



DIETRICH MANIA

## THE ZONAL DIVISION OF THE LOWER PALAEOLITHIC OPEN-AIR SITE BILZINGSLEBEN

**ABSTRACT** — *With the help of different find associations and structures several distinct activity zones can be determined on the Lower Palaeolithic living-floor of Bilzingsleben. Additionally, the structures of single dwellings, hearths and workshops can be recognized. They enable essential conclusions and information necessary for the reconstruction of the life of Homo erectus on this camp site.*

**KEY WORDS:** *Lower Palaeolithic — Living floor — Bilzingsleben — Homo erectus.*

As has become known through the recent publications, the lower Palaeolithic archaeological horizon situated at the basal parts of the younger Hollstein travertine sequence near Bilzingsleben is recognized to represent the evidence of a *Homo erectus* occupation floor on the shore of a small lake in the proximity of the mouth of a spring source. The geological setting already indicates a general zone division of the site. In the area of the mouth of the spring source, predominantly, locally redeposited archaeological material was discovered in a wide diluvial fan which had been carried into the basin of the lake by the brooklet ("Schwemmfächerfazies"). The largely undisplaced find associations were in their primary position ("Uferfazies") in the loess. They represent the traces of a certain occupational activity of a *Homo erectus* group living there.

Besides the foundations of some small dwellings — already presented during the IIIrd Bilzingsleben colloquium (Mania 1983) — more structures and zonal divisions can be identified which indicate this site

The following conclusions were the result of investigations made during the research excavations of the Landesmuseum für Vorgeschichte Halle/S., which had been carried out on the site of the Steinrinne near Bilzingsleben since 1974.

to have been a rather long-lasting living floor than a floor occupied not intermittently (*Fig. 1*).

To sum up, the following facts can be noted: In the inhabited marginal zone (Uferzone), there were three foundations of simple oval to circular dwelling structures of 3–4 m in diameter situated in a distance of 1 and 4 m of each other. They were characterized by larger, heavy bones of large mammals and plates and blocks of travertine and "Muschelkalk" peripherically set up on the structures and forming circles in a more or less diffuse way. In each case their entrances faced south.

In front of each structure towards the southwest, there was a hearth which can be identified by pebbles subjected to fire (fire-cracked, broken into pieces, chalky) and by remains of charcoal and charred wood occurring more or less frequently. South of each dwelling structure, directly adjacent to them, there were two workshops with anvil-stones in their centre and pieces of stone and bones needed for the fashioning of tools, as well as the manufacturing waste. Large tools were posed on the periphery of the structures which may be explained as an expression of a principle of order: they were scraper- and knife-like bone tools, antler cudgels, rod-like, calcified wood representing fragments of artifacts.

Two large bone artifacts with engravings laying between the workshops of two dwelling structures were discovered. A third engraved bone artifact was found deposited in site of a workshop northwest behind the third structure; a fourth one was lying inside the workshop in front of the three dwelling structures.

The area unearthed so far outside the section of the dwelling structures shows different zones discernible (Fig. 1). Each of them is distinct from the others by the occurrence of certain find associations or of the same type of artifacts. They are also delimited from each other by the relative composition of the archaeological material (artifacts of stone, bone, antler, wood, artifact waste, raw-material, food remains, etc.).

**Zone I:** This zone comprises the whole diluvial fan. Numerous smashed bones and jaw remnants from hunted animals, silex artifacts, their manufacturing waste, and less frequently, also, some large objects such as antler artifacts, tusks or parts of them, bones of large mammals, large pebble tools, pebbles or wrecked pieces of various rocks are embedded in its up to 60 cm thick travertine sands.

The rubbish (food garbage) represent dominant

elements. So, this zone can be characterized as a garbage dump (Abfallhade). This is also attested by a great quantity of small objects found (silex material excluded) < 10 cm: their proportion being of 88 %. Larger objects come from certain activities executed on the sand banks or on particular shore sections near the water, such as antler artifacts, the bones of large mammals and tusks, being apparently the result of the processing of prey animals.

Southwest of the dwelling structures, there was a brooklet trough as deep as 1 m running from NW to SE and cutting the ancient loess surface. Up to two-thirds of its depth, it was filled with the same rubbish as that found in the diluvial fan. In the vicinity of the brooklet trough, reaching as far as to the dwelling structures, only a moderate scatter of small finds was discovered. This area seems to have been cleared up, the major part of the rubbish having been removed by *Homo erectus*.

**Zone II:** It extends along the shore line in a 2–3 m wide band. It comprises even the shore slope which rises to about 30–50 cm. There, in particular, large objects are abundant, with conspicuous large fragments or complete pieces of extremity bones, pelvis and scapulae of large mammals. Moreover, large parts

of rhinoceros and elephant lower jaws are common. With the same frequency, large blocks, pebbles and slabs of travertine and Muschelkalk occur, whereas those of quartzite and kristallin can be registered in a lesser abundance. Often, the soil is covered by objects forming an area similar to a pavement. Mostly on the shore escarpment, large skeletal fragments are scattered. It is notable that finds of numer-

ous antler cudgels occur there, along to the shoreline. Some large bone tools equally occur repeatedly.

The proportion of smaller objects < 10 cm was reduced to 55 %. This zone is explained by us to have been a special activity zone on the shore with activities having to be carried out which necessitated water or its easy access. Partly, they are butchering or dismembering sites of the animals hunted, partly they represent

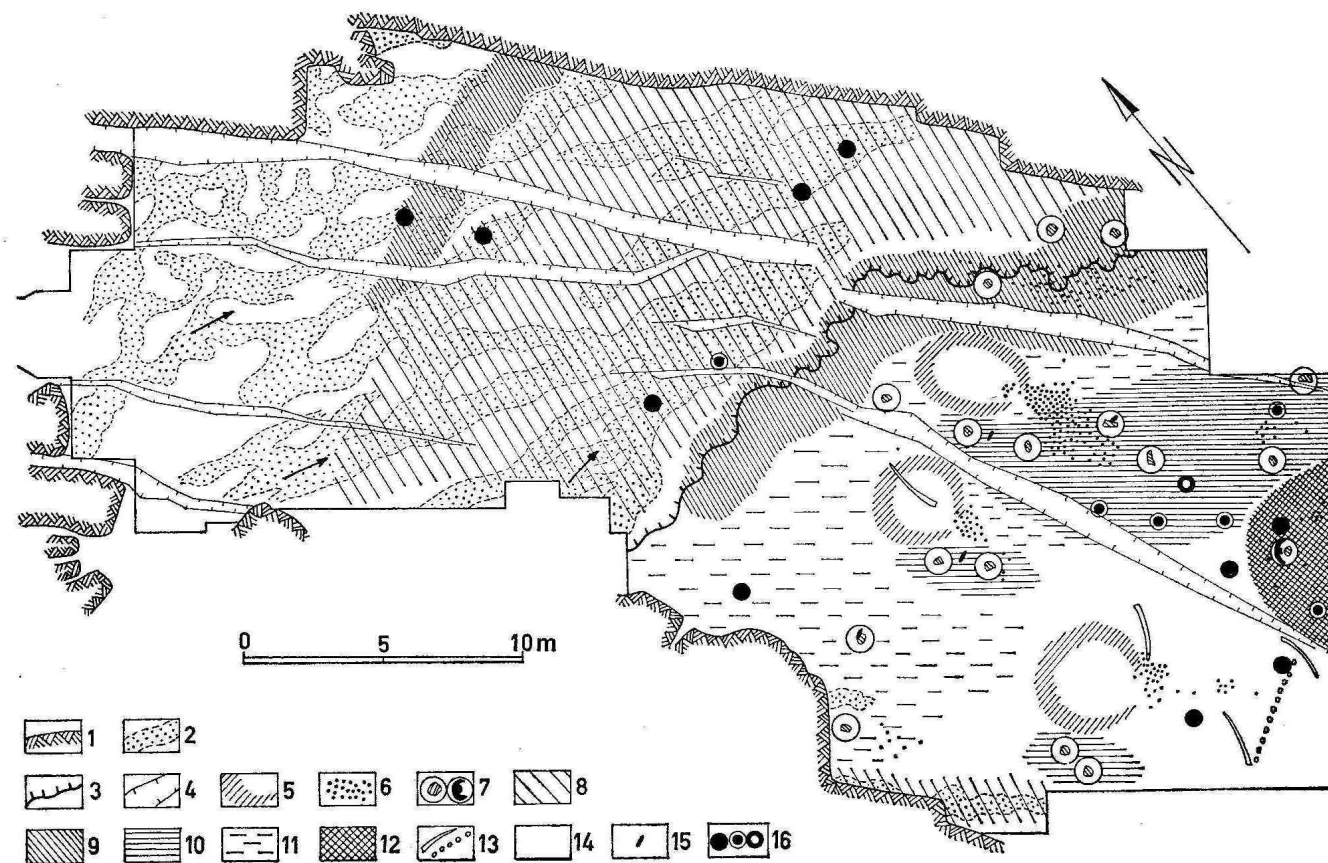


FIGURE 1. Bilzingsleben. Excavation area until 1987 with zonal division of the living-floor. 1 boundary of the quarry (travertine), 2 brooklet troughs, 3 lake edge, 4 cracks, 5 foundations of dwelling structures, 6 hearths, (5 and 6 = zone III), 7 workshops with central anvil, on the right: with bison skull, 8 garbage dump in the diluvial fan of the lake basin (zone I) and in the brooklet (Ia), 9 activity zone on the shore (zone II), 10 workshop zone (zone IV), 11 less characteristic find associations, 12 central, paved place (zone V), 13 alignment of larger stones and tusks, 14 zone VI: mainly smaller find objects, 15 engraved bone artifacts, 16 human remains (skull fragments, permanent teeth, milk molar).

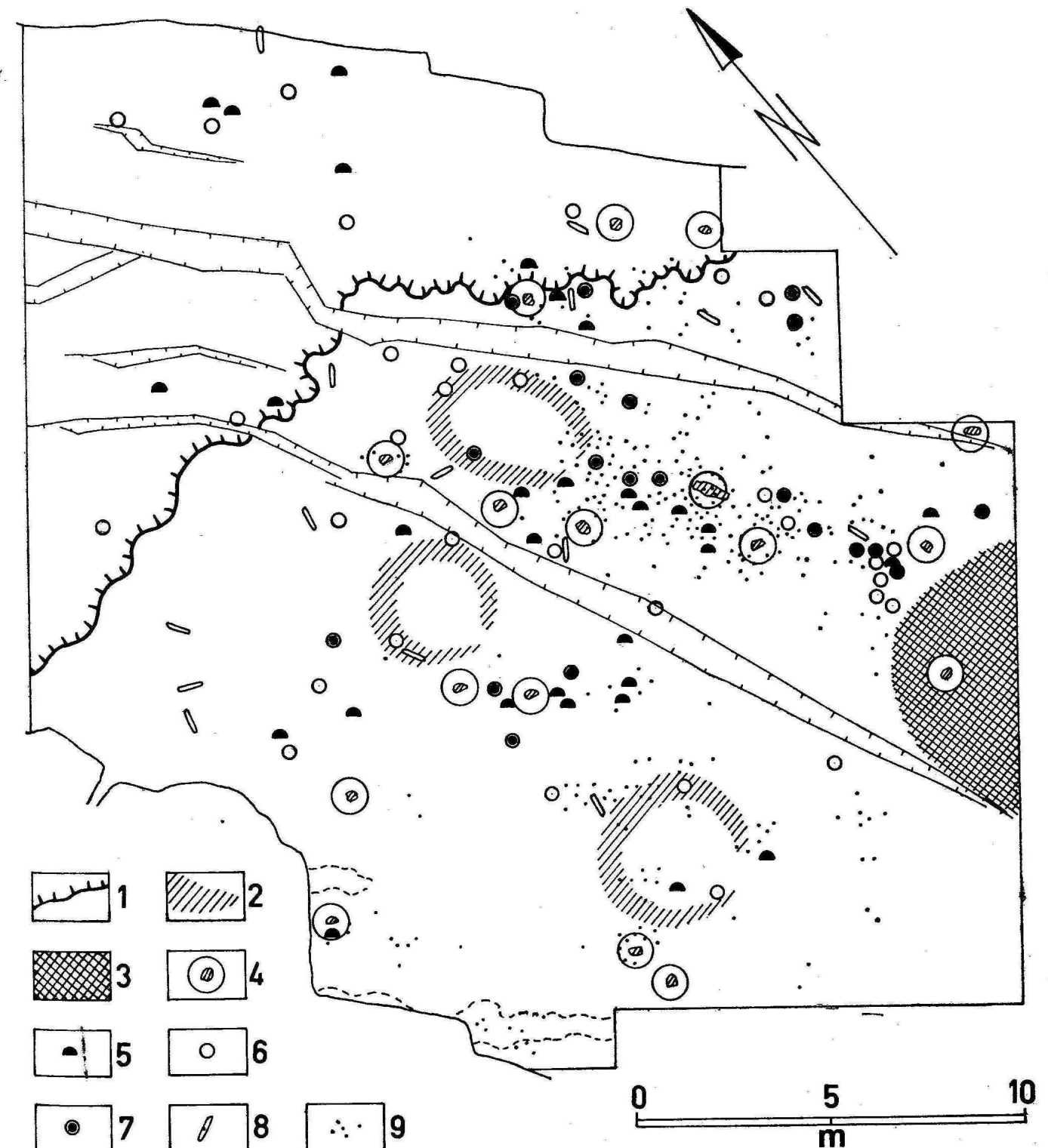


FIGURE 2. Bilzingsleben. Distribution of some bone artifacts. 1 lake edge, 2 dwelling structures, 3 central, paved zone, 4 workshop with anvil, 5 bone scraper, 6 chisel-shaped bone tool with fractured cutting edge, 7 with fractured pointed butts, 8 very large bone scraper, 9 bone flakes.

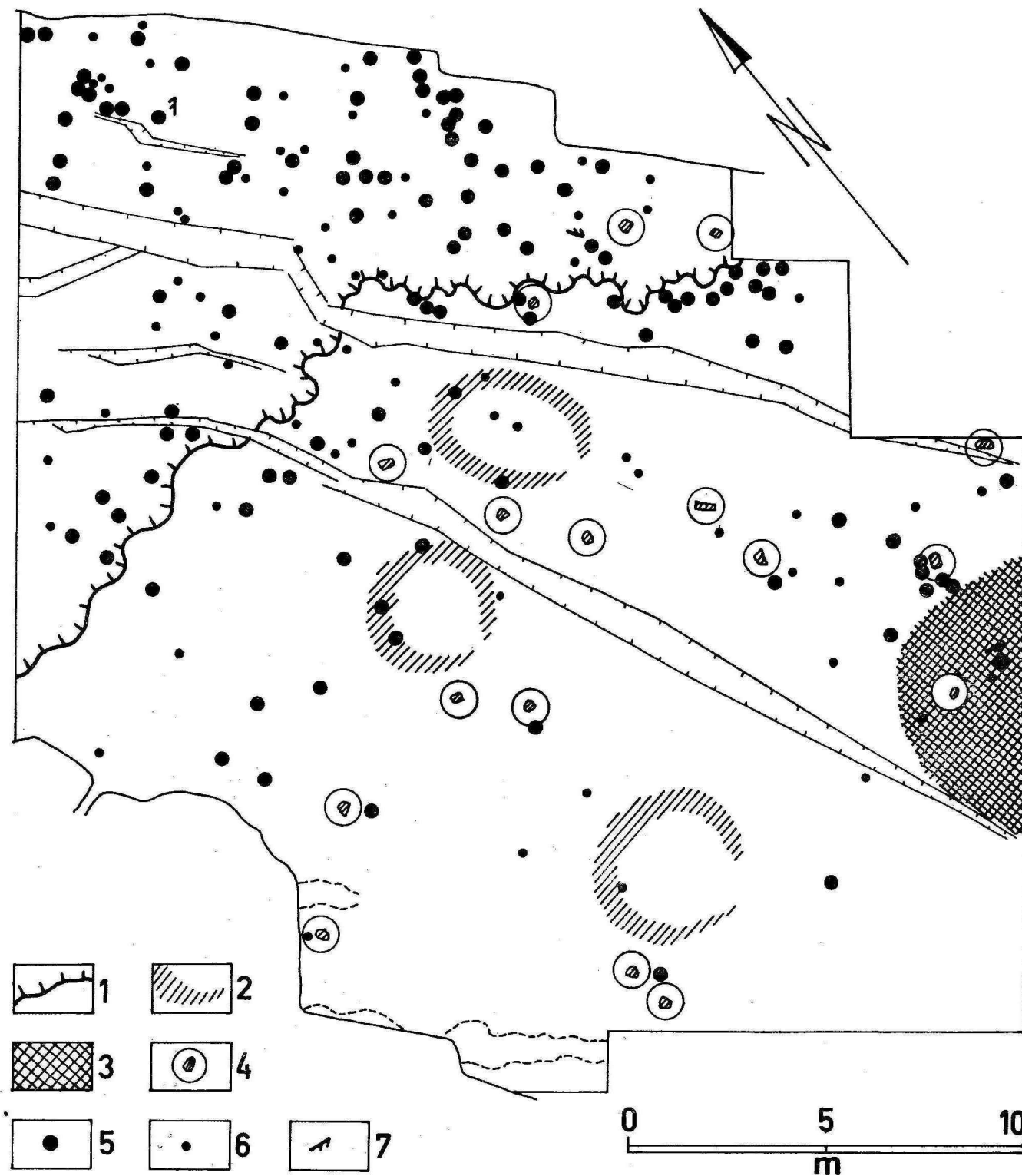


FIGURE 3. Bilzingsleben. Distribution of antler artifacts. 1 lake edge, 2 dwelling structures, 3 central paved zone, 4 workshop with anvil, 5 antler cudgel or antler nuttock, basal fragment of such an antler tool, 7 complete antlers (situated on the central paved place is one antler).

particular workshops. On the opposite shore edge of the diluvial fan, a similar zone appeared, not so distinctly structured, however, since already situated in a peripheral way to the occupation zone. It is noticeable that a great abundance of antler tools were found there (Fig. 3).

Zone III: The area of dwelling structures situated behind the shoreline containing hearths and workshops can be recognized as a particular zone. This zone constitutes a 4–5 m wide, arc-shaped band (it was already described above).

Zone IV: It is the so-called workshop zone.

It extends over the place in front of the dwelling structures (Vorplatz) running in a 4–6 m wide band over the northeast part of the place as far as zone II situated on the shore. It includes numerous workshops with anvils. They consist of quartzite, travertine, of Muschelkalk slabs and served for the working of bones or for the manufacture of pebble or silex tools.

Another anvil was made of the tibia of an elephant propped laterally and used as chopping block for the working of wood. In accordance to it, there were numerous calcified wood remains and rod-like wood artifacts of a size of 2.5 m scattered about in the neighbourhood. Probably, a fragment of a tusk lying beside it equally served as an anvil.

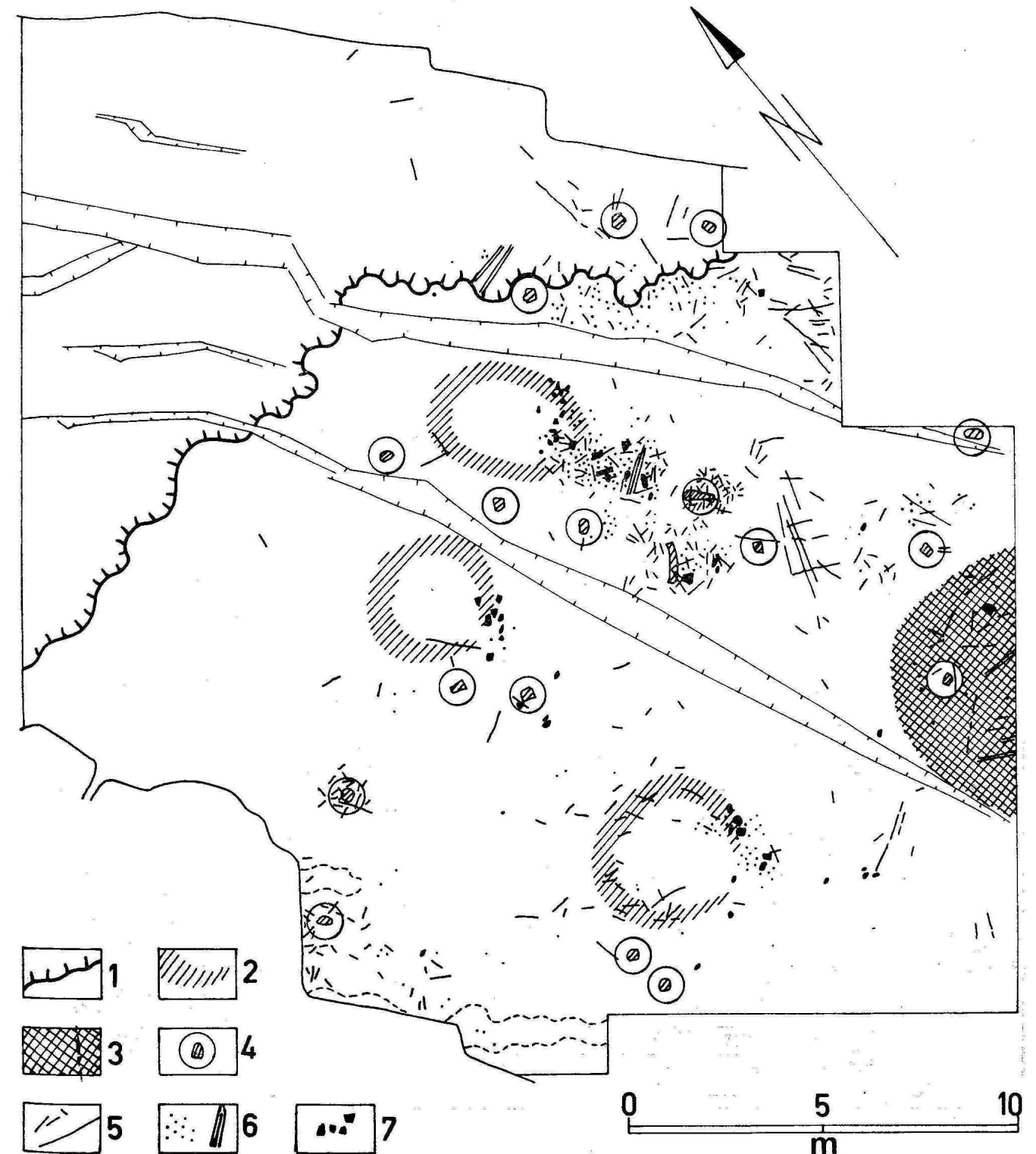


FIGURE 4. Bilzingsleben. Distribution of wood remains and traces of fire. 1 lake edge, 2 dwelling structures, 3 central paved zone, 4 workshop with anvil, 5 calcified wood or impressions of wood, 6 charcoal remains, charred trunk of wood, 7 stones with traces of fire influence.



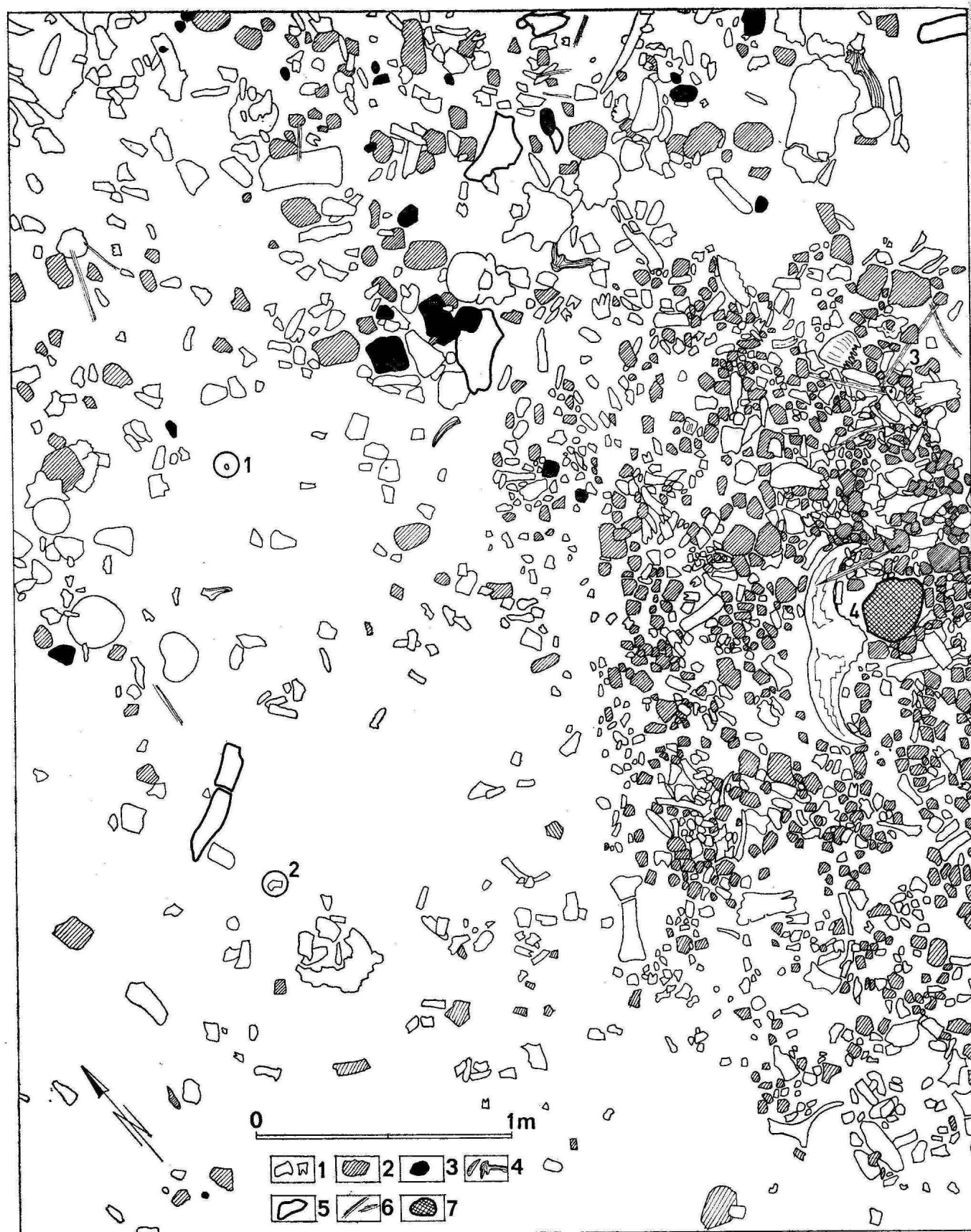


FIGURE 5. Bilzingsleben. Detailed representation of the central, paved zone. State of excavation of 1986. 1 bone fragments, teeth 2 slabs of stone, pebbles, 3 pebble tools, 4 antler remains, antler tools, 5 bone tools, 6 wood remains. Human fossil finds: 1 lower jaw molar, 2 left frontal bone fragment, 3 right parietal bone fragment.

The finds in the workshop zone mainly consist of large bone fragments, mostly from elephants and rhinoceroses, the long bones of elephants predominantly having been used as raw-material for the manufacture of large bone tools. They were chopped, split and later worked with the hammerstone on the anvils. Abundantly, the chips of waste, flakes, half-finished pieces and blanks from the compacta of elephant bones occur at these places. Moreover, there are pebbles and slabs of Muschelkalk and travertine as well as large pebble tools of quartzite and limestone. At special places, bone tools are accumulated, this indicating that they were used there.

One anvil of travertine served mainly for the detaching of antlers used to manufacture cudgels and nutcrackers. That is why many prongs, parts of crowns and splinters of shafts were scattered around the workshop.

Objects < 10 cm represent 70 % of all objects found in this zone (silex artifacts excluded). However, unlike the situation in the diluvial fan, where especially food garbage had accumulated, they consist of waste produced by the working of bones, antlers, ivory and stones.

The archaeological composition of the workshops beside the dwelling structures is markedly similar to the find situation of this workshop zone. Equally, some workshops situated west and northwest behind the dwelling structures are similar to them.

**Zone V:** It is a zone situated almost centrally on the area in front of the dwelling structures (Vorplatz) at a distance of 5–8 m from them. It was discovered on the surface covered by archaeological material. We have designated it with the name of "central paved place" (Mania 1987, Unnittel 1987), it was only partially uncovered, this part being of semi-circular form and reaching a width of 7 m (Fig. 1 and 5). In general, it constitutes a closely paved horizontal place predominantly consisting of small objects. Pieces < 10 cm represent 83 % of all objects found there and forming the pavement. 60 % of them are stones, 38 % bones, splinters of bones, teeth, antler fragments and 2 % are evidence of wood. They represent material which was hardly suitable for any use, tools are almost missing and the skeletal assemblage consists of insignificant refuse. However, flat slabs, pieces detached from stones and even bones such as vertebrae from elephants and rhinoceroses were also part of the pavement. The rock material is alien. It is composed of 60 % of travertine pebbles, Muschelkalk pebbles and chips make up 25 %, and 15 % are quartzite, kristallin and silex pebbles as well as calcareous concretions. The travertine pebbles originate from weathered debris coming from an older travertine deposit lying in the neighbourhood, 200 m from the living floor. The wood remains which are also included in the pavement — mostly rod-like pieces — could be recognized as negative impressions on the loess surface.

Wood structures were still determinable as impressions in the wood, hard parts of the wood were preserved in a calcified state, brownish to black organic matter could still be seen on the impressions.

The place was densely and simply paved, only in rare cases there were pieces overlying each other — they were covering about 75 % of the loess surface. The objects were pressed into the soft loess soil and their parts jutting from the surface were covered by a 1–2 cm thick layer of silty travertine sand. Thus, the pavement appeared to be a flat barn-floor-shaped place which, by virtue of the scanty presence of objects, stood out against its surroundings distinctly, especially against the workshop zone lying west, north and northeast.

The following conspicuous, though isolated objects were found on the pavement: in the midst of the presumed centre, there was a naturally dropped red-deer prong lying on a Muschelkalk slab disintegrated through fire influence. This prong constitutes, by the way, the only completely preserved one to have been found on the entire site. In the peripheral southern part, there was a larger travertine slab, in the western section, there appeared an anvil constituting a quartzite block distinctly jutting from the pavement. Bones were smashed on it, as was indicated by minute bone elements which had remained in the natural cavities on its surface. There were, however, neither chopping tools nor bone splinters. To the west, adjacent to the quartzite block, there was the bison frontal bone with both horn cores pressed into the loess soil. We consider it to be a finding of particular significance. At a 50 cm distance from the anvil, a human parietal bone was unearthed. There was a further bone of a hominid lying at the northwest periphery of the pavement with its break surface matching with the first fragment. Apparently, both of them derive from a crushed skull. A left orbital fragment was posed at the northeast periphery of the pavement. About 5 m away, a third parietal fragment was found. One canine tooth lay in the southern part of the pavement. Farther to the north and west, i. e. 1–3 m outside the pavement, one premolar and two molars occurred. This finding is very conspicuous, too.

**Zone VI:** To the west and southwest of the pavement, a zone is spreading which is delimited by the third dwelling structure in the southwest and by the brooklet trough (Fig. 1-1a). It is striking too see a considerable thinning of finds distributed there. Remarkably smaller objects occur. These are, however, similar to the central pavement, pressed into the ancient loess surface at several places, on areas of 1 to 2 m<sup>2</sup>. Large pebble, bone and antler tools occur less frequently.

Some other conspicuous finds are the tusk of a big suid (perhaps having served as a hunting trophy) and a thin flat Muschelkalk slab with polished surface bearing numerous scratches. The most striking find, however, seems to be a 5 m long straight alignment of medium-sized Muschelkalk and travertine pebbles deposited in regular distances of 25–30 cm from each other. It runs from SSW to NNE and is directed to the centre of the pavement ending abruptly in front of its periphery. 1.8 m long tusks of a forest elephant were lying at the two terminal parts of the alignment, belonging presumably to the same animal. Both of them were considerably crushed

and therefore difficult to recover. Between this alignment and the third dwelling structure, some linear clusters of finds appeared, equally running towards the central pavement. They suggest small paths which had been due to bone and stone objects accumulated laterally by man walking there. Thus, 40–60 cm wide zones remained devoid of any objects.

There is a less conspicuous zone west and south-west behind the dwelling structures. There, some workshops were observed. The disposition of the zones related to special activity areas on the living floor is also discernible according to a quantitative and qualitative evaluation of their archaeological material (*Fig. 2–4*). These archaeological analytical investigations starting only now, we are just able to refer to a few differences.

The distribution of antler tools and their manufacturing waste indicate the zonal disposition of the occupation floor (*Fig. 3*). Most frequently, they occur on the shore of the lake immediately in front of it at the basin edge. This situation is repeated at the opposite basin edge delimiting the diluvial fan. In the diluvial fan, mostly broken or worked down antler tools and countless antler rejects are found. They are less common on the place in front of the dwelling structures (*Vorplatz*), in the area comprising the dwellings. On one hand, they were deposited along with other large tools on the periphery of the dwelling foundations, on the other hand, they appear within the workshop zone. Three antler tools appeared so far on the pavement. From the density of distribution related to 1 m<sup>2</sup> the following data are obtained:

Zone	IIa	I	II	III–IV
	0,45	0,34	0,5	0,14

Number of antler tools per 1 m<sup>2</sup>.

The proportion of archaeological objects < 10: > 10 cm was already mentioned above (see description of zones) and it equally shows differences, such as a high proportion of small objects from food refuse in zone I as well as of small objects from manufacturing waste in zone III, a very high proportion of smaller objects lying on the central pavement appropriate to the material employed there. But the proportion of large tools from pebbles, bones, antlers and ivory (silex excluded), related to the totality of the material allows the zones to be easily distinguished and characterized: In the activity zone on the shore (II),

large tools were preferably used at work. They almost made up 20 % of the finds distributed on the shore (> 10 cm). In the workshop zone (IV), on the grounds of abundant manufacturing waste, they only represent 11 %. In the garbage dump of the diluvial fan, however, they reach only 1.5–2 %. Similarly they occur rarely on the central pavement (V), as they were not employed there: 1–1.5 %.

The mapping of different artifact types also demonstrates particular activity areas: With the help of bone flakes distributed at certain places, the workshops can be recognized where compact bone was fashioned in order to manufacture bone tools. The workshops equally recognizable by wood remains and characteristic of wood working were already mentioned above (*Fig. 4*). A special type of bone scraper appears almost exclusively in front of the entrances of the three dwelling structures (*Fig. 2*). Special persons carried out particular works with them. Other bone tools, i. e. the type having a splintered and rounded cutting edge and splintered butts, are found on particular workshops in front of the dwelling structures. The large 30–80 cm long plane-shaped resp. scraper-shaped bone tools are mostly found on the shore or were deposited against the walls of the dwelling structures.

Once these investigations will have come to an end, it will be possible, as is already partially visible, to attest quite specific activities and behaviour of the hominids on the occupation floor of Bilzingsleben. These associations of artifacts and differentiations of zones being possible without any zone or structure overlapping or disturbing the other, we are justified to conclude by the following statement: this site constitutes a long-lasting living-floor inhabited almost intermittently for a long time serving as a home base and not, as was previously supposed, as an occupation floor used for a short time, perhaps related to seasonal or traditional activities.

#### REFERENCES

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