

MINERALOGICAL AND PETROGRAPHICAL STUDY OF CELTIC HOUSEHOLD CERAMIC FROM BRATISLAVA`S OPPIDUM (SLOVAKIA)

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Twenty-five fragments of Celtic household ceramics, such as pots, bowls and tripods, excavated from various archaeological sites in Bratislava were studied by polarized light optical microscopy (OM), X-ray powder diffraction (PXRD) and scanning electron microscopy (SEM).

Macroscopically, the shards were divided into thin-walled (6 mm thickness) and thick-walled ceramics (12 mm). The thin-walled shards have a red-colored ceramic body, with the surface decorated with red paintings, while the thick-walled shards are usually black or grayish, only occasionally exhibiting carved surface. Granulometric analyses according to Ionescu & Ghergari (2002) show that thin-walled shards belong to semi fine and fine categories, whereas the thick-walled shards belong to the coarse ceramic. PXRD and optical microscopy reveals details on the mineralogical composition of the ceramic body as well as the thermal changes due to the firing. The ceramic body consists of a thermally transformed clay matrix in which various temper grains occur. The temper consists of quartz, feldspars, micas and rock fragments, e.g. biotitic and sillimanite-gneisses with graphite. Additionally, the thick-walled ceramics contains a large amount of graphite.

The matrix structure and the distribution of temper indicate a possible style of shaping the vessels (Roux & Courty, 1998; Ionescu & Ghergari, 2002). Consequently, the thin-walled ceramics were wheel-thrown on potter's wheel, while the thick-walled ceramics was probably made by slab building technique and also characteristic structures belonging to the wheel-fashioning methods of creating the vessel were observed. Based on the thermal changes of the mineral phases as noticed in thin section and the changes of the XRD patterns, compared with references data (Velde & Druc, 1999; Cultrone et al., 2001), we can estimate that the firing temperature reached 600 °C and 800 – 900 °C for the thin-walled ceramics, and maximum 900 °C for the thick-walled ceramic respectively.

As the thin-walled ceramics does not contain large temper grains, we presume that it was obtained from washed clays but there is no way to indicate the geological source of it. In the case of the thick-walled ceramics, the graphite temper could originate from the southern part of Bohemia, where graphite deposits occur (Tichý & Voda, 1983). Additionally, in the ceramic shards, in thin sections, metamorphic fragments similar to those found in the surroundings of the graphite deposits were identified as well.