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JAKSICE II – A NEW GRAVETTIAN SITE IN SOUTHERN POLAND

JAKSICE II – NOVÁ GRAVETTSKÁ LOKALITA V JIŽNÍM POLSKU

Jarosław Wilczyński, Piotr Wojtal

Abstract

In 1912 L. Kozłowski and W. Kuźniar discovered a new Paleolithic site in Jaksice. A fireplace with flint artefacts, which appeared to be Aurignacian, was found in a loess exposure. This was one of the first open-air Palaeolithic sites discovered in territory of Poland. During fieldwork conducted at the site in 2010-11, an interesting assemblage of flint artefacts was discovered. This new material can be clearly linked to the Gravettian culture. This antiquity was also confirmed by radiocarbon dating performed on mammoth bones from this site. In this work, an analysis of the assemblage is presented and it is also compared with the Kraków Spadzista assemblage. Although the assemblage is small, it sheds new light on the variability of Gravettian assemblages in southern Poland around 24 ka BP.

Keywords

Gravettian, Jaksice, Spadzista, southern Poland

Introduction

In March 1912 west of the village Jaksice in a place situated on the bank of the Vistula River, opposite the mouth of the Raba River, L. Kozłowski and W. Kuźniar discovered Paleolithic site (Kozłowski, Kuźniar 1914). A 10–12 cm thick lens of charcoal was discovered at a depth of about 6 meters below the ground surface in a loess exposure eroded by a local stream. The material consisted of a mixture of gray bone ash, bone fragments and 13 flint artefacts. The visible length of the hearth was less than 2 meters. Kozłowski and Kuźniar (1914) mention bone remains which were identified as woolly mammoth (*Mammuthus primigenius*) and horse (*Equus* sp.). The flint artefacts include five endscrapers (with a strongly arched scraping end) and one retouched blade (fig. 2). They strongly resemble the Aurignacian tradition - especially the artefacts at Kraków Zwierzyniec (Chmielewski 1975). This discovery was one of the first open-air Palaeolithic sites in territory of Poland and it yielded a rich bone assemblage as well as lithic material. Unfortunately, both archaeological and paleontological materials, as well as the information about the exact site location were lost during the wars.

Results

In late autumn 2010, almost 100 years after the discovery of L. Kozłowski and W. Kuźniar, new work was undertaken at the presumed location in Jaksice by J. Wilczyński from Institute of Systematics and Evolution of Animals PAS in Kraków. Based on the description set out in article (Kozłowski and Kuźniar 1914), the probable location of the 1912 finds was determined to be in a small ravine, near the Vistula River. The visible loess terrace was cleaned. At a depth of about 6 meters below the ground surface, in a layer of bluish-gray loess, ash layer with a large number

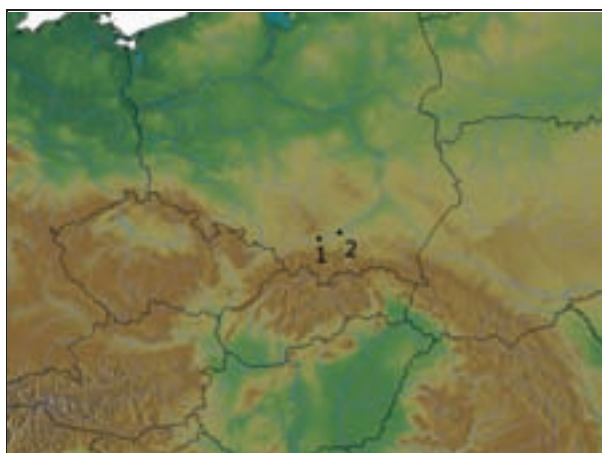


Fig. 1. Location of the Kraków Spadzista (1) and Jaksice II site (2).

Obr. 1. Poloha lokalit Kraków Spadzista (1) a Jaksice II (2).

of burned bones and isolated flint artefacts were discovered. During regular fieldwork conducted in spring 2011, 12 m² were excavated (fig. 2). All of the sediment from the cultural layer containing Paleolithic material was wet-sieved. During the excavation both stone artefacts and mammal remains were found.

A fragment of mammoth tooth provided an uncalibrated date of 23,460±150 BP (Poz-42517), which is chronologically consistent with the central European shouldered point horizon of the Gravettian period (Kozłowski 1996). Of the 30 artefacts (not including small chips) there were 2 chunks, 6 flakes, 12 blades, 9 tools and one burin spall (fig. 3). Jurassic flint (17 items) and erratic Cretaceous flint (7 items) were the main raw materials. Remaining single artefacts were made of differ-

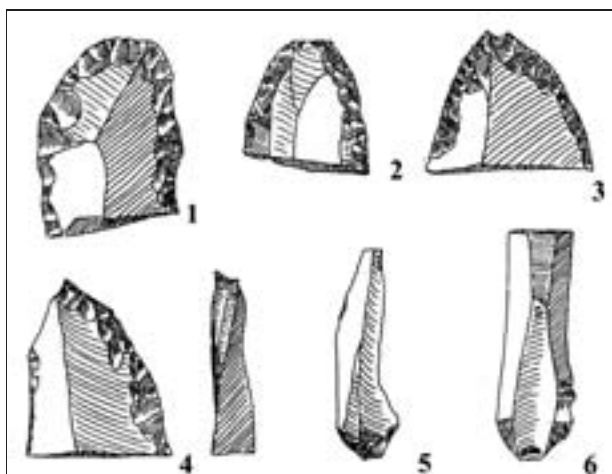


Fig. 2. Flint inventory from Jaksice discovered in 1912 (after Kozłowski, Kuźniar 1914).

Obr. 2. Pazourkové nálezy z Jaksic roku 1912 (podle Kozłowski, Kuźniar 1914).

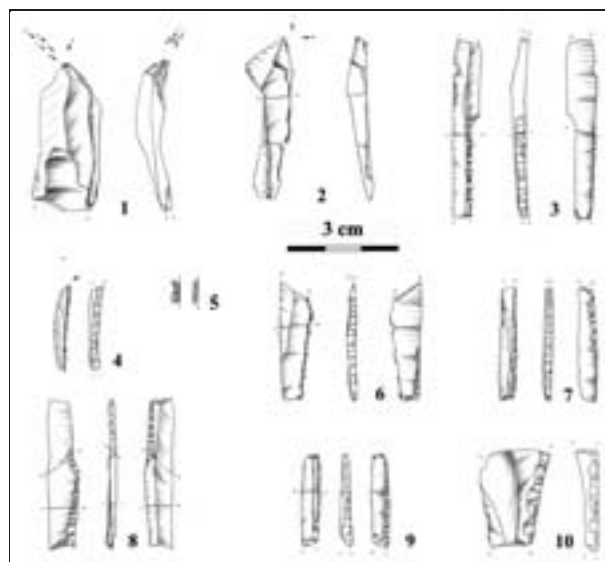


Fig. 3. Flint inventory from Jaksice II. Dihedral burin (1), burin spall from dihedron burin (2), shouldered point (3), backed blades (4–9), retouched blade (10).

Obr. 3. Pazorkové nálezy z Jaksic. Klínové rydlo (1), odpad z klínového rydla (2), hrot s vrubem (3), čepele s otupeným bokem (4–9), retušovaná čepel (10).

ent types of erratic flint (including chocolate flint), which were recently discovered in the area of the Sandomierz Valley (Wilczyński 2009). One third of blades (12 in total) originate from exploitation of double platform cores with a common striking surface. Tools are the most interesting part of the inventory. They include a dihedron burin (fig. 5:1), a single shouldered point (fig. 3: 3), six backed blades (fig. 3: 4–9) and a retouched blade (fig. 3: 10). Backed blades are mainly small, always straight, slender and thin. Half of them are rectangles. One lateral edge tends to be formed by steep retouch and the opposite edge is almost always retouched by flat retouch on the ventral side (fig. 3: 6–9). The proximal end of these tools, when present, is always straight, mainly formed by retouch on the ventral side (fig. 3: 6, 8, 9). On one rectangle bipolar steep retouch is observed (fig. 3: 8). Two of the backed blades have visible impact traces. The shouldered point is also very slender. The base of this item is prepared by flat retouch of the ventral side (unfortunately it is partially broken). Much more massive blades were used for production of the burin and the retouched blade. The retouched blade fragment has two continuously retouched edges. This stone assemblage is typical for the Gravettian period.

Excavations carried out in 2011 yielded thousands of burnt and small bone fragments. Identification of species and skeletal elements was possible for only 55 remains. They belonging to six taxa: hare (*Lepus* sp.), arctic fox/red fox (*Vulpes lagopus/Vulpes vulpes*), bear (*Ursus* sp.), horse (*Equus* sp.), woolly mammoth (*Mammuthus primigenius*) and reindeer (*Rangifer tarandus*) (tab. 1). Remains of woolly mammoth are the most numerous. The most common elements were small skull fragments, teeth

and ribs, which belong to a minimum of two individuals – an adult and a juvenile. Only slightly less numerous are the remains of two reindeer individuals (tab. 2). Limb bones (particularly metapodials) are the most common elements. Notable is the absence of reindeer phalanges.

At the site calcaneus of hare, distal part of metapodial of arctic fox/red fox, single phalanx of horse and fragment of canine of young individual of big carnivore, possibly bear (*Ursus* sp.?) were found. The remains of rodents were obtained during wet-sieving of sediments from the cultural layer. No fish remains were found among the numerous small fragments of animal bones. This suggests that the basis of Gravettian hunter-gatherer economy at this site were large mammals. This result is different from that which are known from such Gravettian cave site as Geißenklösterle and Hohle Fels (Conard, Münzel 2010). However, at Pavlovian open air sites, fish remains are also very rare (Wojtal et al. 2011).

The presence of a large river (possibly also wetlands and river crossings used by the animals) facilitated the hunting of big game animals. Some signs of human activity are also visible on the palaeontological material. A series of cut marks made during skinning of the carcass were observed on the distal part of a reindeer metatarsus at the front/dorsal side above distal articular surface (code Mtd-1 after L. Binford 1981). Almost all bones, except small carpus bones of reindeer discovered in anatomical position, were splintered probably during marrow extraction. During excavations and wet-sieving, thousands of tiny burnt bone fragments (no larger than 10 mm) were uncovered. This suggests that larger mammal bones were used as fuel in hearths. Lack of reindeer phalanges and observed cut marks made during skinning of carcasses

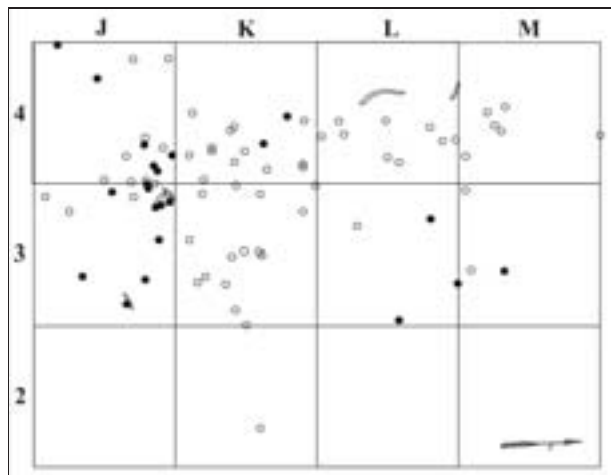


Fig. 4. Spatial distribution of the flint artefacts (black dots) and bones (white).

Obr. 4. Prostorová distribuce pazourkových artefaktů (černá body) a kostí (bílé).

Tab. 1. NISP (Number of Identified Specimens) and MNI (Minimum Number of Individuals) of mammals from Jaksice II.

Tab. 1. NISP (počet identifikovaných kostí) a MNI (minimální počet jedinců).

Taxon	NISP	MNI
<i>Lepus</i> sp.	1	1
<i>Vulpes lagopus/Vulpes vulpes</i>	1	1
<i>Ursus</i> sp. (?)	1	1
<i>Rangifer tarandus</i>	23	2
<i>Mammuthus primigenius</i>	28	2
<i>Equus</i> sp.	1	1
Total	55	8

clearly shows that these animals were killed not only for meat, but also for hides.

Discussion

Technology and typology of the lithic assemblage discovered in 2011 does not correspond to the assemblage described from 1912. This material can be clearly linked with the Gravettian, in contrast to the 1912 Aurignacian assemblage. Therefore, in order to distinguish between these two sites, the newly discovered site has been designated as Jaksice II. It is possible that the site discovered by L. Kozłowski was located a short distance from the current site and is now completely destroyed.

Jaksice II is an extremely valuable site for understanding Gravettian occupation of the Polish territory. The Gravettian occupation from open-air sites in southern Poland is known only from Kraków Spadzista (Kozłowski et al. 1974, 1975; Kozłowski, Sobczyk 1985, Sobczyk 1996). It is analogous to that observed in Moravia where settlement concentrated in limited areas such as Dolní

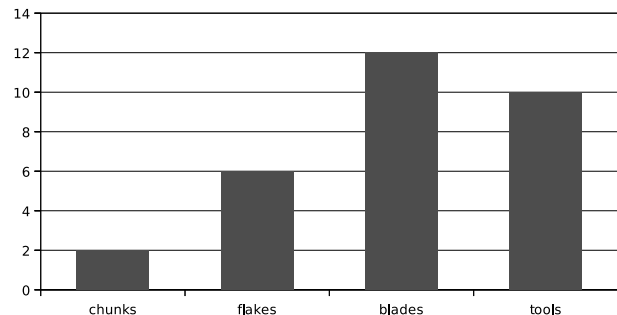


Fig. 5. Frequency of flint artefacts from Jaksice II.

Obr. 5. Počty artefaktů z Jaksice II.

Tab. 2. Skeletal elements, NISP (Number of Identified Specimens) and MNI (Minimum Number of Individuals) of reindeer (*Rangifer tarandus*) from Jaksice II.

Tab. 2. Jednotlivé kosti, NISP (počet identifikovaných kostí) a MNI (minimální počet jedinců) soba (*Rangifer tarandus*) z Jaksice II.

Skeletal element	NISP	MNI
Molar	1	1
Ulna	1	1
Radius	4	2
Metacarpus	3	2
Carpus	5	1
Pelvis	1	1
Tibia	2	1
Metatarsus	6	2
Total	22	2

Věstonice-Pavlov, Předmostí or Uherské Hradiště microregion (Škrdla, Luká 1999; Svoboda 2002). Jaksice II demonstrates that a Gravettian group reached as far as southern Poland. These movements took place along large river channels (fig. 1). Further fieldwork will show whether a large base camp existed in the vicinity of this site (as at other Gravettian localities), or whether the discovered site is only a short-term hunting camp. Remains of large mammals, cut-marks on bones, a high proportion of blades and tools all suggest, that the site can be interpreted as a short-term killing and butchering site. The dating and the function of this site is analogous to another well known Gravettian site – Kraków Spadzista (Wojtal – Sobczyk 2005; Kalicki et al. 2007). This makes it possible to compare these two inventories with each other.

Although the Jaksice II collection is small, this inventory (especially the tools) makes it possible to study the techno-typological characteristics of this sample. The difference in size between the tools at the two sites is particularly noticeable. This is especially evident in the case

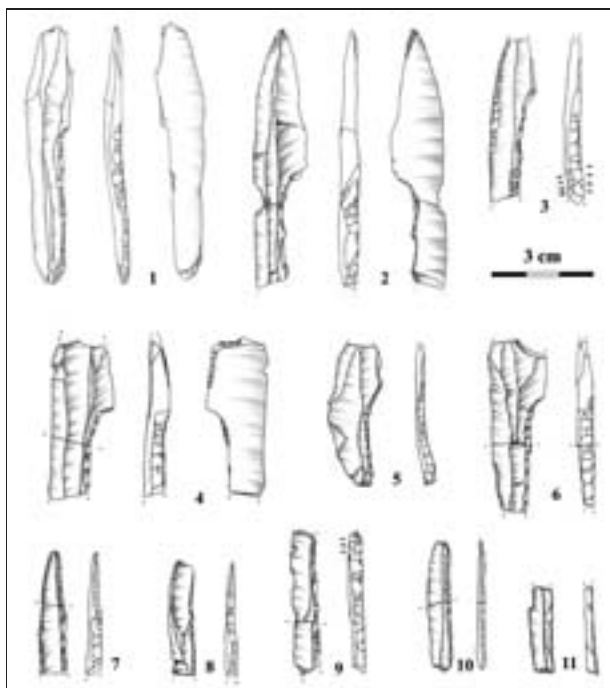


Fig. 6. Flint inventory from Kraków Spadzista unit B+B1. Shouldered point (1–6), backed blades (7–11).

Obr. 6. Pazourkové nálezy z Krakova Spadzisté, B+B1. Hroty s vrubem (1–6), čepele s otupeným bokem (7–11)

of the shouldered point. At Kraków Spadzista they are more than twice as large (fig. 6: 1–6). The same applies to backed blades, although it should be noted that Kraków Spadzista assemblage includes a trapezoid (Escutenaire et al. 1999; Wilczyński 2007) (fig. 6: 11). In contrast to the specimens found at Jaksice II, they are formed mostly by using marginal, not step, retouch on the dorsal side. On the rectangles at Kraków Spadzista, the base is formed by retouch on the dorsal side, sometimes thinned by flat transverse retouch on the ventral surface (Kozłowski et al. 1974). Among the backed implements from Kraków Spadzista, there are no similar specimens to those discovered in Jaksice (especially the rectangles with transverse base formed only on the ventral side). These differences in morphology and typology of tools are not due to site function or chronological differences, but could be attributed to possible differences in cultural traditions existing within the Gravettian techno-complex, and/or the availability and quality of raw material used by the hunter-gatherers.

Unfortunately until more sites are found (Sobczyk 1995), it is too early to make statements about cultural diversity in this area during the Upper Palaeolithic. Raw materials for the described inventory could have an impact mostly on morphology of tools. This influence was not so significant, because the Jurrasic flint sources are located a few dozen kilometers from the site. Therefore, it should be noted that although the finds are not numerous, they do shed new light on the variability of Gravettian assemblages in southern Poland at ca. 24 ka BP.

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Resumé

L. Kozłowski a W. Kuźniar objevili roku 1912 novou paleolitickou lokalitu v Jaksicích. Ve spraši bylo nalezeno ohniště s pazourkovými artefakty, které se zdály být aurignacké. Bylo to první sídliště pod otevřeným nebem objevené na polském území. Odkryvem lokality v letech 2010-11 byl získán zajímavý soubor pazourkových artefaktů, které je možné přiřadit ke Gravettienu, což potvrdilo i radiokarbonové datum z mamutího zubu. Předložená práce prezentuje získaný soubor a porovnává ho se souborem z lokality Kraków Spadzista. Přestože soubor je malý, přináší nový pohled na variabilitu Gravet-ských souborů v jižním Polsku okolo 24 ka BP.