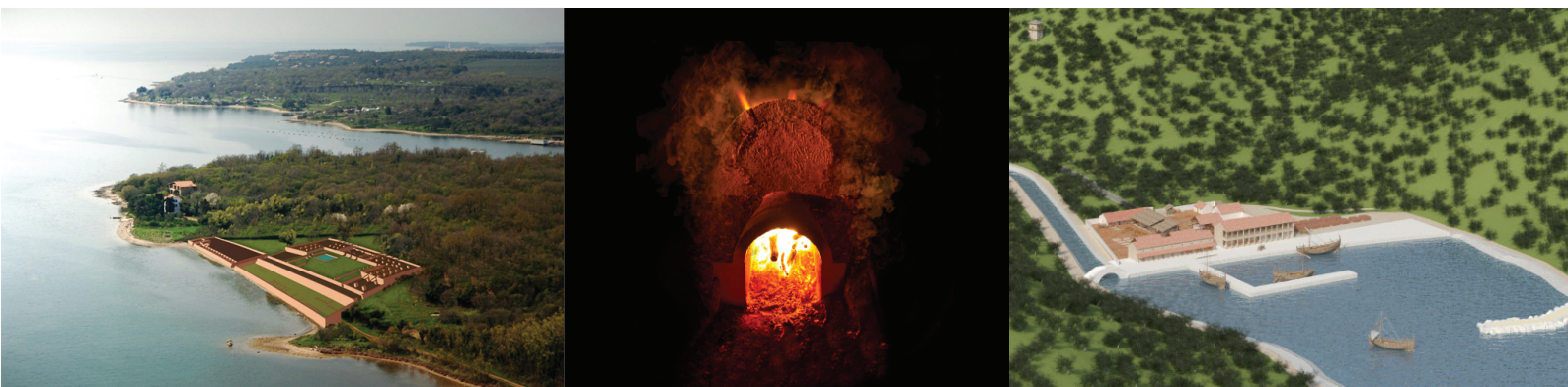




ÉCOLE D'ÉTÉ / SUMMER SCHOOL

Exploitation des ressources et mise en valeur du territoire
au 1^{er} millénaire de notre ère :
Nouvelles méthodes en archéobotanique, archéométrie, modélisation

Land use and exploitation of natural resources in the 1st millennium AD -
New methods in archaeobotany, archaeometry and modelling



Poreč/Parenzo – Tar-Vabriga/Torre-Abrega – Crikvenica, Croatia
25th–30th June 2018

Organisers :

C. Rousse (Aix-Marseille université, LabexMed, Centre Camille Jullian, UMR 7299)

Chr. Vaschalde (LabEx Archimède, ASM UMR 5140-IS-EM UMR 5554)

A. Konestra (Institut za arheologiju – IARH)

Scientific Committee :

G. Benčić (Zavičajni muzej Poreštine), M.-B. Carre (AMU, CNRS, CCJ), A. Konestra (IARH), G. Lipovac Vrkljan (IARH), S. Mauné (CNRS, LabEx Archimède/UMR5140 ASM), R. Matijašić (University of Pula), C. Rousse (AMU, CNRS, CCJ), N. Rovira (ASM), F. Tassaux (Université Bordeaux Montaigne, Ausonius), Chr. Vaschalde (LabEx Archimède, ASM-ISEM)



La relation entre les sociétés anciennes et leur environnement est une question centrale dans la recherche actuelle. Depuis environ trois décennies, les apports majeurs de disciplines issues des sciences du vivant, et des sciences de la terre, de l'informatique renouvellent notre approche de l'exploitation et de la gestion des ressources naturelles par les sociétés anciennes.

L'Ecole d'été réunira une quarantaine d'intervenants, comprenant des chercheurs confirmés qui présenteront les résultats de leurs travaux sur des sites archéologiques majeurs en Croatie, en France, en Italie et en Espagne et des jeunes chercheurs qui utilisent des méthodes telles que l'archéobotanique, l'archéométrie ou la modélisation, pour restituer l'exploitation de l'environnement méditerranéen à l'époque antique et son impact écologique.

L'objectif est de favoriser les convergences scientifiques et disciplinaires entre archéologie, environnement et archéométrie, avec des intervenants issus de l'ensemble du bassin méditerranéen (Croatie, Slovénie, Italie, France, Espagne, Algérie et Tunisie).

The link between ancient societies and their environment has become a key issue in today research. For about three decades, the contributions from biology, computing science and geoscience have renewed our approach of both the exploitation and management of natural resources developed by ancient societies.

Around forty participants, lecturers as well as young researchers and PhD students, coming from the Mediterranean basin (Croatia, Slovenia, France, Italy, Spain, Algeria and Tunisia) will present their research and methodological approaches, with a special focus on archaeobotany, archaeometry and modelling.

The goal of the summer school is to develop multidisciplinary interactions and subject convergences. Bringing together different skills and approaches will set up a creative environment and boost scientific collaborations between the participants.

MAJOR SUPPORTERS

LabexMed - Aix Marseille University - Centre Camille Jullian - UMR 7299

LabEx Archimède – Archéologie des Sociétés Méditerranéennes - UMR 5140

Institut za arheologiju – IARH - Project RED: Roman economy in Dalmatia (HRZZ, IP-11-2013-3973)

Zavičajni muzej Poreštine / Museo del territorio parentino

Ecole française de Rome

Ministère de l'Europe et des Affaires étrangères

A*MIDEX –*Water Traces* project

Općina Tar-Vabriga -Torre-Abrega/Comune di Tar-Vabriga -Torre-Abrega

Tourist board Tar-Vabriga -Torre-Abrega

Comunità degli Italiani "Giovanni Palma" di Torre

Crikvenica municipal Museum

PROGRAMME

MONDAY, 25TH JUNE 2018

Welcome and Presentation of the Summer School

9.00 Welcome

G. Benčić – Tar-Vabriga / Torre-Abrega Municipality

E. Uljančić – Zavičajni muzej Poreštine / Museum of the Poreč territory

A. Konestra, C. Rousse, C. Vaschalde – Welcome by the organizers and main partners

9.20 – 9.50 Introduction to the Summer School

G. Benčić, D. Munda (Museum of the Poreč Territory), M.-B. Carre (AMU, CNRS, CCJ), A. Konestra (IARH), C. Rousse (AMU, CNRS, CCJ)

Loron / Santa Marina, Busuja and Stancija Blek: Presentation of the interdisciplinary research on the territory of Tar/Torre

SESSION 1 : Vegetal economy

Morning - Lectures

Session Chair – G. Benčić

10.00 – 10.30 F. Guibal – *Wood identification and dendrochronological analysis of the Busuja fish pond*

10.30 – 11.00 E. Goršić – *Dendrochronology in archaeology*

11.00 – 11.40 Discussion/Questions; Break

11.40 – 12.10 N. Rovira – *Plant products and culture contact: the exemple of fruits in the north-western Mediterranean during the 1st millenium BC and the early Roman times*

12.10 – 12.40 V. Glavaš – *Difficult karstic landscapes on the Velebit mountain: research methods and results*

12.40 – 14.00 Discussion/Questions; Lunch break (1 hour)

Afternoon - Presentations

Session Chairs – N. Rovira, E. Goršić

14.00–14.20 M. Tillier – *Archaeobotanical evidence of economic plants in coastal Croatia during Roman times*

14.20 – 14.40 M. Murredu – *Wild and domesticated plants exploitation in Sardegna during Phoenician and Punic period 8th–3rd century BC*

- 14.40 – 15.00 **A. Ferreira Dominguez** – *Studies of the wood of ancient shipwrecks and structures of the Adriatic Sea and South-eastern Europe: contribution to the study of the local shipbuilding traditions*
- 15.00 – 15.40 Discussion/Questions; Break
- 15.40 – 16.00 **A. Barbir** – *Grave goods as evidence for ritual and trade in the early Roman period graves from Ilok-Dvor knezova Iločkih, eastern Croatia*
- 16.00 – 16.20 **Y. Boulmis** – *Land-use and exploitation of natural resources in Maurétania Caesariensis under the Roman Empire (1st c. BC – 5th c. AD)*
- 16.20 – 16.40 Discussion/Questions;

EVENING EVENT

- 17.30 – 19.00 Visit to the archaeological sites of Loron and Santa Marina
- 20.30 Dinner

TUESDAY, 26TH JUNE 2018

SESSION 2 : Craft, fuel and production

Morning - Lectures and Presentations

Session Chair – M.-B. Carre

- 09.30 – 10.00 C. Rousse, C. Vaschalde, C. Benčić, D. Munda – *Archaeological and anthracological approaches of the workshop complex of Loron: new insights into the amphorae kilns*
- 10.00 – 10.30 G. Lipovac Vrkljan, A. Konestra – *Project RED - Defining pottery production in Roman Dalmatia: workshops, resources' exploitation and technological choices*
- 10.30 – 11.10 Discussion/Questions; Break
- 11.10 – 11.40 S. Mauné – *Bilan, enjeux et perspectives du programme OLEiculture et production d'amphores en Turdétanie Romaine (Bassin moyen du Guadalquivir, province romaine de Bétique, (I^{er} s. av.-III^e s. ap. J.-C.))*
- 11.40 – 12.00 I. Gonzales Tobar – *New Insights into oil amphorae workshops of Conventus Cordubensis. Results of the Land Surveys in the Gualdaquir Valley and excavation of El Mohino amphorae workshop*
- 12.00 – 14.00 Discussion/Questions; Lunch break (1 hour)

Afternoon - Presentations

Session Chairs – A. Konestra, C. Rousse

- 14.00 – 14.20 L. La Rosa – *Firing pottery: assessing the environmental impact of terra sigillata production*
- 14.20 – 14.40 L. Cavassa – *Pottery production in Pompeii during the 79 AD*
- 14.40 – 15.00 V. Lauras – *Potters' workshops and the exploitation of natural resources during Roman times in the low valley of the Peyne: New perspectives on research*
- 15.00 – 15.40 Discussion/Questions; Break
- 15.40 – 16.00 I. Valent – *The topography of archaeological sites with smelting characteristics on the territory of the River Drava Basin*
- 16.00 – 16.20 M. Pawlowicz – *Une production de pâtes sombres à Fréjus (Var)? : les fours de potiers situés sous la domus de la Plate-Forme*
- 16.20 – 16.40 T. Berden – *Crafts of Nauportus*

16.40 – 17.00 Discussion/Questions;

EVENING EVENT

18.00 – 19.00 Practical workshop on the pottery production of
Loron (Y. Marion, C. Rousse)

20.30 Dinner

SESSION 3 : Land resources and Archaeometry

Morning –Lectures and Presentations

Session Chairs – R. Matijašić, P. Lanos

- 09.30 – 10.00 F. Tassaux – *Approaches to the study of territories in Roman Istria, between traditional methods and archaeometry*
- 10.00 – 10.30 P. Machut – *Production strategies and procurement of clay raw materials: the case of Loron (1st–3rd c. AD)*
- 10.30 – 11.10 Discussion/Questions; Break
- 11.10 – 11.40 C. Morhange – *Geoarchaeology of ancient Mediterranean harbours*
- 11.40 – 12.10 S. Faivre – *Relative Sea-Level Change along the Northern Adriatic during the Late Holocene*
- 12.10 – 12.30 A. Teklehimanot Araya – *Paleoenvironmental reconstruction of Caraburun shoreline: a geoarchaeological approach*
- 12.30 – 14.00 Discussion/Questions; Lunch break (1 hour)

Afternoon – Lectures and Presentations

Session Chairs: S. Mauné, S. Faivre

- 14.00 – 14.30 V. Ollivier – *Geomorphology and water management, a diachronic view*
- 14.30 – 14.50 Ph. Bromblet – *Provenance studies of materials (building stones, mortars) - presentation of Pierresud database*
- 14.50 – 15.10 Y. Rezkallah – *A multidisciplinary approach to the study of the ancient quarries of Djelfaoune, in the area of the ancient city of Thamugadi (Algeria)*
- 15.10 – 15.50 Discussion/Questions; Break
- 16.50 – 16.10 K. Mijić – *Roman ceramics as a grave goods*
- 16.10 – 16.30 C. Caillaux – *Productions and uses of pitch in Antiquity: crossed contributions of archaeological data and chemical analysis*
- 16.30 – 16.50 Discussion/Questions;

EVENING EVENT

17.30 - 19.00

Visit to the archaeological sites of Stancija Blek and Busuja

(practical workshop *in situ* to observe the biological relative sea-level indicators - in swimsuit)

20.30

Dinner

THURSDAY, 28TH JUNE 2018

SESSION 4 : LAND RESOURCES AND MODELLING

Morning - Lectures and Presentations

Chairman : F. Tassaux

- 10.00 – 10.30 R. Matijašić – *ArchaeoCulTour - A project aimed at studying the archaeological landscape of Vrsar / Orsera*
- 10.30 – 10.50 S. Popović – *ArchaeoCulTour project - First results of LiDAR data interpretation and mapping in GIS*
- 10.50-11.30 Discussion/Questions; Break
- 11.30 – 11.50 G. Ciucci – *Modelling for archaeological research and heritage promotion. The case study of the villa maritima of Saint-Cyr-sur-Mer (Var, France)*
- 11.50 – 12.10 O. Tiago-Seoane – *Roman amphorae kilns in the Western Mediterranean (2nd century BC - 5th century AD): new reflections on the contributions of archaeometry and modelling*
- 12.10 – 14.00 Discussion/Questions; Lunch break (1 hour)

Afternoon Lecture and Practical workshop

- 14.00 – 14.30 Ph. Lanos – *Composing time in archaeology: Initiation to chronological modelling*
- 14.30 – 15.00 Discussion/Questions; Break
- 15.00 – 16.30 Ph. Lanos, C. Vaschalde – *Practical workshop with ChronoModel*

EVENING EVENT

- 17.30 Visit to the town of Poreč . Reception at the Lapidarium – Museum of the Poreč territory

The Summer School moves to Crivenica (2 hours trip, departure from Tar at 8.30)

- 29th June 2018

Morning: filling of the kiln with ceramic objects. Starting firing of the kiln

- Open air exhibition on the site of the pottery workshop in Crivenica (ancient *Ad Turres*)

Lunch at the Hotel

Afternoon:

- Crivenica's products: review of the typology of the products
- Visit to the Badanj fortress: visit of the monument, view on the Vinodol and of the clay deposits of Slani potok

Evening: reception organised by the Crivenica municipal Museum

All day: firing of the kiln with temperatures and firing progress monitoring

- 30th June 2018

Morning: opening of the kiln and review of the fired objects – End of the summer school