# V

# THE ARCHAEOLOGICAL LAYERS: FEATURES AND SPATIAL DISTRIBUTION

by

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Five archaeological layers characterized by concentrations of artifacts, faunal remains, manuports, and manmade features have been identified in the 1986-87 trench (cf. supra, section III). The 1986/87 excavations focused on layers I to IV. Little is know of the lowest layer (AL5) which was identified at the base of two deep, 1.5m x 1m test-pits. The exposed surface was too limited to provide much information. Artifact scatters were thin, 15 to 20 items per square meter, including bone splinters and chips. In the absence of any diagnostic artifact, the cultural affiliation of the layer remains uncertain and the recovered bone pieces did not yield enough collagen to obtain a C14 date. AL5 corresponds probably to the lower level identified by Kiesling and Bayer in the sunken road. However, the material they collected from the lower level was not identified nor kept apart and cannot be used to establish the cultural affiliation of AL5.

Two scattergrams illustrate the vertical distribution of material remains attributed to AL1, AL2, AL3, and AL4 (Figs. V-1 and V-2). In each case, the projection represents the artifactual content of a 50 cm. wide bench of deposits. The graphs are computer generated by means of a two dimensional plot program from the NCSS library. Vertical scales are one and a half time the horizontal scales in order to provide a better estimate of variation patterns in the vertical placement of material debris.

## AL1

The topmost layer, AL1 formed a vertical scatter of 20 to 25 cm along the western wall of the trench (Fig. V-1) where the greater concentration of debris occurred. Along the eastern wall of the trench, AL1 formed a 15 to 20 cm. thick band (Fig. V-2). A series of 10 to 15 cm long stone slabs introduced into the site by paleolithic occupants constituted the heaviest and largest debris at this level. Both the position of the slabs and their regular placement suggested that the plane they described constituted an occupation floor. Lithic artifacts were scattered 5 to 10 cm above and around the manuports, the smaller pieces showing a greater degree of dispersal than the larger and heavier specimens. A comparable range of vertical dispersion was noted at Kadar (Montet-White and Johnson, 1976; Montet-White, Laville and Lezine, 1986) where it was attributed to post-depositional phenomena. Widely dispersed artifacts found at depths of 5 cm to 15 cm below the manuports could have derived from AL1. However, they may also represent an earlier occupation.

Within the 1986/87 trench, the distribution of AL1 is limited to units Ie, Id, Ic, Je, Jd, and Jc. The northern limit of the artifact scatter was located between units Ib and Ic. AL1 extended to the west and to the south, beyond the limits of the excavation block. However, no trace of the level could be found in test-pit P. The negative evidence indicates that the layer 1 did not extend more than 10 to 15 m beyond the southern limits of the excavation blocks. Traces of the layer were noted on the west

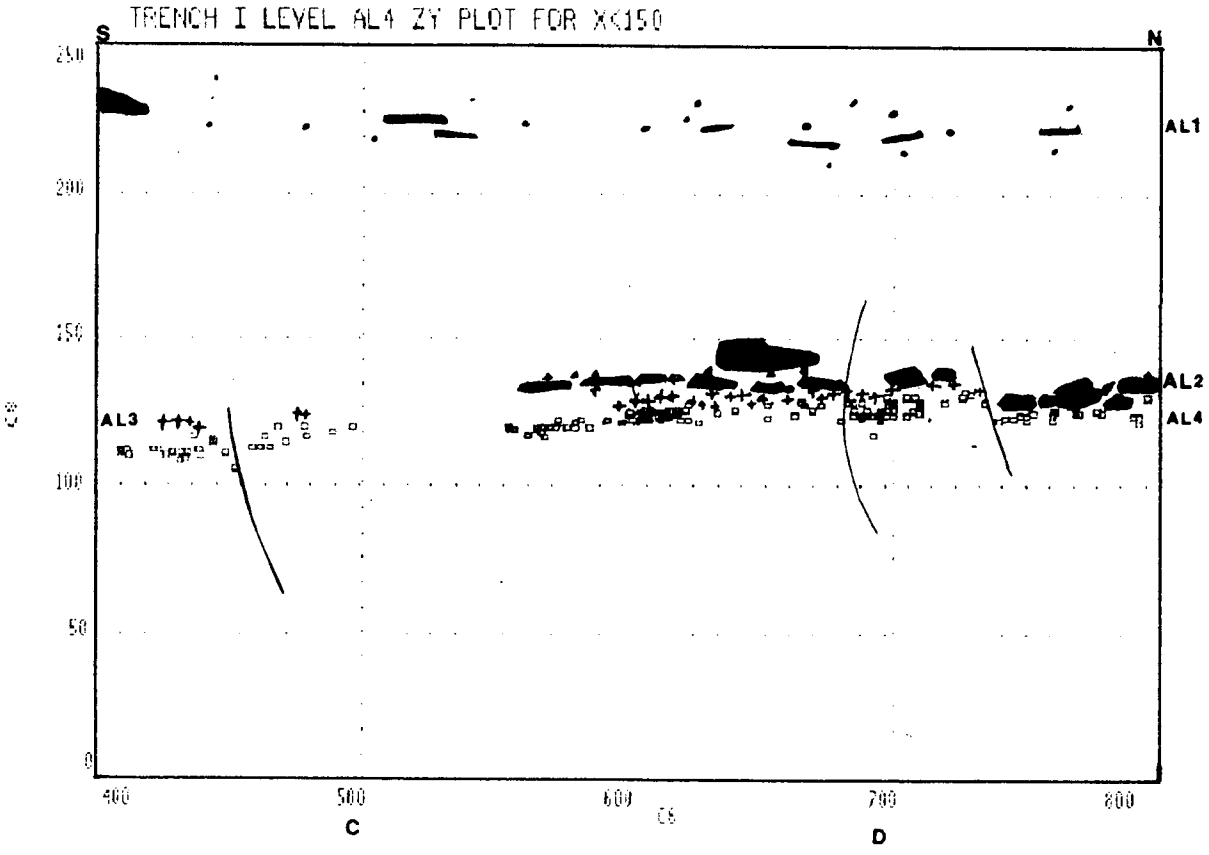


Fig. V-1 Artifact projection along the west wall of trench I (excavation units C and D). Manuports and fault lines have been added to the computer generated graph of artifact distribution.

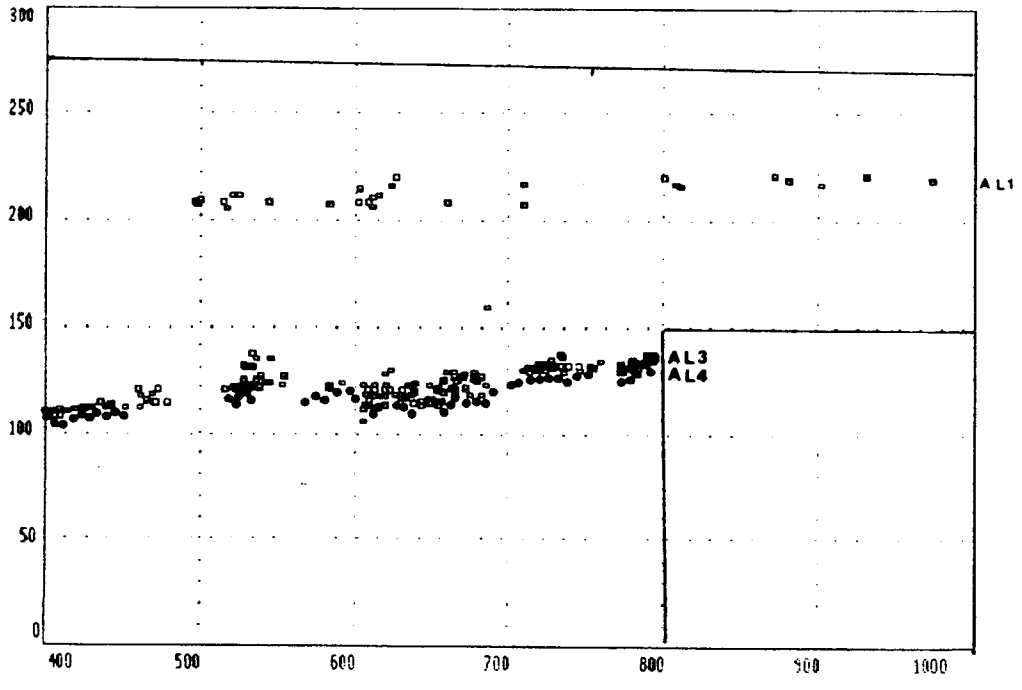


Fig. V-2 Artifact projection along the east wall of trench J. Note the AL2 scatter has disappeared.

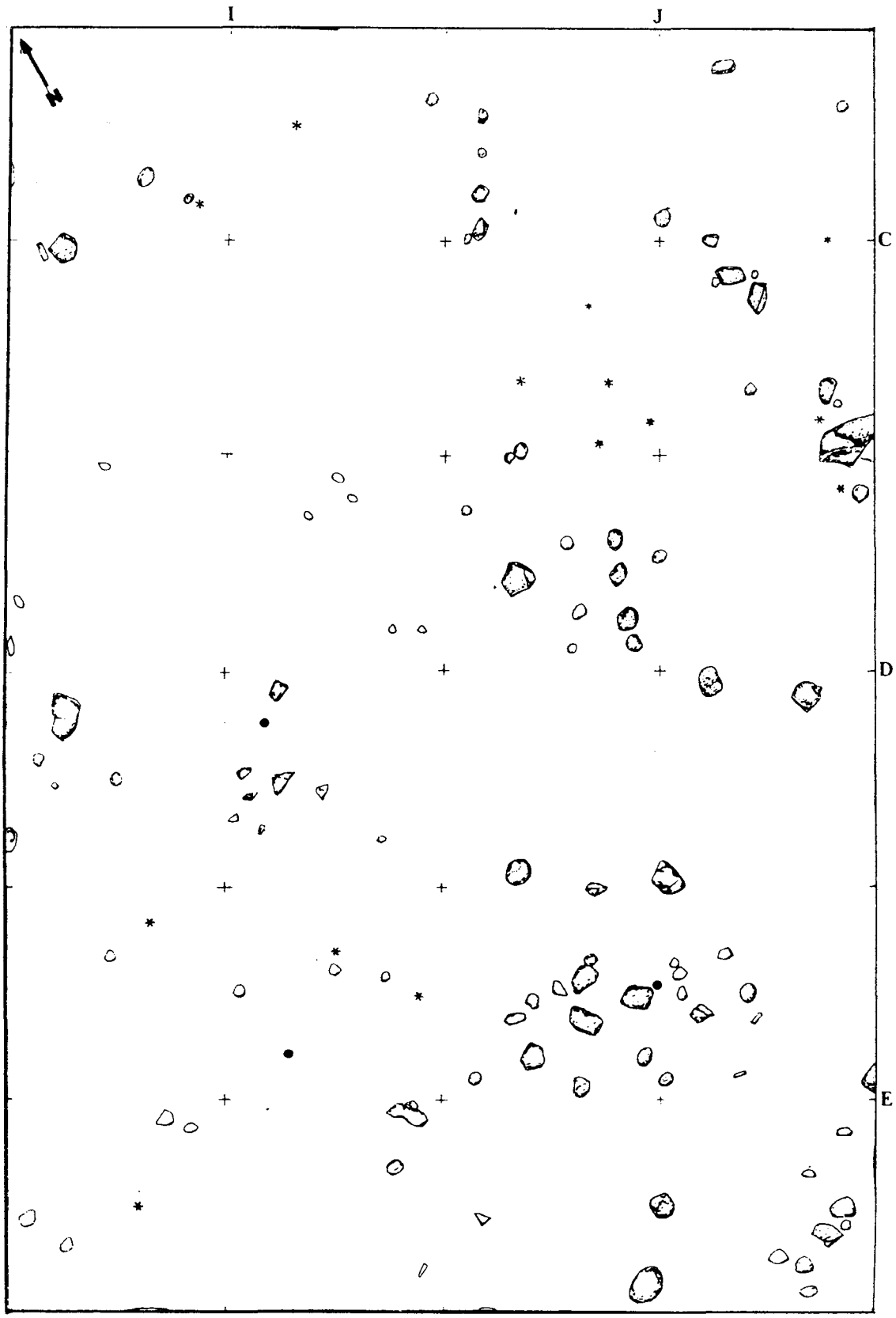


Fig. V-3. AL1: horizontal distribution of stones slabs, ocher (dots) and shells (asterisk).

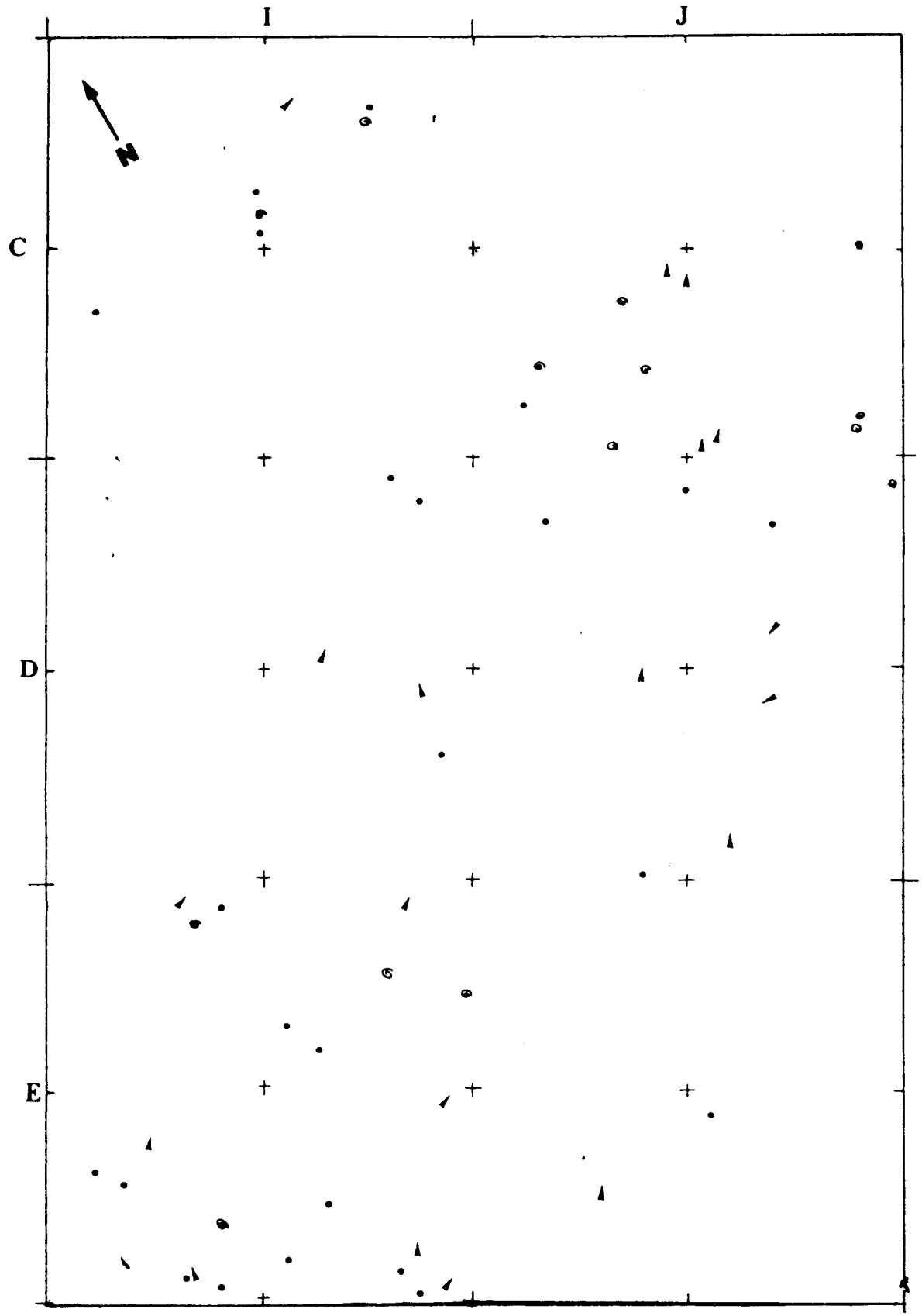


Fig. V-4 AL1: horizontal distribution of burins (triangles) and burin spalls (dots).

side of the graben where the outline of a small pit filled with burned earth and containing a few radiolarite flakes was clearly visible on the profile. Therefore, AL1 occupations extended across the graben road and under the upper vineyard.

The AL1 scatter comprised stone platelets and lithic artifacts, dentalia shells and ocher (Figs. V-3 and V-4). The latter was in the form of small fragments and patches of stained sediment. Faunal remains were scarce: half a dozen horse and reindeer teeth and a few bone splinters. However, the scarcity of faunal remains at this level does not appear to be the result of poor preservation as the few recovered specimens were in relatively good condition. Rather it may be attributed to the fact that little if any butchering and/or food consumption took place in this area of the campsite.

The density of lithic debris varied from 3 to 42 pieces per square meter with a median of 15. A small cluster of large trimming flakes from the preparation of a single block of white flint was recovered in unit IC; the core and usable blanks had been taken somewhere else by paleolithic occupants. The debris found in unit IC are the remains of one instance of flint knapping activity; they do not constitute a workshop.

A single large sandstone block was recovered from the excavated area at the edge of unit jd. Stone platelets and cobble-sized pieces were scattered around, forming no apparent patterns. These smaller stones ranging between 7 and 15 cm. in maximum dimension included sandstones, quartzites and gneiss, all materials which could have been obtained from outcrops along the ravine slopes a few 100 feet from the Kamp River gravels at a distance of 1.5 to 2 km. Some of the sandstone and quartize pieces have broken edges and a few are marked with ocher stains. Perhaps used as anvils, percussors or grinding stones, the small stone slabs were an integral part of the tool-kit. Burins and burin spalls, small blades, and flakes were among the most common artifacts. Other items included segments of dentalia shells and pieces of ocher. This was an area where shell ornaments were cut and color was prepared or used. The function of burins in this context remains unclear; they may have been used to cut dentalia shells. In any case the frequency of spalls indicates that burins were resharpened and, therefore, used within the area. However, burins and burins spalls did not match, so that burins discarded at the spot were not the ones that had been sharpened there (cf. infra).

The AL1 assemblage is a specialized tool-kit and belongs to an epigravettian phase characterized by the presence of small backed and truncated bladelets (cf. infra, schapter IX).

**AL2**

In contrast to AL1 which formed on a nearly horizontal surface, layers AL2, AL3 and AL4 occupied a more irregular terrain. Excavations and core tests have confirmed that a small knoll existed to the east of the wide depression which included the present day sunken road as well as trench I of the excavation block. Trench J cut through the knoll's edge. There, the cultural layers AL2-AL4 slope toward the north and west.

The cultural layer designated AL2 consisted of large manuports, artifacts and faunal remains which lie on the slope of the knoll and on a sub-horizontal, regular surface at the bottom of the graben depression. The layer was shallow, no more than one or two artifacts deep. Very little vertical dispersal of the kind noted above AL1 occurred above AL2. The upper boundary of the layer was marked locally by a few centimeters of sediments slightly enriched in humic materials. Under the main structure, the limit between AL2 and AL3 was marked by a 1 cm to 3 cm level of sterile loess. However, features built by AL2 occupants destroyed or displaced AL3, especially in the area of the hearth.

The presence of several major features characterized AL2. The main feature, Structure Id/e, consisted of an horizontal layer of large stone slabs which joined each other to form what can be described as a pavement (Figs. IV-6 and IV-8, 9, 10). The northern, eastern and southern edges of the stone structure were exposed by the 1986/87 excavations. To the west, the pavement continued under the I.5 m. wide balk. that had to be left between the excavation block and the graben road. The exposed area was 8 m long and 2.2 m wide. As rocks were not exposed in the road profile it is assumed that the pavement extended less than a meter beyond the limits of the excavations. The width of the structure is therefore estimated to have been between 3.5m and 4m.

A total of 525 stones was recovered from the Id/e pavement. The figure does not include some disintegrated blocks of gneiss that could not be recovered. Sandstones (arkoses), biotitic gneiss and gneiss are the most common materials. Pieces varied in size from 15 to 50 cm in maximum dimension with weight ranging from 500 gr. to 2 or 3 kg. Stones are not available at the site itself but must have been carried from the hillslopes surrounding the graben. The nearest modern-day source of similar stones is at the bottom of the ravine slope at distances of 200-300 m. from the site. It may be said, then, that transport of the stones and construction of the pavements did represent a sizeable investment of time and effort on the part of the site's paleolithic occupants.

The pavement showed irregularities and may well have been constructed in several stages. The overall shape is rectangular with rounded corners. At the northern edge, stones were stacked 2 or 3 deep and scattered stones set at irregular angles formed a small pile beyond the limits of the structure. This suggests that a low wall or stone pile had been erected at that end perhaps to support the posts of a superstructure. In the north corner, a circular arrangement of stones over a flat layer of smaller rocks may have constituted an intentional feature. This is difficult to ascertain as no artifacts were recovered from that spot. In the southern half (Ie) the pavement is never more than 1 stone deep and elements are not so tightly jointed as in the northern half. Manuports were set farther apart leaving some unpaved intervals. A roughly circular, unpaved zone surrounded an area at the south corner of the structure within which were burnt stones, large charred bones and burnt bone splinters. This area marked the probable location of a large hearth which would have been built above the ground with ash, burnt stones and debris scattered around after use. Traces of ocher extended under the designated hearth area and continued under the pavement. The ground and the lower side of the stones were heavily stained. A large, unpaved area at the south corner contained burnt stones and charred bones which marked the probable location of a large hearth. Fire would have been built above the ground with ash and stones scattered around after use.

A high density of debris was noted outside of the pavement in the area behind the hearth. Manuports varied from 10 to 55 cm in maximum dimension; most of them weighed less than 5 kg although the largest may have weighed as much as 30kg.

Variations in the number and placement of the stones suggest that the structure may well have been constructed in several stages and probably included several, distinct, activity areas. At the northern end (excavation unit Id), stones were stacked 2 or 3 deep. Scattered stones set at irregular angles formed small piles beyond the limits of the structure (excavation unit Ic). The more or less linear arrangement of the stones suggests that they had originally been arranged to form a low wall or a series of stone piles to support the posts of a tent.

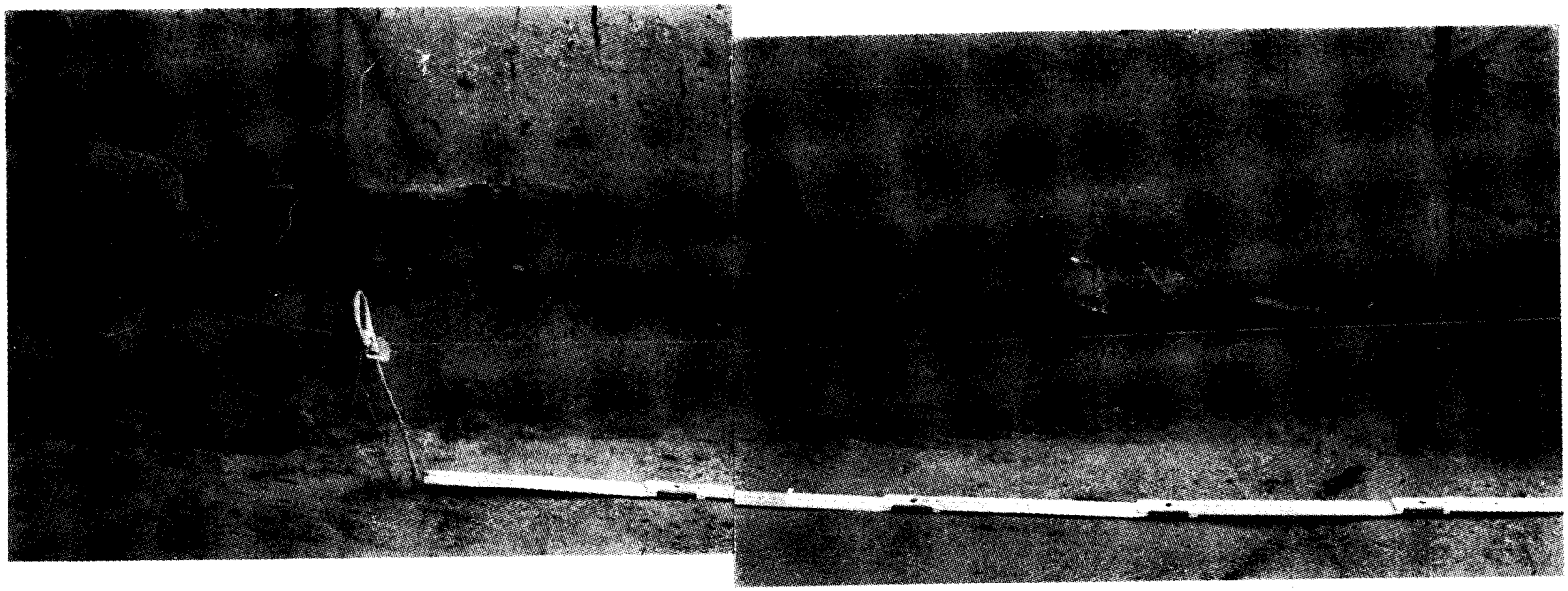

Fig. V-5 Detail of the AL2-AL4 stratigraphy. AL2 is marked by manuports, the black stains on the same horizontal plane as the blocks are disintegrated gneiss. The AL4 artifacts are clearly visible within the dark humic band. AL3 is contained in the loess between AL2 and AL4.

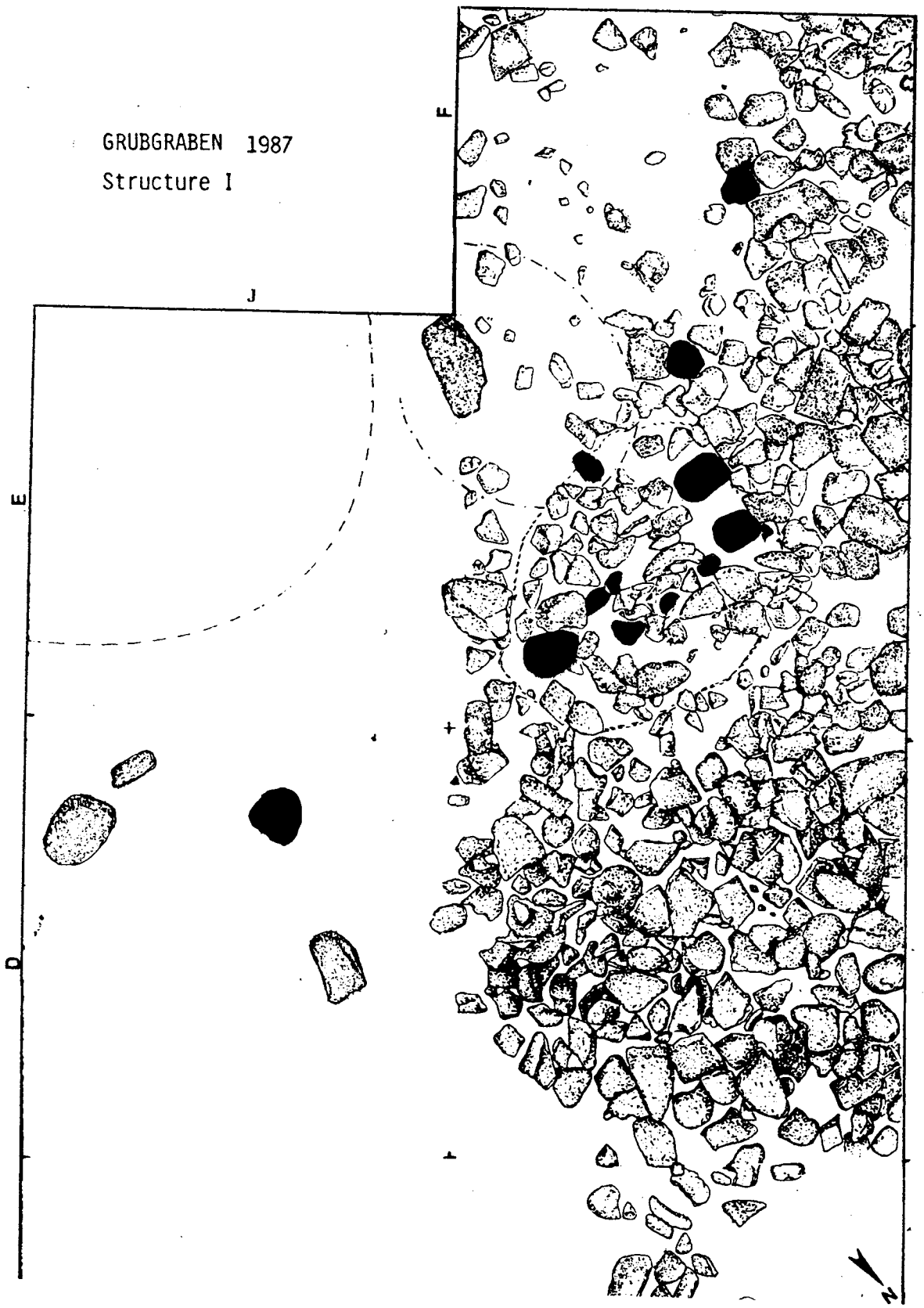


Fig. V-6 Plan of the stone structure Id/e in AL2. Black spots indicate burnt rocks. The striped lines indicate the limits of ocher concentration within the stone structure. The discontinuous line in excavation unit Je marks the outline of the second stone pavement. Drawing by Rudolf Braun.

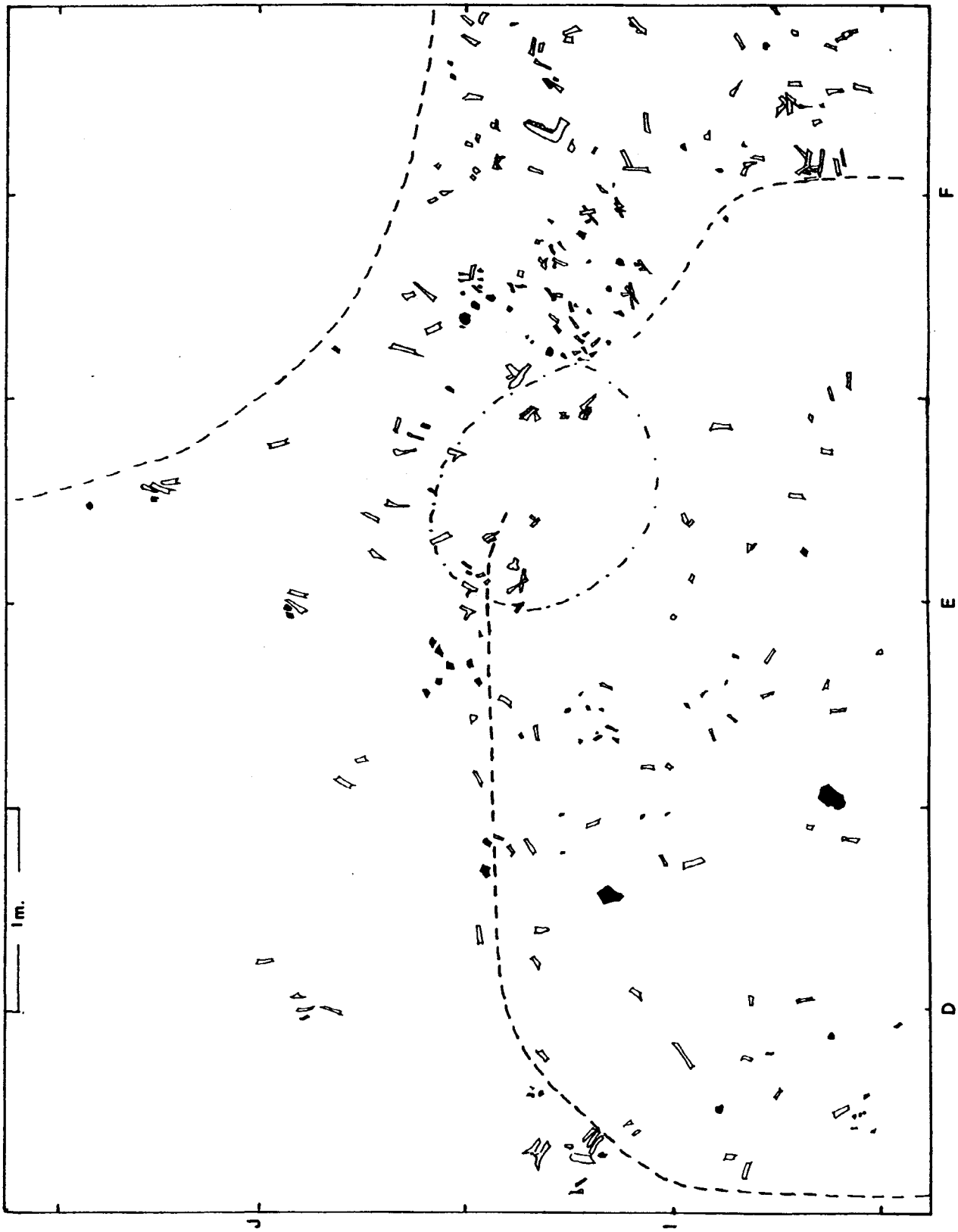


Fig. V-7 AL2, Artifact (black) and bone (outline) distribution within and around the Id/e structure.

A relatively high density of debris was noted outside the pavement, in the area behind the hearth. Among the debris were bone splinters, split reindeer mandibles, chunks of ivory, flint and radiolarite tools and chips. In addition, the refuse area contained an abundance of quartz pieces among which were large cores, cores reused as percussor, quantities of shatter and flakes. The most characteristic type of flake was a wide, rectangular piece with or without a natural cortical back opposed to a jagged cutting edge. The quantity of debris, presence of cores and trimming flakes indicate that knapping of quartz blocks was taking place there and that selected pieces were used. Direct association with bone splinters and split mandibles around the hearth further suggests that quartz pieces were used for cutting meat as well as splitting bones for marrow. Another local material, granulite, was used in the same context and probably for the same purpose.

A single very large stone set at the edge of the paved surface on the other side of the hearth may have served as a seat. Among the artifacts scattered around the large stone were pieces of antler and large fragments of ivory in a poor state of preservation.

The pavement surface was remarkably clear of debris. A total of 31 lithic artifacts, 114 bone fragments and 3 cut dentalia shells were recovered from a surface area of 8.2 square meters. A large prepared core and a denticulate scraper made on a large tabular piece, both of coarse grained radiolarite, were found on top of the pavement stones. Most of the other pieces were recovered between the stones.

Part of a second pavement was uncovered in excavation unit Je. The structure was placed on the slope and continued beyond the excavation trench. Like structure Id/e, the Je pavement was formed of large sandstone slabs and chunks of gneiss set close together. The surface was littered with large bones and artifacts. Some of the bones had been chipped but not crushed. Both the quantity and the kind of recovered debris differentiated the two paved structures which must have had different functions. Any reconstruction or interpretation of the second structure must remain tentative pending further excavations.

Extensive and detailed spatial analysis of late Paleolithic sites has provided a wealth of information concerning habitation structures, hearths, activity areas and workshops as well as zones of primary or secondary trash disposal (Leroi-Gourhan and Brezillon, 1972; Audouze *et al.*, 1981; Julien *et al*, 1988). On the basis of the information thus provided, the structure Id/e may be viewed as a domestic unit which included a habitation area contained in the northern section of the pavement and corresponded to some kind of a dwelling. A large outside hearth at the south end of the paved structure was surrounded by areas of food preparation and food consumption. Trash was rejected in the unpaved zone between the two structures. More detailed analysis of the spatial distribution of bones and artifacts following more extensive excavations will be needed to substantiate the interpretation proposed here.

### AL3

Layer 3 consisted of a sheet of bones and artifactual remains contained in a yellowish, loessic matrix that extended over the whole excavated surface (Fig. V-11). The AL3 sheet of bone and artifacts continued under the AL2 pavement from which it was separated by 2 or 3 cm of sterile loess. This established that AL2 and AL3 constituted two distinct and identifiable archaeological layers. To the north of the structure, AL3 formed a thin band vertically placed between the scattered stones marking the continuation of AL2 and the well marked, dark humic band (HH1) containing AL4 (Fig. V-5). Debris density increased in the eastern section of the excavated area (Trench J) where the accumulation of bones and other materials reached a thickness of 10 to 20 cm. (Fig. V-6).

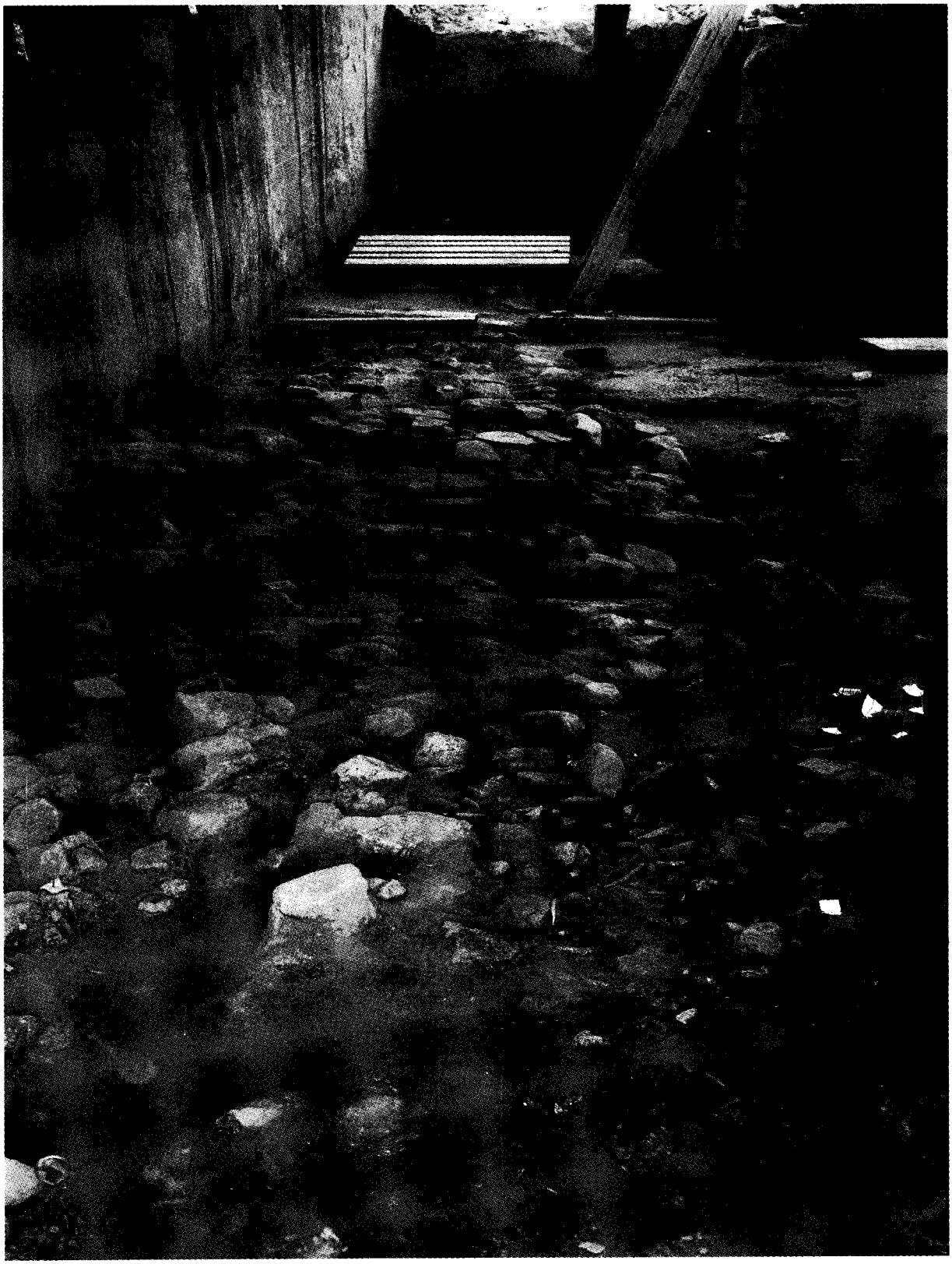

Fig. V-8 View of the pavement from the south. In front, concentration of bone fragments.

Fig. V-9 Pavement seen from the north end of the trench.

Fig. V-10 Lateral view of the northern section of the paved structure where rocks are piled two or three thick.

A certain degree of instability was noted in areas where the slope angle is more noticeable, in front of structure Je in excavation units Jc and Jd and to a much lesser extent along the western wall of excavation unit Ic. The minor faults affected most especially artifacts contained within AL3 and to a lesser degree the ones contained within the underlying AL4. The phenomena had little or no effect on the overlying AL2 as the vertical displacements caused by them were less than the thickness of the pavement stones and artifacts above the stones were left in place.

In AL3, cultural materials tended to pile up along the down slope side of the fault lines where they accumulated in 20 cm to 30 cm deep pockets.

No obvious features could be identified within the mass of broken bones and artifacts that constituted AL3. The organization of the faunal debris is not clearly apparent. An understanding of the butchering practices which produced the accumulation of bone fragments may eventually be derived from the detailed spatial analysis and refitting of the faunal remains.

**AL4**

The AL4 layer contained the greatest density of artifact and faunal remains. Cores and test-pits indicated that it had its maximum extension within the graben depression. A 20 cm wide, 10 cm deep, basin shaped pit had been cut into the underlying loess (Fig. V-14). A thin coat of humic material lined the bottom of the pit. A first layer of fill containing a few artifacts was overlaid by a second layer consisting of the dark humic matrix of HHI. The pit itself and the first fill corresponded to a phase of occupation that took place immediately before, or at the very onset of, the formation of the humic layer. A second occupation was stratified within the humic layer. The sequence of occupations is difficult, if not impossible to recognize outside of pits or features as the layer is no more than 5 to 6 cm thick.

Other features identified in AL4 included a deep and narrow pit filled with bones and chips (Fig. V-13) and postholes filled with a dark humic matrix. On the west side of the graben, the 85 profile cut a section through a stone built hearth at the base of HH1. Unfortunately much of the material the feature contained had been eroded and continued excavations were prevented by the massive overburden.

Maximum artifact density was recorded around the pits in units Ie and Jd, along the wall of unit Ic/d (Fig. V-12) and in unit Ia. Notable differences in the artifact cluster's content suggested the existence of several activity areas. In the southern section of the trench (Ie, If) were concentrations of reindeer mandibles, sections of fractured bones, 15 to 20 cm wide manuports and pieces of quartz which probably constituted the remains of a butchering/food preparation area (Fig. V-15). At the other end of the trench (la), large manuports, scrapers, splintered pieces, fragments of ivory and a broken stone bead represent the remains of a very different kind of workshop (Fig. V-16).

In summary, the four excavated cultural layers constitute a rich record of different aspects of prehistoric base camps during the last Pleniglacial. Repeated occupations took place during the period of relatively favorable conditions represented by the humic horizon HHI. Faunal remains are abundant, artifacts are varied and in good numbers. People settled in the ravine depression. Camps included hearths, pits and post holes and different activity areas. The same pattern continued during the time of the AL3 occupations. A change in settlement type corresponds to the AL2 occupations which took place at a time when conditions were becoming markedly drier even though traces of humidity here and probably at other spots within the area still made life possible. Previous occupants had made use of manuports, however, the construction of the stone pavement seems to have been developed as an adaptive mechanism by people who settled in the channel and on the knoll during the formation of AL2.

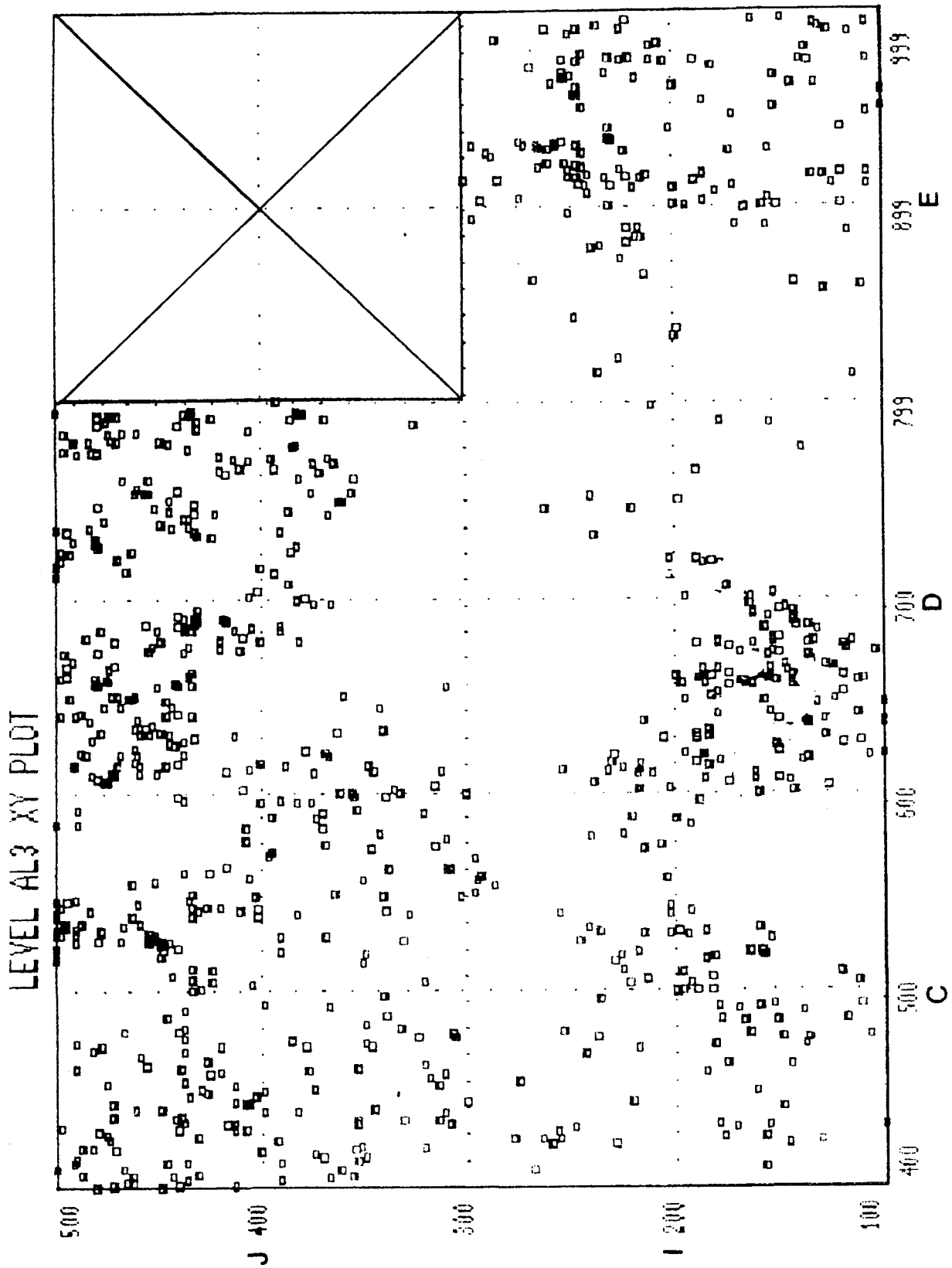


Fig. V-11 AL3: horizontal plot of artifact and bone distribution.

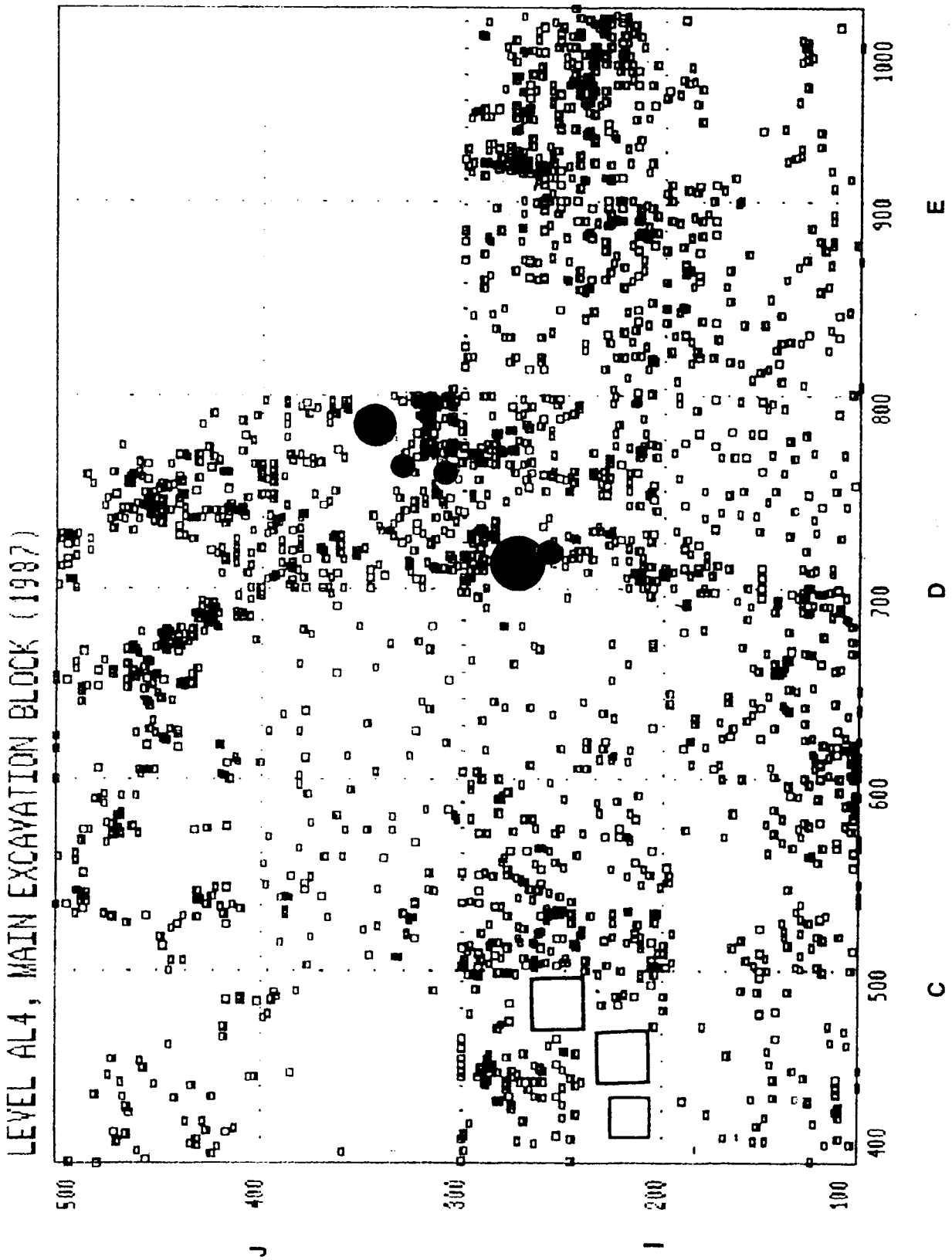


Fig. V-12 AL4 Plot of the horizontal distribution of bones and artifacts. Black circles indicate placement of features, pits and post holes. Square outlines mark places where sediment samples were taken.

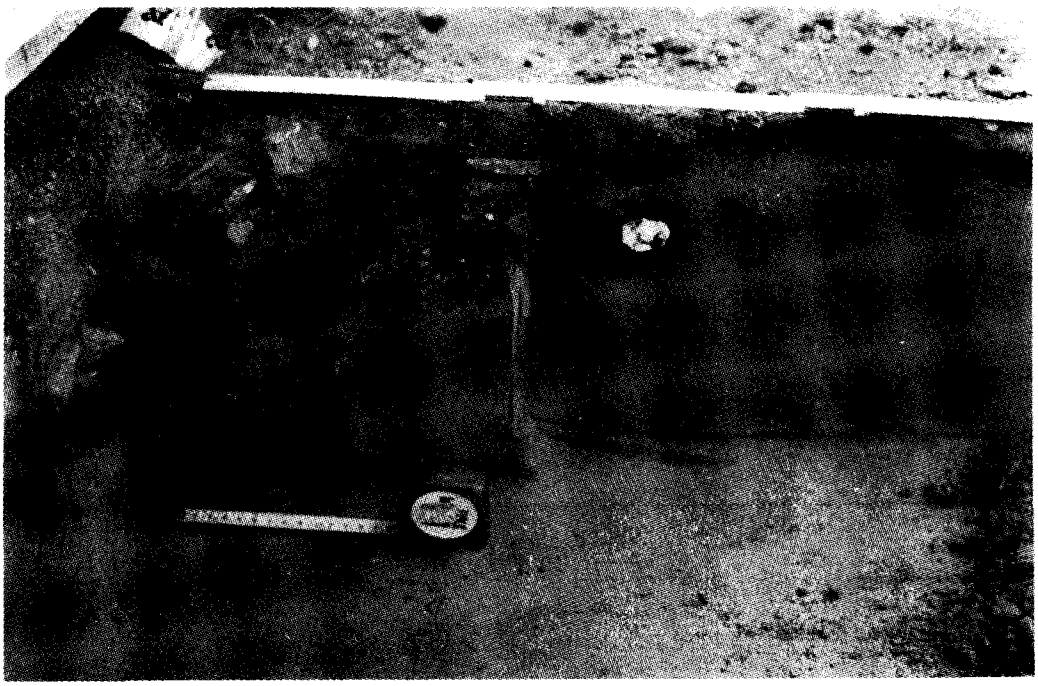

Fig. V-13 Narrow and deep pit filled with dark humic material containing artifacts and bone debris (AL4).

Fig. V-14 Basin shaped pit in excavation unit Id. The deeper pit outline marks the earliest occupation of AL4, at the very beginning of the formation of the humic horizon. The second stage of the pit fill consists of dark humic material, bones and chips.

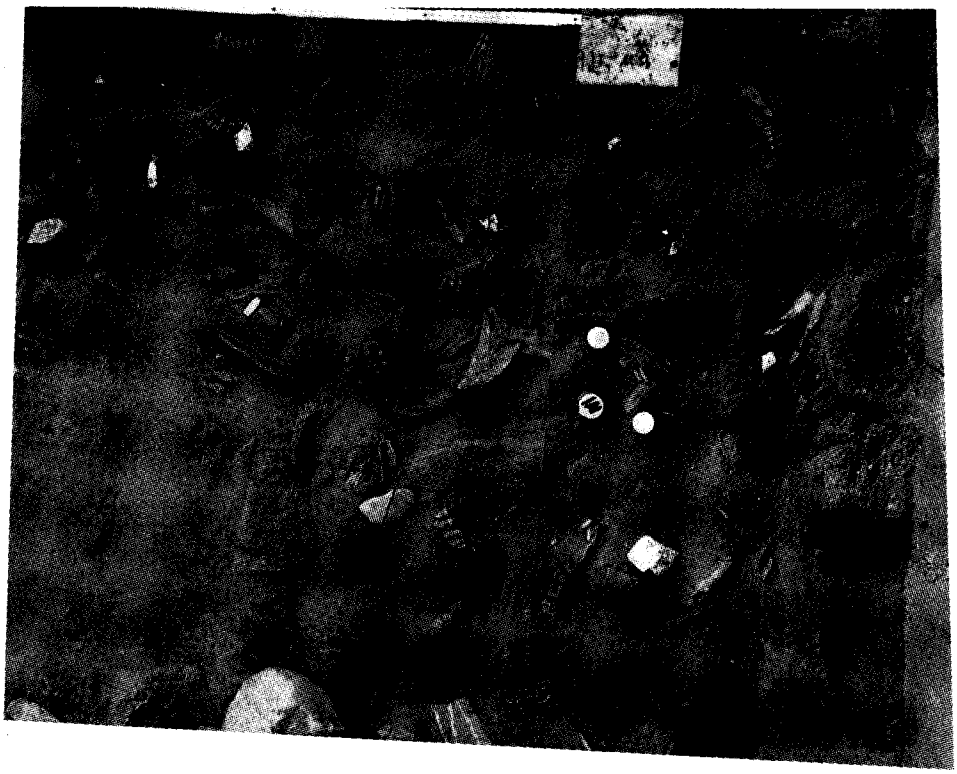

Fig. V-15 AL4, mandibles and bone fragments at the north end of the trench (Ie/f).

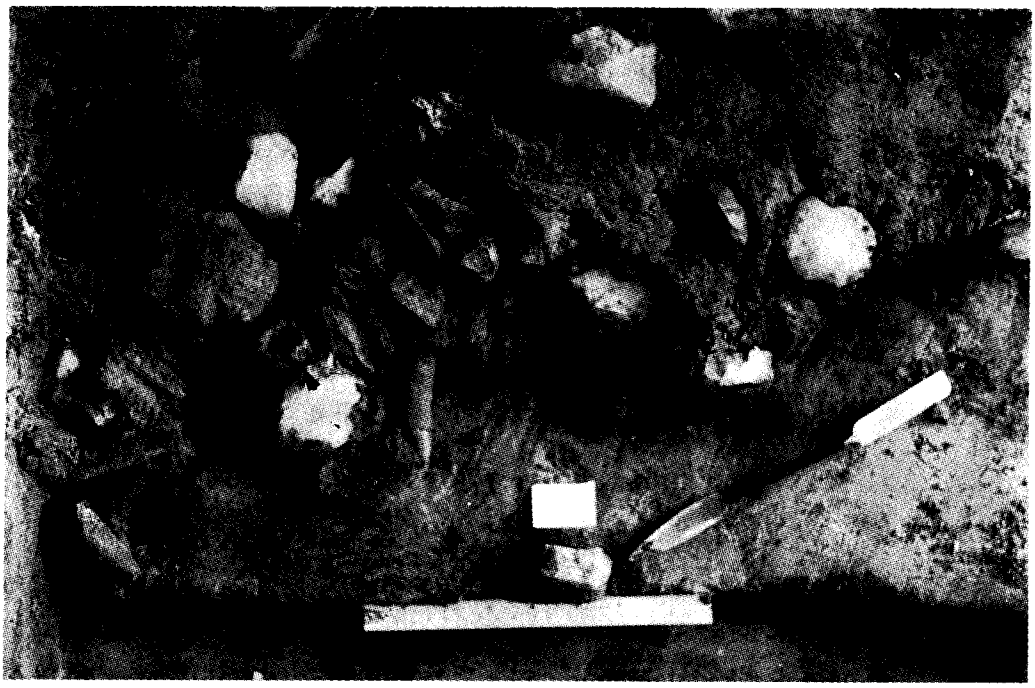

Fig. V-16 AL4, flint and quartz artifacts among hearth clearing debris. The arrow indicates the perforated stone bead.