

Vegetal roofs analysis from *Las Paleras* fortification. Human impact during IX-Xth centuries AD (Alhama de Murcia, Spain)

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Summary: *Las Paleras* site preserves several vegetal roofs collapsed above the occupation levels from many rooms. Thanks to a thorough excavation of these layers, a large number of dendrological remains have been recovered. First charcoal analysis results show a low diversity of species used for the construction of these roofs, focused mainly on *Pistacia lentiscus*.

Key words: *Alhama de Murcia*, charcoal analysis, dendrology, human impact, *Pistacia lentiscus*.

INTRODUCTION

Las Paleras site is located on the top of Cerro del Castillo hill at 368 m high overlooking the present town of Alhama de Murcia. (Ramírez and Baños, 2004; Baños and Ramírez, 2005; Baños, 2006).

Since April 2010 it has started a systematic collection of archaeobotanical samples at the site of *Las Paleras*. The aim is to obtain data of forest exploitation and ethnological knowledge from IX-X centuries AD.

The fortress area has been excavated much of the compound. This area is currently expanding with the emergence of a new housing area. For now, here are the first results of E8 and E26 rooms.



FIGURE 1. Room E26. Example of vegetal ceiling collapsed above occupation levels (see the darker spots). The remains consist of small-caliber branches (*M. Celma*).

DATA AND RESULTS

The *taxa* determined for Cerro de las Paleras site are: *Pistacia lentiscus*, *Pinus nigra*, *Punica granatum*, *Teucrium* sp. and other herbs like *Stipa tenacissima* (Schweingruber, 1990; Schweingruber *et al.*, 2006).

The most interesting result is specific *P. lentiscus* study. It offers information about vegetal roofs construction. Transverse section shows acquisition of

this woody plant in the beginning of spring. The branches measure from 15 to 40 mm of diameter. The maturity of the wood used is variable, from 3 to 25 years old, indicating a selection of young shoots to lighten the roofs.

At the moment, laboratory excavation and dendrological remains determination are still on. It will be completed during next months.

DISCUSSION

There are no so many sites from this chronological period with archaeobotanical analysis done. It is needed to increase the remains from different archaeological sites to compare uses and forest exploitation forms. Does political change mean different exploitation forms in medieval times?

On the other hand, exhaustive and individualized analysis of the samples offers new data of local ecological changes.

CONCLUSIONS

Quite often, collapsed levels are not excavated properly. Sometimes these layers are containing the best remains for dendrological analysis to determine which woody plants were used for construction. In this case is presented an example of revaluation of its importance in a site with low sediments for occupation layers (20 to 70 cm). *Las Paleras* charcoal study is an opportunity to know the environment and vegetation for Sangonera valley during IX-Xth centuries AD. The next results will provide a pattern of forest exploitation and the specific use of wood in different rooms of the site.

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