



Archaeology Research Grant Report

Recipient name	Dr Jonny Geber
Discipline and subject name	Archaeology Research Grant
Year awarded	2023
Title of Project	Funerary rites and social complexity in Neolithic Ireland: (Re)assessing the Fourknocks human bone assemblage



Summary of findings

The Neolithic human remains from Fourknocks were excavated by P.J. Hartnett of the National Museum of Ireland over 70 years ago, but never fully analysed. This project seeks to undertake a full osteological analysis of the remains from Fourknocks following modern methods and comprehensive statistical analysis. The preliminary results indicate that more than 79 individuals were interred at Fourknocks, and that bones were both cremated and unburnt before interment. The data will provide a detailed insight into what remains were interred in the monuments and how the bioarchaeological patterns observed reflect local, regional and wider funerary rites in Neolithic Ireland.



Archaeology Research Grant Report



Objectives of the project

The stated aims and objectives of the project were fourfold: [1] Assessing the demographic profile (age-at-death, sex, minimum number of individuals) to get a sense of what section of Neolithic society that were involved (or included) in the funerary rites at Fourknocks I and II; [2] Investigating the level of physiological stress and pathology, as indicators of lifestyle and living conditions of the section of the population interred in the monument; [3] Elucidation of evidence of post-mortem processing of the dead, prior to interment in the monuments, to get a sense of perceptions of the afterlife and religious and cosmological paradigms in the Neolithic; [4] Placing Fourknocks I and II within the broader funerary context of Neolithic Ireland, by direct comparisons with contemporaneous passage tomb monuments across the island.



Archaeology Research Grant Report

Methodology used in conducting the research

As part of the analysis, it was deemed necessary to clean and sort the human remains according to the modern requirements set by the National Museum of Ireland. The unburnt bones were all cleaned in lukewarm water and air-dried before being bagged and sorted separately from the unburnt remains. Animal bones were identified and separated for future analysis. The human remains were analysed following standard analytical praxis (Brickley & McKinley, 2004; Buikstra & Ubelaker, 1994; McKinley, 2004a, 2004b; Wahl, 1982). Bones were identified by element, part of bone, side, and age-at-death and sex 2 when possible. Each fragment was counted and weighed on a digital scale with 0.01g accuracy. The bone was also quantified by fragment size into four categories: $\geq 10\text{mm}$; 5–9mm; 2–4mm; and $< 2\text{mm}$. Metrics were taken in accordance with Buikstra and Ubelaker (1994), Gejvall (1970) and van Vark (1974, 1975). Pathological changes in bones were assessed and described and diagnosed when possible. Photographs were taken at high resolution (ISO: 100) with a DSLR camera.

Findings and milestones achieved

The time needed to undertake the full analysis of the human remains took longer than anticipated, and was first completed fully in April 2024. As such, the results at present are only preliminary (Phase 1 of the project), as the interpretation of the data is yet to be completed (Phase 2, RIA funded project 'Osteological and bioarchaeological analysis of the Fourknocks I and II Neolithic human bone assemblage – Phase 2' awarded to Jessica Smyth, UCD). The full assemblage comprises 87,523.81g (c. 209,454 fragments) of cremated and 10,270.24g (c. 10,370 fragments) of unburnt human bone, making it one of the largest Neolithic human bone assemblages from Ireland. The unburnt assemblage comprises the remains of a minimum of 14 neonates, 4 infants, 2 young children, 1 older child and 7 adults. The cremated remains are yet to be fully quantified, but include a minimum of 51 adults (based on petrous parts of right temporal bones). It is evident that a large proportion of the unburnt remains comprise neonates, which will warrant particular attention when interpreting the results. It may suggest that the seemingly communal



Archaeology Research Grant Report

funeral rite was determined by social age and individuals' place within society. There is a seemingly even representation of males to females in the assemblage, but this ratio will be investigated in more detail. The human remains display evidence of degenerative joint disease (which may indicate an advanced age for many of the adults interred in the monument), but also some cases of healed blunt force trauma. To fully understand the taphonomic, demographic and pathological patterns observed in the human bone assemblage from Fourknocks I and II, the data needs to be assessed in comparison with contemporaneous sites. For this study, the human remains from Carrowkeel, Co. Sligo and Knockroe, Co. Kilkenny are the most comparable datasets, and the Fourknocks I and II data will be interpreted in conjunction with the aforementioned sites to elucidate whether there is an underlying pattern in Neolithic funerary rites across Ireland, or whether local variations and traditions dominate the funerary customs.

Dissemination of the outcomes

The preliminary results of this project were presented at the European Archaeology Association (EAA) 29th Annual Meeting in Belfast ('Linking Ancestors with Monuments: Engaging with the Dead in Neolithic Ireland') on 31 August 2023, and at the Annual Conference of the Institute of Archaeologists of Ireland (IAI) in Limerick ('Building Baselines and Engaging with the Dead in Neolithic Ireland') on 13 April 2024. A manuscript, with some preliminary results has been submitted for as a co-authored publication (Jessica Smyth, Jonny Geber, Neil Carlin, Muiris O'Sullivan and Seren Griffiths) "Notes from the archives: re-analysis of skeletal assemblages from three later 4th millennium BC Irish passage tombs", to be published in the conference proceedings of the 'The early Neolithic of Northern Europe: new approaches to migration, movement and social connection' meeting, organised by Mathias Bjernevad-Ahlqvist, Vicki Cummings, Daniela Hofmann, and Rune Iversen at the University of Copenhagen in 2023.



Archaeology Research Grant Report

Communication and publication plans

The project will be completed (data analysis and dissemination) via the RIA funded project 'Osteological and bioarchaeological analysis of the Fourknocks I and II Neolithic human bone assemblage – Phase 2' 3 awarded to Jessica Smyth. Most forthcoming, Jonny Geber and Jessica Smyth are planning a public outreach and dissemination event at a venue close to Fourknocks as part of Heritage Week in August 2024. Following the data analysis and interpretation of the results, we seek to focus the publications on the themes of funerary rites and body processing in the Neolithic; interments of children at Fourknocks I and II, and archaeological reinterpretations of the Fourknocks complex. We seek to publish these in international peer-reviewed scientific and anthropological journals, such as Bioarchaeology International, American Journal of Biological Anthropology, Archaeological Science, International Journal of Osteoarchaeology and more. The National Museum of Ireland require a full osteological report of the Fourknocks I and II assemblage, as by agreement. This report will be completed and submitted before any results are published.

How did the award enhance your professional development?

It enabled collaborations with colleagues in Ireland, by covering accommodation costs which is a huge and debilitating expense for undertaking archaeological research in Ireland at the moment.

What plans (if any) do you have to further your proposal/project?

Following the completion of the project, we see to expand further research on Neolithic funerary rites in Ireland based on the results we will obtain from this research.