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The Eemian *Elephas antiquus* finds with Artefacts from Lehringen and Gröbern: are they really Killing Sites?

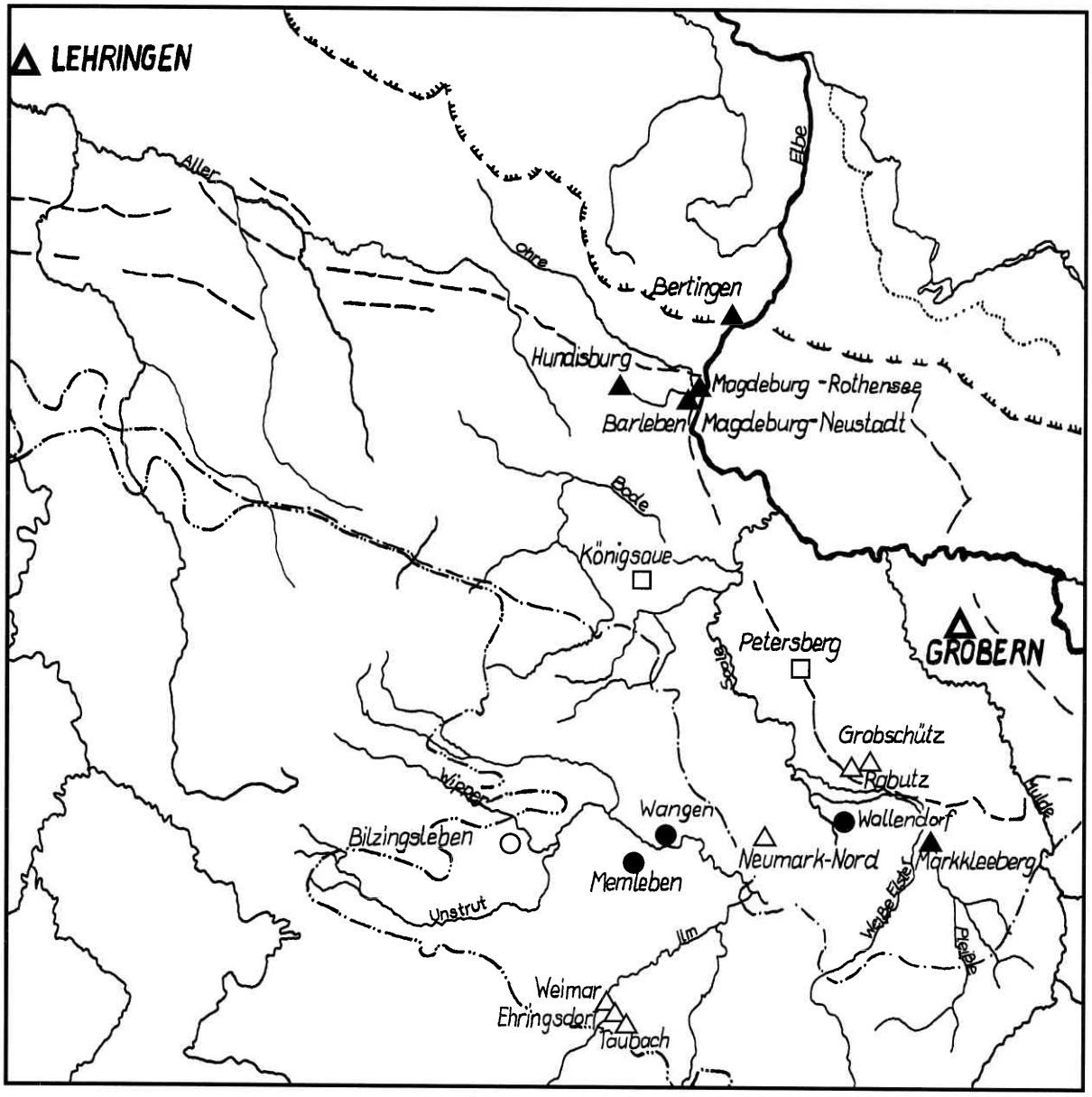
Thomas WEBER

The genesis of human hunting, earlier mostly seen as a very old phenomenon (e.g. from the African Plio/Pleistocene occurrences with hominid remains, stone tools, and faunal assemblages), has become questioned since many argue that these finds reflect especially scavenging behaviour—even a "secondary use" of mammal carcasses (Blumenshine, 1988a). This problem does not only arise after the discoveries in Olduvai's "Zinjanthropus floor" with its two different kinds of hominids leading to the questions: Who was the hunter? Who the hunted? It has also been discussed, however, in connection with such a late find as the Homo erectus "cave home of the Beijing Man" from Zhoukoudian (Binford & Chuan Kun Ho, 1985). Very sophisticated models have been established to find the answer at the question for the human versus the non-human agents responsible for the composition of any given faunal assemblage (Potts, 1986; Bunn & Kroll, 1986; Blumenshine, 1988b). The solution may be complicated as we have to take into account that we mostly find material from large duration home sites (or "living floors") often disturbed by geological processes and there fore only parautochthone in its situation—in the best case.

Thus the discovery and careful excavation of Earlier Paleolithic killing and butchering sites will become very important as a unquestioned source for the reconstruction of human hunting behaviour. In Central Europe a growing evidence of Lower and Middle Paleolithic sites could been found following the intensified lignite working in open-casts during the last years. One of these finds is very interesting in our connection: in 1987 a dredging worker discovered in the open-cast Gröbern (50 km NE from Halle, fig. 1) a large concentration of bones over an area of perhaps 40 m^2, 6 m below the surface during the first rubbish-cut in the mine. Following his report we could save a nearly complete skeleton of *Elephas antiquus* (fig. 2) [the excavation undertaken by the Landesmuseum für Vorgeschichte Halle/Saale was aided by several specialists from different institutions; see the publications from Mania, Thomae, Litt & Weber, 1990 and Eißmann (ed.) 1990]. It laid on the sandy shore of an ancient lake, later covered with muds. The dark colour and high organic content showed us apparently interglacial sediments, and from the palaeontological point of view Litt (1990) found a clear Eemian succession beginning in the Late Saalian and going up to the first Weichselian interstadials. The elephant itself could be dated in the upper *Corylus/Taxus/Tilia* zone. The larger plant remains immediately from the site confirmed the supposition that the animal died near the shore in a part of the lake between 0.1 and 1 m deep.

Asking for the reason of the death the palaeontologist Erfurt identified some osteoporotic changes at different parts of the skeleton like sternum, vertebrae, parts of the autopodium, and at the teeth (fig. 3; Erfurt & Mania, 1990). At the plan of the bones we found the natural articulation of the skeletal units sometimes in order (e.g. at the feet, the pelvis, and parts of the spine). Other bones, however, have been clearly disarticulated, under them the left tusk and the right femur (fig. 4). This can hardly be explained only by a "spontaneous decay" of the carcass. We found, however, only small signs of animal gnawings at the bones possibly responsible for some of the changes in their position.

A much more impressive explanation can be given for these observations: beneath the bones laid artefacts—flint flakes without retouch (fig. 5). At all 28 pieces have been discovered, under them 26 flakes and 2 "wrecked pieces", sharp-edged splinters without sure signs of artificial flaking. These objects can be grouped into five or seven "raw material entities".



△ *Elephas antiquus* finds together with artefacts (Eemian);
● Clactonian (Holsteinian);
○ Microlithic Lower Paleolithic (Holsteinian);
▲ Acheulian with Levallois technique (Early Saalian);
△ Interglacial Middle Paleolithic (Eemian);
□ Early Glacial Middle Paleolithic (Weichselian).

Southern extensions of different glaciations:

····· Weichselian;
– – – Petersberg stage of the Saalian;
— ·· — Elsterian. After Heußner and Weber, 1990 : 238, pl. 1, Liedtke, 1981 : pl. 7, Litt, 1990 : pl. 1.
– – – Warthe stage of the Saalian;
— · — Drenthe (Maximum) stage of the Saalian;

Fig. 1 — Central European *Elephas antiquus* finds together with compared Lower and Middle Paleolithic sites. Probable datings in parentheses. (Drawning from A. Mövius, Magdeburg.)

Fig. 2 — View of the excavation (illustration from the author).

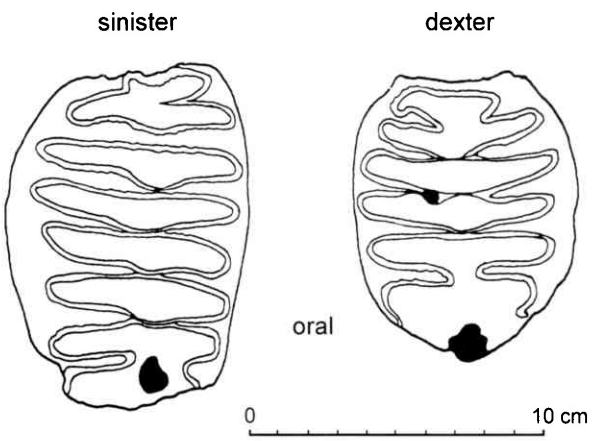


Fig. 3 — Ostitic caverns on the molars (black) [drawning from J. Erfurt, Halle).

Unfortunately no possibility of a "refitting" has been found.

From the functional point of view it seems to be most interesting that—following Heußner's investigations (Heußner & Weber, 1990)—nine of them show microwear traces originating in contact with meet or hide (fine polishes). The relatively small number of these apparently used pieces can be partly explained with a beginning patination on some of the surfaces attacking even the finest traces of meet and hide working. No surface damages on the flat ventral and dorsal parts of the flakes could be observed so that we may exclude a flake transport in the same bag. Rather the flakes have been produced in the vicinity of the skeleton and especially for the purpose to separate it.

The question in which way the people handled the bones cannot be answered with this material. Apparently most of them have not been brought from the site (with the exception perhaps of a part of the left chest). Thus we could confirm that the Gröbern elephant reflects a real butchering site.

Another problem is the question: Is it also a killing site? Two scenarios may be possible

Firstly: *Elephas antiquus*, a relatively old, ill male (and therefore, probably, a "single"), died at that place. Later the people came and used parts of the carcass. We could, however, nearly exclude bone and ivory using. Meet and hide and sinews would be usuable under these temperate conditions of an interglacial only for days or hours after the animal's death. The

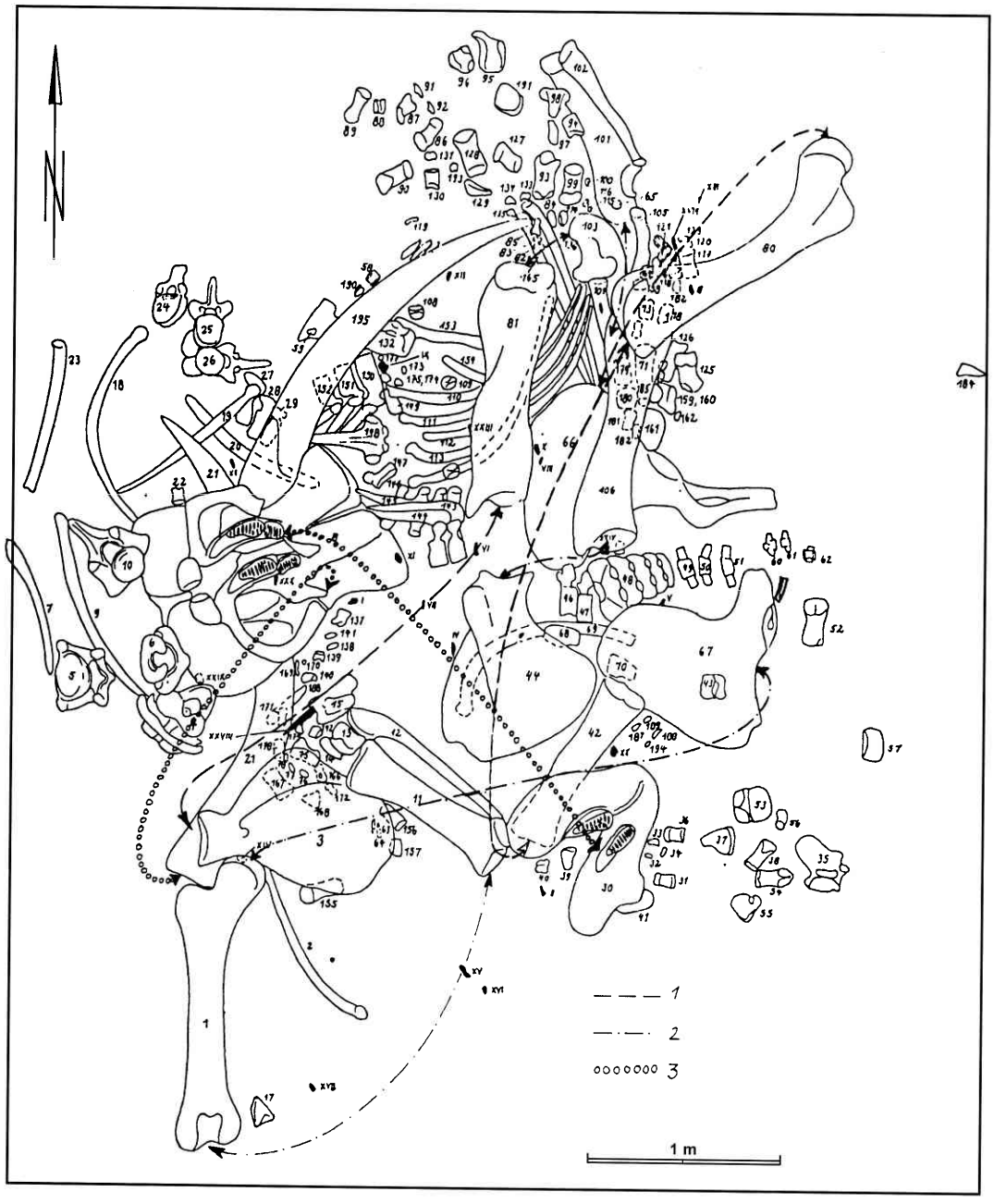


Fig. 4 — The skeleton *in situ* with striking disarticulations of left (1) and right legs (2) respectively between the different parts of the skull (3) [drawning from A. Mövius, Magdeburg].

polishes on the flakes especially argue for meet using.

Therefore we may secondly ask for a possible hunting strategy responsible for our observations. Together with the skeleton and the artefacts three pieces of a cervid tibia have been found. Under two small splinters there were also a larger piece with 13 cm in its length made from a compacta span perhaps as a result of a flaking process (fig. 7). Two small "flake scars" give the piece a sharp point. It is difficult to say if this object found near the broken left tusk under the skull could be understood as a projectile of a lance: we know the finds from Lehringen (Thieme & Veil, 1985) and from Clacton-on-Sea (Oakley, Andrews, Keeley & Clark, 1977) as original lances made from one piece of wood and only with wooden points. Mania and Cubuk (1977), however, described similar so-called "bone points of the Bilzingsleben-Helin type".

If we are not able to decide the question for the probable character of the Gröbern bone point, we may compare the situation there with

Fig. 5 — Flint flake Nr. 26 *in situ* (illustration from the author).

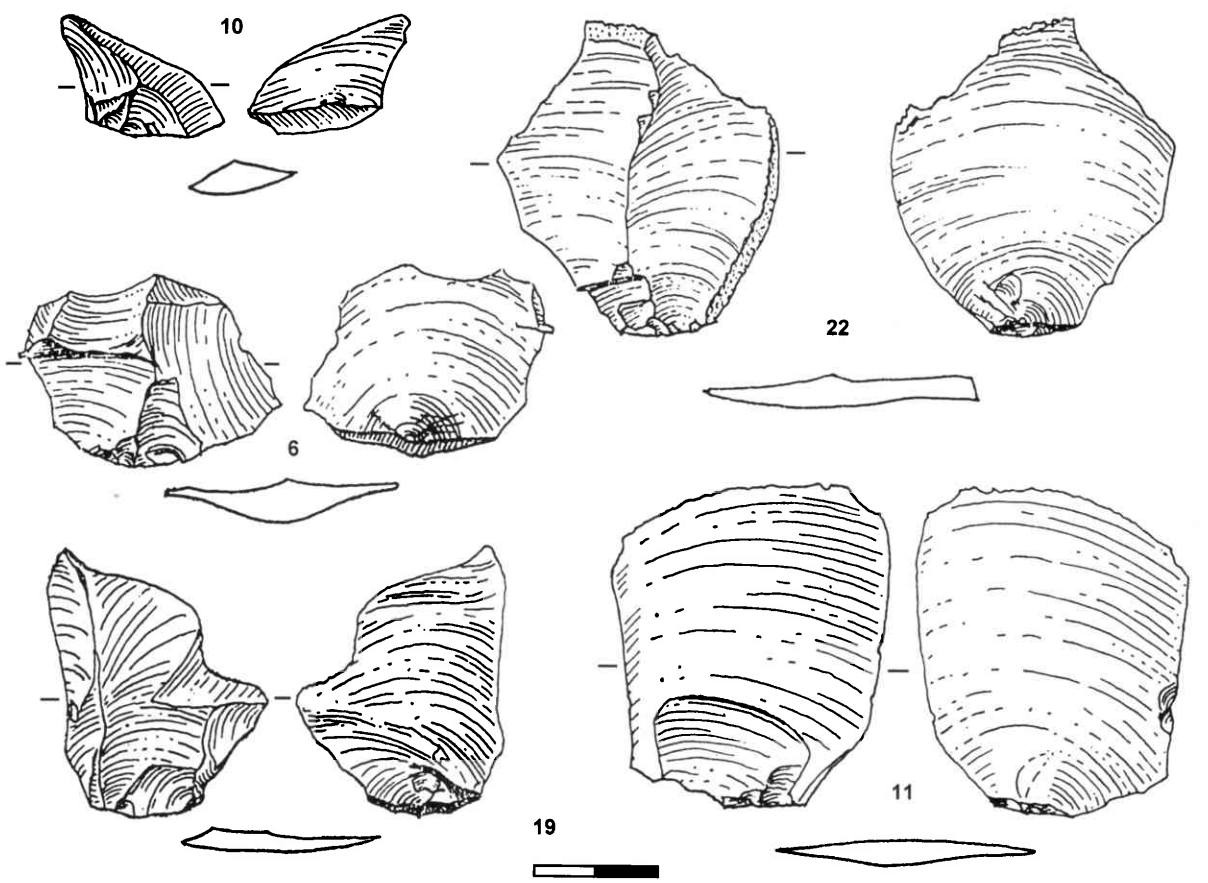


Fig. 6 — Flakes found between the bones of *Elephas antiquus* [drawning from from E. Weber, Landesmuseum Halle].

Fig. 7 — Bone point made from a cervid tibia splinter found between the elephant bones (illustration from E. Hunold, Landesmuseum Halle).

the well-known Lehringen find (Thieme & Veil, 1985). In 1948, an apparently complete skeleton of *Elephas antiquus*, has been found there in Eemian lake sediments. Unfortunately the excavator A. Rosenbrock, an amateur-archaeologist, worked under unsufficient conditions, could not take photographs of his even so surprising observations so that the most important of these, the wooden lance "between the ribs of the elephant", had to be reconstructed using a broomstick (Thieme & Veil, 1985:23, pl. 3). The piece itself, however, has been preserved and could be studied by Thieme and Veil. They showed that this yew stem had been carefully barked, the smaller branches were removed so that the artefact implies a certain amount of labour. Therefore the hunters normally took such a weapon with themselves after the killing. In the case of Lehringen, probably, they were not able to do that as the wounded elephant fallen onto the lance. Thus the absence of such an arm cannot be interpreted as a clear difference between the Gröbern and Lehringen find.

To compare the two sites we can only use the artefacts found in this connection and preserved up to our time—the flint flakes. These pieces may be understood as "occasional tools" (from the functional point of view) produced from prepared cores anywhere in the vicinity and between the bones after the butchering process.

Technologically there are amazing similarities between the two small inventories from Gröbern and Lehringen (cf. Weber, 1990a). Here only two examples may be given for these morphometrical conformities. Figure 8 shows the trend of the development in the arithmetic means of the so-called "Relative thickness index" (the thickness of the pieces divided by the mean between length and breadth multiplied with 100). Generally, a decrease could be observed from the Lower up to the late Middle Paleolithic. That means a tendency to flatter and on the edges rather sharp pieces (without regard to the absolute measurements of the artefacts). In this view it is interesting to see the nearly exact similarity between Gröbern and Lehringen. The corresponding means can be understood as a result of the comparable flaking technique using especially prepared (probably "discoid") cores. In the same manner the picture

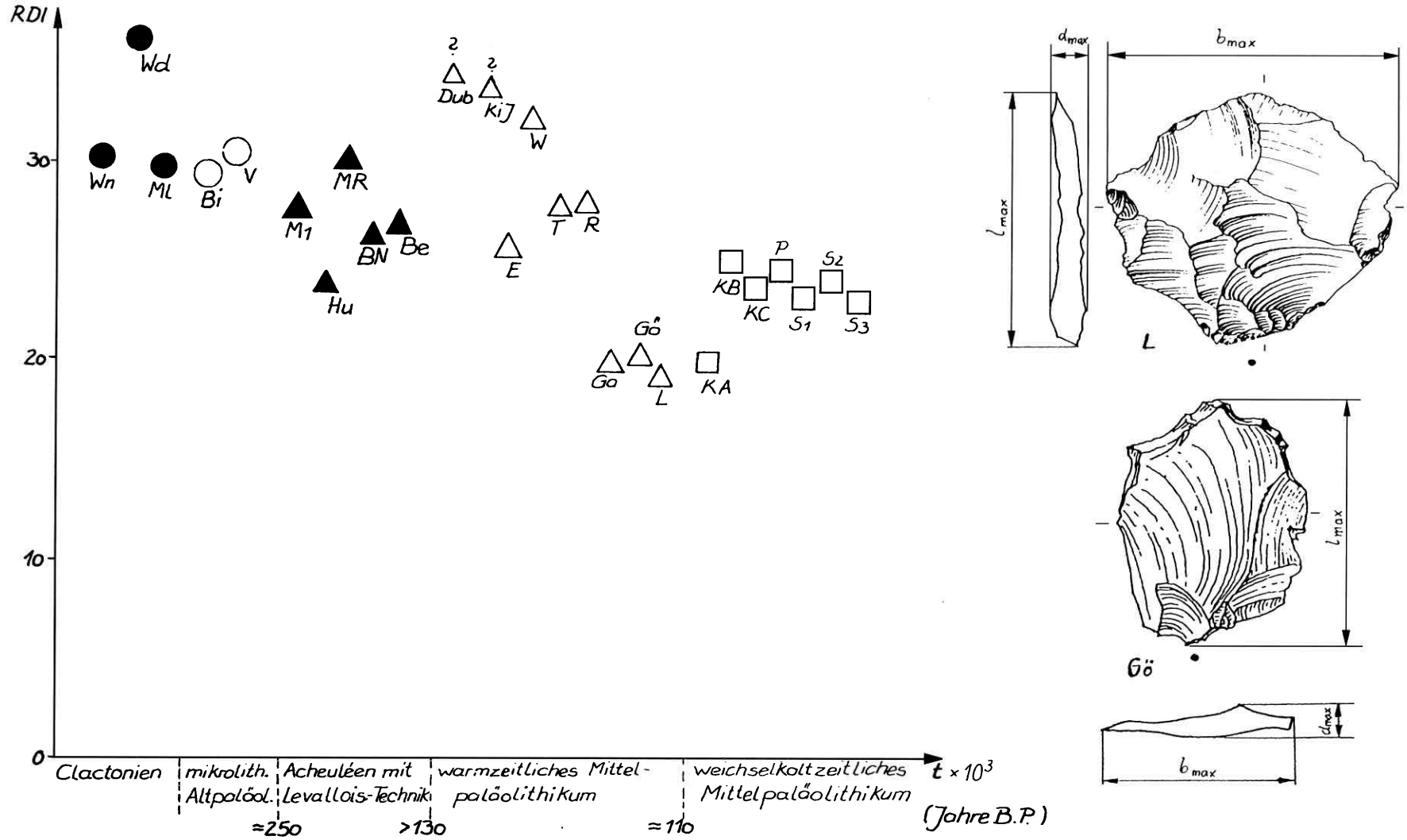


Fig. 8 — Relative thickness index [$RDI = \frac{100\,D}{0.5(L+B)}$] means of Lower and Middle Paleolithic flint flake inventories

● Clactonian, ○ Microlithic Lower Paleolithic, ▲ Acheulian with Levallois technique, △ Interglacial Middle Paleolithic, □ Early Weichselian Middle Paleolithic.

Abbreviations. Be: Bertingen; Bi: Bilzingsleben; BN: Barleben/Magdeburg-Neustadt; Dub: Dubossary (USSR); E: Ehringsdorf; Ga: Grabschütz; Gö: Gröbern; Hu: Hundisburg; KA, KB, KC: Königsaue A, B, C; KiJ: Kislanskij Jar (USSR); L: Lehringen; M1: Markkleeberg 1; Ml: Memleben; MR: Magdeburg-Rothensee; P: Petersberg; R: Rabutz; S1, S2, S3: Samuilitsa II (Bulgaria), upper, middle and lower horizons; T: Taubach; V: Vértésszöllös (Hungary); W: Weimar (Belvédèrer Allee); Wd: Wallendorf; Wn: Wangen. The two examples from Lehringen (L: after Thieme & Veil, 1985:27, pl. 5, 1) and Gröbern (Gö: after Heußner & Weber, 1990:229, pl. 4, 9) indicate the measurement method. (Drawning from A. Mövius, Magdeburg.)

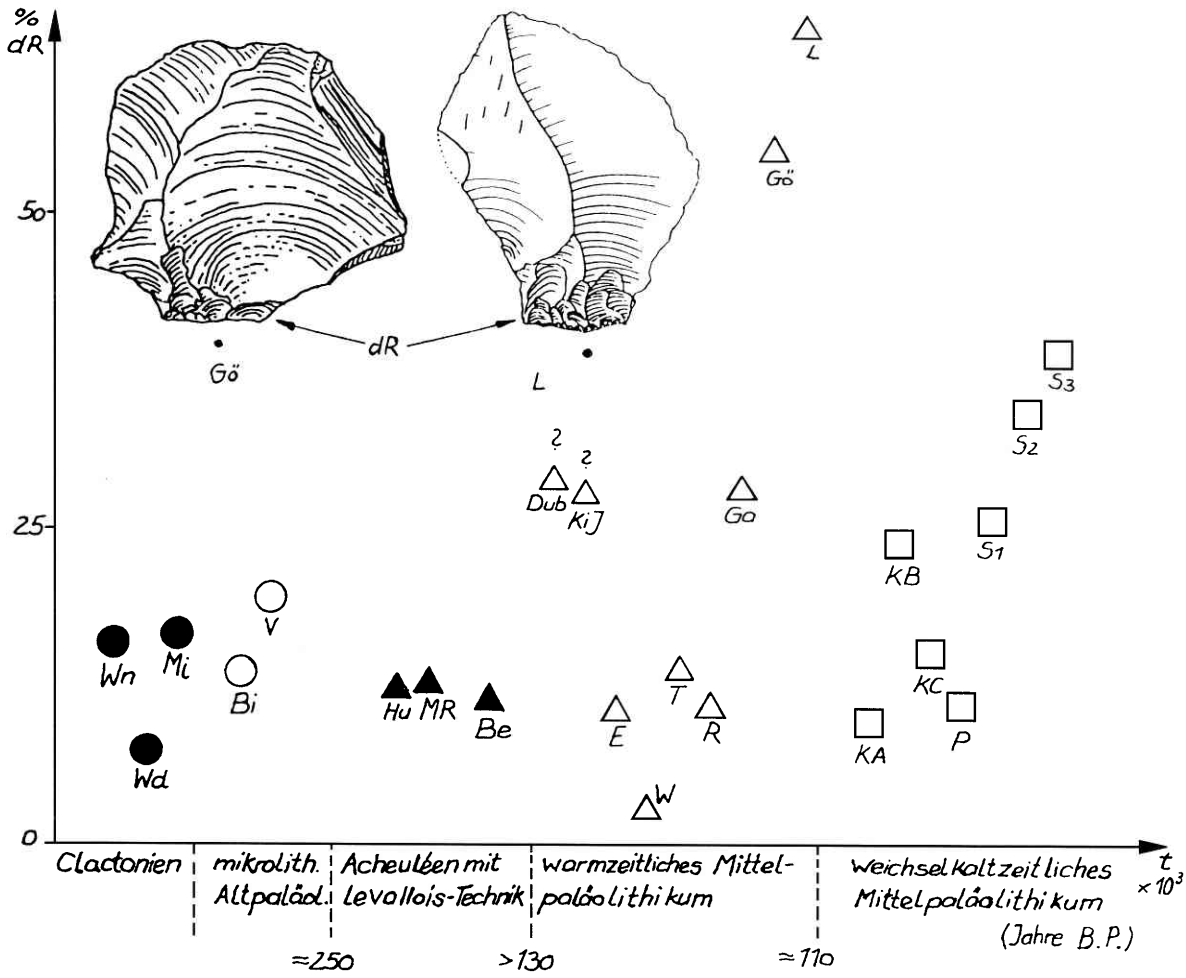


Fig. 9 — Percentage of pieces with dorsal reduction

● Clactonian, ○ Microlithic Lower Paleolithic, ▲ Acheulian with Levallois technique, △ Interglacial Middle Paleolithic, □ Early Weichselian Middle Paleolithic.

Abbreviations. Be: Bertingen; Bi: Bilzingsleben; BN: Barleben/Magdeburg-Neustadt; Dub: Dubossary (USSR); E: Ehringsdorf; Ga: Grabschütz; Gö: Gröbern; Hu: Hundisburg; KA, KB, KC: Königsaue A, B, C; KiJ: Kislanskij Jar (USSR); L: Lehringen; M1: Markkleeberg 1; Ml: Memleben; MR: Magdeburg-Rothensee; P: Petersberg; R: Rabutz; S1, S2, S3: Samuilitsa II (Bulgaria), upper, middle and lower horizons; T: Taubach; V: Vértésszöllös (Hungary); W: Weimar (Belvédèrer Allee); Wd: Wallendorf; Wn: Wangen. Two examples from Lehringen (L: after Thieme & Veil, 1985:27, pl. 5, 2) and Gröbern (Gö: after Heußner & Weber, 1990:229, pl. 4, 12). [Drawning from A. Mövius, Magdeburg.]

at fig. 9 may be interpreted. The percentage of flakes with traces of a dorsal reduction (of the edges between former flake scars) on the cores grew, generally, but depended from the functional aspect of the flakes found at each site, too. Especially in the later periods from the Eemian up to the Weichselian with its "diversification" in flaking we observe quite high percentages of artefacts in such a way especially prepared. This group of flake complexes includes inventories like Dubossary, Kislanskij Jar, and Königsaue B with a dominant discoid core production, and the finds from Samuilitsa with a respectable blade portion. The highest percentages of dorsal reduced flakes have been found, however, in Lehringen and Gröbern in both of the cases nearly the same.

There are other interesting similarities between the Gröbern and Lehringen flake inventories (absolute measurements, special preparation of the platforms made from several flake scars, flaking angles, etc.). In the group of the Weichselian Middle Paleolithic inventories these two sites form a sub-cluster characterised by a special production of relatively flat, sharp-edged (mostly) medium-sized flakes from discoid cores apparently used as knives for butchering. Artificially selected (e.g. following the platform condition) we can recognise even this group in the larger Eemian and Early Weichselian inventories (Erfurt, Heußner, Litt & Weber, 1990).

Thus we expect a similar human behaviour behind these comparable attributes. It seems

to be very likely that this behaviour was comparable with regard to the butchering process well-represented at both of the sites but with regard of the killing activity, too. Lehringen and Gröbern belongs to the first traces of human hunting in the Paleolithic.

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Author's address:

Thomas WEBER
Landesmuseum für Vorgeschichte
9/10, Richard Wagner Straße
D–4020 Halle-Saale (Germany)