Archaeological charcoal: natural or human impact on the vegetation

**Anthracological analysis of an Early PPNB roof from Tell Qarassa North (southern Syria)**

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**Summary:** This work presents the results of the analysis of wood charcoal remains from a roof found in Tell Qarassa North (Early PPNB), southern Syria. The analysis was carried out in 50 burnt beams found in situ, as well as in 3 flotation samples from the same structure and in a flotation sample retrieved from a post hole. The taxa selected to build up the roof were Pistacia terebinthus/palaestina, Salicaceae and to a lesser extent Amygdalus sp. The structure was composed at least of a post of Pistacia wood which supported a structure made of branches and medium size trunks orthogonally disposed. The wood structure was covered with non-woody plant parts and adobe layers. Abundant xylophagous galleries and fungi remains identified in the charcoal remains point to a deterioration of the wooden structure previous to its burning.

**Key words:** charcoal, Near East, roof, building technology, PPNB.

**INTRODUCTION**

During the Early PPNB significant changes in the building techniques were developed, among others the transformation from round to square shape houses or the stabilization of large-scale villages (e.g. Goring and Belfer, 2008, and references therein). In our study we will analyze an *in situ* burnt roof found in an Early PPNB context from the site of Tell Qarassa North and we will briefly characterize some of the building elements employed in its construction.

**FIGURE 1. Location map of Tell Qarassa North.**

Tell Qarassa North is located in the Leja basaltic plain, to the west of the Jebel el Arab mountain range, 20 km from the city of Sweida, southern Syria (Fig. 1), (Ibáñez et al., 2009, Ibáñez et al., 2010). Nowadays the climate in this region is arid to semi-arid, and the annual precipitation ranges from 250 mm in the north and southeast, to 530 mm in the central and upper parts. Tell Qarassa North is situated in a Mediterranean forest zone or Mediterranean island composed of a forest-like community of Pistacia atlantica-Amygdalus korschinskii and Quercus calliprinos-Crataegus azarolus. The site is formed by different spaces -up to 8- built up of basaltic stones, which can be considered as an aggregated habitat. So far, spaces 1 and 2 have been excavated. The roof here presented was found in space 1 (Fig. 2). The context has been dated to 8740-8470 cal BC, (Beta-290929, T. monococcum sp. charred seed).

**FIGURE 2. Excavation area of phase 2 of this zone, scale 1 m.**

**DATA AND RESULTS**

The roof was sampled after identifying archaeologically each trunk or branch, taking the corresponding diameters and measuring their plunge and trend when possible. Apart from this, 3 flotation samples were taken from the burnt roof in order to assess whether other wood species had also been used. A post-hole was also sampled and processed through flotation. The wood was identified using an incident light microscope, several atlases (among others Fahn et al., 1986; Schweingruber, 1990) and our own reference collection.

The identifications of the 50 beams indicate that the roof is mainly composed of Pistacia sp. (33 beams out of 50) which probably corresponds to *Pistacia terebinthus/palaestina* rather than *P. lentiscus* or *P.*
architectural features can be discerned. The presence of such details is indicative of a semi-permanent building structure, possibly reflecting a transitional period between mobile and sedentary lifestyles.

The analysis of the wood charcoal preserved in the burnt roof of the Early PPNB house Space 1 from Tell Qarassa North (Syria) gives us significant data on building techniques during this period and on the selection of plant raw materials for this purpose. In Tell Qarassa North the roof was supported at least by a post of *Pistacia terebinthus/palaestina* wood. The roof itself was composed of beams and small branches of *Pistacia terebinthus/palaestina*, Salicaceae and *Amygdalus* sp. disposed orthogonally and it was covered by straw and adobe layers. The high state of deterioration in most of the wooden elements as well as in the adobe layers could have led to an intentional burning of the structure maybe within a practical cycle of renovation, rebuilding and structural repair of the dwelling.

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REFERENCES


