The use of Lime in the funerary practice of archaeological Past Populations

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The use of lime in funerary/burial practice by Past Populations has long been recorded, and its intended use has been attributed both to the acceleration of decomposition and to its sanitary properties. Recent studies (Shotman, 2012; Schultz et al., 2006), have deepened our knowledge. Nowadays, it is used worldwide, mostly as a sanitary measure (as advised by the World Health Organization and Red Cross and Red Crescent), due to its antiseptic properties, while it has been widely replaced by Alkalines for the decomposition of remains. Lime is usually used hydrated or quicklime and can be applied directly on the contact body, mixed in the grave's soil or even dusted on shrouds and coffins.

In Portugal, there are some examples of the use of lime directly over the body and mixed within the soil. For the first case, it has been reported on a mass grave from the 1786 shipwreck at Peniche (Blot, 1994) where the bodies were buried, in different stages of decomposition, continuously, as they were recovered. It has also been noted on individual burials such as at the Convent of Espírito Santo, where it was applied inside the casket, forming a block. The use of lime mixed with soil has been observed at the Churches of Misericórdia of Almada, and Church of Espírito Santo. The addition of lime was also required on public cemeteries (created and regulated by a 1835 decree) not only to accelerate decomposition but mainly as a sanitary measure to prevent “fearful vapours” that could emanate from cadaver decomposition (Queiroz, 1998, 269).

In the case of Santa Maria da Consolação, the substance observed is similar to the description of powdered lime as well as its apparent effect on the osteological remains. Despite lime further studies are needed, specially the comparison between different archaeological sites, to access the differences and similarities in the use of lime. Freitas, E. 1947.

RESULTS AND DISCUSSION

We consulted the results of other anthropological studies of convents with similar chronology – burial of both clergy and laymen benefactors – as the Convent of Lóios in Arraiolos (Forte, 2006; Ventura, 2004; Ramos, 2004; Tavares, 2003); Convent of Villar de Frades (Assis, 2002; Tavares, 2001). and of other orders such as the convents of Convent of the Carmo (Benisse, 2005); Igreja da Misericórdia of Almada (Neto, 2005); Igreja de Santiago (Gonçalves, 2004); Igreja de S. Pedro (Furtado, 2007); Capela of Nossa Senhora da Vitória (Marques, 2007); Igreja Matriz de São Julião (Pinto, 2012); Hospital of the Venerable Order of S. Francis (Domingues, 2013); Círio de Santo António-o-Novo (Godinho 2008) and the Cemitério Oculto da Sé Velha de Coimbra (Teixeira, 2007).

Although most had evidence of a strong re-utilization of the graves with a frequent rebury, and many included individuals with signs of pathology, there is little evidence of lime. However, in the Convent of São Francisco it was observed while colouring on several remains (Gaspar, 2013) where the author has considered lime in a differential diagnosis with exposure to fire, since the area had suffered a fire. In the Church of Santiago (Goncalves, 2004) although there is a mention of some remains with white colouring, pertaining to a female individual with a case of Spina Bifida, lime was not considered, possibly due to the textured it presented, since it was more fluid, but no further explanation is given.

We observed a powdered white substance, consistent with the description of lime (Coma, 1991), on a total of 22 individuals. 6 of them show evidence of pathological conditions. It was observed from ossuary/reduction context found near burials, and included both adults and non-adults. Additionally, 6 individuals were exhumed at in situ burials. Of these burials, 5 were located in a small crypt (3 non-adults and 2 adults), and 2 in individual graves in the cloister (both adults). The pathologies observed in these individuals include depilation of white bone, while, including a case of osteomyelitis. Since most burials were of adult males and children, and many cases corresponded to secondary depositions, relation with sex was possible to confirm.

It was possible to note that:

1. Not all cases with pathological condition had evidence of lime;
2. It was not possible to detect any relation with demographic profile of the individuals;
3. The majority of cases with evidence of lime were recovered from the crypt besides two graves in the cloister;
4. A slight difference of the colour of the bone and in preservation of the osteological material was noticed: the human remains with lime had a more greyish white shade and were slightly more fragmented;

FINAL REMARKS

Further studies are needed, specially the comparison between different archaeological sites, to access the differences and similarities in the use of lime. The use of lime is usually but a footnote on reports, which adds to the difficulty of finding accurate descriptions that allow for deeper comparisons.

In the case of Santa Maria da Consolação, the substance observed is similar to the description of powdered lime as well as its apparent effect on the osteological remains. Despite lime being known to be used in burials in public spaces or in containers without direct contact with the soil, such as cremets, chemical testing would enable a definite conclusion, although it would not be possible to distinguish quicklime from hydratated lime, since the former will eventually turn into the latter.

In the case of Portugal, the legal obligation to include an anthropologist specialists whenever there are human remains and that their preliminary study is included in a report, adds to the potential of the study of archaeological human remains not only for this subject but for funerary practice in general.

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