

ANNUAL REPORT: DENMARK HÅGERUP BIOARCHAEOLOGY 2017 FIELD SCHOOL

Director: Dr. Julia Gamble (University of Toronto)
Co-Directors: Prof. Jesper Boldsen (University of Southern Denmark)
Prof. George Milner (Pennsylvania State University)
Ms. Dorthe Pedersen (University of Southern Denmark)



This first season of the Hågerup Bioarchaeology Field School, involving 12 IFR students from Canada and the United States, saw the beginning excavation of a large, medieval, rural cemetery. The cemetery is estimated to have been in use from the 12th to 16th centuries, with an estimated 3000 individuals having been buried over its duration. The 2017 field season saw the excavation of 43 individuals. Students from the field school fully excavated and conducted post-excavation cleaning and analysis on 19 of these individuals.

During the first week, students engaged in orientation lectures during which they were introduced to social history of the area, human osteology and palaeoepidemiology (the study of past population patterns in health), and some of the core methods of data collection they would be using in the field. The following four weeks were spent in the field, as we collectively learned more about the site.

A few core areas of interest arose over the course of these excavations. We found far poorer preservation than we had hoped for in the upper layers of the cemetery, and this posed a challenge for both for the students who were learning the archaeological techniques and for the instructors. This poor preservation is due to a combination of the high clay content in the soil and the complexity of the cemetery. We elected to start in what had been hoped to be a simpler area of the cemetery, by re-opening and completing test excavation pits from previous work. However in processing these areas we noted that multiple layers of graves were present, something not foreseen by previous field exploration. When we see this sort of pattern, what we also get is not necessarily a clear delineation between graves so much as extensive grave

intercutting, with more recent graves having disturbed earlier ones. Aside from this creating a challenge in terms of both preservation and identifying grave cuts (the edges of graves which can help use distinguish which graves are earlier and which later), this also reinforces earlier estimates of the cemetery containing between 2000 and 4000 individuals. Based on the number of burials in the relatively small area we were working in, it seems reasonable to expect at least 3000 from this cemetery. We have also found that burials in the lower levels are in a better state of preservation, which is encouraging for future seasons.

Burials in the medieval period in Denmark show a change in arm position over time, beginning with the arms down at the sides (A arm position) until roughly 1250 A.D. and then progressing through arms crossed over the pelvis (until about 1350 / 1400 A.D.), waist (until about 1450 A.D.), and then chest (until the Reformation in about the mid-16th century) (arm positions B, C, and D respectively). We found that the individuals in this portion of the cemetery had predominantly A arm position, which may suggest that we are working in an earlier part of the cemetery. There were also a few stone-lined graves, which might also support this earlier date.

We also know a little more about demographics in this portion of the cemetery. Interestingly, we had a large portion of young individuals (who died before they were 18 years of age) and also a higher proportion of females. We cannot draw any conclusions on this at this point in time, but it is possible that we are beginning to see some patterning in burial practices in terms of how different parts of the cemetery were used. We look forward to further seasons to gain further insight into this trend.

In addition to this information about demographics and cemetery patterning, students also got some experience in taking photographs for 3D reconstruction, particularly of crania (skulls). Given the fragmentary nature of the remains, crania would not stay in one piece through the cleaning process (being held together only by mud, effectively). After carefully cleaning around the outside, therefore, we took photos for photogrammetry. An example of these efforts can be viewed at <https://skfb.ly/6rQBU>.

A number of students have expressed an interest in presenting their findings from the field school at conferences in the upcoming year. We will be working towards seeing this move forward, with focus on poster presentations at the Canadian Association for Physical Anthropology conference and the Palaeopathology Association conference, as well as at some smaller local conferences. While the material from this field season does not provide us with a representative enough sample to publish our results, continued analysis on soil samples collected, and pathogen DNA work on some of the teeth, will be ongoing in the upcoming year.