



Climatic and environmental conditions favoring the crossing of the Carpathians by early Neolithic populations

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The study of the origin and spread of Neolithic has been the subject of heated debate since the early studies of Childe (1942). To what extent the dispersal process was influenced by environmental factors is still debated, one of the issues being whether climatic conditions influencing agricultural practices, could have influenced the dispersal route, “blocking” some of the Neolithic societies in front of ecological barriers. Data from Neolithic sites in SE Europe shows that a continuous stream of people and cultures flowed through the Danube’s Iron Gates towards Central Europe, while in the eastern part of Europe this process was delayed, people and cultures “moving” around the Carpathians and crossing them with a delay of ca. 1000 years. One of the possible avenues for this crossing is the floodplain of Someşu Mic River (Transylvanian depression), home to the oldest (~8500 cal. BP) Neolithic settlement in Romania.

In this paper, we review the climatic and environmental changes that affected the region at the time of Neolithic dispersal. Pollen and stable isotopes in cave ice indicate an early Holocene rapid warming during summer months, peaking around 7 ka cal. BP; and a delayed warming for autumn and winter months, peaking at 5 ka cal. BP, both followed by a continuous cooling trend towards the present. Someşu Mic River developed and maintained a narrow sinuous channel during the Holocene, with local development of meanders and anabranches, in response to both climatic and geologic controlling factors. Archaeological finds in the floodplain and the lower terraces suggest that human societies in the region responded in sensitive manner to these climatic and environmental changes. During warm and dry periods, with low fluvial activity, the number of settlements increased in the floodplain’s perimeter, while during the short cold and humid periods, the number of settlements rapidly increased on the lower terraces and on the valley slopes, disappearing from the flooded valley bottom and flash-flood prone alluvial fans.

Our results suggest that once reaching the foothills of the Carpathian Mts., early Neolithic communities encountered a forested landscape and rather than clearing it for agriculture, they have moved along the middle Danube towards Pannonia and Central Europe, as well as along the lower reaches of the Danube’s tributaries, following the most suitable and easily accessible terrain for agriculture practices.