



A palaeochannel evolution history from Vörös Marsh in Danube alluvial plain in the southern part of Hungary

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An infilled palaeochannel at Vörös Marsh (46°26' 07,86" N, 19°10'41,23" E) near Császártöltés village in the alluvial Danube plain on the southern part of the Great Hungarian Plain was investigated by chronological, palaeoecological methods. This palaeochannel had remained an affected by river regulation, peat mining and dredging operation of the 19th and 20th centuries. It was thus possible to conduct environmental history analyses based on the sediment deposited in the infilled palaeochannel. The marshland covered the surface of a special some kilometres long palaeochannel. Peat cores were retrieved using a 5 cm diameter Russian corer. On the undisturbed rest part of the marsh surface five boreholes were placed along a geological cross-section. Borehole CSII was gained from the deepest part of the basin and was used for malacological, pollen analytical, macrobotanical, geochemical and radiocarbon analysis. The radiocarbon and palaeoecological data suggest that the analysed filled up palaeochannel cut down from active river system of Danube under one of the neotectonic subsidence processes thus a long, uncommon oxbow lake developed at the transition phase of Pleistocene/Holocene boundary, between 13.000-11.000 uncal BP years. This long canal-like oxbow lake filled up during Holocene period. The environmental analyses allow the reconstruction of the following development sequence in the studied basin and its broader environs. Phase 1: Late Glacial riparian stage. The bottom sediment of the cores was fine sand rich in muscovite and very small gravels. This base fluvial sand accumulated until 11.000 uncal BP year. After the deposition of the coarse grained sandy riverbed, the palaeochannel (spillstream) separated from the river Danube. Phase 2: Early Holocene mesotrophic oxbow lake stage, the greenish

grey silt-rich lake sediment accumulated in the cutting channel. Phase 3: From 5800 uncal BP a peat layer developed in the palaeochannel. Peat accumulation started in every part of the channel and the vegetation of the channel became uniform. The occurrence of marsh fern remains suggests the presence of floating reed swamps in the deeper part of the basin. This fossil plant association is very poor in species. Reed swamp covered the entire basin until end of the Middle Age.