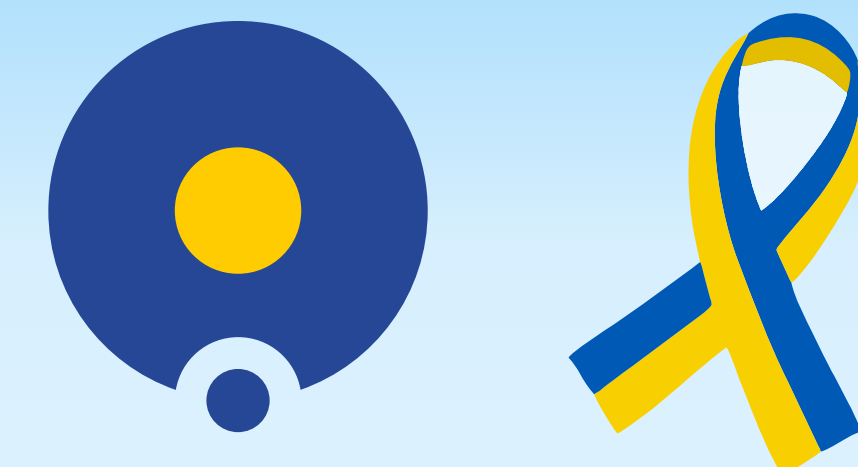


# UPPER PALAEOLITHIC OSSEOUS ARTEFACTS FROM THE MAMUTOWA CAVE IN POLAND.

## FIRST RESULTS OF THE TRACEOLOGICAL STUDIES



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The study's main objective is to present the first results of the traceological analyses concerning selected osseous artefacts found in the site Mamutowa Cave in Poland. The inventory of the Cave includes, among others: projectile weapons represented by more than twenty Mladeč-type points, baguettes demi-ronde, ornamented artefacts and pendants. They are made mostly from mammoth tusk and bone. The poster below presents observations and interpretations made on one type of artefacts discovered on the site, namely the Mladeč-type points. During the traceological analysis of the mentioned artefacts, many technological traces were identified, which allowed to comment on and interpret the method of their production.

### ARCHAEOLOGICAL BACKGROUND

**Site Mamutowa Cave** (PL: Jaskinia Mamutowa) is located in southern Poland, on the left slope of Kluczwoda valley; about 20 meters above its floor (Fig. 1). The first excavations on the site were conducted by J. Zawicza at the end of the XIX century (between 1873-1882). The most recent excavations were carried out by S. Kowalski between the years 1957-1974. The relics from research campaigns reflect several settlement phases. The oldest one, dated back to the transitional period between the Middle and the Upper Palaeolithic, represents the so-called cultures with leaf-shaped blades (Szeletian and Jerzmanowice cultures). The second settlement phase distinguished in the cave is related to the so-called Aurignacian culture. The collection of around 20 spindle-shaped points made mainly from mammoth tusks, the so-called Mladeč type points (Fig. 2), which was found in the cave is identified with this cultural horizon.

The radiocarbon dates obtained for a two Mladeč type points from Mamutowa Cave, are about 40–35,000 cal BP (Wojtal 2007).

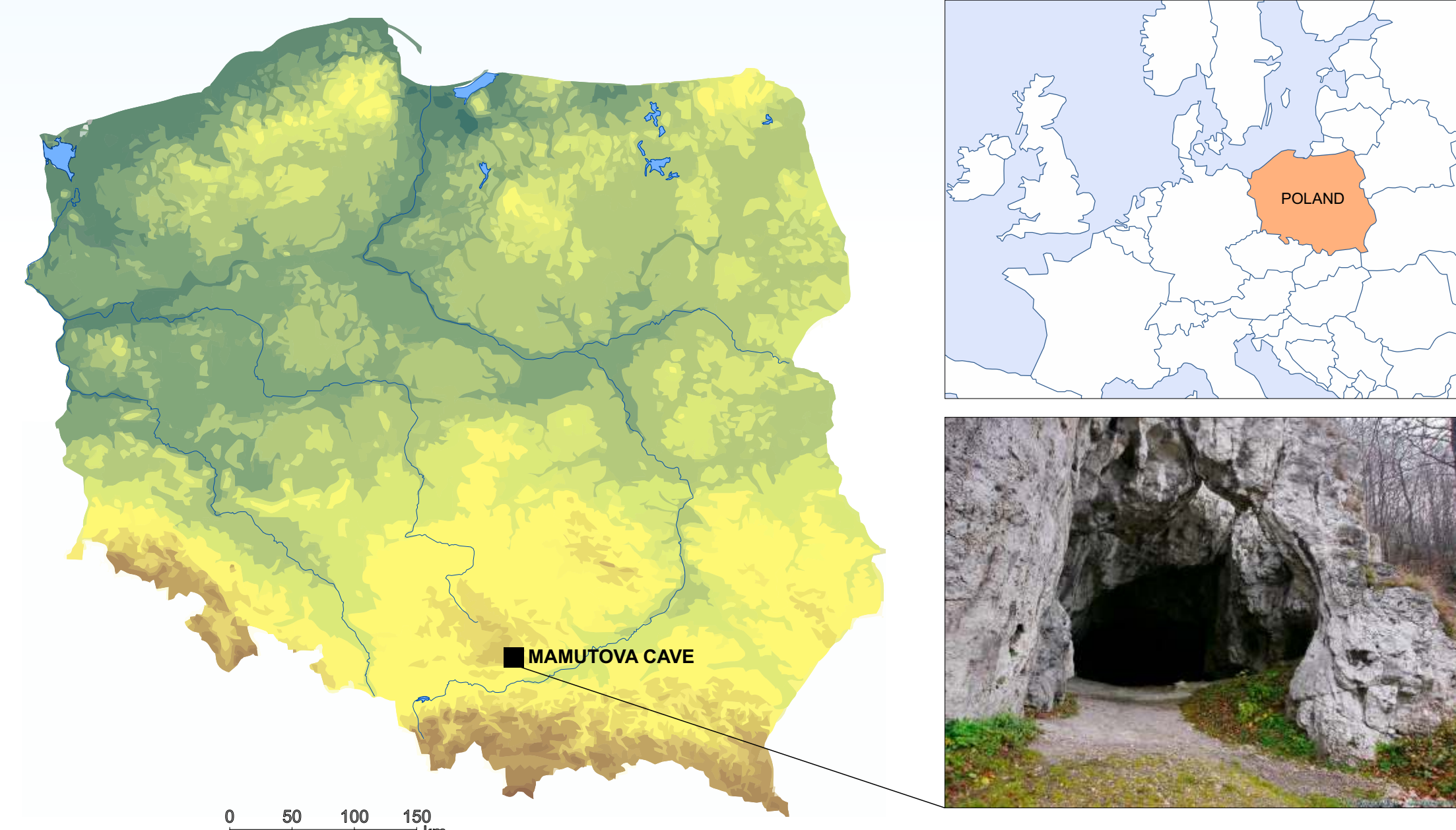


Fig. 1. Location of the Mamutowa Cave and general view at the entrance to the cave.



Fig. 2. Selected examples of Mladeč type points found in the Mamutowa Cave.

The most distinct traces of settlement were left in the cave by the creators of the so-called Gravettian culture, which in the middle phase of the Upper Palaeolithic Age, 20-30 thousand years ago, spread over vast regions of Europe, leading to their significant cultural unification.

### PRELIMINARY RESULTS OF THE TRACEOLOGICAL STUDIES

The state of the preservation of the analysed products varied. In many cases their surfaces were flaked, preventing microscopic observation. The study was also considerably hindered by the substance used for conserving the artefacts which had obscured the technological traces and prevented an analysis of the use-wear polish.

The conducted traceological analyses allow one to reconstruct the chain of treatments performed during the production of the Mladeč type points from Mamutowa Cave, at least to some extent. Unfortunately, it was impossible to fully and reliably recreate the initial stages of this manufacturing process, i.e. the stage of obtaining matrices that were then transformed into points. However, given the characteristics of the general morphology of the analysed materials, we can assume that one of the possible manufacturing methods could be based on the exfoliation of the layers of the tusk by wedging technique which is well known from other Upper Palaeolithic sites (e.g. Pitulko et al. 2015).

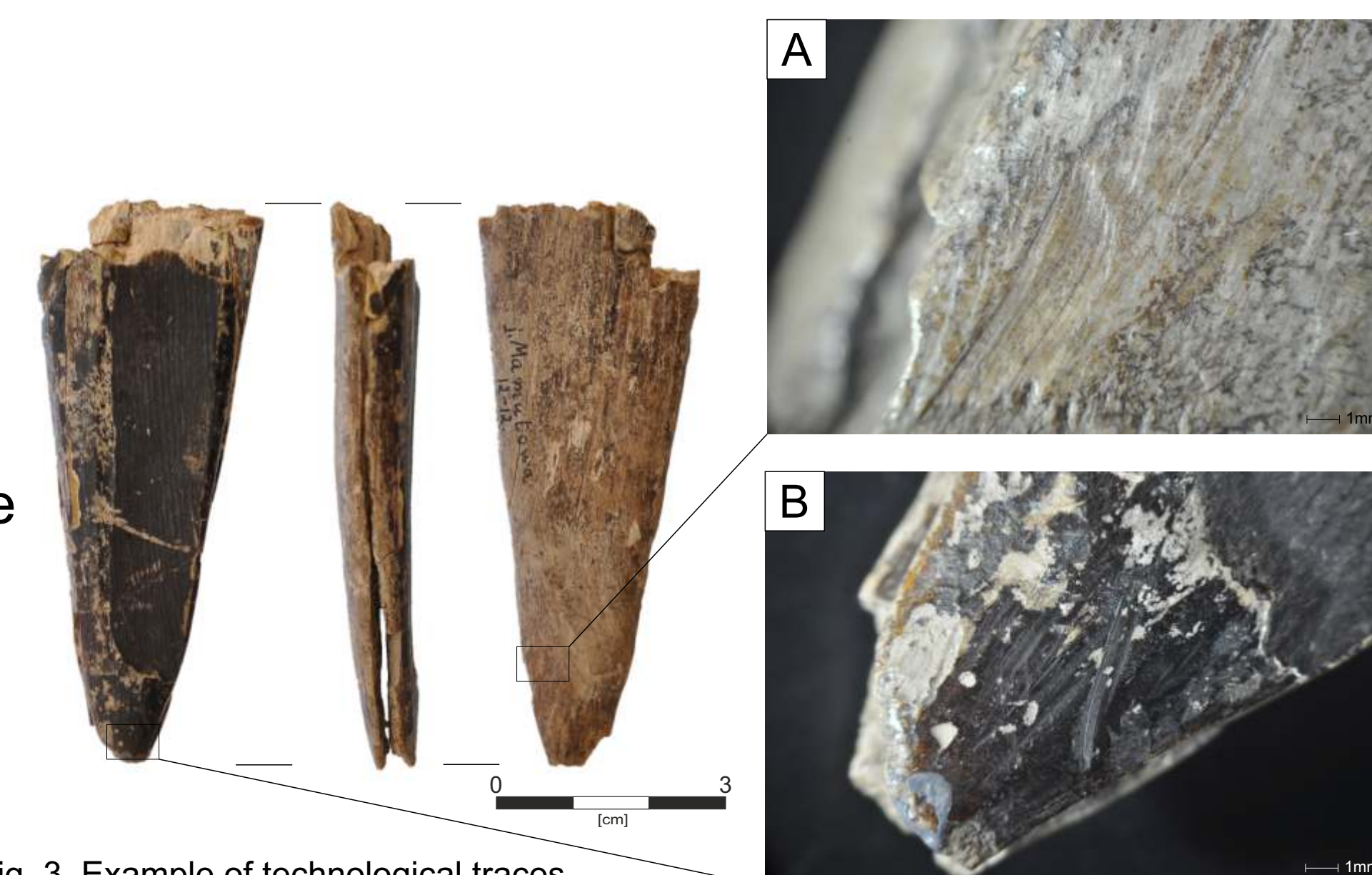


Fig. 3. Example of technological traces observed on one of the points (MAK 12-12).



Fig. 4. Example of technological traces observed on one of the points (MAK 12-10).



Fig. 5. Example of technological traces observed on one of the points (MAK 12-4).

The points were given the required shape as a result of surface processing using three basic techniques, namely scraping, whittling and occasionally chiselling. Processing of this kind (mostly first two mentioned techniques) were usually applied to almost entire specimens, but specific areas were treated with different invasiveness. For example, the flat dorsal and ventral sides of the points were mostly delicately scraped (Fig. 4A, B, D; 5B, C; 6B). Observed traces are represented mostly by sets of long and straight striations, which are parallel or intersecting to each other and often arranged on bands. The bands consist of a series of shallow, parallel scratches, of similar depth and (more or less) V or U-shaped section. Similar traces can be obtained with natural flint blades.

The traces of scraping and whittling observed on the sides, side edges near the tips and bases (places that required more processing) of many points were more irregular and invasive (Fig. 3A; 4C; 5A; 6A, C). Observed striae are often arranged in wide, lightly curved (Fig. 3B; 5D), deep bundles, partly overlapping. Their morphology suggests that they could be created with some kind of retouched tool. What is important, in some cases on the bases clear, deep cuts were identified, connected most probably with chiselling of the tusk to create a proper shape of the point (Fig. 3B; 6D).

### CONCLUSIONS

- ➡ The conducted studies constitute the first traceological analysis performed on Mladeč type Points made of mammoth tusk from Mamutowa Cave in Poland.
- ➡ The obtained preliminary data pay attention to the high degree of uniformity of the technological treatments carried out in the manufacturing process of the presented type of artefacts.
- ➡ They were prepared with high minimalism, that is, the fact that only activities necessary for forming a given artefact were performed.

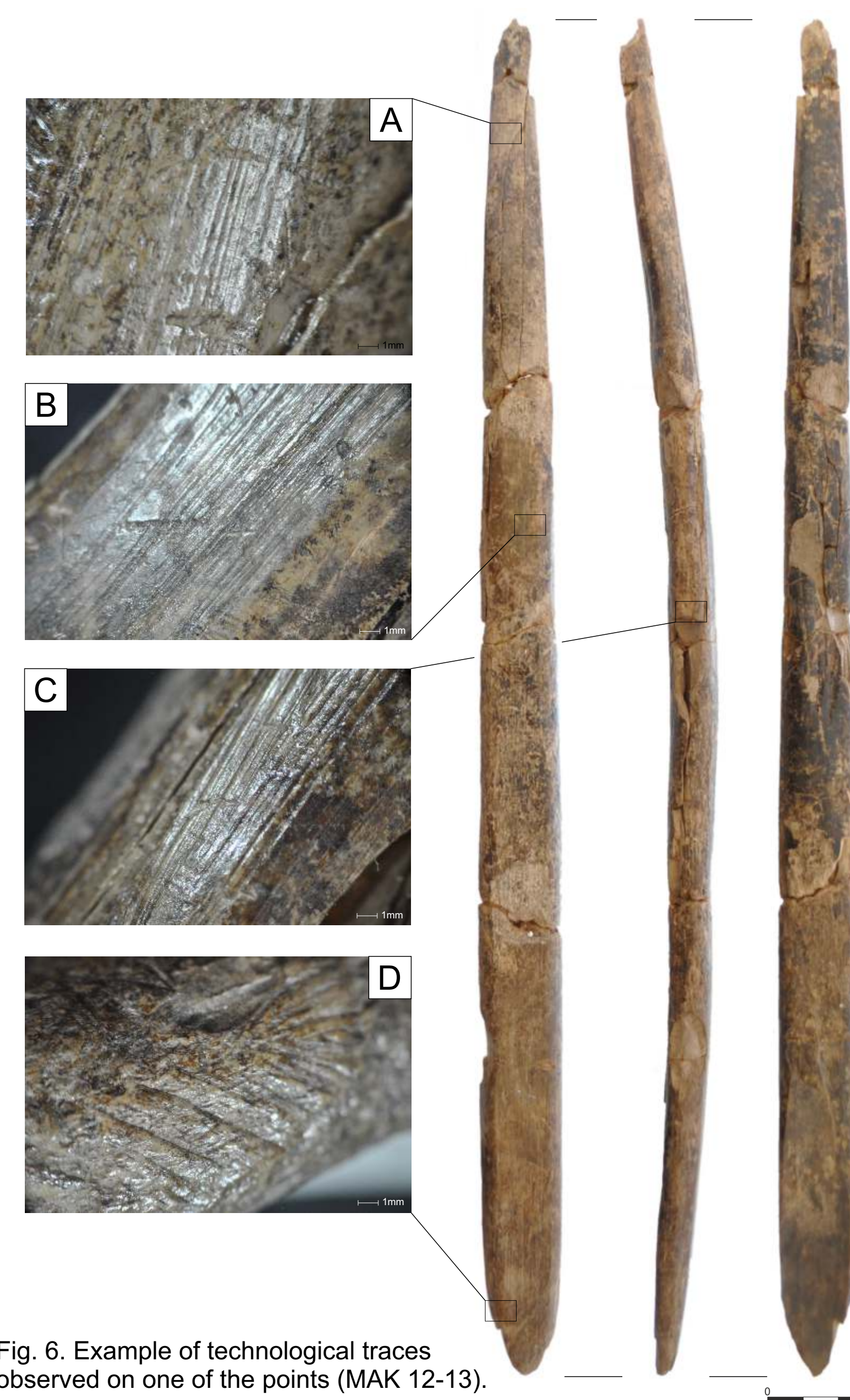


Fig. 6. Example of technological traces observed on one of the points (MAK 12-13).

### References:

Pitulko V. V., Pavlova E. Y., Nikolskiy P. A. (2015): Mammoth Ivory technologies in the Upper Palaeolithic: a case study based on the materials from Yana RHS, Northern Yana-Indighirka lowland, Arctic Siberia, *World Archaeology*, DOI: 10.1080/00438243.2015.1030508

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