

The Romans, the wood and the forest: state of the art and new data from the Vesuvius area (Naples, Italy)

Daniela Moser^{1,2,3}, Oliver Nelle^{2,1} and Gaetano Di Pasquale³

1 Graduate School "Human Development in Landscapes", Christian-Albrechts-Universität, 24118 Kiel, Germany; dmoser@gshdl.uni-kiel.de

2 Institute for Ecosystem Research, Palaeoecology, Christian-Albrechts-Universität, 24118 Kiel, Germany; onelle@ecology.uni-kiel.de

3 Lab of Vegetation History and Wood Anatomy, Università degli Studi di Napoli Federico II, 80055 Napoli, Italy; gaetano.dipasquale@unina.it

Summary: *The Vesuvius area (Naples, Italy) is one of the richest regions in archaeological findings of the Roman Age. A huge quantity of vegetal material was preserved by the 79 AD eruption. Unfortunately, because of the early beginning of the archaeological investigation in this area, huge parts of the archaeobotanical remains are now completely destroyed and not available any more for modern research. Nevertheless, the analysis of the last charred and wooden remains of structural elements from Herculaneum and from the Poppaea's Villa at Oplontis is started. Silver fir and cypress are the most used taxa. The identification of these trees, together with other taxa as chestnut and walnut, gives us new information about these outstanding trees in this part of the Italian peninsula and allows us to better understand the use of wood and the utilization of forest resources during Roman times. This will also contribute to the reconstruction of the ancient landscape of this region of the Roman Empire.*

Key words: charcoal analysis, *Abies alba*, *Cupressus sempervirens*, Herculaneum, ancient landscape

INTRODUCTION

The area surrounding the Vesuvius volcano, with its famous cities of *Pompeii*, *Herculaneum* and *Neapolis* and its numerous villas, was one of the most important and vital places of the Roman Empire. The 79 AD eruption allowed the preservation of entire cities and villas, giving to the posterity the possibility to investigate every aspect of the social and economic life and of the artistic and architectural production. The eruption allowed also the preservation of the vegetal material: timber used for structures, garden plants, remains of meals and stored foodstuffs were found in huge quantities since the first excavations.

STATE OF THE ART: ARCHAEOBOTANICAL RESEARCH IN THE VESUVIUS AREA

Unfortunately, the aim of the researches in this area that started in 1738 with a first investigation in *Herculaneum* was to bring to light the precious artistic objects found in the villas and not to understand the material culture of the daily life. Because of this approach, and because of the scant attention paid both by the classical archaeologists and the Italian botanists and ecologists to the archaeobotanical findings, the most part of the vegetal remains discovered during these first investigations were not studied in a systematic way and not published. Up to now, although on the one hand pollen analysis was applied in several contexts (e.g. Mariotti Lippi, 2000) together with carpological investigation (e.g. Ciaraldi and Richardson, 2000), on the other hand the studies of charcoal and wood remains are not widely applied yet. The few available data mostly concern the archaeological contexts investigated by Jashemski (1979), together with unsystematic

research carried out in *Herculaneum* and in *Pompeii* (e.g. Mols, 2002). Thus, the big amount of vegetal material found by the several investigations taken up during the last 250 years in the most important archaeological contexts of the Roman world, is today almost completely lost or destroyed and risks to be unavailable any more for modern research. However, it is important to mention that the Vesuvius area still today is the richest place concerning archaeological wood, constituting a unique chance to analyze the use and technology of wood during the Roman Age and to reconstruct the past landscape of this important region.

HERCULANEUM AND OPLONTIS: NEW DATA

In this perspective, a PhD project is started, in the range of a wider work aimed to analyze all the evidence of the use of this material in the Vesuvius area. The investigation regards different archaeological contexts: from the so-called "Villa of Augustus" at Somma Vesuviana and the bath complex at Pollena Trocchia (Di Pasquale *et al.*, 2010) both on the northern slope of the Vesuvius, to the shipwrecks found in the *Neapolis* harbor (Allevato *et al.*, 2010). In this paper we present the first new data from the analysis of the charred and wooden structures of the Poppaea's Villa at *Oplontis* and of *Herculaneum*.

MATERIALS AND METHODS

The methodology has envisaged the sampling of all the wooden and charred elements pertinent to the structures, and the furniture still present in the two archaeological contexts. The taxonomic determinations have been made with a stereo lens (magnification 7.5-112.5x) and an incident light microscope (100x, 200x and 500x), using wood anatomy atlases and reference collections of wood.

RESULTS AND DISCUSSION

The two main *taxa* used in the Poppaea's Villa are *Cupressus sempervirens* and *Abies*, indicating the preference of coniferous wood for building. This situation is confirmed by the analysis of the charred structures at *Herculaneum*, where *Abies* is the most represented *taxon*, followed by *Cupressus sempervirens*. *Castanea sativa* and *Juglans regia* are also present. The results are very interesting since they give us information about the history and the use of some outstanding trees of this part of the Italian peninsula during the Roman Age. Regarding the two main *taxa*, of great interest is the attestation of *Abies* at both sites. Based on the morphological features of the wood it is not possible to distinguish between the different species of the genus *Abies*, nevertheless the attribution of our fragments to *A. alba* seems the most reliable due to the wider distribution of this species in the Italian peninsula. Silver fir is frequently found in archaeological sites of the Mediterranean Italy dated to Roman times. Nowadays in Italy *Abies alba* is common on the Alpine chain and, with scattered small populations, along the whole southern Apennine chain above 800 m asl. The nearest population to our study area is located at about 70 km from Mount Vesuvius. The archaeobotanical data available for ancient Campania seem to prove, instead, a wider diffusion of fir during the Roman time and to ascribe its decline to the forest exploitation for timber (Quézel and Médail, 2003). Pollen data from the Sele basin area (60 km south of Naples), moreover, show the fir decline only at the end of the Medieval Age (Russo Ermolli and Di Pasquale, 2002). The whole set of these data is in contrast with the hypothesis of an Alpine provenance of the fir timber found at *Herculaneum* and *Pompeii* (Kuniholm, 2002). Also the identification of cypress timber is interesting. Cypress has probably been cultivated on the Italian peninsula since the Etruscan times (Quézel and Médail, 2003) and gradually it has become a key element of the cultural landscape of Mediterranean Italy, assuming during the Roman Age a strong symbolic-ritual value (Meiggs, 1982). Anyway, cypress had also a certain economic significance: this plant was also used in woodworking and as building timber, as the archaeobotanical data available for ancient Campania, and in particular for *Oplontis* and *Herculaneum*, clearly show. Chestnut and walnut wood was used as building timber. Together with other evidence available for ancient Campania (Di Pasquale *et al.*, 2010), these results suggest a not exclusive cultivation of these trees for their fruit during the Roman Age, as it is commonly thought. Most probably in this area Romans exploited small forests of chestnut present *in loco* for the timber, and the diffusion of this tree on a large scale took place only from the 5th – 6th century AD when the big interest on its fruit started.

CONCLUSIONS

The analysis shows the prevalent use of coniferous wood for building. Among conifers *Abies*, probably *A. alba*, and *Cupressus sempervirens* are the predominant

taxa. The massive use of silver fir timber in building is probably the main cause of its almost total disappearance from the forests of southern Italy. Regarding cypress, we can hypothesize its cultivation for timber production. Finally the data can indicate the good level of knowledge in wood use and technology reached by the Romans.

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