



## Project Gallery

# Beetle body parts as a funerary element in a cremation grave from the Hallstatt cemetery in Domasław, south-west Poland

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The discovery of an ornament made from *Phyllobius viridicollis* beetles in a cremation grave at the Domasław cemetery highlights the diverse use of organic materials in funerary rites. Together with dandelion pollen, the find offers interpretative potential for reconstructing the seasonal timing of the burial.

Keywords: Eastern Europe, Early Iron Age, Urnfield culture, archaeoentomology, scanning electron microscopy, *Phyllobius* sp., pollen

## Introduction

Organic elements identified at Urnfield culture cemeteries are usually limited to cremated bones and charcoal fragments. In rare cases, pseudomorphs of textile fabrics have preserved (Gleba & Mannering 2012). Until now, there has been no conclusive evidence for the use of insects as decorative elements by prehistoric communities (Huchet 2014; Hałuszko *et al.* 2022).

More than 800 cremation graves dating to the Hallstatt period (*c.* 850–400 BC) were discovered at the Lusatian Urnfield culture cemetery in Domasław (51°0′39.96″N, 16°56′30.696″E) in 2005–2007 (Goslar 2019) (Figure 1A & B). Most of the graves contained a standardised set of vessels along with numerous imported items, such as swords, bronze vessels, ornaments and toiletry items (Figure 1C & D), providing evidence of intensive contact between the community buried there, important subalpine centres of the Hallstatt culture and groups from the Mediterranean region.

Grave 543 is one of the most impressive (Figure 2A). The burial pit was the deepest discovered in the cemetery, containing a square, log chamber. Ecofacts and artefacts were discovered in the backfill of the grave chamber.

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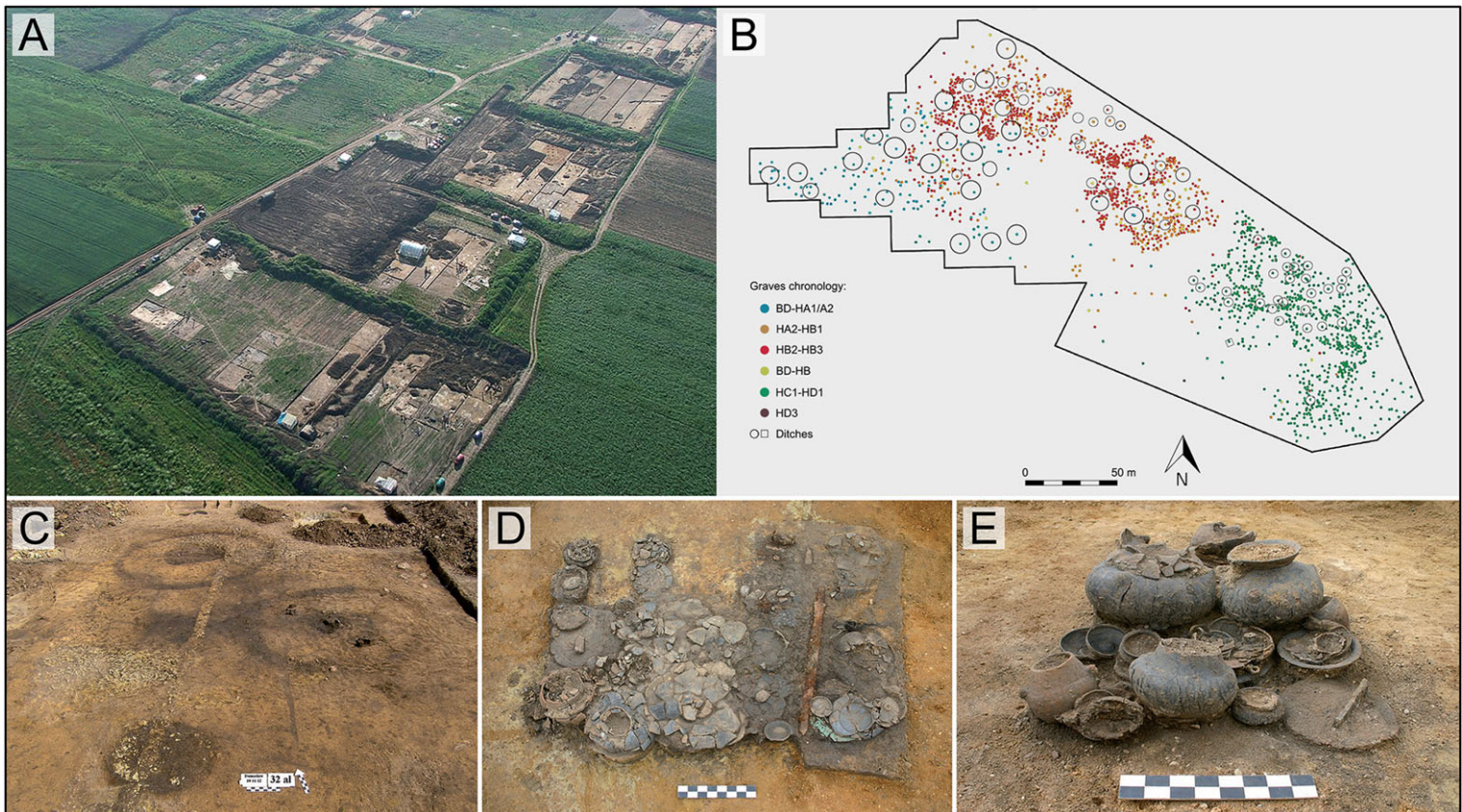


Figure 1. Field excavation at the cemetery in Domaskaw: A) general view of the site; B) site plan of the cemetery with chronology of burials; C) fragment of the cemetery with the plough layer stripped and chamber graves visible; D) grave no. 390 with a sword; E) grave no. 4270 with a large set of vessels (figure by J. Zipser, A. Józefowska, S. Domański & A. Haliusko).





*Figure 2. Chamber grave no. 543: A) arrangement of vessels in situ; B) close-up on the south-east part of the burial with urns 1, 2 and 5; C & D) urn no. 1 in situ; E) harp-shaped fibula in urn no. 1 with the insect fragments marked with arrows (figure by A. Woźniak & A. Hałaszkó).*



## Characteristics of organic materials identified in urns from grave 543

Three urns were among the vessels discovered in grave 543 (Figure 2B & C). Examination of the cremated bones indicated that each urn contained a single human individual. In urn 1, a child aged approximately 9–10 years old was interred with cremated animal bones identified as a sheep/goat (Gediga & Józefowska 2020). Urn 2 contained the remains of an adult individual of undetermined sex, aged 20–35 years, while urn 5 contained very few bones, negating the visual assessment of age and sex (Figure 3).

In the upper part of the backfill of urn 1, a bronze, harp-shaped fibula (Figure 2D & E), a braid, birch bark fragments (Figure 4) and approximately 17 fragments of insect exoskeleton (Figure 5) were recorded. Pollen was identified on one of the birch bark fragments (Figure 4E & F), most likely from the common dandelion (*Taraxacum officinale*). The pollen had heavily eroded exine spines and was coated with sediment, and as the excavation of grave 543 took place in winter, modern contamination can be excluded. It remains uncertain, however, whether the dandelion pollen reflects intentional deposition—from a floral offering for example—or wind-blown contamination during

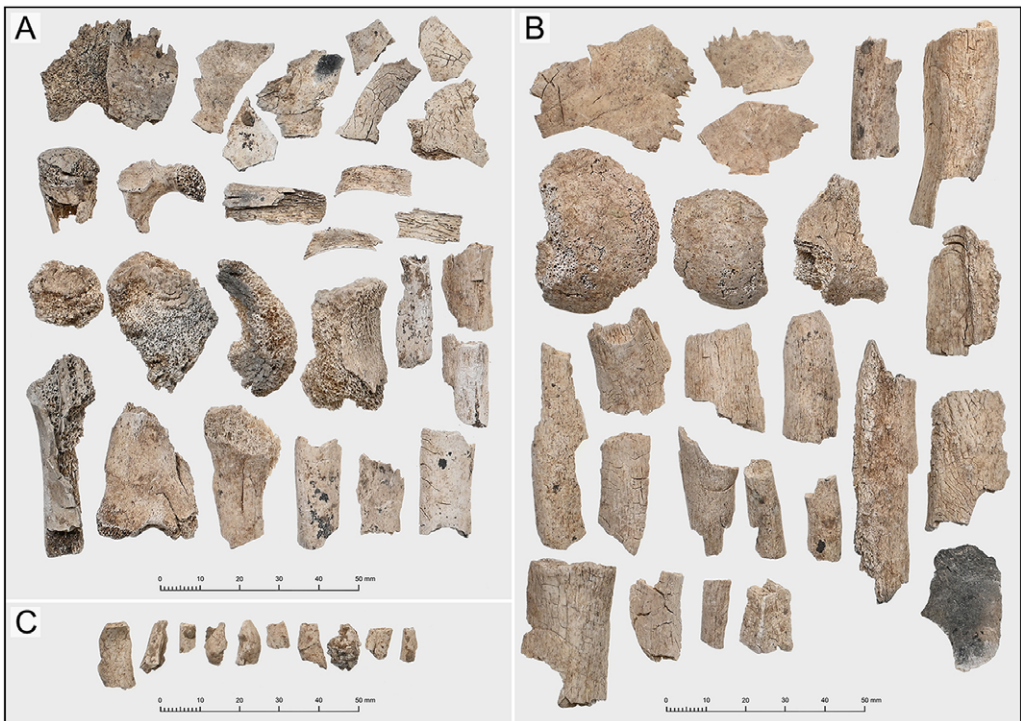


Figure 3. Cremated human bones from grave no. 543: A) best-preserved bone fragments of a 9–10-year-old child from urn no. 1; B) best-preserved bone fragments of an adult from urn no. 2; C) bone fragments of an individual of undetermined age and sex from urn no. 5 (figure by A. Hatuszko).



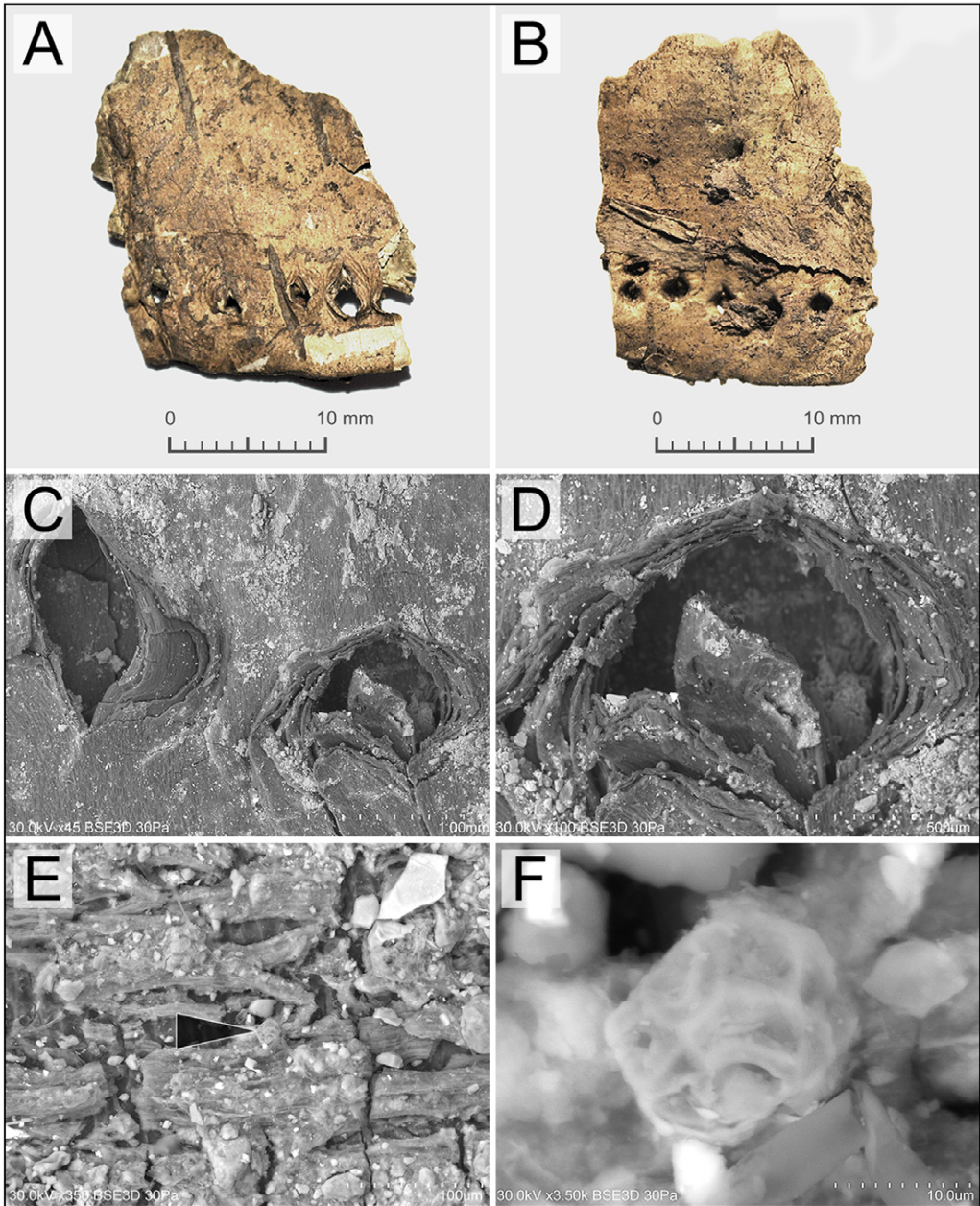


Figure 4. Preserved birch bark fragments: A & B) birch bark fragments from the upper layer of urn no. 1; C & D) SEM-BSE imaging of visible sewing holes; E & F) identified *Taraxacum officinale* pollen in SEM-BSE imaging (figure by A. Sady-Bugajska & A. Hahuszko).

burial. Macroscopic examination and imaging using scanning electron microscopy with back-scattered electrons (SEM-BSE) identified no insect body parts or imprints thereof on any of the preserved birch bark fragments.

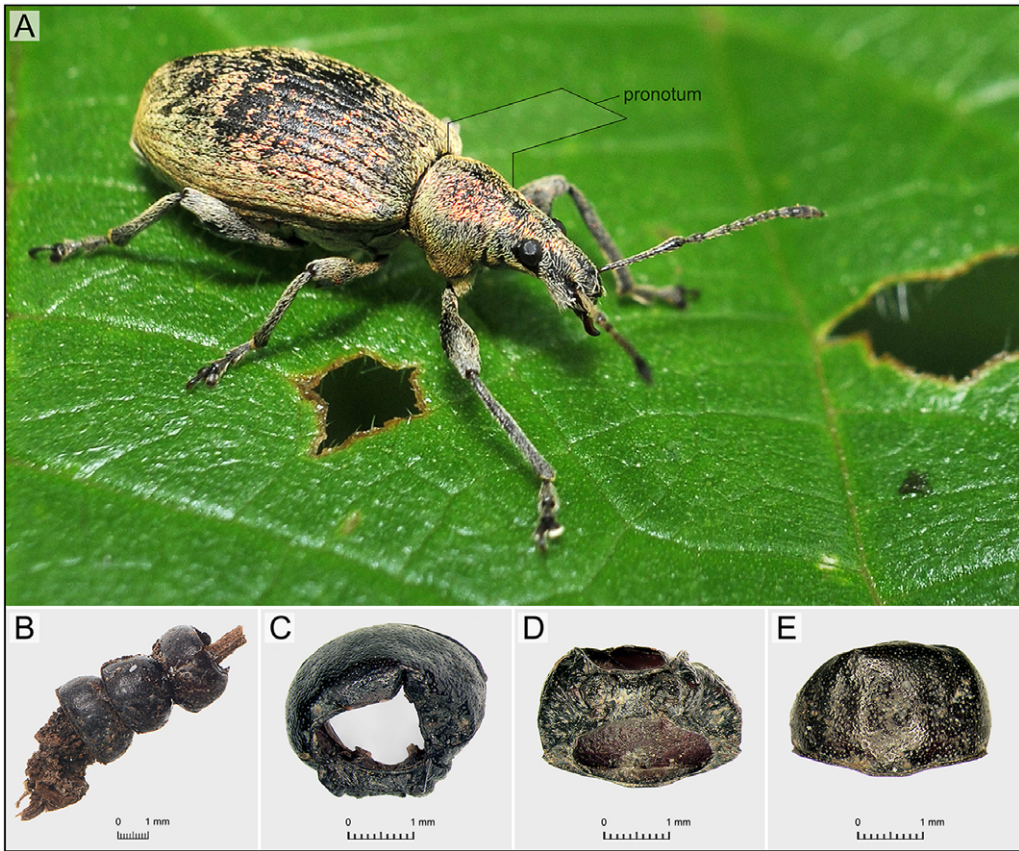


Figure 5. Pronota of *Phyllobius* sp. beetles: A) contemporary representative of *Phyllobius* sp. with pronotum marked; B) pronota of *Phyllobius viridicollis* strung on a blade of preserved grass; anterior (C), ventral (D) and dorsal (E) side of one of the pronota of *P. viridicollis* from grave 543, urn no. 1 (figure by J. Józefczuk, J. Kania & A. Hahuszko).

## Archaeoentomological research

Morphological and microscopic entomological analyses identified 12 whole and five fragmented pronota of the beetle species *Phyllobius viridicollis* (Figures 5 & 6). Like the other organic elements, these ecofacts were most likely preserved as a result of impregnation by chemical compounds precipitated by passivation of the copper present in the bronze alloy from which the harp-shaped fibula was made. Only pronota were found in the sediment; their uniform appearance and the preservation of the coxae suggest that the remaining parts of the legs as well as the head and abdomen were intentionally removed. Some of the pronota were strung on a preserved blade of grass, while others were dispersed. Those found in what was likely their original arrangement were



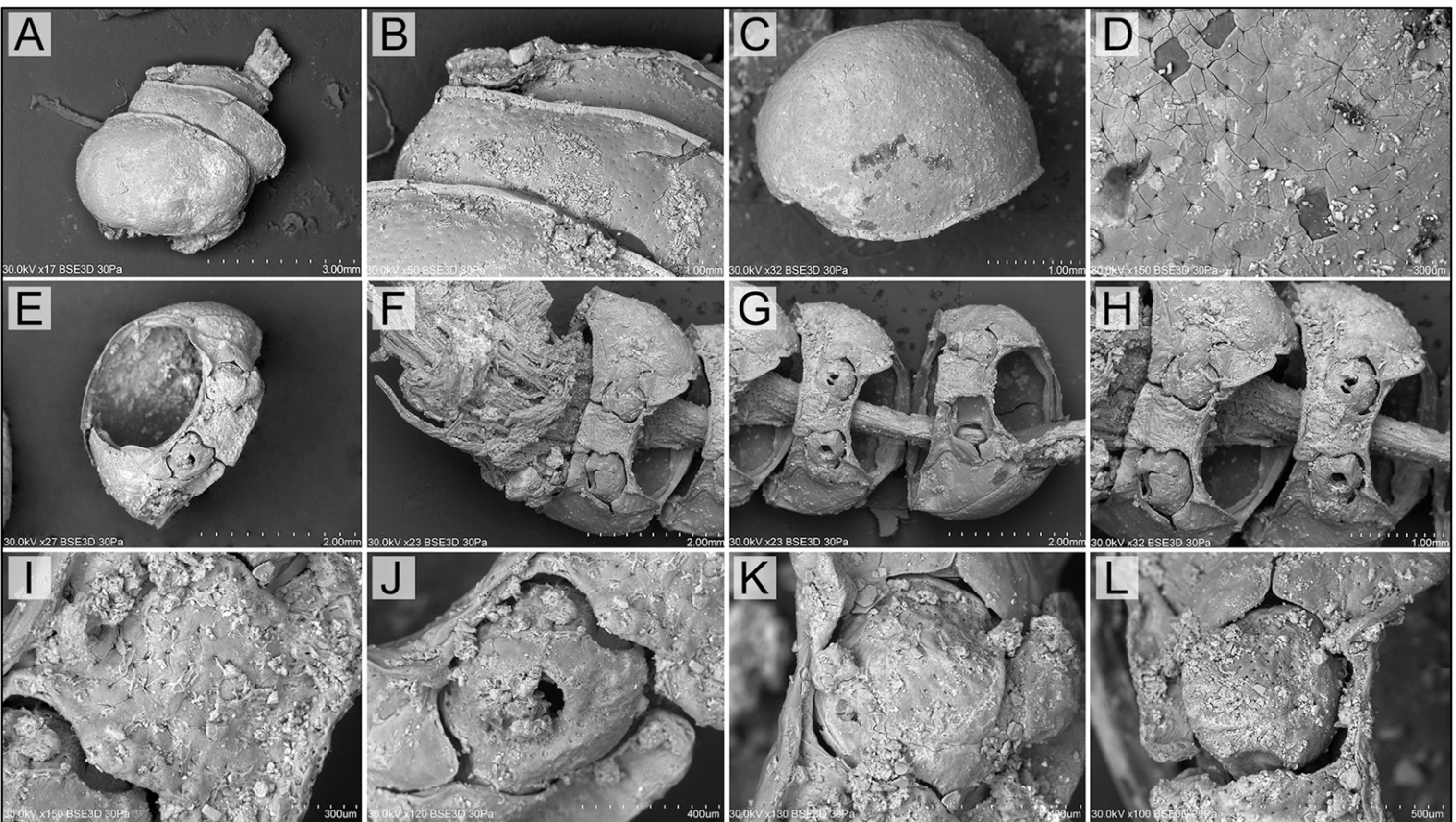


Figure 6. SEM-BSE imaging of the preserved pronota of *Phyllobius viridicollis*: A–D) dorsal side; E–H) ventral side; I) central ventral side; J–L) coxa (figure by A. Hatuszko).

organised in one direction, overlapping each other (Figures 5B & 6A, B, F, H). While the pronota have darkened (Munsell 10YR 2/1), their chitinous surfaces retain a characteristic gloss.

## Discussion and conclusions

Insects discovered in funeral contexts are most often associated with magical practices and interpreted as symbols of the transience of life and death (Andrews 1994). The beetle pronota in grave 543 were probably strung as an ornament, but its function is more difficult to interpret. Perhaps it was a part of the ornamentation of the birch bark container or the harp-shaped fibula. Or perhaps it was part of a necklace given as a gift in a birch bark container to the child interred in the urn.

Ethnographic accounts of the Hutsuls, a Slavic ethnic group that occupies areas of western Ukraine and northern Romania, describe necklaces made from the rose and copper chafers (*Cetonia aurata* and *Protaetia cuprea*, respectively). The necklaces, composed of approximately 80 beetles, were worn by girls as talismans to ensure their prosperity (Moszyński 1939). The natural shine and durability of the chitinous insect exoskeleton provide value as decorative elements. During the Victorian era in Britain (AD 1837–1901), insects, particularly beetle wing covers, were widely used for ornamentation and as part of elaborate jewellery and costume applications.

Given the fragility of the exoskeleton, ornaments composed of insect remains are typically produced shortly after the selected species emerges from its larval stage and are subject to rapid natural degradation. Consequently, their archaeological visibility is severely constrained, making the pronota from Domasław exceptional finds.

Seasonality plays a critical role in the contextualisation of this funerary find. The flowering period of *Taraxacum officinale* typically spans two intervals annually, from April through August. In contrast, adult *Phyllobius viridicollis* are limited to a narrower temporal window, generally from May to July, with occasional occurrences extending into August. This synchronicity suggests that the burial of urn 1 most likely took place in late spring or early summer.

The presence of *Phyllobius viridicollis* pronota within the burial assemblage of grave 543 at Domasław highlights the deliberate utilisation of readily available faunal materials in symbolic or ornamental capacities. However, due to the inherently ephemeral nature of most organic remains, particularly those of invertebrate origin, direct archaeological evidence of such practices is exceedingly rare.

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