L'Homme de Néandertal, vol. 6, LA SUBSISTANCE, Liège, 1989, pp. 69 à 73

PRELIMINARY NOTES ON THE FAUNA OF THE MIDDLE PALAEOLITHIC SITE AT ZWOLEN (POLAND)

by

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The Zwoleń site was discovered in 1983 by an amateur archaeologist and a salvage project was set up, which has now completed three excavation campaigns (1984, 1985, 1986). The fieldwork was carried out jointly by the Institute of the History of Material Culture, Polish Academy of Science (IHMK, PAN, Warsaw) and the State Archaeological Museum (Warsaw). The present author was invited to coordinate the palaeontological and archaeozoological analysis of the mammalian and eventual other animal remains recovered. The following brief report is based on the preliminary investigations of the mammal remains, collected and excavated up to 1985; they were analysed during two short visits to Poland. A separate paper to be published in this same series (SCHILD and SULGOSTOWSKA, 1988) deals extensively with the history, excavation, geomorphological, stratigraphical and archaeological context of the site; here only a very short summary of these aspects is given.

The Zwoleń site lies in the Central European Plain, some 120 km SSE of Warsaw. It is situated on the right or southern bank of the Zwolenka River, a tributary of the Vistula (Weichsel). The area was overridden by the Saale glaciation during its maximal extent; the Last Glacial, Weichselian or Vistulian ice sheet did never reach it, but it is profondly affected by periglacial phenomena. As a result of the advance of the land ice and its periglacial vanguard, land surfaces in the Central European Plain which had been formed in the early Vistulian or before were generally destroyed either by erosion or by land remodeling through extensive periglacial slope processes. Concomittantly, all prehistoric open air sites suffered greatly and up to now only one Middle Palaeolithic site with well preserved fauna is known in this region; it is located on the northern footslope of the Harz at Salzgitter-Lebenstedt (TODE *et al.*, 1953). Zwoleń seems to give us another glimpse at how middle Palaeolithic man lived outdoors in the Central European Plain.

As said, the sites lies on the right bank of the Zwolenka River, which drains the Zwoleń Plateau, a subunit of the southern Masovia Lowland. The stratigraphy of the site can be very briefly summarized as: (1) Massive slope deposits of the maximum extension of the land ice of the Last Glacial or Vistulian, beginning ca. 20.000 B.P.; (2) Some 10 or 11 cycles of cut-and-fill gullying with alluvial, niveo-eolian and loessic deposits dating from the early Vistulian; (3) Boulder clay and fluvio-glacial sands from the Penultimate or Saale

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Glacial. The initial gullying would have been triggered by the thawing of deep ice wedges; most later cycles are also preceded by periglacial phenomena.

Lithic artifacts are rare and were extracted from the deposits of cycles II, V, VI and VII. In the lower cycles they can be compared with the Micquo-Prondnikian, higher up bifacial foliates were identified. Faunal remains were found associated mostly with cycles II and V, but quite some finds were also made in cycles VI and VII; sporadic finds occur in cycle I and those younger than cycle VII. Thermoluminescence dates are being processed and those already obtained suggest that the cut-and-fill cycles began somewhere around 115.000 B.P., while cycle V started around 80.000 B.P. The same time bracket can be used provisionally for most of the faunal finds.

Preservation of the osseous material varies markedly. Some specimens are well preserved indicating rapid, alluvial burial and little post-depositional degradation; others were buried very slowly or suffered appreciable from post-depositional degradation of the collagen. The effects of periglacial phenomena has still to be gauged and no detailed study has yet been made of the various *post-mortem* traces on the material. However, it would appear that butchering traces (chopping and cut marks), traces of carnivore activity (punctures, gnawing, etc.), and traces of transport (rolling; striae) are virtually absent. The assemblages may well have been affected by selective transport, which could have removed small and lighter bones (ribs, vertebrae) and smaller bone fragments, creating thus a kind of lag deposit characterized by high frequencies of skulls, jaws and other not easily moved remains. In the end it may be quite difficult, if not impossible, to evaluate the combined effect of the various taphonomic agents involved, i.e. "natural" attrition due to burial circumstances and post-burial degradation, the effects of selective transport and the removal by man of body parts with high food value.

A preliminary list of species is given in table 1, together with their absolute frequencies based on fragment or specimen counts (for a definition of a specimen, see GAUTIER, 1984). We can distinguish very generally two synecological groups: a larger group of cold open biotope herbivores and a smaller group of riverine forest animals with beaver and probably elk. These groups do fit with the setting of the site, which formed, as it were, an ecotone between the plains of the Central European Lowland with no doubt generally open habitats (parkland, steppe, etc.) and the more wooded slopes and alluvial plain of the palaeo-Zwolenka.

As can be seen, horse is the most frequent game (Fig. 1), represented by cranial and postcranial remains: skulls, lower jaws, skulls with lower jaws in articulated position, molariform teeth, long bones (often cannonbones). Evaluated on the basis of the dental remains, the total number of horses may have exceeded 30, part of which can be aged provisionally, as in table 2. The age distribution of the animals appears to be random; the same can be said about the sex distribution, for as far as it can be analysed. Such a distribution might result from hunting with random results. The animals of table 2, especially the younger ones, i.e. those in which the replacement of the teeth is not yet completed, give the impression that they pertain to discrete age groups. This suggests seasonal killing, of individual animals, herds or parts of herds. For the moment nothing can be said about the season, but our guess is summer or fall.

The detailed analysis of the Zwoleń archaeofauna will concentrate mainly on an aspect of pure palaeontological systematics and on the archaeozoological interpretation. The systematic aspect concerns the identity of the horses, which we labeled provisionally *Equus* cf. *remagensis* following NOBIS (1971); other available names are *E. germanicus, E. caballus germanicus* etc. The classification of Pleistocene horses of the Old World is rather confused. One reason may be that morphological differentiation of the finds is difficult, but perhaps also that the French do not read the Germans and vice versa, while the Russians go their own way etc.

The archaeozoological aspect concerns essentially the verification of the fact whether the Zwoleń-horses do fall in discrete age groups and if so, whether these groups can be correlated with a definte period of the year. This would help to reestablish (if necessary) that Middle Palaeolithic man was indeed a big game hunter capable of specialized hunting. At Zwoleń, he apparently went after horses, although he did not disdain other game. The study of the site context as well as that of the adjacent gully systems, which have been tested but which proved to contain no traces of prehistoric activity, suggest that, near Zwoleń, Middle Palaeolithic people may have used the Zwolenka Valley as a game drive, perhaps when herds came to water (see also SCHILD and SULGOSTOWSKA, 1988). It has also been suggested to us that herds may have been crossing the Zwolenka near the site and that this activity may have made them temporarily more vulnerable as a group.

The fauna collected spans several cycles of cut-and-fill, suggesting a long use of the site. This use however should not be viewed as continuous. Zwoleń may have been a game drive locality where a multicomponent "site" could be formed, producing incomplete evidence of many episodes of killing and butchering during certain phases of the early Vistulian, when the valley and the adjacent gullies presented the right characteristics for driving big game. Thus certain privileged localities such as Zwolen may preserve evidence of long term continuity of human behaviour, in the same way prehistoric caves do; both were used for countless generations because of their setting. It may be difficult for *Homo sapiens industrialis* to grasp such behavioural continuity.

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TABLE 1

Preliminary list of mammals collected at Zwoleń up to 1985
(fragment/specimen counts)

Species		
Beaver (*Castor fiber*)	:	3
Mammoth (*Elephas primigenius*)	:	4
Horse (*Equus* cf. *remagensis*)	:	94
Woolly rhinoceros (*Coelodonta antiquitatis*)	:	10
Reindeer (*Rangifer tarandus*)	:	8
Elk (American moose) (*Alcas alces*)	:	2
Steppe wisent/bison (*Bison priscus*)	:	7
Total	:	128

TABLE 2

Provisional age groupings of the Zwoleń horses based on
the material excavated until 1985

Odontological features	Number	Age
m1-m3, m3 slightly worn	1	some months.
m1-m3, M1-M1, M1 slightly worn	5	± 1,5 year?
m1-m3, M1-M2, M2 slightly worn	2	± 2,5 year?
P2 slightly worn (No 258)	1	?
P2-M3, M3 slightly worn	3	± 4,5 year?
P2-M3, M3 medium worn	2	medium adult
P2-M3, M3 much worn	4	old adult

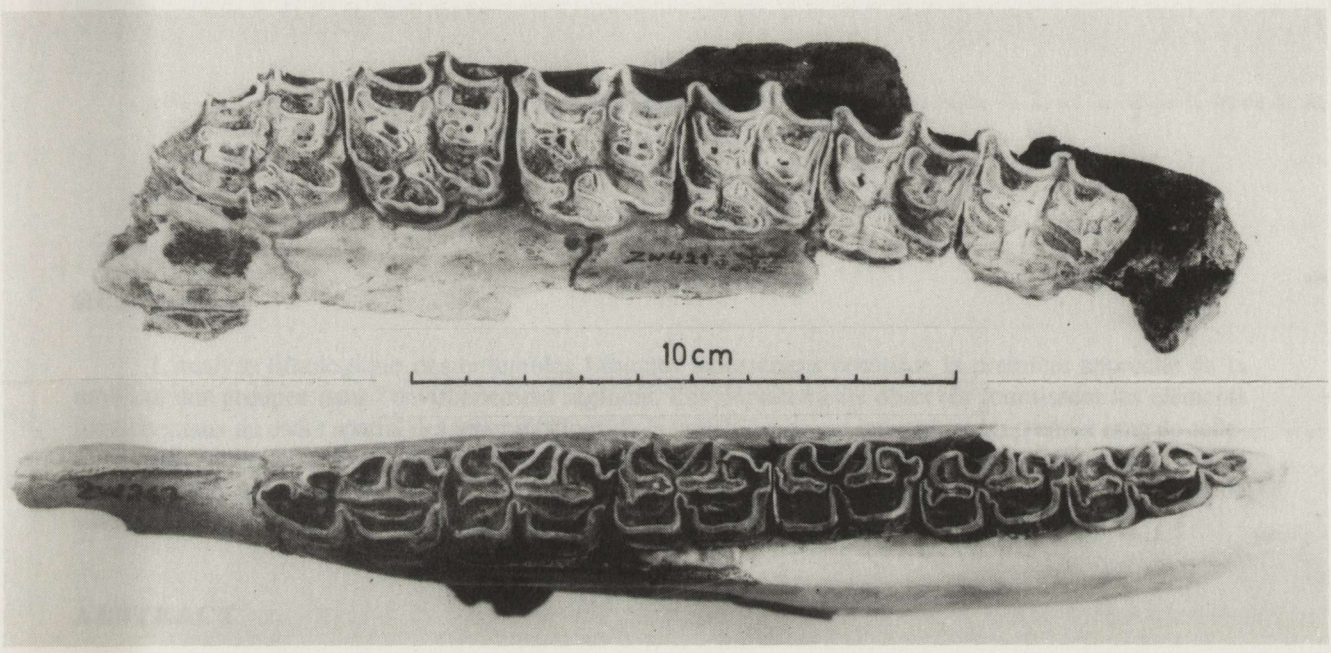

FIGURE 1

Upper left jugal teethrow of wild horse from Zwoleń (number ZW421). Lower left jaw idem (number ZW269). Both represent adult animals.