

Report – Sam Eames Grant-in-Aid

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Through the Mists of Time: the search for the origins of olive domestication



Figure 1 Olive trees today in the foothills of the north Jordan Valley

Eight new radiocarbon dates funded by NEAF through the Sam Eames Grant-in-Aid have made a significant contribution to understanding the origins of olive domestication. They have also confirmed occupation occurred at the archaeological site of Pella c.1000 years earlier than previously held. I am very grateful to the NEAF Grants Committee for generously agreeing to my request to re-purpose the grant. After pandemic-related travel issues, re-purposing the grant enabled me to fund further radiocarbon dates focussing on the earliest phases at Pella, made possible by new samples taken during the 2019 field season, as well as buttressing some of our earlier radiocarbon dating efforts. The results not only made my Doctoral analyses more robust but is of significant benefit in understanding prehistoric life at Pella more broadly.

Scholars working around the shores of the Mediterranean continue to debate when and where the olive tree was first domesticated. The quote “Through the mists of time...” is often used to describe the quest to understand the timing and process of the origins of olive domestication. This is the core of my Doctoral research.

One of the challenges in addressing these issues is the reliance on a poorly resolved regional chronology derived from often poorly defined cultural assemblages with inadequate radiocarbon datasets. This is problematic for regional comparative analysis. The situation has improved in recent

years but seeking to provide a solid foundation for the interpretation of data generated from southern Levantine sites is still a work-in-progress.

Several forms of proxy evidence have been used by researchers to better understand the timing and process of olive domestication including analysis of diachronic olive endocarp morphometrics, regional pollen cores and archaeological wood charcoal. Key to this research is a secure chronology on which to base the results of our analyses.

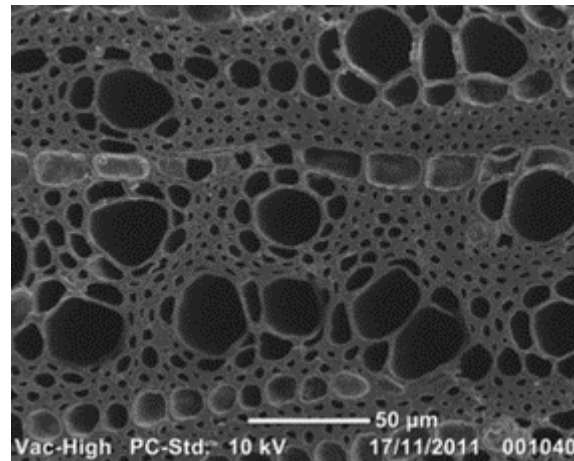


Figure 2 Olive wood charcoal from a Pella Late Neolithic sample



Figure 3 Whole olive endocarp from a Pella Late Neolithic sample

Pella is located in the foothills of the north Jordan Valley, a region generally accepted as one of the earliest centres of olive domestication. Pella's long occupation sequence, combined with a long-term, comprehensive soil sampling strategy, provides a unique opportunity to better understand the process and timing of initial interaction with this iconic tree, and the subsequent impact of that interaction.

We know from the site of Teleilat Ghassul in the southern Jordan Valley that intensive engagement with the olive occurred during the 5th millennium BCE. For some time, this has been the point from

which we as researchers included olives in our considerations of prehistoric socioeconomic practices. But what of the frequent, and much earlier remains I was finding in the archaeobotanical samples from the Pottery Neolithic phases at Pella? These samples had been dated previously to c.6000BCE; a thousand years earlier than the existing evidence suggested for significant human-olive interaction. Conceptualising this very early exploitation at Pella was obviously going to make a key contribution to the ongoing debates around the beginnings of olive domestication. Was the olive instrumental in the regional sociocultural gear-change evident from the Late Neolithic into the Chalcolithic or was it a gradual intensification of this valuable resource over the long term, leading to the clear evidence for manipulation at Teleilat Ghassul? Would we be able to correlate these early olive remains with the regional olive pollen spike evident at c.6000BCE, previously difficult to align with existing evidence? To answer these questions, two key components of my PhD became analysing the wood charcoal from Pella and refining the chronology of these earliest phases at the site.

The new dates obtained did not disappoint. We now have solid evidence for occupation at Pella from c.7000BCE. Two further dates of c.6000BCE buttress our previous dates for occupation nicely. The new dates align perfectly with the stratigraphical relationships in these phases across the relevant trenches on the main tell, such that we now have a solid occupation sequence for these key early phases at Pella.

The dates also underpin my preliminary analyses which indicates a significant change in the woodland vegetation in the Pella environs, with a move from oak-pistachio woodland in the Early Pottery Neolithic to a dominance of olive in the Late Pottery Neolithic, suggesting significant human-olive interaction in this key period. The new dates also mean that we can start to correlate human-olive interaction with that somewhat puzzling olive pollen spike evident in the Lake Hula pollen core at c.6000BC.

I look forward to continuing the analysis of the material from the 2019 and 2023 field seasons, the results from which will be securely underpinned by one of the best radiocarbon datasets in the southern Levant. The contribution made by the new dates to the olive domestication debate is significant, providing solid evidence for the growing picture of very early manipulation of the olive trees in the Pella environs – among the earliest in the world.

Acknowledgements

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