MINERALOGICAL AND PETROGRAPHIC CHARACTERISTICS OF THE XVIITH CENTURY CERAMIC WARE FOUND IN THE ORADEA FORTRESS (ROMANIA)

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In the Medieval fortress of Oradea (west Romania) a high number of Medieval archaeological objects were exhumed during the 2001 archaeological campaign. From these, the beautiful glazed ceramic ware, archaeologically dated at the XVIIth century, was studied from mineralogical, petrographic and technological point of view. Macroscopically, the recovered material represents either whole household pots or fragments, in general with the surface covered by coloured glaze. From macroscopical point of view, the ceramic fragments can be divided into two categories: type A ceramics, with zoned distribution of colours, i.e. a reddish external part and a more brownish-blackish internal part, reflecting the variable firing atmosphere, from reducing to oxidizing one and type B ceramics, of homogeneous creamy colour, mirroring a constant, oxidizing, firing atmosphere and Fe-poor raw materials.

Type A ceramics can be classified mainly as coarse one, with a significant contribution of inclusions larger than 0.05 mm. Some vessels show a fine to semifine character. Mineralogically, the composition of the ceramic fragments is quite similar, for all categories of fineness. In the mainly sintered, slightly vitrified matrix, with microcrystalline-amorphous texture, various clasts occur. The crystalloclasts are quartz, plagioclase and alkaline feldspars, micas, and heavy minerals fragments, the lithoclasts are quartzites, gneisses, micaschists, granites, granodiorites, andesites, volcanic glass, sandstones, limestones, and silicastones fragments. The potsherds (ceramoclasts) are rare. The porosity is relatively low, with irregular-shaped pores, often filled in with glass. The arrangement of the mica lamellae as well of the pores in rows parallel to the surface is ubiquitous. This oriented structure is mainly due to the modelling of the ware at the potter's wheel. The ceramic body is covered by glaze, a brown glassy mass, with a high refractive index, containing probably Pb-based pigments. Based on the alteration of both the microscopical features and some XRD lines compared with literature data (SHEPARD, 1976; VELDE & DRUC, 1999 *etc.*), we presumed a high firing temperature between 850 and 900 °C for type A ceramics. Most likely, illitic-kaolinitic clays with some calcite content were used as raw materials.

Type B ceramics has mainly semifine and only subordinately coarse character. The ceramic body is composed, microscopically, from a high amount (up to 70%) of transparent, slightly brownish microcrystalline-vitreous matrix and a lower amount of clasts (maximum 30%). The matrix contains high amounts of newly formed glass, as a result of the high temperature of firing. Quartz, feldspars, micas and heavy minerals fragments form the crystalloclasts, while quartzites, gneisses, quartzitic-biotitic schists, granodiorites, rhyolites, dacites, andesites, silicastones, sandstones and clays form the lithoclasts. The porosity is relatively high and is represented mainly by primary, elongated pores. The structure of the ceramic body is clearly oriented, with both lamellae and pores arranged in parallel rows to the surface of the ceramic wall, result of the potter's wheel modelling. The firing products are represented by the high amount of glass, the sintering of the clayish matrix, and the forming of mullite. Based on the thermal alteration processes noticed in thin sections and X-ray diffractograms, we inferred a high temperature of firing, in the range of 900 to 1000°C. For Type B ceramics most likely kaolinitic-illitic clay was used as raw material.

This study was financially supported by the Romanian Ministry of Education and Research (Grant 1762/2005).

References

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