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Site Bajč (Slovakia) – bonanza of the Neolithic polished stone artefacts

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Site Bajč – Medzi kanálmi (Nové Zámky district) belongs to unique ones with an extremely high number of stone artefacts found there. Evaluation of a pottery assemblage dates it into the Želiezovce group and polished industry documents the period of the terminal Middle-Neolithic.

In the site from the 3rd stage of the Želiezovce group in Bajč numerous chipped and polished stone industry has been excavated together with various artefacts made of clay, bone and antler. These are representing a full spectrum of raw materials revealed at the site under archaeological investigation – the entire assemblage of the polished stone finds from Bajč contains 289 pieces. But these are only a known part of unknown bulk of polished stone production in Bajč.

From the typological point of view they are flat axe, flat triangle shaped axe, flat shoe-last axe, flat trapezoid axe, shoe-last wedge, crusher, globular maceheads, hammer-axe, grinder, chisel and semiproduct. As far as typology is concerned, two types are predominating in the polished stone industry assemblage in Bajč – a various types flat axes (trapezoid, shoe-last, triangle shaped) and shoe-last wedges.

The great number of polished stone artefacts, namely flat axes and shoe-last chisels, had to be made of raw material from more distant regions. From the archaeological point of view the petrographic analysis can help to define regions of Bajč raw materials primary sources occurrence and by this way to confirm or extend regions with which cultural relations are documented by pottery imports.

Raw material

The polished industry from Bajč was made of following kinds of raw materials: metamorphic rocks (greenschists, amphibolites, leptynites and serpentinites), igneous rocks (basalts, andesites and volcaniclastics) and sedimentary rocks (sandstones and limestones).

Metamorphic rocks

Metamorphic rocks represent substantial part of the raw materials of the polished industry from site Bajč. It

reflect physical properties, which fundamentally differ even within this rock group. Their basic characteristics are as follows.

Greenschist

Greenschists (273 pieces) are the most often used raw material type used for the polished implements construction on site Bajč. In prevailing cases they are represented by amphibole schists, biotite-amphibole schists and spinel-hornblende-anthophyllite schists.

Amphibole schists (150 pieces) are mostly very fine-grained rocks with well developed foliation. In this type of the greenschist green pleochroic monoclinic amphibole is dominant. According to the albite morphology and size the artefacts studied they should be divided into: a) equal grained types, and b) porphyroblastic types with albite porphyroblasts. Namely types quoted as a) gradually pass into monomineral varieties composed mostly of amphiboles. In all thin sections studied fine-grained magnetite pigment cause dark colour of the given rock-types.

Biotite-amphibole schists (71 pieces) are represented by fine-grained and in the majority of cases also schistose rocks. As the consequence of intensive periplutonic alterations feldspars are replaced by the sericite aggregates. Intensive biotitization is characteristic for the majority of them, which causes dominant image of the given rocks – they are spotted.

Spinel-hornblende-anthophyllite schists (52 pieces) have pronouncedly schistose fabric. Greenschists under consideration are mostly of darkgrey colour. The prevailing rock-forming mineral is anthophyllite. In the given rock type variable proportion of hornblende (tremolite, anthophyllite, actinolite) and grass-green spinel has been observed. Green spinel forms clusters or individual xenoblastic crystals spread over areas of rectangular shape, e. g. spinel is one of pseudomorphic phases after orthopyroxenes. Locally observed felty fabric of needle-like anthophyllite aggregates allow to classify rocks under consideration as nephritoids (Illášová and Hovorka 1995, Hovorka et al. 1997).

Serpentinite

From the serpentinite two hammer-axes and one globular macehead have been identified. Artefacts made from serpentinite are either light-green with black nests of ore minerals, or darkgrey with irregular nests of rusty-brown carbonates. They are of massive fabric, in thin section there is observable local foliation of antigorite flakes. Rock under discussion are anchimonomineral. Except of strongly prevailing antigorite they contains magnetite pigment and Mg-Fe carbonates. Generally this rock type corresponds to antigorite serpentinite described in paper by Hovorka and Illášová (1996).

Amphibolite

Amphibolite as the raw material has been identified in the case of two polished stone artefacts: one shoe-last wedge and one flat triangle shaped axe. Amphibolite represents fine-grained rock-types mostly with well developed foliation. It is composed of two minerals: amphibole and plagioclase. Pronouncedly dominant presence of amphibole in several cases allow as to classify such types as melamphibolites. Plagioclases of the given rock types often recrystallized into fine-grained aggregate of saussurite character.

Leptynite

From the leptynite only one hammer-axe has been identified. Leptynites represent rocks of high-grade metamorphic origin. They are light in colour, mostly foliated. They are composed of quartz, plagioclase, and bluishgreen amphibole, minerals of the epidote group and accessories (titanite, zirconite).

Igneous rocks

Among neolithic/eneolithic artefacts from various sites of the Slovak republic territory plutonic as well as volcanic rocks are present (Hovorka and Illášová 1996, Illášová and Hovorka 1995, Hovorka and Cheben 1997). For the site studied artefacts made from intrusive as well as effusive rock types are present in subordinate amount only.

Andesites

From andesites has been made only two implements: one shoe-last wedge (clinopyroxene phyric andesite) and one flat axe (amphibole-biotite andesite). This typical volcanic rock consists of phyric clinopyroxene or amphibole and biotite within submicroscopically grained matrix. It consists of very fine-grained crystals of needle-like plagioclases and volcanic glass. Rock under consideration has locally slightly fluidal fabric.

Basalts

From basalts has been made one shoe-last wedge and one flat axe. Basalts are fresh rocks and they belong to the alkali basalt clan. They have dark-grey up to black colour, and mostly of fine-phyric (clinopyroxene and olivine) and massive patterns. Mineral composition of alkali basalts is characterised by plagioclases and clinopyroxenes, olivine, amphibole and ore minerals are also present

Sedimentary rocks

Among sedimentary rocks as the raw material have been identified **sandstone** (one globular maceheads and one hammer-axe) and **limestone** (one globular maceheads).

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