

# Roman Villas of Lake Garda and the Occurrence of Coloured Marbles in the Western Part of “Regio X Venetia et Histria” (Northern Italy)

---

Bugini, Roberto; Folli, Luisa; Roffia, Elisabetta

Source / Izvornik: **ASMOSIA XI, Interdisciplinary Studies on Ancient Stone, Proceedings of the XI International Conference of ASMOSIA, 2018, 231 - 238**

Conference paper / Rad u zborniku

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

<https://doi.org/10.31534/XI.asmosia.2015/02.06>

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:123:756579>

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

Download date / Datum preuzimanja: **2025-04-02**



Repository / Repozitorij:

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



UNIVERSITY OF SPLIT

  
DIGITALNI AKADEMSKI ARHIVI I REPOZITORIJI



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

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



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

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

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

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

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

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

# ROMAN VILLAS OF LAKE GARDA AND THE OCCURRENCE OF COLOURED MARBLES IN THE WESTERN PART OF “REGIO X VENETIA ET HISTRIA” (NORTHERN ITALY)

Roberto Bugini<sup>1</sup>, Luisa Folli<sup>2</sup> and Elisabetta Roffia<sup>3</sup>

<sup>1</sup> CNR-ICVBC (Ist. Conservazione Beni Culturali), Milan, Italy (bugini@icvbc.cnr.it)

<sup>2</sup> Viale Calabria 18B, Lodi, Italy (lufo@fastwebnet.it)

<sup>3</sup> Piazzale Libia 4, Milan, Italy (Isa.rofa@tiscali.it)

## Abstract

Important remains of Roman villas are preserved on the shores of Lake Garda, in the western part of “Regio X” (now Brescia province, Lombardy): Toscolano Maderno, Desenzano, Faustinella, Nuvolento. Each villa was developed over several centuries (1<sup>st</sup> - 5<sup>th</sup> CE) and contains a lot of coloured marble fragments (slabs, listes etc.), mainly coming from the quarries of the Eastern Mediterranean basin.

The wide diffusion of coloured marbles in the western part of Regio X (Venetia et Histria) is then compared to the marbles found in the eastern part of the Regio XI (Transpadana), two territories today united in the region of Lombardy.

## Keywords

coloured marble, Roman architecture, Lombardy

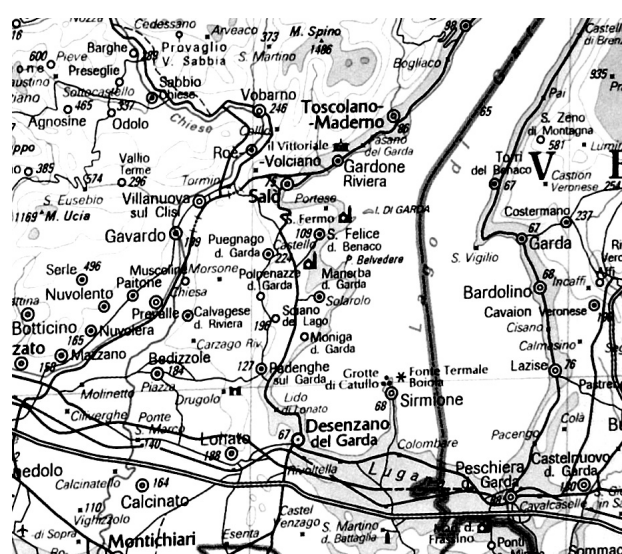


Fig. 1a. Map of the Lake Garda area (Toscolano, Desenzano and Nuvolento are indicated)

## 1. Introduction

The shores of Lake Garda (Benacus) host some of the richest and best preserved Roman villas of Northern Italy (Fig. 1a); they exhibit some architectural characteristics of the enchanting villae maritimae of Central Italy. Two villas, lying in Toscolano - Capra and in Desenzano - Borgo Regio, are the most interesting examples owing to the complexity of the architectural plans and the grandeur of the decorations with mosaic pavements, wall paintings and sculptures. These villas, built at the end of the 1<sup>st</sup> century BCE, were inhabited until the beginning of the 5<sup>th</sup> century CE: in both cases the building schemes and the room decorations were significantly changed. Another residential villa lies a few kilometres south Desenzano (Faustinella - San Cipriano) near the Morainic Hills. Finally, a fourth villa (Nuvolento - Pieve) lies some kilometres west of Lake Garda between Brescia and Salò, and it was mainly devoted to the agriculture. Considerable amounts of pieces of coloured marble were found in these sites, pertaining to “opus sectile”

pavements, wall veneering and carved decorations. White marbles of different grain sizes or black veined or grey marbles are present in each site together with coloured ones.

## 2. Site description

### 2.1. Toscolano - Capra (Fig. 1b)

The villa was built near the western shore of Lake Garda and the remains occupy a length of about two hundred metres. A series of excavations since the third quarter of the 20<sup>th</sup> century unearthed some structures in the southern part: a lot of rooms with wall paintings and mosaic pavements; some structures in the northern part: three large rooms with a portico in front of a great water pool, 47 metres long and 6 metres wide (#52). A huge quantity of marble fragments, pertaining to the 2<sup>nd</sup> century phase, was found in a small repository dug in a niche of the water pool (ROFFIA 2015).



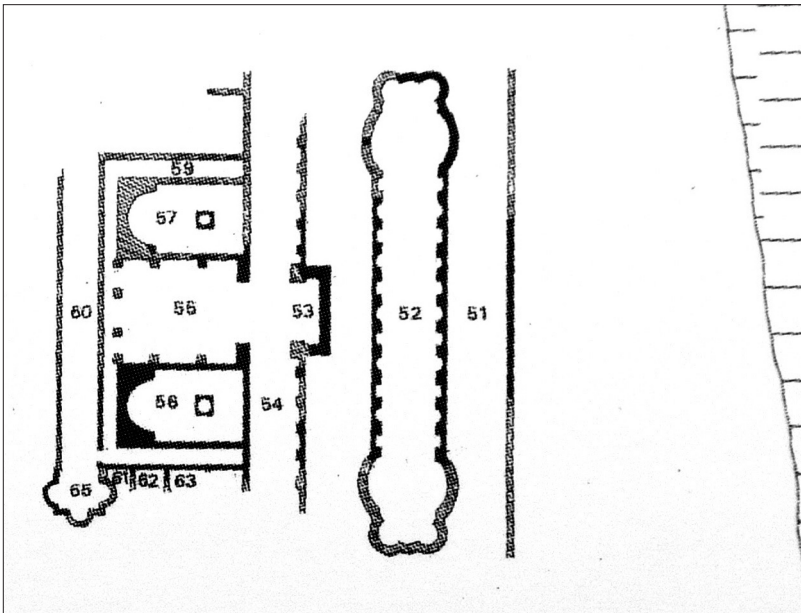


Fig. 1b.  
Plan of the Toscolano - Capra (marbles from the basin #52, northern part of the villa)

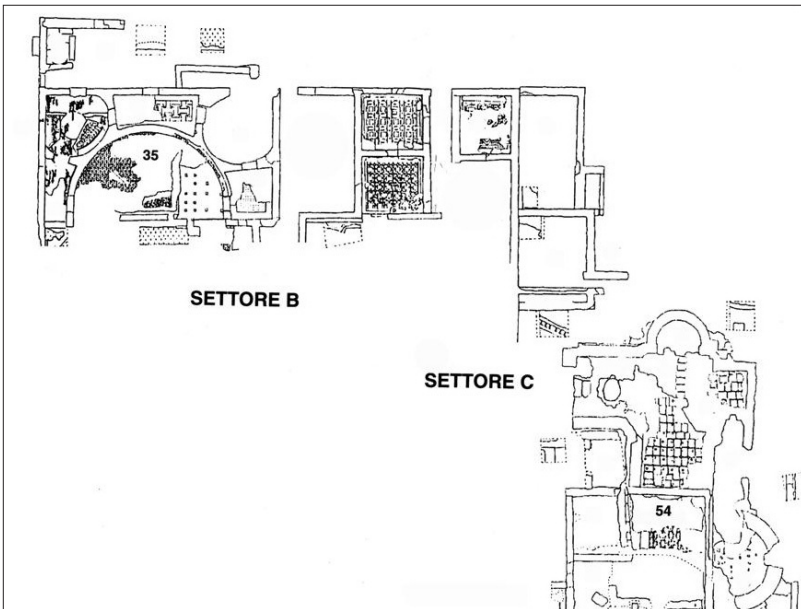


Fig. 1c.  
Plan of Desenzano - Borgo Regio (marbles linked to rooms #35 and #54)

## 2.2. Desenzano - Borgo regio (Fig. 1c)

The villa was built close to the south-western shore of Lake Garda and the remains occupy an L-shaped area surrounded by modern buildings. Series of excavations since the second quarter of 20<sup>th</sup> century have unearthed three sectors including an octogonal vestibule, a peristyle, a tricora with mosaic pavements and a viridarium (sector A); some residential rooms (sector B); a thermal complex with mosaic and *opus sectile* pavements (sector C). Marble fragments were mainly found in sectors B and C during ancient and unscientific excavations: they are probably referred to the building phase marked by *opus sectile* pavements (rooms #35 and #54; late 4<sup>th</sup> - early 5<sup>th</sup> century) (ROFFIA 1994).

## 2.3. Faustinella - San Cipriano (Fig. 1d)

The villa was built near the Morainic Hills, a few kilometres south of Desenzano and the remains occupy a rectangular area (about 50x35 metres) put at risk by some commercial buildings linked to the Desenzano exit of the motorway A4 Torino-Trieste.

The excavations of the 1990s unearthed some structures around a rectangular yard pertaining to the southern and to the western parts of the villa (first half 4<sup>th</sup> century). Rooms C, D and E contain mosaic or “*opus sectile*” pavements, wall paintings and a lot of fragments of coloured marbles were discovered in a debris layer (US134) (ROFFIA 2007).



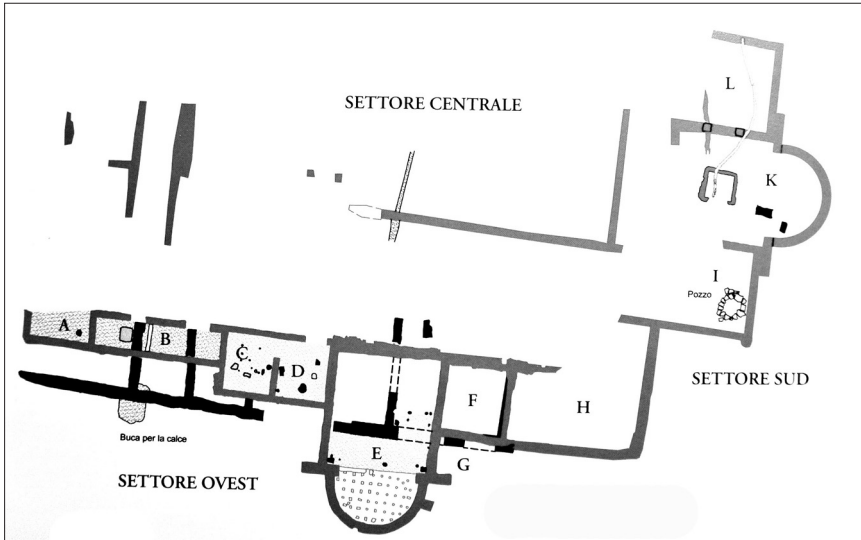


Fig. 1d.  
Plan of Faustinella - San Cipriano  
(marbles from rooms C, D and E)

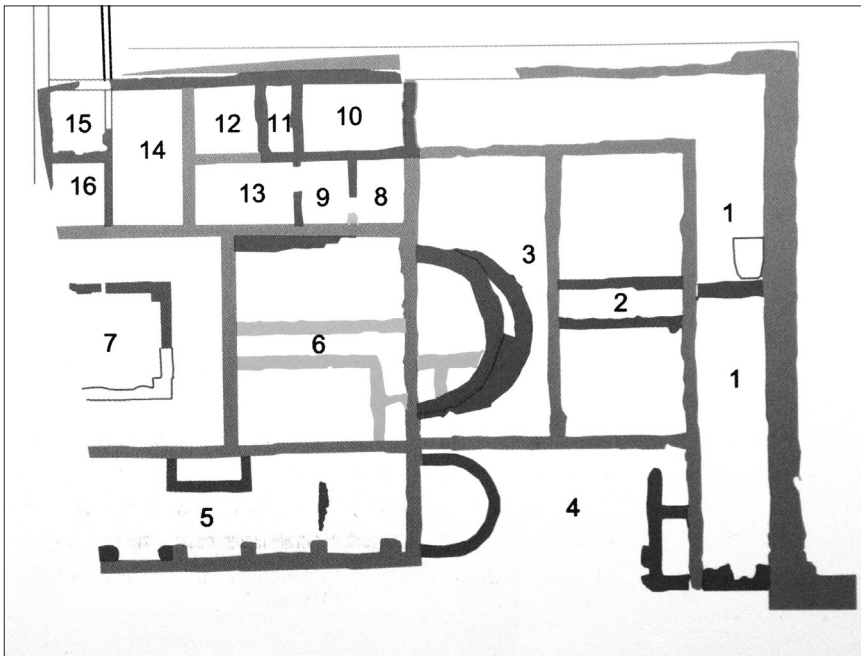


Fig. 1e.  
Plan of Nuvolento - Pieve  
(marbles from room #6)

#### 2.4. Nuvolento - Pieve (Fig. 1e)

The villa lies in the agricultural plain between Brescia and Salò, near the River Chiese and the hills of Serle plateau (renowned for the quarries of “Botticino” limestone) and the remains occupy a rectangular area (about 40x30 metres), also put at risk, by an industrial area. The residential sector with baths (room #6) was developed around a square yard at short distance from the rustic sector devoted to agriculture. The excavations of the 1980s unearthed several pieces of the ornamental arrangement pertaining to the bath rooms (third period of the building, 3<sup>rd</sup> century) (ROSSI 2012).

#### 3. Coloured marbles identification

Coloured marbles were identified in each site using traditional investigations according to the literature published in the last decades (BORGHINI 1989; DOLCI, NISTA 1992; GNOLI 1988; LAZZARINI 2004; LAZZARINI 2007; MIELSCH 1985; NAPOLEONE 2001; PENSABENE; BRUNO 1998; PRICE 2007) and were compared to coloured marble samples specifically kept in different quarries around the Mediterranean basin.

**3.1. Toscolano (Capra)**

| Stone or marble name | Thickness (mm) | Stone or marble name  | Thickness (mm) |
|----------------------|----------------|-----------------------|----------------|
| Africano             | 3.5 – 16.5     | Palombino             | 2.3 – 15.0     |
| Breccia corallina    | 8.0 – 13.0     | Pavonazzetto          | 1.9 – 12.6     |
| Breccia Settebasi    | 7.8 – 16.0     | Porfido rosso antico  | 5.0 – 14.2     |
| Cipollino            | 5.0 – 24.3     | Por. serpentino verde | 2.4 – 32.0     |
| Fior di Pesco        | 16.0           | Portasanta            | -              |
| Giallo antico        | 2.9 – 21.9     | Rosso antico          | 8.6 – 13.8     |
| Greco scritto        | 8.0 – 15.0     | Verde antico          | -              |

**3.2. Desenzano (Borgo Regio)**

| Stone or marble name | Thickness (mm) | Stone or marble name  | Thickness (mm) |
|----------------------|----------------|-----------------------|----------------|
| Africano             | 6.9 – 25.0     | Greco scritto         | 9.0 – 21.6     |
| Breccia pavonazza    | 9.0 – 19.7     | Pavonazzetto          | 6.5 – 26.6     |
| Breccia Settebasi    | 8.5 – 16.5     | Por. serpentino verde | 7.4 – 23.7     |
| Cipollino            | 7.0 – 35.5     | Portasanta            | 7.1 – 19.8     |
| Fior di Pesco        | 6.8 – 30.5     | Rosso antico          | 8.9 – 25.1     |
| Giallo antico        | 7.5 – 32.5     | Verde antico          | 11.0 – 16.9    |

**3.3. Faustinella (San Cipriano)**

| Stone or marble name | Thickness (mm) | Stone or marble name  | Thickness (mm) |
|----------------------|----------------|-----------------------|----------------|
| Africano             | 4.0 – 15.2     | Giallo antico         | 4. – 19.0      |
| Bigio antico         | 9.0 – 14.3     | Greco scritto         | 4.0            |
| Breccia corallina    | 11.0 – 18.0    | Pavonazzetto          | 6,3 – 17.8     |
| Breccia Settebasi    | 9.0 – 17.5     | Por. serpentino verde | 11.4           |
| Cipollino            | 7.2 – 15.0     | Portasanta            | 14.0           |
| Fior di Pesco        | 24.5           | Rosso antico          | 5.0 – 17.5     |

**3.4. Nuvolento (Pieve)**

| Stone or marble name | Thickness (mm) |
|----------------------|----------------|
| Alabaster            | 15.2 – 21.0    |
| Bigio antico         | 14.8 – 21.5    |
| Cipollino            | 15.0           |
| Greco scritto        | 15.0           |
| Pavonazzetto         | 15.5 – 20.0    |



Fig. 2.  
Shaped pieces of  
Palombino from a Roman  
villa (Toscolano - Capra)



Fig. 3. Porfido Rosso Antico: upside-down view of a thin slab (thickness 10 mm) with oblique edges



Fig. 4. Porfido Serpentino Verde: listel with trapezoidal section (thickness 14 mm)

#### 4. Categories of marble fragments

The categories classified after the examination of marble fragments concerning the whole marble fragments from villas of “Regio X”, are listed below.

The thickness is almost always variable in each lithologic group, as shown by high value of standard deviation measured on the fragments of the Toscolano villa:

Africano: 70 measurements, average thickness 9.87 mm, standard dev. 2.6.

Cipollino: 180 measurements, average thickness 10.0 mm, standard dev. 3.08.

Giallo antico: 84 measurements, average thickness 8.15 mm, standard dev. 3.33.

Palombino: 125 measurements, average thickness 5.48 mm, standard dev. 1.95.

Pavonazzetto: 55 measurements, average thickness 7.25 mm, standard dev. 2.85.

Porfido Serpentino: 103 measurements, average thickness 9.27 mm, standard dev. 4.64.

1. Slab: element with two parallel faces, the profile mainly shows two right angles; in some cases a small strip rises above the surrounding surface near the corner on the rear of the slab as evidence of the sawing operation; it is worth noting the reduced thickness (lower than 3 mm) of some lithotypes (Giallo antico, Pavonazzetto) recalling an excerpt from Seneca’s “De Beneficiis” (SENECA 1928, 4.6.2): “(...) a house in which you see, not flimsy veneers, thinner than the very blade by which they are cut, but virgin masses of most precious stone (...)”.

1.1. Polygonal tile: this category concerns white or coloured marbles together with black limestones as part of pavements with geometric patterns: triangle, rhombus, square or hexagon; many slabs or fragments maintain scraps of mortar along the edges. This kind of pattern,



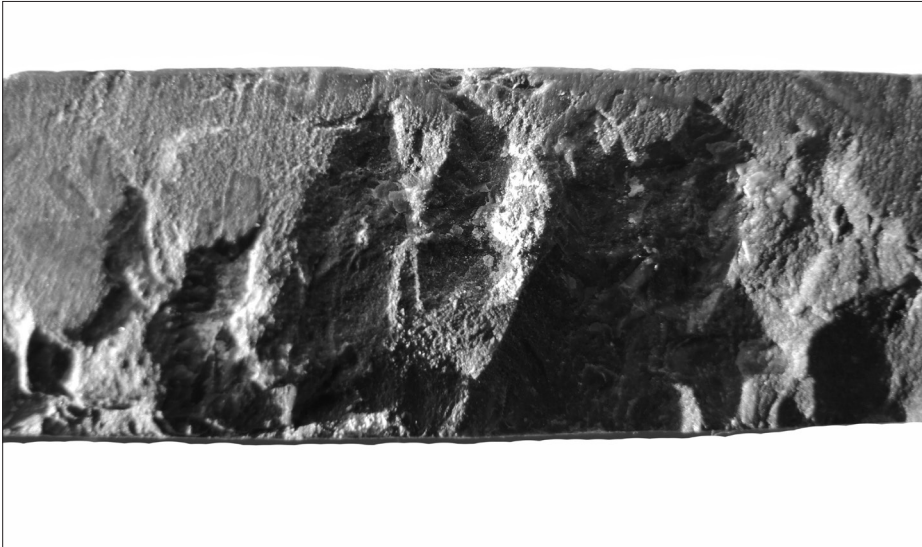


Fig. 5.  
Porfido Serpentino  
Verde: listel edge  
(thickness 12 mm) with  
smooth cut (above) and  
rough cut (below)



Fig. 6.  
Giallo Antico:  
shaped pieces and  
curvilinear listels

based on the repetition of geometric figures, is widely documented in the Roman territory now included in the region of Lombardy. These patterns are also documented in Late Antiquity and in the Middle Ages when the ancient materials were reused (BUGINI, FOLLI 2009).

1.2. Shaped piece: this category concerns coloured lithotypes for pavement and wall veneering: the form is variable from semicircular to almond-shaped etc. Small pieces of Palombino are noticeable: the stone is present in Toscolano and it is lacking in other villas. The shape of the pieces reproduces leaves, petals, fishes etc. and the curvilinear contour is very sharp avoiding the use of sealing mortar between two pieces fitted together (Fig. 2). Some thin slabs of Porfido Rosso Antico show oblique edges with rough cut (Fig. 3). Slabs of Porfido Serpentino Verde show irregular shape, sometimes with a straight side; they were used to make a dark background to light

coloured patterns or figures of wall veneering as shown in Rome (Basilica of Juiunius Bassus) and in Ostia antica (Edificio fuori Porta Marina)(ENSOLI, LA ROCCA 2000).

2. Listel: this element shows two very smooth parallel sides and a quadrangular section (square, rectangle or trapeze).

#### 2.1. Rectilinear listels

Listels with rectangular or square sections often show two worked edges with right angles; they were employed in wall veneerings to make frames around the panels of the central register; some listels show an inclined cut (45°), corresponding to the corners of these frames.

Listels with trapezoidal sections were employed as frames for rectangular panels, this kind of section facilitating insertion on the mortar bedding (Fig. 4). In particular, Porfido Serpentino listels show a specific cut of

the edge: the cut is straight and the edge is smooth near of the upper surface, the cut is irregular with rough edge in the remaining thickness (Fig. 5).

Listels sometimes show a toric surface as contour; they were employed in wall veneering to separate the lower from the central register.

#### 2.2. Curvilinear listels

These elements, showing two parallel and curvilinear sides with rectangular section, were a part of circular crowns employed as the frame of circular panels made of other coloured marbles (Fig. 6).

#### 3. Moulding

In these elements, length prevails over other dimensions; the section is quite triangular and the carving produces a concave section or with double curves.

They were employed as skirting boards where the wall veneering joins the pavement or to emphasize the passage between the lower and the central register of the wall veneering, as reported above in connection with the listels.

#### 4. Architectural element

This category involves thin pilasters with bases and capitals used in wall veneerings.

The categorization of the pieces seems to change in accordance with the lithology.

Slabs were made of carbonate stones such as Cipollino, Giallo antico, Palombino, Pavonazzetto, Portasanta etc.; rectilinear listels were made using Africano, Cipollino, Giallo antico, Pavonazzetto, Porfido rosso antico, Porfido serpentino verde and Rosso antico; curvilinear listels were mainly made of Porphyries or Giallo antico; mouldings and skirting boards were mainly made of white marbles, but Porphyries are also noticeable. Architectural elements are infrequent: a capital made of Rosso Antico was found in the villa of Toscolano (thickness from 8.6 to 13.8 mm).

The arrangement of these different categories on a wall veneering is confirmed by a several sites: i.e. the marble storage in the rooms of the imperial domus of Gianicolo Hill in Rome (FILIPPI 2005) or the marble Hall 31 in the Hang house 2 of Ephesos (THÜR, RATHMAYR 2014). Furthermore, some wall paintings of the Toscolano Villa (room 1 and room 2b referred to the 2nd century; room 28 referred to 4<sup>th</sup> century) give a good representation of the coloured marble arrangement: Pavonazzetto slabs in the central register (room 1); Proconnesian slabs in the low register and Pavonazzetto slabs in the central one separated by a listel of Rosso antico (room 2b); one panel made of Porfido rosso antico flanked by two rectangular panels made of Pavonazzetto, these panels are framed by listels of red, yellow and black marble (room 28).

### Coloured marbles in Regio X and Regio XI

The comparison involves several sites of Lombardy (Regio X and Regio XI) showing coloured marbles and is based on direct observations made by the authors on behalf of Soprintendenza Archeologica della Lombardia (BUGINI, FOLLI 2005). The number of fragments of each marble is not considered. Marble fragments of each site are heterogeneous, ranging from a single pavement made of "crustae" to wide excavations spanning a great period of time: wider sites show, obviously, greater lithological variety. The most diffused category is the slab from "opus sectile" pavement or wall veneering.

The coloured marbles identified in sites of Regio X are part of the main group of coloured marbles used in Rome and in countless sites in the whole territory of the Roman Empire (LAZZARINI 2004).

### LEGEND

Af = Africano, Al = calcite Alabaster, BC = Breccia corallina, BS = Breccia di Sciro, Cip = Cipollino, CR = Cipollino rosso, Gra = Egyptian granites, FdP = Fior di Pesco, GA = Giallo antico, GS = Greco scritto, Pal = Palombino, Pav = Pavonazzetto, PRA = Porfido rosso antico, PSV = Porfido serpentino verde, Por = Portasanta, RA = Rosso antico, Sem = Semesanto, VA = Verde antico.

### REGIO X

#### TOSCOLANO (Capra)

-Villa (fragments): Af, BC, BS, Cip, GA, GS, Pal, Pav, PRA, PSV, Por, RA.

#### DESENZANO (Borgo Regio)

-Villa (fragments): Af, BC, BS, Cip, FdP, GA, GS, Pav, PSV, Por, RA.

#### FAUSTINELLA (San Cipriano)

-Villa (fragments): Af, BC, BS, Cip, FdP, GA, GS, Pav, PSV, Por, RA.

#### NUVOLENTO (Pieve)

-Villa Pieve(fragments): Al, Cip, GS, Pav.

#### BRESCIA

-Ortaglia S. Giulia (fragments): Af, BC, Cip, FdP, Pav, PRA, PSV, RA.

-via Musei (palazzo Martinengo - fragments): Af, Al, Cip, FdP, GA, Pav, PSV.

-via Trieste (Istituto Arici - fragments): Af, FdP, Pav.

#### BERGAMO

-Palazzo del Podestà (fragments): Cip, Pav, RA.

#### CREMONA

-p.zza Marconi (fragments): Af, Al, BC, BS, Cip, FdP, GA, Gra, GS, Pav, PRA, PSV, Por, RA, Sem, VA.

-via Cadolini (crustae pavement): Af, Al, BS, Cip, FdP, GA, Gra, Pav, PRA, PSV, Por, RA, Sem.

**REGIO XI****MILANO**

-via Moneta (fragments): Af, Al, BC, BS, Cip, FdP, GA, Pav, PRA, PSV, Por, RA, VA.

-via Correnti (*opus sectile*): Af, BS, Cip, GA, Pav, PRA, Por.

-Archaeological Museum (fragments): Cip, Pav, Por.

-Chiesa Rossa (fragments): Af, BC, Cip, PSV.

-via Gorani (crustae pavement): Af, Al, BC, GA, Por.

-San Giovanni baptistery (fragments): Af, BC, BS, Cip, CR, FdP, GA, GS, Pav, PRA, PSV, RA.

-Imperial mausoleum (fragments): Af, Cip, FdP, GA, Pal, Pav, PRA, PSV, RA.

**COMO**

-via Parini (fragments): Af, Al, BC, Cip, FdP, GA, Pav.

**GARLATE**

-Santo Stefano (fragments): GS, Pav, PRA, PSV, Por.

**Conclusion**

Coloured marble fragments coming from pavements and wall veneering were found in some villas located in the western part of "Regio X" (now the eastern part of Lombardy) near Lake Garda (Toscolano, Desenzano, Faustina, Nuvoletto). The marbles are equally well documented in Rome, in Italy and all around the Roman world. Carbonate rocks (Africano, Alabaster, Breccia Corallina, Breccia di Sciro, Cipollino, Fior di Pesco, Giallo antico, Greco scritto, Palombino, Pavonazetto, Portasanta) form the great majority of the examined marble fragments, a low fraction only pertaining to porphyries (Porfido rosso antico, Porfido serpentino verde), with other silicate rocks totally lacking. The classification of marble fragments selected different use: slab (mainly carbonate stones), listel (mainly porphyries), moulding (white marbles), architectural element (Rosso antico). The homogeneous diffusion of coloured marbles, both in residential and in rustic buildings, witnesses the importance attained by these materials in the territory of Lombardy. The diffusion of coloured marbles in northern Italy is also confirmed in comparison with other Roman sites located in the adjacent Regio XI (now the western part of Lombardy).

**REFERENCES**

- BORGHINI G. 1989: *Marmi antichi*. De Luca, Roma.
- BUGINI R., FOLLI L. 2005: Sull'uso di marmi colorati antichi in Lombardia, *Marmora* 1, 145-168.
- BUGINI R., FOLLI L. 2009: Pavimenti in opus sectile a Milano e in Lombardia e l'uso dei calcari neri, *Atti V Congresso Nazionale Archeometria*, Siracusa 26-29 febbraio 2008, 265-278.
- DOLCI E., NISTA L. 1992: *Marmi antichi da collezione*. Museo del Marmo, Carrara.
- ENSOLI S., LA ROCCA E. 2000: *Aurea Roma*, L'Erma Bretschneider, Roma. 251-262.
- FILIPPI F. 2005: *La domus del Gianicolo e i suoi marmi*, Electa, Milano.
- GNOLI R. 1988: *Marmora romana*, Edizioni dell'Elefante, Roma.
- LAZZARINI L. 2004: *Pietre e marmi antichi*, CEDAM, Padova.
- LAZZARINI L. 2007: *I marmi colorati della Grecia antica*, Fabrizio Serra Editore, Pisa-Roma.
- MIELSCH H. 1985: *Buntmarmor aus Rom* in *Antikenmuseum Berlin, Staatliche Museen Preußischer Kulturbesitz*, Berlin.
- NAPOLEONE C. 2001: *Delle pietre antiche di Faustino Corsi romano*, Franco Maria Ricci, Milano.
- PENSABENE P., BRUNO M. 1998: *I marmi della collezione Podesti*. L'Erma di Bretschneider, Roma.
- PRICE M. T. 2007: *Decorative stone - The complete sourcebook*, Thames & Hudson, London.
- ROFFIA E. 1994: *Studi sulla villa romana di Desenzano*, Edizioni ET, Milano.
- ROFFIA E. 2007: *Dalla villa romana all'abitato altomedievale - Scavi archeologici in località Faustina*, San Cipriano a Desenzano, Edizioni ET, Milano.
- ROFFIA E. 2015: *La villa romana dei Nonii - Arrii a Toscolano Maderno*, Edizioni ET, Milano.
- ROSSI F. 2012: *La villa romana della Pieve a Nuvoletto*, Edizioni ET, Milano.
- SENECA 1928: *Moral Essays* (J.W. Basore translation), Loeb, London.
- THÜR H., RATHMAYR E. 2014: *Hang house 2 in Ephesos - Die wohnheit 6*, Verlag Österreichischen Akademie der Wissenschaften, Wien.