

CoLAT 24 April Paper 2

CITY OF LONDON ARCHAEOLOGICAL TRUST ROSEMARY GREEN GRANT: Impact of Industrialisation on London Health

Report March 2017

The project has continued to progress well with the radiography on-going in London and locations outside of London managed by Jelena. Further research of sites, analytical work and radiographic analysis has been carried out by Gaynor. The project is fortunate to have the invaluable help of David Allan, a retired radiologist for assistance with the radiographic analysis of the multiple images produced from the radiography of the skeletal elements.

Radiographic Progress

Overview

From the last report there were 37.5 days still allocated for the radiography of the skeletal remains for the project and a schedule was worked out with Reveal Imaging Ltd for the logistics of the hiring of the portable digital radiographic kit, the availability of a radiographer to operate the kit and access to the collections. With some delays in being able to gain access to collections the time period covered for the radiography was from November 2016 to March 2017.

It had been hoped to be able to carry out radiography in November of the Swinton collection (Non Metropolitan, Industrial) excavated by Oxford Archaeology North in the same period as the next phase of the Barton collection (Non Metropolitan, Pre Industrial and Industrial) which with the permission of the English Heritage curator for the North had made it possible to have the boxes transferred to the English Heritage (EH) store in Helmsley. This had been worked out due to the initial phase of radiography being carried out in the church in August/September 2016 but with the short opening times of the church it was not feasible to continue radiography at the church. The EH curator kindly agreed that the boxes could be transported from the church to the EH store facility at Helmsley for the radiography to continue and to enable a full operational working day. With the logistics of the numbers needed for the project, the size of the vehicle available to transfer the boxes from the church and the feasible times for access for EH, the radiography had to be carried out in two phases with one group radiographed in January 2017 and the other group in March 2017, enabling the involvement of osteology students from the University of York. The radiography of the Swinton collection was also carried out in January 2017 at the Oxford Archaeology North base in Lancaster of selected adults with an age and sex estimation, which was possible with the generous sharing of the assessment data by Oxford Archaeology.

The days which had been allocated for the kit for the Swinton and Barton collections in November were reassigned to continue with the London collections curated at the Museum of London.

The application for requesting access to the Wharram Percy collection retained at the EH Fort Cumberland site was completed and permission for access was kindly granted in February 2017. Individuals were selected from the available data kindly supplied by Dr Simon Mays to enable us to identify adults with an age and sex estimation from the Medieval (Pre – Industrial) and Post Medieval (Industrial) phases. Radiography of the individuals took place at Fort Cumberland over two sessions.

Radiography also continued to be carried out in February and March 2017 on the London collections curated at Museum of London and the individuals with biographical details retained at St Bride's church, Fleet Street. The individuals interred in the crypts at St Bride's having the benefit of having associated biographical information are a valuable source for being able to access other documentary data. Notably the interesting information pertaining to parish cause of death and death certificates for those dying from 1837 onwards with the advent of the introduction of the more formal certification of death. The associated data for cause of death will be very useful and informative for the future analytical studies of the individuals.

The project was fortunate to be able to include another London Metropolitan Post Medieval (Industrial) collection excavated and analysed by Wessex Unit, New Covent Garden. The unit kindly shared the assessment data so that a selection could be made of suitable individuals for inclusion in the project. The radiographic kit was transported to the Wessex Unit and radiography took place over one day at the unit.

It had been hoped to be able to include as a good comparison for the St Bride's collection the contemporary collection of individuals with biographical information from the Christ Church Spitalfields collection curated at the Natural History Museum (NHM). The collection had been closed for many months with work being carried out in the osteological stores but notification was given that the collection was once again available for access following an application procedure. Enquiries were made to the relevant department at the NHM to ask with regard to the inclusion of a number of the individuals in to the Impact Project and the use of the portable digital radiographic kit on site at the NHM.

Having worked out based on the number of days needed for being able to include a suitable sample from the Christ Church Spitalfields collection the total costs that would have been incurred were too high for the project (including a £730 bench fee to access the collection for 5 days) and so unfortunately it was not possible to include them in the Impact Project.

Fortuitously, the Museum of London Archaeology (MoLA) unit had recently completed the analysis of a contemporary 18th and 19th century metropolitan site from Mare Street, Hackney of high social status that also had a high number of individuals with associated biographical information. MoLA were able to provide us access to them during the time that had originally been assigned for the Christ Church Spitalfields collection and kindly shared the information to enable selection of suitable adult individuals for the project.

Documentary Research: Archaeological, cartographic & environmental research

Further research was continued by Gaynor on archaeological sites for archaeological, cartographic and environmental data. This was added to the already extensive data set of information collated for each site and stored in BOX. There were 9 days remaining from the assigned total of which 4 days have been used for the continuation of the data collection. This work is most complete, with research only outstanding for the latest sites analysed (i.e. Swinton, Mare Street and New Covent Garden).

Presentations in which the project has been included

Close to the Bone – Forensic Outreach event – November 2016 and March 2017

Worcester Archaeological Society

JPEG radiography Images

The conversion of the DICOM images to jpegs is on-going and they will all be labelled with the nomenclature to enable them to be easily searched when deposited as an archive

Output from the project

As part of the visual information for the public visiting the museum to show the types of work and research which are currently happening, the Impact Project is a focal point with a large image of the kit and a crania being radiographed with associated information about the funding from CoLAT Rosemary Green Grant and a very brief description of the project.

Completed radiographed sites

The total number of individuals currently radiographed is over 2, 000 - the final total will be calculated once all of the radiographic queries have been able to be addressed and cross checked from the radiology sheets recording the elements radiographed, with the DICOM and converted jpeg images.

Site	Location	Time period	Number of Individuals Radiographed
North Eastern Cemetery, Bethnal Green (PGV10)	London	Industrial	200
St Bride's Lower Churchyard, Farringdon (FAO90)	London	Industrial	136
Bridewell Workhouse - AOC (NBR98)	London	Industrial	8
St Bride's Crypt (SB79)	London	Industrial	174
Mare Street	London	Industrial	146
St. Georges Brentford (HHS14)	London	Industrial	114
Chelsea Old Church (OCU00)	London	Industrial	35
Broadgate (LSS85)	London	Industrial	61
Billingsgate (BIG82)	London	Industrial	29
Bow Baptist (BBP07 & PAY05)	London	Industrial	127
St Mary Graces (MIN86)	London	Pre-Industrial	12
St Mary Spital (SRP98)	London	Pre-Industrial	399
New Covent Garden (NNE16)	London	Industrial	23
Upton-upon-Severn, Worcestershire (WSM43246)	Non -Metropolitan	Industrial	10
Holy Trinity, Stratford (P4442)	Non -Metropolitan	Industrial	33
Holy Trinity, Stratford (P4442)	Non -Metropolitan	Pre-Industrial	48
St Peter's, Barton Upon Humber, Humberside (BH81)	Non -Metropolitan	Industrial	134
St Peter's, Barton Upon Humber, Humberside (BH81)	Non -Metropolitan	Pre-Industrial	189
St Michael and. Lawrence, Fewston (SLF09)	Non -Metropolitan	Industrial	24
Coach Lane, North Shields (COL10)	Non -Metropolitan	Industrial	88
Wharram Percy, North Yorkshire	Non -Metropolitan	Industrial	29
Wharram Percy, North Yorkshire	Non -Metropolitan	Pre-Industrial	128
Swinton, Manchester, OA Archaeology (SWC12)	Non -Metropolitan	Industrial	50
TOTAL			2197

Radiographic and Macroscopic Analysis

Gaynor created a Radiology Progress Sheet accessed through BOX, working to update and maintain the figures for the individuals radiographed and the conversion of the DICOM images to jpegs. Gaynor has begun working through the vast number of radiographic images for the analysis of the radiographed elements from the sites and entering the data into the Access database which she constructed for the project. David Allan is then also able to access the database through BOX so that he can cross check the individuals where Gaynor has highlighted elements of individuals that are showing areas of pathological interest.

There have been some interesting observations from the radiographic analysis that have included bone lesions relating to cancers in individuals from St Bride's Lower Churchyard (FAO90), Bow Baptist (PAY05) and a possible embedded blade tip in the lumbar vertebrae of an individual from Broadgate (LSS85). The radiographic analysis is on-going and will be completed at a later date than originally planned but had been delayed with the later timings and logistics of the radiography of the sites and some delays in the conversion of the jpeg images.

Sites radiographically analysed by Gaynor
North Eastern Cemetery, Bethnal Green (PGV10)
St Bride's Lower Churchyard, Farringdon (FAO90)
Chelsea Old Church (OCU00)
Broadgate (LSS85)
Billingsgate (BIG82)
Bow Baptist (BBP07 & PAY05)
St Mary Graces (MIN86)
St Michael and. Lawrence, Fewston (SLF09)
Coach Lane, North Shields (COL10)
Swinton, Manchester, OA Archaeology (SWC12)

Sites in progress of radiographic analysis
St Mary Spital (SRP98)
St Peter's, Barton Upon Humber, Humberside (BH81)
St Peter's, Barton Upon Humber, Humberside (BH81)

The radiographic analysis is on-going for the sites, and of the 25 days assigned for analysis 12 have been used. The days which had originally been assigned to Mark Farmer (15) for radiographic analysis will now be used by Gaynor since his involvement with the project had to be altered with his taking up post at Teesside University. To date, 965 individuals have been analysed.

Collation of macroscopic data from the sites focussing on trauma, joint disease, DISH, rib lesions and pipe-smoking facets has also been undertaken by Gaynor and is ongoing, with the data for 14 sites having been completed to date.

Student research

The project having been shared on line through websites, the radiology journal publication and various presentations has already generated interest amongst researchers and students. An enquiry has been made by a forensics masters student from John Moores University Liverpool to enquire if they would be able to have access to images of crania from a site to use as part of their thesis study investigating the unique pattern of individuals' sinuses. We were very pleased to have been asked as it clearly demonstrates and exemplifies already the potential for the future of the radiographic archive.

Financial overview update

Impact Project - Invoices paid and Instalments	Amount