

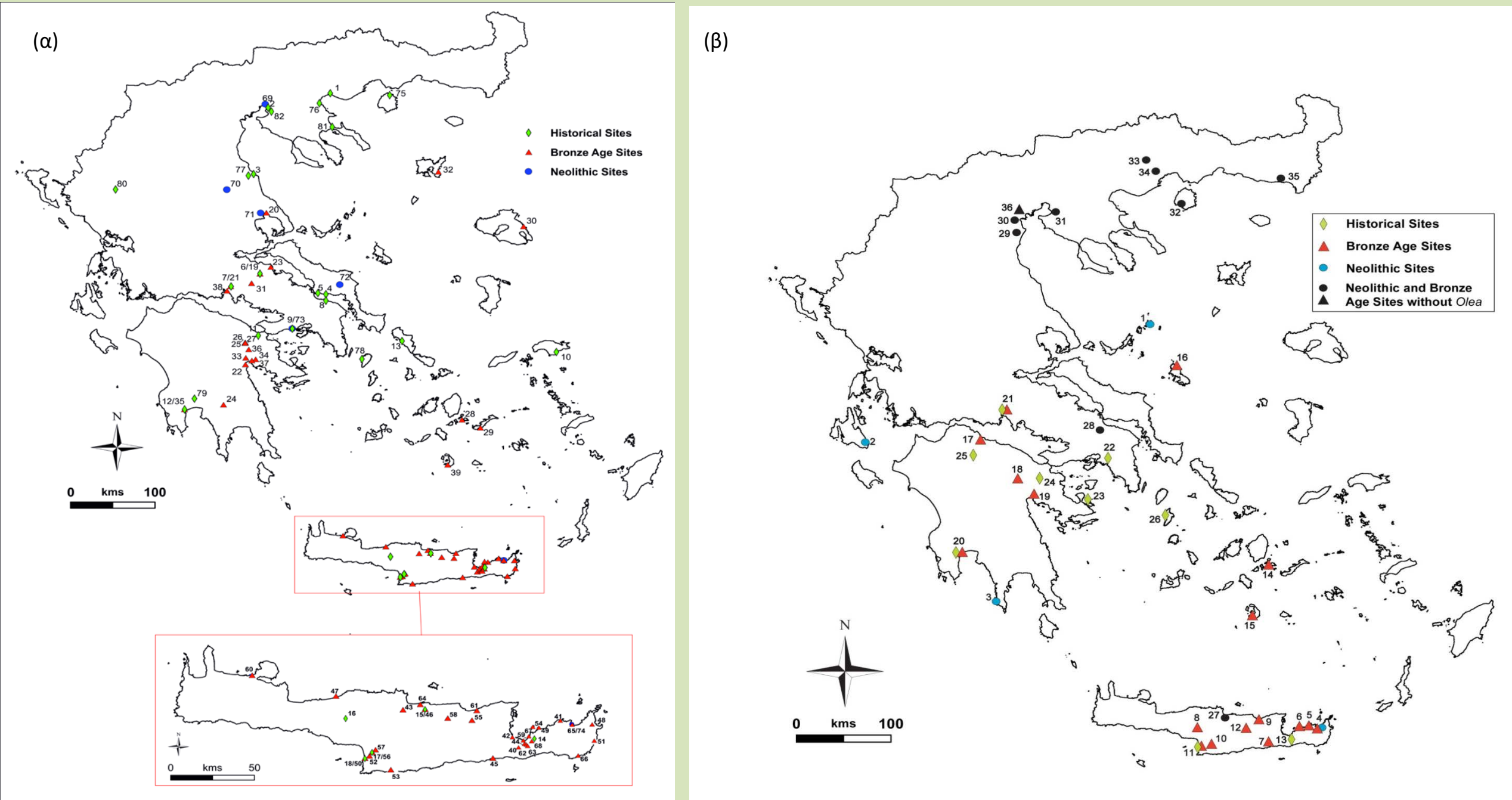
# The dynamics of olive cultivation in the context of Greek colonisation: an archaeobotanical investigation integrating old and new archaeobotanical evidence

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Olive and olive oil constitute important elements of prehistoric communities of the Eastern Mediterranean and the Aegean as, together with cereals and wine, they form the 'Mediterranean triad', later modified as a tetrad with the addition of pulses by Sarpaki. The olive forms, an essential element of what has been described by Renfrew as the Mediterranean polyculture. Olive cultivation has been considered as a decisive factor towards the emergence of Bronze Age elites either by a need for redistribution due to its ability to thrive in less fertile soils or by labour demands and ties to the cultivated land due to its late return in produce.



Maps showing distribution of olive stones (a) and olive charcoal (b) in the prehistoric Aegean and mainland Greece. Maps by (a) Kalliopé Efkleidou, (b) Guillermo Pascual Berlanga

Our mapping of the presence of olive stones shows that the olive is absent during most of the Neolithic. The neolithic finds from Thessaly and Stavroupoli in northern Greece correspond in all likelihood to intrusions and should really be dated for a Neolithic date to be convincing. Similarly, olive charcoal is absent from Neolithic sites in northern and central mainland Greece as far south as Boeotia. Both charcoal evidence, and sporadic finds of stones may point towards a rare presence of the olive only during the Late/Final Neolithic on sites such as Kephala-Petra on Crete, Alepotrypa Cave in the Peloponnese, Drakaina Cave on the island of Kephallonia, in the Ionian Sea, Skoteini Tharounion on Euboea and Cave of the Cyclops on the island of Youra in the Sporades.



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Charred olive stones from Late Iron Age/Archaic Toumba Thessalonikis (1) and Argilos (2) in northern Greece

## Conclusion

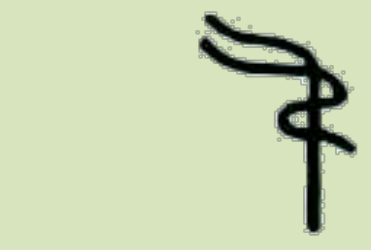
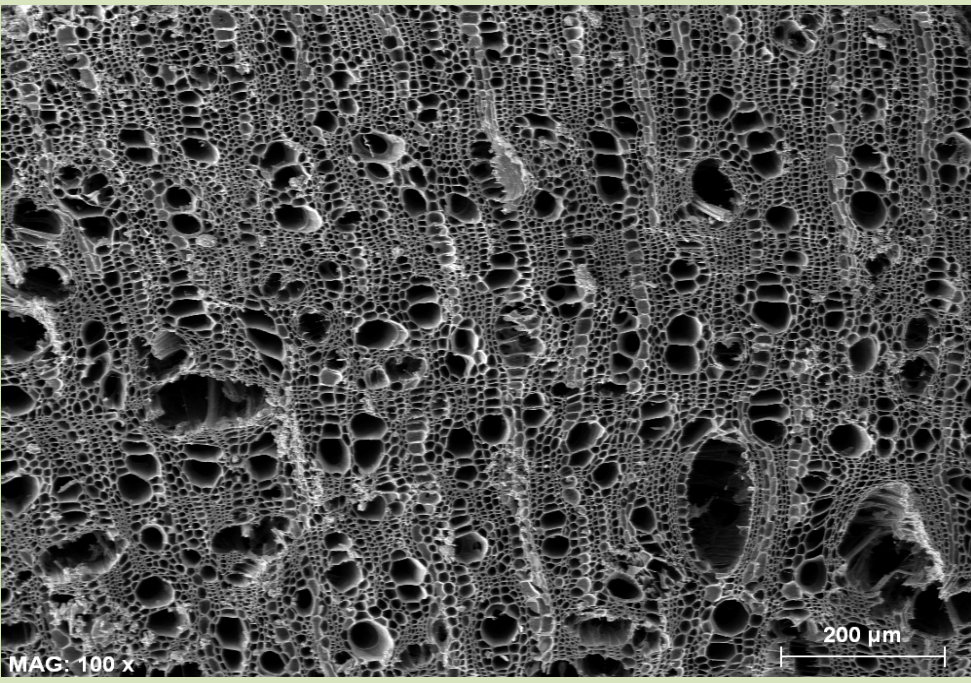
The available evidence considered here, both published and unpublished, points towards a northernmost limit of the olive during the Bronze Age leaving the north Aegean (the coasts of Macedonia and Thrace) outside this *Olea* culture. We strongly believe that the olive was introduced to the north Aegean coastal areas during the Iron Age based on limited finds of olive stones retrieved from such sites. The archaeobotanical evidence indicates that this introduction was the outcome of Greek colonisation by southern groups. Subsequent to this introduction, olive cultivation seems to take off by the 3rd century B.C. This increase of the visibility of olive stones and olive oil presses in the archaeobotanical record during the 4th and 3rd centuries B.C. indicate that olive oil acquires a great social and economic significance during those periods.



The olive tree has been a characteristic of Mediterranean landscapes in the recent past  
An old olive tree on the island of Crete, August 2008, photo SMV

Although many authorities consider the olive and olive oil as essential elements of Minoan and Mycenaean societies as a food ingredient, others have expressed serious reservations on this issue. Boulotis, Hamilakis and Fappas see hardly any or no evidence for the use of olive oil as food while, sometime before them, Runnels and Hansen have expressed reservations on a widespread culinary use of olive oil in the prehistoric Aegean, on the basis of the limited visibility of the olive in the archaeobotanical record from Greece. We are here presenting a thorough overview of the archaeobotanical evidence for the olive from the 7th millennium BC to the 2<sup>nd</sup>/1<sup>st</sup> century BC, exploring the beginnings and context of olive exploitation through time.

*Olea* charcoal from Drakaina Cave, Kephallonia, Ionian Islands, 5<sup>th</sup> millennium BC



Stirrup jar-potential oil container and Linear B ideogram for olive oil

Our overview of the archaeobotanical data for *Olea* (stones and charcoal) shows that during the Bronze Age the visibility of the olive increases dramatically in the Aegean, Crete and the Peloponnese in particular. Although this may be partly due to an increased number of Bronze Age sites excavated in the south, the absence of the olive in the north of Greece during the Neolithic cannot be considered the outcome of a sampling bias. The northernmost occurrence of the olive during the Bronze Age is situated in coastal Thessaly (LBA) and the northeast Aegean.

This is in agreement with artefactual evidence associated with olive exploitation within the context of the emergence of social stratification in the Bronze Age Aegean, in particular during the LBA, generating needs for olive oil and perfumes used in rituals and trade. As for the Late Bronze Age the Linear B texts leave no doubt that the olive was systematically grown and exploited both in its wild and cultivated form.



Within the framework of **ERC** project **PLANTCULT** funded by the European Research Council (ERC) under the European Union's Horizon 2020 Research and Innovation Program (Grant Agreement No 682529), we aim to explore further the spread of the olive across the Aegean, mainland Greece and the Ionian coasts and islands combining archaeobotanical and textual evidence. In this way we will be able to further test our hypothesis that for northern Greece, the olive corresponds to a new tree species, introduced in the context of ancient Greek colonisation leading to its subsequent establishment in the northern Greek coastal landscape.



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