

## **Geochemical features of Bükk pottery and local sediments (with special regard to fineware)**

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In the frame of the current MÖB-DAAD project archaeological Bükk fineware pottery and comparable local sediments were collected and geochemically analysed from the core of the habitation area of this culture, comprising NW Hungary. Our overall aim of the project was to reconsider the distribution map of the Bükk Culture fineware by scientific investigations and to understand better the civilisations that produce these archaeological objects. We tried to establish this by determining and evaluating chemical characteristics, which specifically describe the Bükk Culture fineware.

Detailed archaeometrical (petrominerological and geochemical) investigation could provide help to decide whether geographically distinct occurrences of Bükk fineware with the same quality, shapes and decorations derived from a certain location (their raw material was the same) or whether the knowledge of the handcraft persons was adapted in another cultural region using the local raw materials.

Pottery samples were selected from the collection of the Herman Ottó Museum, Miskolc and the Hungarian National Museum, Budapest, from 10 important settlements of the Bükk culture, altogether some 100 sherds. Field survey with hand boring was applied to collect soil / clay samples from the environs of the sites. The sediments were described in detail and burnt under controlled conditions for better comparison with the sherds. Geochemical investigations were made partly in Budapest (PGAA) and mainly in Tübingen by WD-XRF techniques. This latter technique provides geochemical information by the analysis of 10 major and 17 trace element concentrations.

Several factors may hamper the attempt to characterise pottery geochemically and compare it to potential raw materials. The first factors are temper and levigation, the second burial diagenesis and alteration and the third petrography, as two chemically identical samples may be completely different from a petrographical point of view. So the general question arises, how helpful element concentration data can be, to solve the questions given above. The data we present now on Bükk pottery and potential soil materials show, that obviously a general geochemical fingerprint that applies to all Bükk fineware samples does not exist. The overall scatter is too high and the Bükk sherds are geochemically too heterogeneous to fingerprint them with element concentration measurements and clearly distinguish Bükk fineware pottery from other (contemporary) pottery.

However, at a specific site or in geographically restricted areas geochemical information can be very helpful to distinguish sherds, but also to evaluate soil data and to find possible raw materials, e.g. soils and clays (e.g. Garadna, Sajószentpéter, where soil and sherds are very similar – or Boldogkőváralja and Bodrogkeresztúr, where they are different). This applies particularly to trace element data of immobile elements. We present a summary of more than 100 geochemical measurements on Bükk sherds and potential raw materials.