

# New investigations at the Cave of Pastena (Frosinone). Report 2012

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## 1. Premise

The Caves of Pastena are located in a marginal area of an ancient karst polje of the Ausoni Mounts. Over the wet season, the rainwater flows into the Rio Mastro. This penetrates in the karst massif and reemerges after km 2 at the Obbuco's wellhead, flowing afterwards in the Sacco River (fig. 1).

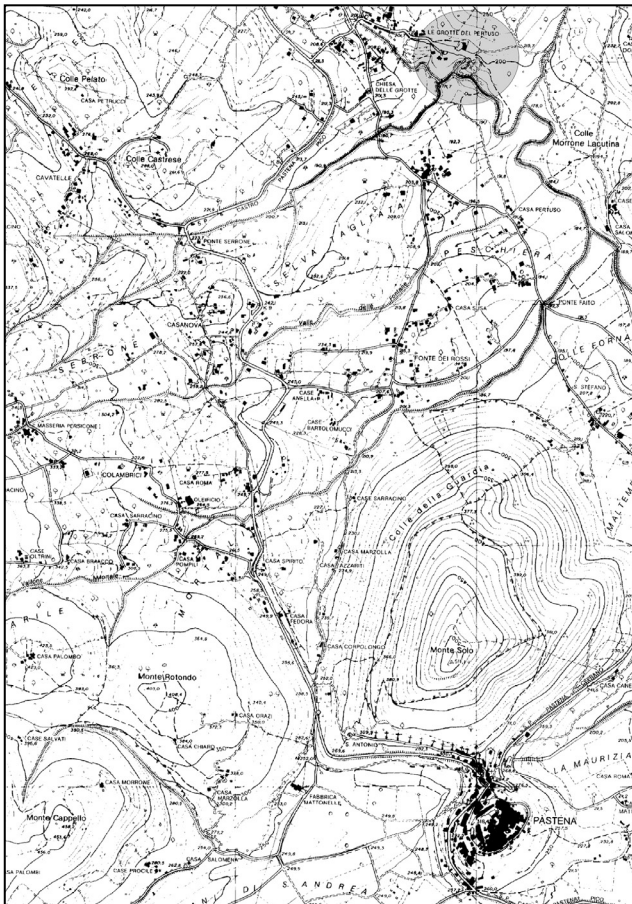


Fig. 1. Location of the Caves (Pastena, Frosinone).

The cave has a wide entrance chamber, which leads to two branches located on different levels and with different trends: the lower one is still active, whereas the upper one is fossil.

The archaeological relevance of the Caves of Pastena has been long known: the first archaeological surveys were undertaken by Italo Biddittu in 1986 and subsequently by Alessandro Guidi<sup>1</sup>. Following these discoveries, Biddittu (as Director of the Prehistoric Museum of Pofi) and the Insegnamento di Protostoria Europea – Università di Perugia<sup>2</sup> undertook the first recovery operations in 2000 and 2001. In 2008, the Consorzio per la valorizzazione delle Grotte di Pastena e Colleparado carried out work at site to comply with the health and safety legislation. This led the Soprintendenza per i Beni Archeologici del Lazio to undertake geo-archaeological, multidisciplinary investigations at both caves.

The project was aimed, on one hand, to the identification of key early cave-use markers, also taking into account the processes of geo-morphological and climatic transformation that influenced the differ-

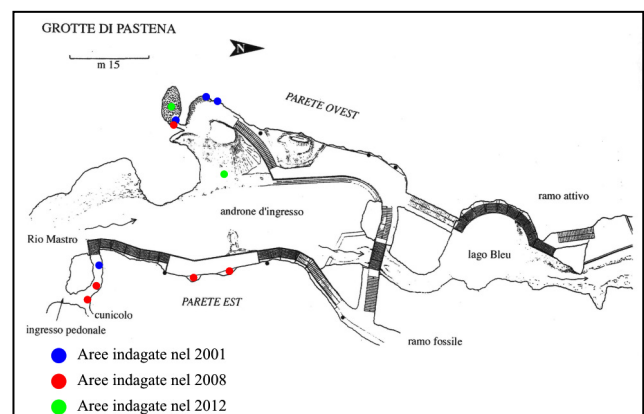


Fig. 2. Areas investigated in the entrance hall of the cave (years 2000-2012).

<sup>1</sup> Biddittu 1987; Guidi 1991-1992.

<sup>2</sup> Biddittu *et al.* 2007. For a wider bibliography see Angle *et*

*al.* 2010a.

ent human uses of the caves over time. On the other hand, it aimed at the safeguard of one of the most important archaeo-speleological complexes of Lazio.

Starting from 2012 the researches are carried out in collaboration with the University of Tor Vergata and the support of the Comune di Pastena<sup>3</sup> (fig. 2).

## 2. The 2012's investigations

The investigations have been mainly focused on the "Grotticella W2", whose archaeological importance had been already identified through a limited test pit carried out at the entrance in 2008<sup>4</sup>. This chamber is located about m 8 above the present level of the Rio Mastro, on the Western wall of the cave's entrance. Due to several landslides which eroded the walls, the small chamber is today accessible only through a staircase (fig. 3).

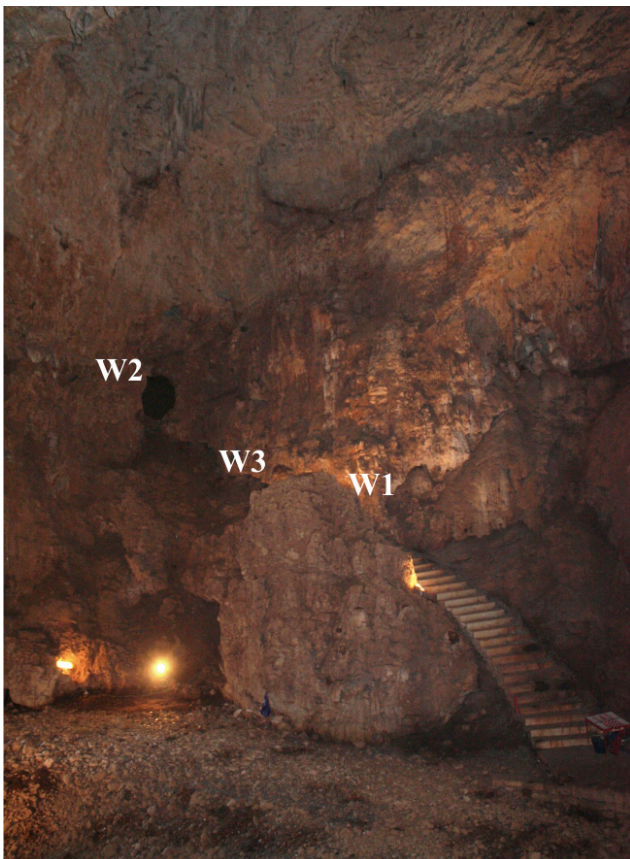


Fig. 3. Access to the Grotticella W2, inside of the entrance.

The small chamber (about m 3,5 wide, m 5,5 long, and with a maximum height of m 3,2) has a sub-rectangular shape and a E-W orientation. The current floor level slopes with three natural drops towards the small entrance, formed out of a rock collapse. Such drops have been caused by various accumulation dynamics of both natural and anthropic nature. The soil deposit lays on an earlier limestone crust.

The chamber should not have suffered from significant percolation events, collapses and displacements of the paleosol<sup>5</sup>.

An important morphological feature of the chamber consists of the natural terraces, formed by limestone concretion during an intense karst activity. These terraces form a number of niches on the eastern wall, opening slightly below the vault towards the chamber (figg. 4-5). Such niches, whose bases consist of stratified stalagmitic veils, also hold archaeological deposit.

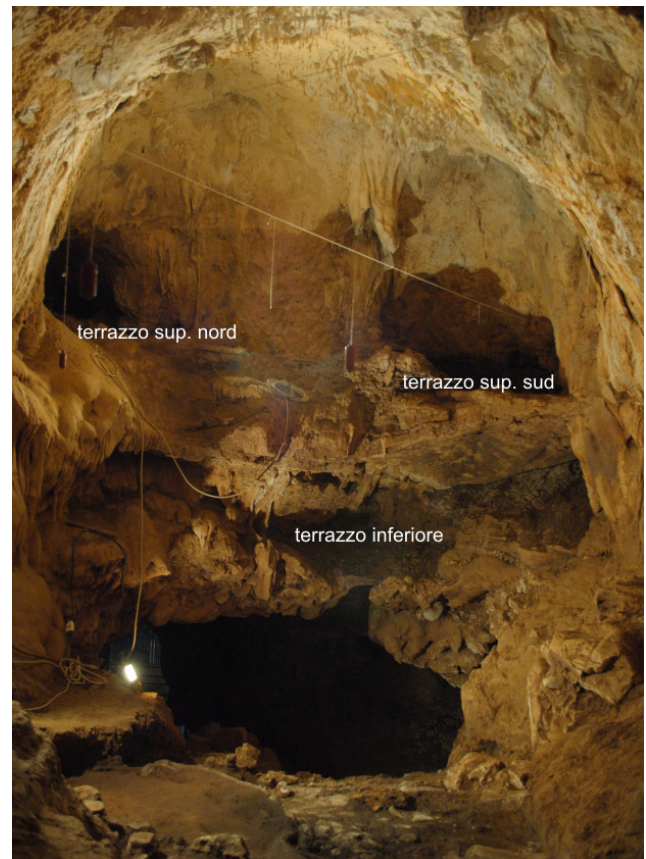


Fig. 4. Internal view of the Grotticella W2.

<sup>3</sup> We would like to thank the Mayor Dr. Arturo Gnesi and the Councilor Attanasio Di Domenico, and the Consorzio delle Grotte di Pastena e Collepardo, particularly the Commissioner Dr. Fausto Di Domenico, for their priceless support. We also thank the staff of the Caves, photographer Augusto Briotti and Roberto Mazzoni (both from SBAL). The following Undergraduates and Postgraduates from the Università degli Studi di Roma "Tor Vergata" (Insegnamento di Paleontologia) and Durham University (UK) took part in the 2012's fieldwork: R. Fasano, M.

Gatta, L. Mitchell, E. Palladino, A. Pieragostini, V. Tamorri, S. Villani, M. Wiecek.

<sup>4</sup> The fieldwork, supervised by M. Cerqua, in collaboration with N. Bruni e A. Riva, allowed to identify an important stratigraphy which confirmed the hypotheses of use of the chamber; see Angle *et al.* 2010a.

<sup>5</sup> The investigation confirmed the earlier inferences made on the dynamics of formation of the archaeological deposit.



Fig. 5. Plan and section of the Grotticella W2.

### 2.1. The archaeological deposit

Once the reclaiming operations were completed, the morphological structure of the chamber reappeared: we noticed that the drops of the deposit were delimited by natural pools of dropped water (now dry). These bordered depressions prevented from post-depositional displacement of the remains (see fig. 6/1).

After the removal of the modern layers on top of the deposit, the surface of the chamber (SSUU 22, 23) showed the presence of non-wheeled ceramic sherds and extremely rare wheeled fragments, dated

on a typological basis to an early phase of the Middle Bronze Age and to the historical period (6<sup>th</sup>-4<sup>th</sup> centuries BC) respectively. The prosecution of the investigations allowed to reach a less disturbed archaeological level, which held only protohistoric pottery. The western part of the paleosol presented a better preservation degree, due to the presence of the aforesaid dammed pools. Conversely, the eastern part suffered from partial landslides. The best preserved area held an anthropic level characterized by an accurate stone paving, delimited on top by the borders of the pools (fig. 6). The cobbled paving continued also in the remaining sectors of the chamber, but appeared to be uneven because of the steepness of the area.

The cobbled paving consists of an homogenous layer of stones and flat karst fragments, partly burished, which lays horizontally on a clay level rich in charcoal, ash and burnt seeds (SSUU 30, 32, 35). The structure is delimited on top by the stalagmitic border (SU 33) of a big pool. This was filled by a fine clay deposit with a reddish surface, due to the contact with a hearth (fig. 7/1). This surface held some pot sherds and a spindle-whorl.

A rough oval-shaped clay slab (cm 40 x 25 wide and about cm 5 thick), unfired but reddened, laid on top of the cobbled paving, whose base was reinforced in that area by further pebbles (fig. 7/2). The interstices between the stones held several burnt seeds, whereas ashes and charcoals were scattered in

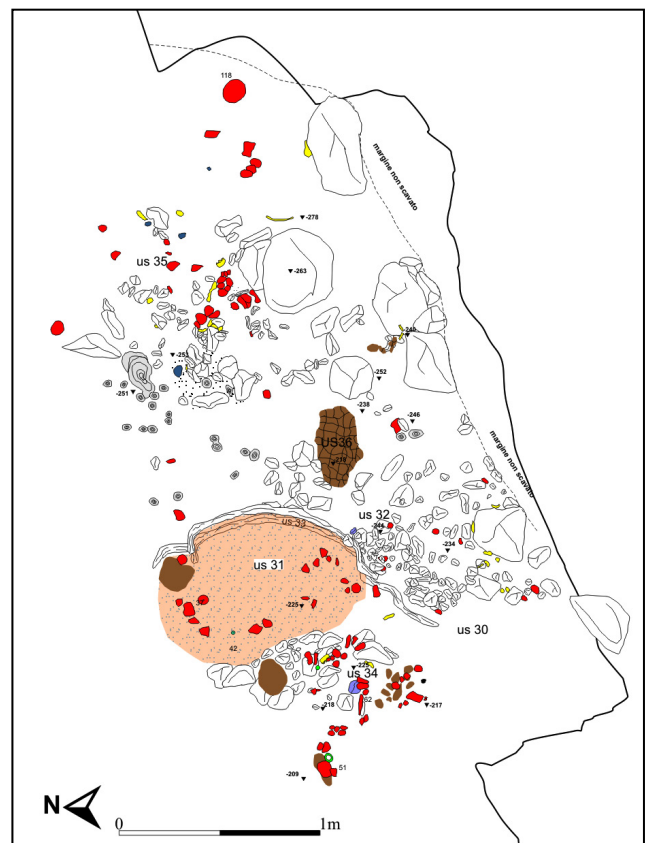


Fig. 6. Plan of the level of cobbled paving (SSUU 30-35).

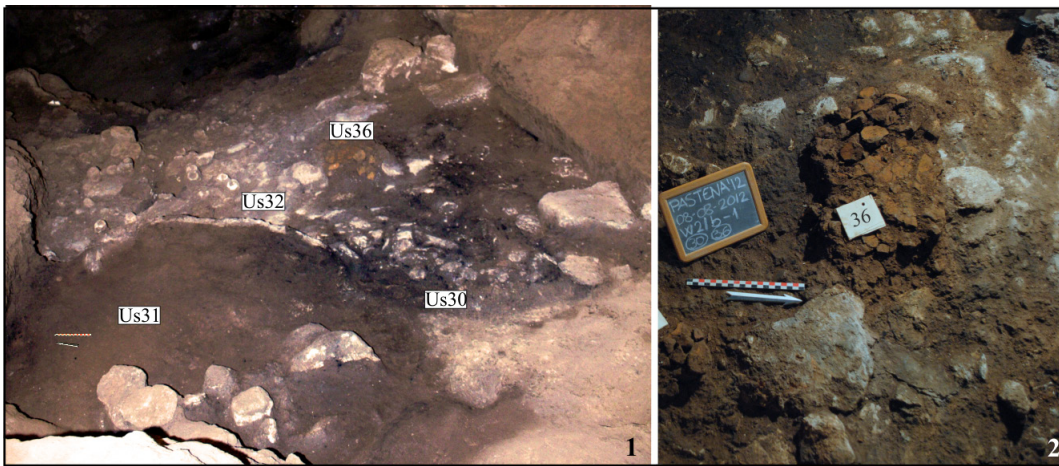


Fig. 7. 1. Cobbled paving; 2. Clay slab (SU 36).

the surroundings, indicating that the area around the slab was kept clean.

The surface described above was probably exposed after the Middle Bronze Age to intense karst activities. This can be inferred by the presence of small stalagmitic columns, rising up from the cobbled paving. These karst formations were then submerged by the silt layer (SSUU 22-23) that covered the floor level of the chamber.

A different context is represented by the terraces (fig. 3), located about m 2,20 above the floor level, whose mapping operations revealed an inter-

esting use of the spaces. The upper northern terrace (m 2,4 x 1,9 wide) held residues of intense combustion activities, testified by layers of clay with significant amounts of charcoal and burnt seeds, stones and limestone surfaces blackened by the action of fire. The southern one (fig. 8), m 2,1 x 1 wide, is divided from the first by a stalagmitic column, perhaps formed after the Bronze Age use of the terraces. It presents a similar deposit to the northern one, with botanical remains and, in addition, a remarkable structure. That is a shallow pit (SSUU 501, 502) holding an overturned intact cup sided by a fluvial pebble, a hare's hind limb, an adult human's metatarsal and two fragments of a bronze tool<sup>6</sup>. This pit and its content were sealed by multiple layers of flat crust fragments.

### 2.2. The artefacts<sup>7</sup>

The artefacts recovered are not particularly abundant, but they can be mainly attributed, on a chronotypological basis, to the early stages of the Middle Bronze Age (figg. 9-10).

The following ceramic materials have been found in the SSUU 30-35 (i.e. the cobbled paving): a fragment of a deep bowl with slight *carena* (fig. 10/2), a fragment of elevated handle with expanded button-shaped top (fig. 10/4), a small, very compressed bowl with its maximum width at the rim, with a ribbon-shaped handle with broken elevation (fig. 10/3). These types can be easily compared with Protoapennine contexts of Eastern Italy (Abruzzo and Puglia), but also with those attributed to the Grotta Nuova *facies*<sup>8</sup>. Amongst the smaller objects, a biconical spindle-whorl, a bronze bracelet/ring and a biconical *faïence* bead need to be mentioned (fig. 9).

In the upper terrace, the overturned cup was almost intact. It is a well attested type<sup>9</sup>, with its maxi-

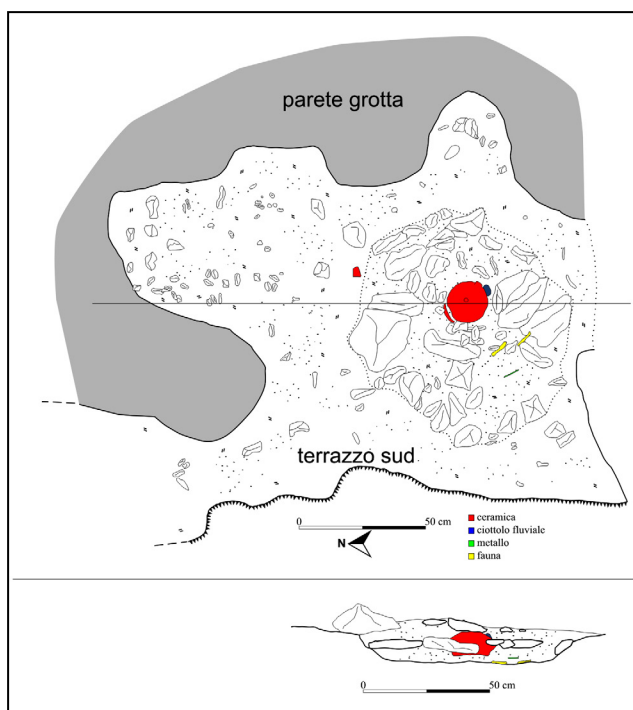


Fig. 8. Plan and section of the southern terrace (SU 502).

<sup>6</sup> Maybe an awl with quadrangular section.

<sup>7</sup> Drawings: courtesy of Noemi Tomei.

<sup>8</sup> Damiani 1995, 398 ff.; Cocchi Genick 1995, 429 ff.

<sup>9</sup> Similar to the type 157 of Cocchi Genick. It is very common in the area of the Ofanto and the Northern Murge.



Fig. 9. 1. Bead, faïence 2. Spindle-whorl, coarse ware 3. Ring/bracelet, bronze.

mum width at the *carena*, incurved shoulder, straight rim and a vertical ribbon-shaped handle with flat elevation attached to the *carena* and the shoulder (fig. 10/1).

### 2.3. The faunal remains

Faunal remains recovered from the 2012's investigation are not abundant (about 200 finds, only 50 of which are diagnostic by species), but they nevertheless provide relevant economic and cultural information (tab. 1).

	NISP	% NISP	MNI	% MNI
<i>Ovis aries vel Capra hircus</i>	24	51	3	34
<i>Sus domesticus</i>	13	28	2	22
<i>Bos taurus</i>	2	4	1	11
<i>Lepus sp.</i>	6	13	1	11
<i>Meles meles</i>	1	2	1	11
<i>Martes sp.</i>	1	2	1	11
<b>Total Identified</b>	<b>47</b>	<b>100</b>	<b>9</b>	<b>100</b>
Undetermined	145			
<b>Total NISP</b>	<b>192</b>			

Tab. 1. The faunal remains from the 2012 campaign by NISP (Number of Identified Specimens) and MNI (Minimum number of individuals).

With regards to the economy, it can be noted that the domestic species are extremely preponderant.

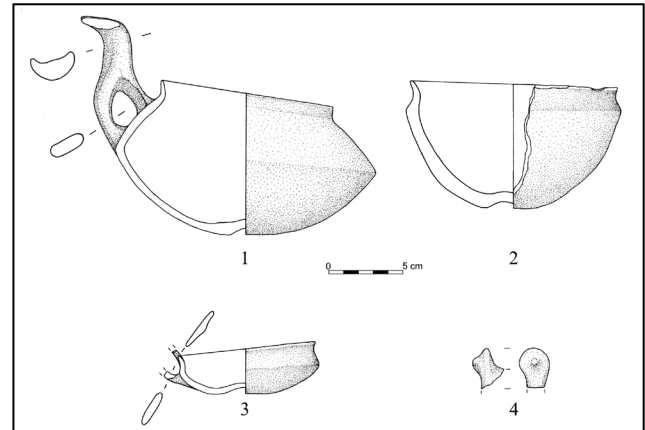


Fig. 10. Coarse ware pottery from SSUU 30-35 and 502.

The domestic caprines (*Ovis aries* and *Capra hircus*) are the most common animals of the context, as suggested already by earlier analyses<sup>10</sup>. They make more than 50% of the total by NISP (number of identified specimens). Pigs (*Sus domesticus*) follow sheep and goats with the 28% of presence in the assemblage, whereas cattle (*Bos taurus*) is very rare (4%). The domesticates seem to show a kill-off pattern mainly aimed at meat consumption: they are young – but never very young, young adults and adults.

Besides the discovery of a badger's humerus (*Meles meles*) and a mustelid's phalanx (*Martes sp.*), which could be post-depositional intrusions of non-anthropogenic nature<sup>11</sup>, hare (*Lepus sp.*) is the only well attested wild species of the context. It is very interesting to note that the hare's bones belong all to a single left hind limb, from the structure SU 502 of the Southern terrace. This supports the intentionality of the deposition.

The relatively good state of preservation of the other artefacts and ecofacts suggests that the Grotticella W2 was never subject to substantial post-depositional events. Therefore, the high fragmentation degree of the faunal remains seems to have anthropic causes rather than taphonomic ones. Moreover, most of bones are burnished or sided by charcoals. Some ribs and rare other bones show the presence of cut-marks, while the vertebrae of a size compatible with sheep\goat and pigs were often sown. All of these features and the kill-off pattern identified allow us to hypothesize that the faunal remains were the residues of meals, partly made and then eaten at site.

### 2.4 The anthropic remains

Only three human bones were recovered in the Grotticella W2: a metatarsal from the Southern terrace, a

<sup>10</sup> Celletti in Angle *et al.* 2010, 378-379.

<sup>11</sup> They occurred only in the most superficial layers with mate-

rials of different chronological period.



Fig. 11. Seeds: *Triticum dicoccum*, *Hordeum vulgare* and *Vicia faba* (SU 502).

phalanx and a molar from the floor level, all of them compatible with adult individuals<sup>12</sup>. Although the quantity of the data is not relevant, the presence of these bones testifies to the burial practices (probably secondary) carried out in the small chamber.

### 2.5. The botanical remains

The palaeobotanical remains (fig. 11) are the most common finds of the protohistorical contexts of the Grotticella W2. The thousands of burnt seeds (the study of which is still ongoing) found homogeneously at site can be preliminarily attributed to cereals (*Triticum dicoccum* and *Hordeum vulgare*) and legumes (probably *Vicia faba*).

### 3. Observations

Given the preliminary nature of the analyses, it is only possible to elaborate general observations on the occupation patterns of the cave over the Bronze Age. This can be done also in comparison with similar contexts that have been recently investigated<sup>13</sup>.

The finds of Pastena<sup>14</sup> can only show an incomplete picture of the archaeological site, because of the destructive work carried out to make it a tourist cave. Nonetheless, the evidence indicates a widespread presence of areas with burial remains<sup>15</sup>, probably in

primary deposition, as documented in other caves and as confirmed here through the identification of body portions found in skeletal connection. These remains were then scattered due to post-depositional events of different nature, including scavenging and especially the repeated floods of the Rio Mastro. Such floods involve the whole entrance chamber and all the karst branches of the cave, causing periodic sediment removals. The burials are associated with areas of activity holding hearths, faunal remains, toasted seeds, pots and rare tools for handicraft<sup>16</sup>.

In addition, the Grotticella W2 preserved structures which are not to be related to a single burial, but rather to patterns of ritual occupation. The exceptional degree of preservation of the deposit in this chamber, which was only marginally involved in the aforementioned post-depositional events, allowed to identify two particular contexts: the cobbled paving with the hearth structure, and a pit (SU 502) in the southern terrace holding a cup, a hare's hind limb and seeds heaps.

Such structures and activities are thus not directly linked to the deposition of a deceased.

With regards to the botanical content of the pit (SU 502), it can be noticed that the seeds are all attributable to domestic species (cereals and legumes) which are the basis of the food supply in the past<sup>17</sup>. These species are not cultivated and harvested in the same season<sup>18</sup>. The repeated deposition of seeds, associated as such, thus implies their preservation, and the intentionality of the deposition<sup>19</sup>.

Similarly, the remains of the hare associated with the upside-down cup seem to have been intentionally selected<sup>20</sup>, since they differ from those found on the cobbled paving and close to the hearths.

This dataset supports the hypothesis of ritual ceremonies independent from the burial depositions. However, both activities are repeated over time, with the deposition of deceased individuals on one hand, and the recurring use of hearths and the formation of heaps of food offerings on the other. These offerings, in addition, seem to consist only of domestic species.

The use of hearths, pottery and food, recurring in most caves of central Italy with similar patterns, suggests the existence of a widespread ideology in the region. The recurring association of burials and

<sup>12</sup> Analyses undertaken by Dr. Claudio Cavazzuti, who also studied the human remains from the previous surveys at Pastena and Collepardo Caves. Angle *et al.* 2010a; Angle *et al.* 2010b.

<sup>13</sup> Collepardo, Grotta Vittorio Vecchi and Jenne, are only some of the most recent case-studies of Lazio's Bronze Age caves. For a wider bibliography see, for example, Rolfo *et al.* 2012.

<sup>14</sup> Considering all the discoveries made over time by the different Authors.

<sup>15</sup> No selection was noted in relation to gender or age (see especially Cavazzuti in Angle *et al.* 2010b). The assemblage consists of adults of both sexes, young and infants. These bones, quantitatively scarce, do not represent a community. Their rare grave goods do not allow the association with a particular social status

or role.

<sup>16</sup> See cited bibliography.

<sup>17</sup> The Roman *pulsium* was a mush made of cereals and fava beans, see Ampolo 1980.

<sup>18</sup> Legumes are harvested in spring, cereals in summer.

<sup>19</sup> It has to be remarked that the Middle Bronze Age farming economy was very complex, as suggested by the Villaggio delle Macine (Carra *et al.* 2008) and other conservative contexts.

<sup>20</sup> An interesting parallel can be done with a myth linked to the origins of death. See Brelich 2007; Pettazzoni 1948. For an archaeological interpretation see <http://antropospaetno.wordpress.com/seminario-2013-miti-riti-e-reliquie>.

cult practices might indicate that a specific ritual had to be performed for selected individuals of the same community, the nature and reasons of which are still to be explored.

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#### Abstract

*Nel 2012 sono riprese le indagini della "Grotticella W2", all'interno delle Grotte di Pastena. Sono stati individuati due contesti riferibili alla frequentazione dell'età del Bronzo Medio iniziale: una pavimentazione a ciottoli (UUS 30-35), connessa con una struttura di combustione (US 36), e una fossa (US 502) nel terrazzo sud contenente una tazza, una zampa di lepre e un accumulo di semenze. Questi dati confortano l'ipotesi di cerimonie rituali non direttamente connesse alla deposizione di individui.*

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