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CEA 2018: the 14th Conference of Environmental Archaeology in Modena and this Special Issue of IANSA

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Our journal, *Interdisciplinaria Archaeologica, Natural Sciences in Archaeology* (IANSA) has been closely associated with the Conference of Environmental Archaeology (CEA) since its very conception. These modestly organised conferences were first held in the Czech language under the Archaeobotanical working group beginning in 2005 in Prague, and was then transformed into the CEA from 2010. Later, the Scientific Committee decided to hold a conference every three years in English to open it up to an international audience. The first such meeting was organised as the 11th Conference of Environmental Archaeology in February 2015, in České Budějovice, Czech Republic, under the auspices of the PAPAVER Centre (Beneš *et al.*, 2015).

In 2017, the 13th Conference of Environmental Archaeology took place in Nitra, Slovakia: the first time outside the Czech Republic (Mlejnek and Hajnalová, 2017). February 2018 saw the conference leave its central European ‘motherland’ and head down towards southern Europe: moving to Italy. Its organization was undertaken by the University of Modena and Reggio Emilia, under the direction of the Laboratory of Palynology and Palaeobotany of the Department of Life Sciences, an interdisciplinary biological centre in the full spirit of transdisciplinarity within environmental archaeology. This was the third congress locally organised by the Modena team since 2013, and was an obvious continuation of its scientific activity: proposing a bridge between palaeoecology and ecology and emphasizing the role of archaeobotany in environmental archaeology and the modern science of conservation (Mercuri *et al.*, 2013; Marignani *et al.*, 2017; Piovesan *et al.*, 2018).

In the CEA of 2018, seven thematic sections were planned, reporting contributions on:

- 1) Detecting human impact: the ABG (Archeo-Bio-Geo) research.
- 2) Long-term environmental reconstruction for landscape management.
- 3) Northern Africa archaeo-environmental changes.
- 4) Mediterranean archaeo-environmental changes.

- 5) Reconstructing past landscape: flora insights from archaeological sites.
- 6) Interdisciplinary methods for environmental archaeology interpretation.
- 7) Environmental sustainability in a changing world: lessons from the past. Studies on palaeoecological reconstructions with archaeological surveys, analyses of botanical remains, human and animal bones, and isotopic and molecular data were also presented. The botanical contribution to archaeology was developed in several presentations that dealt with transformations in flora and vegetation as the centre of environmental reconstructions. Research based on plant macroremains, non-pollen palynomorphs and pollen data enriched the long-term perspective of the analytical archaeological studies (for example, Mercuri, 2014; Mercuri and Florenzano, in press). The abstracts were collected together as part of an e-book, including oral presentations (41) and posters (20), that were presented at the three-day conference (Florenzano *et al.*, 2018).

The congress received sponsorships from the Botanical Society of Italy (SBI), the Italian Institute of Prehistory and Protohistory (IIPP) and the Society of Naturalists and Mathematicians of Modena (SNMM), three important Italian scientific associations which awarded several contributions by young scientists (*e.g.* Luelmo-Lautenschlaeger *et al.*, 2018; Figure 1). Moreover, overall patronage was given by the Superintendence of Bologna, Modena, Reggio Emilia and Ferrara, along with the Municipality of Modena and the Emilia Romagna Region, and the archaeobotanical network BRAIN – Botanical Records of Archaeobotany Italian Network (*brainplants.successoterra.net*; Mariotti Lippi *et al.*, 2018). Modena’s Civic Museum hosted the Social Dinner in the wonderful surroundings of the archaeological rooms of the museum. Financial support was offered by the national project SUCCESSO-TERRA (on sustainability



Figure 1. The award ceremony at the closing session of the CEA2018 of Modena.

and the Bronze Age in the Po Plain, N Italy; Cremaschi *et al.*, 2016, and this issue), by the Fondazione Anna Maria Catalano ONLUS and by the CEDAD-Centro di Datazione e Diagnostica laboratory. The local organization committee and the Centro Interateneo EDUNOVA – Centro E-learning di Ateneo, which created the logo (Figure 2), contributed to the success of the conference.

This special issue brings seven contributions that were made at the Modena conference and a backstory based on the plenary lecture given by Mauro Cremaschi at the opening session. In the vast majority their themes touch on the archaeobotany and palaeoecology of southern Europe – from France to the Balkans. The first contribution, prepared by the Czech-Macedonian team, concerns the archaeobotany of the Neolithic. The paper by Jaromír Beneš *et al.* maps the noticeable possibilities of the site of Vrbjanska Cuka in

Pelagonia (Republic of Macedonia), where the Neolithic tell is investigated in an interesting environmental setting. The paper integrates the analytical knowledge of several archaeobotanical disciplines, as well as an analysis of molluscs describing the local early and middle Holocene environment. The article about fuel practices in Roman North Africa written by Erica Rowan presents the extensive use of pomace. The author, who has developed this topic (Rowan, 2015), focuses on the ways in which the Romans brought together olive oil and pottery production. The paper emphasizes the role of archaeobotanical research in modern contexts by remarking that today, in the face of increasing energy demands, pomace is once again being recognized as an important resource for sustainable development in the Mediterranean area.

Chiara Molinari and Carlo Montanari describe the “wooded-meadows system”: a former multifunctional use of vegetation that had been widespread in Europe since the Neolithic. They document this type of human and vegetation interaction in the Ligurian Apennines (Italy) between the Middle Ages and the first half of the 19th century. The charcoal kilns of the northern Apennines are investigated by anthracologists and palaeoecologists under the leadership of Alessandra Benatti. The charcoal fragments contained in these anthropogenic structures, located in the mountain areas of Monte Cimone and Corno alle Scale in the Tuscan-Emilian Apennines (northern Italy), at high altitudes, have enabled the reconstruction of human-forest relationships during the last centuries. Comparison between the anthracological results and other ethnobotanical and historical-social information has made it possible to improve our knowledge of an activity that was fundamental to past mountain needs and economies. Environmental archaeology from mountain landscapes is



Figure 2. The logo of the CEA2018 of Modena.

Figure 3. Post-conference excursion of the CEA2018 of Modena: visit to the Archaeological Park of the Terramara di Montale (Castelnuovo Rangone, Modena).



also developed by Yannick Miras *et al.*, who investigate the Holocene trajectories of landscape evolution arising from the interplay between human impact and adaptability, climate oscillations and environmental evolution. Their results substantially extend our knowledge concerning landscape development in the Lower Auvergne Mountains (France).

Unique archaeobotanical and archaeozoological finds from the New World in the Early Modern period are presented in an article by Claudia Moricca *et al.* which presents an interesting assemblage – from the seeds of pumpkins to the pelvis of a guinea pig – from a pit infill found in Rome. Their results improve our knowledge of the eating customs and daily habits of a high-status Renaissance clerical community. Mariotti Lippi *et al.* prepared a thematic review on the reconstruction of Mediterranean forests using palynology: proposing a bridge between the palaeobotanical and phytogeographical approaches, and suggesting that pollen analysis can help to reconstruct the Meso-Mediterranean forest.

The backstory reports on the national research project SUCCESSO-TERRA (financed by PRIN-MIUR (PRIN20158KBLNB, PI: M. Cremaschi), which sponsored the CEA 2018 and was based on the cooperation between two partner units, the geoarchaeologists of the University of Milan and the palynologists of the University of Modena and Reggio Emilia. The archaeological excavation of three key sites (Terramara Santa Rosa di Poviglio, Vasca di Noceto and San Michele di Valestra) and surveys in northern Italian regions have led to interdisciplinary results useful for an understanding of the rise and fall of the Terramare culture, which developed in the Po Plain during the Middle to Recent Bronze Age (Cremaschi, 2014; 2018; Mercuri *et al.*, 2015; Cremaschi *et al.*, 2016). The Archaeological Park of the Terramara di Montale, which was built on the basis of impressive archaeological and archaeobotanical research producing palaeoenvironmental reconstructions, celebrates this Bronze Age period and therefore the CEA 2018 organized the post-conference excursion to this archaeological park located in the province of Modena (Figure 3).

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