Stratigraphy of habitation deposits and fire history of the early medieval town Dzhankent (Kazakhstan, Eastern Aral region)

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Anthropogenic soils and soil-sedimentary systems (cultural layer, occupation deposit) in settlement archaeological settings are highly valuable and underappreciated archives of past environments, land-use activities, and life cycles within past residential areas. This study is aimed to reconstruct fire history for the early medieval town of Dzhankent located in Eastern Aral region, Kazakhstan as based on the C14 dated stratigraphy, morphology and micromorphology, data on charcoal morphology, C:N and C13 isotope records.

Several sections of cultural layers were studied within excavated areas. Stratigraphic units were thoroughly C14 dated (58 dates). Most 14C dates are between the 7th and 10th centuries, and most of the dates have overlapping intervals of calibrated age although clear up-section trends from older to younger ages may be seen. This demonstrates the slow, progressive accumulation of occupation deposits. The analysed excavation sections are very well stratified. Stratigraphic units based on char-enriched marker beds could sometimes be traced for long distances. Char enriched layers contain enormous quantities of both grass and wood charcoals. Thin, about 1 m long lenses of ash and charcoals of poor and unified taxonomic variety are thought to be fireplaces. Extended thick char-enriched layers (about 10 meters long and 0.1 m thick), well stratified at macro-, and micro-levels, with sub-parallel oriented charcoals of highly variable taxonomic compositions considered to be traces of big fires. Three fire events were detected based on the stratigraphy, morphology, charcoal amounts, C, N and C13 isotope depth variability.

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