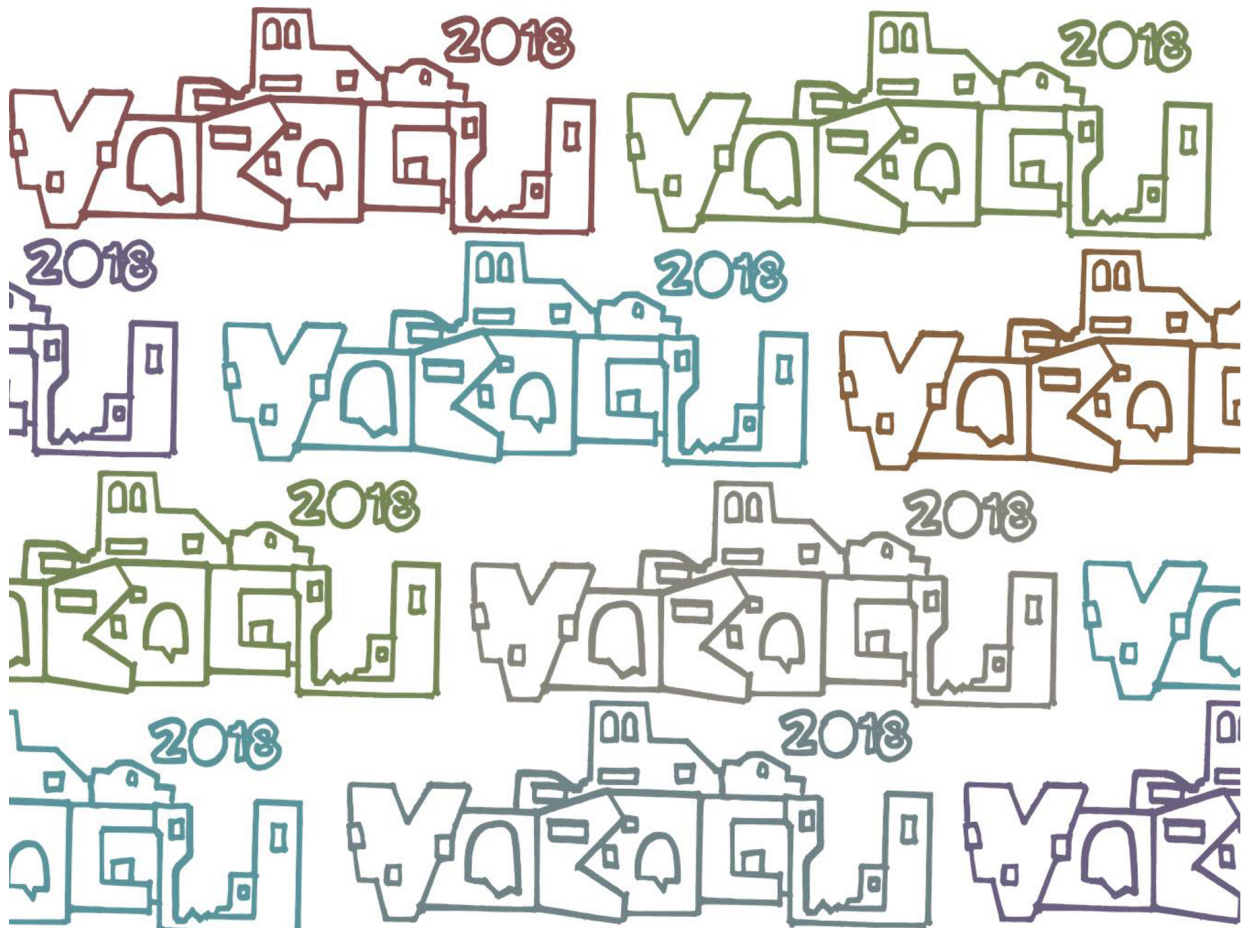


Dialogues in Cultural Heritage



**Book of Abstracts of the VI International Conference YOCOCU
Matera 22-26 May 2018**

**Andrea Macchia
Nicola Masini
Mauro F. La Russa
Fernanda Prestileo**

Editors

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Edited by

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Preface

YOCOCU has become in the last decade a networking and meeting platform where senior and young researchers, professionals and students, all animated by the common goal to preserve and promote cultural heritage, share their experiences, show and discuss their investigation methods, offer their input in research in the different fields of cultural heritage, from the conservation to management.

The 2018 YOCOCU conference at Matera (Italy) has been conceived as a forum to promote dialogues and partnerships between scientists, conservators and managers, on one hand, and civic and community non-governmental organizations, on the other.

All parties act as interlocutors and sources of information and advice as *pares inter pares*, as partners for heritage since both are interested in new ways to improve the conservation and management of movable, immovable and intangible cultural heritage.

In YOCOCU 2018 this meeting platform will welcome citizens to encourage new dynamics between these contributors to ignite the experience and the creativity in each of these groups for the benefit of cultural heritage management and conservation.

In YOCOCU 2018, cultural heritage professionals and researchers (architects, restorers, conservation scientists, archaeologists....) and the citizens (association, municipality, heritage groups....) will present their projects, accomplished research, future activities or challenges; all together will consult, debate, establish new decision-making strategies and trace new future priorities; professionals, on their side, will learn the aims and objectives of civic groups and establish conservation strategies that may keep the integrity of cultural heritage as a first priority.

This Book of short papers is the result of a will and effort aimed at creating a bridge between Research and the Conservation of cultural heritage, in continuity with previous conferences, including the last one held in Madrid in 2016.

The Book is divided in five sections, Museum, Heritage Science, Cultural Heritage management, archaeological sciences and architectural/built heritage, in their turn divided in paragraphs which better define methods, approaches and aims: (i.e. from microclimate monitoring of Museums to Cultural Heritage valorization, from archaeometry to Public Archaeology, Reuse of Industrial heritage and monuments ..).

The short papers (2 to 5 pages) deal with most of the issues that characterize the debate of scientists and conservators for two decades among which: i) the most reliable strategies and methods of safeguarding, maintenance and preservation of cultural heritage sites, including monuments and archaeological areas; ii) the effectiveness and compatibility of remedial treatments; iii) the best way to use and integrate in situ investigations and laboratory tests to study and evaluate the decay processes of heritage material; iv) the museums as inclusive places to share knowledge, culture and heritage which is the focus of the Opening of the Conference

In conclusion, the Book is the result of the will of YOCOCU, CNR and the other partners which contributed to the organization of the conference to create an effective alliance between research and conservation in order to increase the interest, understanding of the public in cultural heritage problems.

Such alliance will take place in an emblematic town, Matera, that just half century ago was considered a national disgrace for the poverty, "the shame of Italy", and next year will be the European Capital of Culture.

Matera, 22.05.2018

Andrea Macchia, Nicola Masini, Mauro F. La Russa, Fernanda Prestileo

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4.1.2

THE COTTANELLO ROMAN VILLA PROJECT: RESEARCH, CONSERVATION AND DISSEMINATION

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Abstract – This paper presents the archaeological research project focused on the Roman villa of Cottanello, near Rieti, in the Lazio Region. The project is based on multidisciplinary researches and includes archaeological excavations and diagnostic surveys to support the study of the site and the materials. Since 2013 researchers of the National Research Council of Italy are working together with other researchers and students from different Italian Universities and with independent scholars. Here we summarize the main results of the archaeological and archaeometric researches.

Key Words – archaeometric analyses, archaeological site, excavation.

I. INTRODUCTION

This research project is focused on the Roman villa of Cottanello, near Rieti, one of the most important archaeological sites of the Sabina Tiberina territory in the Lazio Region.

The villa was discovered at the end of the 1960s, when the structures that are currently visible were brought to light.

The building can be classified as a Roman urban-rustic villa, a structure with a residential zone for the owner's family and an agricultural and productive zone; three main building phases have been identified from the 3rd cent. BC to the 6th century AD (Fig. 1). The first scientific publication about the villa, realized by the initiative of the Archaeological Superintendence of Lazio, was edited in 2000 by Mara Sternini [1].

In 2010 the Sapienza University of Rome started new archaeological investigations that yielded important results about the building phases of

the villa and for the study of its architecture and materials [2-3].

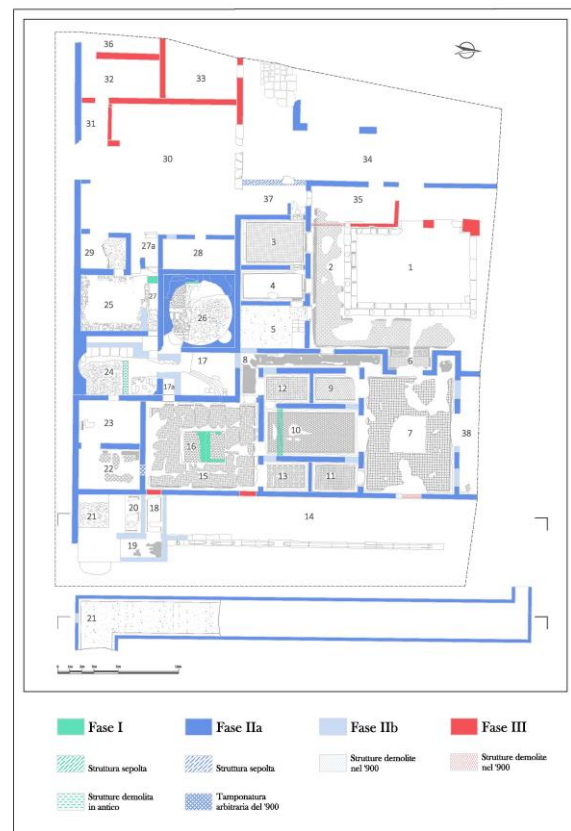


Figure 1. The villa plan with the building phases.

Continuing these investigations, the Institute of Studies on Ancient Mediterranean (ISMA) of the National Research Council of Italy (CNR) began to perform researches on the site in 2013 with the permission of excavation granted by the Italian Ministry for Cultural Heritage and Tourism, and in collaboration with the Archaeological Superintendence of Lazio. The

researches included archaeological excavation campaigns and diagnostic surveys to support the study of the site and its materials, carried out by researchers of CNR Institutes for the Conservation and Valorisation of Cultural Heritage (ICVBC), for Technologies applied to Cultural Heritage (ITABC), of Structure of Matter (ISM), of Environmental Geology and Geoengineering (IGAG), together with other researchers from different departments of Sapienza University of Rome, Federico II and Suor Orsola Benincasa Universities of Naples, and with independent scholars.

II. MATERIALS AND METHODS

The project has increasingly adopted the multi-interdisciplinary scientific method that underlies the modern “global” landscape archaeology and which provides for a marked multidisciplinary and a close interconnection between research, teaching and promotion of the site.

Therefore, the study of the Cottanello villa and its territory has developed through historical-archaeological approaches and archaeometric analysis on the archaeological findings.

In particular, the characterization of the materials was carried out using non-destructive or micro-destructive spectroscopic techniques such as hyperspectral imaging (HSI) and X-ray fluorescence (XRF), μ -Raman spectroscopy, infrared spectroscopy (FT-IR) as well as observing samples of ceramic and painted plasters in glossy and slim sections by optical microscopy (MO) (Fig. 2).

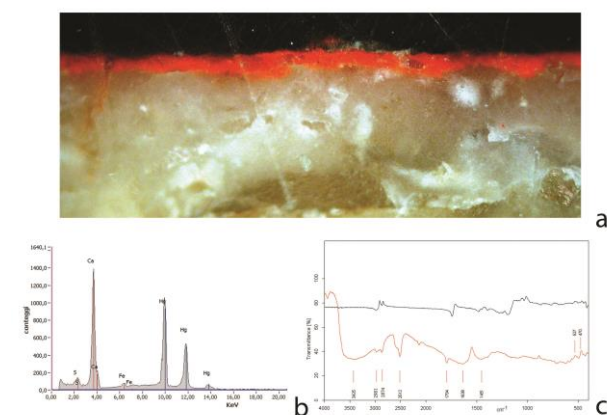


Figure 2. Different analyses on a red sample of

painted plaster: a) thin section in MO (100X); b) XRF; c) FT-IR.

Gas Chromatography coupled with Mass Spectrometry (GC-MS) has allowed the identification of the organic residues present in large containers for the storage of food (*dolia*).

The faunal remains were also carefully examined with diagnostic and quantitative analyses.

Furthermore, we are also experimenting new bioproducts for the cleaning of rust stains on mosaic surfaces (Fig. 3).



Figure 3. A mosaic detail during a cleaning intervention.

We have also started geophysical (using integrated application of geo-radar and magnetometric techniques) and topographic surveys (using total station and GPS) in the area around the villa.

Finally, we have organized many initiatives for the dissemination of the results, not only addressed to the students and the inhabitants of the area, but also to scholars coming from different countries of the Mediterranean in the frame of the international program DIPLOMAZIA, carried out under an agreement between CNR and Italian Ministry for the Foreign Affairs.

The aim is to give information about the villa and the Sabina territory in order to promote tourism, support the economic development of the territory and increase the awareness of the local Cultural Heritage.

III. RESULTS AND DISCUSSION

The first concrete result of this scientific collaboration is a volume, published at the end of 2017, in which the outcomes of the 2010-2016 researches are presented [4].

In addition to many studies of a strictly historical-archaeological nature and to architectural analyses aimed at 3D reconstructions of parts of the building and of the structure as a whole, in this volume there are numerous scientific contributions that have brought new information for the knowledge of this archaeological site. They summarize the main results of the research carried out in various fields.

Geophysical surveys, carried out to address future stratigraphic investigations, provided interesting data on the presence of other buried structures in the areas near to these already excavated.

Gas chromatography analyses confirmed that the *dolia* found in the villa were destined to contain oil. The archaeometric study of some types of ceramics also provided significant indications about a possible origin of the clay from the area of the Tiber valley to which the villa was closely connected.

From the systematic study of all the faunal remains found in the various phases, some interesting data emerged not only on the eating habits of the inhabitants of the villa, but also on the possible breeding activities.

The archaeometric study of the painted plasters allowed us to verify the use of precious pigments, like Cinnabar and Egyptian blue, to describe particular decorative elements in the main constructive phase of the villa (I sec. A.D).

During the last years, different events were organized at the villa with public, students and scholars to disseminate the results of the excavation activity as well as the results of the diagnostic investigations (Fig. 4).



Figure 4. Educational activities at the villa.

IV. CONCLUSION

The work carried out so far is a basis for planning future scientific researches that will allow to deep the knowledge of the villa, its materials and its territory.

On the basis of a multidisciplinary and global approach, which combines research, conservation and dissemination, it seems significant to have carried out researches on different issues with the ultimate goal to contribute to the enhancement of the archaeological site of the Cottanello Roman villa.

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