Mohamed Gaied and Wissem Gallala</i> .....	659
Building Materials and the Ancient Quarries at <i>Thamugadi</i> (East of Algeria), Case Study: Sandstone and Limestone <i>Younès Rezkallah and Ramdane Marmi</i> .....	673

The Local Quarries of the Ancient Roman City of <i>Valeria</i> (Cuenca, Spain) <i>Javier Atienza Fuente</i> .....	683
The Stone and Ancient Quarries of Montjuïc Mountain (Barcelona, Spain) <i>Aureli Álvarez</i> .....	693
<i>Notae Lapidinarum</i> : Preliminary Considerations about the Quarry Marks from the Provincial Forum of <i>Tarraco</i> <i>Maria Serena Vinci</i> .....	699
The Different Steps of the Rough-Hewing on a Monumental Sculpture at the Greek Archaic Period: the Unfinished Kouros of Thasos <i>Danièle Braunstein</i> .....	711
A Review of Copying Techniques in Greco-Roman Sculpture <i>Séverine Moureaud</i> .....	717
Labour Forces at Imperial Quarries <i>Ben Russell</i> .....	733
Social Position of Craftsmen inside the Stone and Marble Processing Trades in the Light of Diocletian's Edict on Prices <i>Krešimir Bosnić and Branko Matulić</i> .....	741
<b>6. STONE PROPERTIES, WEATHERING EFFECTS AND RESTORATION, AS RELATED TO DIAGNOSIS PROBLEMS, MATCHING OF STONE FRAGMENTS AND AUTHENTICITY</b>	
Methods of Consolidation and Protection of Pentelic Marble <i>Maria Apostolopoulou, Elissavet Drakopoulou, Maria Karoglou and Asterios Bakolas</i> .....	749
<b>7. PIGMENTS AND PAINTINGS ON MARBLE</b>	
Painting and Sculpture Conservation in Two Gallo-Roman Temples in Picardy (France): Champlieu and Pont-Sainte-Maxence <i>Véronique Brunet-Gaston and Christophe Gaston</i> .....	763
The Use of Colour on Roman Marble Sarcophagi <i>Eliana Siotto</i> .....	773
New Evidence for Ancient Gilding and Historic Restorations on a Portrait of Antinous in the San Antonio Museum of Art <i>Jessica Powers, Mark Abbe, Michelle Bushey and Scott H. Pike</i> .....	783
Schists and Pigments from Ancient Swat (Khyber Pukhtunkhwa, Pakistan) <i>Francesco Mariottini, Gianluca Vignaroli, Maurizio Mariottini and Mauro Roma</i> .....	793
<b>8. SPECIAL THEME SESSION: „THE USE OF MARBLE AND LIMESTONE IN THE ADRIATIC BASIN IN ANTIQUITY”</b>	
Marble Sarcophagi of Roman Dalmatia Material – Provenance – Workmanship <i>Guntram Koch</i> .....	809

Funerary Monuments and Quarry Management in Middle Dalmatia <i>Nenad Cambi</i> .....	827
Marble Revetments of Diocletian's Palace <i>Katja Marasović and Vinka Marinković</i> .....	839
The Use of Limestones as Construction Materials for the Mosaics of Diocletian's Palace <i>Branko Matulić, Domagoj Mudronja and Krešimir Bosnić</i> .....	855
Restoration of the Peristyle of Diocletian's Palace in Split <i>Goran Nikšić</i> .....	863
Marble Slabs Used at the Archaeological Site of Sorna near Poreč Istria – Croatia <i>Đeni Gobić-Bravar</i> .....	871
Ancient Marbles from the Villa in Verige Bay, Brijuni Island, Croatia <i>Mira Pavletić and Đeni Gobić-Bravar</i> .....	879
Notes on Early Christian Ambos and Altars in the Light of some Fragments from the Islands of Pag and Rab <i>Mirja Jarak</i> .....	887
The Marbles in the Chapel of the Blessed John of Trogir in the Cathedral of St. Lawrence at Trogir <i>Đeni Gobić-Bravar and Daniela Matetić Poljak</i> .....	899
The Use of Limestone in the Roman Province of Dalmatia <i>Edisa Lozić and Igor Rižnar</i> .....	915
The Extraction and Use of Limestone in Istria in Antiquity <i>Klara Buršić-Matijašić and Robert Matijašić</i> .....	925
Aurisina Limestone in the Roman Age: from Karst Quarries to the Cities of the Adriatic Basin <i>Caterina Previato</i> .....	933
The Remains of Infrastructural Facilities of the Ancient Quarries on Zadar Islands (Croatia) <i>Mate Parica</i> .....	941
The Impact of Local Geomorphological and Geological Features of the Area for the Construction of the Burnum Amphitheatre <i>Miroslav Glavičić and Uroš Stepišnik</i> .....	951
Roman Quarry Klis Kosa near Salona <i>Ivan Alduk</i> .....	957
Marmore Lavdata Brattia <i>Miona Miliša and Vinka Marinković</i> .....	963
Quarries of the Lumbarda Archipelago <i>Ivka Lipanović and Vinka Marinković</i> .....	979

Island of Korčula – Importer and Exporter of Stone in Antiquity <i>Mate Parica and Igor Borzić</i> .....	985
Faux Marbling Motifs in Early Christian Frescoes in Central and South Dalmatia: Preliminary Report <i>Tonči Borovac, Antonija Gluhan and Nikola Radošević</i> .....	995
<b>INDEX OF AUTHORS</b> .....	1009

# MARBLE AND SCULPTURE AT LEPCIS MAGNA (TRIPOLITANIA, LIBYA): A PRELIMINARY STUDY CONCERNING ORIGIN AND WORKSHOPS

Luisa Musso<sup>1</sup>, Laura Buccino<sup>2</sup>, Matthias Bruno<sup>3</sup>, Donato Attanasio<sup>4</sup> and Walter Prochaska<sup>5</sup>

<sup>1</sup> Dipartimento di Studi Umanistici, Università degli Studi Roma Tre, Rome, Italy ([luisa.musso@uniroma3.it](mailto:luisa.musso@uniroma3.it))

<sup>2</sup> Dipartimento SAGAS - Storia, Archeologia, Geografia, Arte e Spettacolo, Università degli Studi di Firenze, Florence, Italy ([laura.buccino@unifi.it](mailto:laura.buccino@unifi.it))

<sup>3</sup> Via dei Vascellari 34, Rome, Italy ([matthiasbruno@libero.it](mailto:matthiasbruno@libero.it))

<sup>4</sup> Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche (ISM-CNR), Rome, Italy ([donato.attanasio@ism.cnr.it](mailto:donato.attanasio@ism.cnr.it))

<sup>5</sup> Department of Applied Geosciences and Geophysics, University of Leoben, Leoben, Austria ([walter.prochaska@unileoben.ac.at](mailto:walter.prochaska@unileoben.ac.at))

## Abstract

The sculptures of Lepcis Magna represent one of the richest and most important collections of ancient Tripolitania (Libya). Many of the statues were discovered during the excavations carried out in the first half of the 20<sup>th</sup> century. Archaeometric analysis on the white marble provenance was conducted on a selection of 36 statues kept in the storerooms and in the Museum of Lepcis Magna. These new data concerning the origin of sculpted marbles allow better consideration of several questions concerning the import of sculptural marbles and finished works, the presence of foreign craftsmen in the local context, the ability to identify local production with a distinct style and the organization of the Tripolitanian workshops. Of particular relevance is the copious use of Luna marble for statues from the 1<sup>st</sup> up to the 3<sup>rd</sup> century AD.

## Keywords

Lepcis Magna, sculptures, marble provenance

## Introduction

The excavations at Lepcis Magna, the most important city of ancient Tripolitania (Libya), have yielded a remarkable number of sculptures, which make up one of the most representative samples from North Africa. Many of the statues were discovered during the archaeological campaigns of the first half of the 20<sup>th</sup> century in the Hadrianic Baths,<sup>1</sup> the Severan Complex,<sup>2</sup> the Old

Forum,<sup>3</sup> the Theatre,<sup>4</sup> and the Serapeum;<sup>5</sup> they are now on display in the National Museum of Tripoli and in the local Museum of Lepcis Magna, or stored in their reserves.

No marble quarries were present in ancient Tripolitania, so that all the rough and semifinished marble blocks destined for sculptural or architectural purposes had to be imported from renowned overseas marble quarries.

This paper presents the results of an archaeometric study on the provenance of white marble conducted in November 2013 on a selection of 36 statues, 31 of which have been kept since 2011 in the Old Museum of Lepcis Magna, now used for storage.

The criteria used for the selection (Tab. 1) reflect the accessibility of the statues themselves and take into account the indications provided by the Controller of the Department of Archaeology of Lepcis Magna. The togate statues (Fig. 2) make up the majority of the sample with 18 specimens (cat. nos. 6-10, 12-15, 17, 20, 22-24, 28-31), followed by 7 female portrait-statues<sup>6</sup> (3 of which are inspired by the type of the “Large Herculeanum Woman” (cat. nos. 2, 26, 35), 1 is inspired by the “Small Herculeanum Woman” (cat. no. 18), 1 by the “Orans” type (cat. no. 37, Fig. 7), 1 by a variant of the “Ceres” type (cat. no. 1, Fig. 3) and 1 is a variant of the “Eumachia-Fundilia” type (cat. no. 25). Female ideal statues are attested as well as 6 times: 1 Muse (cat. no. 4), 1 seated female statue, most likely identifiable with a Muse (cat. no. 19), 1 female

1 BARTOCCINI 1929; FINOCCHI 2012.

2 FLORIANI SQUARCIAPINO 1974; FINOCCHI 2015.

3 AURIGEMMA 1941; MUSSO 1996a; DI VITA, LIVADIOTTI 2005.

4 CAPUTO, TRAVERSARI 1976.

5 DI VITA *et al.* 2003; KREIKENBOM 2005.

6 EQUINI SCHNEIDER, BIANCHI 1990; MUSSO 1996b; BUCCINO 2014.

Cat. no.	Object	Inv. no.	Provenance	Chronology
1	Headless draped female portrait-statue in Ceres type	L002300	Mausoleum of Gasr Duirat	First half of the 2 <sup>nd</sup> c. AD
2	Headless draped female portrait-statue in Large Herculaneum Woman type	L002310	West to Wadi er-Rsaf funerary area	2 <sup>nd</sup> c. AD
3	Fragmentary relief with a female captive	L002301	Severan Arch	Early 3 <sup>rd</sup> c. AD
4	Headless draped female ideal statue (Muse)	L002304	-	2 <sup>nd</sup> c. AD
5	Headless draped female ideal statue (peplophoros)	L002305	-	2 <sup>nd</sup> c. AD
6	Headless togate statue	L002306	North to the passageway along the front side of the Severan Basilica	Early 2 <sup>nd</sup> c. AD
7	Headless togate statue	L002307	-	Late 1 <sup>st</sup> - early 2 <sup>nd</sup> c. AD
8	Headless togate statue	L002308	-	Late 2 <sup>nd</sup> - early 3 <sup>rd</sup> c. AD
9	Headless togate statue	L002309	-	1 <sup>st</sup> c. AD
10	Headless togate statue	L002333	Severan Forum, exedra, left niche	Late 2 <sup>nd</sup> - early 3 <sup>rd</sup> c. AD
11	Headless draped female ideal statue	L002332	Scavi Nuovi, Unfinished Baths	2 <sup>nd</sup> c. AD (?)
12	Headless togate statue	L002312	Old Forum	Late 2 <sup>nd</sup> - early 3 <sup>rd</sup> c. AD
13	Headless togate statue	L002311	-	Late 3 <sup>rd</sup> c. AD
14	Lower part of a togate statue	L002313	-	2 <sup>nd</sup> c. AD
15	Lower part of a togate statue	L002314	Hadrianic Baths, eastern exedra	First half of the 2 <sup>nd</sup> c. AD
16	Headless herm	L002315	-	Early 2 <sup>nd</sup> c. AD (?)
17	Headless togate statue of a boy with bulla	L002316	Severan Forum	Second half of the 1 <sup>st</sup> c. AD
18	Lower part of a draped female portrait-statue in Small Herculaneum Woman type	L002317	-	1 <sup>st</sup> c. AD
19	Headless draped female ideal seated statue (Muse?)	L002318	Old Forum	Second half of the 2 <sup>nd</sup> c. AD
20	Headless togate statue	L002319	Severan Forum	2 <sup>nd</sup> c. AD
21	Headless draped female statue (peplophoros)	L002320	-	Late 2 <sup>nd</sup> - early 3 <sup>rd</sup> c. AD
22	Headless togate statue	L002322	-	2 <sup>nd</sup> c. AD
23	Headless togate statue	L002321	Theatre	1 <sup>st</sup> c. AD
24	Headless togate statue	L002323	Theatre	1 <sup>st</sup> c. AD
25	Headless draped female portrait-statue in Eumachia-Fundilia type (variant)	L002324	-	2 <sup>nd</sup> c. AD
26	Headless draped female portrait-statue in Large Herculaneum Woman type	L002325	Calchidicum	2 <sup>nd</sup> c. AD
28	Headless togate statue	L002327	Theatre	1 <sup>st</sup> c. AD
29	Headless togate statue	L002328	Old Forum	1 <sup>st</sup> c. AD
30	Lower part of a togate statue	L002329	-	2 <sup>nd</sup> c. AD
31	Lower part of a togate statue	L002330	Area around the Serapeum	2 <sup>nd</sup> c. AD
32	Cuirassed torso	L002342	-	1 <sup>st</sup> c. AD
34	Headless male ideal statue (Aesculapius)	2322	Hadrianic Baths, frigidarium	Second half of the 2 <sup>nd</sup> c. AD
35	Headless draped female portrait-statue in Large Herculaneum Woman type	2323	-	2 <sup>nd</sup> c. AD
36	Colossal headless female ideal statue (Virtus)	2161-2	once Tripoli, Orthodox Cemetery	Late 1 <sup>st</sup> - early 2 <sup>nd</sup> c. AD
37	Draped female portrait-statue in Orans type	498	Serapeum	Second half of the 2 <sup>nd</sup> c. AD
38	Draped female ideal statue (Tyche)	506	Serapeum	Second half of the 2 <sup>nd</sup> c. AD

Table 1. General overview of the 36 sculptures from Lepcis Magna with archaeological and chronological indications and analytical results of the tested marbles (isotopic data for sculpture cat. no. 38 are taken from LAZZARINI, TURI 2003)



Dolom. %	MGS mm	$\delta^{18}\text{O}$ ‰	$\delta^{13}\text{C}$ ‰	Intensity %	Distance	Prob.Rel. %	Prob.Ass %	Marble provenance
0	0.9	-7.73	2.60	155.0	0.6	100	99	Pentelic
0	0.9	-4.59	2.91	643	30	59	~ 0	Pentelic
0	1.75	-1.88	4.03	8.5	7.4	95	20	Proconnesos
0	1.1	-2.87	1.86	47.8	2.3	73	80	Luna
0	0.45	-2.16	2.08	21.9	8.7	88	12	Luna
100	1.3	-4.17	3.58	22.3	7	98	22	Thasos, Cape Vathy
0	0.65	-1.77	2.03	17.2	8.7	79	12	Luna
0	1.4	-1.07	2.78	17.3	5.9	79	32	Proconnesos
0	0.52	-1.78	2.11	63.9	5.9	100	32	Luna
0	1.4	-1.11	2.98	3.5	2.1	97	83	Proconnesos
0	0.8	-7.40	2.96	69.2	7.1	85	21	Pentelic
0	0.9	-2.70	4.91	3.3	8.2	99	15	Paros I Lychnites
21	0.55	-1.93	2.10	91.6	1.3	100	93	Luna
0	2.25	-3.80	1.87	16.3	2.6	71	76	Aphrodisias
14	1.75	-2.84	2.36	26.6	3.2	51	68	Aphrodisias
100	1.3	-3.66	3.51	54.2	4.3	95	51	Thasos, Cape Vathy
0	0.45	-2.03	2.01	86.6	3.1	100	69	Luna
0	0.75	-4.91	4.21	37.6	7.8	88	17	Ephesos 1
0	0.8	-7.74	2.50	277.9	1.5	100	92	Pentelic
0	1.1	-2.48	2.28	11.4	4.2	35	52	Paros II, Marathi
0	0.65	-6.41	2.45	162.6	4.2	90	52	Pentelic
0	1.3	-2.75	4.84	6.5	2.5	100	77	Paros I Lychnites
0	2.5	-0.74	2.32	25.3	2.1	81	84	Paros II, Chorodaki
0	0.7	-1.83	2.08	62.2	0.1	100	100	Luna
0	0.7	-1.44	2.42	22.9	2.6	93	76	Luna
26	0.7	-7.32	2.84	310.5	1.7	100	90	Pentelic
0	0.5	-1.52	2.34	67.8	2.1	100	83	Luna
0	0.4	-2.18	1.92	104.4	6.1	85	30	Luna
0	0.6	-1.87	2.31	55.9	1.0	100	97	Luna
0	1.1	-6.68	2.65	156.7	0.3	99	100	Pentelic
0	1.1	-4.27	2.48	151.4	1.7	92	89	Docimium
0	1.3	-3.53	2.77	8.8	4	67	55	Proconnesos
18	0.63	-5.86	2.74	135.3	3.5	81	62	Pentelic
0	0.45	-1.64	2.29	44.9	3.4	99	63	Luna
0	0.5	-2.69	3.00	1.6	5.4	81	38	Göktepe
-	fine	-2.82	2.50	-	-	-	-	Göktepe

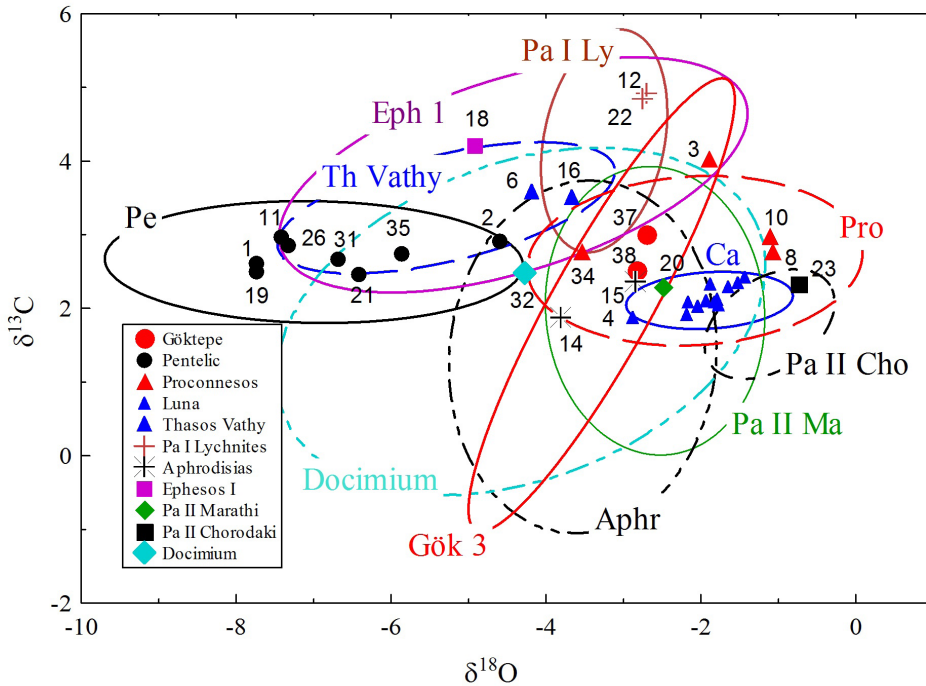


Fig. 1.  
Isotopic diagram with  
plotted data of the 36  
Lepcis sculptures

figure wearing an Amazon style dress which has been interpreted as Dea Roma or, more likely, Virtus (cat. no. 36), 1 Tyche (cat. no. 38, Fig. 5), 1 unidentified (cat. no. 11) and 1 peplophoros (cat. no. 5; the second peplophoros, cat. no. 21, could be a portrait-statue). The sample also includes 1 male ideal statue of Aesculapius (cat. no. 34, Fig. 4), 1 cuirassed torso (cat. no. 32), 1 fragment of a relief showing a captive woman from the Severan Arch (cat. no. 3), and finally 1 headless herm (cat. no. 16). From a total of 36 pieces, 20 provenances are known with certainty (Tab. 1): the largest groups come from the Severan Complex (4), the Old Forum (3), the Theatre (3), the Serapeum (3), the Hadrianic Baths (2); the Calchidicum, the Severan Arch, the area of the so-called “Scavi Nuovi” next to the Unfinished Baths, the area of the Mausoleum of Gasr Duirat, and the funerary area of Wadi er-Rsaf are all represented only by one specimen.

The chronological range of the sculptures is quite large and, based on a still preliminary study, it extends from the 1<sup>st</sup> to the mid-late 3<sup>rd</sup> centuries AD.

The archaeometric analysis here presented, undertaken on a heterogeneous group of sculptures of provenance, typology, usages and chronology, provides the opportunity to combine observations about sculptural typology, style, and archaeological context of provenance, with those on the identification and origin of the marble. The aim of such an exercise is to gain a comprehensive understanding of the sculptural artefacts from Lepcis, from their execution to the identification of their workshops, and their place of production.

### Archaeometric study

Since the eighties of the last century Susan Walker and Hafed Walda have been undertaking several sampling campaigns of different archaeological artefacts at Lepcis Magna, which included not only sculptures found in the city, but also a fair amount of architectural elements, such as the famous pillars of the Severan Basilica.<sup>7</sup> Their analytical data were subsequently reviewed in comparison to the improved isotopic graphs, which over the years have undergone a remarkable transformation. In the following years other analyses were performed on more specific contexts, such as the Serapeum where several statues were discovered,<sup>8</sup> while more recently archaeometric testing was undertaken on items of the Severan Complex,<sup>9</sup> or on specific well attested marble types.<sup>10</sup>

In the frame of the Archaeological Mission of the University Roma Tre carried out in fall 2013, 31 statues in the Old Museum of Lepcis Magna (cat. nos. 1-26, 28-32) underwent archaeometric analysis with stable isotopes (Fig. 1), MGS, EPR (Tab. 1). To those we have added 5, previously analysed, statues, all of them on display in the Lepcis Museum (cat. nos. 34-38).

The obtained analytical data were compared with those of 15 Roman quarries (Tab. 2) of fine, medium and

7 WALKER, WALDA 1984; 1988.

8 LAZZARINI, TURI 2003.

9 BIANCHI *et al.* 2011; BIANCHI, BRUNO, PIKE 2015.

10 ATTANASIO *et al.* 2012.



Fig. 2. Lepcis Magna, Old Museum – Headless togate statue (cat. no. 24), Luna marble, from the Theatre (Archaeological Mission of the University Roma Tre, Fabian Baroni)



Fig. 3. Lepcis Magna, Old Museum – Headless draped female portrait-statue of the Ceres type (cat. no. 1), Pentelic marble, from the Mausoleum of Gasr Duirat (Archaeological Mission of the University Roma Tre, Fabian Baroni)

coarse grained white marble from Italy (Carrara/Luna), Greece (Pentelic; Paros I and II; Thasos Alike and Vathy) and Asia Minor (Göktepe; Aphrodisias; Docimium; Ephesos; Proconnesos).

It was thus possible to assign as many as 12 statues to the white Luna marble (cat. nos. 4-5, 7, 9, 13, 17, 24-25, 28-30, 36), followed by 8 statues of Pentelic (cat. nos. 1-2, 11, 19, 21, 26, 31, 35) and 4 sculptures of Proconnesian marble (cat. nos. 3, 8, 10, 34). The Parian lychnites from Marathi (cat. nos. 12, 22), the Paros II quality from Marathi/Chorodaki (cat. nos. 20, 23), the Cape Vathy marble from Thasos (cat. nos. 6, 16), and the Aphrodisian marble from the “city quarries” (cat. nos. 14-15) and that from Göktepe (cat. nos. 37-38) are each attested by two exemplars, while the white Docimium marble quality (cat. no. 32) and the coarser Ephesian marble (cat. no. 18) are present only once.

The white Göktepe marble was used for two statues from the Serapeum, the impressive female portrait-statue and the statue of Tyche (Figs. 5, 7).<sup>11</sup> Previously the marble

of these two sculptures was identified as Luna marble,<sup>12</sup> but the values of strontium and the high intensity of manganese allow us to attribute at least the draped female portrait-statue of the Orans type (cat. no. 37, Fig. 7) unequivocally to white Göktepe statuary marble, while for the statue of Tyche (cat. no. 38, Fig. 5) measurements are incomplete but the isotopic signature together with the fine grain of the marble unquestionably identifies Göktepe as the source quarry.<sup>13</sup>

### White marbles and statues production at Lepcis Magna from the 1<sup>st</sup> to the 3<sup>rd</sup> century AD

The most surprising data detected by this first preliminary archaeometric study is that the majority of the sculptures are of Luna marble, for a total of 12 statues corresponding to 34%. The presence of Luna marble is totally unexpected and the fact that this marble is actually the

11 The statues are made of different pieces, but it was possible to sample only the lower ones of both sculptures. Nevertheless the marble quality of the other elements was identified macroscopically with the same high quality white Göktepe marble.

12 LAZZARINI, TURI 2003, 287-289.

13 The female portrait-statue (cat. no. 37) was resampled and tested again after macroscopic inspection and the autoptic identification with the white Göktepe marble. The statue of Tyche (cat. no. 38) was not accessible at that time and the archaeometric analysis could not be repeated.

No.	Site, no. of samples	MGS mm	$\delta^{18}\text{O}$ ‰	$\delta^{13}\text{C}$ ‰	EPR intensity %	EPR linewidth %
1	Carrara, 112	0.80 0.4, 1.4	-1.89 -3.0, -0.5	2.11 1.1, 2.6	68.5 10, 237	63.4 55, 80
2	Pentelicon, 154	0.96 0.6, 1.8	-7.00 -9.0, -3.8	2.63 1.9, 4.1	226.3 12.5, 1010	58.2 38, 100
10	Pa I, lychn, 41	1.70 1.0, 3.1	-3.25 -4.0, -2.6	4.27 3.0, 5.1	8.6 3.6, 22.8	48.6 41, 59
11	Pa II Ma, 28	2.11 1.0, 3.0	-2.59 -4.2, -1.9	1.97 -0.6, 3.4	9.8 3.6, 49.5	52.0 42, 59
12	Pa II Cho, 62	2.07 0.9, 3.0	-1.11 -2.6, -0.6	1.79 0.5, 2.2	19.5 1.8, 36.7	47.9 40, 57
13	Th Alikei, 76	3.84 2.4, 7.5	-0.72 -4.8, 0.5	2.98 1.5, 3.6	130.8 3.6, 522.7	55.7 46, 69
14	Th Vathy, 37	1.85 0.9, 3.2	-5.29 -8.2, -3.2	3.37 2.0, 3.9	105.3 19.1, 633.9	75.8 62, 107
8	Göktepe 3, 72	0.62 0.2, 1.1	-3.33 -6.6, -2.6	2.11 -4.5, 3.4	3.5 1.1, 14.0	53.9 45, 64
9	Göktepe 4, 29	0.62 0.2, 1.3	-3.45 -7.1, -2.2	2.03 -1.5, 2.7	19.3 3.2, 47.1	46.0 37, 51
3	Docimium, 65	0.67 0.4, 1.2	-4.32 -7.7, -2.3	1.80 -1.4, 3.1	242.5 5.7, 626.6	53.9 40, 68
4	Aphrod, 103	2.12 0.1, 4.5	-3.53 -6.5, -2.05	1.34 -2.7, 2.6	43.4 3, 276	53.7 37, 72
5	Ephesos 1, 88	1.74 0.4, 4.6	-4.42 -8.3, -2.2	3.81 -0.6, 5.1	60.0 14.7, 51.3	56.4 42, 73
6	Ephesos 2, 38	1.71 1.3, 2.4	-3.14 -4.3, -2.6	0.35 -0.8, 1.5	41.8 23, 69	45.5 39, 60
7	Proconn 1, 380	1.72 0.4, 3.5	-2.08 -5.2, -0.3	2.65 -0.9, 3.9	6.0 0.8, 46.4	57.8 37, 87
15	Proconn 2, 14	1.68 1.2, 2.5	-6.78 -9.1, -5.5	2.59 2.3, 3.2	7.7 1.2, 53.1	58.9 40, 75

Table 2.  
Summary of the database of the considered white marbles. Mean variable values are given in the first row, followed by minimum and maximum values in the second row. The isotopic and EPR variables are given as ‰ or % with respect to specific standards (Pee Dee Belemnite for isotopes and Dolomite N368 BCS for EPR). The maximum grain size (MGS) is given in mm

most attested is at odds with the evidence from the architectural materials in Lepcis<sup>14</sup> and with what is so far known about the provenance of other sculptural marbles from North Africa.<sup>15</sup> However it is clear that the Luna marble is among the earliest to have been used for statues of Lepcis and is the only one to be attested down to the late 3<sup>rd</sup> century AD. In fact, in the 1<sup>st</sup> century AD Luna marble is the most represented with 7 statues, 6 of which are togate (cat. nos. 7, 9, 17, 24, Fig. 2, 28-29), and one imposing statue of the goddess Roma, or rather Virtus (cat. no. 36), which dates between the 1<sup>st</sup> and the 2<sup>nd</sup> century AD. The Paros II from Chorodaki, the Ephesian and the white Docimian marble are attested only once, used respectively for a togate statue (cat. no. 23), a draped female portrait-statue (cat. no. 18) and a cuirassed torso (cat. no. 32).

The largest group of sculptures refers to the 2<sup>nd</sup> century AD, when Greek and Asiatic marbles take

precedence, but the use of Luna marble remains well attested. The most representative marble is the Attic Pentelic marble, with 6 female statues (cat. nos. 1, Figs. 3, 2, 11, 19, 26, 35), and one togate statue (cat. no. 31), followed by the Carian marbles: the marble from the so-called Aphrodisias “city quarries” attested by 2 togate statues (cat. nos. 14-15), and the fine grained marble from Göktepe quarry district used for 2 female statues from the Serapeum (cat. nos. 37-38, Figs. 5, 7). Luna marble is attested for 3 female statues (cat. nos. 4-5, 25) and one togate statue (cat. no. 30). The Parian marbles, to be distinguished in Lychnites Paros I from the Marathi valley (cat. no. 22) and Paros II from Marathi (cat. no. 20), were used for 2 togate statues, while the white dolomitic marble from Cape Vathy on Thasos island is attested twice, for a togate statue (cat. no. 6) and a headless herm (cat. no. 16). The coarse white-grey Proconnesian marble is attested only once, for a statue of Aesculapius from the frigidarium of the Hadrianic Baths (cat. no. 34, Fig. 4).

The period between the end of the 2<sup>nd</sup> and the early 3<sup>rd</sup> century AD is represented by 4 statues, made in three different marbles: the Parian Lychnites (cat. no. 12), and the Asiatic Proconnesian marble (cat. nos. 8, 10) were used for togate statues, while the Pentelic is

14 WARD PERKINS 1951; 1980; PENSABENE 2001, 2003; 2006; BRUNO, BIANCHI 2015, 31-46.

15 Cyrene and Cherchel represent two case-studies: ATTANASIO *et al.* 2006; ATTANASIO, BRUNO, LANDWEHR 2012; LANDWEHR *et al.* 2012-2013.



Fig. 4. Lepcis Magna, Museum – Headless statue of Aesculapius (cat. no. 34), Proconnesian marble, from the Hadrianic Baths (Archaeological Mission of the University Roma Tre, Fabian Baroni)



Fig. 5. Lepcis Magna, Museum – Statue of Tyche (cat. no. 38), Göktepe marble, from the Serapeum (Archaeological Mission of the University Roma Tre, Fabian Baroni)

represented by a peplophoros statue (cat. no. 21). In this period the use of Proconnesian marble gains prominence, a phenomenon amplified and made possible by the massive Severan building project, whose construction demanded the import from the quarries on Marmara Island of huge quantities of such material, as testified by the fragmentary relief with female captive from the Severan Arch (cat. no. 3). Finally, an additional togate statue made of Luna marble (cat. no. 13) may be dated to the late 3<sup>rd</sup> century AD.

### Conclusions

At Lepcis Magna, the extensive use of marble in the public architecture begins with the construction of the great Hadrianic Baths, inaugurated in 137-138 AD, and reaches its peak, in terms of imported stocks, in the central decades of the 2<sup>nd</sup> century to continue in the Severan period: the Severan Complex testifies to the enormous imperial financial investment of L. Septimius Severus in his hometown.<sup>16</sup>

The picture of statuary marble provenance outlined so far bears witness to a variety of marbles of Greek and Asiatic origin already in the 1<sup>st</sup> century AD, in addition to the more attested Italic Luna marble. The number of marble types grows over the 2<sup>nd</sup> century, with a predominance of those of Greek origin, among which the Pentelic, accompanied yet by two insular qualities from Paros, the Lychnites and the Paros II variety, and Thasos, the dolomitic marble of Cape Vathy. With regard to Pentelic marble, its presence at Lepcis Magna is attested from a huge shapeless block recovered in the shipwreck found during the construction works of the new harbour of Misratah (Sidi Ahmad).<sup>17</sup> What we know about the way Pentelic marble was marketed, would lead us to hypothesize that the shipments of shapeless blocks to be sculptured at destination were accompanied by Attic sculptors accustomed to a sophisticated and rich patronage,<sup>18</sup> but nevertheless

16 BRUNO, BIANCHI 2015, 31-46.

17 BRUNO, BIANCHI 2015, 102.

18 For a very fine peplophoros statue in Pentelic marble, found in Lepcis Magna and dated to 1<sup>st</sup> century AD, see PORTALE 2012.



Fig. 6. Istanbul, Archaeological Museums – Draped female portrait-statue of the Ceres type, from Pisidian Antioch, sanctuary of Men (Photo courtesy of Roberto Lucignani, Rome)



Fig. 7. Lepcis Magna, Museum – Draped female portrait-statue of the Orans type (cat. no. 37), Göktepe marble, from the Serapeum (Archaeological Mission of the University Roma Tre, Fabian Baroni)

we should bear in mind that in the 2<sup>nd</sup> century AD many flourishing and accomplished local sculpture workshops were active in Lepcis (Fig. 3). These workshops could have met the demand of the local market and work with imported marbles, adapting to the stylistic trends in vogue at that time.

Significant too is the presence of Asiatic marbles, among them the white statuary from Göktepe for 2 female statues of the Serapeum, one an ideal type (cat. no. 38, Fig. 5), the other a portrait-statue (cat. no. 37, Fig. 7), which show remarkable stylistic differences even though they were made with the same material: the portrait-statue is stylistically very close to another from Pisidian Antioch (Fig. 6),<sup>19</sup> whereas the ideal statue was executed in a less refined, more rigid way. The portrait-statue is, with some probability, an imported product, as would let us suppose the fact that it is executed in different pieces to be later reassembled, and it can therefore be assigned to a micro-Asiatic workshop. A different question is to

determine whether such workshop was based in Asia Minor or in Rome, since Rome worked as hub of artists and art pieces, other than as a production centre. As the case of the marble from Göktepe proves, the relation between material and those who sculpt it can be rather complex; there cannot be any simplistic assumption about the identity of provenance of material and artist. The evidence entails a wide range of possibilities: imported products, finished or almost-finished; statues sculpted by travelling artists, who work only with familiar marbles; local workshops working with imported marbles.

As for the Proconnesian marble, we can assume that, especially in the Severan age, unused architectural elements originally destined for the largest urban building projects of Lepcis, might have supplied local sculptural workshops; this phenomenon is well evidenced by a number of sculptures from the early 3<sup>rd</sup> century AD discovered in the so-called Nymphaeum of Hercules along the main road of Lepcis.<sup>20</sup> Two statues of Hercules (Fig. 8)

19 BUCCINO 2014, 23, Figs. 6-7.

20 TOMASELLO 2005, 57-111.



Fig. 8. Lepcis Magna, Museum – Statue of Hercules, with the remains of the reused architrave, Proconnesian marble, from the so-called Nymphaeum of Hercules (Archaeological Mission of the University Roma Tre, Matthias Bruno)

clearly show along their lower edge and on their back the remains of the decoration of the original architrave.<sup>21</sup>

In conclusion, this brief presentation shows the variety of issues raised by the archaeometric analysis of marbles combined with the formal study of the sculptures, beginning with the differentiation in terms of use of various marbles, also in connection with the cultural and commercial exchanges on the Mediterranean market of the Roman Empire.

The quite obvious connection between the type of marble and the provenance of the artists who travelled with the marble is plausible in the case of large and specific orders, but it cannot be assumed as the rule and must be carefully considered case by case. The knowledge of the local craftsmanship picture reveals a quite lively reality represented by workshops working with imported marble and reaching heterogeneous results with respect to quality of handcraft and influence of models.

To assess the relevance of the handcraft component that is foreign to the local context, we should not neglect the role of sculptural artefacts which are imported in a semi-worked condition or are completely finished and polished: they usually represent well defined and standardized types of works, as exemplified by the production of the Attic workshops for the export market.<sup>22</sup>

These new data concerning the origins of sculpted marbles have provided an opportunity for dealing with an issue that moves from the provenance of the marbles to the core of artisanal production and its nodes and complexities. Such as, for example, the presence of foreign craftsmen in the local context, the importation of finished works, the ability to identify local production with a distinct style, but where different external influences are also visible, and finally the organization of the Tripolitanian workshops themselves.

## BIBLIOGRAPHY

- ATTANASIO D., BRUNO M., LANDWEHR CH. 2012: "I marmi scultorei di Caesarea Mauretaniae (Cherchel)", in M. B. COCCO, A. GAVINI, A. IBBA (eds.): *L'Africa romana: trasformazione dei paesaggi del potere nell'Africa settentrionale fino alla fine del mondo antico. Atti del XIX Convegno di Studio* (Sassari, 16-19 dicembre 2010), Roma, 527-540.
- ATTANASIO D., KANE S., PLATANIA R., ROCCHI P. 2006: "Provenance, use, and distribution of white marbles at Cyrene", in E. FABBRICOTTI, O. MENOZZI (eds.): *Cirenaica: studi, scavi e scoperte. Atti del X Convegno di Archeologia Cirenaica* (Chieti, 24-26 novembre 2003), Parte I: Nuovi dati da città e territorio, Oxford, 247-255.
- ATTANASIO D., YAVUZ A. B., BRUNO M., HERRMANN JR. J. J., TYKOT R. H., VAN DEN HOEK A. 2012: "On the Ephesian origin of greco scritto marble", in *ASMOSIA IX*, 245-254.
- AURIGEMMA S. 1941: "Sculpture del Foro Vecchio di Lepcis Magna raffiguranti la Dea Roma e i principi della casa dei Giulio-Claudi", *Africa Italiana* 8, 1-94.

21 FLORIANI SQUARCIAPINO 1974, Pl. 81.

22 MUSSO 1996a.

- BARTOCCINI R. 1929: Le terme di Lepcis (Leptis Magna), Bergamo.
- BIANCHI F., BRUNO M., GORGONI C., PALLANTE P., PONTI G. 2011: "The pilasters of the Severan Basilica at Leptis Magna and the School of Aphrodisias. New archaeometric and archaeological data", in *ASMOSIA VIII*, 329-349.
- BIANCHI F., BRUNO M., PIKE S. 2015: "Pentelic marble in the Severan Complex in Leptis Magna (Tripolitania, Libya)", in *ASMOSIA X*, 23-34.
- BRUNO M., BIANCHI F. 2015: Marmi di Leptis Magna: repertorio delle pietre bianche e policrome della città, Roma.
- BUCCINO L. 2014: "Ritratti di Leptis Magna: modelli, produzione, contesto tra la dinastia flavia e gli Antonini", *Libyan Studies* 45, 19-47.
- CAPUTO G., TRAVERSARI G. 1976: Le sculture del teatro di Leptis Magna, Roma.
- DI VITA A., LIVADIOTTI M. (eds.) 2005: I tre templi del lato nord-ovest del Foro Vecchio a Leptis Magna, Roma.
- DI VITA A., PUGLIESE CARRATELLI G., DI VITA EVRARD G. 2003: "Il Serapeo di Leptis Magna: il tempio, le iscrizioni, i marmi", *Quaderni di Archeologia della Libya* 18, 267-292.
- EQUINI SCHNEIDER E., BIANCHI L. 1990: "Considerazioni su alcune statue femminili di Leptis Magna: iconografia e officine", in A. MASTINO (ed.): *L'Africa romana. Atti del VII Convegno di Studio* (Sassari, 15-17 dicembre 1989), Sassari, 793-801.
- FINOCCHI P. 2012: Le sculture delle terme adrianee di Leptis Magna. Dagli appunti di M. Floriani Squarciapino, Roma.
- FINOCCHI P. 2015: Le sculture del Ninfeo Maggiore di Leptis Magna. Dagli appunti di M. Floriani Squarciapino, Roma.
- FLORIANI SQUARCIAPINO M. 1974: Sculture del Foro Severiano di Leptis Magna, Roma.
- KREIKENBOM D. 2005: "Zum Sarapeion in Lepcis Magna", in *Urbanistik und städtische Kultur in Westasien und Nordafrika unter den Severern. Beiträge zur Table Ronde in Mainz am 3. und 4. Dezember 2004*, Worms, 83-99.
- LANDWEHR CH., ATTANASIO D., BRUNO M., SOBOTT R. 2012-2013: "The sculptural marbles of Caesarea Mauretaniae (Cherchel, Algeria)", *Jahrbuch des Deutschen Archäologischen Instituts* 127-128, 227-260.
- LAZZARINI L., TURI B. 2003: "I marmi e le pietre", in *DI VITA et al.* 2003, 286-292.
- MUSSO L. 1996a: "Nuovi ritrovamenti di scultura a Leptis Magna. Athena tipo Medici", in *Scritti di antichità in memoria di Sandro Stucchi*, 2. La Tripolitania, l'Italia e l'Occidente, Roma, 115-139.
- MUSSO L. 1996b: "Statua funeraria nel tipo della Grande Ercolanese. Nota sulla scultura iconica femminile a Leptis Magna", in L. MUSSO *et al.*, *La tomba presso la scuola elementare "al-Hadi al-Fergiani" a Khoms, Libya Antiqua*, n.s. 2, 142-150.
- PENSABENE P. 2001: "Pentelico e proconnesio in Tripolitania: coordinamento o concorrenza nella distribuzione?", *Archeologia Classica* 52, 63-127.
- PENSABENE P. 2003: "La Porta Oea e l'arco di Marco Aurelio a Leptis Magna. Contributo alla definizione dei marmi e del loro costo, delle officine e delle committenze", *Quaderni di Archeologia della Libya* 18, 341-367.
- PENSABENE P. 2006: "Le scuole di Nicomedia e Afrodisia e i pilastri della basilica severiana di Leptis Magna", *Marmora. An international journal for archaeology, history and archaeometry of marbles and stone* 2, 41-58.
- PORTALE E. C. 2012: "Una 'nuova' Livia da Leptis Magna. Osservazioni sul contributo delle botteghe attiche nell'elaborazione e diffusione dell'immaginario imperiale", in TH. STEPHANIDOU-TIVERIOU, P. KARANASTASI, D. DAMASKOS (eds.): *Κλασική παράδοση και νεωτερικά στοιχεία στην πλαστική της Ρωμαϊκής Ελλάδας. Πρακτικά Διεθνούς Συνεδρίου (Θεσσαλονίκη, 7-9 Μαΐου 2009)*, Thessaloniki, 477-496.
- TOMASELLO F. 2005: Fontane e ninfei minori di Leptis Magna, Roma.
- WALKER S., WALDA H. 1984: "The art and architecture of Lepcis Magna. Marble origins by isotopic analysis", *Libyan Studies* 15, 81-92.
- WALKER S., WALDA H. 1988: "Isotopic analysis of marble from Lepcis Magna. Revised interpretations", *Libyan Studies* 19, 55-59.
- WARD PERKINS J. B. 1951: "Tripolitania and the marble trade", in *Journal of Roman Studies* 41, 89-104.
- WARD PERKINS J. B. 1980: "Nicomedia and the marble trade", in *Papers of the British School at Rome* 48, 23-69.