H70 The Fromelles Project – The Recovery and Identification of British and Australian WWI Soldiers From Mass Graves in Northern France

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After attending this presentation, attendees will have a greater understanding of how forensic anthropological and archaeological methods can be used to not only excavate eight mass graves, document, and recover 250 sets of remains and thousands of artifacts, but also manage to positively identify almost 100 of the soldiers through interdisciplinary evidence collection.

This presentation will impact the forensic science community by demonstrating up-to-date and progressive excavation and anthropological analysis methods and by showing the possibilities of positively identifying individuals after being buried almost 100 years.

On July 19 and 20, 1916, British and Australian Forces fought a hopeless battle against German forces trying to draw attention away from the Somme. The outcome of this battle was the catastrophic loss of over 7,000 soldiers in less than 48 hours.

In the past two decades professional and amateur historians managed to locate eight possible mass grave pits adjacent to a small village of Fromelles in Northern France. The presence of multiple remains was confirmed in 2007-08 and in February 2009, Oxford Archaeology (OA) was awarded the contract to carry out the recovery at Pheasant Woods. A team of OA staff and external consultants was assembled, including forensic archaeologists and anthropologists, osteoarchaeologists, finds experts, crime scene investigators, anatomical pathology technologists, radiographers, IT experts, and many more.

A second contract was awarded for analyzing ante- and postmortem DNA samples. The goal was to extract sufficient amounts of uncorrupted DNA from the soldiers as well as trying to find second or third generation direct relatives. Both aspects of the program were extremely challenging but turned out very successful.

After the site was made secure in April, two teams of around five to six archaeologists and one supervisor each began excavations of the first two graves. All stages of the excavation were carefully documented by professional surveyors and photographers. The excavation was conducted under strict forensic archaeological rules. All data was immediately entered onto a secure database system and therefore instantly available to all relevant staff in the anthropological laboratory.

DNA sampling was carried out using a specifically developed protocol that ensured that samples were taken within a few minutes of being uncovered and exposed to oxygen and to eliminate contamination as much as possible. All personnel involved on site had to wear full personal protective equipment at all times when within less than 10 meters of the grave.

To ensure that all human remains and artifacts were recovered, metal detectors were used extensively throughout the excavation and all soil that was removed from around remains or artifacts was scrutinized in great detail. Soil was collected from around and underneath remains and x-rayed to make certain that even the smallest finds would not be lost. The excavation and recovery phase resulted in 250 sets of human remains and over 6,000 artifacts.

The laboratory, store rooms, and office space was set up in March and April. The layout guaranteed a secure and efficient workflow as well the dignified and respectful treatment of the human remains. Sets of remains and associated artifacts were transferred from the excavation to the anthropological laboratory using a documented handover procedure witnessed by a crime scene investigator to guarantee the continuity and integrity of all evidence. Remains and artifacts were first x-rayed using a direct-digital x-ray unit, operated by an experienced radiographer. All images were stored digitally and moved onto the secure database to give access to the anthropologists.

Human remains were then carefully cleaned to prepare them for anthropological analysis. All anthropologists had their own workstation, consisting of a fixed table, a digital SLR camera permanently fixed to the ceiling above the table, a PC workstation connected both to the camera and the database server.

The newly build cemetery is located in close proximity to the mass grave site. Each soldier was buried individually with full military honors. DNA analysis took place throughout the project and the results, together with the anthropological and artifact analysis results were presented to an Identification Commission in March 2010. To date, 97 soldiers have been positively identified. The cemetery was officially dedicated and opened in a ceremony in July 2010.

Forensic Anthropology, Forensic Archaeology, DNA Sampling

 ** Presenting Author*