



University of
HUDDERSFIELD

**1st International
Conference
Funerary
Archaeoentomology**

2015

6th May 2015 University of Huddersfield, Huddersfield, UK

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***Dear Archaeologists, Entomologists, Archaeozoologists,
Archaeoparasitologists and friends,***

We are happy and honoured to host the 1st International Conference in Funerary Archaeoentomology at the University of Huddersfield, on 6th of May 2015.

Insects are the largest and most widely distributed group of animals in the world. Currently, insects contribute to 75% of all known animal species. They are represented on all terrestrial land masses, from high altitudes to the interiors of caves. Due to their relatively small size, the presence of wings in many species, and their feeding habits they have been successful colonisers of all trophic niches. Given this, it is not surprising that they have constantly been in close contact with humans and that their presence and activity can play an important role in human life and health but also after death

Funerary Archaeoentomology, as defined by Jean-Bernard Huchet in 1996, is the use of information provided by the insect fauna associated with archaeological human remains in order to define the peri (around) and post mortem events or funerary practice. This discipline has a common theoretical and practical background with Forensic Entomology but it differs for the aims. Till now the discipline has been used in a wide spectrum of archaeological studies from the Egyptian and South American mummies to the remains of the WWI soldiers.

The conference is the moment where we start to define the state of the art of the discipline and where we discuss the challenges as well as creating new collaborations and friendships.

All the best
Stefano Vanin

With the support of



Programme

	6th May 2015
8.30-12.30	Registration
9.15-9.45	Welcome Speech
9.45	Invited Speaker
9.45-10.30	J-B Huchet Funerary Archaeoentomology: a general overview
10.35-	Oral Communications Section I chairman : J-B Huchet
10.35-11.05	S. Vanin Insects from natural Mummies in Italy
11.05-11.30	Coffee break
11.30-12.00	E. Panagiotakopulu Without a body
12.00-12.30	S.V. Urquiza The entomofauna of agropastoral funerary contexts from the Argentine Puna
12.30-13.30	Lunch Time
13.30-14.30	Poster Section
14.30	Oral Communications Section II chairman: E. Panagiotakopulu
14.30-15.00	L.S. Owens, P. Eeckhout, P. Arguelles, L. Higley, K.J. Reinhard Pachacamac: prehistoric Peruvian burial customs revealed by application of forensic entomology techniques
15.00-15.30	S. Vanin WWI and WWII: insects from the frontline
15.30-16.00	B. Pasqualinoto Macari, L. Massutti de Almeida, I. Chmyz A summary of Brazilian Archaeoentomology research
16.00-16.30	Coffee break and Poster Section
16.30	Oral Communications Section III chairman: E. Panagiotakopulu
16.30-17.00	S. Vanin When Physics meets Entomology and Archaeology
17.00	Workshop: the future of Funerary Archaeoentomology
18.00	Conclusion of the 1 st ICFAE and 1 st FAE award
18.30	ICFAE Goodbye Reception and EAFE Welcome Reception

**ORAL COMMUNICATIONS
AND
POSTER PRESENTATIONS**

FUNERARY ARCHAEOENTOMOLOGY: A GENERAL OVERVIEW

Jean-Bernard Huchet^{1,2,3}

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It has been almost 20 years since the bioarchaeological discipline known as "Funerary Archaeoentomology" had started, and this first meeting is indisputably the ideal place to initiate a first review of the studies conducted until now and to gain new perspectives in this area of research.

At the interface between two distinct disciplines, the intended objectives of Funerary Archaeoentomology display nonetheless notable differences with the classic fields of Archaeoentomology and present-day Forensic Analyses. Thus, specific investigations as the famous "quest for PMI" doesn't figure in the vocabulary registry of the archaeoentomologist who intends to study human remains from archaeological contexts. While the principles and recovery procedures are directly inspired by both above-mentioned disciplines, the prime objective of Funerary Archaeoentomology targets the reconstitution of funerary practices and customs in past populations.

Based, until now, upon the tracking of evidence solely from the insect remains, the discipline recently expanded its sphere of investigation, paying careful consideration to the specific traces left by some kind of arthropods on bones and exogenous materials present in the grave, therefore improving our understanding of pre- and post-depositional taphonomic processes.

A short synopsis of all the different potential of Funerary archaeoentomological surveys will be addressed through several examples from distinct cultural, geographic, and/or chronological contexts.

INSECTS FROM NATURAL MUMMIES IN ITALY

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Funerary Archaeoentomology is the study of insect fauna found in burials or from archaeological investigations. The study of insect fauna associated with burial can provide useful information on the remains and on the burial/funerary practices that may have been performed.

The presence of natural or anthropogenic mummies has been reported from different location both in Northern and Southern Italy. In all the cases mummies are located in religious site, crypts or churches. In fact, for centuries, bodies have been buried under churches.

In several of them the specific climatic conditions (cold/warm and dry) allow the preservation of the body in a mummified or partially mummified condition. The most famous site, where human mummies are preserved is the Cripta dei Cappuccini in Palermo (Sicily).

In the last years two important mummies discoveries, both related with churches restorations, have been performed in Central (Monsampolo, Ascoli Piceno, Marche) and in Northern (Roccapelago, Modena, Emilia Romagna) Italy. In Monsampolo, a location close to the Adriatic Sea, 20 bodies in mummified condition have been found, whereas in Roccapelago, a location in the Appenines Mountains, more than 200 bodies have been identified.

Entomological samplings were performed in both cases with manual collection and, in Roccapelago as well sieving the dust and other fragments present on the bodies.

Diptera puparia and beetles fragments represent the majority of the findings. Among the Diptera the most common fragments belong to Muscidae, Calliphoridae, Fanniidae and Sarcophagidae species. Beetles are represented by species belonging to Cleridae, Tenebrionidae, Dermestidae, Trogidae, Ptinidae, Anobiidae, Aderidae, Histeridae and Staphylinidae. Fragments of Hymenoptera and Lepidoptera have been as well sampled.

Differences in the two faunas reflect the different climatic environments despite a lot of analogies have been reported between the two sites.

WITHOUT A BODY

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Insect fossils provide unique information from palaeoecological and archaeological forensic contexts, in particular when differential preservation leads to loss of critical information, including the body itself. This paper will present examples which range from Norse farms in the former Western Settlement in Greenland, through an early medieval Age burial in Northern Norway to a medieval burial in the British Isles, where from the information acquired from the invertebrate fauna is central to the interpretation of relevant contexts. Although there has been a long debate about the demise of the Norse Western Settlement, *ca.* 1350 AD, there is no evidence of from any dead lying *in situ* in the farmhouses. From the single farm where a catastrophic end has been postulated, Nipaatsog (Site V54), most of our information is based on the Diptera recovered from the farm (Panagiotakopulu *et al.* 2007). The faunas, dominated by the introduced *Telomerina flavipes*, provide evidence which suggests that the occupants died in the bedroom, and perhaps the bodies were removed for burial later. A boat burial dated to around 950 AD from Øksnes, Vesterålen, Northern Norway, produced new insect data which aid the interpretation of this unique context. The body was not preserved and the information recovered comes from feathers from a pillow placed as part of the burial in the boat. The assemblage which was included relatively high numbers of the flea *Pulex irritans*, throws light both on aspects of everyday life in Northern Norway as well as the burial itself. The faunas from Archbishop Greenfield on the other hand, indicated a post burial assemblage and provide a cautionary tale about the taphonomic differences between modern forensic and fossil assemblages and the parameters that ought to be taken into account during the interpretation of assemblages (Panagiotakopulu and Buckland 2012).

Panagiotakopulu, E. Skidmore, P. & Buckland P. C. (2007) Fossil insect evidence for the end of the Western Settlement in Greenland. *Naturwissenschaften* 94, 300-306.

Panagiotakopulu, E. , Buckland, P. C. (2012) Forensic Archaeoentomology- a medieval burial from York Minster. *Forensic Science International*, 221, 125-130.

THE ENTOMOFAUNA OF AGROPASTORAL FUNERARY CONTEXTS FROM THE ARGENTINE PUNA

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We present record of invertebrates of agropastoralist burials from the Argentine Puna (Central Andes).

This record comes from rock-shelter sites and opencast sites. In rock-shelter sites have been recovered several pupae of Diptera: Calliforidae: *Compsomyiops* sp., in association with a mummified female human body (570±80 years BP C¹⁴); and Scorpiones: Bothriuridae: *Brachistosternus* sp. in association with a human neonate (1270 ± 50 years BP C¹⁴).

The opencast site is composed of several domestic and funerary structures. In a domestic structure have been recovered pupae of Diptera: Calliforidae: *Cochliomyia macellaria* (Fabricius, 1775) in association with a human neonate burial in a ceramic urn (1090 ± 50 years BP C¹⁴). The funerary structures contained secondary burials of human adults. The structure number 1 belongs to a funerary burial of two adults; a men and a female (1240±50 years BP C¹⁴), around a big rock or "huanca", associated with exoskeletons of Coleoptera: Curculionidae, Dermestidae and Carabidae. The structures 4 and 5 have at least 6 human bodies (ca.1388±45 to 1250 ±70 years BP) related with several pupae of Diptera: Calliforidae: *Compsomyiops fulvicrura* (Robineau-Desvoidy)?

The integration of data allow us to understand human practices, as site reopenings, sediment removal, aggregate and extraction of bones and offerings deposition. Also enabled us approach the taphonomical process that modeled the funerary contexts of the Puna.

PACHACAMAC: PREHISTORIC PERUVIAN BURIAL CUSTOMS REVEALED BY APPLICATION OF FORENSIC ENTOMOLOGY TECHNIQUES

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We carried out entomological analyses of a series of 21 burials from the Ychsma horizon at the Peruvian coastal site of Pachacamac. We found calliphorid flies and dermestid beetles. The time lapse between death and burial at Pachacamac had been sufficiently prolonged in order to allow calliphorid infestation of the head, and complete cranial tissue removal before burial. This indicates that the bodies were not wrapped, nor were calliphorid larvae removed from bodies prior to burial. Bodies were buried before all soft tissues were removed, as indicated by the presence of large numbers of dermestids (that feed on dried tissues). This may have been a deliberate funerary practice. Archaeological, ethnohistorical and entomological data demonstrate that corpses were exposed for significant periods after death and before burial. Our sample indicates that this was a common practice at Pachacamac. This practice – known in the Colonial Period – likely had origins in the Middle Horizon. It is possible that the mythical function attributed to certain insects could have played a role in the overall process.

WWI AND WWII: INSECTS FROM THE FRONTLINE

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Funerary Archaeoentomology is the study of insect fauna found in burials or from archaeological investigations. The study of insect fauna associated with burial can provide useful information on the remains and on the burial/funerary practices that may have been performed.

The majority of the studies, clustered in this discipline are mainly related with Egyptian and Peruvian mummies. A very problematic topic is the classification of the entomological investigation on human remains belonging to WWI and WWII soldiers. Particularly, the investigations of human remains from victims of the WWII are between forensics and history. In fact, in case of homicide, in the majority of the legal systems, the alleged crime is extinguished with the death of the perpetrator. If for WWI we can suppose that all the participants are dead, or at least all the people that during that war were over the age, we cannot make the same speculation for WWII. In Italy the oldest people that were over the age at the end of the war (1945) are today 88 years old.

In this paper we summarize the findings from two WWI cases from the Italian front (Venetian Pre-Alps) and from two WWII cases from Northern and Central Italy.

Entomological findings, puparia of Diptera (Calliphoridae, Fanniidae, Heleomyziidae and Phoridae) have been used in order to reconstruct the events occurred in the perimortem and postmortem time.

In the first WWI case the record of puparia belonging to *Protophormia terranova*, *Phormia regina* and *Fannia* cfr *canicularis* was fundamental for the estimation of the season of death of a young Italian soldier. This conclusion was supported by other historical evidence.

In the WWII case, some puparia (Calliphoridae and Heleomyziidae) have been analyzed from human remains from a Foiba (vertical cave, used to conceal bodies). Data have been compared with recent experimental data in order to understand where the insect colonization happened.

A SUMMARY OF BRAZILIAN ARCHAEOENTOMOLOGY RESEARCH

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Entomological studies in Brazilian archaeological contexts are recent and still in low number. The first researchers to report the presence of insects in Brazilian archeological context was Araújo et al. in 1986. During a pathological research, the authors discovered eggs, nymphs and adults of mites, Hemicheyletia (Cheyletidae) and Phoridae (Diptera) pupae in mummified bodies from a cave of Minas Gerais state dated at 600 ± 80 years BP, and deposited in the National Museum of Rio de Janeiro. They concluded that flies are an indication there was partial decomposition before a natural mummification. In 2000, Araújo et al. reported the earliest occurrence of *Pediculus humanus* Linnaeus, 1758 (Anoplura: Pediculidae); they founded eggs in human hairs remains from an archaeological site in northeastern Brazil dated at over 10,000 years, suggesting that lice species possibly had coevolution with humans since ancient hominids. A study with participation of two Brazilian researchers analyzed the esophageal contents of an early nineteenth century Portuguese mummy, buried in Lisbon, where were found a Diplopoda and *Ophyra capensis* (Wiedemann) (Diptera: Muscidae) pupae and adult fragments. The authors suggest that infestation started after the body's preparation through the mummy's mouth (Couri et al. 2008; Couri et al. 2009). In 2013, as master's project, Macari et al. conducted a systematic microscopic sorting in sediments from an indigenous (Tupiguarani) urn of Paraná state dated at 250 years BP, and deposited in the Centro de Estudos e Pesquisas Arqueológicas of Universidade Federal do Paraná. As results, Arthropoda of Arachnida (Araneae, Mesostigmata, Oribatida, Pseudoscorpiones) e Insecta (Blattaria, Coleoptera, Dermaptera, Diptera, Hemiptera, Hymenoptera, Isoptera, Lepidoptera e Psocoptera) were recovered. Among intact specimens and fragments, the most abundant were Coleoptera, Hymenoptera, Isoptera and Oribatida. The first occurrences of beetles *Corticaria* sp. (Latridiidae: Corticariinae) for Brazil and *Bembidion* sp. (Carabidae: Trechinae) were recorded for Paraná. Some specimens were related to the surrounding forest but it cannot be assumed if these species are contemporaneous to the site or not. Other insects are associated with body decomposition that possibly occurred in the fall. The entomological remains also indicate the practice of planting corn by this Tupiguarani group and a prior use of the urn as a plants reservoir. Besides, they recommended a curation plan in order to prevent the urn degradation by biological agents. The entomological analysis stands out as a promising tool in archaeological research, but needs to be improved in each work. Brazilian archeoentomological researches are still preliminar. It takes a closer relationship between archaeologists and entomologists, an increase in analysis methods and a wider use of remains found in national sites, in order to expand our researches.

WHEN PHYSICS MEETS ENTOMOLOGY AND ARCHAEOLOGY

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The most important instrument in Entomology, historically, is the microscope. First the compound microscope, then the stereomicroscope and in recent years, the electron microscope (SEM and TEM). Moreover, the development and the application of molecular techniques on insect studies provided a further level of resolution in species identification and in the understanding of insect biology.

DNA analysis often requires the destruction of the sample, whereas microscopy requires the sample to be visible and not included in any opaque matrix.

In order to study insects and other archaeological element in an opaque matrix, the matrix has to be broken or diaphanised. These operations are not always possible, especially in forensic and archaeological cases. In order to bypass this problem, μ CT-scans can provide useful information not only on the external morphology of included organisms, but as well on internal features fundamental for species identification. If the resolution of a common μ CT-scan is not enough, a source of monochromatic light and a phase contrast are required. Observations using this approach can be done at different synchrotrons-for example, at the "Elettra Sincrotrone Trieste".

Additional information about the molecular nature of archaeological, historical and forensic items can be obtained using other subatomic particles such as neutrons.

Some examples and new research, applicable in funerary Archaeoentomology, general entomology, forensic and archaeology are presented.

THE BONES SCAVENGERS

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The following work is based on the study of the exuviae of Dermestidae, recovered during the anthropological analysis of the remains of a group of individuals identified for age, sex and cause of death, belonging to the Skeletal Collection identified of Bologna Certosa. The collection consists of 439 individuals, all of whom died between the end of 1800 and the first half of 1900. The individuals under the age of 18 years are 145, 46 are not known and the remaining 248 have an age greater than 18.

The aim of this study is to verify the state of conservation of skeletons from the collection identified, through forensic Entomological analysis.

Exuviae, collected from hair and skull cavities, have been identified and documented by microscopic observation (Nikon SMZ745T-Nikon Digital Sight DS-vi1).

After careful analysis, the samples have been attributed to the family Dermestidae (genus *Attagenus*, sp. *Attagenus pello*). The exuviae found are ten, complete and well preserved.

Dermestid beetles feed primarily on dry tissues and , hair, feathers, pollen and other insects. These beetles belong to the carrion breeding fauna and have been reported as well from human cadavers in the seventh colonization wave. Dermestids can cause important damages on museum collections and in funerary archaeoentomology they have been described also as secondary contamination.

In the samples analyzed in this study, the presence of these insects is most probably due to a secondary contamination, occurred when the remnants were located in Laboratory of Bioarchaeology and Forensic Osteology of the University.

A WWII CRIME: BETWEEN FORENSICS AND HISTORY

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The studies and the investigations of human remains from victims of the WWII are between forensics and history. In fact, in case of homicide, in the majority of the legal systems, the alleged crime is extinguished with the death of the perpetrator. If for WWI we can suppose that all the participants are dead, or at least all the people that during that war were over the age, we cannot make the same speculation for WWII. In Italy the oldest people that were over the age at the end of the war (1945) are today 88 years old.

We present a case of an exhumation, requested by the court, of a 20 years old man killed during the last year of war. The exhumation was performed in order to verify the cause of death and potential tortures inflicted to the person before the death.

The results of the remains analyses have been compared with the original autopsy report (1944).

Several puparia of Phoridae (cfr *Megaselia* sp.) have been collected from the bones, no other entomological evidence has been found

FUNERARY ARCHAEOENTOMOLOGY: AN UPDATE TO THE ROCCAPELAGO'S MUMMIES (XVI-XVIII CENTURY)

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Funerary Archaeoentomology is the study of insect fauna found in burials or from archaeological investigations. The study of insect fauna associated with burial can provide useful information on the remains, the burial/funerary practices that may have been performed and on potential transfer of the remains from the primary burial site to a secondary one, like in the cases of Saints.

Forensic Entomology and Funerary Archeoentomology are two distinct disciplines but with a common background: the carrion/cadaver breeding fauna.

In 2010 about 300 bodies (XVI-XVIII century), some of them partially mummified, were discovered under the church of Roccapelago (Northern Italy, 1,095 m asl). A multidisciplinary project was set up in order to investigate this finding from an anthropological, genetic, pathological, historical, fashion, lifestyle and entomological point of view.

The samples were collected manually using a low power vacuum cleaner. The collected material was sieved using different mesh sizes (2 cm-300µm) and partially treated by flotation in distilled water.

Currently, 35 different taxa of Arthropods have been identified including Insecta, Pseudoscorpionida, Aranea, Acari, and Isopoda. Insects represent the most important part of the fauna found on the bodies with Diptera, Coleoptera, Lepidoptera and Hymenoptera species. Among insects fly puparia belonging to the family Muscidae (mainly *Ophyra* cfr *capensis*) are the most common finding. Puparia and adults fragments of members of the dipteran families Calliphoridae, Fanniidae, Sarcophagidae and Phoridae were also found.

Among Coleoptera the most common finding is the blacklegged ham beetle *Necrobia violacea* (Cleridae) followed by Dermestidae (*Dermestes lardarius*, *Anthrenus* sp., *Attagenus* spp.) Tenebrionidae (*Tenebrio molitor*), Histeridae (*Gnathoncus nannetensis*, *Gnathoncus rotundatus*, *Gnathoncus communis*, *Saprinus subnitescens*, *Saprinus semistriatus*, *Saprinus planiusculus*), Trogidae (*Trox* sp.), Cryptophagidae, Ptinidae (*Ptinus fur*) and Staphylinidae species.

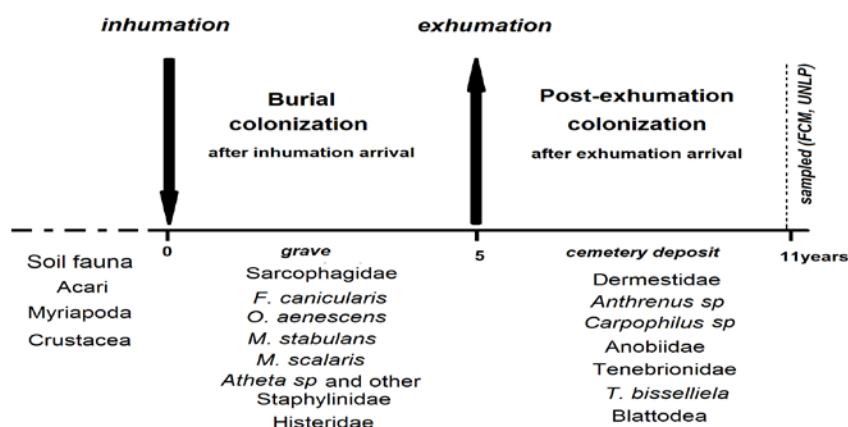
The results of this study are providing useful information about the insect community in partially mummified bodies in a mountainous environment and will allow for comparison between the carrion breeding fauna active 500 years ago with the one active now. This information is significant in order to investigate the change in distribution of the species in a relative long temporal scale.

ANALYSIS AND INTERPRETATION OF THE ENTOMOLOGICAL SPECIMENS FROM LEGAL BURIED BODIES IN BUENOS AIRES, ARGENTINA.

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The investigation related to Funerary Archaeoentomology are very recent in Argentina, some studies came from recent archaeological excavations and others from archaeological naturally mummified human remains actually housed in the Museo de La Plata collection (Varela et al., 2014). In this contribution we continue a novel research path on legally buried remains from the Cemetery of La Plata (Mariani et al., 2014) analysing the entomofauna sampled from 30 foetal and infant individuals, to provide valuable information for the interpretation of taphonomic processes and burial contexts. These bodies were buried in soil inside a wooden coffin in a grave 40-50 cm deep and stayed buried for at least 3 years. After the exhumation took place, the skeletons were stored at the cemetery deposit and finally were ceded to the 'Prof. Dr. Rómulo Lambre' collection for research and teaching purposes to the University of La Plata. Age, sex, nationality, date and cause of death, location at the cemetery and date of exhumation were obtained from death records at the cemetery archives. Faunal remains were sampled from the wrappings, clothing, insides of bone cavities and sediments using conventional techniques and were identified at different taxonomic levels depending on the stage of conservation. The dominant taxon was the muscid fly *Ophyra aenescens* (Wiedemann) represented by a considerable amount of empty puparia. The relationships among the identified taxa and the moving of the corpse, from the burial context to the cemetery deposit, are discussed and used to create a hypothetical colonization sequence after death:



Mariani, R. ; García-Mancuso, R.; Varela, G.L. & Inda, A.M. (2014) Entomofauna of a buried body: Study of the exhumation of a human cadaver in Buenos Aires, Argentina. *Forensic Sci. Int.* 237. p.19-26.

Varela, G.L.;Kierbel, I.; Teileche, T. & Mariani, R. (2014) Arqueoentomología: los insectos y su aporte en la interpretación del pasado. *Bol. Soc. Ent. Arg.* 25 (2). p. 8-11.

INSECTS FROM PRE-COLOMBIAN PERUVIAN MUMMIES: A FUNERARY ARCHAEOENTOMOLOGICAL APPROACH

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Funerary Archeoentomology was used for the first time by Jean-Bernard Huchet in 1996. This author defines "l'Archeoentomologie funeraire" as the use of the information provided by the insect fauna associated with archaeological human remains in order to define the peri (around) and post mortem events or the funerary practices.

The museum of Human Anatomy (University of Pisa) hosts a large collection of artifacts and human remains belonging to the Chimù-Chancay population. This material, partially analysed in the 18th century, is now under a more concentrated study. The preliminary observations of the samples collected from different kind of materials (cotton, leaves, plant fibers, etc) present between the fabric layers that formed a sort of cocoon in which the body was wrapped (the "fardo") revealed a very complex entomofauna. Insects and other arthropods found in the fardos can be grouped in five major groups: 1) insects related with body decomposition, 2) insects associated with the offerings, 3) ectoparasites, 4) organisms associated with the environment where the bodies were stored and 5) contamination occurring in previous years in the museum store

In the first group, remains of insects belonging to Diptera (Sphaeroceridae undetermined) and Coleoptera (*Dermestes maculatus*, *Mezium americanum*), in the second group, Coleoptera belonging to the family Tenebrionidae (*Gnatocerus cornutus* and undetermined species) and Anobiidae associated with corn and cereals. The ectoparasites found in two of the five analysed "fardos" belong to a species of flea (Aphaniptera, *Pulex simulans* a species close to *Pulex irritans*), whereas some nits, louse's eggs (Phthiraptera, *Pediculus humanus capitis*), were collected from hairs. Several fragments of spiders and pseudoscorpions were found on the analyzed materials. Pseudoscorpions are arthropods related with the soil and often with hypogean cavities. Their presence suggests that the fardos stored at the Museum of Pisa had been buried or stored in soil holes before their discovery. This observation is confirmed by other "fardo" findings (Huchet et al., 2013).

Insect feeding on museum samples, especially belonging to the Dermestidae and Lepismatidae (Thysanura) families have been found among the collected material. These findings require a rethinking of the storage and preservation strategy in place at Pisa museum in order to avoid the destruction of such an important collection.

ENTOMOFAUNA FROM NATURAL MUMMIES IN SOUTHER ITALY: MONSAMPOLO

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During restoration works, after the Umbria-Marche (Italy) earthquake, on the Maria Ss. Assunta church in Monsampolo, an archaeological survey of the crypt allowed the discovery of 20 mummified bodies (19 natural mummifications and 1 anthropogenic mummification obtained through a surgical procedure of evisceration) behind a wall. The specific climatic conditions allowed the conservation of not only the bodies but also of clothes, other accessories and jewels. All this material plays an important role in the understanding of the funerary rites and in the life style in Southern Italy in XVI-XVII century, especially in the lowest social classes.

An entomological collection performed by one of the authors on 12 bodies allowed for the identification of more than 20 different taxa of Arthropods including Insecta, Pseudoscorpionida, Aranea, and Acari. Insects represent the most important part of the fauna, with species belonging to Diptera (present in the 57.1% of the samples), Coleoptera (71.4%), Lepidoptera (60.7%) and Hymenoptera (28.6%). Among insects fly puparia belonging to the family Muscidae (53.6%, mainly *Ophyra capensis*) are the most common finding. Puparia and adult fragments of members of the dipteran families Calliphoridae (17.9%, *Calliphora vicina*) and Phoridae (3.6%) have also been found.

Among Coleoptera, Cleridae was the most common taxon as it was present in 39% of the samples. Three different species of Cleridae were identified *Necrobia rufipes*, *Necrobia violacea* and *Necrobia ruficollis*. Dermestidae specimens (32.1%) were identified as belonging to three species (*Anthrenus* sp., *Attagenus* sp. and *Attagenus unicolor*), Histeridae (28.6% *Gnathoncus communis*, *Gnathoncus nannetensis*), Tenebrionidae (17.9%, *Tenebrio molitor*), Ptinidae (7.1%, *Gibbium psylloides*), Curculionidae (3.6%, Cossoninae), Anobiidae (3.6%, *Stegobium paniceum*), Aderidae (3.6%, *Otolelus flaveolus*) and Scolitide (3.6%) species.

