Appendix B

Faunal Remains from the Sites of Spytihněv-Duchonce, Jarošov-Kopaniny and Napajedla-Brickyard

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1. Spytihněv-Duchonce

Faunal materials excavated during a test excavation of the site (May 29, 2003) and recovered during excavations at the site in the 2003 and 2004 seasons were subject to an osteological examination. Although the faunal remains are highly fragmented, it was possible to identify three species that are known to have been hunted by humans: wooly mammoth (*Mammuthus primigenius*), reindeer (*Rangifer tarandus*) and horse (*Equus germanicus*) (Škrdla, Nývltová Fišáková 2003; Škrdla, Nývltová Fišáková, Novák, and Nývlt 2005).

1.1. Preservation

Among the bones identified as belonging to the wooly mammoth are fragments of long bones, molars, tusk, pelvis and one complete third metacarpal bone with visible cut marks. Bones identified as horse were the proximal end of the third metacarpal and the proximal end of the second metacarpal. The second and fifth metacarpals are often used during the Gravettian as awls. Unfortunately the specimen recovered here has the distal end broken off and so it cannot be said with certainty whether or not it had been used as a tool. Reindeer bones identified were a second upper molar, a lumbar vertebrae, sacrum and patella (see Table B.1). An examination of this table reveals that very few identifiable bones were recovered, with only one individual identified from each bone type.

1.2. Osteometry

I measured the dimensions (using the methodology described in Duerst-Berna 1926) of the proximal second metacarpal bone of the horse. I then compared these dimensions with information published from the Bohemian Karst site of “Poslední Dům” near the town of Chlum u Srbiska (Cholastová 1994). The figures obtained by me fall within the range of variation for *Equus germanicus* during this period (see Graph B.1).

1.3. Age Distribution

Given the size of the molar and the number of lamellae (12), one mammoth was fifteen years old at the time of death. Given the non-fused proximal humeral epiphysis of on a second individual, the age at time of death was between 19 and 26 (based on Haynes 1999). Both the reindeer and horse appear to have been young, mature individuals at the time of death.

1.4. Taphonomy

Damaged caused by climatic conditions and transport are clearly visible on the bones. This indicates extended surface exposure followed by transport, most probably as the result of solifluction, and repeated exposure of the
surface. Damage caused by later agricultural activities at this site is also visible. The mammoth bones were mostly broken into small fragments, most probably as the result of marrow extraction activities and use of the bones as tools. The remaining bones were burned in a hearth. Only a tooth, a patella and vertebrae of a reindeer and the lower leg bones of a horse were recovered. This is primarily waste material, which would indicate that this site served as a butchering place. The bones on which there was larger amounts of meat were removed from the site. When the locations of the bones were plotted on a map, it is apparent that the bones together with the artifacts and charcoal, it is apparent that a tent-like structure was located on the site. The burnt bones and teeth are associated with charcoal and fired artifacts, indicating the presence of a hearth. The species represented would appear to represent cold-loving species, although it is not possible to draw firm conclusions from such a small sample. The range of species is equivalent to that found in this region and at other Gravettian sites, with the exception of Jarošov, where small mammals completely dominate (fox and hare and to a lesser degree wolf and reindeer – see Musil, Appendix A.

1.5. Conclusions

- Faunal remains from the wooly mammoth, reindeer and horse were found at this site.

- The bones identified as horse and reindeer represent one individual each, two individuals of different ages were identified from the wooly mammoth remains.

- The size of the equine metacarpal bones indicate that its size falls within the range of variation found among this species during this period.

- The horse and reindeer were adults and the mammoths were juveniles.

- Evidence of transport and climatic changes were clearly visible on the bones, indicating extended exposure on the surface and subsequent severe impacts by natural forces and human activities.

Graph B.1. A comparison of the metacarpal bones of *Equus germanicus*. 
Based on the types of bones found, it can be stated that this site represents a butchering place, where the animals were butchered and the more valuable portions removed from the site.

The outline of a dwelling was identified using the location of faunal material, artifacts and charcoal.

The species identified represent a cold-loving fauna.

The species represented at this site are equivalent to species of fauna found at other sites in the region and other Gravettian sites with the exception of Jarošov (see above).

2. Jarošov-Kopaniny

In 2003, a test pit was excavated on the site of Procházka’s unit and extended to the sides. Two wooly mammoth \((Mammuthus primigenius)\) milk teeth \((molars)\), ivory fragments, bones and a mammoth rib fragment were recovered (Škrdla 2004).

2.1. Age Distribution

The age of the mammoths at the time of death can be determined using the two milk molars. One molar comes from an individual two years old and the second molar from an individual between two and five years of age (using Haynes 1999).

Only mammoth bones were found in the excavated unit and they represent at least three individuals. Two of the individuals were immature and one was adult, with the ivory and bone fragments coming from this individual. Preservation was similar to that at the rest of the site (see Musil, Appendix A). The molars were entirely covered in calcium carbonate. The bones and tusks were broken by human activity into small fragments and most were covered in calcium carbonate.

Tab. 1. Bone type frequencies for individual species / Minimum number of individuals (MNI)

<table>
<thead>
<tr>
<th>Species / Bone category</th>
<th>Wooly Mammoth ((Mammuthus primigenius))</th>
<th>Reindeer ((Rangifer tarandus))</th>
<th>Horse ((Equus germanicus))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teeth</td>
<td>4/1</td>
<td>1/1</td>
<td></td>
</tr>
<tr>
<td>Tusk fragments</td>
<td>10/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertebrae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humerus</td>
<td>1/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metacarpals</td>
<td>1/1</td>
<td></td>
<td>2/1</td>
</tr>
<tr>
<td>Pelvis</td>
<td>1/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tibia</td>
<td>2/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patella</td>
<td></td>
<td></td>
<td>1/1</td>
</tr>
<tr>
<td>Unidentifiable mammoth bone fragments</td>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentine fragments</td>
<td></td>
<td>130, of which 9 are burned</td>
<td></td>
</tr>
<tr>
<td>Unidentifiable bone fragments</td>
<td>423, of which 90 are burned</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Based on the types of bones found, it can be stated that this site represents a butchering place, where the animals were butchered and the more valuable portions removed from the site.

- The outline of a dwelling was identified using the location of faunal material, artifacts and charcoal.

- The species identified represent a cold-loving fauna.

- The species represented at this site are equivalent to species of fauna found at other sites in the region and other Gravettian sites with the exception of Jarošov (see above).
2.2. Conclusions

- Only the remains of wooly mammoth were recovered from the Jarošov-Kopaniny (2003).

- At least three individuals were identified at Jarošov-Kopaniny (2003), two of which were juveniles.

- The range of species present does not deviate from the spectrum found at other Gravettian sites.

3. Napajedla-Brickyard

In 2004, a test excavation was carried out at the Napajedla-Brickyard site. In addition to artifacts and a lump of ochre, faunal remains were found in two separate locations identified here as Northern Margin and Southern Margin (Škrdla, Nývltová Fišáková and Nývlt 2005).

3.1. Northern Margin

Remains of wooly mammoth (*Mammuthus primigenius*) were recovered on the northern edge of the brickyard. The remains include a tusk fragment and unidentifiable bone fragments.

3.2. Southern Margin

In this area, an equine (*Equus germanicus*) third molar and a fragment of the right maxillae of a grey wolf (*Canis lupus*) were recovered in this area.

3.3. Age Distribution

All the faunal remains recovered here come from mature individuals.

3.4. Taphonomy

Based on the bones and teeth preserved here, this site would once again appear to represent a butchering place, from which those portions of the animal with large quantities of meat and the hides were removed from the site because all of the faunal material recovered is waste material. The species represented would appear to represent cold-loving species, although it is not possible to draw firm conclusions from such a small sample. The range of species is equivalent to that found in this region. Given the fact that this site has been severely impacted by modern activities, no firm conclusions may be drawn.

3.5. Conclusions

- Faunal remains from of wooly mammoth, horse and grey wolf were found in both parts of this site.

- Based on the types of bones found, it can be stated that this site represents a butchering place, where the animals were butchered and the more valuable portions removed from the site.

- The species identified represent a cold-loving fauna.

- The species represented at this site are equivalent to species of fauna found at other sites.

Literature


Cholastová, J. 1994: *Zpracování osteologických nálezů z lokality Poslední dóm u Chlumu u Srbska.* Master’s Thesis on file at the Faculty of Science, Charles University, Prague.


