

EXPERIMENTAL ARCHAEOLOGY IN ITALY¹⁵

Arqueología experimental en Italia

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Abstract

This paper is a review of the establishment of experimental archaeology in Italy from an historical perspective: from the first attempts to introduce experimentation in archaeological and Heritage culture, by the end of the 70s (with a clear delay comparing with the rest of Europe), up to its recent systematization. The first experimental approach, both in the academy and university, in Italy occurred in the 80s, with the creation of several institutes devoted to experimentation, as the Italian Institute of Experimental Archaeology (1986) that is still active. This institute has created a team able to experiment with an architecture of archaeological research and subsequent reconstruction on a broad scale.

This paper includes also a review of the introduction of experimental archaeology in the academy. Several laboratories of experimental archaeology have been created in Italian universities, specifically integrated into the university teaching program. Finally, this work includes a short revision of the contribution in experimental archaeology by individual scholars, academics or not to the expansion of research, and the role of the archaeological parks.

To address this issue, some case studies are reported to highlight the main trends in different regions of Italy.

Keywords: Italy, Experimental Archaeology, historiography.

Resumen

Este artículo es una revisión de la implantación de la arqueología experimental en Italia desde una perspectiva histórica: a partir de los primeros intentos de introducir la experimentación en la cultura arqueológica y del Patrimonio, desde finales de los años 70 (con un claro retraso en comparación con el resto de Europa), hasta su reciente sistematización. El primer acercamiento a la experimentación, tanto en la academia como en la universidad, tuvo lugar en los años 80 con la creación de varios institutos dedicados a la actividad de experimentación, como el Instituto Italiano de Arqueología Experimental (1986), todavía activo. Este instituto se ha dedicado a crear un equipo capaz de hacer investigación en arquitectura experimental y posterior reconstrucción a gran escala.

Este trabajo incluye también la revisión de la aplicación de la arqueología experimental en la academia. Se han creado varios laboratorios de arqueología experimental en varias universidades italianas, específicamente integrados en el programa de enseñanza universitaria. Por último, se trata una breve revisión de la arqueología experimental realizada por personas individuales, académicos o no, y el papel de los parques arqueológicos, que han contribuido a la expansión de la investigación. Para abordar el

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problema, se utilizan algunos casos de estudio con el objetivo de subrayar las tendencias principales en diferentes regiones de Italia.

Palabras clave: Italia, Arqueología experimental, historiografía.

1. INTRODUCTION:

“Experimental archeology is an attempt to reproduce through experiments, in the material and organizational conditions that are as close as possible to ancient ones, instruments, objects and buildings, and to reproduce the circumstances in which the goods themselves have degraded or destroyed.” (Coles, 1981)

According to Coles (1981), Experimental Archaeology is responsible for investigating historical processes. Through this method of research, it helps us to evaluate human choices and raw material constraints in technological behaviours, and some of the fundamental economic and subsistence strategies from ancient Prehistory to historical periods and contemporary archaeology. In fact, through an imitative experiment, it tries to replicate phenomena of the past with the aim of verifying hypothesis of interpretations and acquiring greater knowledge in Archaeology.

This discipline originated in the early nineteenth century, in parallel with the beginning of the systematic study on Paleethnology, as a discipline that studies the Prehistory. The nineteenth-century pioneers, especially from the Anglo-Saxon and Scandinavian world, based their first experiments on the use and production techniques of some prehistoric artefacts found at excavations. Initially it focused on reproducing and analysing lithic objects, and, subsequently, the experimental analysis spread also to other materials, such as ceramics and metals.

After the first attempt of experimental reproduction, the development of a scientific Experimental Archaeology took place. It means that, after an initial phase of imitation and the so called ‘experiences’ (Reynolds, 1999), it became a genuine experimental method that includes the measure and control of variables, the reproducibility of processes and the development of specific analytical procedures.

In the American anthropological archaeology, a cultural movement developed in the 1960s, which characterized archaeology, especially in the Anglo-Saxon environment, until the early 1980s, the main exponent of this currently known as ‘New Archaeology’¹⁷ or even processual archaeology, was Lewis Binford¹⁸. He and his colleagues rebelled against the principle that each cultural phenomenon was unique and unrepeatable, thus denying any value to the comparative procedures between different ethnic and historical contexts. His study has allowed consolidating the first rules of experimental archaeology, considering the tools as a mean ‘*to go back to the society that produced them*’ (Binford and Binford, 1968).

The discipline was defined from a theoretical point of view in 1973, with the publication of *Archaeology by Experiment* by John Coles. Coles examines major trends and gives an

¹⁷ This archaeological theory was born in 1958 thanks to Gordon Willey and Philip Phillips. It focused on the archeology of prehistoric and protohistoric scope. It was practiced since the 1960s, first in the United States of America (in particular by L.R. Binford, K.V. Flannery, and the reworking by M. B. Schiffer) and, therefore, in Great Britain (by D.L. Clarke and C. Renfrew) and, then, in other parts of Europe. Many consider Gordon Willey as the innovator of theoretical archeology.

¹⁸He wrote about this theory in a series of articles, and later in the volume entitled *New Perspectives in Archaeology* (Binford and Binford, 1968).

overview and a brief history of experimental archaeology, within its contemporary context and that of archaeology. In his work, the importance of ethnography is a recurrent theme, in order to record information before it is lost forever. The goal of all this, was avoid losing the meaning of the use of a specific object, leaving archaeologists to misinterpret artefacts. Watching an expert, when creating and using a tool is the best way to understand it, especially because it can explain how it works (Blockley, 1999).

2. THE ORIGINS OF EXPERIMENTAL ARCHAEOLOGY IN ACADEMIC ITALY

In some European countries (Denmark, France, England and Holland) several centres devoted to experimental research have been created through the work of some researchers¹⁹, over the years.

Although in the 1970s European and extra-European studies began to progress and develop, in Italy the few existing attempts to experiment did not find interlocutors in the academic world, remaining mostly just as a topic of curiosity or reading or, even worse, for profit doing it²⁰. A substantial change occurred in the 1980s. According to A. Guidi, and others (2003), in this decade, there were not many experimental experiences in the research field, or at least few were published in an exhaustive way. However, it was possible to find the first approaches to experimental archaeology above all, as those regarding litho-technic problems of, such as the predetermination of Levallois and blade splinters (Chelidonio and Farello, 1976), or the construction and use of Palaeolithic *lucerna* (Chelidonio, 1982). An example can be seen in the work carried out by Bernardo Bagolini, in which, starting from previous experiments carried out by European and American researchers, he began the practice of the litho-technical studies and their functional applications (Bagolini and Scanavini, 1974).

It is considered that the first experimental approach in the academia and university in Italy took place in the 80s, in the Prehistoric archaeology courses held by the Università Popolare di Torino conducted by Borrelli Nicola Silvano as teacher. The first course was organized under the name of the Centro di ricerca e studio di archeologia sperimentale, that later joined the CAST (Center of Experimental Archeology of Turin). This was an association of researchers who conduct investigation and study activities to clarify methods and materials regarding technologies of the past with a broad spectrum. The CAST was not chronologically limited, although it showed a certain prevalence in the pre-protolithic context. In 1982-83, the LIAST (Italian Laboratory of Experimental Archaeology of Torino) was created from these two organizations, Nowadays, it is informally established and currently active. It is divided into several departments:

¹⁹ For example, in Bordeaux by François Bordes, whose experimental "school of lithotechnics" was active early on the 1950s, or in the United States by Don Crabtree. However, other large-scale research was also carried out over the years in Europe and the United States. The contemporary experience of two very different schools from archeology remains significant: the "western" one, of which A. Leroy-Gourhan and L.R. Binford represent two pivotal figures, and the Soviet functionalist school of S. A. Semenov (Guidi et al., 2003)

²⁰ Such as the work of functional analysis conducted by Bagolini and Scanavini in 1974, on the Fimon scrapers, that was never published in scientific journals, but it was developed in the informative sphere (Bagolini y Scanavini, 1974).

Prehistory, current primitives, Ancient History, Middle Ages, Renaissance and machines of the First Industrial Revolution²¹.

Later, in 1986, the Istituto italiano di archeologia sperimentale (IIAS) was created in Milan (currently headquartered in Genoa) by a group of researchers from several fields of knowledge with active interest in experimental archaeology and museology. Throughout the years, the IIAS has formed a team capable of experimenting on functionality of ancient architecture through archaeological research and subsequent full-scale reconstructions of buildings allocated towards educational use (Tinè, 1999).

The creation of these institutions was very important as it showed an initial interest from academic institutions to this issue. However, it was especially thanks to the work by Professor Peretto in 1993 on the site of Isernia La Pineta (Peretto, 1994) that the interest in the discipline grew it (Fig. 1. left). His research, carried out with the University of Ferrara, has found one of the most important and complete lower Palaeolithic areas of Europe, and has been subjected to intense lithic experimentation. In fact, starting with a detailed analysis of the lithic artefacts recovered from the site, it was decided on reproducing some objects to refute some hypotheses of the study, for example, the production techniques and use of tools (Peretto, 1998). The contributions of the University of Rome “La Sapienza”, on the Middle Palaeolithic site of ‘Grotta Breuil’ (Lazio, Italy) were of same importance. (Fig. 1. right) The multidisciplinary experimental program through the lithic industry highlight the Neanderthal adaptations and technical responses with relation to raw material in this site (Guidi et al., 2003).



Figure 1: left.-Isernia-La-Pineta Archaeological site; right.-Grotta Breuil, San Felice Circeo

Thanks to this first research, the fundamental role of experimental archaeology in higher education reached acknowledgement. Applying experimentation to all disciplines of archaeology has meant an important step in education. It allows, on the one hand, to put one’s knowledge into practice and, on the other hand, it can be pointed to “problem solving” in field research. Archaeologists try to understand and interpret contexts during field activities, mainly excavations, and must refer to all the available knowledge including their own experience in experimental archaeology (Cattani, 2016).

The following are some examples of university institutes that have integrated experimental archaeology into their training plans:

- the University of Siena, which in 1998-99, together with the Department of Historical Sciences and Cultural Heritage, founded the Laboratory of Experimental Archaeology

²¹ <http://www.liast.it/indexita.htm>

(LARS), as a result of the deep experimentation activity conducted and initiated by Prof. Attilio Galiberti (Tarantini and Galiberti, 2011), oriented both to archaeological research and divulgation, and focused on the study of lithic, ceramic, metallurgical and fire production.

- the Department of Archaeology and Cultures of the ancient world, from the University of Bologna, that has organized an experimental archaeology laboratory, under the direction of Professor Maurizio Cattani. This laboratory was founded in 2011 and it carries out archaeological research on Italian prehistoric and protohistoric contexts, with preference to the study of Neolithic and Bronze Age contexts. This research includes various types of ceramics, metals, earthen and wooden structures, spinning and weaving, cooking systems and prehistoric cultivation techniques (Cattani, 2016) (Fig.2).
- The University of Trento with the “Bernardino Bagolini” Laboratory (LAB), directed by Professor Annalisa Pedrotti (Professor of Prehistory and Protohistory). The research carried out by the LAB concerns historical geography and archaeology, including, as regards the latter, the whole chronological period from prehistory to the Middle Ages, with special attention to methodological aspects, the territory uses and the genesis of archaeological stratifications from the Italian territory²².
- The University of Sassari, established in 2009-2010 the Laboratory of Prehistory and Experimental Archaeology (LaPArS) at the Department of History, Human Sciences and Education by Ramona Cappai and Laura Manca, in which the technological analysis applied to the lithic industry, ceramics and to the industry in animal hard material are dealt with.
- They have followed practical lessons on the analysis and on the description and representation of archaeological artefacts (Mellis, 2018) (Fig. 2c).
- The Laboratory of Experimental Archaeology and Research on Technology (LASERT) of the Department of Cultural Heritage of the University of Padua. From November 2016, the LASERT is fully active at the Archaeology Laboratories of Ponte di Brenta.

It is currently dedicated to the project *We recreate the Francois Vase*, (the most important painted vase of ancient Greece), working on reconstruct a faithful replica of a VI-V century BC Greek kiln, within which a natural scale copy of the famous vase will be cooked. LASERT also works the main processes for processing materials such as copper, iron or glass (Fig. 2b).

²²<http://laboratoriobagolini.it/laboratorio/>



Figure 2: some images from the educational laboratories of several mentioned universities. a): experimenting with pottery cooking and bronze smelting (Cattani M., 2016); b): model of the kiln, currently being pre-recorded (LASERT, 2016); c): LAParS

3. THE CONTRIBUTION OF NON-ACADEMIC INITIATIVES IN RESEARCH

Despite academic research has contributed to expand experimentation, there are many examples of the work done by individual scholars, both academics or not. It results more prolific, mainly in the reproduction of objects and their operational chains. For obvious reasons, it is not possible to mention all the archaeological experiments carried out by individuals over the years; but this work will report some examples of these activities that have been accomplished in Italy though the last decades and recently.

It is worth to mention the works of A. M. Bietti and P. Pulitani, on the finds of the Lazio necropolis of Osteria dell'Osa (Bietti and Pulitani, 1992) (Fig. 3). It consisted in reproducing several ceramic typologies to understand technical-operational aspects and the organization and division of labour of the site's people (Guidi et al., 2003). Another important research was carried out by Renato Perini for the exhibition that took place in 1988 at Trento, on wood working at the Fiavé lake dwelling. This work started from the study of the wood findings in post holes, from the Fiavé and Lavagnone dwellings. Perini tried to reconstruct the operating chain that led to the construction of the piles: from the choice of the type of wood to the finishing, including the search for processing traces and the subsequent identification of the instruments used (Guidi et al., 2003).

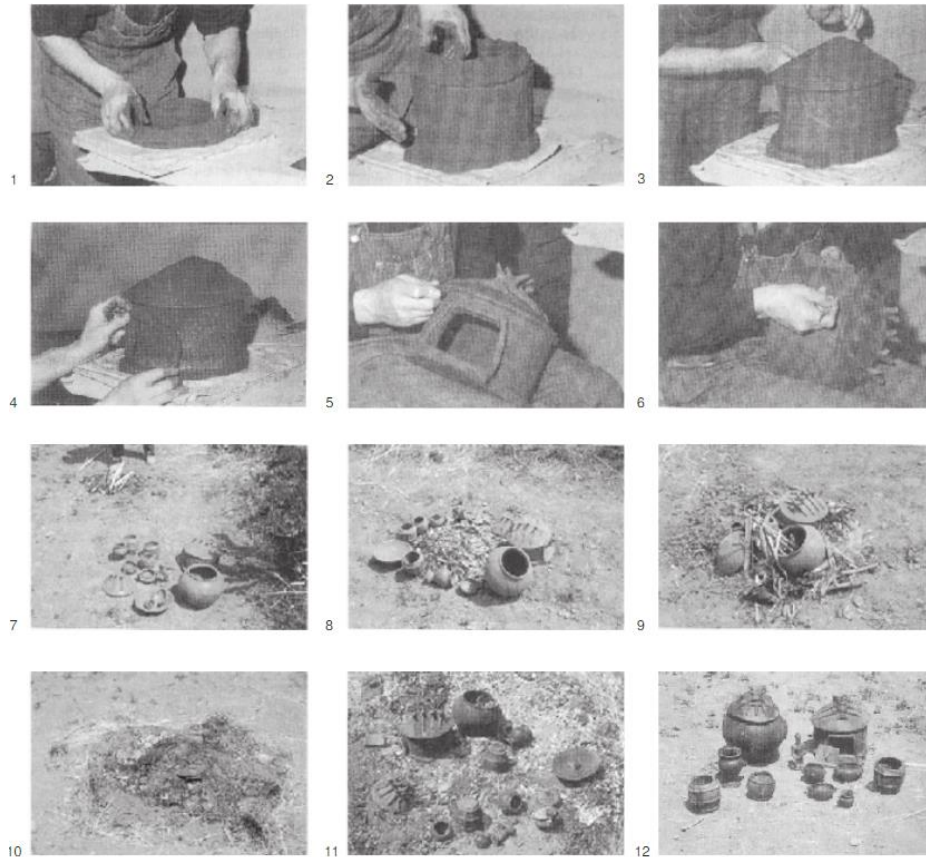


Figure 3: Experimental reproduction of ceramic artefacts found in the Iron Age necropolis of Osteria dell'Osa (Rome). Images taken from Bietti and Pulitani, 1992 (Guidi et al., 2003).

Riccardo Merlo, an architect dedicated to the reconstruction of ancient landscapes, which has carried out more recent work in collaboration with the University of Bologna by implementing one of the oldest reconstructions of a Villanovian hut (Martinelli, 2000). Considered a great example of experimentation and knowledge of Villanovian culture, the structure is currently preserved at the *Giardini Margherita di Bologna*, (Fig. 4.a). It consists in a circular construction, of 4 m diameter and 80 cm depth of the underground floor, made all, walls and roof, with traditional techniques, and probably not very different from those used in prehistory.

Regarding the same topic of huts building, the work conducted by the archaeological group of Scarperia, at the Archaeological Documentation Center of Sant'Anna, must be remarked (Fig. 4.b). This group has made several reconstructions of pre-historic and

protohistoric huts. These structures recall the Palaeolithic ones from Pinvec (France) and from the Gravettian site of Barberino di Mugello.



Figure 4: a) Villanovian hut in Bologna; b) Bronze Age hut at the Archeological Documentation Center of Sant'Agata di Mugello, during its construction in 2004. Photo by Maurizio Martinelli.

The research of M. Barbieri and others (2012) on sword mould replicas, using the same raw material as used in the Bronze Age villages from Modena area. This work allowed to understand that the better accessibility to raw material, together with the easiness of work and quality in details, determined the preference on using certain sandstones for bronze sword molds, resulting in time and effort savings (Barbieri et al., 2015) (Fig. 5).



Figure 5: The manufacturing phases of sword production. Photographs from Barbieri et al. 2015.

Another remarkable work was presented during the eighth conference of experimental archaeology in Oxford (Caruso et al., 2014). This team focused on reproductions of weapons and in this occasion, they presented a study on experimental replicas- making and use- of four bronze axes (Fig. 6). This study originated in the framework of the archaeological project of prehistoric hut rebuilding in Tornambé (Pietraperzia, Enna), and for the implementation it was decided to reproduce the same weather conditions, making use of the archaeological material found, faithfully reproducing the instruments for bronze melting based on the archaeological findings of the site (Caruso et al., 2014).

Lastly, I would like to highlight the work by C. D'Oronzo on the hearths structures -better defined as cooking platforms- found in Bronze Age sites from central and southern Italy. These cooking structures have been identified, especially in the multi-activity open spaces and inside huts (Cazzella and Recchia, 2008). This research allowed to understand the

use and running of these structures through an experimental protocol, based on the contextual analysis of ceramics, stone tools and bio-archaeological remains (fauna and plant remains) showing a wide range of activities, while the archaeometric analysis of the structures revealed the selection of specific types of clay (D'Oronzo, 2015).



Figure 6: Bronze axes manufacture process. Photo from Caruso et al., 2014.

4. THE ARCHAEOLOGICAL PARKS AND THE APPLICATION OF EXPERIMENTAL ARCHAEOLOGY IN DISSEMINATION ACTIVITIES, AND MUSEUMS.

In the last years, experimental archeology has increased in diffusion considerably, especially in the field of dissemination, thanks to the work carried out by various educational programs of museums and institutions. Recent projects have shown that experimental archeology is not only one of the many methods to research, but it is also seen as a “*cultural entertainment' tool allowing a non-specialist viewer to understand live history and stimulating a new interest in this discipline*” (Ratti, 2004:39).

Initially, this was carried through the historical reconstruction, by several folklore groups trying to reproduce past events or situations, with the aim of enhancing and rediscovering the historical-cultural traditions of a population. During the 90s of the last century, the growing interest in this discipline led to the establishment of the ‘Archaeological Parks’, defined as ‘*a territorial area characterized by important archaeological evidence and the presence of historical, landscape or environmental values, equipped as an outdoor museum*’ (Decreto Legislativo Italiano N. 490 del 29/10/99)²³.

One of the first approaches was carried out by the Institute of Experimental Archeology linked to the University of Genoa, and by Santo Tinè. The Institute, currently engaged in several projects, ranging from field research to the design and construction of archaeological parks, first introduced the practice of experimentation as part of the functional analysis of the pre-and protohistoric structural remains.

The relationship between the Archaeological Park and experimentation is very often embodied in the demonstration of processes or buildings and contexts reconstruction, as well as in education and training. Among the first ones that have been founded, there is the experience at Darfo-Boario Terme in Valcamonica (the “Archaeodromo” and

²³ Testo Unico Disposizioni Legislative in Materia di Beni Culturali e Ambientali G.U.27/12/99 Serie generale n. 302 - Supplemento Ordinario n. 229/L.

“Archaeopark”) that can be classified within the context of thematic-parks. It comes closer to similar experiences in central and northern Europe inspired by the so-called “living history”. Another examples are S.Silvestro and Populonia parks in the Val di Cornia , which are archaeological parks in the true sense of the word, as they are directly linked to the exploitation of important archaeological areas (Guidi et al., 2003).

The following are some of the most important institutions present in the Italian territory:

1.- the archeological park and open-air museum of Terramare di Montale, located at Castelnuovo Rangone (Montale) (Fig. 7). The discovery of a large amount of postholes in the site and their subsequent study and comparison with other Terramare foundations²⁴, stimulated the creation of this great park. The reconstruction of several Terramaricole dwellings ²⁵ has been built in a meticulous manner, trying to make them as real as possible. Apart from a structural point of view, the reproduction also includes the original furnishings of the houses and the construction of a section of the fortifications of the Bronze Age village.



Figure .7: Open-air museum of Terramare di Montale. Photograph by Sabrina Armenio.

2.- the Archeo Parc Schnalstal/Archeoparc Val Senales, located at Madonna di Senales / Bolzano, near the Oetzi Mummy Site (Fig. 8). The park is an active museum, where it is possible to see the experimental reconstructions of the equipment belonging to the mummy, and it has an outdoor area that includes the archaeo-botanic garden and some models of prehistoric huts. Several activities are carried out there, some didactic laboratories and several crops of tree species recorded 5300 years ago.

²⁴ Another example of this type that can be mentioned is the sloping village on the banks of lake Carera, still visible today in the archaeological area of Fivè.

²⁵ Typical palafittic huts, developed in northern Italy from the Mesolithic to the end of the Bronze Age.



Figure 8: Archeo Parc Schnalstal / archeoparc Val Senales. Photograph from Archeoparc Schnalstal (2019).

3.-the archaeological park of the Neolithic village of Travo (Piacenza). The Neolithic Village of Saint Andrea is an open-air museum. The rectangular perimeter channels of two of the six Neolithic huts recently identified have been consolidated in the archaeological area. On a real scale, some huts are built with materials and replicas of the objects found on the site. The silhouettes of domesticated animals and trees recorded in the Neolithic, contribute to the reconstruction of the ancient natural environment.



Figure 9: Archaeological Park of Neolithic village of Travo. Photograph from Archeotravo(2018).

4.-Palaffite di Ledro Museum (Molina di Ledro) (Fig. 10). In the last century, thanks to the work conducted by the Riva del Garda hydroelectric plant, it began to draw water from Lake Ledro, bringing to light more than 10,000 post holes dating back to the Bronze Age. A large pile dwelling village has been found that has been recognized by UNESCO. The museum and the village recreate the atmosphere of the lake-dwelling settlement of Lake Ledro and make visitors relive the life of our ancestors.



Figure 10: Palaffite di Ledro Museum. Photograph from Museo delle Palafitte del Lago di Ledro (2019).

5.-the open-air Museum 'Antiquitates', located at Civitella Cesi Blera (Viterbo) (Fig. 11). A research center devoted to experimental archeology, located in an ancient Etruscan center, does not directly control archaeological structures, but has been included in the 1997 design for the Archaeological and Environmental Park of the province of Viterbo. Within the site, there are reconstructions of the Villanova era. Experimental archeology and archaeological research workshops are carrying out there.



Figure 11: Open-air museum of Antiquitates. Photo from Antiquitates.

6.-Oasi del Baugiano, located in Quaranta (Pistoia) (Fig. 12), in which a Neolithic village was reproduced, is devoted to teaching. This is a multifunctional center, with more than 27 different educational proposals, including five dedicated to prehistory. To take care of the Neolithic farm, the young archaeologists of the Museum of Monte Lupo Fiorentino, who guide the children to remake live there as in the days of prehistory. In fact, inside the Neolithic huts and in the outdoor area of the village, some structures are used: kilns to cook the pottery; the fireplace; the rock paintings made with minerals (thanks to the different oxidation of the iron); terracotta ovens for baking and making bread from the wheat cultured there; looms for weaving rope braids and necklaces, up to the enclosures for animals.



Figure 12: Oasi del Baugiano, Photograph from Associazione Culturale Archeoidea (2011).

In addition, in the educational area, we should remember that experimental research in archeology could be stimulated by the needs associated with the activities of valorization by museums. Several examples can be mentioned, such as the Museum of Prehistory of Vaie, founded in 2001 by the collaboration of the city of Vaie with the Center of Experimental Archeology of Torino and the Superintendence. The museum structure, through the exhibition of experimental reproductions, allows an integral reading of many aspects of everyday life in prehistoric times.

Another example may be the Museum of Prehistory "Luigi Donini" of San Lazzaro di Savena (Bologna), which recreates the local landscape²⁶, the presence of man and evolution of the material culture of the valley of Savena during the prehistoric periods by means of a museum path. It also includes didactic and experimental activities and cognitive experiences of archeology.

5. CONCLUSION

Over time, archaeologists have become increasingly aware of the importance of experimentation to understand not only the object itself, but also to give us traces of the culture and environment to which it was part.

Italy, linked to a traditional archaeological research method, has always been behind the rest of Europe in the field of archaeological experimentation. Even today, when we talk about experimental archeology, we tend to think of something related to the purely

²⁶ The outcrops of the Gessi Bolognesi, a rock formation typical of the area, have been reproduced inside the museum.

popular and tourist context rather than the scientific sphere. In recent years, however, there has been a growing push in the field of research, both at university level and among individual researchers because the discipline offers specific knowledge which requires, besides a broadmindedness, a good mastery on production processes and materials, unlikely to be obtained with traditional academic courses. Experimental archeology in Italy has among its consequences also that of a limited specific literature, and not always easy to access. For brevity, this work reports some of the most notes in front of experimentation than a few experiences in whole or in large part unpublished.

Nevertheless, the lack of recognition of the figure of the archaeologist by public institutions and the lack of provision of funds does not allow the development of the sector, diminishing the figure of the archaeologist in favor of free volunteering. For this reason, the work of archaeologists in Italy is increasingly difficult because since even today, most of the funding and routes of scientific diffusion derived from this research through museums, archaeological parks, and more, the universities and cultural institutions should increasingly devote resources for the research.

Furthermore, it is very important to remember the hard job done by small associations and archaeological cooperatives scattered throughout Italy, who continuously, with passion and dedication, seek to work in this sector through collaborations with museums, archaeological park and more promoting educational workshops for schools.

Although, problems of Italian archeology remain so many, it is hoped that even in this country there will be more interest among specialists and users of this discipline, as a study of natural and anthropic processes of archaeological interest reproducible in laboratory conditions.

Lastly, a link between research and dissemination has now become a stimulus to seek an effective way of communicating this knowledge and to fill large gaps in research in archaeological evidence.

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