

# The Use of Alcover Stone in Roman Times (Tarraco, Hispania Citerior). Contributions to the Officina Lapidaria Tarraconensis

---

Gorostidi Pi, Diana; López Vilar, Jordi; Gutiérrez Garcia-M., Anna

Source / Izvornik: **ASMOSIA XI, Interdisciplinary Studies on Ancient Stone, Proceedings of the XI International Conference of ASMOSIA, 2018, 577 - 582**

Conference paper / Rad u zborniku

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

<https://doi.org/10.31534/XI.asmosia.2015/03.07>

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:123:599173>

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

Download date / Datum preuzimanja: **2025-02-19**



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 – 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 Silentary, 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 Ruppinić 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

# THE USE OF ALCOVER STONE IN ROMAN TIMES (*TARRACO, HISPANIA CITERIOR*). CONTRIBUTIONS TO THE *OFFICINA LAPIDARIA TARRACONENSIS*

Diana Gorostidi Pi<sup>1</sup>, Jordi López Vilar<sup>2</sup> and Anna Gutiérrez Garcia-M.<sup>3</sup>

<sup>1</sup>Institut Català d'Arqueologia Clàssica (ICAC) / Universitat Rovira i Virgili, Tarragona, Spain (dgorostidi@icac.cat)

<sup>2</sup>Institut Català d'Arqueologia Clàssica (ICAC), Tarragona, Spain (jlopez@icac.cat)

<sup>3</sup>Institut de Recherche sur les ArchéoMATériaux (IRAMAT) / Centre de Recherche en Physique Appliquée à l'Archéologie (CRP2A) / Université de Bordeaux Montaigne, France (anna.gutierrez@u-bordeaux-montaigne.fr)

## Abstract

After the recent re-edition of Tarraco's epigraphic corpus (CIL II<sup>2</sup>/14), we initiated a multidisciplinary project to study the stones used for the town's inscriptions. The study of Santa Tecla stone and the knowledge of the quarries of the territory provides a basis for the study of stone from Alcover, which was employed during the founding period of the *colonia*. Its lithology is very different from the bioclastic limestones and calcarenites so common around Tarragona that supplied large blocks and ashlar (El Mèdol and soldó stones) and facilitates obtaining uniform, thin pieces perfect for plaques. Its use for the earliest epigraphy is one of the clearest pieces of evidence to date the first historic urban phases. Alcover stone was used alongside another local stone, Santa Tecla limestone, which was gradually introduced during Augustan and Julio-Claudian times. However, in Flavian times, Alcover stone was no longer used in epigraphy.

## Keywords

Tarraco, Alcover stone, Roman inscriptions

## Introduction

Updating of the recently re-edited epigraphic corpus<sup>1</sup> is a key element in a multidisciplinary project aiming at understanding the stones used for the inscriptions of Tarraco (Hispania Tarraconensis).<sup>2</sup> After a study of Santa Tecla



Fig. 1. Tarraco in the western Mediterranean context

stone<sup>3</sup> and after advances in our knowledge of the quarries of the territory of Tarragona,<sup>4</sup> (Fig. 1) we now tackle the study of a material employed during the earliest period of the town: Alcover stone. Its lithology is very different from the bioclastic limestones and calcarenites (El Mèdol and soldó stones) that supplied Tarraco with large blocks and ashlar; its structure makes it possible to obtain uniform, thin slabs, which are perfect for plaques. No archaeological evidence at the Alcover quarries sheds light on the beginning or the end of exploitation there, but fortuitous ceramic findings in

1 CIL II<sup>2</sup>/14, 2-4.

2 This paper based on the preliminary results from the ongoing R&D Research project "*Officinae lapidariae Tarraconenses*. Canteras, talleres y producciones artísticas en piedra de la *Provincia Tarraconensis*" (I+D HAR2015-65379-P (MINECO/FEDER, UE)), funded

by the Ministerio de Ciencia e Innovación of the Gobierno de España. We want to thank J.A. Remolà, curator of the MNAT, and archaeologists J.F. Roig (ICAC) and J. Massó (Institut Municipal de Museus de Reus), for helping and facilitating our research.

3 ALVAREZ *et al.* 2009.

4 GUTIÉRREZ GARCIA-M. 2009; 2011.



Fig. 2. Two examples of the strong bedding of Alcover stone outcrops. A: millimetric/centimetric and B: decimetric bedding (photos: authors)

the quarries have demonstrated the Roman presence at least during the 1<sup>st</sup>-2<sup>nd</sup> centuries AD.<sup>5</sup>

Epigraphy, which provides well-dated inscriptions, is crucial to delineate the chronology of the stone's extraction and use; in this case, its start in the early 1<sup>st</sup> century BC. In fact, the use of Alcover stone in the earliest epigraphy of Tarraco, as in the honorific inscriptions commemorating

the foundation of the colonia in Caesar's time, provides solid evidence to advance our knowledge of the first historic phases of the town.<sup>6</sup>

### Characteristics of Alcover stone

Alcover stone is a sedimentary carbonate rock formed during the Middle Triassic in a shallow lagoon of calm water connected to the Sea of Tethys through a coral reef that restricted the entrance of seawater. These particular conditions created a context in which the continuous sedimentation of very fine particles at the bottom of this lagoon produced this fine-grained stone in which various fossils have been perfectly preserved. It belongs to the Upper Muschelkalk<sup>7</sup> and is a very homogeneous and very fine-grained stone with strong bedding, which results in the natural splitting of the rock into sheets between a few millimetres and 10 cm thick (Fig. 2).<sup>8</sup> Macroscopically it is a compact, grey to light brown, almost beige, calcareous mudstone. Sometimes it may have a red colour which has occasionally led to erroneous identifications with red-toned *marmora* (Fig. 3).<sup>9</sup>

### The epigraphic survey

An epigraphic survey was carried out in spring 2015 by revisiting and updating a previous work of J. F. Roig; this was the sole study until now of inscriptions on Alcover stone and it included 25 entries.<sup>10</sup> Despite its usefulness, a new appraisal was done because of additional archaeological findings; some important pieces led to general considerations about the stone's use.

Thirty-six Latin inscriptions in CIL II<sup>2</sup>/14 are listed as being made of Alcover stone. We excluded three of them because of erroneous information and we registered two as post-classical. We examined 51 inscriptions autoptically, most of which are currently in the warehouse of the archaeological museum.<sup>11</sup> Fifteen inscriptions still

6 ALFÖLDY 2000; 2011, 430.

7 RIBA ARDERIU 1997.

8 GUTIÉRREZ GARCIA-M. 2009, 224.

9 Such as in the case of the inscription CIL II<sup>2</sup>/14, 977, a dedication to Cn. Domitius Calvinus (36 BC) (Fig. 3A).

10 ROIG 2001. Roig provides a useful list of inscriptions in Alcover stone, but his main goal is updating the archaeological data about the quarries and their exploitation in ancient times, and consequently the paper lacks a deeper analysis about the use, function and chronology of the inscriptions.

11 The National Archaeological Museum of Tarragona (MNAT).

5 MASSÓ, ROIG 2004.





Fig. 3. Alcover stone slabs in different colours: A: beige red (due to fire) (CIL II2/14, 977), B: beige (CIL II2/14, 1270) and C: a case of combination of two tones in the same slab (photo: authors)



Fig. 4. Inscriptions of private persons: a freedman (CIL II2/14, 1487) and a freeborn man (CIL II2/14, 1080) (photos: MNAT)

remain to be checked, but these slabs are very fragmentary with just one or two letters. The main result is an updated catalogue that doubles the number of total entries.

Despite its appearance, which is not particularly attractive, Alcover stone was the main material used by people belonging to the higher and upper middle social strata of Tarraco in Late Republican and Augustan times. Indeed, the palaeographic technique of the inscriptions is of top quality (Fig. 4). This rock allows a deep and well-defined cut, which results in lettering that is clear and magnificent, in contrast with the other inscriptions of the time. A comparison between Alcover and El Mèdol stone inscriptions with similar contents demonstrates great differences in style and appearance.

Epigraphic practice for public tributes to Roman magistrates in Republican times at Tarraco shows that local magistrates, prominent members of the municipal



Fig. 5. Inscription of Divus Iulius from Otriculum (CIL VI, 872 = CIL I, 797) (photo: EDCS/M. Claus)

society and wealthy private individuals preferred local Alcover stone for public as well as private inscriptions.

This preference was also connected with a specific workshop of carvers, which seems to have had connections with Italy. An inscription of Divus Iulius from Otricoli<sup>12</sup> (Fig. 5) dated to 42 BC shows a specific feature that is only known in another case from Tarraco: the dedication to P. Mucius Scaevola<sup>13</sup> (45/44 BC), in a reused slab with a previous inscription for Cn. Pompeius Magnus on the back<sup>14</sup> (71 BC) (Fig. 6). The characteristic hook-shaped apex attached to the letter V<sup>15</sup> confirms the chronology of both inscriptions and testifies to a workshop connection. The palaeographic parallel from Italy highlights the importance of epigraphy as dating element for the use of Alcover stone at Tarraco, and as evidence for the arrival of Italic stonecutters in Hispania at this time.<sup>16</sup>

This preference for Alcover stone in elite epigraphy contrasts clearly with the use of other local limestones, among them El Mèdol stone, which was mostly used for structural purposes. For instance, El Mèdol stone appears in funerary buildings and in parallelepiped blocks that contain private epitaphs.<sup>17</sup> These monuments belonged mainly to ordinary people, freeborn people, freedmen and slaves. According to the palaeography, onomastics and formulae, they date from the first century BC to the



Fig. 6. Opisthographic inscription from Tarraco (CIL II2/14, 991-988) (photos: MNAT)

Augustan age. This type of Mèdol epitaph characterizes the Republican epigraphy of Tarraco and disappears in the first decades of the 1<sup>st</sup> century AD.<sup>18</sup>

Alcover stone was also used alongside Tarraco marble (Santa Tecla limestone), a fine easily workable stone that is characterized by a bright yellowish colour and occasionally a rosy tone. In contrast to the Alcover and Mèdol types, Santa Tecla stone stands out for its beauty and, in fact, its use gradually increased in Augustan and Julio-Claudian times.<sup>19</sup> The earliest inscription in Santa Tecla stone is a dedication to Tiberius dated to 16-14 BC,<sup>20</sup> and it could represent the beginning of the exploitation of this limestone, which was a prestigious local material reserved for the most elite commissions. During the Julio-Claudian period, Alcover stone is well documented as an epigraphic support, but its presence had diminished by the end of the century, at the time of the urbanistic reforms under the Flavians. These changes involved a massive exploitation of Santa Tecla stone as a favourite local building and ornamental material alongside the newly imported Luna (modern Carrara) marble.<sup>21</sup> The Santa Tecla stone quarries continued to be heavily exploited from this period onwards.

At the same time, a change of technique took place in Flavian times when the *officina lapidaria* began to favour new epigraphic monuments in the shape of

12 CIL VI, 872 = CIL I, 797.

13 CIL II<sup>2</sup>/14, 988.

14 CIL II<sup>2</sup>/14, 991.

15 GORDON 1983, 97.

16 ALFÖLDY 2011, 431.

17 GOROSTIDI, LÓPEZ VILAR 2015.

18 For characteristics and formulae in the Republican epigraphy of Hispania, cf. DÍAZ ARIÑO 2008.

19 For private uses in the early Julio-Claudian period: (CIL II<sup>2</sup>/14, 1270; 1620 a-b). A slab containing a dedication to the Victoria Augusta offered by the *colonia Tarraconensium* seems to be the newest public inscription in Alcover stone (CIL II<sup>2</sup>, 14, 864).

20 CIL II<sup>2</sup>/14, 879.

21 ÁLVAREZ *et al.* 2009.



Fig. 7. Slab with an epitaph from the 4<sup>th</sup>-5<sup>th</sup> centuries (CIL II2/14, 1603) (photos: authors)

parallelepiped blocks, a kind of support that previously only stones similar to El Mèdol were capable of providing. As previously noted, archaeology does not offer evidence of when the Alcover quarries were abandoned, but one can have some confidence that their stone was gradually replaced by Santa Tecla and other minor local limestones - among them the so-called “llisós”- until its total disappearance from the epigraphic record.<sup>22</sup>

In fact, Flavian workshops specialized in producing a support that became common in the town: the tripartite monolithic pedestals elaborated in Santa Tecla stone. This type was widespread on the whole conventus Tarraconensis, at the expense of the characteristic inscribed plaques of the Julio-Claudian era.<sup>23</sup> This phenomenon occurred simultaneously with the important urbanistic developments in the upper part of the town under the Flavian dynasty.

### Brief considerations

Alcover stone went out of use for inscriptions after the Julio-Claudian period until Late Roman times, when inscriptions of the 4<sup>th</sup> to 6<sup>th</sup> centuries testify to its use once more (Fig. 7). As we have tried to demonstrate, the reason behind this chronological gap lies in the introduction of the local Santa Tecla stone as well as in

the massive arrival at Tarraco of other types of marble in Flavian times.<sup>24</sup> This promoted a change in epigraphic practices, involving the privileged use of monolithic blocs and the monumental inscriptions in marble from Luna, the imperial marble par excellence.<sup>25</sup>

In this sense, assembling the Roman inscriptions of Tarraco creates an attractive epigraphic landscape composed according to the principles of Late Republican, Augustan and Julio-Claudian aesthetics. The use of Alcover stone as a prestigious support for official monuments derives from previous traditions, but the palaeography reveals the arrival of craftsmen from Italy, who introduced the practice of institutional epigraphy of quality.<sup>26</sup>

In conclusion, the detailed exam of the inscriptions enables the identification of a hierarchy of the use of all these stones; in this hierarchy, Alcover stone is consigned to private uses after Late Republican times through the Julio-Claudian period and gives way to foreign, prestigious marbles and the above-mentioned Santa Tecla stone. Its complete disappearance in the epigraphic record coincides with a change of technique of the *officina lapidaria*. The workshops from the following period were specialized in making a new kind of support that would become the most common in the town: the tripartite pedestals in Santa Tecla stone. This typology was largely widespread on the whole of the conventus Tarraconensis, at the expense of the previously common plaques. This phenomenon occurred simultaneously with important urbanistic changes that were undertaken in Flavian times.

22 About “llisós” and its geological association with Santa Tecla stone, cf. GUTIÉRREZ GARCIA-M. 2009, 208-221.

23 Santa Tecla stone is diffused out of Tarraco in various ornamental purposes. For example, the honorific tripartite pedestals of the Flavian *officina* in Barcino and its territorium, Egara, Sigarra and Ilerda are well documented (cf. ÁLVAREZ *et al.* 2009, 71-80).

24 ÁLVAREZ *et al.* 2009, 81-82.

25 GUTIÉRREZ GARCIA-M, RODÀ 2012  
RUÍZ RODRÍGUEZ 2016.

26 Cf. GOROSTIDI, LÓPEZ VILAR 2015.

## REFERENCES

- ALFÖLDY G. 2000: "Wann wurde Tarraco römische Kolonie?", in G. PACI (ed.): *Epigraphai. Miscellanea epigrafica in onore di Lidio Gasperini*, Tivoli, 3-22.
- ALFÖLDY G. 2011: "*Officina lapidaria Tarraconensis*", in A. DONATI, G. POMA (eds.): *L' officina epigrafica romana*. In ricordo di Giancarlo Susini, Faenza, 429-471.
- ÁLVAREZ A., GARCÍA-ENTERO V., GUTIÉRREZ GARCIA-MORENO A., RODÀ I. 2009: El marmor de Tarraco. Explotació, utilització i comercialització de la pedra de Santa Tecla en època romana / Tarraco marmor. The Quarrying, Use and Trade of Santa Tecla Stone in Roman Times, Tarragona.
- CIL II/14 = ALFÖLDY G., *Inscriptiones Hispaniae Latinae. Pars XIV Conventus Tarraconensis. Colonia Iulia urbs triumphalis Tarraco*, Berlin, 2011-2012.
- DÍAZ ARIÑO B. 2008: *Epigrafía latina republicana de Hispania*, Barcelona.
- GORDON A. E. 1983: *Illustrated introduction to Latin Epigraphy*, Berkeley-Los Angeles-London.
- GOROSTIDI D., LÓPEZ VILAR J. 2015: "La *officina lapidaria* Tarraconense en época augustea: actualización del corpus y primeras consideraciones", in LÓPEZ VILAR, J. (ed): *Actes de 2on Congrés Internacional d'Arqueologia i Món Antic Tarraco Biennal. August i les províncies occidentals. 2000 aniversari de la mort d'August* (Tarragona, 26-29 de novembre de 2014), Tarragona, 257-262.
- GUTIÉRREZ GARCIA-MORENO A. 2009: *Roman Quarries in the Northeast of Hispania (Modern Catalonia)*, Tarragona.
- GUTIÉRREZ GARCIA-MORENO A. 2011: "The exploitation of local stone in Roman times: the case of north-eastern Spain", *World Archaeology* 43 (2), 318-341.
- GUTIÉRREZ GARCIA-M. A., RODÀ I. 2012: "El marmol de Luni-Carrara en la fachada mediterránea de Hispania", in KEAY, S. (ed.) *Rome, Portus and the Mediterranean*. London, Oxbow Books, 293-312.
- MASSÓ J., ROIG J. F. 2004: "Notes sobre un lot de gerres de ceràmica trobat a la pedrera de la Lloera", *Butlletí del Centre d'Estudis Alcoverencs* 107, 13-19.
- MNAT = Museu Nacional Arqueològic de Tarragona.
- RIBA ARDERIU O. (dir.) 1997: *Diccionari de Geologia*, Enciclopèdia Catalana, Barcelona.
- ROIG J. F. 2001: "Inscripcions romanes sobre pedra d'Alcover", *Butlletí del Centre d'Estudis Alcoverencs* 95, 22-46.
- RUÍZ RODRÍGUEZ J. C. 2016: "El uso del mármol lunense en la epigrafía de ámbito público. El caso de Tarraco en época altoimperial (siglos I y II n.e.)", *Cuadernos de arqueología de la Universidad de Navarra* 24, 103-121.