

Abstracts for OOS XXXV 6th Oct 2016

Excavation of human skeletal remains

Archaeological excavation of human bones – an example. Methods, approach, collection and possible loss of data

In this presentation we put forth an example of a recently finished excavation of a medieval cemetery in the center of Odense. We wish to present the archaeological method that has been used to unearth the human remains. This is to give an idea of the circumstances under which the biological anthropological material is excavated. As with all methods there are advantages and disadvantages and possible a loss of information in the process. The approach to the archaeological object (that is human burials) can be very different seen from an archaeological point of view than the anthropological approach would be. Basically we are looking for different answers. We wish to discuss whether a closer collaboration between archaeologists and anthropologists prior and during the field work can secure data that can only be recorded in the field and will be lost in the unearthing and handling of the human bones.

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Sct. Hans church and cemetery in Viborg – excavation, considerations and challenges

Prior to renovating Nytorv square in Viborg in 2015-16, Viborg Museum examined almost 650 medieval burials and the belonging church remains alongside other contemporary constructions inside the cemetery borders. In 1529 the Church of St Hans was closed down when the citizens of the town were granted permission to use the Grey Friar and Order of Preachers churches for services and hence demolish the present 12 parish churches. Therefore the abandoned cemeteries only contain burials from the medieval period, which renders the material particularly suitable for studying the medieval population of the town. The investigation revealed a quite intensively used cemetery in which the bone material was characterized by great differences in preservation. Especially the southern part of the cemetery with its waterlogged underground was characterized by decayed to very poorly preserved skeletons. This gave rise to a number of challenges and considerations, which will be presented and discussed in the presentation.

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A churchyard from Tjærby excavated in annual campaigns over 14 years

The village of Tjærby lies a few kilometres east of Randers on the north side of Randers Fjord. The church disappeared after the reformation in 1536.

The church and churchyard at Tjærby were totally excavated in a series of annual campaigns carried out between 1998 and 2010. A stone church, remains of a farmstead from the Late Viking Age, a wooden church and more than 1200 graves were excavated.

The advantages of working in annual periods such as only excavation in the best time of the year, not too many competitors, no lack of student or archaeologist and no stress or panic in the museum while washing and packing the skeletons must be compared to the disadvantages such as many different students, technical problems with the registration, different people making statistics over the skeletons at the Panum Institute etc. Annual periods gives challenges, but also advantages!

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Excavations at S. Mary's Cathedral in Ribe – Recording and understanding a cemetery with a lifespan of 1000 years and what to do with it afterwards.

During excavations at the Cathedral in Ribe between 2008-12 more than 700 burials dating between the 9. and early 19. C. were excavated and recorded. Osteologists took part in most of the fieldwork and have successively carried out the preliminary investigations of the buried. Further studies, including archaeochemistry, are carried out within the frameworks of an ongoing research project, *1000 års mennesker*, funded by the Velux Foundation.

In the paper the excavation and the Hi-Res recording procedures are presented and compared to other churchyard excavations done in Ribe and elsewhere in Denmark.

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Estimating age at death from skeletons

Estimating the age of skeletons is one of the corner stones in anthropological research. Despite the large number of methods 'on the market' most of them gives questionable results.

A large number of the standard methods that are used many places give open ended intervals like 50+ or divides skeletons into age groups like adultus, maturus and senilis. Add to that many age estimation methods are so incorrect and put people into the wrong categories which challenges a proper conduction of demographic analyses.

With support from the National Institute of Justice (USA) a new method is under development by researchers from America and from University of Southern Denmark. The method will be computer-based and use transition analysis as the statistical foundation. Raw data for the method has been collected on four continents and the method reaches the limit for correlation between real age and estimated age set by Bouquet-Appel and Masset in 1982. The method will give much more precise and accurate estimates of time of death in archaeological samples and must be regarded a new and better tool to understanding life in the past.

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Chemical composition of decayed soft tissue.

Human bone tissue from archaeological excavations has been subjected to chemical analysis for many decades. Only in very rare cases are soft tissue preserved and even then the state of preservation often makes sampling difficult and leaves the analyses much wanting. At the CHART Group at SDU we have developed a method where we sample the soil surrounding the skeleton in situ. This sampling strategy allows revealing the exposure to mercury in various organs and, together with bone analyses, as a function of time in the life of the individual. Mercury from the decayed soft tissue has been retained in the soil which was once soft tissue and measurements of mercury on such soil samples reveals the exposure while the individual was still alive. In this talk I will show results of mercury analyses of past soft tissues of muscles, kidney, liver, and lung of 12 individuals from 3 medieval cemeteries.

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Reference samples – the need for known age and sex skeletal collections

Known age and sex skeletal collections are needed to develop and test anthropological methods, since especially forensic identification and paleodemographic analysis rely on precise estimates. The perfect reference sample would consist of complete skeletons, which represent an ideal

population: all ages, both sexes, variable socio-economic status, healthy and pathologically changed bones, and detailed biographical data (e.g. records about health and disease, cause of death, ante-mortem trauma, occupation, and socio-economic status). In reality there is no such thing as a perfect collection; all samples suffer from representation bias of some kind, and most of them show individuals with identification problems where the biological reality of a skeleton visibly diverges from the recorded data. However, there are a number of collections to choose from depending to the focus of the planned research.

This presentation describes how reference samples are collected, and some of the insights gained while working with collections from different backgrounds and on four continents.

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Analyzing the special aspects of cemetery use – The examples from the Löddeköpinge and Tirup cemeteries.

Archaeologically determined burial patterns provide rare glimpses of medieval behavior. Two medieval cemeteries – Löddeköpinge in Sweden and Tirup in Denmark – show how burial position and orientation provide important clues about the nature of medieval life.

Separation of burials by sex within cemeteries was a custom in early Christian Scandinavia. It looks as if this custom prevailed for longer in northern and eastern Scandinavia than in areas to the south and west. Only in a few places was the division by sex absolute. Usually other personal characteristics seem to have played a significant role in determining precisely where an individual was buried. Here the burial pattern in the Löddeköpinge cemetery is interpreted as evidence of social stratification in the local community.

Early in the Tirup cemetery's use, burials were also primarily separated by sex, although later this pattern was abandoned. One aspect of the burial pattern, however, appears to have remained constant throughout 200 years of cemetery use. When graves were dug, it seems that a distant point marked the customary east-west direction of graves. The orientation of graves in relation to their position within the cemetery indicates the aiming point was 1 – 3 km east of the cemetery; that is, in Horsens.

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Archaeological Skeletons in the United States: Excavation, Collections, and Reburial

Numerous human skeletons have been excavated in the United States from prehistoric and historical contexts (the dividing point is about 400 to 500 years ago). Many large collections are available for research, but others have been returned to federally recognized Indian tribes for reburial. Focusing mostly on the eastern part of the country, the history of archaeological work is summarized to explain why excavations of the largest skeletal collections were unevenly distributed both geographically and temporally over the past century. The current situation regarding the reburial of human remains under federal legislation (e.g., NAGPRA) is covered. The emphasis is on how research is affected by access to human remains that varies among institutions and individual collections.

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