Exploring the Taphonomy of Past Activities:

A Geochemical and Phytolith Analysis of Bedouin Camp Sites and Neolithic Structures in Jordan

Daniella Vos[1], Emma Jenkins[1], Carol Palmer[2], Andrew Garrard[3], Helen Smith[1] and Tim Darvill[1]

[1] School of Applied Sciences, Bournemouth University, Fern Barrow, Poole, BH12 5BB, UK
[2] CBRL British Institute in Amman, PO Box 519, Jubaiha 11941, Amman, Jordan
[3] Institute of Archaeology, University College London, 31-34 Gordon Square, London, WC1H PY, UK

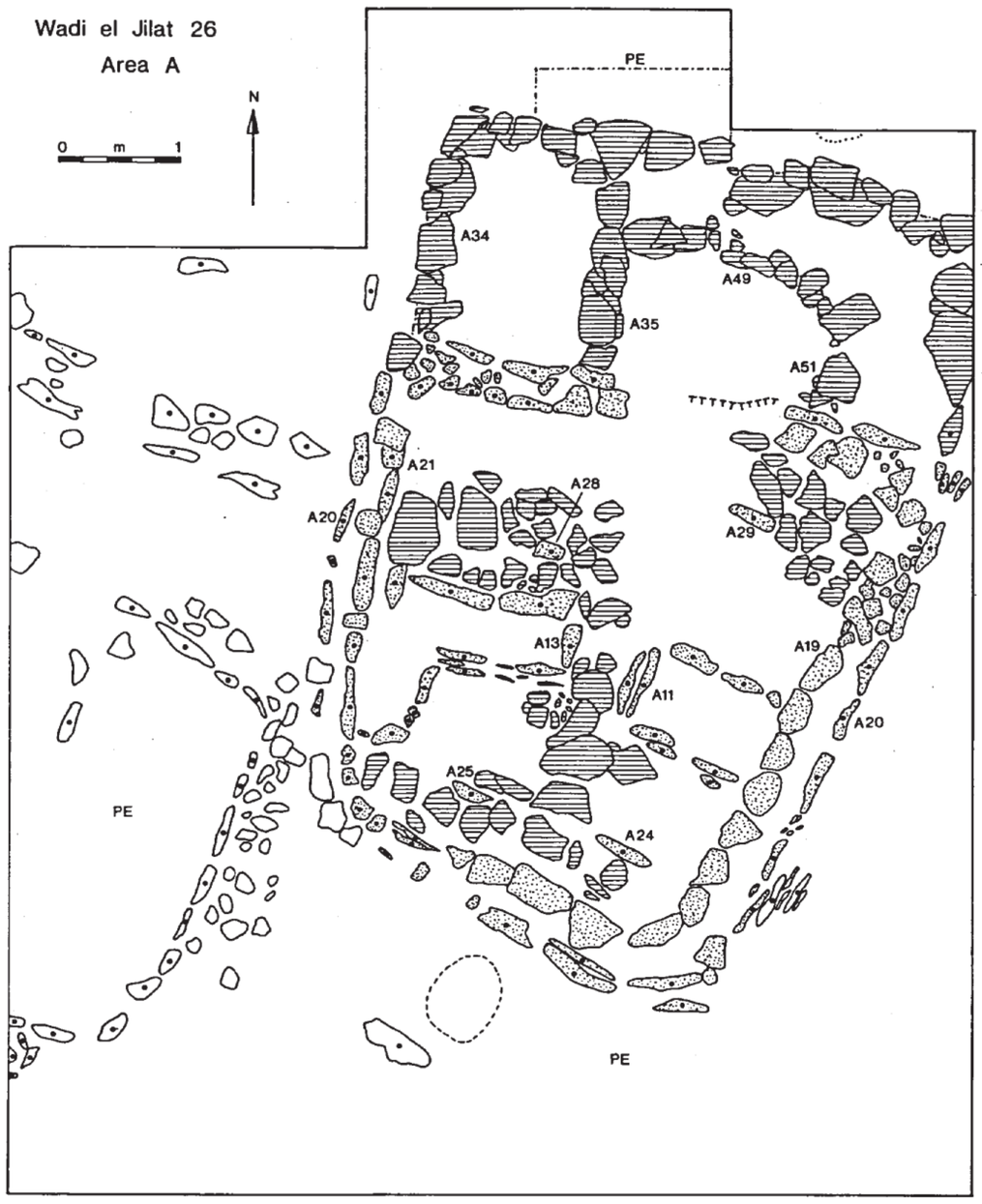
Project Introduction

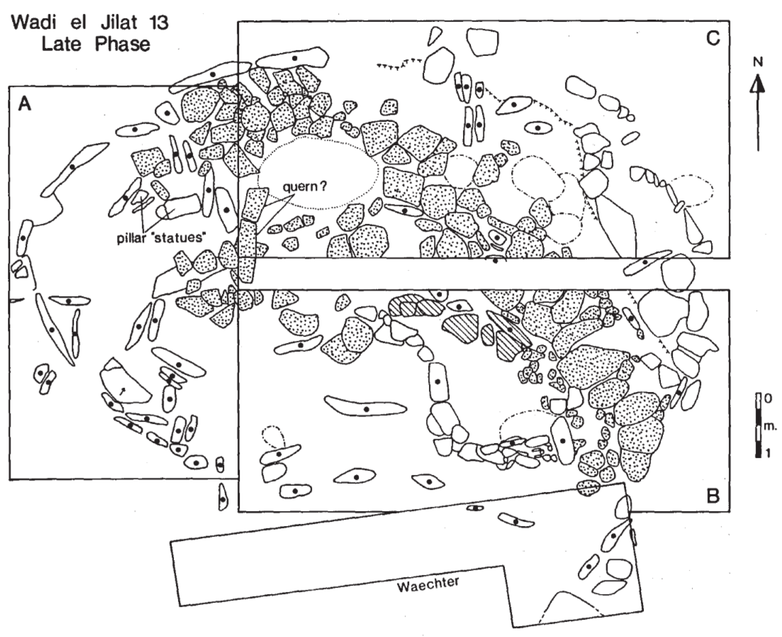
The geochemical analysis of soil samples with the aim of identifying spatial activity patterning in archaeological sites is becoming an established method aiding the interpretation of architectural remains. In addition, the recent application of phytolith analysis, often in combination with other methodologies, to the spatial analysis of activity distribution patterns in sites has opened up new avenues of research to such interpretations. This having been said, problems of equifinality and the complexities involved in accounting for various taphonomic processes that have influenced the studied anthropogenic soils limit the accuracy and extent of interpretation possible today. By applying a combined geochemical and phytolith method for identifying activity areas to ethnographic samples, this project aims to contribute to our understanding of the potential this method carries and the formation of geochemical and phytolith signatures in anthropogenic soils.

Methodology

The ethnographic soil samples were taken from ten Bedouin camps in Wadi Faynan, Jordan, that were located in different areas and occupied for various durations of time. The ethnographic fieldwork associated with the soil sampling recorded descriptions of the activities that took place within these households. By comparing the information we have about the types of activities and where they took place within the camps to the geochemical and phytolith analysis a better understanding of the correlation between soil signatures and human activity can be reached. Furthermore, by considering the different durations of occupation for the various sites and time since abandonment to collection of samples the influence these have on formation and taphonomic processes can be addressed.

The geochemical analysis will be performed using a portable XRF scanner, and selected samples will be further analysed for geochemical elements using an ICP/AES device. In addition, the samples will be analysed for phytolith content using the dry ashing method, and in combination with the geochemical values a joint signature for the anthropogenic soils will be created. This will enable the analysis of the distribution patterns of a variety of geochemical elements, phytolith types and quantities, and a combination of these variables. Once the combined method has been applied to the ethnographic data and its efficacy has been evaluated, it will be used to examine samples taken from Neolithic Azraq and Wadi el-Jilat sites in order to address its potential for interpreting ephemeral archaeological sites.





Archaeological data: plans of two of the Wadi el Jilat sites (WJ 13 and WJ 26), Jordan, which provided soil samples that will be examined for phytolith and geochemical content.

Ethnographic data: one hundred soil samples that were collected from ten Bedouin camps in Wadi Faynan, Jordan, will be analysed for phytoliths and geochemical elements.

dvos@bournemouth.ac.uk