ANIMAL PERFORATED TEETH DEPOSIT FROM MAGDALENIAN SITE AT WILCZYCE (SOUTHEASTERN POLAND). WHAT THEY WERE USED FOR? A USE-WEAR CASE STUDY

Depósito de dientes de animal perforados del yacimiento magdaleniense de Wilczyce (sureste de Polonia). ¿Para qué se usaron? Un estudio de caso de huellas de uso

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ABSTRACT Many years of research on archaeological site at Wilczyce brought into light a unique and diversified evidence of the Late Magdalenian hunters living in southeastern Poland. Among several thousands of artefacts one hundred sixty two perforated teeth of arctic fox were discovered. There were deposited in one spot of *ca*. 10 cm in diameter, close to female skeleton in prenatal age. Large part of the assemblage (few dozens of best preserved pieces) were a subject of traceological investigations in order to establish how these decorations were made and which way they were wearing. Perforations in teeth were made in two ways and the teeth were fastened on both side being cloth' decoration. Probably complete teeth were ripped off the cloth before deposition and put together with broken specimens (collected purposely) in a small sack made of organic material.

Key words: Late Pleniglacial/Early Late Glacial, Arctic Fox Teeth, Traceology, Ornament.

RESUMEN Tras muchos años de investigación en un yacimiento arqueológico de Wilczyce se dio a conocer una evidencia única y diferenciada de los cazadores del Magdaleniense Final que vivían en el sureste de Polonia. Entre varios miles de artefactos se descubrieron ciento sesenta y dos dientes perforados de zorro ártico. Se depositaron en un lugar de unos 10 cm de diámetro, cerca de un esqueleto femenino prenatal. Gran parte del conjunto (unas docenas de las piezas mejor conservadas) fueron objeto de análisis traceológico para establecer cómo se hacían estos ornamentos y de qué manera se usaron. Los dientes se perforaron desde ambos lados y se cosieron al vestido como adorno.

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Probablemente, los dientes completos se arrancaron del vestido antes de la deposición y se juntaron con muestras rotas (recogidas deliberadamente) en una pequeña bolsa de material orgánico.

Palabras clave: Pleniglacial Final/Glacial Final Antiguo, Dientes de zorro ártico, Adorno.

Many years of research on archaeological site at Wilczyce brought into light a unique and diversified evidence of the Late Magdalenian hunters living in the southeastern Poland (Schild, 2014a). Specific conditions of artefacts deposition – within the frost wedges, allowed good preservation of several thousands of flint and quartz artefacts (Królik, 2014), but especially those made of bone, antler and ivory (Boroń, 2014), all that accompanied by rich faunal assemblage, including woolly rhinoceros, horse, arctic fox, arctic hare, marmot, red fox, polecat, brown bear, suslik, reindeer and birds (Lasota-Moskalewska, 2014a; Nadachowski *et al.*, 2014). Unusual find are Venus figurines made of flint (Boroń *et al.*, 2014; Winiarska-Kabacińska, 2014a). Research on archaeological data, including animal furs and numerous sandstone slabs and blocks interpreted as remains of dwelling floor or evidences of their construction, suggests that Late Magdalenian site in Wilczyce was a winter residential camp (Schild, 2014). Among the above artefacts a female skeleton in prenatal age was recorded (Irish, 2014). It was discovered, similarly to other artifacts, in the ice wedge cast, within an area no larger than 1 m^2 and was directly dated to 12870+/–60 BP (uncal). The site itself, basing on twenty-four C^{14} estimates, is dated between the end of last Pleniglacial (GS-2a) and the beginning of the Late Glacial (GI-1e) (Schild, 2014b). Close to it an assemblage of one hundred sixty two perforated teeth of a arctic fox (*Vulpex lagopus*) was deposited in one spot of *ca*. 10 cm in diameter (figs. 1 and 2) (Lasota-Moskalewska, 2014b; Sulgostowska, 2014; Winiarska-Kabacińska, 2014b). It consists mainly of incisors (149 items: I1-9; I2-16; I3-27; Roots I-30; Crowns I-67; after Lasota-Moskalewska, 2014b) and 13 premolar teeth, and all the teeth came from upper jaw (maxilla), from at least 31 mature animals. Both complete and broken items were put together. Large part of the assemblage (few dozens of best preserved pieces) were a subject of traceological investigations in order to establish how these decorations were made and which way they were wearing. So the observations were directed toward the registration of technological and use traces. For analyses a stereoscopic microscope was used with magnifications ranging from 6 to 56 times.

Artefacts were taken for observations without any special preparation, especially cleaning, to not remove stains and recoloration visible on the teeth surface.

In the course of research it was observed that perforations in teeth were made in two ways. A minority of specimens (17) carry clear traces of root scraping either on one or both sides before the perforation was executed. In consequence on the surface around the perforations scratches of different length and depth are observed, undoubtedly made with a flint tool (fig. 3). Perhaps that kind of scraping was sometimes performed already during the process of perforation to speed up that activity. However, in most cases (44) a perforation was made straight without

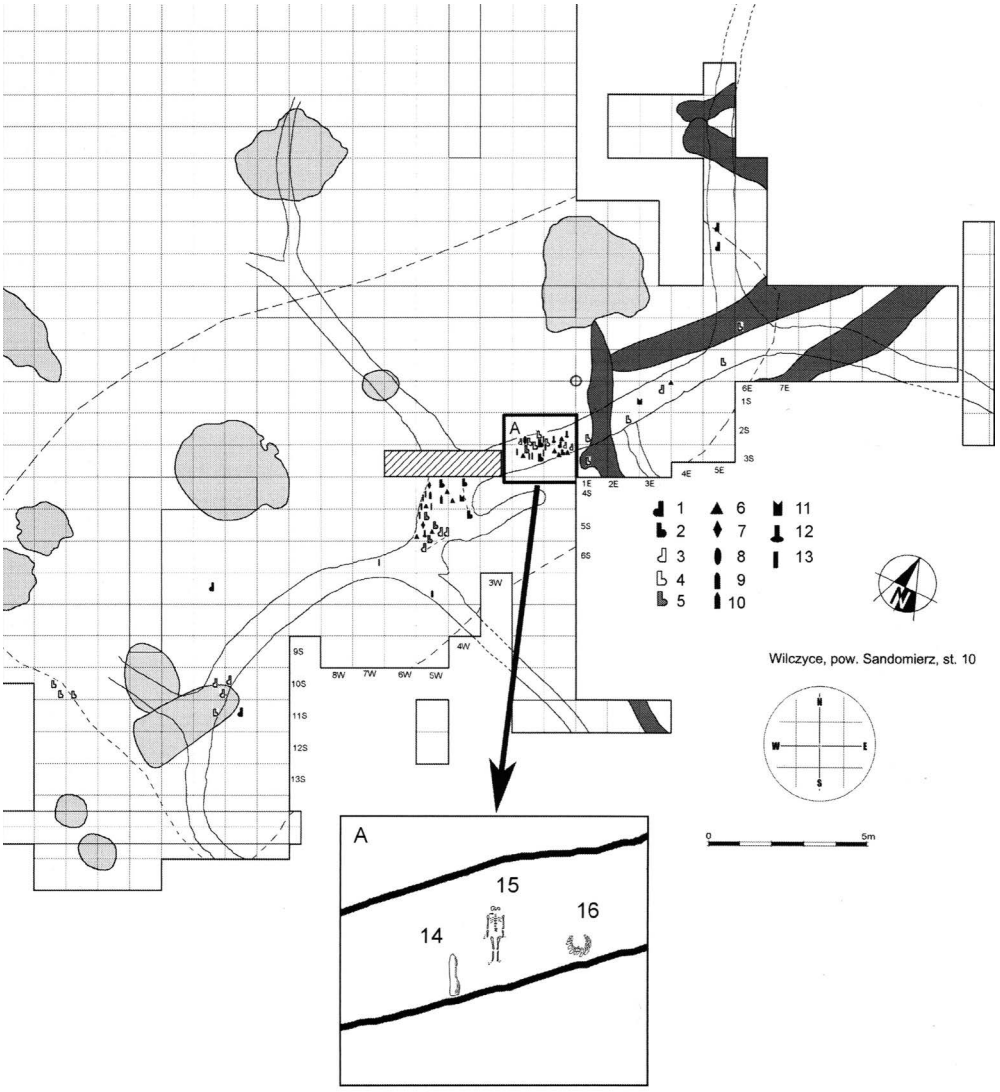

Fig. 1.—Horizontal distribution of bone, antler and ivory artifacts in the ice wedge cast. Key:1, figurines with buttocks in base part of left edge, chocolate flint; 2, figurines with buttocks in base part of right edge, chocolate flint; 3, figurines with buttocks in base part of left edge, Turonian flint; 4, figurines with buttocks in basal part of right edge, Turonian flint; 5, bone and ivory figurines; 6, antler and ivory points; 7, intermediate tools; 8, rods; 9, spatulas; 10, chisels; 11, handles; 12, awls; 13, needles; 14, fragment of the elongated ivory plaquette; 15, symbol for approximate location of slightly dispersed bones of human perinatal skeleton; 16, necklace (after Boroń, 2014:fig. 12.1). Solid line – boundaries of the ice wedge cast.

Fig. 2.—Tight concentration of arctic fox tooth beads near a large bone fragment. Photograph by H. Królik (after Schild, 2014b:fig. 4.15).

Fig. 3.—Surface of root showing traces of scraping.

any initial tooth' surface preparation. In this case small splinters and damages of root surface are visible, usually on ventral parts of the tooth (fig. 4). Perforation was drilled with a flint tool from the upper and lower side of the tooth respectively. Different techniques of making perforations may suggest different persons engaged in its production as well as different time of manufacture. Not all the teeth were found in a complete shape, showing traces of damages that could appear in the course of wearing (fig. 5).

Fig. 4.—Surface of root showing traces of damage.

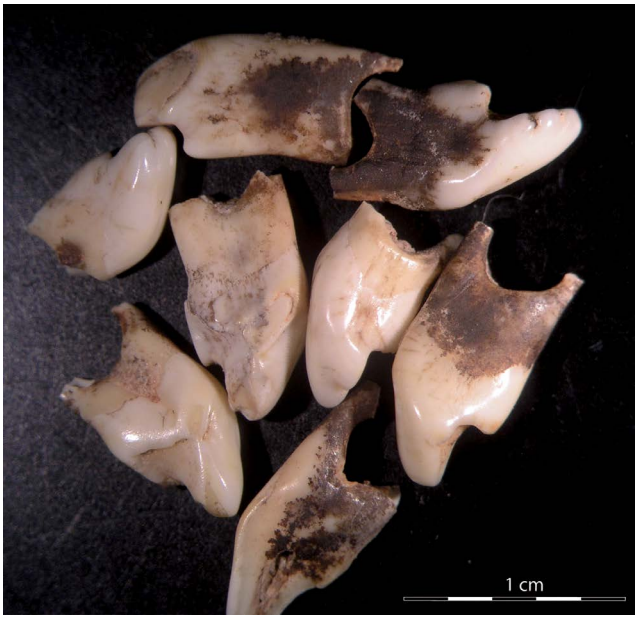

Fig. 5.—Broken perforated teeth.

Most of premolars were intentionally sawed on the crown side to split the tooth into half to make its shape and size similar to incisors (figs. 6 and 7). Similar behavior was recorded on Magdalenian sites in Gönnersdorf and Andernach-Martinsberg, also in the case of arctic fox tooth (Alvarez-Fernández, 2000:fig. 2).

Fig. 6.—Tooth showing traces of sawing.

Fig. 7.—Teeth showing traces of sawing.

Another issue is how were they wear. Ornaments made of arctic fox teeth are known from many Magdalenian sites (Płonka, 2012) and usually they are described as pendants. However, question arise whether they served as hangers or were sown to a cloth or other objects being its' part. Traces recorded on teeth' surfaces and around perforators often were ambiguous. In some cases recoloring and abrasion on both sides of a perforation suggest that second case (Vanhaeren and d'Errico, 2002:fig.10-10c, 10-11). Traces of similar character were recognized in the course of ethnographic research and were produced experimentally as well (Bonnardin, 2008, 2009). Above mentioned recoloring, usually brownish-redish, is also recorded in the case of perforated teeth from Wilczyce being placed both on flat surfaces and inside perforations (figs. 8 and 9). That can be explain by chemical properties of a cloth the teeth were fastened to. In the light of traceological research, it seems that perforated teeth from Wilczyce, fasten on both sides, were cloth' decoration rather than hangers. And certainly they were not used to make a necklace.

Fig, 8.—Tooth showing discolorations and dulling on the surface and along the edge.

Fig. 9.—Tooth showing discolorations and dulling on the surface and along the edge.

Another issue is how to interpret teeth deposit from Wilczyce. Due to the way it was recorded (see Irish, 2014) the relation of a prenatal child burial and the teeth deposit is not completely convincing as no traces of a grave pit survived. So its interpretation as a grave offering is only hypothetical. Teeth belonged to at least 31 adult individuals that most probably were not hunted by Wilczyce occupants around the site (Nadachowski *et al.*, 2014; Lasota-Moskalewska, 2014) and the teeth were collected for a longer time. Intensity of traces visible on every specimen point to a long time a dress was used after teeth fastening as well. The way and form they were found – complete and broken pieces clustered in one small spot – suggest that complete teeth were ripped off the cloth before deposition and put together with broken specimens (collected purposely) in a small sack made of organic material, like leather or bark. Accepting the relation of this deposit with a prenatal child burial (grave offering) one may pronounce a symbolic/magical meaning of fox teeth for Magdalenian societies playing distinctive and prestigious role in the burial practices (Vanhaeren and d'Errico, 2005).

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