

# Peasants, nobles and religious. Mortuary archaeology in the church of SS. Eusebio and Antonio of Azzio, Varese (Northwest Italy)

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## Abstract

*Aim.* In this paper, we present a summary of the bioarchaeological analyses carried out in the church of SS. Eusebio and Antonio of Azzio, Varese, between 2012 and 2022.

*Material and Methods.* Ten years of studies have qualified this church as a context of primary importance as regards some aspects related to the mortuary archaeology of a human sample composed by peasants, nobles and religious. Several analyses have been proposed and many methods adopted, from time to time to respond to different needs.

*Results.* The context allows us to acquire data about e.g., the treatment of the body, the tomb types, the funerary ritual and the entomofauna of the context.

*Discussion and Conclusion.* This paper wants to present an overview of the analyses that have been carried out in the context also thanks to the collaboration of various scholars who have made it possible to form a multi-disciplinary team.

**Key words:** Bioarchaeology, anthropology, body treatment, Modern Age, burial analyses

## Introduction

Between 2012 and 2022, the anthropologists of University of Insubria carried out the bioarchaeological analysis in the St. Eusebio and Antonio church of Azzio (Larentis & Gorini, 2019; Licata et al., 2021), a town in the Varese municipality, lying in the north-western part of Lombardy, Italy (Fig. 1). The skeletal remains were stored and analysed in our Laboratory, in the University Department of Biotechnology and Life Sciences. The church of Azzio is an important archaeological site for Italian Modern era for its vast osteological archive (Larentis et al., 2020). Moreover, the rituality reserved for some of the bodies refers to the underground exhibition rooms sporadically analysed in Northern Italy and often called incorrectly *putridarium*. Therefore, this context is emblematic from the point of view of Mortuary Archaeology.

## Bioarchaeological background

The first archaeological investigations took place in 2012, due to the need to excavate the church for a floor heating system. In this occasion, we investigated the main phases of the context (Fig. 2). We found several burials and filling levels characterised by a conspicuous presence of bones, not analysed from the anthropological point of view before the 2022.

The discovery of a hypogeum vaulted area adjacent to the high altar led in 2013 to further archaeological investigations to document this environment. The research allows us to verify the funerary function of the hypogeum, reserved for the Franciscan friars. The bone remains found inside the niches of vaulted space was recovered and preliminarily analysed by Dr Marta Licata. During the archaeological campaign was found a second trap door at the floor level, that leads to an osuary below the room. Inside, on top of a pile of bones,



**Figure 1.** Above the physical map of Europe, Italy is highlighted by the white rectangle; in the lower left, the Lombardy region is highlighted in red within Italy; below right, the Azzio site is located within the Valcuvia, a pre-alpine valley in north-western Lombardy that connects Lake Maggiore and the transalpine.

a skeleton was found in perfect anatomical connection, subsequently analysed (Larentis et al., 2020).

The archaeological investigations carried out between 2012 and 2015 allow us to discover some underground rooms in the church: the ossuary chamber below the Franciscans “*putridarium*”, the Dalla Porta family tomb, and five funerary chambers. We explore these environments to draw up a work plan for subsequent anthropological research activities on the context in 2021 thanks to a research project which involves other churches in Valcuvia (Tesi et al., 2019; Licata et al., 2020). In addition, the osteoarchaeological materials found during the previous campaigns were analysed and reviewed. For the anthropological analyses, a temporary physical anthropology laboratory has been set up in the sacristy of the church.

## Materials and methods

We analysed the osteological materials found between 2012 and 2015, and those recovered in 2021 in the nave and in the tomb of the Della Porta, following the ethic statement proposed by Squires, Roberts & Marquez-Grant (2022).

The skeletal remains were in a good state of preservation and representation, although in the hypogeal chambers the osteological material is really compromised. The bones were inspected macroscopically with the naked eye and by use of a magnifying glass. As for the anthropological methods, we used metric variables of the femoral head (Purkait, 2003) and pelvis for sex determination (Bruzek et al., 2017). Skeletal age was estimated from the phase of the fourth rib (Iscan, Loth & Wright, 1984; Iscan, Loth & Wright, 1985), the level of degeneration of the auricular surface (Lovejoy et al., 1985) and the pubic symphysis (Brooks & Suchey, 1990). Individuals were attributed to the following age groups: adult (20–40 years); mature (40–60 years); senile (> 60 years); adult not determinable (> 20 years). We performed trauma analysis and paleopathological evaluation following the specific literature (Buikstra, 2019; Lovell, 1997). Furthermore, we assessed the degree of osteophytosis of the insertions and origins of muscles and ligaments to verify and quantify the use of the main joints (Hendreson et al., 2016) and to hypothesize the activities carried out by the subjects (Larentis, 2017). Finally, the measurements of long bones allowed us to determine the individual’s height (Trotter, 1970). Moreover, due to the importance of RX and TC acquisition (Fusco et al., 2020; Tonina et al., 2018; Fusco et al., 2018), the bones were analysed histologically and radiologically with conventional digital radiography and clinical computed tomography (direct digital Fujifilm machine, exposure [100 ms] 55 kV, 100 mA) performed at the Gaetano and Piera Borghi Foundation, Brebbia, Varese, Italy.

## Results

### The osteological materials of the 2012 excavation

The archaeological excavation carried out in 2012 allowed the recovery of some burials and some SU characterized by the presence of scattered bones. These were cleaned, analysed, documented and anatomically determined during the anthropological laboratory activities *in situ*. Below is the list of SU sorted by year of excavation and increasing list number (Table 1).

The research was useful to complete the anthropological and taphonomic analysis of these materials, to which the acquisition of radiological and histological data useful in order to evaluate possible deficiency states that cannot be investigated thanks to the morphological study. The materials have been washed, documented, and placed in containers suitable for their conservation over time. We briefly present the results of the analysis of SU 104, which is the one that has the most bones.

#### *SU 104 hallway*

We found 48 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, I). The bones, divided anatomically, belong to: 22.9% skull, 14.6% left upper limb, 20.8% right upper limb, 8.3% pelvis, 6.3% thorax (vertebrae and ribs), 6.3% right lower limb, and 10.4% left lower limb.

#### *SU 104 II chapel*

We found 26 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, II). The bones, divided anatomically, belong to: 11.5% skull, 7.7% right upper limb, 15.4 left upper limb, 11.5% thorax (vertebrae and ribs), 26,9% right lower limb, 19.2% left lower limb.

#### *SU 104 III chapel*

We found 22 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, III). The bones, divided anatomically, belongs to: 18.2% skull, 4.5 right upper limb, 18.2% left upper limb, 4,5% pelvis, 31.8% thorax (vertebrae and ribs), 4.5% right lower limb, 9.0% left lower limb.

#### *SU 104 IV chapel*

We found 44 bone fragments of the post-cranial skeleton in this area (Fig. 2, IV). The bones, divided anatomically, belongs to: 20.5% right upper limb, 6.8% left upper limb, 9.0% pelvis, 2.3% thorax (vertebrae and ribs), 34.0% right lower limb, 22.7% left lower limb.

#### *SU 104 nave*

We found 25 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, V). The bones, divided anatomically, belongs to: 24.0% skull, 12.0% right upper limb, 12.0% left upper limb, 8.0% pelvis, 16.0% right lower limb, 28.0% left lower limb.

#### *SU 104 presbytery*

We found 167 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, VI). The bones, divided anatomically, belongs to: 34.7% skull, 13.2% right upper limb, 6.0% left upper limb, 7.8% pelvis, 4.2% thorax (vertebrae and ribs), 13.8% right lower limb, 13.2% left lower limb.

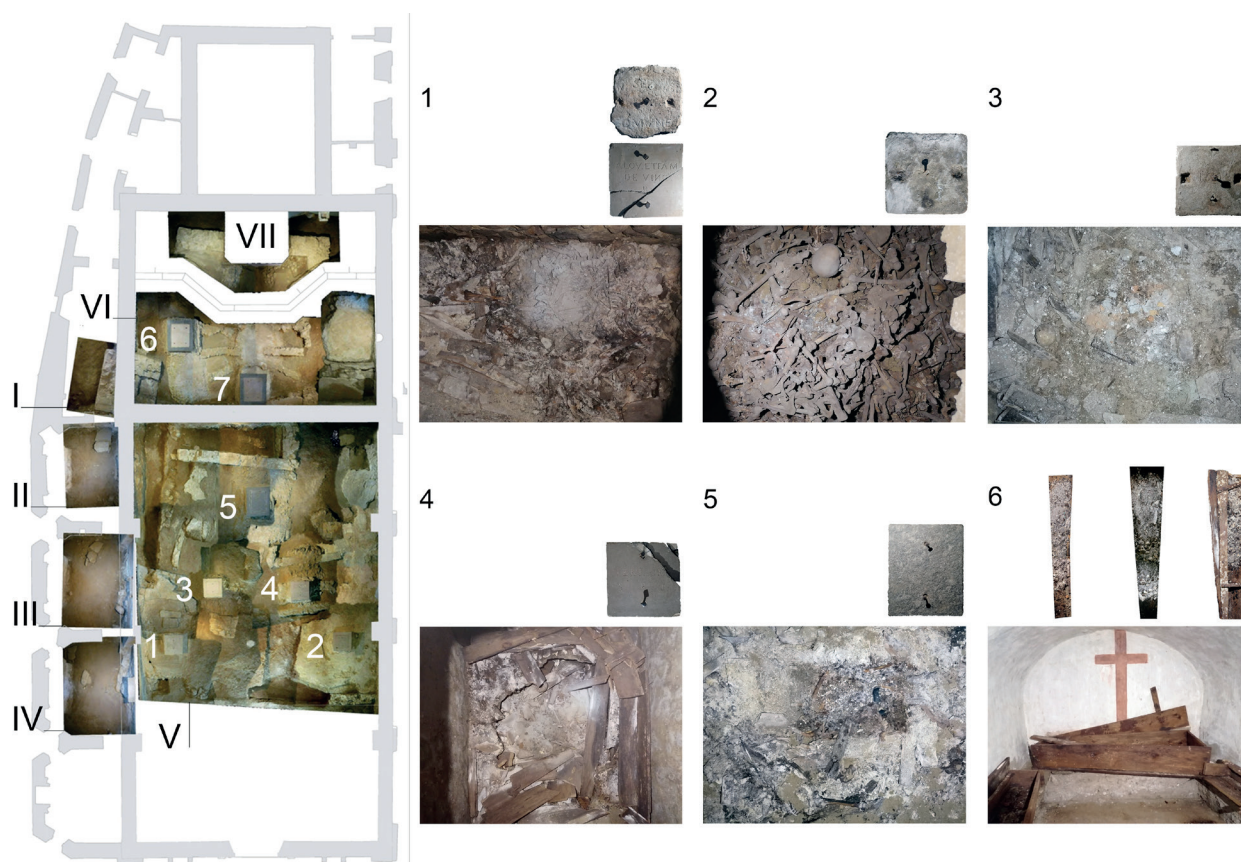
#### *SU 104 sacristy*

We found 84 bone fragments of the cranial and post-cranial skeleton in this area (Fig. 2, VII). The bones, divided anatomically, belongs to: 26.0% skull, 12.0% right upper limb, 2.4% left upper limb, 13.0% pelvis, 6.0 % thorax (vertebrae and ribs), 19.0% right lower limb, 12.0% left lower limb.

We analysed 416 bones, and here we present a table that summarizes the estimate of the minimum number of individuals (Table 2).

To confirm the alleged morphological diagnoses of micronutrient D deficiency in the non-adult sample (Larentis et al., 2019), we analysed the bones radiologically and histologically. For this reason, we acquired CT / CB radiological images of molars to evaluate the pulp chamber morphology and thin section of incisors to verify and quantify the presence of interglobular dentin (Fig. 3 a-f).





**Figure 2.** On the right, the orthophoto of the interior of the church of SS. Eusebio and Antonio at the end of the archaeological excavation in 2012. In Roman numerals, the excavation areas as divided by the archaeologists: I – hallway, II – II chapel, III – III chapel, IV – IV chapel, V – nave, VI – presbytery, VII – sacristy. In Arabic numerals the underground chambers under study: 1 – I hypogaeum, 2 – II hypogaeum, 3 – III hypogaeum, 4 – VI hypogaeum, 5 – V hypogaeum, 6 – Tomb of the Dalla Porta family, 7 – Franciscan hypogaeum and ossuary. On the right some details of the first six hypogea are shown. For the first 5 it was chosen to present the stone slabs closing the underground rooms and a zenith photograph of the materials contained in each of the rooms. For issue 6 it was chosen to show an overview of the wooden coffins of the Dalla Porta family members and a zenith photograph of each coffin.

## The underground chambers of the presbytery

### *The crypt of the Franciscan order*

The materials found in 2013 in the hypogaeum (Fig. 2, 7) have been reorganised, brought back to the church, and studied to integrate the previous anthropological study. This occasion made it possible to verify the state of conservation of the remains and to put forward hypotheses on the decomposition process they encountered; this information will integrate the entomological study already carried out in this environment, with the aim of reading the ritual of treatment of the body of the confreres. Below is the list of US sorted by year of excavation and increasing list number (Table 3).

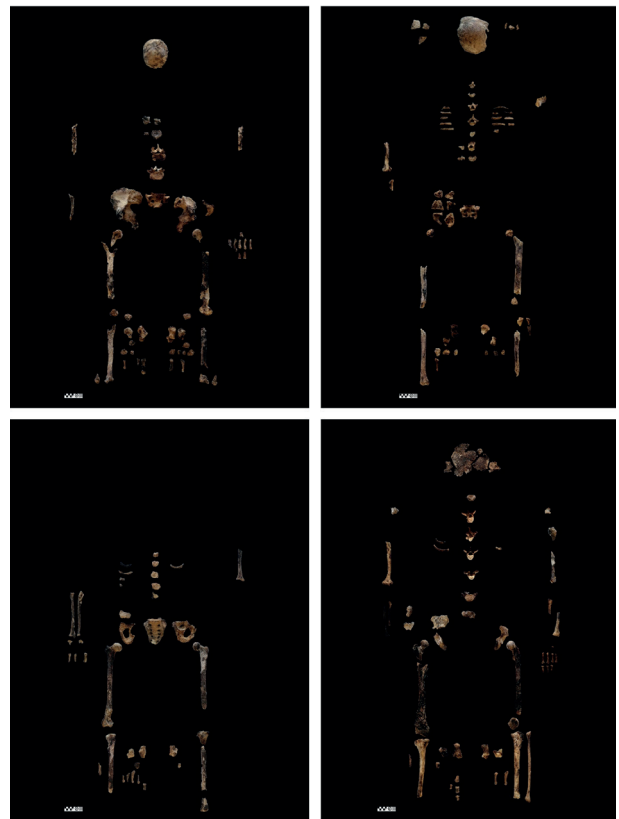
We analysed *ex novo* the bones of the Franciscan “*putridarium*” to verify and integrate the published data; in particular, our efforts have gone towards understanding the post-depositional and taphonomic processes that have affected the remains and context over the last few centuries (Fig. 4). The work was useful to verify the dynamics of the funeral ritual and to investigate possible anthropogenic alterations of the remains that occurred following the opening of the niches, which took place in past times and of which no historical memory remains. Finally, radiodiagnostic analyses were carried out on some finds selected for their historical, anthropological or paleopathological interest, to acquire useful data for the investigation of



**Figure 3.** Thin section of a second permanent lower right incisor of a subject from excavations in 2012. a) transmitted light, macro of the section in which taphonomic damage is noted on the collar and on the root and the Hunter-Schreger streaks highlighted in the rectangle are clearly visible white. b) transmitted light, 10 x, the staining allows to appreciate the dentinal tubules of the dentin, in the junction with the enamel. c) polarized light, 10 x, the Hunter-Schreger striae are evident and the junction between dentin and enamel with different colours. d) polarized light, 10x, in the portion close to the junction between dentin and enamel, in the lower left area of the white rectangle, it is possible to notice a hint of globularity of the dentin. e) polarized light, 10x, lingual occlusal surface of the tooth that allows to see the wear. f) transmitted light, 10x, near the neck some taphonomic damage to the enamel and dentin is evident.

the health quality of the group and the treatment of the body (Licata et al., 2020) (Fig. 5).

As for the ossuary below the “*putridarium*” we start with the recovery, documentation, and anthropological analysis of the skeletal remains. Prof. Stefano Vanin of the University of Genoa sampled the entomofauna linked to the deposition environment (Pradelli et al., 2019), and Prof. Susanna Bortolotto and Prof. Emanuele Zappa of the Politecnico di Milano took care of the 3D acquisition of the finds and environments.



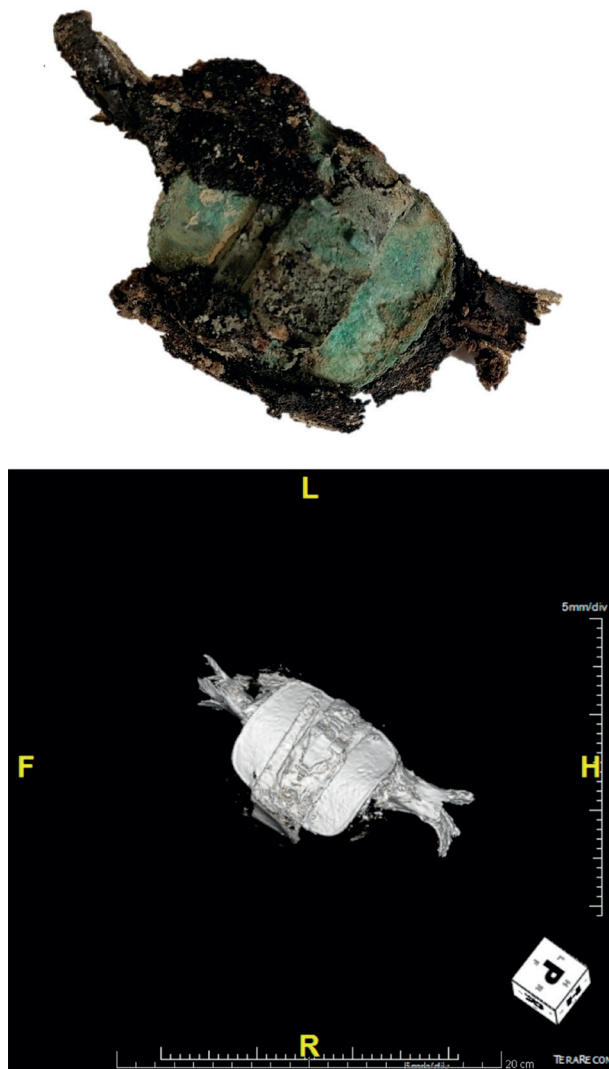
**Figure 4.** Anatomical arrangement of some subjects found inside the hypogeum of the Franciscans. We note the complete skeletonization of individuals and the loss of much bone tissue which implies anatomical incompleteness.

In addition, the Politecnico has acquired the photo-spheric images of the “*putridarium*”, useful for the subsequent phase of musealization the context.

#### *The tomb of the Della Porta family*

On 20 September 2021, we removed the covering slab of the Della Porta family tomb (Fig. 2, 6). This noble family, who lived in the nearby Villa Porta Bozzolo in Casalzuigno, looked after the economic interests of the monastery (Langè, 1968). The closing slab present today in the church replaces the original one of 1702 following the construction of the underground chamber. This last cover bore the name of Carlo Girolamo I Della Porta, who died in 1704 and was a lawyer and apostolic man of the Franciscan convent.

The single-chamber tomb is in the presbyteral area, located to the right of the main altar and the



**Figure 5.** Above, right humerus of one of the subjects found in the hypogeum of the Franciscans; a metal alloy element containing copper was fixed to the arm by means of a leather strap. Below the CT acquisition allows to verify the shape of the metal object.

Franciscan crypt. It is a sub-rectangular room, the development of which corresponds to the longitudinal one of the church. The room is vaulted, finished with fine mortar, and roughly blanché with a layer of white paint. A fresco painted cross is in the back wall in front of the access staircase. A masonry step about 50 cm high and 40 cm wide, covered by slabs of shale, runs along the three perimeters spared by the encumbrance of the access staircase. This step was used to place three wooden coffins, each close to a different perimeter wall.

The first, entering on the right, shows some decorations painted outside the coffin. In addition, a date painted on the outside of the main head report the date 1711. The second coffin is close to the wall in front of the access stairs. The third coffin, poorly preserved in its original structure, is found as you enter on the left. This coffin, although badly preserved, allows you to appreciate some constructive elements such as the nails closing the lid and the remains of probable organic fibre straps that were to constitute the handles for lifting and transporting the coffin.

All the coffins contain poorly preserved osteological remains, condition that limits the potential of the anthropological study. However, some preliminary considerations have been made. The bones of a male are preserved in the coffin in front of the access ladder.

Considering this burial as a single deposition, it is possible to exclude, by comparing the quantity of the remains, the presence of double burials or the re-use of the same box for the diachronic deposition of several subjects. Finally, in all the coffins, the bones are not in anatomical order. This data, together with the high fragmentation of the remains and the coffins found open or damaged, can be traced back to anthropic actions of disruption of the bones aimed at the stripping of clothing or grave goods, whose presence is still indisputable today by some elements.

Also, in this case, the Politecnico took care of the acquisition of spatial data useful for the three-dimensional reconstruction of the environments, as the elements contained therein. Subsequently, entomological samples were taken, useful for acquiring data on the funeral ritual reserved for the corpses and on the dynamics of decomposition in hypogeal space. These data will integrate the available and published ones collected in the Franciscan “*putridarium*” and the unpublished ones of the context, to create a homogeneous database relating to the hypogeal environments of the 17-19<sup>th</sup> century in north-western Italy. Subsequently, the state of the crypt and its contents were also graphically documented, mostly represented by wooden crates and bone remains poorly preserved and difficult to interpret.



## The underground chambers of the nave

Inside the main nave there are five underground chamber tombs, placed according to a V-shaped scheme with apex near the main altar. The tombs were opened on September 20, 2021.

### *I hypogeum*

This room is closed by two tombstones (Fig. 2, 1). The oldest bears the epigraph “SEP COMUNE” and allows us to hypothesize that this room was used as a common ossuary of the church. However, a second plaque, placed above the first, is engraved with the words “ALOY. ET FAM.a DE VIN.is R “, which allow the use of the tomb to be traced back to the de Vincenti family. Therefore, it is possible that this environment has changed its intended use over time, passing from a common tomb of the community to a family tomb. Inside, a layer of bones in a poor state of conservation can be recognized, which totally obliterates the view of the floor. Among these at least three subjects are characterized by the anatomical connection of the skeletal elements.

This environment has proved to have a good potential from the anthropological point of view; the remains, in fact, are numerous and in a good state of conservation. However, in this step of the research, bone recovery has not yet been predicted.

### *II hypogeum*

The burial chamber, whose tombstone bears no inscriptions, appears filled with a thick layer of bones (Fig. 2, 2). The colour and conservation of the bones allow us to hypothesize two moments of filling the hypogeum; in particular, the second seems to be a jet of bones from the entrance to the room; in fact, the elements are disposed to form a pyramidal figure with the vertex below the entrance opening. At a first visual examination, only adult bones are recognized without any anatomical connection.

Given the poor state of conservation of the remains, no anthropological interventions were planned in this step of the research to investigate the burial chamber.

### *III hypogeum*

At the end of this hypogeum a stone on which the date of 1603 is engraved, inside which we can see the presence of a few bones and some wooden elements (Fig. 2, 3). The state of conservation of the materials appears critical, in fact the visual inspection showed that the tomb is filled, at least in its upper portion, with an incoherent layer of material resulting from the decomposition and demineralization processes of the bones.

Given the poor state of conservation of the remains, no anthropological interventions are envisaged in this step of the research to investigate the burial chamber.

### *IV hypogeum*

This room is closed by a stone bearing the inscription “TERT. ORD. S.P.F. “, which frames it as another burial place for the members of the Franciscan order (Fig. 2, 4). Inside the chamber we recognize various wooden boards of the coffins that contained the bodies. None of the coffins appears intact, and the bones that should have been inside them do not appear in an anatomical connection but scattered throughout the environment. The chaotic situation can probably also be traced back to the subsidence of the floor, which collapsed in the central portion, partially filling a gap below the volume of the room.

In this environment there are elements of both anthropological and functional interest to complete our knowledge of the rituals reserved for members of the Franciscan order of Azzio. Therefore, the archaeological excavation of the room was carried out, followed by the recovery, documentation and anthropological and paleopathological analysis of the skeletal remains. In particular, the archaeological excavation wanted to investigate a particularity of the hypogeum and its construction history.

Inside the chamber, in fact, the schist stone slab floor collapsed in the central area, with a lowering of about 20-30 cm deeper than the original height. Over time, this area was filled with bone remains, earth and even substantial fragments of wooden boxes. This situation has led to the question of whether this compartment below the floor was an architectural stratagem to create an air cushion to make the environment healthy

for the purpose of treating the body or whether it was a structural failure. The presence of a cut made in the clayey-silty layer that is imagined to be the original substrate of the site was immediately evident. To better understand the nature of the cut, which in fact extends over almost the entire surface of the environment being clearly visible even below the floor remaining in place, a layer of crumbled bones mixed with the ground and decomposed wood, the removal of which has brought to light some slabs of the floor evidently collapsed from their original location.

The subsequent removal of the slabs revealed a layer of ocher-colored friable soil with lumps of mortar and some lithic elements, among which a limestone fragment is highlighted with the seat of a metal nail clearly visible.

#### *V hypogeum*

This room, wider than the others, is closed by a rough stone without any epigraph (Fig. 2, 5). Inside, there are few skeletal and wooden remains. The situation seems to follow that found in the III hypogeum.

Given the poor state of conservation of the remains, no anthropological interventions are envisaged in this step of the research to investigate the burial chamber.

## Discussion and conclusion

The work made it possible to acquire new data on the context of Azzio, his human sample and the funeral rites practised over the centuries.

The study also led to several degree theses, of which two in particular dealt with important aspects for understanding the context.

Thanks to one of these works, we can verify the presence of micronutrient deficiencies within the medieval sample found during the first archaeological campaigns. These data are useful for understanding the quality of life and health of the population that gravitated around the religious complex more than a thousand years ago. Moreover, experimental radiological and histological methods were used for the verification of the presence of interglobular dentin and the shape of the pulp chamber to advance a diagnosis otherwise

not feasible thanks to the macroscopic morphological approach alone (Zambrano et al., 2003; Souza et al., 2010; D'Ortenzio et al., 2017; D'Ortenzio et al., 2018). Another degree thesis was of fundamental importance for acquiring new data on body treatment practices reserved for Franciscans buried inside the “*putridarium*”. Until now, the “double burial” of the abbots was taken for granted; that is a very complex ritual that was divided into two parts. First, after the funeral, the body of the confrere was placed inside a niche of the *putridarium*, seated and held in position with a wooden stop at chest level; from this moment the body could undergo mummification or corruption of the flesh that led to skeletonization, all under the gaze of the brothers (Fornaciari, 2013; Fornaciari, Giuffra & Pezzini, 2008). If mummification was achieved, the friar was considered a holy body, incorruptible and therefore worthy of devotion; on the contrary, the remains were placed in a common ossuary (Imbesi, 2020). Our work has allowed us to qualify the putridarium of Azzio as a room in which decomposition took place but for exhibition and memento purposes.

In fact, it was possible to better define the ritual reserved for the abbots of the context, managing to clarify, also thanks to the entomological analyses, regarding the treatment of the corpses, which were actually exposed to the devotional practices of the confreres until the niches were closed during the period of the Austro-Hungarian domination, but which were not then placed in the ossuary below, which should have been used to complete the second part of the double burial ritual. Furthermore, by verifying the decomposition patterns, it was possible to advance new hypotheses on the taphonomic aspects that led to the corruption of the mortal remains of the Franciscans. This has also made it possible to parameterize a decomposition model that will also be usable in other contexts to verify the presence and role of anthropogenic actions on decomposition.

The anthropological work in Azzio, although it has reached new goals, is far from being considered finished. Among the future operations is an extensive study of the entomofauna of the site, an in-depth study of the taphonomic variables that characterize the burial chamber of the Dalla Porta family, and the 3D acquisition of all the environments to build multimedia



contents that will become part of the tourist offer, which will be made available at the end of the Valcuvia project in which the analyzes carried out are inserted and which will end next year.

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