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# PRELIMINARY REPORT ON THE EXCAVATIONS OF THE MIDDLE PALAEOLITHIC SITE VANYARC – SZLOVÁCKA-DOLINA

During the last years several new Middle Palaeolithic open-air sites with bifacial industries and high ratio of extralocal raw material were discovered by Attila Péntek in the Cserhát Mountains, Northern Hungary (MARKÓ–PÉNTEK–BÉRES 2002, MARKÓ–PÉNTEK 2003–2004). One of the most promising territory lies in the vicinity of Vanyarc (Fig. 1) where a number of surface concentrations were distinguished. In 2003 a sound excavation, exposing 20 sqm was carried out on the spot nr 5 with the aim of clarifying the stratigraphical and planigraphical relationships between the artefacts of local and imported raw material. In the next years further 16 sqm were excavated. The first artefacts were found immediately below the present-day humic soil, in the reddish-brown clay of some dozens of cm in thickness. The underlying exceptionally compact, cemented-like yellowish sandy clay, dissected by polygon-like cracks was considered as a discrete sedimentological unit and the majority of the artefacts were found on the surface of it or in the infilling of cracks, however, some pieces were also found in this layer.

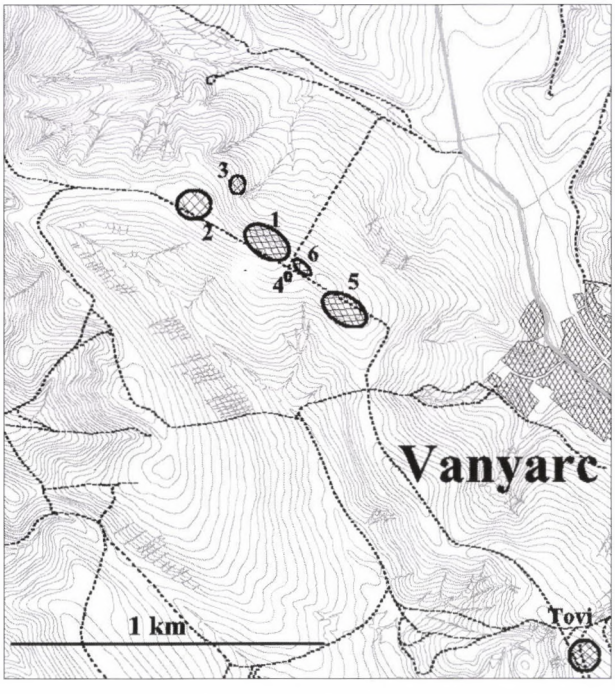


Fig. 1. Middle Palaeolithic sites on the hill westward from Vanyarc

During the three seasons more than 1300 lithic artefacts were found, marked by numbers [xyz] in this paper. 77% of them, i.e. 1054 pieces were recorded three-dimensionally. In the main trench, the number of excavated artefacts ranges 5 to 152 and averaged 45.7 pieces per square meters.

Beside the burned silex artefacts numerous poorly preserved charcoal grains without spatial concentration were found. Regrettably, only 18 pieces could have been determined (Tab. 1.): the list of taxa suggests that the charcoal pieces may belong to a more recent period.

Table 1. *Determination of the charcoal samples by A. Grynaeus*

| nr | quadrate | determination |
|---|---|---|
| [72] | g1 | oak? *(Quercus sp.)* |
| [86] | m9 | oak *(Quercus sp.)* |
| [89] | m9 | oak *(Quercus sp.)* |
| [175] | g1 | beech? *(Fagus silvatica L.)* |
| [259] | m9 | sessile oak *(Quercus peatraea (Mattuschka) Liblein.)* |
| [360] | l3 | beech? *(Fagus sylvatica L.)* |
| [363] | k2 | beech? *(Fagus sylvatica L.)* |
| [392] | n1 | ash *(Fraxinus sp.)* |
| [393] | n2 | diffuse porous wood, willow? *(Salix sp.)* |
| [407] | j1 | beech *(Fagus sylvatica L.)* |
| [408] | j1 | ash *(Fraxinus sp.)* |
| [425] | k1 | deciduous tree |
| [426] | n2 | diffuse porous wood, willow? *(Salix sp.)* |
| [427] | n2 | diffuse porous wood |
| [428] | n2 | beech *(Fagus sylvatica L.)* |
| [432] | j2 | beech *(Fagus sylvatica L.)* |
| [481] | n1 | deciduous tree |
| [484] | l4 | beech *(Fagus sylvatica L.)* |

Limonite concretions and pieces of reddish plastic clay, found during the excavations were originally considered as artefacts, however, they proved to be natural in origin.

*Taphonomy of the culture bearing layer*

Because of the unusual raw material composition and the heavily fragmented state of the surface collected pieces, one of the main goals of the excavation was the reconstruction of the formation of the archaeological horizon. This study is based on three data: the observations on the orientation of the precisely documented artefacts, the refitting study of the natural breaks and the differences in patina formation of the pieces.

Patina is generally considered as weathering phenomena of the silex artefacts due to the alkaline solutions of the imbedding soil (CURWEN 1940, STAPERT 1976, 12–14). In this study we make use of the observation, that the upward facing part of the lithics excavated in original position is patinated to a greater degree than the lower one (ZOTZ 1965, 249). In the assemblage of Vanyarc, the pieces of limnic quartzite are especially suitable for this study: at 102 artefacts (i.e. 10.64% of the pieces of this raw material) could be recognised differences in patina formation on the same artefact. Fourteen flakes bear slight patina on the upward facing surface and 20 pieces with asymmetric patination were found in a vertical position. In two third of the cases however, the observations point to the primary position of the artefact.

The majority of the refittings are natural breaks. The patinated breakage surfaces of 13 naturally broken pieces suggest that the fragmentation occurred during the sedimentation, or, in the time of the settlement as in the case of a double side-scraper, worked ventrally after the break (Fig. 5.5). Generally the distance between these fragments is larger than 30 cm. On the other hand, twelve artefacts excavated in vertical position were cracked by angular and 'pot-lid' fracture without spatial displacement into several pieces. In these cases the breakage surface shows a weak patina formation, and was preformed by the inherent cleavage faces and inhomogenities of the raw material. Further seven fragments, also with slightly patinated surfaces moved away by some (1–14) cm; only two refits show larger distances between the pieces. The presence of angular and 'pot-lid' fragments with granulated breakage surface are generally considered as consequence of frost fracture (STAPERT 1976, 20) or heat damage (LUEDTKE 1992, 97, 100), however, the geological study of the profile did not show traces of frost actions; in this case rather the role of the roots or the moderate mass movement showed by the geo-pedological study (see: Appendix) should be stressed.

The low number of 'fresh' breakages and the small distance between them suggests, that in spite of the polygon-like structures and the present day desiccation cracks, surprisingly weak traces of postgenetic taphonomic events (KOLESNIK 2003, 106–107) could be detected. Concerning the orientation of the lithics, the figures are close to the normal distribution: 328 artefacts were excavated in vertical, 302 pieces in horizontal and 320 in oblique position. Based on the similar ratios and the refitting studies only slight traces of the disturbance was shown on the site of Zeitlarn (Bavaria) (HEINEN–BECK 1997, 75) also.

*Archaeological artefacts*

*Raw materials (Table 2.)*

The extensive use of the extralocal felsitic porphyry is one of the common features of the sites with bifacial industries in the Cserhát Mountains (MARKÓ–BIRÓ–KASZTOVSZKY 2003). The only one outcrop of the rock is lying in 100 km in distance from Vanyarc as the crow flies. In the case of the excavated assemblage its ratio reached nearly 24%.

Limnic quartzite is the dominating raw material of the site. The bluish and yellowish rock, containing many inhomogenities due to mineral inclusions, gastropod shells and vegetal remains may originate from the environs of Galgagyörk and Püspökhatvan lying 10–12 km as the crow flies in south-west direction. A more homogenous variety of brownish grey colour may originate from the vicinity of Buják, lying 9–10 km eastward from the site. We have to mention however, that the exact provenance of the majority of these raw materials, often with heavily weathered, patinated surfaces can not be determined by macroscopic methods (MARKÓ 2005). Burned artefacts with typical net-like cracks might have also been made of hydrothermal raw material.

Jasper is lilac hydrothermal rock covered by white and pinkish patina. Primary outcrops of this raw material were reported from the volcanic mountains of Hungary (BIRÓ-DOBOSI 1991; BIRÓ–DOBOSI–SCHLÉDER 2000) and Slovakia (ILÁšOVÁ–HOVORKA 2002, 363), however, the Sarmatian outcrops around Vanyarc and Buják yielded pebbles of jasper too. Quartzite, radiolarite and siliceous pebbles, also known from the excavated material might have been collected from the same formation.

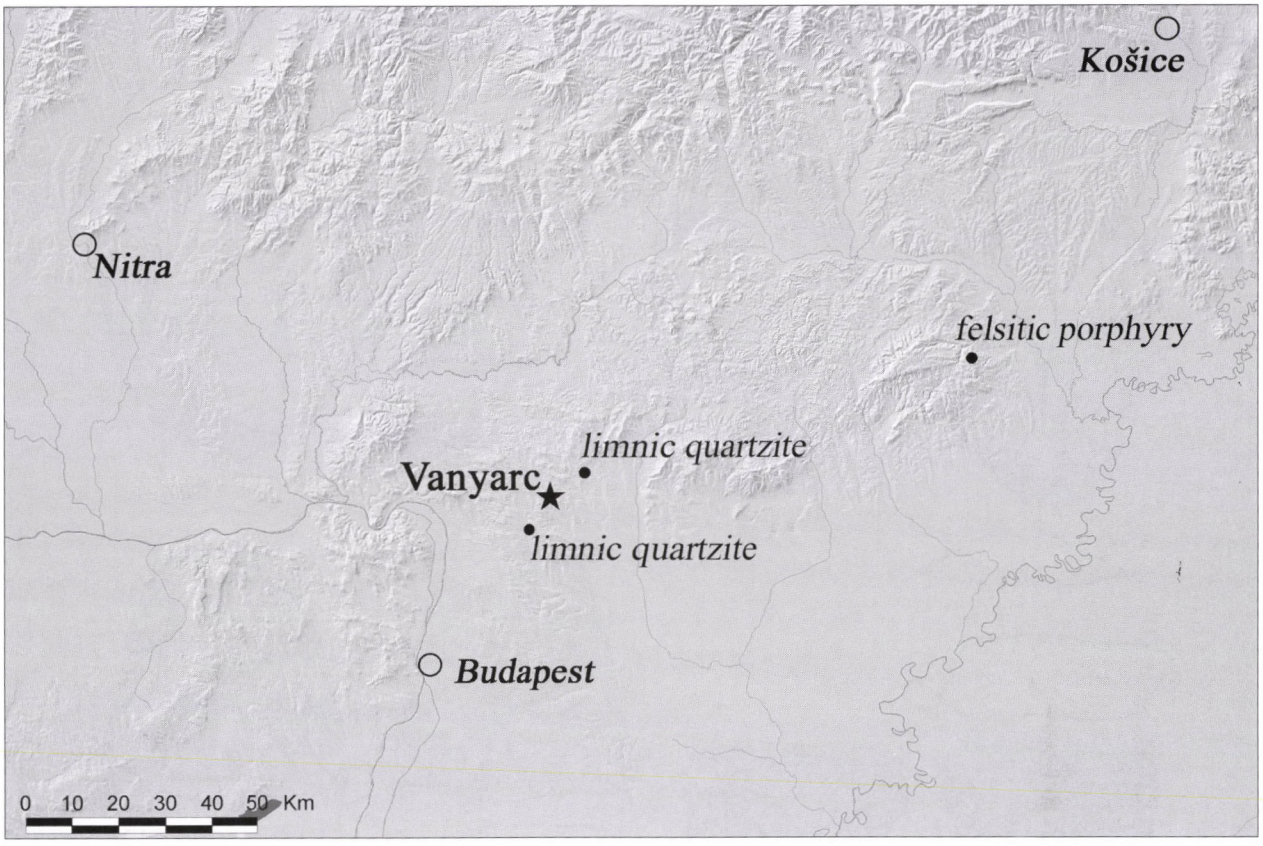


Fig. 2. The sources of raw materials mentioned in the text

Table 2. *Raw material distribution of the excavated assemblage*

| raw | n | % |
|---|---|---|
| limnic quartzite | 959 | 70.10% |
| felsitic porphyry | 362 | 23.83% |
| jasper | 16 | 1.17% |
| quartzite | 12 | 0.88% |
| radiolarite | 1 | 0.07% |
| siliceous pebble | 3 | 0.22% |
| burned silex | 51 | 3.73% |
| **Total** | **1368** | **100.00%** |

*Technology*

The excavated cores were made on raw material fragments of limnic quartzite; during the surface collections cores on flakes were also found. The two pre-cores of the excavated assemblage were discarded because of the poor quality and the inhomogenities of the raw material. In the case of a unipolar core of quartzite the local reduction is demonstrated by the refitting of a flake fragment, as well as the three series of refittings of limnic quartzite flakes (Fig. 6).

Blades and blade-like flakes are represented in the assemblages by a very low number and are distinctly different from the Upper Palaeolithic types. The majority of the flakes were modified by secondary retouches. Finally chips and small fragments of flakes belong to the dominating technological group (885 pieces): core preparation, surface retouch and juvenation chips are also present.

*Typology*

Among the bifacial pieces four weathered tools were identified as *Keilmesser*. One of them belongs to the '*Klausenniche*' type, worked by alternating retouch on a chunk of felsitic porphyry (Fig. 4.3). Another piece with fractured back and convex working edge was made of limnic quartzite, a third one was made on a leaf shaped implement by the intentional removing of the distal part of the tool, finally the clas-

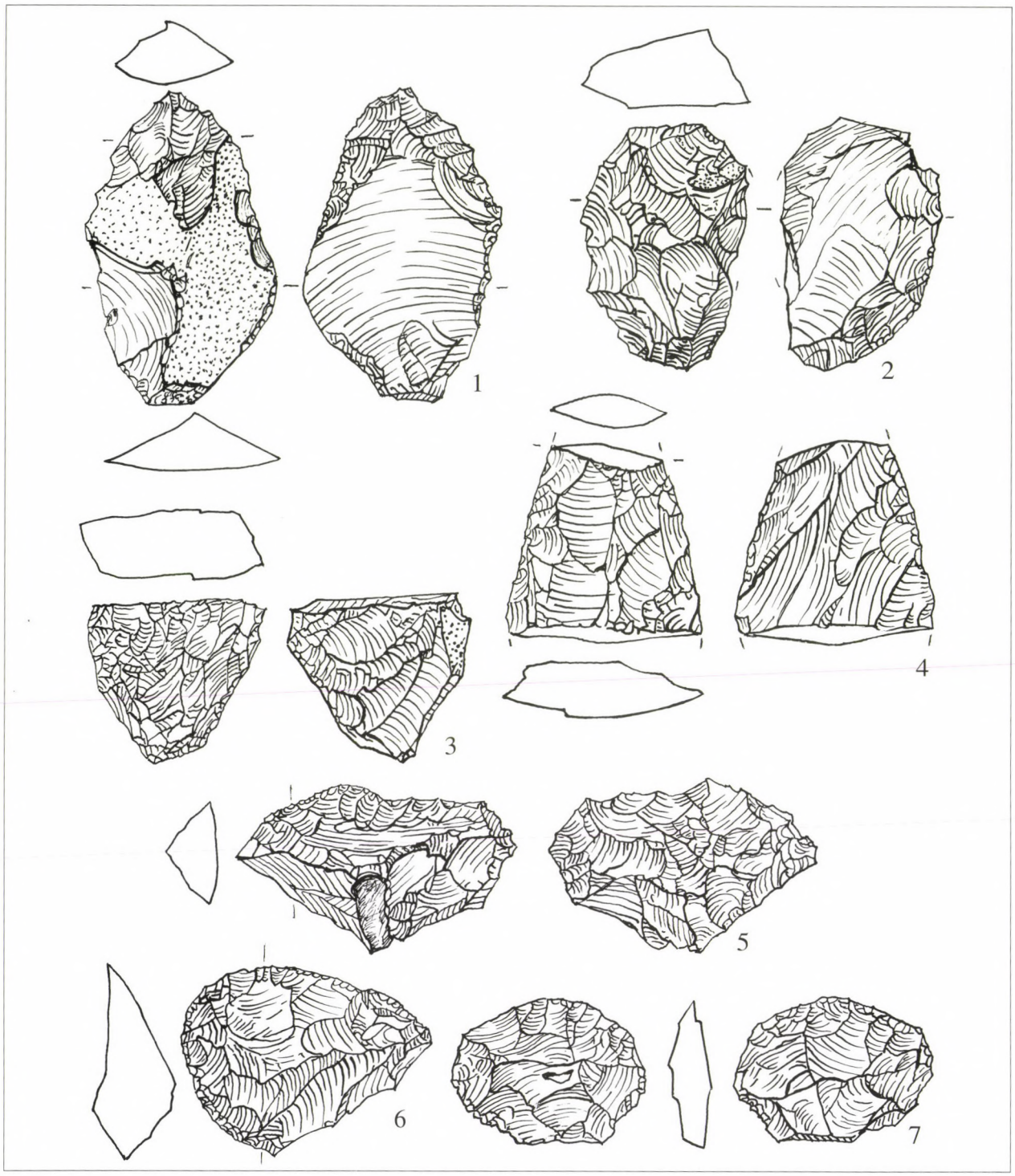


Fig. 3. Retouched tools from the surface collection, Vanyarc – Szlovácka dolina 5.

sification of the last piece, made of quartzite pebble is dubious because of the obscure working. As blanks of these tools raw material fragments and pebbles were used; during the surface collections a tool, made on a limnic quartzite flake with bifacial working edge opposite to the fractured 'back' (Fig. 3.2) was found. Morphologically it can be classified as a *Keilmesser*, however, it may equally be a half-made tool also.

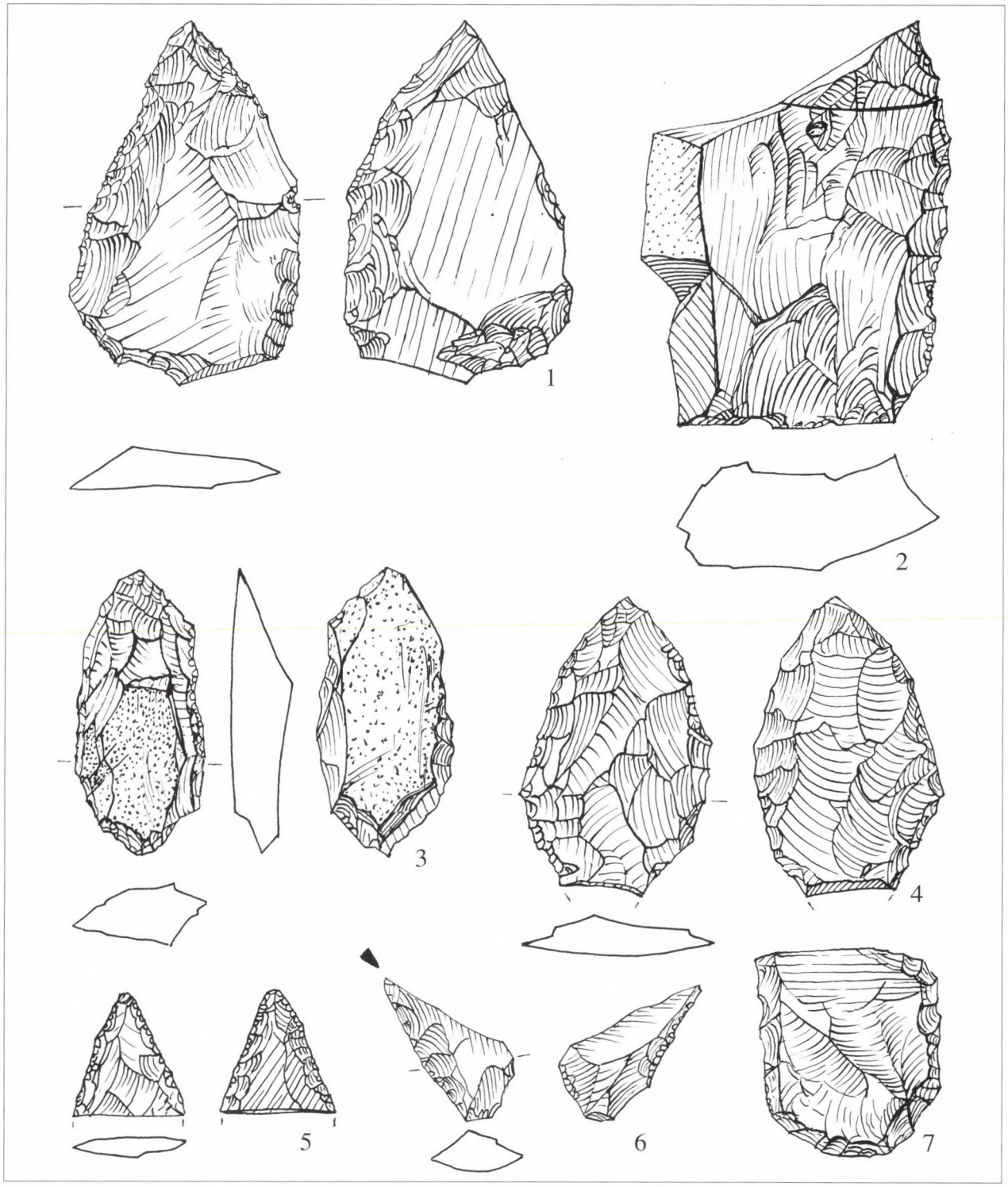


Fig 4. Vanyarc. Tools of felsitic porphyry from the excavation (1: [140]; 2: [522+328]; 3: [255]; 4: [60]; 5: [609]; 6: [403] 7: [515])

During the excavations six leaf-shaped tools of felsitic porphyry were found, one of them, most probably made on a flake is more or less intact (Fig. 4.4). Two base fragments (Fig. 5.7) and a distal one (Fig. 4.5) was worked by *wechselseitig-gleichgerichtete Kantenbearbeitung* (WGK: BOSINSKI 1967). We have to

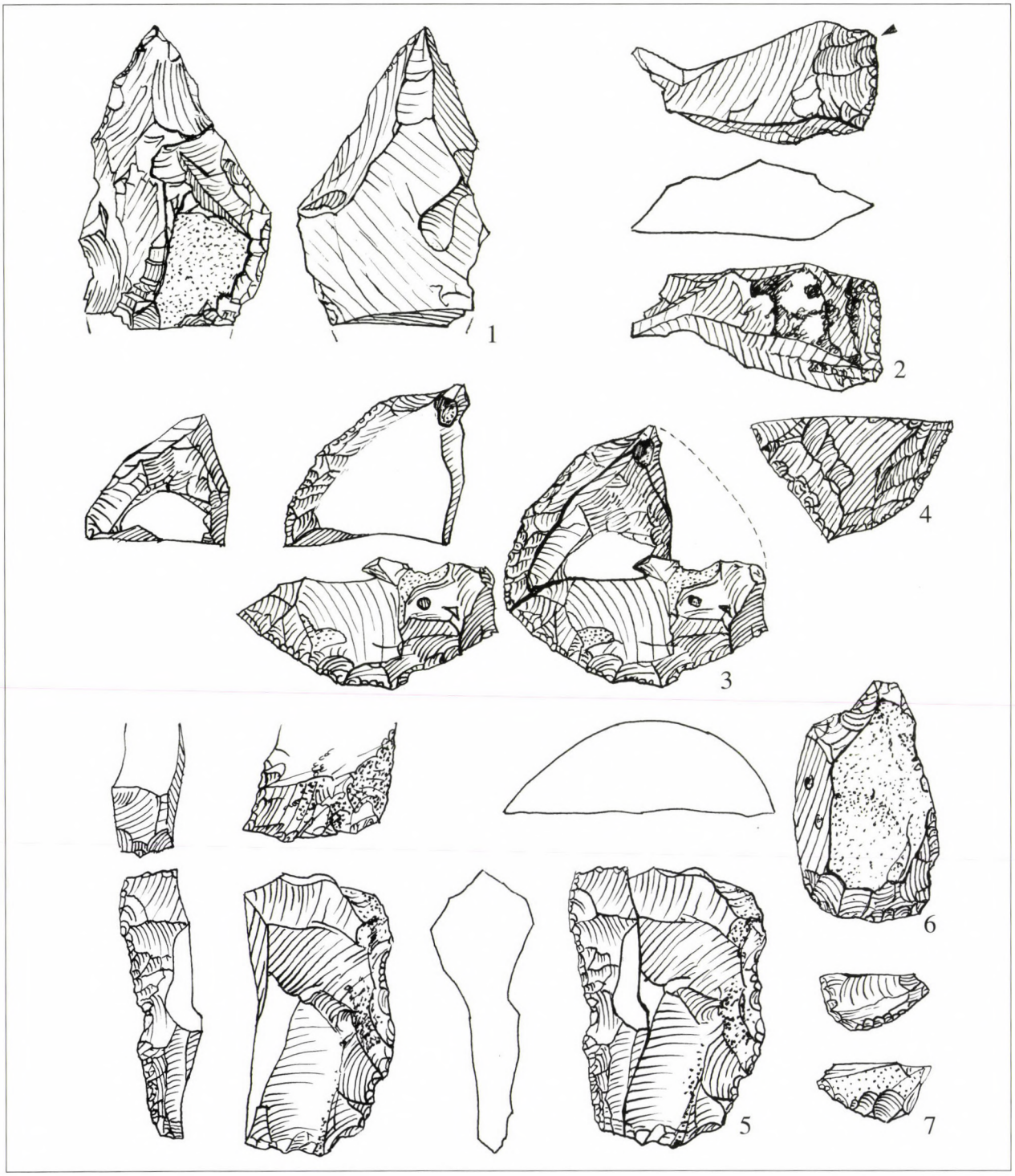


Fig. 5. Vanyarc. Tools of felsitic porphyry (1, 7) and limnic quartzite from the surface collections (1) and the excavation (2: [203]; 3: [196+218]; 4: [22]; 5: [61+234]; 6: [353]; 7: [197])

stress the use of the method when the distal part of the bifacial piece was removed by a burin blow-like working (Fig. 4.6, 5.2). This later, highly weathered, large fragment is the only one leaf tool of limnic quartzite in the excavated assemblage, however, during the surface collections, several leaf shaped tools of this raw material were found, some of them made on transversal flakes (Fig. 3. 5, 7). In these cases the original

striking platform was used as the 'back' of the tool, comparable to the implements of the Late Middle Palaeolithic complexes of Korolevo, Transcarpathian Ukraine (KULAKOVSKA 2002, 2003). Finally, in the surface collection we have to stress the presence of a tool, made of siliceous pebble raw material, thinned partially at the distal part on its ventral side (Fig. 3.1), similar to the Jerzmanowice types.

The bifacial tools with massive base belong to the most characteristic types in the assemblages of Vanyarc. In the case of the excavated piece a discarded core could have been served as blank. Its raw material is limnic quartzite of poor quality; as trace of postgenetic events it was fragmented into four pieces. The local shaping is demonstrated by the refitting of three flakes (Fig 6).

During the excavations six unifacially worked sidescrapers were found. A large piece with convex edge of felsitic porphyry was worked by stepped retouch and broken into two fragments (Fig. 4.2). Furthermore, the local working of this extralocal raw material can be verified by the refitting of a flake fragment on the dorsal side of the tool. Another side scraper of this raw material is made on a Levallois flake. The above

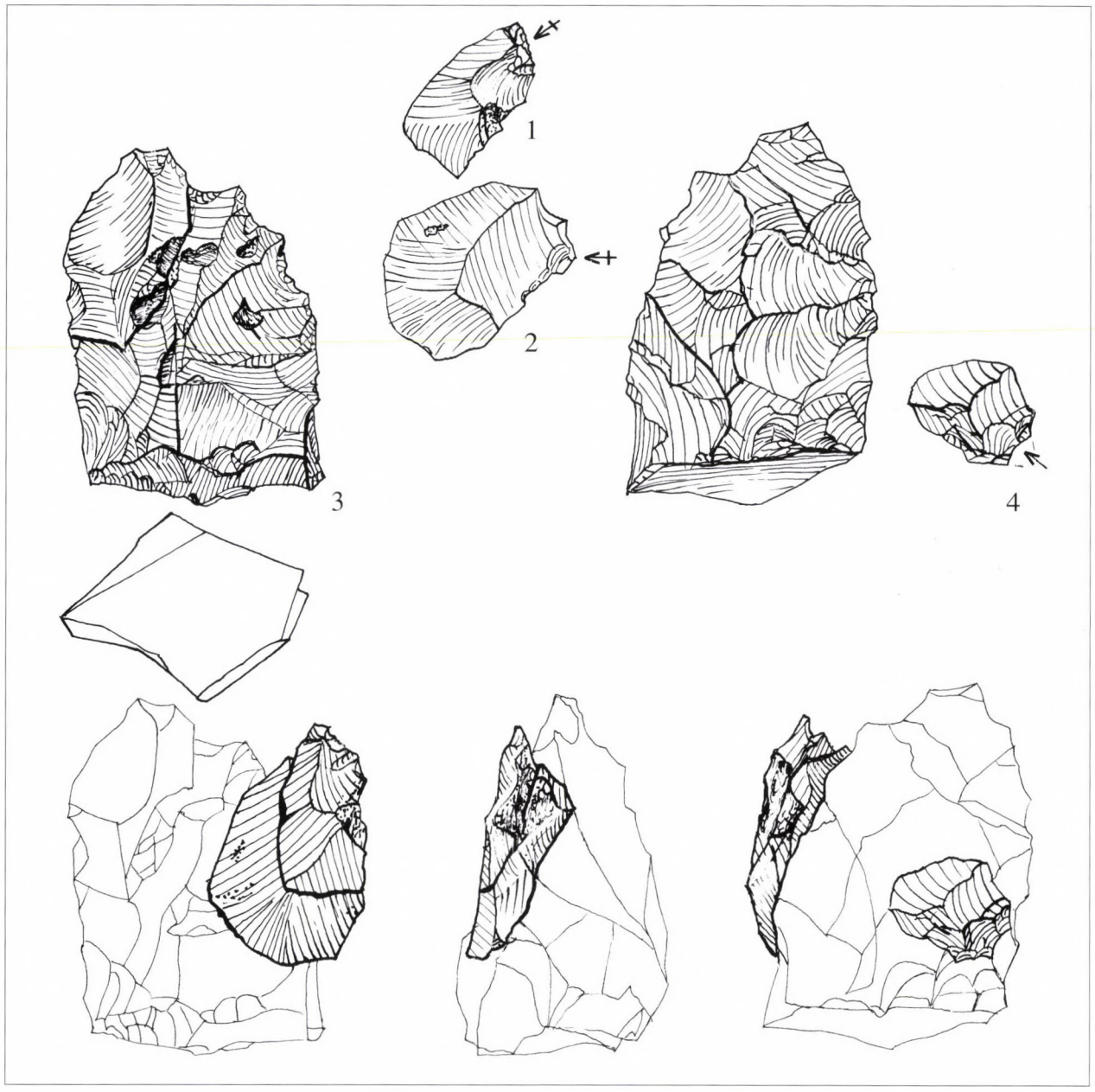


Fig. 6. Vanyarc. Refittings in the excavated material

mentioned double side scraper, retouched on the ventral side after the fragmentation (Fig. 5.5) was made of limnic quartzite, as well as another piece with truncated base (Fig. 5.4). A convergent side-scraper or *Mousterian* point of felsitic porphyry (Fig. 4.1) was worked ventrally, a similar, probably half made tool (Fig. 5.1) was found during the surface collections. The other convergent scraper is the smallest tool in the excavated assemblage, probably due to the pebble raw material. Beside these pieces, from the surface collection four convex side scrapers of quartzite and a transversal tool of siliceous pebble are known.

Two end-scrapers of limnic quartzite and felsitic porphyry were shaped as a convex truncation on the proximal part of blade-like flakes (Fig. 5.6, 4.7). Both of them were worked on their lateral edges too. Based on the morphology of the working edges two tools are also classified as end-scrapers. These implements are often fragmented into sectors; one of them is made of limnic quartzite and could have been refitted (Fig. 5.3), the other one is made of jasper. This type is present in the assemblage of the surface collection too (Fig. 3.6).

Two flakes were worked by alternating retouch, seven pieces bear scattered retouch and four others traces of use. Characteristically, the nine pieces classified as indeterminable tool-fragments belong to the largest 'class' of the tools.

*Discussion*

The WGK, present in Vanyarc was frequently used during the Early and Middle Würm. In the 'transitional' or EUP industries as the Moravian *Szeletian* (VALOCH *et al.* 1993, 67, Abb. 25.1), or on the sites around Eger (ZANDLER 2006, 22, 27, 33) this method was used more rarely. The '*Klausennische*' knife (BOSINSKI 1967) is also typical for the *Micoquian*, however, atypical pieces were reported from the early *Szeletian* site of Jezeřany I (OLIVA 1979, 45, Taf. X, 3, XI, 3), together with the parallels of the other bifacial knifes from Vanyarc (OLIVA 1979, 48, Tab. X, 2). The side scrapers belong to the general Middle Paleolithic types. Convergent tools with partial thinning on their ventral face were published from both *Micoquian* (OLIVA 1987, 30) and *Szeletian* (VALOCH et al. 1993, 32, Abb. 22.4) sites and the *Jerzmanowice*-type artefacts are also present in both Late Middle and Early Upper Palaeolithic industries (e.g.: SVOBODA 1987, 96–98, BÁRTA 1960, Tab. II.4, III.2; DEMIDENKO–USIK 1993, 51, Fig. 5,1-2.).

The leaf shaped tools are typical form of the *Szeletian*. The bifacial tools with massive base (WEISSMÜLLER 1995, 115–116, Abb. 1.:2-3) and leaf shaped tools with burin blow-like working are known from Albersdorf (WEISSMÜLLER 1995, 120–122, Abb. 15,6, 16,3.5, 18,1–3) or from Complex II of Korolevo II (DEMIDENKO–USIK 1993, 50, Fig. 3), both of which belong to the same age and tradition.

End-scrapers with high working front are similar to the typical tools of the *Aurignacian*, however, the pieces from Vanyarc are made on short flakes, as the tool, published from the *Szeletian* site Banka nad Váhom (PROŠEK 1953, Tab. XI. 9). On the other hand, an end-scraper made on the proximal part of a flake and a perforator-like point on the distal one was published from the *Mousterian* layer 11 of the Dzeravá skála (KAMINSKÁ *et al.* 2005. Fig. 18.3).

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The sites published until now from the Cserhát Mountains (MARKÓ–PÉNTEK–BÉRES 2002; MARKÓ–PÉNTEK 2005) differ from the industry of Vanyarc by the presence of hand-axes, *Faustkeilblatt*, Bockstein-type bifacial knifes and *groshak*s or the use of obsidian among the raw materials. These assemblages were sorted into the *Bábonyian* industry (RINGER 1983), a characteristic entity of the south eastern part of the Bükk Mountains, where the natural outcrop of the felsitic porphyry is known. Interestingly, from this territory we do not know similar assemblages to that one of Vanyarc.

In some other Middle Palaeolithic bifacial assemblages of that region, like the lower layer of the Szeleta cave, the ratio of the blades and Upper Palaeolithic types is fairly high. In the complex IIa and II of Korolevo I, dated to the first maximum of the last glaciation and sorted into the *Micoquian* and *Charentian,* the convergent and leaf shaped implements, characteristic for the Vanyarc industry, are practically absent (KOULAKOVSKA 2001; KULAKOVSKA 2002, 2003). On the other hand, in the *Jankovichian* culture of the Transdanubia (GÁBORI–CSÁNK 1993) the high ratio of the Levallois blanks and the use of radiolarite, differ from the sites of the Cserhát Mountains.

The Early Upper Palaeolithic complex II of Korolevo II, with the presence of Middle Palaeolithic tool types and Upper Palaeolithic technological traits yielded numerous leaf shaped points (DEMIDENKO–USIK 1993). M. Anikovich (1992, 209–210) placed this transitional '*Szeletian*' industry between

the lower and upper layers of the Szeleta cave, in accordance with the radiometric date of 38 kys.

The industry of Vanyarc shows many typological connections with the Moravian and Bavarian *Szeletian*. However, in the Moravian assemblages the leaf shaped tools amounts to 5–15% of the industry only and Upper Paleolithic types like burins, blunted tools and blades are also present (OLIVA 1991, 318–319). In the Bavarian group, these elements are represented only by atypical and single pieces, however, by the large number of the *pièce esquillé*, sometimes the most numerous group of the tools (HEINEN 1997), differs from Vanyarc.

*Conclusions*

The first excavation of a Middle Palaeolithic site in the Cserhát area yielded some important data. The slightly reworked culture layer totally lacks the organic remains, the charcoal pieces are considered as Holocene intrusions. In the small trench a relatively dense material of the culture layer was excavated: 306 pieces larger than 20 mm were found, with a maximum number of 29 pieces in a quadrate; the average number of 14.67 pieces larger than 15 mm per square meters shows a 'high density horizon' (CONARD 1998, 260).

As a whole, the *Vanyarc-type industry* on typological ground can be characterized as the follows:

- no raw material preference according to the different tool classes
- large number of fragmentary tools, partly due to the poor quality of the raw materials
- the relatively large number of leaf shaped implements and bifacial forms, worked by *Micoquian* technology
- beside the Klausennische type, the presence of other forms of bifacial knifes, made on fragments of leaf points and raw material blocks
- the large number of general Middle Palaeolithic type side scrapers
- end-scrapers, alien from the Upper Palaeolithic forms
- the Upper Palaeolithic types (retouched blades, burins etc) and in technological point of view, the blade production is totally absent.

According to the typological studies, the industry is similar to the Slovakian, Moravian and Bavarian *Szeletian* and the to the complex II of Korolevo II. It may belong approximatively to the period of the Hengelo interstadial, and dated to the end of the Middle Palaeolithic.

The most interesting feature of the sites in the Cserhát Mts. is the high amount of the extralocal felsitic porphyry. According to the observations the pieces of this raw material were found together with the artefacts of local rocks in one and the same layer, without differences in the spatial distribution. The ratio of felsitic porphyry and the high number (221 pieces) of chips in the excavated assemblage support the observations based on the surface collections; on the other hand, the reduction refit shows clear raw material working on the site. In the future field works, a more detailed study of the broken surfaces and further refitting studies are planned.[1]

*Notes*

1 The base maps used for the article was constructed by Holl, Balázs (Hungarian National Museum) the artefacts were drawn by Katalin Nagy.

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## GEO-PEDOLOGICAL OBSERVATIONS AT THE VANYARC SITE

### *Introduction*

Requested by A. Markó, archaeologist-in-charge of the excavations a complex geo-pedological field work was undertaken at the Middle Palaeolithic site Vanyarc. The horizons the soil structure and the calcareous character of the studied profile were described and the colours recorded by using MUNSELL SOIL COLOR CHARTS (1990). Samples were collected in order to study particle size distribution, micromorphology and clay mineralogy.

### *Geological backgrounds*

The oldest formation exposed along the margins of the NNE facing hillslope, right above the village of Vanyarc are Late Miocene (*Sarmatian*) terrestrial gravels, sands and Late Pleistocene loess and brown earth.

Clays and siltstones ('Schlier') of Early Miocene (*Karpatian*) age crop out to the NNW, various Middle Miocene (*Badenian*) andesite and sand (with *Pectunculus*), sandstone and clay of Late Oligocene age are exposed to the NNE of the research area.

### *Description of the studied formations*

Based on field observations supported by laboratory analyses the following three main formations could be disinguished at the esxcavated site.

*Formation N° I.* (0–22 cm) is a loose, brown (10YR 5/3), humiferous silty sand with scarce, 2 mm to 1 cm size, quartzite pebbles. The soil structure is platy on the uppermost 5 cm as a result of recent winter frost,