Geophysical Research Abstracts
Vol. 18, EGU2016-17190, 2016
EGU General Assembly 2016
© Author(s) 2016. CC Attribution 3.0 License.

Environmental change and human occupation in the floodplain area of Balta Ialomiţei. The case study of Bordușani Popină Chalcolithic tell settlement

Constantin Haita (1), Dragomir Nicolae Popovici (1), and Cristian Panaiotu (2)

(1) National Museum of Romania History, Bucharest, Romania (c_haita@yahoo.com), (2) University of Bucharest, Bucharest, Romania (cristian.panaiotu@gmail.com)

The floodplain area of Balta Ialomiței, between Călărași and Giurgeni, delimited by Borcea River and Danube is formed by an anostomosing system, up to 13 km wide and 70 km long; this zone has a particular important evolution in Holocene for the alluvial system and associated environment.
The Chalcolithic occupation in southern and eastern Romania is marked by the development of tell type settlements along the Danube and its main tributaries, chronologically attributed to Gumelnița culture, Vth millenium BC, one of the most important civilisation in the Lower Danube zone.
In this area, the most representative settlements are: Borduşani Popină, Hârşova tell and Popina Blagodeasca, situated either on erosional remnants from terraces ("popine") or on the edge of the lower terrace.
Bordușani Popină is located inside the floodplain zone, on a remnant separated from the lower terrace of Borcea River, in Romanian Plain. On this site, a pluridisciplinary research program allowed the investigation of Chalcolithic occupation in terms of archaeological, geomorphological, archaeozoological, archaeobotanical and petrographical point of view.
The Chalcolithic occupation is represented by successive levels of dwellings, destroyed by fire and also unburned; their stratigraphic relationships, together with the presence of passageways and domestic waste areas, revealed an organised internal space.
In Balta Ialomiței meadow area, a paleoenvironmental research was iniatiated with a Cobra TT percussion corer in five important locations, on a West-East alignament. The bulk samples were investigated for grainsize, clay mineralogy and magnetic susceptibility. This study was completed with the micromorphology analysis on undisturbed samples of the sedimentary succession from a tubed core located in the eastern vecinity of the tell.
Our results show important environmental changes in the period from Chalcolithic to Iron Age and Middle Ages. The analysed sequence, from the Chalcolithic period to the present, reach up to 10 m of alluvial deposits, as reflected by 14C dating on wood samples from core sediments, corresponds to episodes with frequent and repeated floods, and documents different sedimentary ambiances.
Regarding the influence of anthropogenic occupation, the two important moments of living in this area, corresponding to the Chalcolithic and Iron Age, are marked by the presence of anthropogenic inclusions, reworked in natural sediments. This information is correlated very well with the values of the magnetic susceptibility curve which major changes marks these two periods. In the case of Chalcolithic habitation, it was identified a millimeter thick lamina of ash with burned clay grains, associated with frequent fine charcoal and phytolites very likely of Graminee type. This may correspond to a secondary accumulation in relation with a structure for the preparation of cereals.
Our study emphasized that the correlation of archeological, sedimentological and micromorphological data allow the reconstruction of the main stratigraphic sequences, sedimentary and anthropogenic, in this significant area for Danube upper Holocene development.