

## **Environmental change and human activities at the Travo Neolithic site (Val Trebbia, Northern Italy): geoarchaeological aspects.**

Luca Trombino (1), Sara Pescio (1), Alain Beeching (2), Maria Bernabò Brea (3), Maria Maffi (4), Marco Marchesini (5), and Mauro Mele (1)

(1) University of Milano, Earth Sciences Department, Milano, Italy, (2) Retired from University of Lyon 2, Lyon, France, (3) Retired from Soprintendenza Archeologia PC-PR, Parma, Italy, (4) Museo e Parco Archeologico di Travo (PC), Italy, (5) Palynology and Archaeobotany Laboratory, C.A.A., Bologna, Italy

The valley of the Trebbia river (Val Trebbia, Northern Italy) constitutes a natural connection between the Ligurian Coast and the Po Plain; for this reason, the valley was intensively settled since prehistory, towards Roman and Middle Age times, as attested by several archeological evidences.

The Travo S. Andrea archeological site is located in the middle Val Trebbia, on a Late Pleistocene - Holocene fluvial terrace. The site, dating back to the Neolithic Age (V - IV millennium B.C.), was discovered in 1983 and it is excavated every year during the summer field season, since 1995.

The settlement was about one hectare sized and the evidences, discovered over time in the site, testify the presence of a Neolithic village, which was composed of different functional areas. The huts are located in the eastern zone, near the Trebbia river, while a concentration of pits is present in the surrounding area; the north-west part of the site is occupied by more than twenty hearths. The Neolithic remains are always enclosed in a dark clayey archaeological deposit that overlays the terrace gravels (and the related reddish-brown soil), while the Neolithic structures are covered by a colluvial slope waste deposit, whose thickness increase slope-ward.

The Neolithic village was settled on the surface of a fluvial terrace, characterized by geological stability and abundant plant cover. Humans occupied the site for at least 500 years, in fact radiocarbon dating testify that the site was occupied from the 4300 B.C. to the 3800 B.C. and then definitively abandoned. Moreover, geoarchaeological studies on the Neolithic traces and materials, geopedological and micromorphological analyses on samples collected in the excavation area and geochemical analyses on the fire structures, allowed to reconstruct the village structure and some aspects of the human behavior in the occupation period.

The investigation of the area surrounding the settlement, carried out by means of the excavation of several trenches and the geoarchaeological, geopedological, palynological and malacological characterization of their stratigraphic sections, together with geo-electrical prospections, allowed to characterize the human influence out of the village (probably related to installations displacement from the original settlement or to agricultural practices), testified by the presence of the Neolithic layer in the area North of the village. During the occupation times, the need to obtain clear areas near the settlement and/or an increase in the wooden resource exploitation could be the reasons of a strong tree removal from the mountainside: charcoal layers present in the trenches could be linked to the above-mentioned clearance activity (i.e. slash and burn practice). This aspect could assume a critical role in the explanation of the site abandonment: in fact, tree removal causes loss of stability on slopes; the human influence together with climatic deterioration events (well known during the Holocene) could be responsible for provoking colluvial events that buried the Neolithic layers. Weak stability of the surrounding terrains (that probably influenced negatively the agricultural practices, too) and an excessive wooden resource exploitation could be thus responsible for the village abandonment.