

## Monday, 8th

## 8.30 h Registration

**9.30 h Opening and Welcoming addresses.** Prof. Francesc Grau, rector of the URV, Prof. Y. Maniatis, president of ASMOSIA, Prof. Isabel Rodà, president of the IX ASMOSIA Organizing Committee and director of the ICAC.

## 10.30 h Coffee Break

**Session: Applications to Specific Archaeological Questions – Use of Marble**  
Chairman: Y. Maniatis

**11.00 h Marble salvaging in Antiquity.** S.J. Barker  
**11.20 h Huge column costs: some examples.** P. Barresi

**11.40 h The import of coloured stone and white marble for the interior wall and floor decoration of public and domestic buildings at Sagalassos, Turkey.** M. Corremans, P. Degryse and M. Waelkens

**12.00 h Use of marble and other stones in Sirmium.** B. Djurić, A. Maver, J. Davidović, I. Riznar, H. W. Müller and D. Jovanović

**12.20 h The Roman cavae romanae quarry—the properties and use of the stone for the amphitheatre in Pula (Croatia).** V. Girardi Jurkić

**12.40 h On the exploitation of marble from Cap de Garde, Algeria.** J. J. Jr. Herrmann, D. Attanasio, R. H. Tykot and A. van den Hoek

**13.00 h The Acropolis marble project: stable isotope analysis of marbles from the Parthenon and Propylaea.** S. Pike

**13.20 h Recutting Roman portraits: problems in interpretation and the new technology in finding possible solution.** J. Pollini and W. Storage

**13.40 h Pentelic marble in theatrical architecture: examples from the theatre of Marcellus.** M. De Nuccio

Pause

Chairman: Ph. Jockey

**16.00 h Marble polychromies in the walls' and floors' decorations of Hadrian's villa in Tivoli: last discoveries and verifications.** E. Lazzeri, G. E. Cinque

**16.20 h The search for the prehistoric marble sources in the Cyclades.** Y. Maniatis and D. Tambakopoulos

**16.40 h The import of prefabricated architectural marble items to Moesia inferior. Provenance determination and technical aspects.** N. Toma

**17.00 h The architectonic marbles of Roman theatre of Augusta Baginnorum (Piedmont-Italy).** M. Gomez and E. Rulli

**17.20 h On the production and the diffusion of column shafts in grey cipolin marble from the caves of Cap de Garde in Algeria.** P. Pensabene

**18.00 h Inaugural Lecture: Stones are alive.** J. Wagensberg

**19.15 h Official Welcome at the Main Hall of Tarragona by the Major of the City**

## Tuesday, 9th

**Session: Provenance Identification I: marble**  
Chairman: E. Galán

**9.00 h On the Ephesian origin of the Greco Scritto marble.** D. Attanasio, M. Bruno, A. B. Yavuz, J. J. Jr. Herrmann, R. Tykot and A. van den Hoek

**9.20 h Provenance investigation of marble sculptures from Butrint, Albania.** V. Gaggadis-Robin, K. Polikreti and Y. Maniatis

**9.40 h "Sanctuary of the Great Gods" – Samothrace, an extended marble provenance study.** Y. Maniatis, D. Tambakopoulos, B. D. Westcoat and D. Matsas

**10.00 h A provenance study of marbles from the Roman town of Thamusida (Mauretania Tingitana, Morocco).** F. Origlia, J. Spangenberg, I. Turbanti Memmi and E. Papi

**10.40 h Greek statuary of the Museo Archeologico Nazionale of Venice: archaeological and archeometric studies.** L. Lazzarini, M. Sediari, E. Soccal

## 11.00 h Coffee Break

Chairman: S. Pike

**12.00 h Sculptural materials from Villa Adriana: preliminary archaeometric results.** P. León, P. Lapuente, T. Nogales, M. Preite-Martínez and H. Royo

**12.20 h Investigations on the white marbles of architectural elements in Salento (Southern Italy).** L. Del Pietro

**13.00 h Recutting Roman portraits: problems in interpretation and the new technology in finding possible solution.** J. Pollini and W. Storage

**13.40 h Pentelic marble in theatrical architecture: examples from the theatre of Marcellus.** M. De Nuccio

**14.00 h Medieval green-schist quarries near Bergen, Western Norway.** O. Jansen and T. Heldal

Pause

## 16.00 h Poster Session I

**19.00 Books presentation.** A. Gutiérrez, Roman Quarries in the Northeast of Catalonia. ICAC, Tarragona 2009; A. Álvarez, V. García-Enterro, I. Rodà and A. Gutiérrez. El marmor de Tarraco / Tarraco Marmor: Explotació, utilització i comercialització de la pedra de Santa Tecla en època romana / The quarrying, use and trade of Santa Tecla stone in Roman Times. ICAC, Tarragona, 2009; A. Alvarez, P. Lapuente, A. Pitarch and H. Royo. Marbles and Stones of Hispania. Exhibition catalogue. ICAC, Tarragona, 2009.

**17.00 h On the production and the diffusion of column shafts in grey cipolin marble from the caves of Cap de Garde in Algeria.** P. Pensabene

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**19.15 h Official Welcome at the Main Hall of Tarragona by the Major of the City**

## Wednesday, 10th

Chairman: P. Lapuente

**9.00 h Identification of stone blocks used for the building of Thysdrus and Thapsus amphitheatres.** A. Younès, M. El Gaiad and W. Gallala

**9.20 h Non-destructive elemental fingerprinting of obsidian and other lithic materials using the portable X-ray fluorescence spectrometer.** R. H. Tykot

**Session: Advances in Provenance Techniques, Methodologies and Databases**  
Chairman: L. Lazzarini

**9.40 h Tracing the origin of marbles by inclusion fluid chemistry.** W. Prochaska and D. Attanasio

**10.00 h Missmarble: measurement and information system of samples of marble for archaeometric, art historian and restoration use.** J. Zöldföldi, B. Székely and P. Hegedüs

**10.20 h Contribution to the knowledge of Portuguese marbles through multivariate analysis of qualitative and quantitative properties of the most common varieties.** V. Lamberto, P. Sá Caetano and J. Saraiva

**10.40 h Distinguishing Slovenia's Pohorje marbles from other Mediterranean marble quarries.** S. Jarc, Y. Maniatis, E. Dotsika, D. Tambakopoulos and N. Zupancic

**11.00 h Coffee Break**

Chairman: S. Pike

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**14.00 h Medieval green-schist quarries near Bergen, Western Norway.** O. Jansen and T. Heldal

Pause

## 16.00 h Poster Session II

**19.30 h Book presentation:** T. Nogales, J. Beltrán (eds.), MARMORA HISPANA: Exploración y uso de los materiales pétreos en la Hispania Romana. (Colección Hispania Antigua, Serie arqueológica 2) L'Erma di Bretschneider, Roma, 2009.

**18.00 h Presentation and visit to El Médol quarry**

Pause

## 16.00 h ASMOSIA general meeting

**18.00 h Presentation and visit to El Médol quarry**

**19.30 h Book presentation:** T. Nogales, J. Beltrán (eds.), MARMORA HISPANA: Exploración y uso de los materiales pétreos en la Hispania Romana. (Colección Hispania Antigua, Serie arqueológica 2) L'Erma di Bretschneider, Roma, 2009.

**21.00 h ASMOSIA Dinner, with ceremony of the best poster award.**

## Thursday, 11th

**Session: Quarries and Geology: Quarrying Techniques, Organization, New Quarries, Stone Carving and Dressing, Quarry Risks and Preservation**  
Chairman: R. Sablayrolles

**9.00 h New work on quarrying in the Territory of Eretria.** B. Russell and S. Fachard

**9.20 h Ancient marble and alabaster quarries near Hierapolis in Phrygia (Turkey): new data from archaeological surveys.** G. Scardozzi

**Session: Advances in Provenance Techniques, Methodologies and Databases**  
Chairman: L. Lazzarini

**9.40 h Unknown marble quarries of western Asia minor.** M. Bruno, H. Elçi, A. B. Yavuz and D. Attanasio

**9.40 h Pigment vs the texture and colour of stone to what extent was stone part of the polychrome appearance of Hellenistic sculpture?** Cl. Blume

**9.40 h Ancient polychrome and gilded sculpture: new evidences, new interpretations, new meanings.** Ph. Jockey

**Special Theme Session: Symbolism of Stones: local and Imported Materials.**

**10.00 h Use and symbolism of Pentelic marble in Domitian's Rome.** I. Bald Romano, S. Pike, E. Gazda and R. Paris

**10.20 h Solar symbolism and silicified sandstone consumption in dynastic Egypt: perspectives on the origins of its symbolic value.** E. Bloxam

**10.40 h The quarries of Silsila- Main source of ancient Egyptian sandstone architecture.** D. Klemm and R. Klemm

**11.00 h Coffee Break**

Chairman: S. Keay

**12.00 h Phrygian for Phrygians: semiotics of "exotic" local marble.** B. Burrell and H. Parker

**11.00 h Coffee Break**

Chairman: T. Nogales

**11.40 h Interpreting the Unfinished Obelisk quarry, Aswan, Egypt: a new approach to quarrying techniques.** T. Heldal

**Session: Transport and Trade of Stones**  
Chairman: P. Pensabene

**11.40 h Transportation methods in the ancient granite quarries at Aswan, upper Egypt.** A. Kelany

**12.00 h Cavae romanae, some examples of sculptural formation.** K. Dzin

**12.20 h Grey limestones quarries of Byllis (Albania).** T. Kozelj and M. Wurich-Kozelj

**12.40 h The quarries at Luni in the I century A.D: final considerations on some aspects of production, diffusion and costs.** P. Pensabene

**12.20 h Locatio-conductio and the marble shipwrecks.** J. C. Fant

**12.40 h Shipwrecks and the Roman economy: the view from stone cargoes.** B. Russell

**13.00 h The colours of Death. Symbolism of Roman cinerary urns in coloured stone.** S. Perna

**13.00 h General Discussion IXASMOSIA. Meeting candidatures new XASMOSIA Conference**

**14.00 h Rovira i Virgili's University Honor Wine. Rectorate hall**

## 13.40 h Roman quarries in the northeast of Hispania (modern Catalonia, Spain).

A. Gutiérrez García-Moreno

**14.00 h Visit to the quarries of Broccatello or "Jaspi de la Cinta", the Cathedral and other monuments of Tortosa. Official welcome by the Major of the City**

## Saturday, 13th

**08.45 h Visit to the quarries of Broccatello or "Jaspi de la Cinta", the Cathedral and other monuments of Tortosa. Official welcome by the Major of the City**

**16.00h Poster Session II**

**18.00 h Presentation and visit to El Médol quarry**

**19.30 h Book presentation:** T. Nogales, J. Beltrán (eds.), MARMORA HISPANA: Exploración y uso de los materiales pétreos en la Hispania Romana. (Colección Hispania Antigua, Serie arqueológica 2) L'Erma di Bretschneider, Roma, 2009.

**21.00 h ASMOSIA Dinner, with ceremony of the best poster award.**

**10.00 h Guided visit to Tarragona (optional)**

## Friday, 12th

**Session: Pigments and Paintings on Marble, Authenticity testing**  
Chairman: V. Gaggadis-Robin

**The numbers indicate a provisional order. Some changes could be made. The final order will be announced before the opening of the poster session**

**1. R. Albiach, E. García-Prósper and A. Gallego: The marble repertoire of the Roman villa of**

**Chairman: R. Sablayrolles**

**19. F. Cavari, F. Droghini, M. Giambello, L. Lazzarini and C. Mascione: White marble artefacts**

**from Populonia and the marble of Campiglia Marittima (Grosseto, Italy).**

**20. M. Cipriani, C. Beltrame and S. Medaglia: First results of the study and archaeometric analyses of the marble cargo of the Secca Di Capo Bianco (Crotone, Italy).**

**21. M. Claromonte, C. Santisteban, J. Benedito and J.M. Melchor: Ornamental materials found at Sagunto's moorish quarter square.**

**22. D. Dessandier, F. Antonelli, L. Lazzarini, M. Varti-Matarangas, L. Leroux, M. Hamiaux, C. Riache and C. Khalafallah: Atlas of ornamental and building stones of Djemila**

**ancient site (Algeria).**

**23. I. Mañas and O. Rodríguez: The opus**

**secile of the old curia of Ilipa (Alcalá del Río, Seville). Considerations on the use of stone in**

## Poster Session II

1. X. Aguelo, A. Alvarez and X. Nieto: Quarries used for building the Roman harbour of Empúries.
2. K. G. Akoglu, E.N. Caner-Saltik and T. Topal.: Investigation on sandstone deterioration for developing consolidation methods.
3. A. Alvarez, I. Rodá, M. Riera, A. Gutiérrez and A. Domenech: Provenance of some Roman marbles from El Pla de Ses Figueres (Cabrera, Balearic Islands, Spain).
4. T. J. Anderson and J.M. Fernández-Soler: A preliminary sketch of a lava rotary quern quarry in Cabo de Gata, Almería, Spain.
5. J. A. Antolinos, R. Arana, J.M. Noguera and B. Soler: The sandstone quarries of Cartago Nova: petrological characteristics and mining techniques.
6. R. Arana, J.A. Antolinos, B. Soler, J.M. Noguera: Quarrying, use and scope of Cabezo Gordo and Rambla de Trujillo marbles (Murcia, Spain) in the Roman era.
7. I. Arcó: Late Antique and Ummayad Quarries from the Neat East.
8. J. Beltrán, O. Rodríguez, P. López and E. Ontiveros: Analysis of products from quarries Los Castillejos and Covachos (Almadén de la Plata, Sevilla). A comparative study.
9. A. Blanc and Ph. Blanc: Ancient uses of the Breche des Romains in Gaul.
10. M. Bruno: Quarry blocks in marmor lassense from the Balık Pazarı at lasos (Turkey).
11. M. Bruno and M. Vitti: New cipollino marble quarries south of Karystos at Cape Mandrilli (Evia).
12. R. Bugini and L. Folli: Ancient coloured marbles and their surrogates in the Milan Cathedral (late sixteenth Century).
13. M. Buzov: The ancient quarries in Croatia (the technology of extracting stone).
14. E. Caner-Özler and E.N. Caner-Saltik: Decay of historic limestone and its conservation treatments with nanodispersive Ca(OH)<sub>2</sub> solutions.
15. E. N. Caner-Saltik, T. Topal, V. Toprak, A. Türkmenoglu, A. Tavukcuoglu, K.G. Akoglu, E. Caner-Özler and T. Yasar: Development of management strategies for four ancient quarries in Turkey.
16. M. Chichikova and D. Stoyanova: On the instruments of the stonemasons, the architects and the painters of the royal tomb with Caryatids at the Cetin capital Hells.
17. N. Cueto, D. Benavente, J. Martínez-Martínez and M.A. García del Cura: Influence of mesofabric on water transport properties of continental limestones.
18. M. De Nuccio: The use of travertine covered with stucco in the Temple of Apollo Sosiano in the Circus Flaminius in Rome.
19. M. Delli Santi: Ancient marbles in Florence in XVI century: the Gaddi and Niccolini nobel chapels.
20. M. Devolder: Access to Ashlar as a symbolic resource in Neopalatial Crete (1700- 1450 a.C.n.).
21. M. A. Domagoj Perkic: Quarries, productions sites of Roman sarcophagi and stone urns in the southern border part of the province of Pannonia superior.
22. I. Donelli: Ancient stone quarries on the Eastern Adriatic coast emphasising Brac stone quarries.
23. M. El Gaied, A. Younès and W. Gallala: The stone of Sidi Ghedamsi island quarries (Monastir, Tunisia): from extraction to its use in building.
24. A. Fernández-Díaz and V. García-Enterol: The imitation of Marmor in Roman wall paintings in Hispania.
25. D. Fiorino, C. Garbarino, C. Giannattasio and S.M.Grillo: On site and laboratory investigation on the 16th-17th century Masonries: the western Sardinian coast defensive towers.
26. M. A. García del Cura, D. Benavente, J. Martínez-Martínez and N. Cueto : Petrographic features and physical properties of certain travertine building stones.
27. M. García-Vallés, M. Aulladas, J.B. López and A. Moya: Petrographic study of the tubular cist with carved steles of Règues de Serò (Aresta de Segre, Lleida, Catalonia).
28. M. Genera and A. Álvarez: Ebro final lithic materials exploitation: extraction works, applications and chronology.
29. A. Güneá, E. Playà, Ll. Rivero and M. Jiménez: Prospecting alabaster quarries with electric imaging.
30. M. I. Gutiérrez: The use of local stone in Colonia Patricia Córdoba.
31. A. Gutiérrez and J. Andreu: The Roman quarries of the town and territory of Los Bañales (Uncastillo, Zaragoza, Spain).
32. A. Gutiérrez, J.A. Remolà and F. Tarrats: Marbles from the Roman Villa of Els Munts (Altötula, Tarragona, Spain) and their role in the decorative program. Preliminary approximation.
33. T. Heldal: Quarry Scapes done: results and perspectives for the future.
34. N. Ioannidou: Symbolism and historic aspects: lithic materials used at the Byzantine church (12<sup>th</sup> oc) of Taxiarχ Michel of Mesaria in the island of Andros (Greece).
35. K. Kouzeli and Z.K. Antoniou: "Poroi" in ancient constructions in Athens: nature, properties and state of preservation.
36. T. Kozelj and M. Wurth-Kozelj: The use of the saw during Roman and proto byzantine period in Thassos.
37. P. Lapuente, H. Royo, Ph. Blanc and M. Prete-Martinez: Fine grained marble quarries in the French Pyrenees: overview of petrography, cathodoluminescence and C and O isotope analysis.
38. P. Lapuente, H. Royo, J. Mandado, P. Galve and F. De A. Escudero: Local gypsum and alabaster used in Caesaraugusta (Hispania).
39. L. Lazzarini, D. Visona, M. Giambello and I. Villa: Archaeometric characterisation of some calcareous alabasters used in Antiquity.
40. A. Luque, G. Cultrone, E. Ruiz-Agudo, E. Sebastián and S. Siegesmund: Effect of thermal expansion in marble deterioration.
41. A. Magagnini: "Pesi di basalto dal territorio romano" or something else? Three stone artefacts from the Castellani Collection in the Capitoline Museums, Rome.
42. G. Meléndez, F. Colucci and J. Ramajo: Geoheritage evaluation of ancient quarry landscapes: the case of historical quarries in Aragón (Spain).
43. C. Miró and E. Revilla: The Roman quarry of Montjuïc (Barcelona).
44. N. Molist and P. Otíñia: The republican Roman and medieval quarry of Sant Miquel d'Olèrdola (Olèrdola, Barcelona).
45. M. I. Mota, M.A. Buergo, A. de Pizzo and R. Fort: Provenance of construction stone from Roman monuments in Mérida, Spain.
46. M. Mrozek-Wysocka and P. Zambrzycki: The characterization and state of conservation of building materials used in Greco-Roman times in northern Egypt: the case of Marina el Alamein archaeological site.
47. M. Ortí and M. Ingles: The recovery of Roman quarries as a symbol of artistic and technological modernity. The case of Catalonia in the modern age (XVI-XVIII Centuries).
48. A. Palmentieri: The imago clipeata of "Lucio Sitrius Modestus". As an example of imitatio urbis in Campania (Italy).
49. I. Peña and P. Otíñia: The Roman quarry of Palma de Mallorca (Spain)
50. M. E. Peroschi and Fl. Cambieri: Small quarries of the desert.
51. J. L. Prada, M. Badia, A. Álvarez, O. Oms, R. Estrada and M.E. Arribas: Decay and conservation strategies of rocks containing dinosaur footprints: the case of several sites in the NE Spain.
52. I. Prieto: Mason's marks on the orientalizing building from Pozo Moro (Albacete, Spain) and their relation with the southern paleohispanic writings.
53. I. Rebé: The soapstone pots "pietra ollare" in Roussillon: statement of discoveries.
54. R. Ribaldi and D. Gorostidi: Local stone in the monumental center of Tusculum (Latium, Italy): constructive use and epigraphical evidence.
55. I. Riznar, B. Djurić, A. Maver, G. Rutar, J. Davidović, H.W. Müller and D. Jovanović: Dar-dagani quarry: main regional limestone source for Roman Sirmium.
56. A. Rodríguez Colmenero and M.C. Carrasco Gascón: Granite as the base, almost exclusively, for documents and monuments in the Roman Gallaecia.
57. P. Sá Caetano, V. Lamberto and P. Hasse Verdal: Ecclesiastical geology in the city of Lisbon.
58. B. Soler and R. Arana: The painted marbles of Cartagena's Roman theatre (Murcia, Spain)



Rojo Torcal Variety

MARMORVM GENERA  
ET COLORES NON  
ATTINET DICERE  
IN TANTA NOTITIA  
NEC FACILE EST  
ENVMERARE IN TANTA  
MULTITUDINE. QVOTO  
CVIQUE ENIM LOCO  
NON SVVM MARMOR  
INVENTVR?

Dipòsit legal: T-274-2009

Venue:  
Tarragona, University Rovira i Virgili Chancellorship Building  
(Rectorat) C/ Esconciador, s/n



ASSOCIATION FOR THE STUDY OF MARBLES AND OTHER STONES IN ANTIQUITY  
INTERNATIONAL CONFERENCE  
TARRAGONA, 8-13TH JUNE 2009  
INTERDISCIPLINARY STUDIES ON ANCIENT STONE

SCIENTIFIC PROGRAM



With the collaboration of:

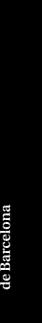


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Ajuntament de Tortosa

CONGRESSUS

derobraneve

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The marbles are too well known to make it necessary for me to enumerate their several colours and varieties; and, indeed, so numerous are they that it would be no easy task to do so. For what place is there, in fact, that has not a marble of its own?

Puny the Elder (*Naturalis Historia*, 36, 11)

Contact:

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