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MESOLITHIC WORKED STONE IMPLEMENTS FROM SMOLÍN (MORAVIA)

*ABSTRACT: In this article, worked stone implements of various rock types from the excavation of a Mesolithic settlement at Smolín (1959–1960) are described. According to use wear or overall design we can distinguish several types of artefacts: retouchers, whetstones, "percussors", "millstones", discoid artefacts, worked slate slab, and polished stone. The attempt of a functional interpretation of all these artefacts is problematic since they were evidently used for multiple different purposes. All these stone artefacts are of high importance for knowledge about the Mesolithic because unlike chipped stone industry they represent other aspects of an economic activity about which we still know only very little. This article is a reprint of a previously published article (Valoch K., 1977: *Anthropologie (Brno)* 15, 2–3: 107–109).*

KEY WORDS: Worked stone implements – Retouchers – Whetstones – "Percussors" – "Millstones" – Worked slate slab – Mesolithic

The excavation of a Mesolithic settlement at Smolín (1959–1960) conducted by the Anthropos Institute obtained from all areas examined not only a voluminous collection of chipped stone industry of siliceous rocks but also some worked stone implements of various rock types. These were mentioned in a comprehensive publication about Smolín (Valoch 1978) but due to a lack of space only a few of them were pictured in drawing. Their occurrence seems so important to us that we would like to record them all as photos. All of these full-size images were taken by L. Píchová at the Anthropos Institute.

According to use wear or overall design we can distinguish several types but only in a few specimens can their functional purpose be identified with any degree of probability.

TYPES OF ARTEFACTS

Retouchers

Four pieces of retouchers were found, all of them made from thin flat Kulmian slate pebbles.

This article is a reprint of a previously published article "VALOCH K., 1977: Felssteinartefakte aus dem Endpaläolithikum von Smolín (Mähren). *Anthropologie (Brno)* 15, 2–3: 107–109."

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Figure 1:1. A broken pebble of rectangular cross-section, 15 mm thick. All surfaces at the upper end bear deep scars, both isolated and clustered. Excavation area B, sq. 84. Pictured in Valoch (1978: Fig. 27:1).

Figure 1:2. Flat, irregularly oval pebble, 12 mm thick, with dense clusters of shallow scars on both sides and ends. The surface also has fine grooves. The notchy lower end as well as the incurved longitudinal rim are also hewn. Excavation area A, sq. 82. Pictured in Valoch (1978: Fig. 29:3).

Figure 1:3. Retoucher, 9 mm thick, with quite deep hollows on both ends, which emerged from clustered scars by long-time use wear. Excavation area C, sq. 107. Pictured in Valoch (1978: Fig. 28:1).

Not pictured: An elongated narrow pebble, almost rectangular in cross-section with only slightly rounded corners, 87 mm long, 29 mm wide and 13 mm thick, broken-off in the lower part. The upper end bears on both sides indistinct clusters of scars as well as scattered individual scars. Excavation area C, sq. 67.

Whetstones

Figure 1:4, 5. Two whetstones from quartz sandstone with medial longitudinal groove. The ventral surface is even, the back is arched. Excavation area D, sq. 13, 18. Pictured in Valoch (1978: Fig. 29:1, 2).

"Percussors"

For this purpose only thick pebbles of coarse-grained greywacke were used. Wear marks are the same in all pieces: the rounded faces are densely covered with scars, which are quite coarse, probably due to the structure of the rock. The use wear in some specimens is so intensive that a considerable loss of material can be observed.

Figure 2:1. Fragment of a large pebble, 32 mm thick, the whole rounding is heavily worn. Excavation area C, sq. 114. Pictured in Valoch (1978: Figure 28:3).

Figure 2:3. Rounded pebble, 23 mm thick, with indistinct clusters of scars only in the distal part of the rounding. Excavation area C, sq. 120.

Figure 2:4. Irregularly oval-shaped, 39 mm thick pebble with coarse scars on the whole rounding except the base; the hollow which can be seen on the picture is probably a wear effect. Excavation area C, sq. 145.

Figure 2:5. Oval-shaped, 37 mm thick, dorsally incurved pebble; the rounded faces on both ends are heavily worn. Particularly left at the base emerged an almost even facet. Excavation area D, sq. 43.

Not pictured: Fragment of a pebble 80 mm long, 61 mm wide and 37 mm thick, hewn-off in one place of

the rounding so that a shallow hollow emerged. Excavation area C, sq. 131.

The largest piece is 120 mm long, 90 mm wide, the unworked base is 53 mm thick, the heavily worn working end is only 23 mm thick. There is also a cluster of scars on the lateral side. Excavation area C, sq. 109.

"Millstones"

Figure 2:2. The most conspicuous form is a small pebble, whose 28 mm wide rounding is crescent-shaped as a result of intensive use wear. The lower part remained naturally rounded, without wear marks. The arched working surface is quite smooth with regard to the coarse-grained rock and compared to the other artefacts. Excavation area C, sq. 137. Pictured in Valoch (1978: Figure 28:2).

Figure 3:1. A triangular piece of amphibolite rubble, 41 mm thick at its base. The edges of the ventral surface seem to have been trimmed by several blows both of the flanks are formed by natural breakages. The arched dorsal side was used as a working surface; it is heavily scarred and thereby flattened so that its shape is reminiscent of that in *Figure 2:2*. Excavation area A. Pictured in Valoch (1978: Fig. 27:2).

Discoid artefacts

Figure 3:2. Greywacke disc, 27 mm thick, worn at the perimeter so that the rounding was flattened to an even facet. Excavation area C, discovered in a collapsed section after excavation.

Figure 3:3. A disc of fine-grained greywacke, max. 24 mm thick, partly hewn at the perimeter and only in the thickest place (on the picture right) equipped with a large cluster of scars. Left at the base is a part of natural rounding. Excavation area C, sq. 36.

Worked slate slab

Figure 4:1. A flat Kulmian slate pebble 10 mm thick, almost heart-shaped, with blow marks on its three projections. Excavation area C, sq. 4.

Polished stone

Figure 4:2. Fragment of an unspecified mafic igneous rock max. 29 mm thick, whose dorsal surface is polished (picture on top), whereas the other side is formed by natural pebble surface (picture at the bottom, the artefact is turned slantwise so that the relatively thin and blunt arched perimeter edge can be seen). The upper side exhibits numerous fine criss-cross grooves. Excavation area A.

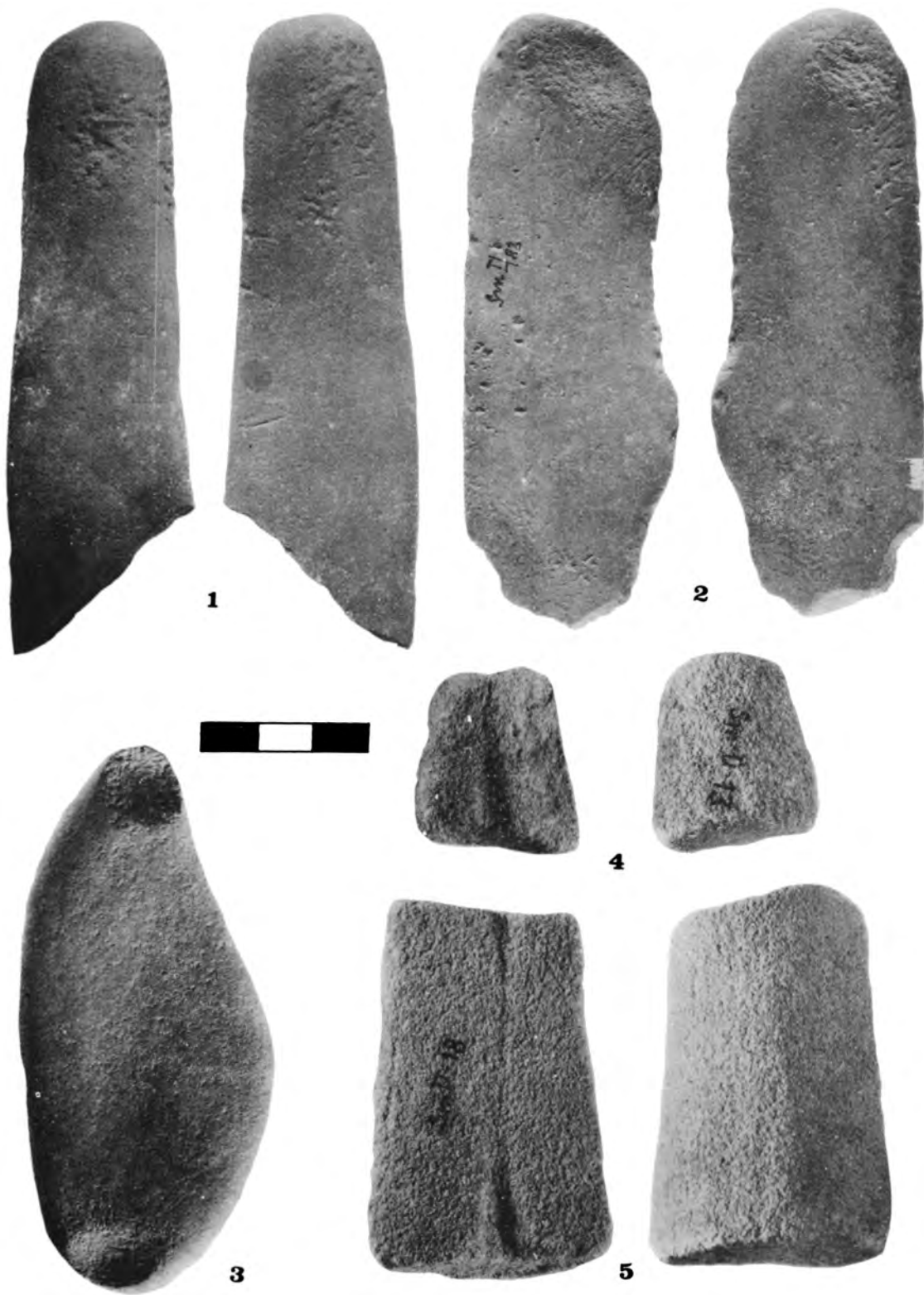


FIGURE 1. Smolín. 1–3, retouchers; 4–5, whetstones. 1/1 full size.

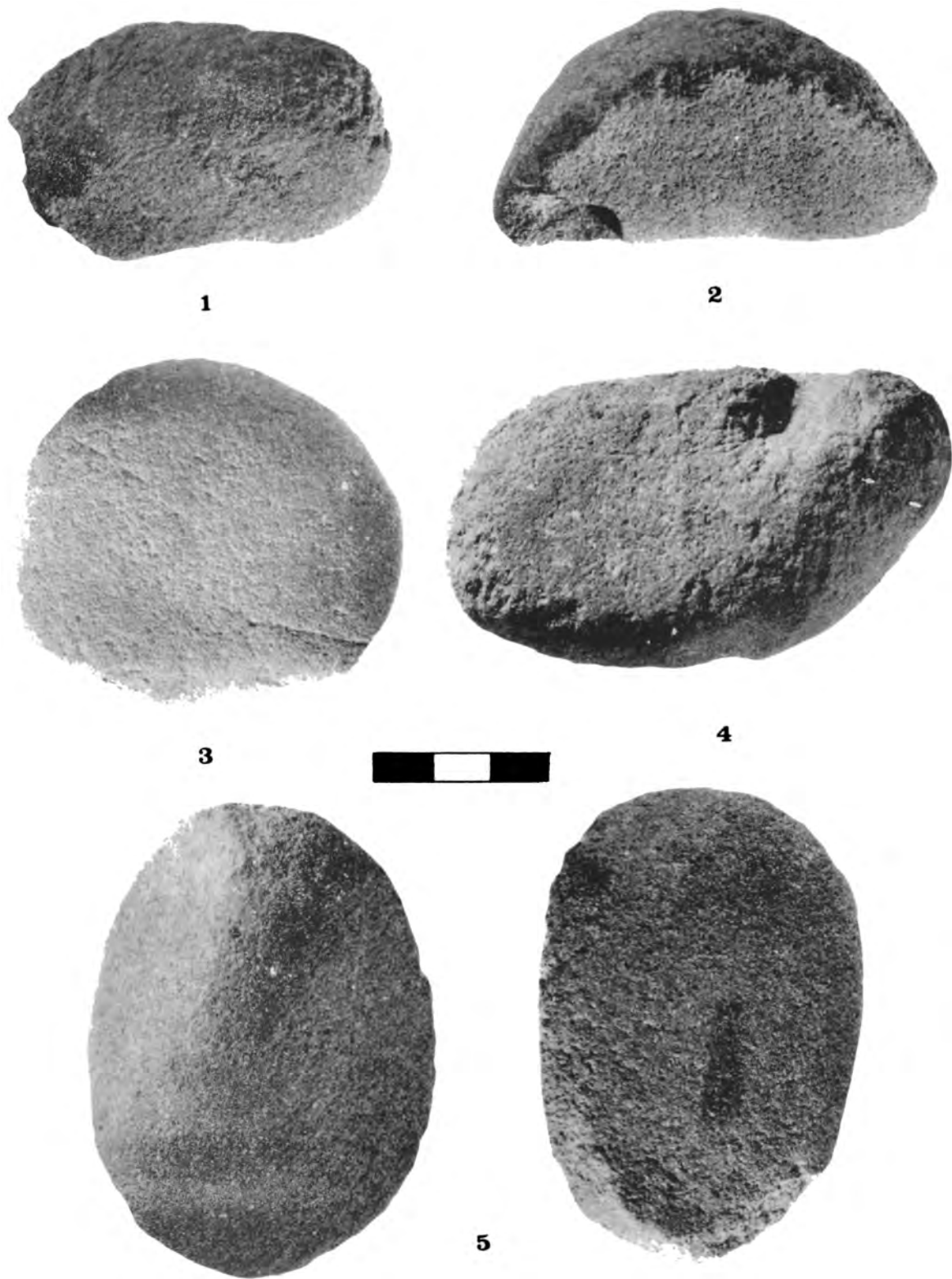


FIGURE 2. Smolín. 1, 3–5, "percussors"; 2, "millstone". 1/1 full size.



FIGURE 3. Smolin. 1, "millstone"; 2-3, discoid artefacts. 1/1 full size.

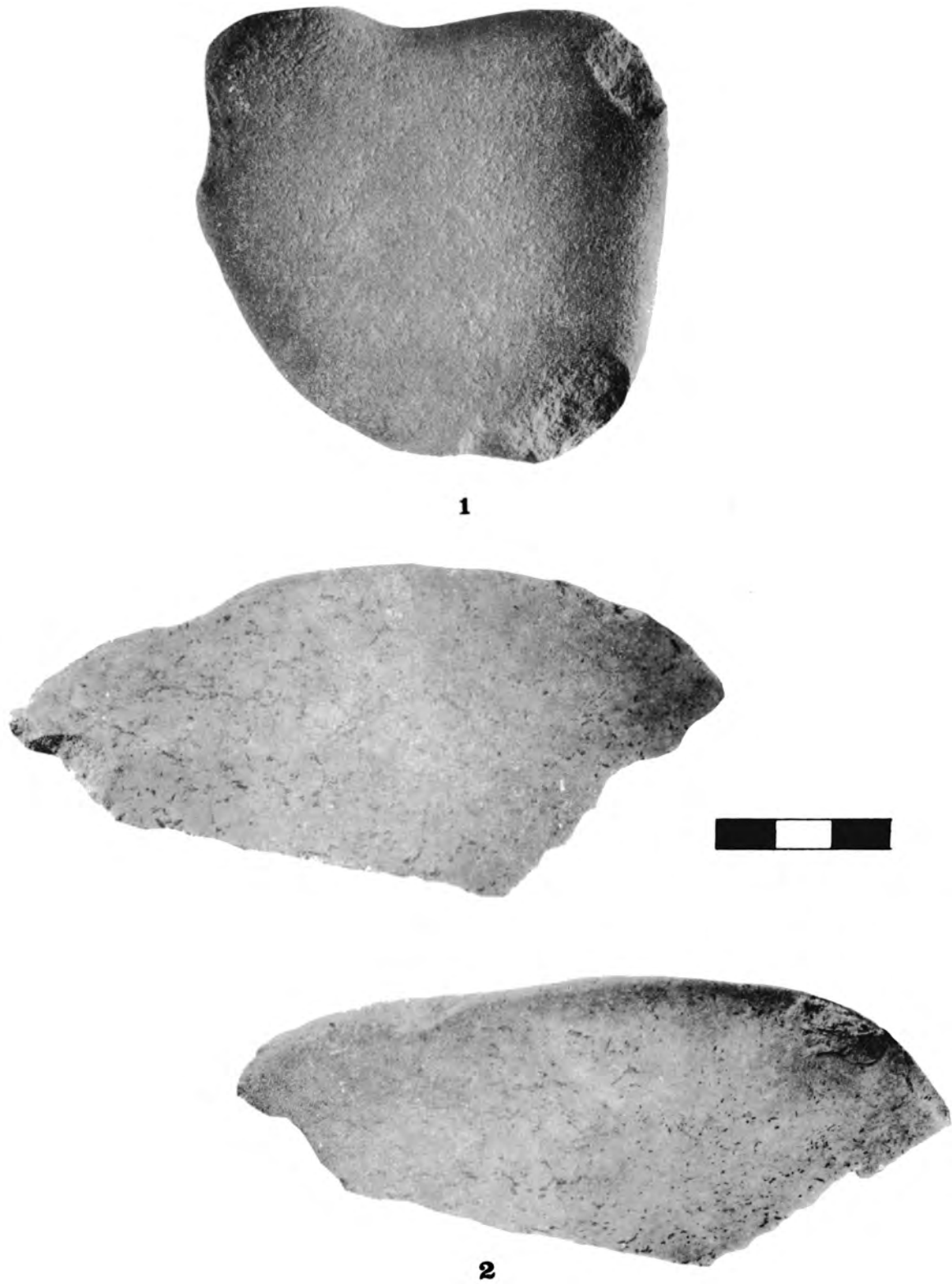


FIGURE 4. Smolín. 1, worked slate slab; 2, polished stone. 1/1 full size.

INTERPRETATION

The attempt of a functional interpretation of all these artefacts is problematic since they were evidently used for multiple different purposes.

The purpose of the four retouchers is unequivocal; in the past years they were treated in three works (Taute 1965, Valoch 1961, Vértes 1963), of which the study by W. Taute in particular, discussed a considerable amount of evidence. Taute's classification of retouchers according to position and extent of clustered scars can be applied to our finds: *Figure 1:1* and the non-pictured artefact belong to "h" type, *Figure 1:2* to "i" type. Only the artefact in *Figure 1:3* with hollows placed medially on both ends does not fit in with the types by Taute.

We can find analogies to both of the whetstones in somewhat older Upper Palaeolithic groups in Northern Europe (groups with tanged points, Federmesser and Hamburgian cultures; Taute 1968: 202 sq.). A Mesolithic whetstone of this sort was found with Tardenoisian at Coincy (Parent *et al.* 1973: Fig. 3:13). The functional purpose of these artefacts, as is supposed by Taute, can hardly give rise to any doubts, either.

Uncertainty begins with artefacts, which are referred to as "percussors". The clustered scars on pebbles pictured in *Figure 2:1, 3–5* as well as on the non-pictured ones correspond to those, which can usually be observed with hammer stones. In Smolín, above all on area C, true hammer stones also were found for which, however, pebbles of harder rocks were used (quartz, igneous rocks). The greywacke pebbles pictured, which are softer and at the same time also coarse-grained, could not be used for heavy blows because they would break into pieces; it is far more probable that they were used for gentle percussion. Their heavily worn marginal parts (*Figure 2:1, 4*) indicate an intensive and frequently repeating activity. According to wear marks, both of the discoid artefacts (*Figure 3:2, 3*) have served a similar purpose; however, because mainly the larger disc (*Figure 3:3*) is made of a fine-grained arkose-like rock, it could not be manipulated with force. With regard to the discs, a question can also arise whether the overall form of the artefacts was achieved intentionally and to what extent, depends on the way it was used. For the artefacts in *Figures 2:1, 3–5* and *3:2, 3* it can be concluded that the wear marks indicate gentle blows or percussion. In this way for example, hazelnuts can be cracked.

A different working procedure can be supposed with artefacts in *Figure 2:2* and *Figure 3:1*. Their working surface is also covered with scars, yet it forms a continuous arched face, which seems to have been flattened or slightly polished. Such wear marks cannot result from blows but only from pressure applied when something is being ground against a hard surface. The tool was moved to and from putting a strain on the whole bulged surface to grind some material. What kind of material it was remains unclear; it may have been plant seeds or just as easily mineral substances (dyes).

I do not know anything about these "millstone"-like artefacts in Central European Mesolithic; such pebbles have probably been paid only a little attention. An artefact with the same wear marks recently appeared with Capsian at the site of Rabah (Algeria) (Grébénart 1976: Fig. 155 top) and is interpreted as a grinder (Grébénart 1976: 237). According to radiocarbon dates, Rabah was inhabited from approximately the mid-sixth to mid-fifth millennium BC, whereupon the industry still falls within the pre-Neolithic (pre-agricultural) period, which is crucial for a comparison with Smolín.

The blow marks on a flat slate pebble (*Figure 4:1*) make it possible to suppose that the indentations may have been used to tie on a hanging stone and to make a sinker, which was then used with fishnets.

The purpose of the fragment with polished surface remains unknown; that it was intentionally modified and used is beyond doubt.

All these stone artefacts are of high importance for knowledge about the Mesolithic because unlike chipped stone industry they represent other aspects of an economic activity about which we still know only very little.

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