

Chapter 2

Kabazi V: Hearths & Pits

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Pits, hearths, and even different kinds of fences, are not a rare occurrence at Crimean Middle Palaeolithic sites, with such structures already reported at Starosele, Shaitan Koba, Kabazi I, Kabazi II, Kholodnaya Balka, Chokurcha I, Volchi Grotto, Kiik Koba, Zaskalnaya V, Zaskalnaya VI, Prolom I, and Prolom II (Bonch-Osmolowski 1930, 1940; Ernst 1934; Formosov 1958, 1959a, 1959b; Chernysh 1965; Liubin 1969, 1970; Kolosov 1972, 1979, 1983, 1986; Bader and Bader 1979; Marks et al. 1998; Chabai 2004a, 2005a). Unfortunately, the majority of these structures are not well documented.

The significance of Middle Palaeolithic structures is difficult to overestimate. Many of the Middle Palaeolithic behavioural studies have featured the analysis of hearths and pits, and the associations of these structures with artefact and bone assemblages (Perlès 1977; Rigaud and Geneste 1988; Gamble 1986, 1999; James 1989; Stringer and Gamble 1993; Mellars 1996).

The main aim of this chapter is to describe the new data from Kabazi V, as well as to propose some methods of investigation and lines of interpretation. The sedimentation conditions of Kabazi V, lithological layers 12 and 12A, appear to be favourable for the preservation of any kinds of structures, with the occupations of sub-units III/1, III/2, III/3, III/4 and III/5 being buried within a fine-grained silt (Chapter 1, this volume). On the other hand, the depositional conditions of Unit IV (lithological layer 14A) were not so favourable – occupations were deposited within a massive silt with *éboulis*. Usually thin living surfaces, separated by sterile sediments, provide an opportunity for better stratigraphical control of spatial and temporal positions of different kinds of structures. At the same time, the gradients of living surfaces, temporarily repeated erosional processes, as well as trampling, especially in palimpsests of occupations, poses a number of interpretational problems. Two kinds of structures were studied in Kabazi V: concentrations of burnt material and pits/depressions.

CONCENTRATIONS OF BURNT MATERIAL

The burnt material found in Kabazi V comprises bones, flint artefacts, sandstone pebbles, limestone boulders, limestone gravels, granular silt sediments, soot, and calcite ash, whereby the main component

of concentrations is soot. Soot was recorded as being of a fine-grain structure, fatty to the touch, of a dark grey/black colour, and was found mixed with silt. Concentrations of soot formed both grey/black

scatters and beds which were visible in both plan and profile. Ash was observed as thin whitish calcite beds. Burnt bones show all variations of colours: red, brown, black, and whitish. The whitish bones are taken as evidence for high temperature heating, which resulted in an oxidation of the organic matter (Bar-Yosef and Weiner 1996). Heavily burnt flints are rare. The most part of the burnt flint assemblage comprises relatively small and thin pieces (length/width: < 3 cm; thickness: < 0.5 cm). The burnt sandstone pebbles, limestone boulders and gravels are easily breakable and had turned to reddish/greyish/whitish colours. The basic sediment in lithological layers 12 and 12A at Kabazi V is a fine-grained silt which developed from the weathering of Eocene fossil clay. When burnt, this granular silt formed thin crusts of either yellow-red or red-brown colours.

There are three types of burnt material concentrations at Kabazi V. The first type is clearly limited concentrations of sooty/ashy sediments which contain burnt bone/artefacts fragments. These are usually of ovoid or rounded shape, and mostly dark grey in colour. Thin crusts of yellow-red/red-brown burnt sediments underlay sooty/ashy concentrations. In a few cases, beds of whitish calcite ash are found incorporated into the sooty sediments. These features are interpreted as the remains of *in situ* hearths (e.g. Callow et al. 1986, pp. 193-194).

Features assigned to the second type of burnt material concentrations are more complicated, they comprising two parts. The first, and often smaller, part is a crust of burnt sediment which was covered by a dense sooty/ashy bed. The shapes of both sooty/ashy beds and burnt crusts are often irregular, whereby the former, which also overlay burnt sediments, are of an intensive dark colour owing to dense concentrations of burnt bone fragments and soot. Occasionally, thin and interrupted beds of whitish calcite ash were observed within the sooty bed. In other words, this first part shows signs of a stratigraphical sequence, as is common for a hearth, although its shape does not substantiate this line of interpretation. The second part of this type is a tail area of light grey coloured sooty sediments which extends in one or two directions. The concentration of soot in these sediments, which also contain some burnt bones and artefacts, is much lower than that observed in the aforementioned first part. On the basis of the above evidence, features assigned to this second group are interpreted as partly disturbed hearths (dense sooty/ashy beds and burnt sediments crusts), with the tail area representing the destruction zone.

Features assigned to the third and final type are the simplest to describe, but are the most difficult to interpret. These comprise concentrations of sooty

sediments, which are sometimes mixed with burnt bone/artefacts fragments. The soot concentration is not very high, but sufficiently dense to be easily visible as light grey colour scatters; there are no underlying burnt sediments. In fact, the light sooty scatters are reminiscent of the tail areas of the type 2 features described above. The difference consists, however, in the absence of an adjacent hearth. Hence, the third type of burnt material concentrations are referred to quite simply as light sooty scatters.

Type 1, hearths

Eight hearths were found in six levels: III/1; III/1A; III/2; III/3-3; III/5-3B and III/5-3B2; five simple hearths were found in levels III/1, III/2, III/3-3 and III/5-3B; and three deepened hearths were excavated in levels III/1A, III/5-3B and III/5-3B2.

Simple hearths

In level III/1 a hearth was discovered in squares 7Δ, 8Δ and 8E (Fig. 2-1), although it remained unexcavated in square 7Δ. The hearth is of an ovoid shape, and is one of the smallest and thinnest known from Kabazi V; it is just 39 cm long, 23 cm wide and about 1 cm thick. The stratigraphy of the hearth is characterised by two beds: an upper bed of dense sooty silt, and a lower bed with crusty burnt sediments. Due to a high concentration of soot, the upper bed is dark grey, almost black in colour. Numerous small fragments of burnt bones are associated with these sooty sediments. The burnt sediments encountered in the lower bed form a thin yellow-red crust. Generally speaking, the sooty bed is slightly thicker than the lower bed of burnt sediments. The hearth is situated on the eastern edge of the dense artefact concentration located in squares 7Δ, 8Δ, and partly 8E (Fig. 2-1). Also, numerous sooty scatters were found in the same squares (see section: Type 3, the light sooty scatters, this Chapter).

The hearth from level III/3-3, which was discovered on the border of squares 7Γ and 7Δ (Fig. 2-2), is roughly of the same size as the small hearth investigated in level III/1 described above. This second hearth is of an ovoid shape, 37 cm long, 25 cm wide and 2 cm thick. Again, the stratigraphical sequence of this hearth is characterised by two beds: whereas the first comprises a black dense sooty silt, the second is red crust of burnt silt. The thickness of the latter measures no more than 0.5 cm. Numerous small fragments of burnt bones and a few burnt flint chips were found in both beds. The hearth is situated between a partially disturbed hearth and light sooty cluster. All three concentrations of burnt material

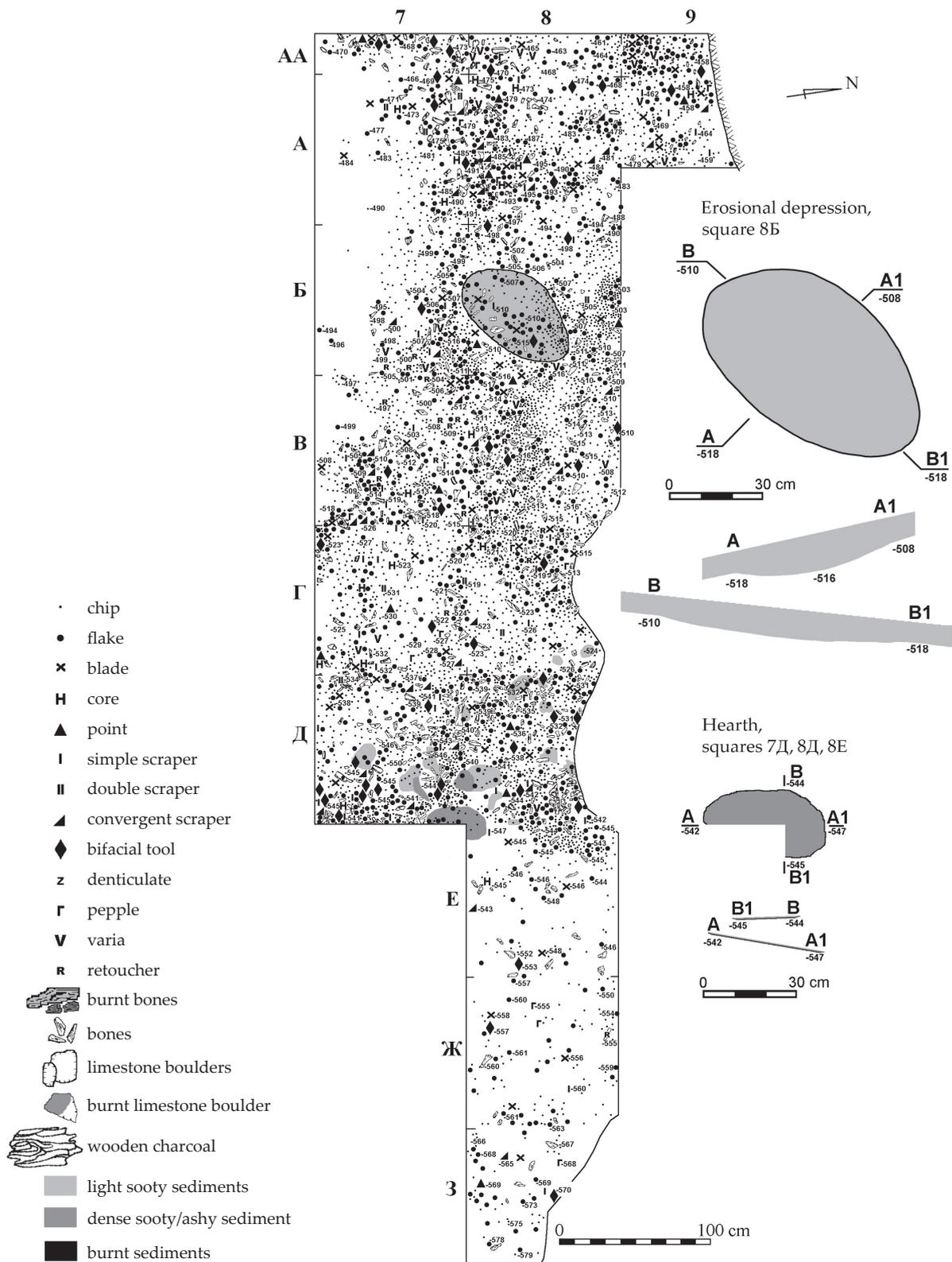


Fig. 2-1 Kabazi V, level III/1: plan. Erosional depression, square 8B: plan and profiles. Simple hearth, squares 7Д, 8Д, 8E: plan and profiles.

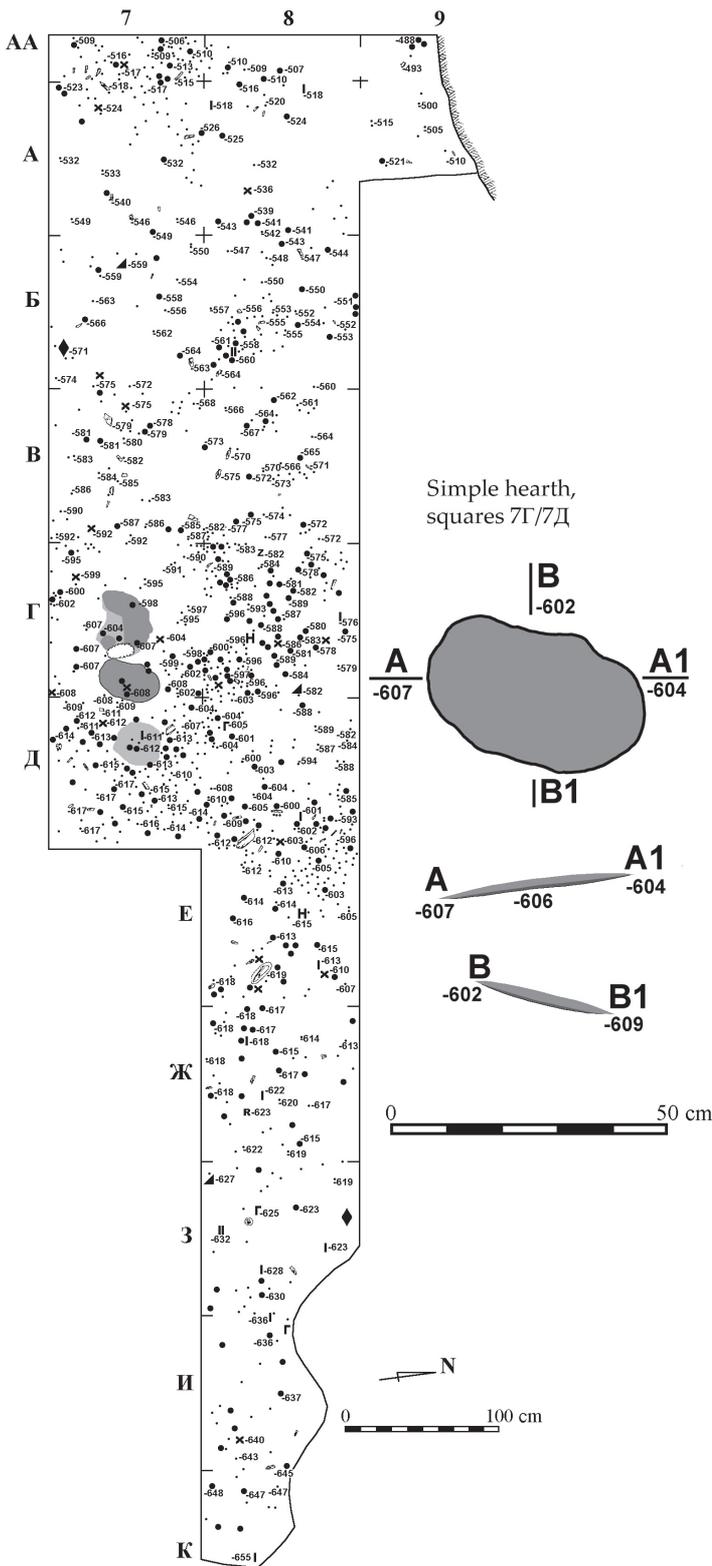


Fig. 2-2 Kabazi V, level III/3-3: plan. Simple hearth, squares 7Г/7Д; plan and profiles. For conventional signs see figure 2-1.

form a line which stretches from north to south over a distance of 115 cm. A concentration of artefacts was found in the northern and southern areas, adjacent to the hearth.

The irregular ovoid shaped hearth discovered in level III/2 was exposed on the border between squares 7B and 7Г (Fig. 2-3). It has a maximum length of 46 cm, it is 45 cm wide, and 4 cm thick. The stratigraphy of this hearth constitutes a 2.5 cm thick bed of dense sooty silt, and a 1.5 cm thick crust of burnt silt. Whereas the former is intensively black, the latter is brown-red. The upper dense sooty bed contains a concentration of relatively large fragments (length up to 10 cm) of heavily burnt mammoth tube bones. The colour of these burnt mammoth bones is black. Also, the dense sooty bed yielded small pieces of burnt bone of a whitish colour, as well as a few heavily burnt flint chips. No concentrations of artefacts were detected adjacent to this hearth, and finds were limited to a few bones and artefacts that were found in a 40-50 cm zone to the north, east, and south of the hearth. The finds in the north and north-east were associated with a partially disturbed hearth and a tail area of a destruction zone (squares 8B and 8Г).

A medium size simple hearth was exposed in level III/5-3B, square 8Г (Fig. 2-4). The hearth, which is round in shape, displays a maximum diameter of 46 cm, and is 3 cm thick at its thickest point. The stratigraphy of the hearth comprises a 2.5 cm thick bed of dense sooty silt and a 0.5 cm thick crust of burnt silt. Some blackish burnt pieces of bone and a few burnt artefacts were recovered from the dense sooty bed. A concentration of artefacts and bones was found south of the hearth.

The largest simple hearth was excavated in the same level III/5-3B, in squares 7B, 7Г, 8B, 8Г (Fig. 2-4; 2-5). This hearth is ovoid, 113 cm long, 104 cm wide, and 3 cm thick. Once again, the stratigraphy of the hearth deposits is made up of two main beds, a 2.0-2.5 cm thick dense sooty sediment, and an underlying 0.5-1.0 cm thick crust of burnt silt. Thin incisions of calcite ash were observed in the dense sooty sediments, with the latter yielding some lightly burnt pieces of flint.

Deepened hearths

The deepened hearth in level III/1A, square 8E could only be partly exposed during excavation (Fig. 2-6). However, on the basis of its excavated part, it can be assumed that this hearth was of an elongated ovoid shape; its maximum investigated length was 40 cm, with a width of 20 cm. The hearth deposits measured 11 cm thick, of which 8 cm comprised light sooty sediments and contained blackish burnt bone fragments and a few burnt chips. From this deposit a

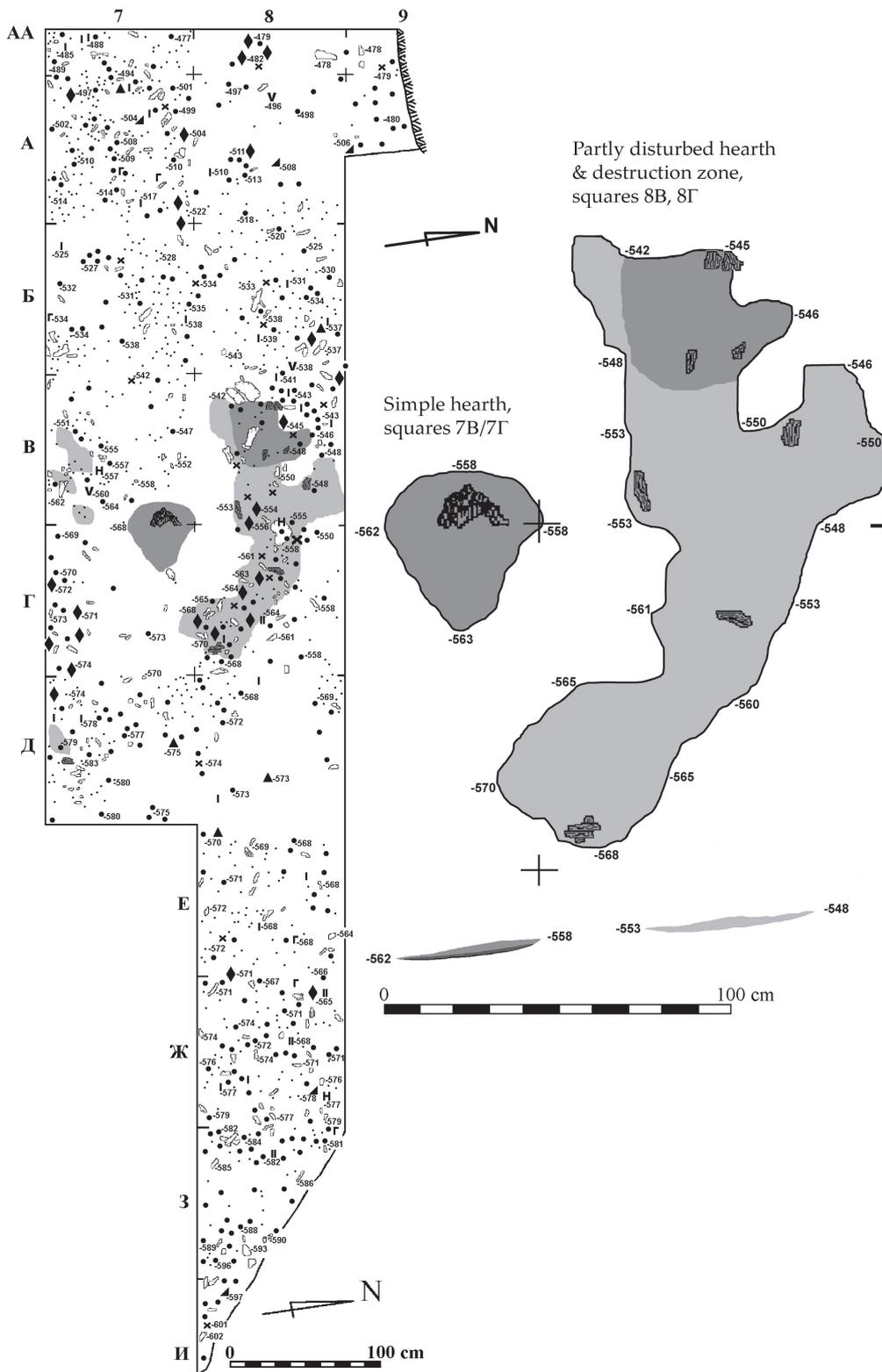


Fig. 2-3 Kabazi V, level III/2: plan. Simple hearth, squares 7B/7Г: plan and profiles along square line B/Г. Partly disturbed hearth and destruction zone, squares 8B and 8Г. For conventional signs see figure 2-1.

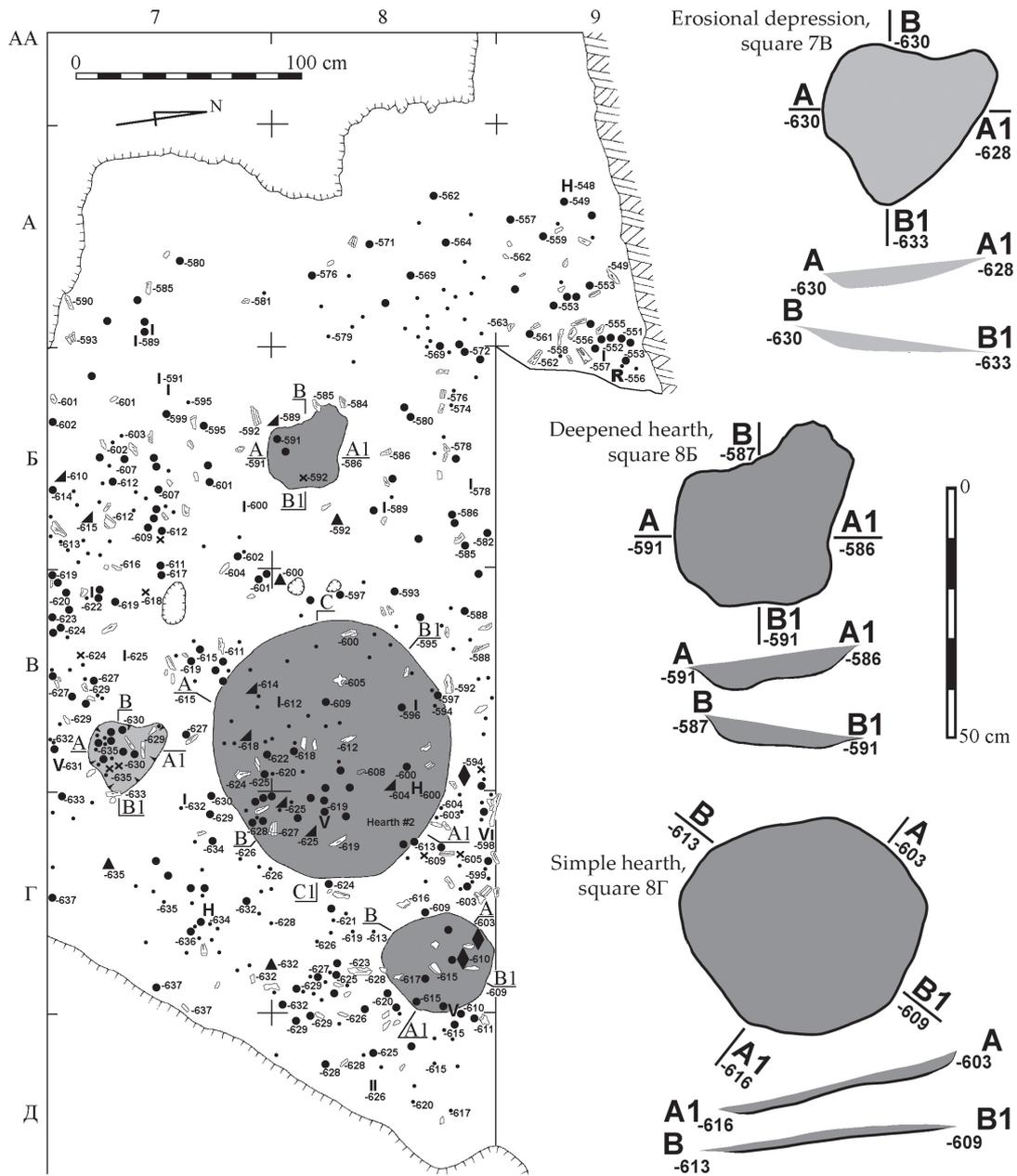


Fig. 2-4 Kabazi V, level III/5-3B: plan. Erosional depression, square 7B: plan and profiles. Deepened hearths in square 8B, and simple hearth in square 8Γ: plans and profiles. For conventional signs see figure 2-1.

relatively large (length – 8.5 cm) retoucher on a tube bone fragment was excavated. This piece was burnt to the same degree as all other bones from this layer. Below the light sooty silt was observed a 2 cm thick bed of dense sooty silt. The thickness of the lowermost reddish burnt crust measured about 1 cm. The general parameters of the hearth correspond with dimensions observed for “pits”. The southern and

northern walls of this pit are slightly sloping; its western wall is abrupt and limited by a flat quadratic limestone boulder (length/width, about 16 cm; thickness, 8 cm). The side of the boulder, which had been laid adjacent to the hearth, shows traces of intensive heating, i.e. it is crumbly and had turned to a reddish colour. In comparison to the simple hearths the stratigraphical sequence of the deepened hearth

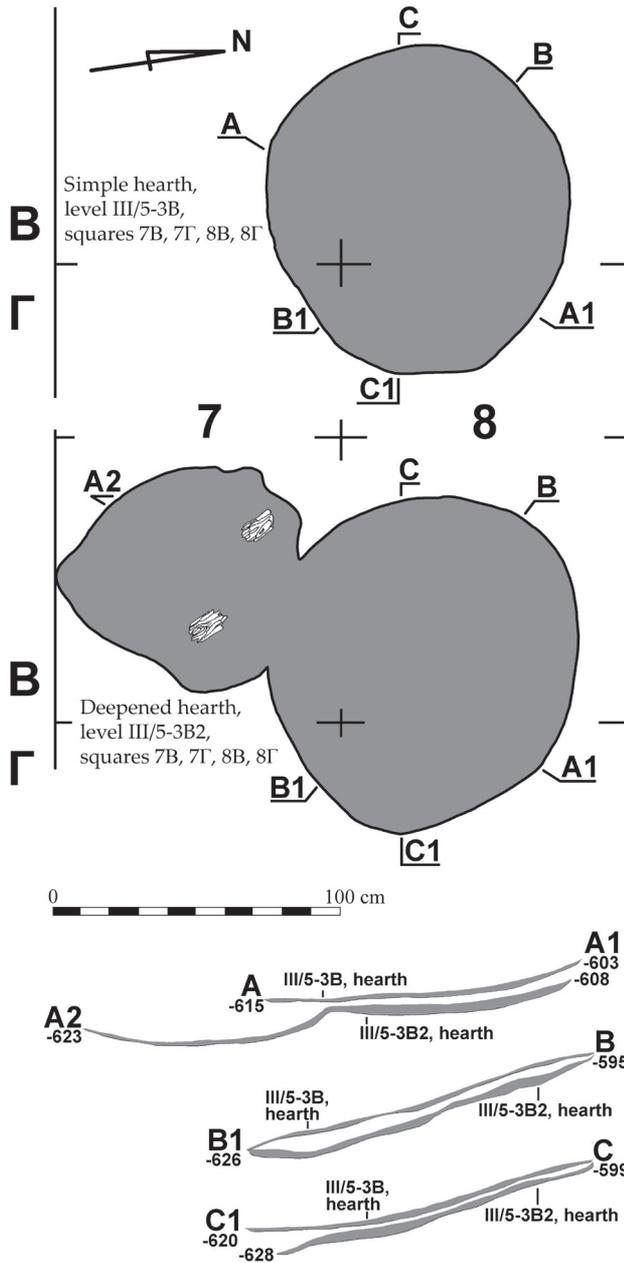


Fig. 2-5 Kabazi V, levels III/5-3B and III/5-3B2, squares 7B, 7Γ, 8B, 8Γ: plans and profiles of the simple and deepened hearths. For conventional signs see figure 2-1.

is more complicated. In contrast to the simple hearths with their straight forward stratigraphy, this deepened hearth displays a total of three beds of burnt material (light sooty silt, dense sooty silt, and a crust of burnt silt). Although the association of the dense sooty silt and the burnt crust with the functioning of the hearth is more or less clear, the appearance of the light sooty sediments in the hearth pit may

be linked to later erosion and trampling activity in adjacent areas.

A deepened hearth of similar shape was reported by F. Bordes at Pech de l'Azé II, and interpreted as a dug-out "tailed hearth" (Bordes 1972, pp. 61-63). In the case of Kabazi V, III/1A the artificial origin of the "pit" is very problematic. The west-east gradient of level III/1 in this particular square (8E) lies at roughly 11°. The only deepened and abrupt part of this deepened hearth was its western – upper – wall, while all other walls were slightly sloping. The correlation of the walls of "pits" with the prevailing gradient of the slopes were studied for the numerous erosional depressions discovered at Kabazi V (see section Pits and erosional depressions, this Chapter). At the same time, the "limiting stone" was the only limestone boulder found in a vertical position in this level. It is likely that the western wall of the erosional depression was lined with this flat boulder, and afterwards used as the location for a hearth.

A further deepened hearth was exposed in level III/5-3B, square 8B (Fig. 2-4). The hearth, the shape of which can be described as irregular, had a maximum length of 42 cm, a maximum width of 35 cm, and was up to 6 cm thick. As such, it is the thickest hearth to have been discovered at Kabazi V. Beneath the 5.5 cm thick bed of dense sooty silt was observed a 0.5 cm thick yellow-red crust of burnt silt. Upon excavation, the former produced a few burnt bone fragments and flint pieces. The walls of the hearth "pit" are slightly sloping, especially the lower wall, in relation to the gradient of the living floor. Seeing as the "pit" used for this hearth resembles in both its shape, size, and form a natural erosional depression discovered in square 7B (Fig. 2-4), it is likely that a similar natural depression was chosen as the location for this hearth also.

The most complicated deepened hearth was excavated in level III/5-3B2, in squares 7B, 7Γ, 8B, 8Γ (Fig. 2-5 and Fig. 1-15 in Chapter 1, this volume). This hearth comprises two conjoined parts. Whereas the bigger part is represented by a circle (diameter: 119 cm, thickness: 2.5 cm), the smaller part is of an irregular shape (length: 84 cm, width: 80 cm, thickness: 2 cm). The stratigraphies of both parts are characteristic of those discovered at Kabazi V; the upper bed is formed by a dense sooty silt, and the lower consists of a crust of burnt silt. The thickness of the former is about 1.5 cm, while the latter is about 0.5 thick. Thin interrupted lenses of calcite ash were found in the dense sooty silt. Also, small fragments of burnt bones and flints, as well as charcoal of varying sizes, are associated with the dense sooty silt deposit. Two pieces of charcoal were found

in the form of relatively big (length/width: ca. 12-10 cm) splinters. One of these was used as a sample for radiocarbon dating (Chapter 3, this volume). The combination of charcoal and calcite ash beds is understood as direct evidence for the use of wood as a fuel for the hearth.

A section (A1-A2) cut through both parts of the hearth provided a profile which appears to show two conjoining pits (Fig. 2-5). However, neither in plan nor in profile, could a clear border between the two "pits" be defined, and it is likely that such a border never existed. The northern walls of the pits are more or less abrupt, while all remaining walls are pretty much shallow or slightly sloping (Fig. 2-5, compare the sections A1-A2, B-B1 and C-C1). The north-south gradient of the living surface lies at 9-10°. As observed among the deepened hearths described above, the abrupt wall is always situated to the side of the pit where the slope gradient is at its highest. In level III/5-3B2 the deepened hearth was placed in an already available erosional depression; in other words, the earlier eroded surface was used as a location for the hearth. It is very unlikely, that both parts of this hearth were in use at any one time, but, at the same time, there is no stratigraphic evidence which might prove or reject the contemporaneous exploitation of both its parts.

To sum up, there is no available evidence in support of the assumption that artificial fire-pits were constructed at Kabazi V. Rather, the observed "deepened hearths" were placed in already available natural depressions.

Type 2, partly disturbed hearths with destruction zones

Burnt material concentrations assigned to this type were discovered in the following occupations: level III/1, squares 7A and 8A; level III/2, squares 8B and 8G; level III/3-1, squares 7AA, 7A, 8A; level III/3-3, square 7T; level III/1A, square lines Б, В, Г; level III/3-2, square lines Б, В; level III/5-2, square lines Б, Г; level III/5-3, squares 8B, 8G.

The largest hearth destruction zone was revealed in level III/1A, square lines Б, В and Г, and covers an area of in excess of three square metres (Fig. 2-6). The thicknesses of the sooty sediments, which are densely packed with burnt bones and artefacts, ranges from 3 cm to 6 cm. A number of heavily burnt large and small mammoth bone fragments were found in squares 7B, 7B and 8B. The colours of these burnt bones ranges from variations of light brown, dark grey and white, i.e. both low and high temperatures were reached during the burning of this material.

The burnt flint from square 6B showed a natural TL peak (NTL in blue) at around 360 °C (Chapter 3, this volume); this might be considered as low heating. As noted by R. Housley et al., square 6B in level III/1A provided similar luminescent sensitivity results to both overlying and underlying sterile sediments, thus indicating that these sediments "*were little affected by any heating*" (Chapter 3, this volume).

In squares 7B and 8B, below the sooty sediments, were found two pairs of thin, near ovoid-shaped beds of burnt reddish sediments that were covered by a dense sooty bed. The thickness of reddish burnt sediments is no more than 0.3 cm, while the thickness of the dense sooty bed is about 3 cm. As noted by R. Housley et al., square 6B in level III/1A, which lies adjacent to the burnt crust in square 7B, provided similar luminescent sensitivity to both overlying and underlying sterile sediments. Once again, this indicates that these sediments "*were little affected by any heating*" (Chapter 3, this volume). Each of the pairs of burnt crusts (squares 7B and 8B) might then be the remnant of hearths, which were later destroyed by natural factors and/or human activity. At least two limestone boulders (squares 7B and 7I/8I) show traces of intensive heating. One side of each boulder was heavily burnt: the limestone had become crumbly and had taken on a reddish colour. The distance between the burnt parts of the boulders is about 50 cm; no burnt sediments were observed separating these boulders, nor were such sediments found below them.

Artefact concentrations in squares bordering 7B/8B and square 7B were found to connect with the tail area. Generally speaking, 267 of 445 tools from level III/1A were found in the destruction zones of hearths; it should also be noted that these zones make up about one quarter of the entire excavated area of level III/1A.

In levels III/3-1 and III/3-2 a little more than one square metre was covered by the destruction zones of hearths. The destruction zone in level III/3-1, squares 7AA, 7A and 8A, is irregular in shape (Fig. 2-7); it is 132 cm long, 114 cm wide and 0.5 cm thick. The greater part of this concentration of burnt material comprises a light sooty tail area, while the hearth remnant, in the form of burnt sediments and a dense sooty cluster, was found on the squares 7AA, and in part of 7A. The parameters of the excavated part of the hearth are as follows: length – 47 cm; width – 56 cm; and thickness – 0.5 cm. A concentration of artefacts was found close to the eastern edge of the tail area. Small fragments of blackish burnt bone are associated with both the hearth and its tail area.

In level III/3-2 an irregularly shaped destruction zone was found in squares 8B, 8B and in part of 7B

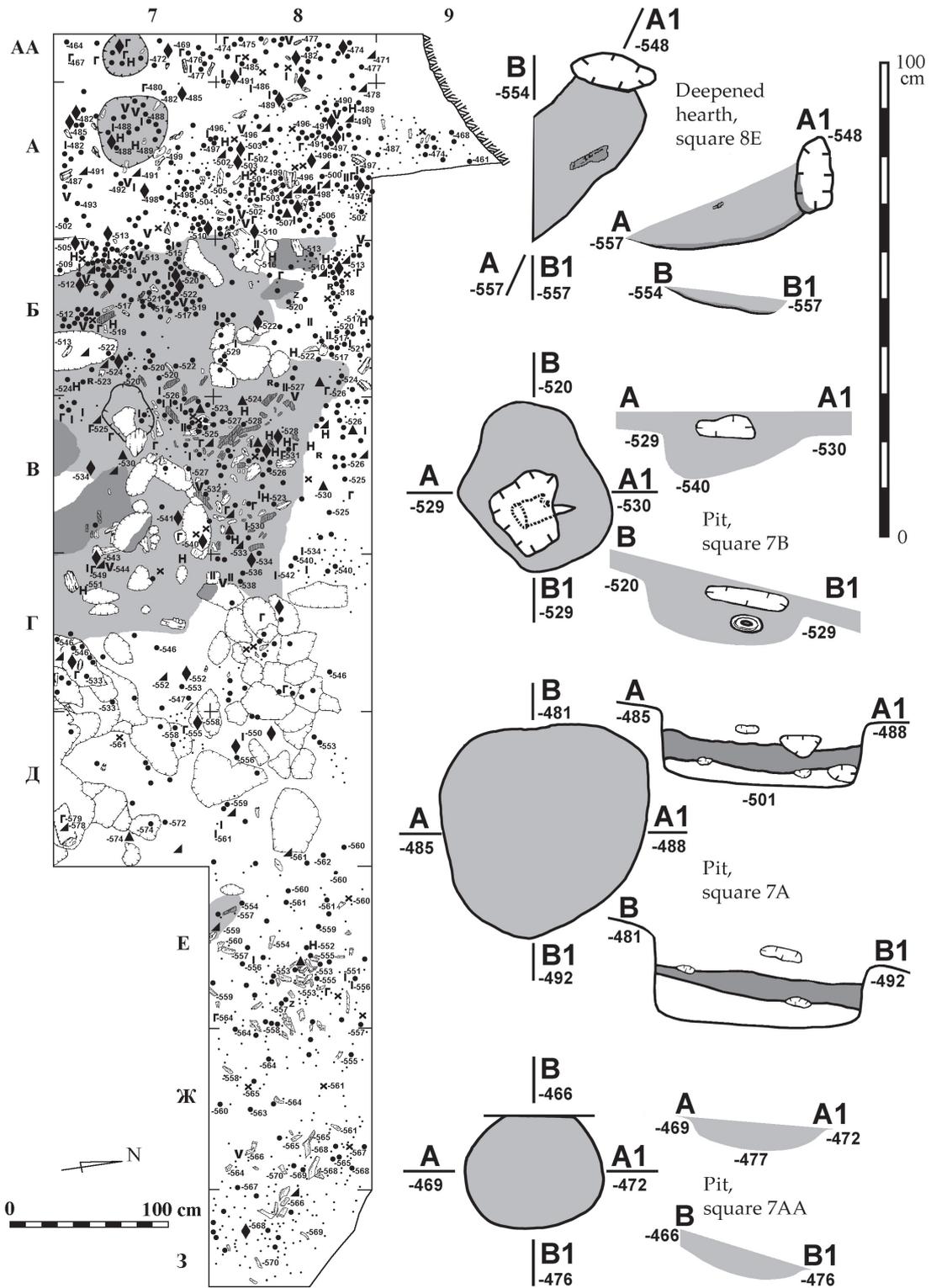


Fig. 2-6 Kabazi V, level III/1A: plan. Deepened hearth, square 8E: plan and profile. Pits in squares 7B, 7A and 7AA: plans and profiles. For conventional signs see figure 2-1.

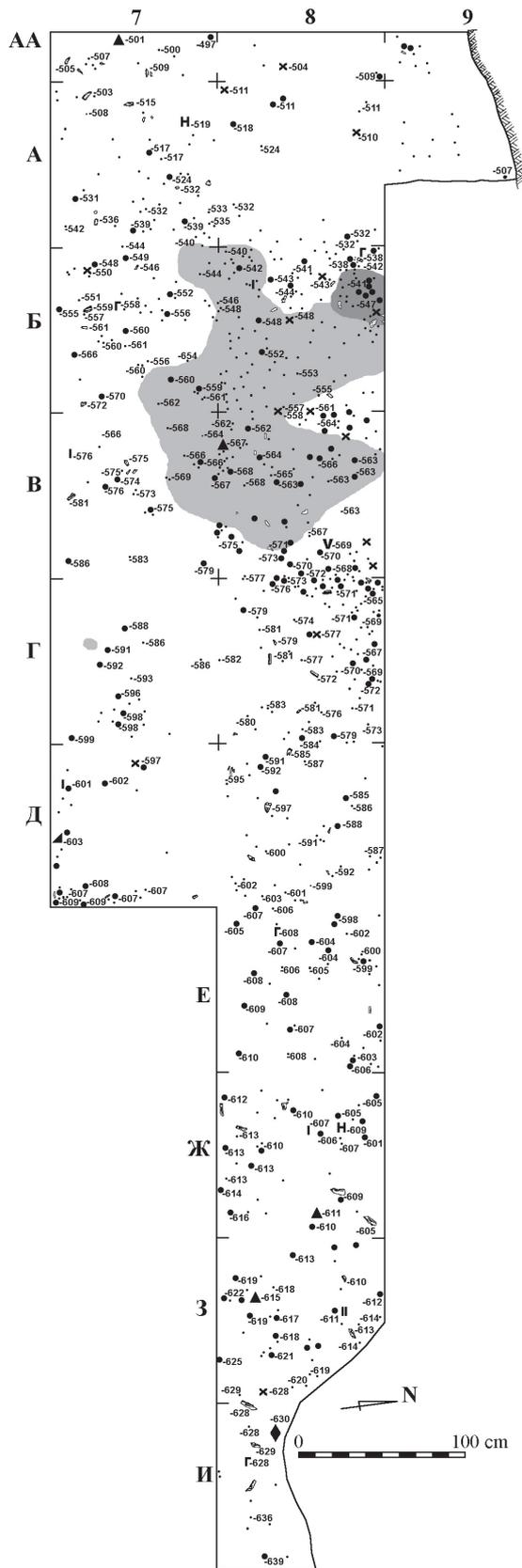


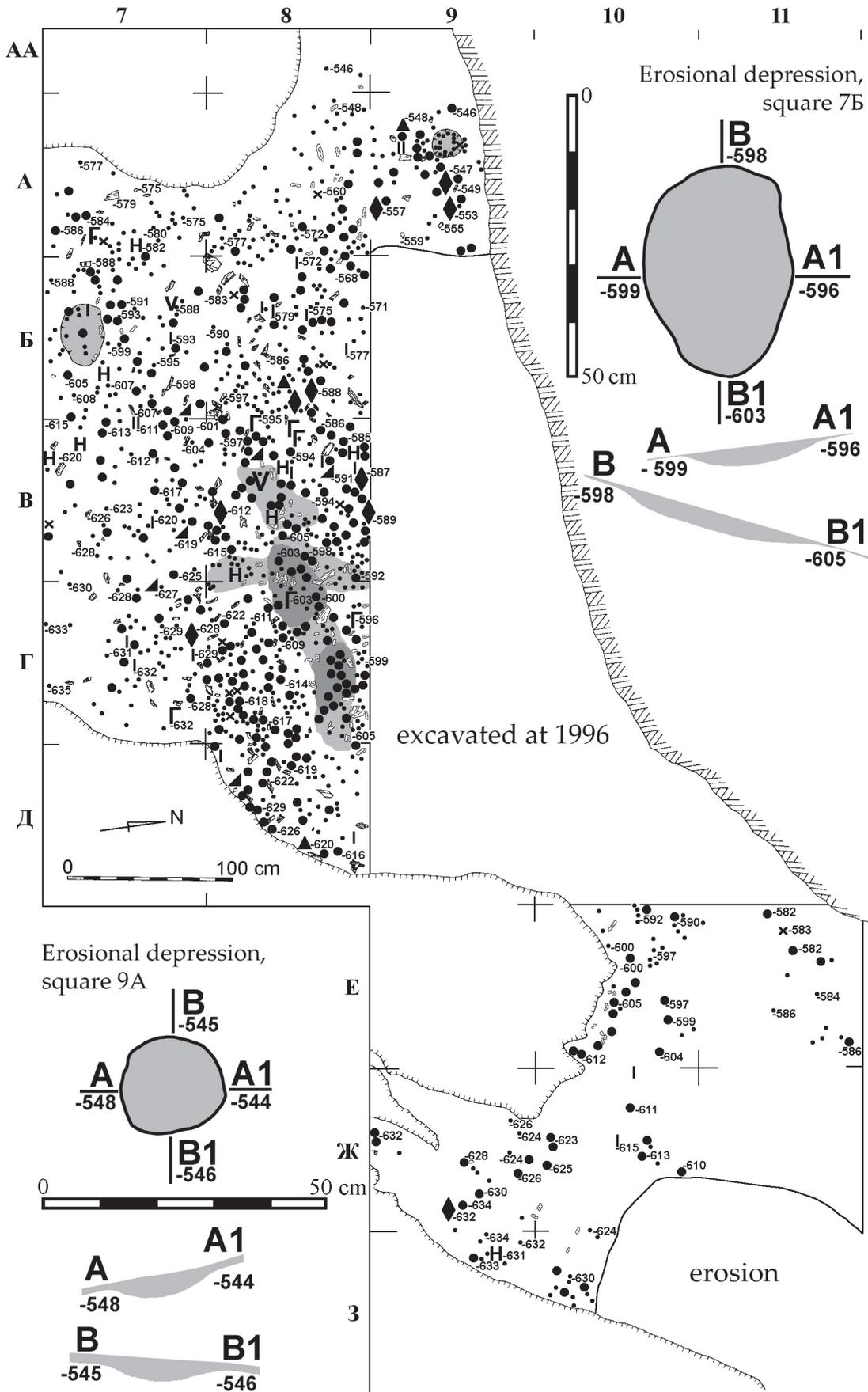
Fig. 2-8 Kabazi V, level III/3-2: plan. For conventional signs see figure 2-1.

sediments. It would appear that we are confronted by the remnants of three hearths. The tail area is situated between the potential hearths, but also extends towards the south, i.e. it follows the gradient of the living surface. There are no obvious concentrations of artefacts in the proximity of the destruction zone. Some burnt bone fragments and flint chips were found in the hearths and in the tail area.

A cross-shaped destruction zone was excavated in level III/5-3, squares 8B, 8Г and 8Д (Fig. 2-10). This zone measures 223 cm in length, it is 99 cm wide, and between 0.5 cm and 1.0 cm thick. Two ovoid shaped zones of burnt sediments were exposed beneath a sooty/ashy bed. The thicknesses of each of these measured about 0.3 cm. The zone of burnt sediments in square 8B/8Г is 47 cm long and 34 cm wide. The destruction zone, in square 8Г, is much smaller, it measuring 27 cm long and 20 cm wide. Thin beds of calcite ash were found covering both zones of burnt sediments. There is no doubt that such combination of burnt sediments, calcite ash, and sooty beds are the remnants of hearths. The light sooty tail area stretches from the hearth remnants in all directions. A concentration of flint material was exposed in this destruction zone, and in areas surrounding it (Fig. 2-10). In level III/5-3 a total of 84 tools were found, of which 37 stem from the destruction zone and nearby area.

The smallest destruction zones were discovered in levels III/1 and III/3. In level III/1 two small, irregularly shaped concentrations of sooty and burnt sediments were found in squares 7Д and 8Д (Fig. 2-1). The combined thickness of these deposits is about 1 cm. The maximum dimension of sooty cluster is about 35 cm, while the maximum dimension of burnt sediments measures 18 cm. These two destruction zones are associated with a relatively large (about 2 square metres) concentration of bones and artefacts. At the same time, this affiliation is not certain, because in the same squares (7Д, 8Д) a hearth was also found (Fig. 2-1). Further, these destruction zones lie in close proximity to one another, which might suggest that they in fact belong to the remnants of just one hearth.

A larger destruction zone was found in level III/3-3, square 7Г (Fig. 2-2). This has an irregularly shape and is 45 cm long, 39 cm wide and 0.5 cm thick. Ovoid (length, 40 cm; width, 18 cm) and rounded (diameter, 10 cm) zones of burnt sediments were again covered by a sooty bed. The thickness of the burnt sediments measures about 0.3-0.5 cm. Both zones of burnt sediments were connected by a light sooty tail area. Therefore, it is likely that we are dealing with the remnants of a single hearth.



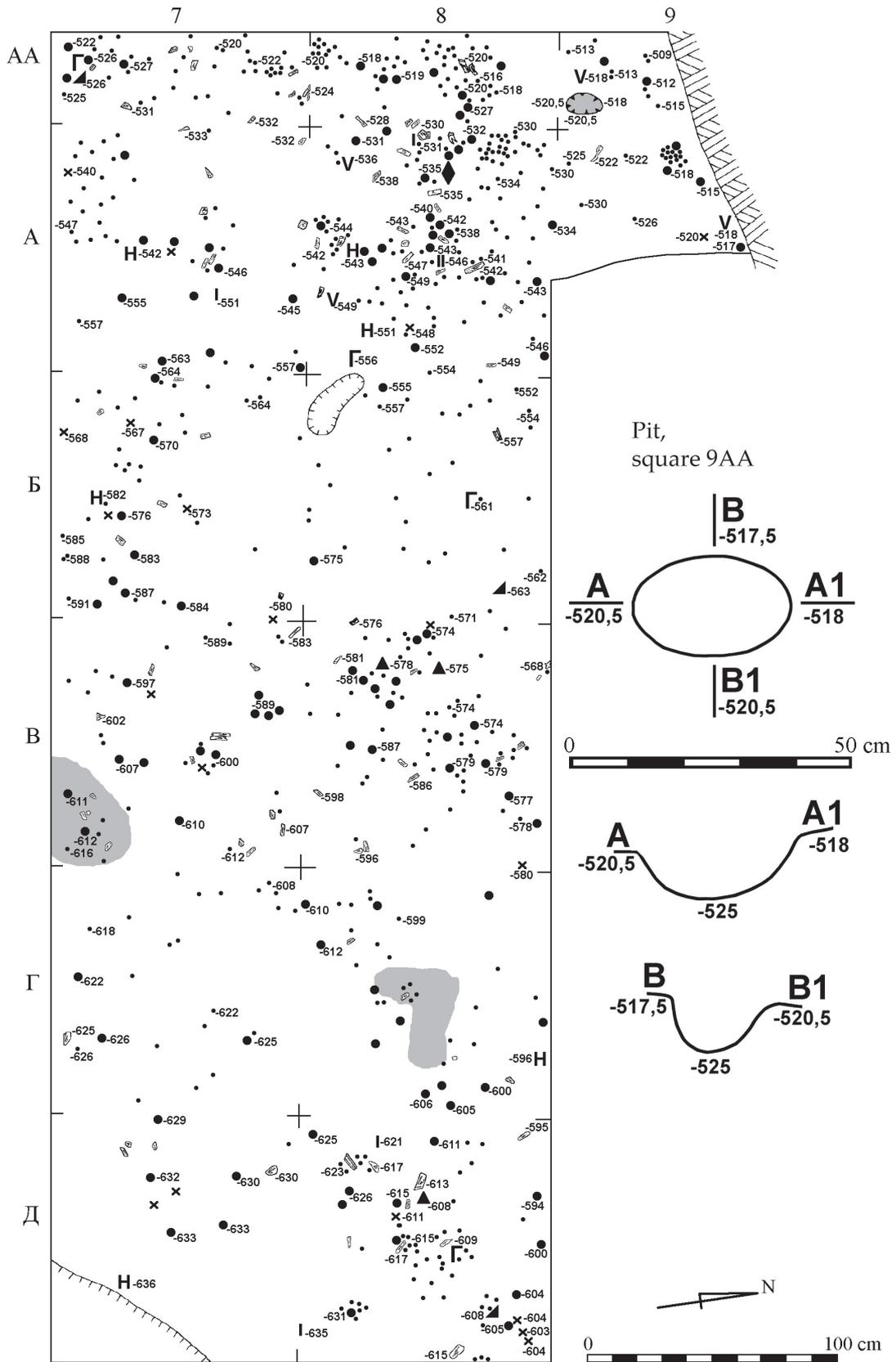


Fig. 2-12 Kabazi V, level III/4-2: plan. Pit, square 9AA: plan and profiles. For conventional signs see figure 2-1.

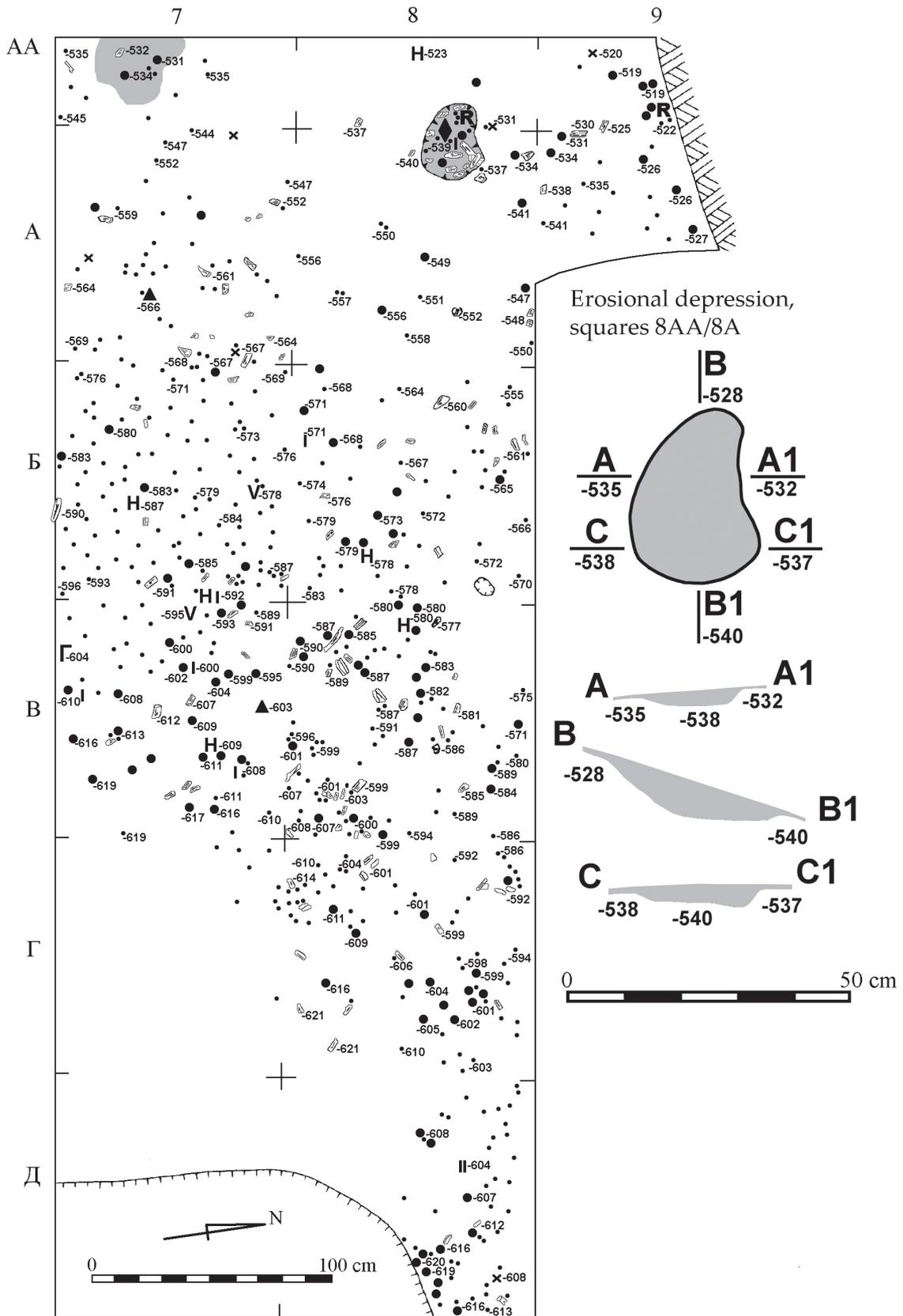


Fig. 2-13 Kabazi V, level III/4-5: plan. Erosional depressions, squares 8AA/8A: plans and profiles. For conventional signs see figure 2-1.

Summary: burnt material concentrations

Under the sedimentation conditions which prevailed in lithological layers 12 and 12A, i.e. relatively slow accumulation of fine-grained silt, it appears that the main attribute of *in situ* hearths is the specific stratigraphical sequence of burnt material. The composition of different kinds of burnt material in clearly limited areas, such as the crusts of burnt sediments and overlying sooty/ashy sediments, provides the best evidence that the excavated object was a hearth. The presence of burnt bones and artefacts within the sooty/ashy sediments is also relatively important, although this attribute is of a more supplementary character. Another variation of hearth preservation at Kabazi V is represented by irregularly shaped, but still well stratified, hearths with a dispersed sooty tail area. In most of these features the direction of the dispersal, i.e. of the tail area, corresponds to the gradients of the living surfaces (Fig. 2-3; 2-7; 2-8; 2-9; 2-10). This might indicate that erosion and gravitation were the main agents in post-depositional disturbance. On the other hand, the appearance on the same living surface of clearly limited hearths (Fig. 2-1; 2-2; 2-3; 2-6) might suggest the importance of trampling as an additional agent of post-depositional disturbance.

Archaeozoological studies of level III/2 fauna have demonstrated that even thin levels could comprise several occupational episodes of both humans and carnivores (Chabai, Patou-Mathis 2006), and that each of the human visits was the result of one hunting event, which could occur in different seasons. In level III/2 the undisturbed and the partly disturbed hearths are situated at a distance of just 47 cm from one another (Fig. 2-3). Thus, it is very unlikely that both were in use at any one particular point in time. In such palimpsests it is evident that the later (youngest) hearth has higher chances of preservation in its primary context. For example, the well preserved hearth in squares 7B/7Г remained intact, while the earlier hearth in square 8B was trampled by the last visitors to the site during this occupation period. The same scenario might also apply to occupations in levels III/1, III/3, and III/1A (Fig. 2-1; 2-2; 2-6).

The majority of hearths are characterised by rather conservative dimensions, with thicknesses rarely reaching 3 cm. The only exception is the deepened hearth from level III/5-3B, square 8B, which produced 6 cm thick deposits of both sooty silt and burnt crust. The maximum length and width of hearths ranges between 37 and 46 cm, and 20 and 46 cm, respectively. Again, the exceptions come from sub-unit III/5 (Fig. 2-4; 2-5). The hearth from

level III/5-3B, squares 7B, 7Г, 8B, 8Г (length: 113 cm; width: 104 cm) and the hearth from level III/5-3B2 (diameter: 119 cm) demonstrate parameters at least twice the size of hearths from sub-units III/1, III/2 and III/3. Also, a number of hearths from sub-unit III/5 show evidence that wood was burned for fuel (calcite ash and charcoal in hearths from levels III/5-3B, squares 7B, 7Г, 8B, 8Г and III/5-3B2, squares 7B, 7Г, 8B, 8Г). On the other hand, in the hearth and disturbed hearths from levels III/1A, square lines Б, В, Г and III/2, square 7B/7Г and 8B/8Г, mammoth bones were used for fuel (Fig. 2-3; 2-6). In other words, the hearths where wood was burned are larger than those which were fuelled with bone. This conclusion is based on length and width dimensions, while the thicknesses for both wood and bone fuelled hearths are roughly the same. The differences in fuel observed in sub-units III/1, III/2 on the one hand, and sub-unit III/5 on the other, partly correspond with results from environmental studies. According to A. Markova, sub-unit III/5 accumulated during the period of forest-steppe landscapes, while the formation of sub-unit III/2 is associated with a steppe environment (Chapter 4, this volume). However, in sub-unit III/1, which at the time was characterised by forest-steppe landscapes, wood was not the chosen fuel, with mammoth bone still the preferred fuel.

Hearth dimensions, especially thickness, are thought to reflect the duration of these features. In this respect it is of interest to note that there are neither long term, nor reused hearths at Kabazi V. The simple (two bed) stratigraphical sequence in all hearths studied is suggestive of only short-term exploitation. Whereas a high degree of fragmentation of burnt bones is interpreted as evidence for a more prolonged exploitation of hearths (Stiner 1994, pp. 147-150), at Kabazi V relatively big pieces of burnt bones were recovered from hearths and tail areas/destruction zones. Even under the conditions with low rates of sedimentation visits were not frequent, and sterile sediments clearly separate hearths, which were sometimes placed in the same areas (Fig. 2-5). Thus, all hearths studied at Kabazi V are characterised by short periods of exploitation only.

The limited excavated area, as well as the permanent blurring effect of occupational palimpsests, does not permit a detailed study of spatial relations between hearths and concentrations of archaeological material. The only reliable conclusion from attempts made at such observations is that concentrations of artefacts and bones are usually found adjacent to either hearths or to their tail areas (Fig. 2-1; 2-2; 2-3; 2-4; 2-6; 2-7; 2-8; 2-10). Therefore, hearths appear to represent the centres of economic activity. Also, sometimes there are no pronounced

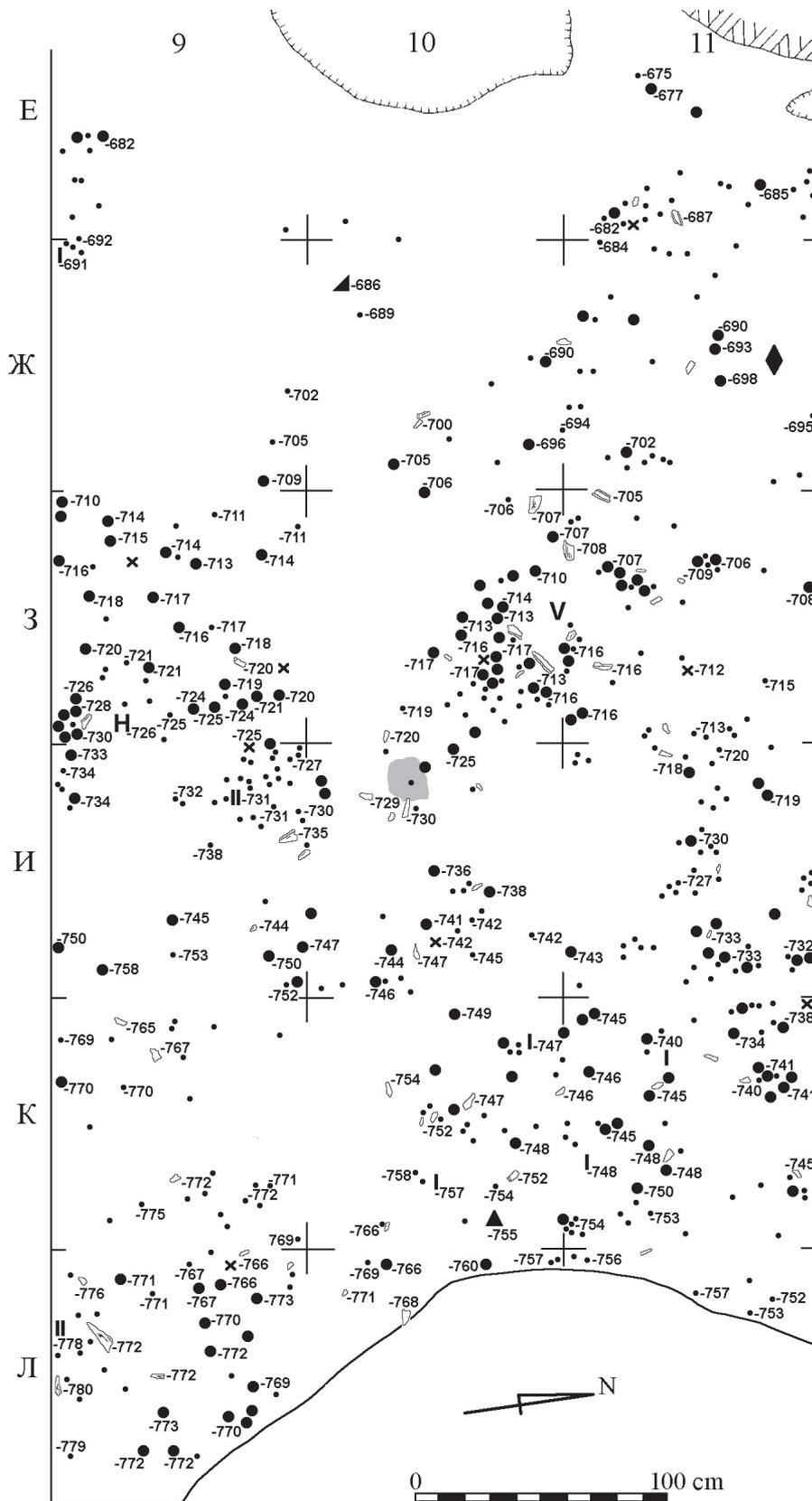


Fig. 2-14 Kabazi V, level IV/2: plan. For conventional signs see figure 2-1.

concentrations of archaeological material at all in the studied areas (Fig. 2-9). In some cases (see for example Fig. 2-3), it is very tempting to interpret these areas as backward toss zones, forward toss zones, and drop zones (Binford 1983). However,

taking into account the palimpsest character of occupations it remains very difficult to provide convincing evidence for the temporal coexistence of hearths and concentrations of archaeological material around them.

PITS AND EROSIONAL DEPRESSIONS

Repeated erosion of the sloping living surfaces resulted in the occurrence of a number of depressions, and was also responsible for a degree of post-depositional transportation of material. The main difference between artificially made pits and erosional depressions lies in the shape of the walls. Whereas artificially made pits display at least three more or less abrupt walls, erosional depressions are characterised by slightly sloping/shallow walls, with abrupt walls, if present, situated to the side of the depression where the slope gradient is at its highest. Both artificially made pits and erosional depressions acted as traps for sediment and archaeological material. Such agents as erosion, trampling and gravitation were responsible for post-depositional archaeological material transportation into erosional depressions and artificial pits. Depending on the trapped material, both pits and depressions are often mistakenly interpreted as "caches" of archaeological material or hearths.

Erosional depressions

Erosional depressions were discovered in levels III/1, III/5-3B, III/5-3, and III/4-5. This list might be extended by two bone and flint assemblages recovered from levels III/7-2 and III/7-3, which were defined as erosional channels filled with archaeological material (Chapter 1, Fig. 1-16, this volume).

The erosional depression in level III/1, square 8B, is ovoid in shape and 68 cm long, 41 cm wide, and 3 cm deep (Fig. 2-1). Its wall can be described as slightly sloping. This depression was filled with light sooty silt, which included pieces of both burnt and unburnt bone and flint; similar finds were also excavated in neighbouring areas. To some extent, in plan this feature resembles a slightly deepened hearth. At the same time, however, the absence of a crust of burnt silt speaks against this interpretation.

An irregularly shaped depression was studied in level III/5-3B, in square 7B (Fig. 2-4). It has a maximum length of 51 cm, a maximum width of 44 cm, and a maximum depth of 7 cm. This depression, the walls of which were slightly sloping, was filled with light sooty sediments and archaeological material.

The latter includes a small cluster of finds comprising 281 chips, 7 flakes, 4 blades, 2 chunks, and 4 relatively big fragments of bone. Neither burnt flints nor burnt bones were found in this depression. The remaining 90% of square 7B produced 1,445 chips, 24 flakes, 4 chunks, 3 heavily burnt flints, and 8 unifacial tools. Thus, in 10% of the area belonging to this square 16.5% of flints from the whole area of square 7B had been trapped. No important finds, such as flint tools, cores, bifacial preforms, pebble or bone retouchers, were found in this erosional "cache".

The shape and size of the erosional depression in square 7B are very close to those attested for the deepened hearth in square 8B (Fig. 2-4). The differences between them lying solely in the stratigraphical sequence of burnt material in the latter (see section Deepened hearths, this Chapter).

Two erosional depressions were found in level III/5-3 (Fig. 2-10). The largest of these was revealed in square 7B; it is ovoid in shape with a long axis oriented west-east in line with the gradient of the living surface. This depression is 37 cm long, 26 cm wide and 3 cm deep. The depression was filled with light sooty sediments. Two flakes and 146 chips were recovered from this depression. More than one thousand chips, 6 flakes, one bifacial and 9 unifacial tools were found in the remaining part of square 7B.

One more erosional depression was found in level III/5-3, square 9A (Fig. 2-10). It is round in plan, and has a maximum diameter of 12 cm; it is 2.5 cm deep. Seventy nine chips were trapped in this depression. In the remaining area of square 9A one unifacial and two bifacial tools, 14 flakes, two chunks and 433 chips were found. None of these artefacts were burnt, and no burnt material was identified in the erosional depression.

The erosional depression from level III/4-5, squares 8AA/8A, is of an ovoid shape and is 31 cm long, 23 cm wide, and 7 cm deep. Generally speaking, its walls can be described as slightly sloping (Fig. 2-13). The orientation of the long axis of this depression corresponds to the gradient of the assumed living surface. The depression was filled with light sooty silt in which a single heavily burnt flint was found. No burnt bones were found. Numerous artefacts were associated with the sooty deposits

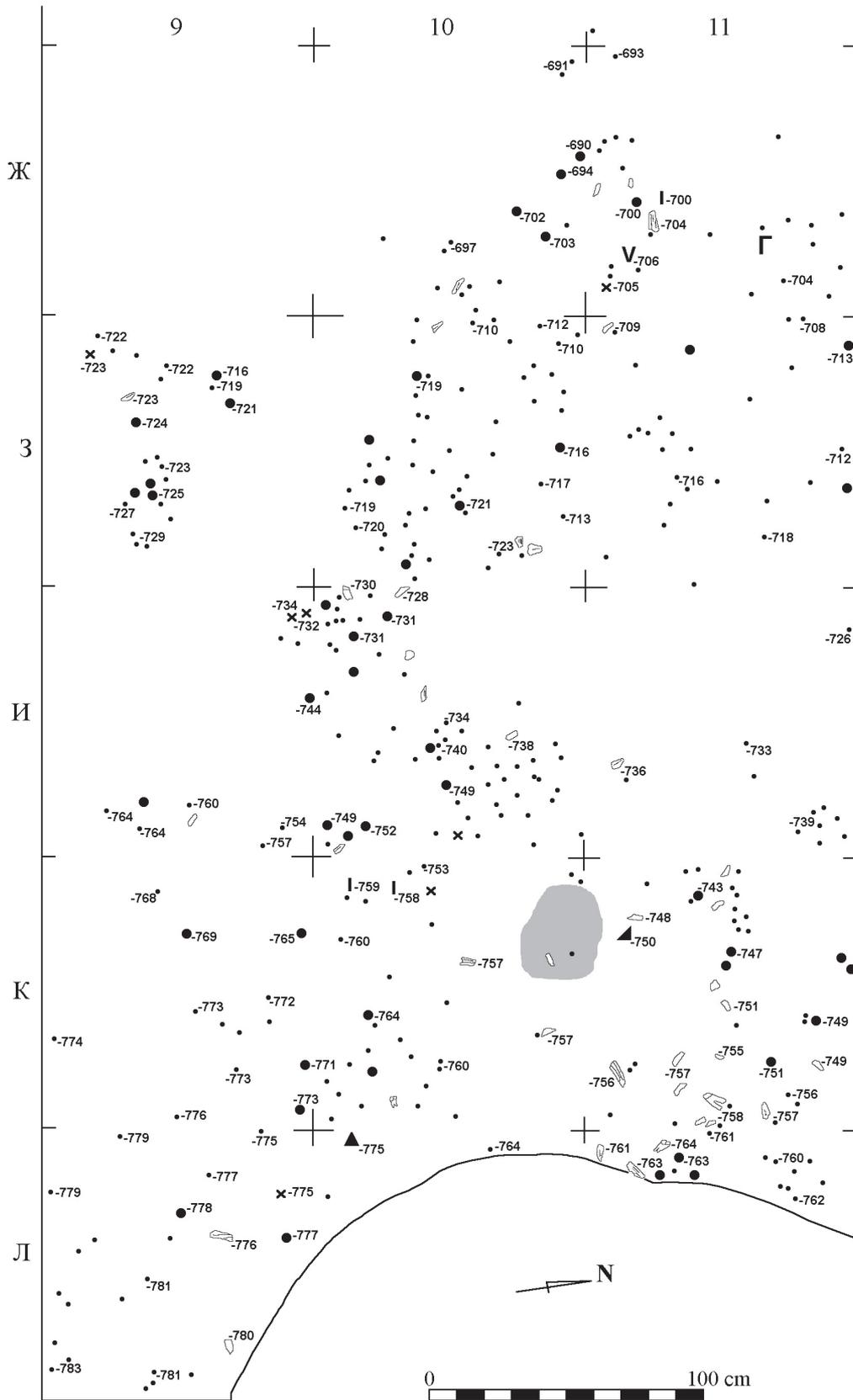


Fig. 2-15 Kabazi V, level IV/3: plan. For conventional signs see figure 2-1.

in this depression. These include 140 chips, 2 small chunks, 3 flakes, 2 unifacial tools, one preform of a bifacial tool, and one unidentifiable heavily burnt flint. At the same time, the adjacent areas are nearly void of flint artefacts, especially square 8AA. It should be noted that square 8AA is situated immediately above the erosional depression. Thus, the most likely scenario is that this rich “cache” of artefacts became trapped in the depression following transportation from further up the slope. Reasons for post-depositional transportation of artefacts on this 15.5° slope were probably gravitation and erosional processes.

Artificial pits

Four artificial pits were found in the two levels III/1A and III/4-2. Pits from level III/1A comprise two clearly artificial features and one problematic feature. The biggest pit was found in square 7A (Fig. 2-6), it is round and displays a maximum diameter of 49 cm; it has a maximum depth of 18 cm. All walls are abrupt. The wall and bottom of the pit conjoin in a near right angle. The stratigraphical sequence of the pit comprises three beds, from bottom to top these are: grained silt with some limestone gravel; dense sooty silt; and grained silt with some limestone gravel. The grained silt is the basic sediment for this level (Chapter 1, this volume). The thicknesses of the aforementioned beds vary in different parts of the pit. Generally, the thickness of each bed is equal to one third of the total thickness of the pit deposits (Fig. 2-6). A three-bed stratigraphy of pit deposits was also studied by G. A. Bonch-Osmolowski at Kiik Koba, upper level. He came to the conclusion that such a sequence is reflective of three periods of pit utilization (Bonch-Osmolowski 1940, p. 133). There are no differences between any of the defined beds in artefact densities or in artefact composition. Altogether, 280 artefacts were recovered from the pit (chips: 92.1%; flakes: 4.6%; blades: 1.7%; tools: 1.1%; and sandstone pebbles: 0.4%). The 1,739 artefacts from square 7A are represented by the following: chunks: 0.6%; chips: 87.8%; cores: 0.3%; preforms: 0.7%; flakes: 6.3%; blades: 0.8%; tools: 2.9%; and bone retouchers: 0.1%. In spite of the absence of some artefact categories in the pit assemblage, there is no significant difference between pit and square 7A flint collections. That is, there is no reliable evidence to suggest that the pit was deliberately filled with artefacts. Considering the stratigraphical sequence of the pit, it might be suggested that the pit became a trap for both sediments and archaeological material over a relatively long period

of time. It would also appear that one of the main agents responsible for the filling up of the pit with sediments and artefacts was trampling. On the other hand, the pit stratigraphy, which is different from the stratigraphy of the neighbouring area, substantiates the palimpsest character of level III/1A.

The next pit in level III/1A was found in square 7B (Fig. 2-6). It has an irregular shape and measures 37 cm long, 31 cm wide and 11 cm deep. The western, southern and eastern walls are abrupt, while the northern wall is slightly sloping. The transition from the western, southern and eastern walls to the bottom of the pit is rounded. The pit was filled by the same sooty silt as was found in nearby squares of level III/1A. The pit was “covered” by a flat limestone boulder of trapezoidal shape (*max* length, 18 cm; *max* width, 16 cm; *max* thickness, 4.5 cm). Beneath this boulder were found 36 chips, 1 flake, 1 fragmented convex scraper, 14 small pieces of tube bones, and one tooth from a young mammoth. These finds were dispersed through the entire depth of the pit deposits and did not appear to lie on clear surface(s). About 3 cm of sooty silt was found between the mammoth tooth and the limestone “cover”. This means that the artefact and fauna materials are not contemporaneous. It is difficult to assume a deliberate character of the archaeological material found in this pit.

The last pit found in level III/1A was revealed in square 7AA (Fig. 2-6), and is the most problematic regarding its interpretation. It is nearly round in shape and displays a maximum diameter of 29 cm; it is 8 cm deep. Its walls are semi-abrupt, and the transitions from the walls to the pit bottom are rounded. As such, these attributes place this feature somewhere between erosional depressions and artificial pits. The pit was filled with light sooty silt. Collections of artefacts (chips, a flake and a bifacial tool fragment) and the fauna assemblages recovered from this pit and from neighbouring squares are very much homogeneous.

The most impressive pit with respect to its content is that discovered in level III/4-2, square 9AA (Fig. 2-12). This ovoid shaped pit, which is 29 cm long, 18 cm wide, and 7 cm deep, has semi-abrupt walls and a rounded bottom. This pit was densely packed with artefacts, which comprised 2,735 chips, 44 flakes, and 7 blades. This *debitage* is the waste, which originates from a single bifacial preform. A more detailed description of these artefacts is provided in Chapters 10 and 16, this volume. Considering the completeness of a refitted bifacial preform cover from this pit, it may be assumed that this material was carefully collected on some kind of bedding and then carried to the pit into which it was then

deposited. Also, the completeness of the preform cover does not suggest that post-depositional transportation was involved. It is of particular note that there is not a single refit between the artefacts from the pit and artefacts recovered from level III/4-2. Only one question remains with regard to this pit: Why did the waste from the production of this bifacial preform need to be so carefully hidden?

DISCUSSION

In the Crimean Middle Palaeolithic artificial pits are associated with Micoquian occupations, while hearths are characteristic for both Micoquian and Levallois-Mousterian levels. There are two main types of pits in the Crimean Micoquian: small pits and large pits. Small pits contain either deliberately hidden artefacts or became filled by the same archaeological material as was found in nearby areas of the living surface. Yu. G. Kolosov also reported caches which he found in Zaskalnaya V and Zaskalnaya VI. In Zaskalnaya VI, layer II, square 32A, near the back-wall of the rock-shelter, a rounded pit with a V-shaped profile (diameter: 20 cm; depth: 5 cm) was discovered. In this pit were found eight bifacial tools (Kolosov 1986, p. 19, fig. 4). In Zaskalnaya V, layer III, square 12A, another rounded pit was exposed (diameter: 18 cm; depth: 3 cm). This pit contained 84 flakes and chips. According to Kolosov, all had been flaked from just one nodule (Kolosov 1983, p. 70). Also, some erosional depressions and artificial pits are known from Zaskalnaya VI, layer IV (Kolosov 1986, p. 52). All of these exhibit comparable shapes and dimensions to those discovered at Kabazi V. At Zaskalnaya VI, IV, pits and depressions were filled with archaeological material. However, there is no evidence that this archaeological material was deposited deliberately. An ovoid pit (length: 28 cm; width: 9 cm; depth: 14 cm) with an U-shaped profile was excavated at Chokurcha I, level IV-B, square 22B (Chabai 2004a, pp. 349-350). Nothing special was found in it.

Three large pits (ovoid, rectangular and rounded) with abrupt walls were found at Kiik Koba, upper level (Bonch-Osmolowski 1940, p. 133-136). One of these contained the burial of a child; all others were filled with the same material as was encountered in the surrounding archaeological level. The lengths of these pits ranged from 70 to 140 cm, with

Summary: pits and erosional depressions

At least three abrupt/semi-abrupt walls appear to be the most reliable attribute in the identification of artificial pits. The small sizes of pits do not suggest any other use than as caches. At least in one case, in level III/4-2, square 9AA, this suggestion could be substantiated.

widths between 80 and 100 cm; they were between 38 and 70 cm deep. Also, three large (one ovoid and two rounded) pits with slightly sloping walls were exposed at Kiik Koba, upper level. The diameters of these pits ranged from 100 to 150 cm, they were between 10 and 20 cm deep. The artificial character of these pits was proved by the presence of small spoil heaps which had accumulated when the pits were dug (Bonch-Osmolowski 1940, p. 134).

Hearths have been reported from numerous sites. Unfortunately, very rarely were these described in any detail, and it is even rarer that descriptions were accompanied by plans and profiles. The majority of the hearths known from the Crimean Middle Palaeolithic are of a simple type, as were all hearths studied at Kabazi V. The most probable candidate for deepened hearths comes from Kiik Koba, upper level; squares 15-16 (Bonch-Osmolowski 1940, p. 133), but the presence of burnt sediments below an ashy bed were not reported. Hearths surrounded by limestone boulders were found at Kabazi I and Prodom II, layer II (Formosov 1959b; Kolosov 1986). To summarise, a maximum of three types of hearth are known from the Crimean Middle Palaeolithic. Based on the available evidence it can be stated that during the Crimean Middle Palaeolithic there is no reliable evidence for the multiple exploitation, i.e. long-term usage, of hearths. Further, very thick hearth deposits and complicated hearth stratigraphies have never been reported.

All in all, Kabazi V occupations are characterised by high densities of artefacts, and the presence of pits and hearths. These suggest an intensive exploitation of the living surfaces at camp sites. On the other hand, the thicknesses of hearths, as well as their very simple two bed stratigraphy, are suggestive of short-term occupation events at Kabazi V.

АБСТРАКТ

КАБАЗИ V: ОЧАГИ И ЯМЫ

ЧАБАЙ В. П., ВЕСЕЛЬСКИЙ А. П.

В культурных отложениях Кабазы V обнаружено 8 очагов в первичном залегании, не менее 11 частично разрушенных очагов и многочисленные светло-серые сажистые скопления. Очаги представлены пятью простыми наземными (Fig. 2-1; 2-2; 2-3; 2-4; 2-5) и тремя углубленными (Fig. 2-4; 2-5; 2-6). Углубленные очаги размещены в эрозионных впадинах. Свидетельства преднамеренного углубления очагов не обнаружены. Пачки отложений очагов подразделяются на два слоя: черный сажисто-пепельный слой и залегающий под ним красноватый обожженный суглинок. Большинство очагов имеют овальную форму, их размеры варьируют в следующих пределах: длина от 37 см до 46 см; ширина от 20 см до 46 см; толщина от 2 см до 3 см. Несколько более крупные округлые очаги (диаметр >100 см) обнаружены в отложениях пачки горизонтов Ш/5.

Частично разрушенные очаги в плане представлены двумя вплотную расположенными скоплениями: черным сажисто-пепельным скоплением и светло-серым сажистым шлейфом (Fig. 2-3; 2-6; 2-7; 2-8; 2-9; 2-10). Под черным сажисто-пепельным скоплением залегают прослойка красноватого обожженного суглинка. В плане, чаще всего, оба скопления аморфны. Первое скопление – это частично разрушенный очаг, а второе – зона его разрушения. Основными причинами частичного разрушения очагов являются эрозионные, гравитационные и антропогенные факторы. Метрические характеристики частично разрушенных очагов и очагов, найденных в первичном положении, практически сходны.

Многочисленные светло-серые сажистые скопления (Fig. 2-2; 2-3; 2-7; 2-11; 2-12; 2-13; 2-14; 2-15), как правило, представлены незначительными по размерам слабыми концентрациями обожженного материала. Вопрос об образовании светло-серых сажистых скоплений остается открытым.

Основным топливом для очагов горизонтов Ш/1А и Ш/2 служили кости мамонтов, а для очагов горизонтов Ш/5-2, Ш/5-3, Ш/5-3В2 – дерево. Как правило, площадь очагов, в которых использовалось древесное топливо, несколько больше. Исходя из характера обожженного материала, можно заключить, что температура горения в очагах редко достигала 750° С. Простая двухслойная стратиграфия, незначительная толщина, низкие температуры горения и отсутствие свидетельств переустройства очагов свидетельствуют об их кратковременном характере.

В Кабазы V обнаружено 4 искусственные ямы (Fig. 2-6; 2-12) и 5 хорошо выраженных эрозионных углублений (Fig. 2-1; 2-4; 2-10; 2-13). Главное отличие искусственных ям от эрозионных углублений состоит в наличии у первых, как минимум, трех практически вертикальных стенок. Только в одной из ям были «найжены» намеренно «спрятанные» артефакты. В яме, обнаруженной в горизонте Ш/4-2 на квадрате 9АА (Fig. 2-12), были помещены 2735 чешуек, 44 отщепа и 7 пластин. На основании проведенного ремонта было доказано, что данные сколы были сняты с одной преформы двустороннего листовидного орудия (Глава 16, в данном томе). На раскопанной площади горизонта Ш/4-2 орудие или преформа обнаружены не были.

Высокая плотность кремневых и фаунистических находок, наличие очагов и ям указывает на то, что горизонты Кабазы V являются лагерями с достаточно широким и разнообразным набором видов производственной активности. С другой стороны, толщина очагов и их двухслойная стратиграфия не предполагают длительного использования данных поселений.

