

# **PAVLOV I SOUTHEAST**

**A Window Into the Gravettian Lifestyles**

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**Frontispice:**

**Plan of Pavlov I – Southeast showing  
features and hearths (left) and object  
density zones A-G (right). Compiled by M.  
Novák.**

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**Frontispice:**

**Plán Pavlov I – Jihovýchod vyjadřující  
objekty a ohniště (vlevo) a zóny hustot  
předmětů A-G (vpravo). Sestavil M. Novák.**

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## **Chapter I.2.**

# **PAVLOV I – SOUTHEAST. LOCATION, STRATIGRAPHY, MICROSTRATIGRAPHIES, AND FEATURES**

Jiří Svoboda

### **1. Geographic Location**

The site of Pavlov I (Klíma 1954, 1955, 1957, 1959a,b, 1962, 1963a, 1964a,b, 1973, 1977, 1984, 1987, 1988, 1989, Musil 1955, 1959, Vlček 1961, Svoboda 1994a, Verpoorte 2000a,b) forms a part of a continuous chain of sites between the villages of Dolní Věstonice in northwest and Pavlov in southeast. All these sites are located near edges of small side valleys and gullies which cut into the northern and northeastern slopes of the Pavlovian Hills (maximum elevation of 550 m a.s.l.), in 190-240 m a.s.l., and 20-70 m above the Dyje river floodplain. The altitudes, changing rapidly from the basal floodplain to the mountain top, were obviously related to a variety of environments and resources, available to exploitation by the Upper Paleolithic hunter-gatherers.

Pavlov I is located on a relatively gentle slope 190-200 m a.s.l., dipping down towards one of the small side valleys and towards the Dyje river in the north. There is an active creek on its eastern boundary and the effect of its erosion should be considered if we aim to reconstruct the geographic background of the site in complexity (namely, the fact that the site, contrary to all larger sites of this area, lacks an adjacent mammoth bone deposit). The site is structured in several parts: Northwest (excavations 1956 ABC, 1957-1958), Southeast (excavation 1952-1956, 1970-1971), Middle (excavations during the 1960's), and, finally, South – an area reserved for future exploration.

The aim of the Pavlov publication project was to start with the two distinct areas, from the southeastern concentration (1952-53, Svoboda, ed. 1994) and northwestern concentration (1957-58: Svoboda, ed. 1997). Their comparison showed little variability in materials, fauna and typology between the two areas. Apart from the male burial Pavlov 1, the northwestern part also differed by a radical increase of radiolarite among the lithic materials and the faunal assemblage shows a slight increase of mammoth bones. There are slight differences in the lithic typology, larger accumulations of ochre, and evidence of special artifacts such as grounded and polished limestone pebbles. In the present volume we look at the settlement area in the southeastern zone with the highest concentration of settlement features (1954-1956) and in several aspects the new data fits with the range of variability recorded previously.

This chapter presents an analysis of the southeastern part of Pavlov I, its stratigraphy and planigraphy, ie. both vertical and horizontal cross sections. Both aspects have to be considered together if our aim is to study the composition of the cultural layers, and the location of distinct terrain features (settlement units) and hearths.



Figure 1. Aerial view of Pavlov and the adjacent Gravettian sites.

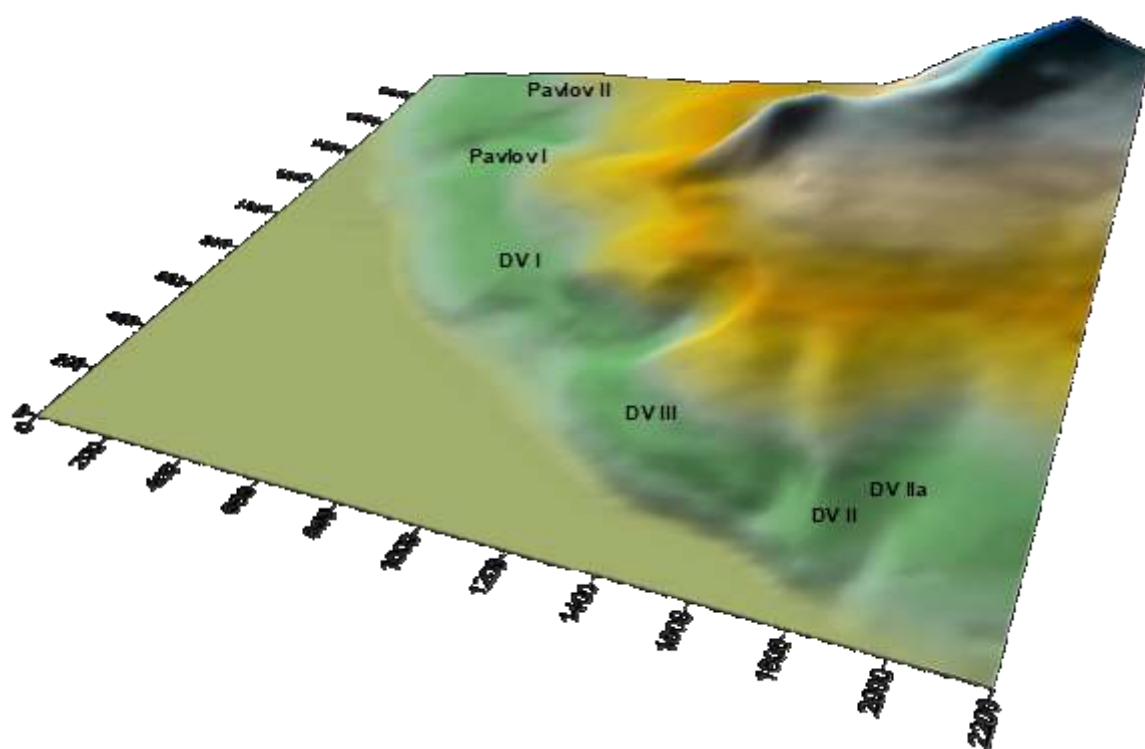


Figure 2. Location of the site of Pavlov I within the Dolní Věstonice – Pavlov settlement area.

## 2. General Stratigraphy of the Site

During the 1954-1956 excavation, the site stratigraphy was recorded based on the complete, 3-4 m thick profiles of the excavation walls (Figs. 3, 4), whereas the microstratigraphy of the cultural layer (layers) was documented on additional sections within a 2 m grid. The complete stratigraphic sequence, as described below, is based on a profile of the 1956-B area (Figure 3, northern wall):

1. recently disturbed (ploughed) soil, mixed with loess
2. pure, light-yellow to ochreous loess, with sandy components
3. a horizon of irregularly accumulated clay particles of dark-brown colour and various shapes
4. ochreous loess, with rusty limonitic aggregations and brown clay particles
5. a thin, brownish horizon, sharply separated from the light subsoil; admixture of limonitic aggregations and individual gley particles of grey-bluish colour
6. light loess, limonitic aggregations, gley particles, and – at certain locations - wedge-shaped calcareous aggregations
7. well visible horizon, dark-brownish, up to 10 cm thick, grades into subsoil; limonitic aggregations, gley particles, and wedge-shaped calcareous aggregations
8. light ochreous loess; particles of greyish gley sediments are more numerous and at some places concentrated in better visible horizons; at some places a darkish horizon can be observed at the base of this layer
9. light-coloured horizon of gley loess, sometimes with well visible marginal rusty (limonitic) colouration above and below; it is best visible in western sections of 1954A. Elsewhere it is preserved only as one rusty-coloured horizon, or as two horizons
10. lenses and inclusion of the cultural layer, partly mixed with the lower paleosol

This sequence can be divided into three temporal units.

### 2.1. The lower paleosol

The lower paleosol (or paleosol complex) has not developed evenly. Wherever present, it developed on a subsoil which formed from Tertiary clays and silts, limestone scree, interlayered loess, and at some places from earlier soil sediments. In the 1972 excavation area, the lower paleosol was dated to around 30 ky by C14 (KN 286; around 32 CAL ky BC) which corresponds with the stratigraphically comparable paleosols at Dolní Věstonice and Stránská skála. This paleosol is thought to date to the earlier Interpleniglacial (OIS 3), but we cannot exclude the possibility of admixture with older soil sediments (Smolíková 1991).

In the area excavated in 1956, in squares x=24-25, y=13-14, B. Klíma recorded that *"the lower part of the (Gravettian) cultural layer is in direct contact with the brownish interstadial paleosol, and at some places it penetrates into it as inclusions or lenses"* (Excavation diary 1956, June 26). One stratigraphic section documents the situation in the adjacent squares x=24-25, y=15 (Figure 24): a light-brownish paleosol at the base included a skeleton of a fox and a hearth was located on the surface of the paleosol; an overlying layer of loess 10-20 cm thick separated this feature from a large overlying hearth.

In this area and its vicinity, Klíma collected a suspicious accumulation of patinated artifacts made of spongolite (a Cretaceous chert – a raw material often utilized during the Early Upper Paleolithic, but also present in the Gravettian cultural layers; Chapter II.4), including a thick Aurignacian endscraper (square x=20 y=13, Figure II.4.15). *„Given this scenario we may ask whether some of the lenses within the lower part of the cultural layer represent an earlier (interstadial) layer containing the chert artifacts, or whether this was a place where this raw material was preferentially processed“* – continues B. Klíma in his diary.



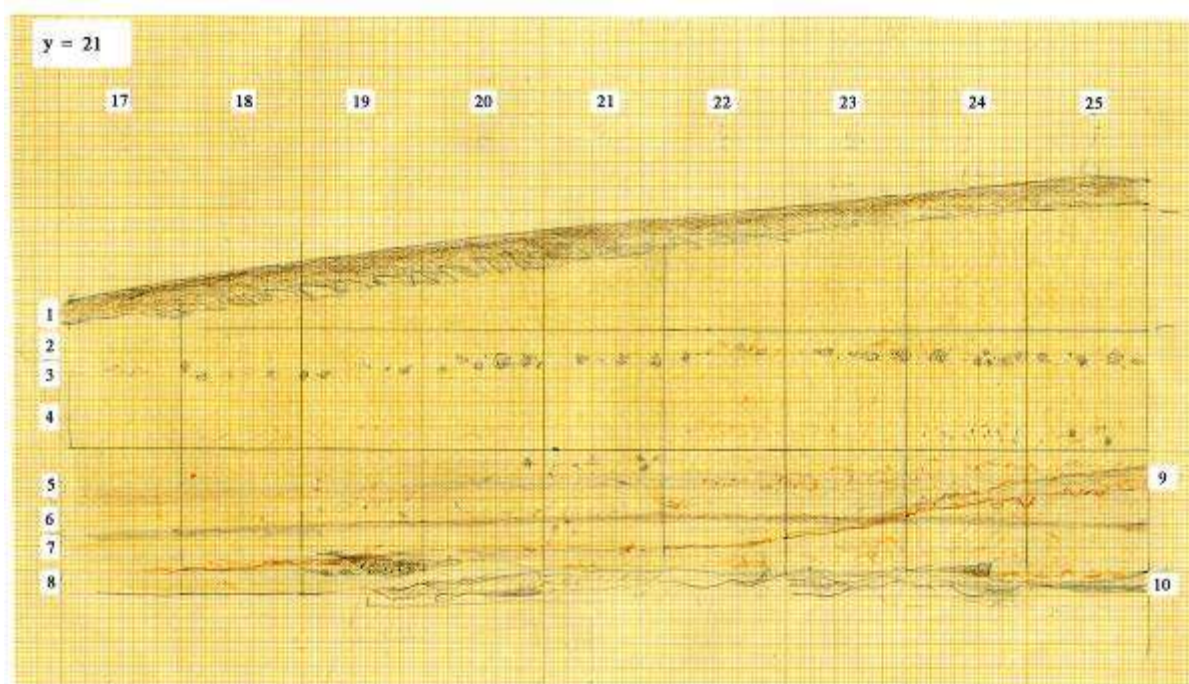


Figure 3. Area 1956-B, a complete transverse section of the northern wall (dissecting feature 11, in Klíma's numeration system).

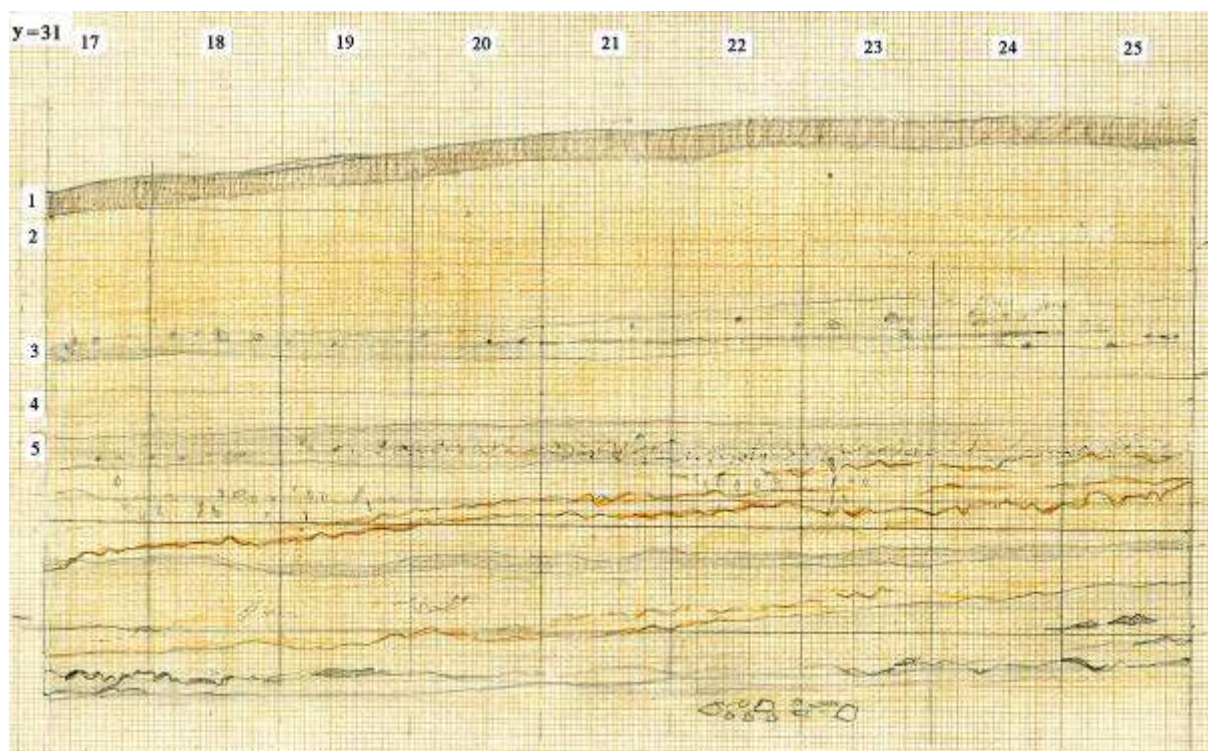


Figure 4. Area 1956-B, a complete transverse section of the southern wall.

## **2.2. The Gravettian stratigraphic complex**

The overlying Gravettian cultural layer is usually well developed and relatively thick, dark in colour (brownish or grayish to black), with soil components, charcoal, burnt bone fragments and various osteological material, ochre and artifacts. It is undoubtedly anthropogenic and it is clearly visible only at places of intensive occupation; it disappears towards the site's peripheries, to be fully replaced by loess outside the settled areas. Its form ranges from compact, sometimes multiple horizons, to isolated lenses or inclusions of dark-coloured sediments, interstratified with loess.

Given the first C14 date obtained from this site - GrO 1325 (Klíma 1959a), Pavlov I was originally thought to be younger than Dolní Věstonice. However, after the correction of GrN 1325, and additional C14 dates from charcoal in the Gravettian layer (Table 1), it became clear that they all belong to a relatively short time-span of two millennia between 27-25 ky BP, ie. the Evolved Pavlovian stage (i.e., final Interpleniglacial, or OIS 3). After calibration, these dates would be between 26-29 CAL ky BC (Jöris and Weniger 2004). Most of the dates originate from the southeastern part of the site, one possibly from the middle, and one from the northwest.

In some areas where artifacts are concentrated, and especially in the depressions, Klíma observed two basic cultural layers separated by a thin layer of loess. Additional microstratigraphies were recorded around selected hearths; this is evident both from the sections drawings and from fieldnotes in B. Klíma's diaries (1956). These superpositions were not dated by C14 (as at Dolní Věstonice I-II, Svoboda 2001b). Given the short time-span of occupation as indicated by the C14 dates in general (Table 1), we expect that the formation of the whole complex was a relatively rapid process.

Typological analysis of the two layers confirms this expectation. Such subdivision was only possible in the 1953 area, where the superposition of the two layers was located in the western part of the area (for map see Svoboda 1994b, figure 5). Nevertheless, a detailed typological comparison of the 1953 situation (Svoboda 1994b, figs. 10-15) shows no difference between the two layers, be it in the general assemblage composition or in the presence/absence of diagnostic artifacts (microliths). Unfortunately, the material was not separated according to layers during the following years of excavation.

## **2.3. The last loess cover**

The Gravettian cultural layer at Pavlov was finally sealed off by the last loess cover of the OIS 2, sometimes with initial pseudogley horizons typical for the whole microregion. The number and colour of these horizons varies from place to place, so we do not give them a single stratigraphic value. The thickness of the last loess ranges from 3-4 meters higher at the slope (where the southern part of the site probably remains unexcavated), whereas downslope the cultural layer occurs almost on the surface.

## **3. Microstratigraphies**

Whereas the complex geological sections at Willendorf II (Lower Austria), Spadista (south Poland) and Molodova (west Ukraine) enable the study of the Gravettian occupational sequence in individual layers separated by loess deposition (Haesaerts et al. 1996, 2004), comparable stratigraphies are not as revealing at the Moravian sites.

The deposition of the Gravettian cultural layers took place under conditions of limited loess deposition of the later Interpleniglacial (OIS 3), when only thin loess layers are sometimes interstratified between the anthropogenic deposits; a massive loess deposition followed later (OIS 2), and „sealed“ the archaeological layer. The layer (or rather layers) are formed by ashy, clayey horizons, in some places separated into two or three subhorizons or just limited to lenses of sediments, and absent in the pure loess elsewhere. The most complex situations are recorded in the depression features and around the hearths.



This pattern is similar to other Moravian sites such as Předmostí, where Maška and Kříž recorded two or three layers by the end of the 19th century, but were unable to follow them on a broader scale. The hypothetical reconstruction of the stratigraphy at Předmostí Ia (Svoboda 2001a), suggests that below the youngest layer of loess there is an "upper" layer with leaf points and with a high concentration of horse and reindeer bones, followed by a "main" (middle) layer with a high concentration of mammoth bones, and finally a problematic "lower" cultural layer where the archeological features may originate from the various man-made depressions (originating from the occupational layer above - e.g. human burials), postdepositional disturbance, and contamination with pre-Gravettian layers.

Later, at Dolní Věstonice I-II, interstratification of Gravettian layers was recorded at certain places, and dated by C14 (Svoboda 2001b). At Dolní Věstonice I, a radiometrically dated superposition was found during the 1990 excavation. The trench included (from top to bottom): ploughsoil, interlayered loess and sandy layers, humous layers with two charcoal layers (27,250 ky BP and 29,300 ky BP), with Tertiary sediments at the base. At Dolní Věstonice IIa excavated in 1999, the stratigraphy consisted of ploughsoil, a loess with rusty spots and slightly undulating gley horizon, followed by a layer of soliflucted loess with inclusions of bluish loamy lenses from the bedrock and several charcoal layers, dated to 25,870 ky BP and 26,190 ky BP (from the top to the base).

**Table 1. Pavlov I, review of C14 dates, all charcoal, (NW - northwest, SE - southeast, M - middle). Calibrations after Jöris and Weninger 2004.**

Lab. no.	Provenience	14C-Age (BP)	Cal Age (cal BC) 68% (95%)
KN 286	Excavation 1972 (SE)	30 010 ± 460	31930 ± 540 (33010-30850)
GrN 19539	Excavation 1953 (SE)	26 650 ± 230	28832 ± 351 (29534-28130)
GrN 22303	Excavation 1954 (SE)	26 400 ± 310	28548 ± 480 (29508-27588)
GrN 1272	Excavation 1956 (SE)	26 620 ± 230	28807 ± 356 (29519-28095)
GrN 4812	Excavation 1956 (SE)	26 730 ± 250	28889 ± 348 (29585-28193)
GrN 20391	Excavation 1957 (NW)	26 170 ± 450	28076 ± 790 (29656-26496)
KN 1286	Excavation 1954 (SE)	26 580 ± 460	28623 ± 565 (29753-27493)
GIN-104	Excavation 1961? (M)	26 000 ± 350	
GrA 192	Excavation 1953 (SE)	25 530 ± 110	27309 ± 779 (28867-25751)
GrN 22304	Excavation 1954 (SE)	25 160 ± 170	26671 ± 904 (28479-24863)
GrN 22305	Excavation 1954 (SE)	25 840 ± 290	27757 ± 744 (29245-26269)
GrN 1325	Excavation 1956 (SE)	25 020 ± 150	26469 ± 841 (28151-24787)

#### 4. Settlement Structure: Models and Expectations

Reconstruction of the presumed dwellings results from empirical field observations, experiments, ethnological analogies, and „archaeological ideology“. During the 1950's, in accord with the political climate of the day, the experience gained from large-scale surface exposures previously undertaken in eastern Europe became widely accepted by central European researchers. This method enabled the detection of physical remains of structures (interpreted as dwellings) in Russia, Ukraine, and finally also the first circular groundplan at Dolní Věstonice I, unit 2 (Gerasimov 1931, Rogachev 1953, Shovkoplyas 1955, Yefimenko 1958, Pidoplichko 1969, Klíma 1963). Thus the search for physical remains of structures and for understanding the spatial organization of the occupation floors, became one of the goals of Paleolithic excavation in Czechoslovakia (see overviews by Prošek 1961 and Sklenář 1976). It was realized that this important evidence was previously unrecognized, and partially

lost during previous excavations at Předmostí and Dolní Věstonice. The excavation of Pavlov I took place just in this atmosphere and with these assumptions during the 1950's.

Spatial analysis of a large Gravettian hunter settlement is usually based on a basic network presented by the central hearths and associated features (Leroi-Gourhan and Brézillon 1972; Stapert 1990; 2003). Klíma's (e.g., 1963a,b, etc.) definition of a „dwelling structure“ combined several viewpoints: terrain depressions, marginal enclosures created by large objects (presumed remains of architectural elements), and hearths. Our own definition of a „settlement unit“ (e.g. Svoboda, ed. 1994, etc.) starts from a central hearth, associated features of the terrain, and spatially related artifact concentrations (presumed activity areas). Leaving aside hearths in the open-air (Stapert 2003), four formal types of „dwellings“ were defined at south Moravian sites: subsurface dwellings with stone alignments, surface dwellings with mammoth-bone alignments, subsurface dwellings without alignments, and surface hearths without alignments (Svoboda 2003).

Recent experiments demonstrate that building a superstructure using a simple geometric form over such circular ground-plans is not difficult or costly either in terms of energy, time or material. Ethnoarchaeological investigations have assembled a mosaic of analogical structures from various climate zones. Based on ethnoarchaeological observations, circular features are employed either as a stabilizing part of the dwelling construction, or they can be a result of long-term „centrifugal“ accumulation processes around a central hearth. As Pavlov I is a large and complex settlement and a result of long-term material accumulations, both of these scenarios should be taken in account when interpreting the formation processes of the individual structures.

When interpreting the large hunter settlements as a whole, two extreme models are usually evaluated: the first model proposes a large, relatively sedentary "camp" (e.g., Klíma 1963b), the second model proposes an accumulation of successive short-term occupations (e.g., Verpote 2000a). Or, in another words, two site-formation factors are involved: the intensity of occupation and its repetition. It is clear today that an *a priori* presumption ordering several settlement units into a kind of more or less contemporaneous "village" requires to be tested by an internal analysis (Kroll and Price, eds., 1991). This analysis includes spatial relationships (or overlapping) among the units, connections by refittings, C14 dating, typological and other comparative study of their content.

Thickness of the cultural layer and the microstratigraphies suggest that the largest sites are, in fact, accumulations or palimpsests of smaller ones (Chapters I.3, II.1-2). The question to ask is whether this is *all* they are. Why are the art objects and burials restricted to certain places at Pavlov and Dolní Věstonice, places which archaeologically appear to be the most concentrated clusters of anthropogenic sediments, charcoal, and artifacts? It seems that these locations are not just archaeological summaries of the individual episodes, but that there was a pattern of human aggregation and centralized activities, both profane and symbolic.

## **5. The Situation and the Database**

The reconstruction of the settlement structure suggests a rectangular shape measuring about 80x40 m, and more than 2000 meters squared in area (Figure I.1.2). B. Klíma identifies two settlement concentrations, northwestern (a) and southeastern (b). Sometimes the excavator also separated the middle part of the site (c), an area that will be examined as a next stage of this project. Excavation of the cultural layer started with a 1x1 meter square grid in 1953-1956 and changed to a 2x2 meter grid later. The provenience of selected, inventorized finds was recorded in the Artifact Inventory (now digitalized), and the remaining finds (most of the *débitage* and fauna) were stored according to the excavation seasons. A stratigraphic separation of the material was done only during the 1953 excavation. At first, the sediments were dry-sieved, but later a wet-sieving procedure was established.

Each of the excavation years used its own planigraphic grid, using Roman numerals on the x-axis (transverse) and Arabic numerals on the y-axis (longitudinal). Some of the areas (1954-B and 1956-B) were documented in detailed stratigraphic sections in 2 m grids, but in the other excavations B. Klíma documented only selected sections. These sections clearly show the irregularities of the surface (depressions), the complex and changing character of the cultural layers, and the stratigraphic position

of the hearths. Finally, there are detailed plans showing the position of the hearths and larger objects in the horizontal plane, without indicating their stratigraphic position within the individual sublayers.

During the 1954-1956 excavation, B. Klíma (1957, 1959, Chapter I.1) recorded, described and numbered 7 dwellings (5-11), all of them more or less regular depressions containing hearths, pits and accumulations of artifacts. Following this numbering system, the two features excavated in the northwestern part of the site in 1957 received numbers 12 and 13. The most complex and unclear remained the 1956 area; following a subsequent reevaluation of the plans, Klíma changed his mind about the kidney-shaped feature 11 in area 1956-B (formerly 7 m x 3,5 m in size), and he subdivided it into three additional features.

However these features are interpreted, they evidently do suggest previously existing and/or overlapping structures, and the spatial analysis (Chapter I.3) is based on the same original numbering system.

## **6. Aims and Methods**

Our approach is based on a unique square grid covering the whole southeastern area. This allows to compare spatially the stratigraphies and microstratigraphies, reconstruct the larger depressions, and relate them to the network of hearths, pits, larger objects, and other features. Spatial distribution of lithic and faunal remains, as presented in the following chapters, is based on the same system.

### **6.1. The grid**

As the starting point, we created a unique 1 m square grid for the whole Southeast area, with  $x = 25$  m and  $y = 35$  m (Figure I.1.3). This grid is a simplification, because it does not take into account the irregularities at the margins of the excavated areas (ie. the 1952 excavation at the northern end, or the irregular-shaped trenches in the southeastern corner). Previous numbering nomenclatures for each season and area were converted into our revised numbering system (Figurek 5-6).

### **6.2. Mapping the depression features**

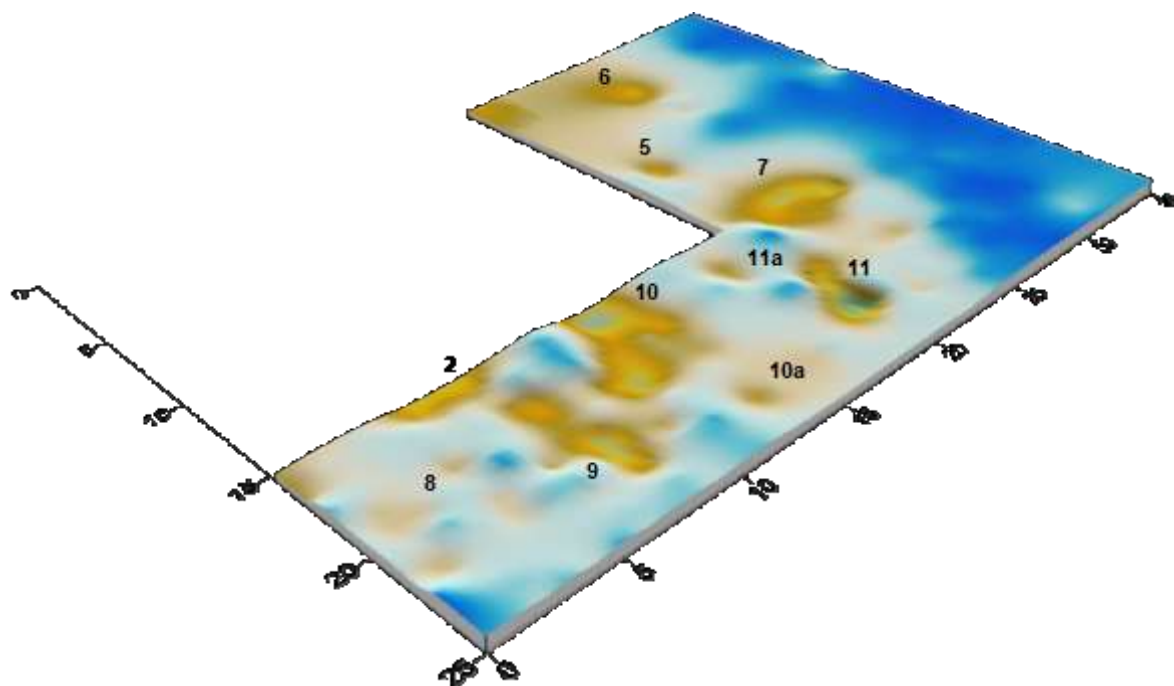
We located all the sections within the combined grid and estimated the thickness of the cultural layers in each square. The data was entered into the Surfer 6 computer program, separately for each square, to create a hypothetical map of the total vertical and horizontal extent of the cultural layers (Figure 5). Unfortunately, there are not enough sections documented from the 1952-53 area to complete the whole Southeastern part in one picture. This map shows the depression features which contained the cultural deposits. Generally, it agrees with Klíma's map, so that we basically used his original numeration (features 1-11) with only slight modifications (addition of features 10a, 11a). However the feature shape outlines are quite different.

### **6.3. Stratigraphy and classification of the depression features**

Most of the depression features have a relatively complex stratigraphy with several layers, and some are clearly separated into two main sublayers with a layer of archeologically sterile loess in between the two cultural layers. This pattern was mapped using data from the individual sections (extrapolated where necessary) and is presented in Figure 4. Shape of the concavities in circular, oval, or irregular.

An unusual circular feature was recorded in the Pavlov–Middle area. It was 80 cm deep and filled with bones and artifacts (Klíma 1977). It has been interpreted as a storage pit. A similar pit, vaulted along the margins, was also recorded in the Pavlov-Southeast, adjacent to the feature 11 (see Figure 30).

Finally, kettle-shaped pits (Figure 28) were clustered on the surface, especially inside some settlement units and near the hearths. They were probably used as boiling pits.



**Figure 5.** Surfer reconstruction of the depression features, based on stratigraphic sections. The feature numbers follow and complete the original numeration system by B. Klíma.

#### **6.4. The hearths**

There are several types of hearths, including irregular areas of charcoal concentration and red-burnt loess, more regular (circular) hearths, and hearths filled with stone blocs (Figure 27). Alternative explanations of these stone fillings are either destruction of hypothetical vaults (Klíma) or stones used as heat accumulators (Svoboda). In addition, some hearths were repeatedly restored, thus forming one of the basis for study of microstratigraphies. The hearths were numbered H1 to H56 (Figure I.3.1).

Besides the active hearth, the site also includes extensive ashdumps.

#### **6.5. Larger objects**

The distribution of the larger mammoth bones is presented in Figure 6. Based on their location, these features were interpreted as remains of circular or oval dwelling structures (Klíma's interpretation), or alternatively, they may be a result of the „centrifugal effect“.

Some of the depression features are associated to larger bones (no 3, 9, 10, 11), but the outline is not sufficiently complete to document an architectural element. The accumulation of bones in the southwest periphery of the area most probably results from removal of larger objects from the center.

### **7. The 1952 and 1953 Areas**

A record of the first two years of excavation was published in preliminary reports (Klíma 1954; 1955; Svoboda 1994a) and in the first pilot volume on Pavlov (Svoboda, ed. 1994). B. Klíma outlined the eastern parts of features 1, 2 and 4, and especially the complete feature 3 in the center. The stratigraphic situation was simple in center of this area, and separation of the cultural layer into substages was documented only from the middle of feature 3 (partial section in row x=8) and from the southern and western borders the area (feature 2).

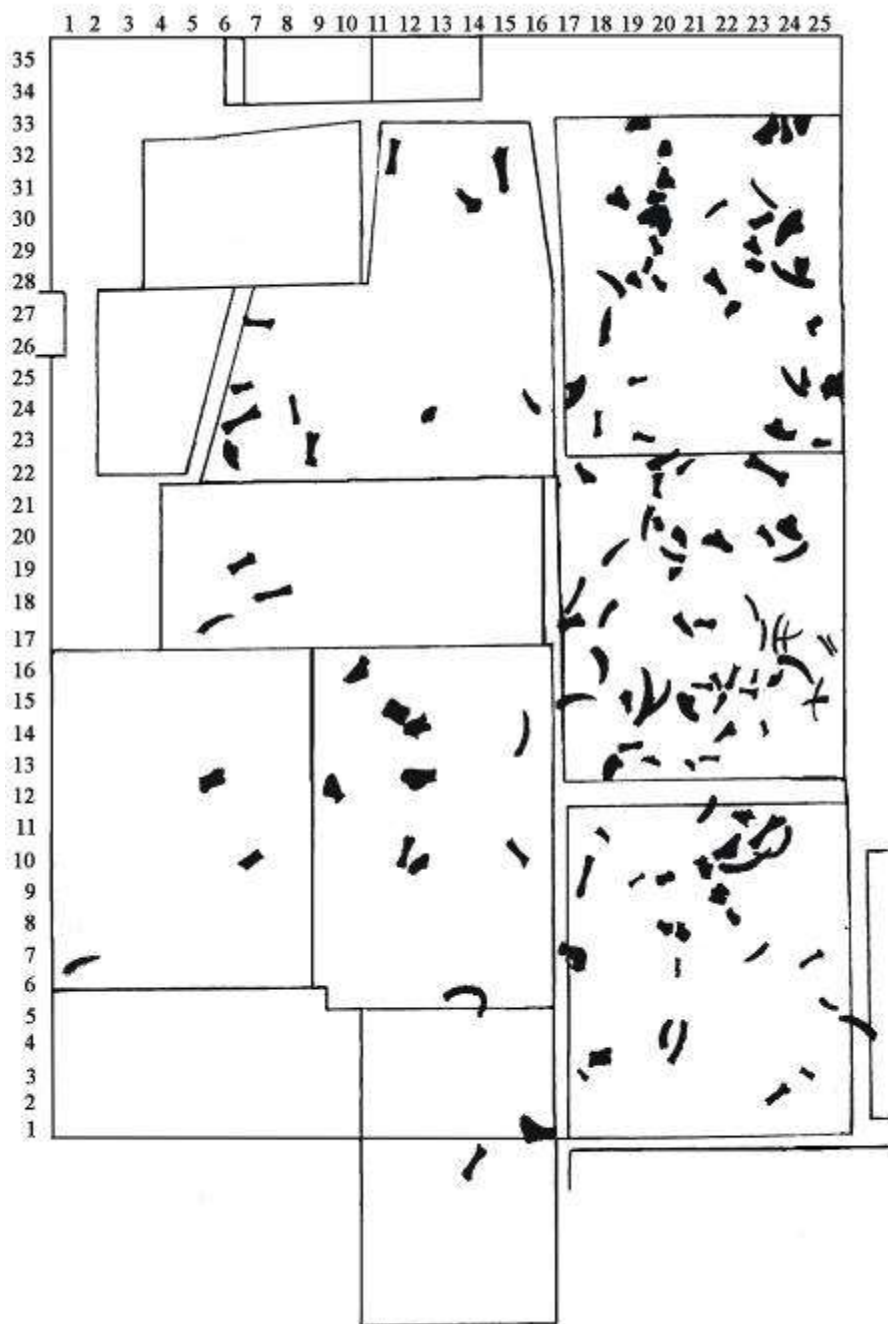


Figure 6. Pavlov I – Southeast, showing position of larger bones (exaggerated).

## 8. The 1954-A Area (Figure 7)

Following Klíma's numbering system, the 1954-A area covers a circular groundplan of feature 5, western part of feature 6, and eastern part of feature 7.

The complex stratigraphy of this area is recorded by the complete crossectional profile of the western wall ( $x = 16$ ,  $y = 21-32$ , Figure 8) and by parallel partial profiles of the cultural layer in rows 13 ( $y = 21-24$ , Figure 9) and 10 ( $y = 21 - 27$ , Figure 10). Transverse profiles of the cultural layer were recorded in the southern wall ( $x = 13-16$ ,  $y = 21$ , Figure 10), in row 24 ( $y = 14-15$ , Figure 12), and in the northern wall ( $x = 27$ ,  $y = 7-10$ , Figure 13). The separation of the cultural layer into two horizons is most clearly visible inside feature 7.



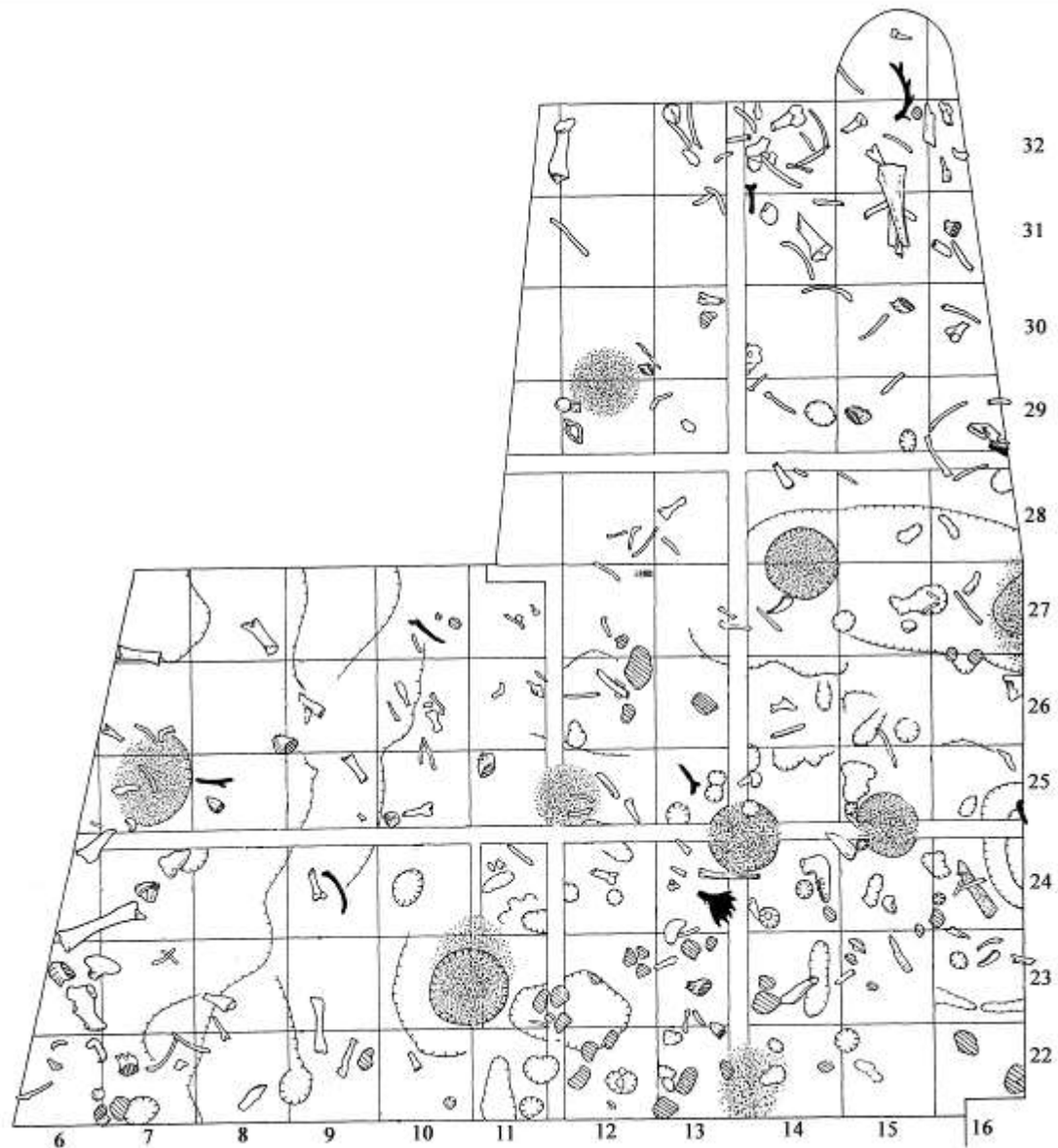


Figure 7. Plan of the 1954-A area, with features 5-7 (after B. Klíma; feature outlines deleted).

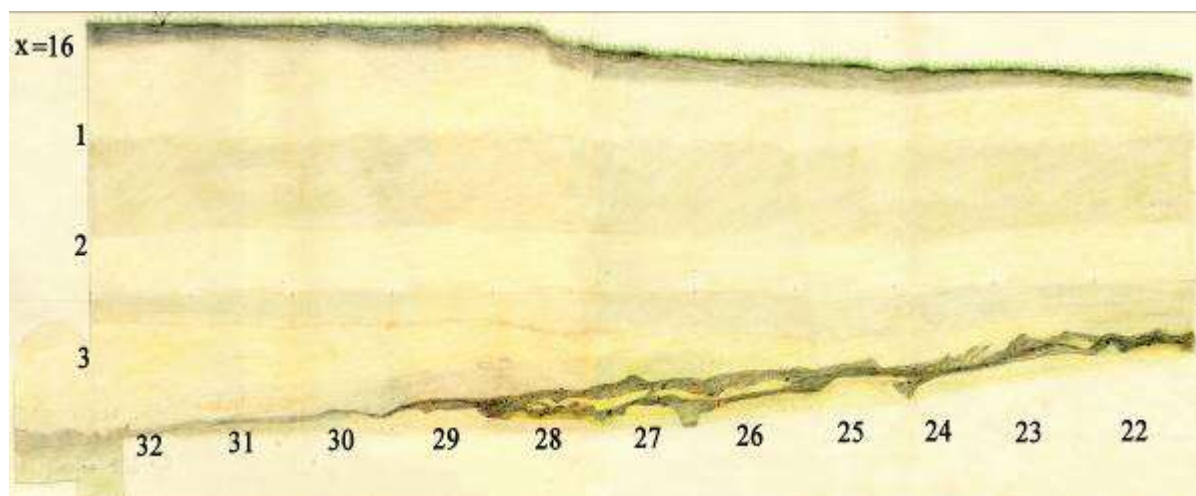


Figure 8. Complete crosssectional profile of the western wall, x = 16 (y = 22-32). A section of feature 7 is shown in the center of the picture.



Figure 9. Parallel detailed profile of the cultural layer in row  $x = 13$  ( $y = 22-24$ ).

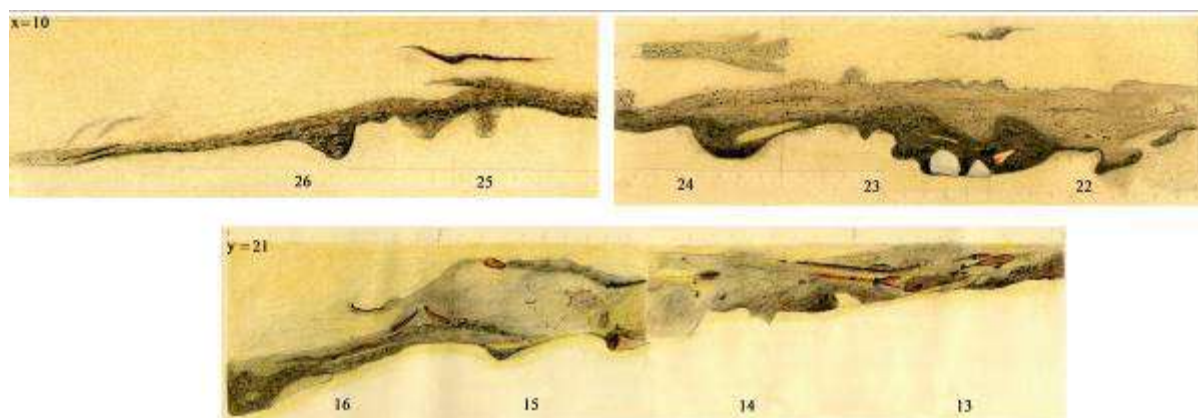


Figure 10. Parallel detailed profile of the cultural layer in row  $x = 10$  ( $y = 22-27$ ). The right part of the section cuts through feature 5.

Figure 11. Transverse profile of the cultural layer in the northern wall,  $y = 21$  ( $x = 13-16$ ).

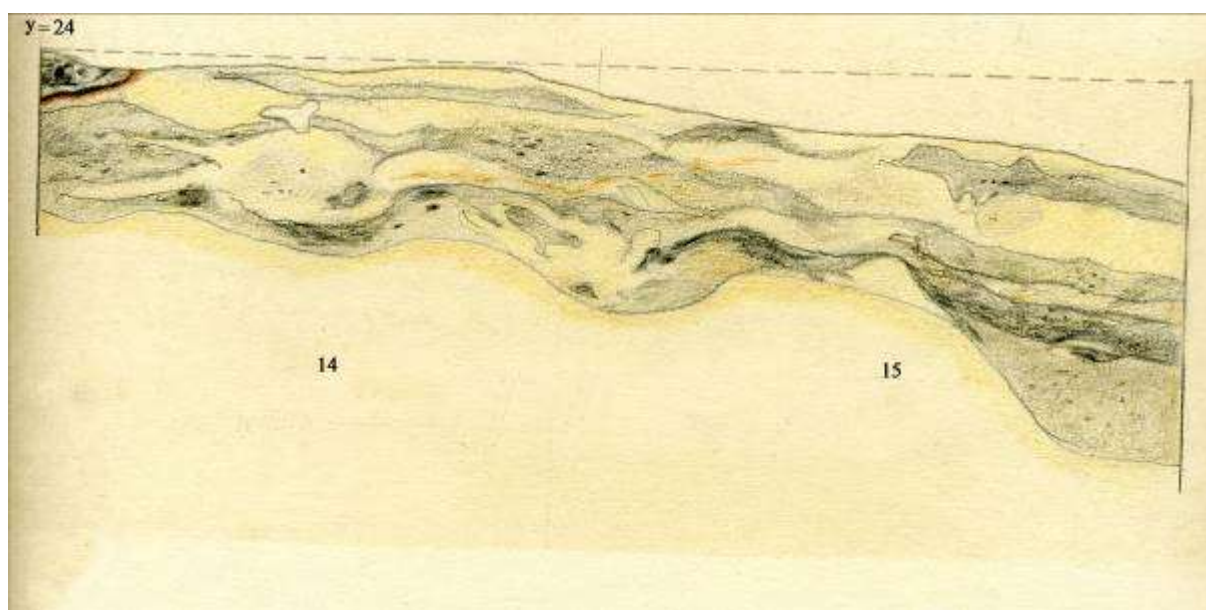
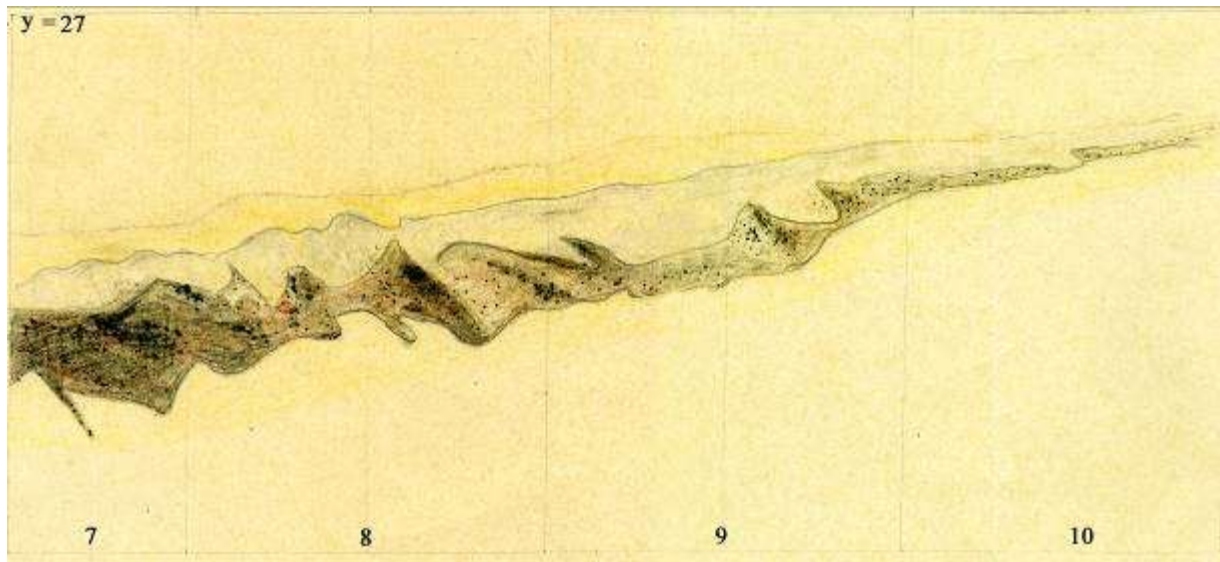


Figure 12. Transverse profile of the cultural layer in row  $y = 24$  ( $x = 14-15$ ).



**Figure 13.** Transverse profile of the cultural layer in the southern wall,  $y = 27$  ( $x = 7-10$ ). The left part of this section cuts through feature 6.

**Feature 5.** The groundplan (Figure 7) is circular, 4 meters in diameter with a central hearth H14 located in a regular pit, about 80 cm in diameter. An adjacent pan-shaped pit was located on its western side, partially filled with relatively large limestone blocks. It also contained a large number of flakes and chips from lithic production. In addition, smaller pits were scattered in the general area. The profile cuts into this feature and its central hearth in row 10 (Figure 10, right part). The microstratigraphy of this feature can be subdivided into two main parts: a dark and ashy hearth fill and smaller pits at the base up to 25 cm thick, overlain by 15-30 cm of light brown, partly layered cultural deposit. Isolated lenses of the cultural layer are also visible in the overlying loess.

**Feature 6 – western part.** This partly excavated depression feature also includes a hearth in the southeastern corner (Figure 7). The stratigraphy is shown on Figure 13 (left part). The fill has two components: the basal layer (up to 25 cm thick) consists of a dark-coloured, ashy sediment mixed with ochre. The overlying layer is a grayish sediment, 10-20 cm thick. Surface of the cultural layer is heavily deformed by cryogenic processes.

**Feature 7 – eastern part.** This feature is composed of two stratigraphic units separated by about 20 cm of loess, as seen in the Figure 8 (center), and Figure 32 (from the 1956 excavation). The upper horizon (about 10-20 cm thick), is oval-shaped and 5x3 m in area. The underlying horizon (up to 45 cm thick) includes another 2 m zone in the northern part of the feature (Figure 7). In the northern part, the two cultural layers are directly superimposed over one another; the archaeologically sterile layer of loess usually present in other areas is missing. Two hearths, H19-20, are located on the axis of the depression feature. Another one, H15, is located in the northern part. Smaller pits filled with charcoal are found at the base of both layers. Famous carving of a lion found at the periphery ( $x = 16$ ,  $y = 23$ ) makes object of a separate publication (Klíma 1964b).



### 9. The 1954-B Area (Figure 14)

This area covers the western sections of features 1 and 2, the complete groundplan of feature 8, and the northern part of feature 9. The stratigraphy of this area was recorded more systematically than before, at regular 2 meter intervals, both along the x-axis (Figure 15) and the y-axis (Figure 16). These general sections, and especially the more detailed microstratigraphies inside the features record several stages of occupation (Figure 17), sometimes separated by the sterile layer of loess (Figs. 18-19). Vertical separation of the cultural layer into two main episodes is clearly visible inside feature 2, in the upper part of feature 8, and in and around feature 9. A single hearth is documented from the lower part of feature 8.

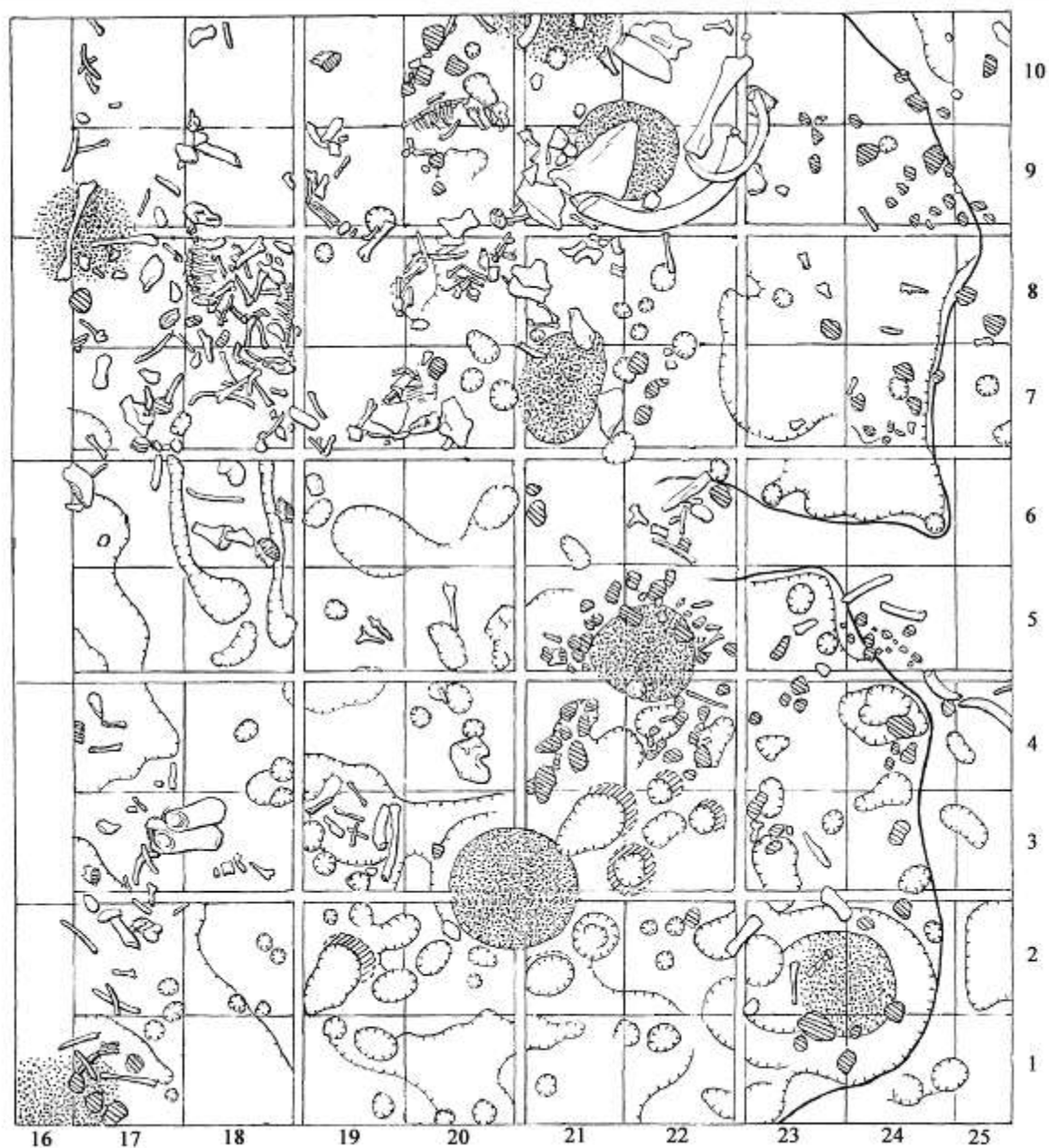
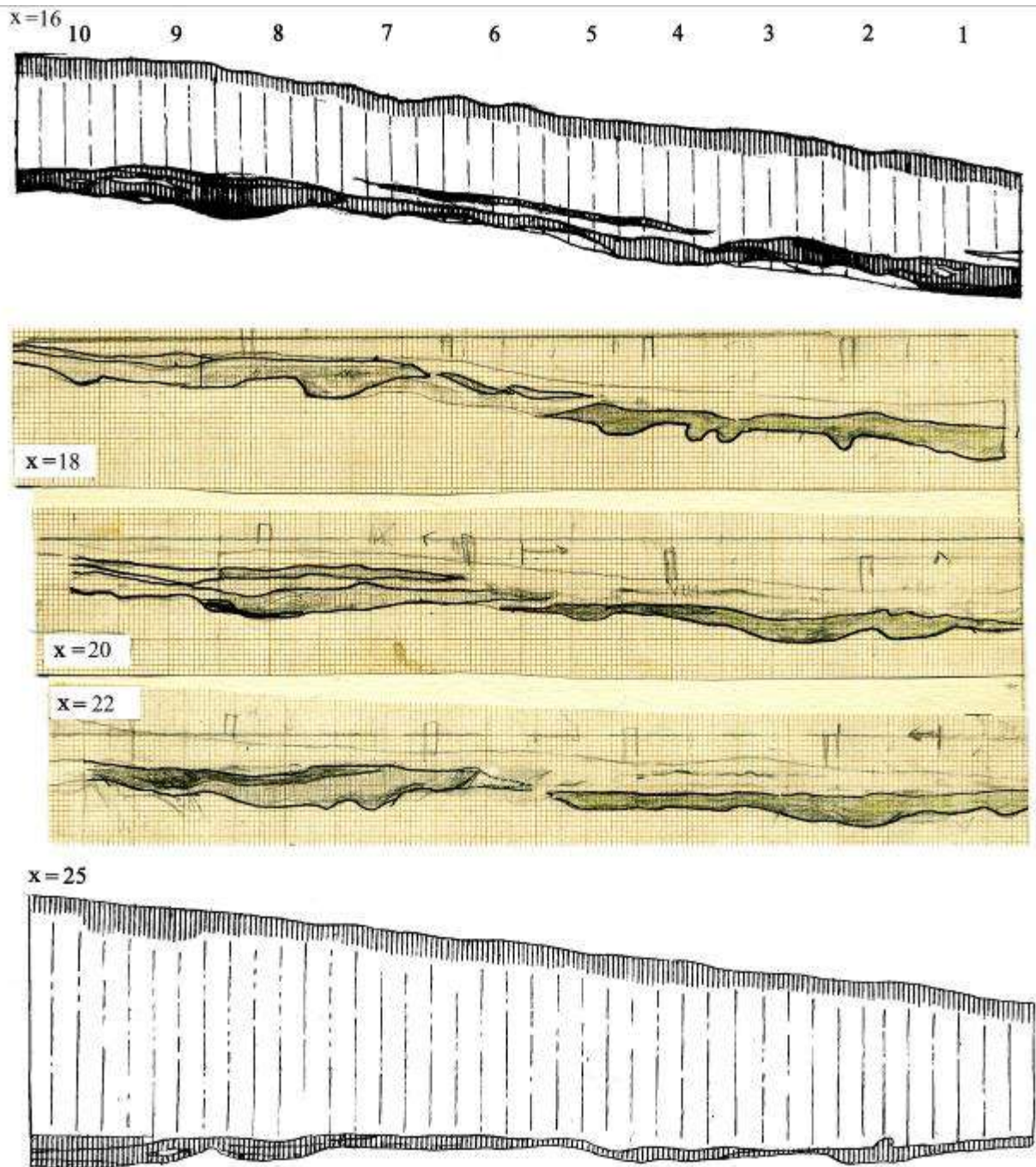


Figure 14. Plan of the 1954-B area, with features 1-2 and 8-9 (after B. Klíma; feature outlines deleted).



**Figure 15.** Series of crosssections at 2 meter intervals ( $x = 16, 18, 20, 22, 25$ ).



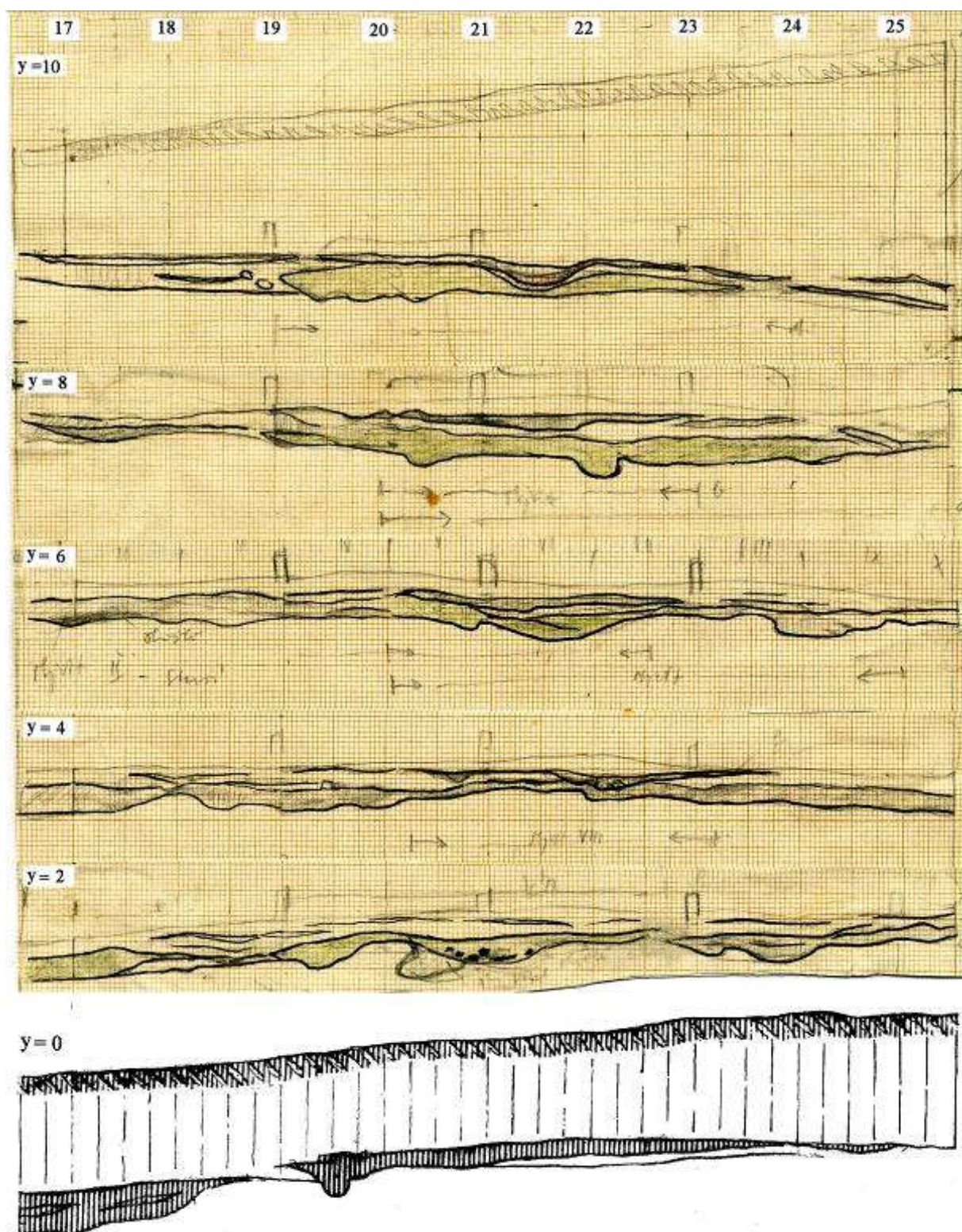
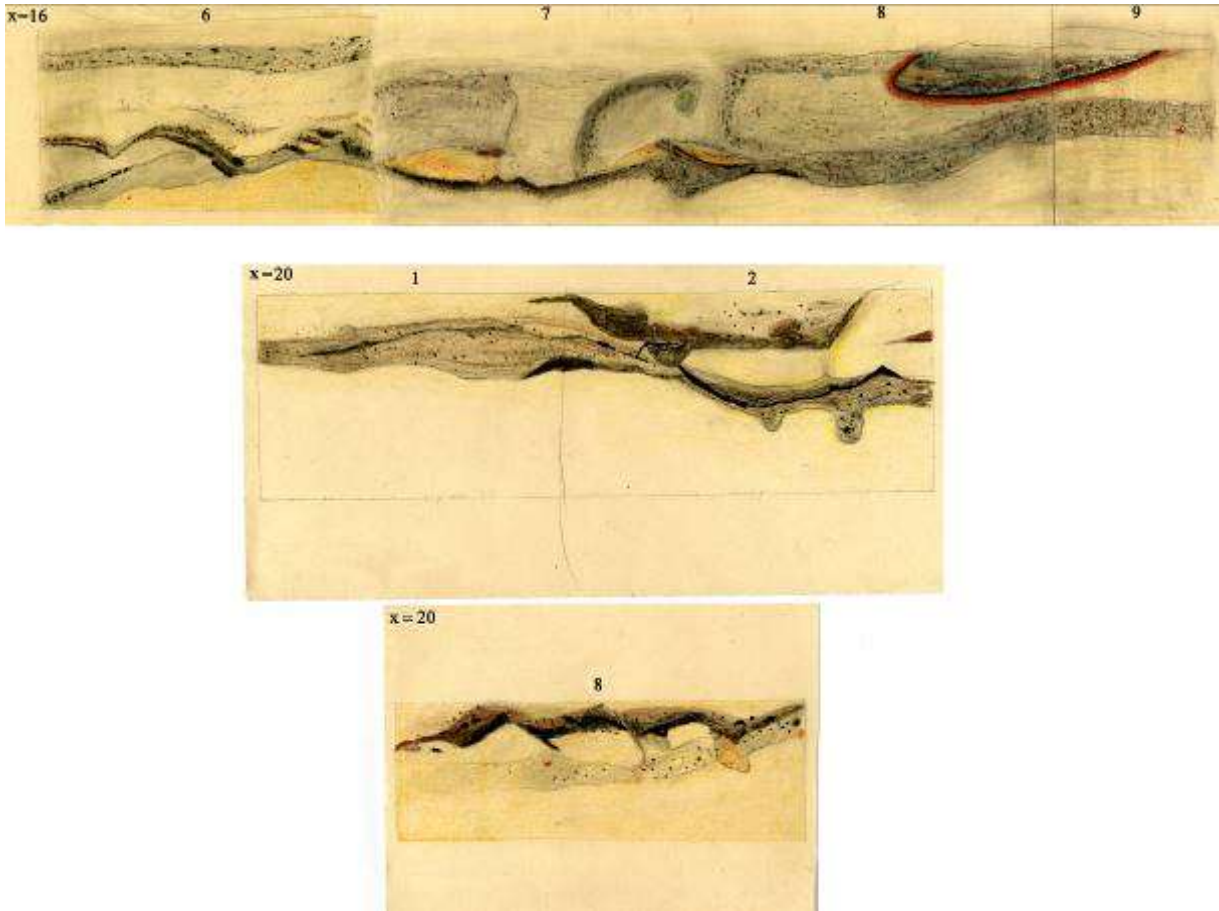


Figure 16. Series of transverse sections at 2 meter intervals ( $y = 10, 8, 6, 4, 2, 0$ ).



**Figure 17. Detailed crosssection of feature 2 (x = 16), showing its complex stratigraphy.**

**Figure 18. Detailed crosssection of the northern part of feature 8 (x = 20), showing at least two layers of the infilling material.**

**Figure 19. Detailed crosssection of feature 9 (x = 20), showing the two stages of occupation.**

**Feature 2 – western part.** After the 1954 excavation we had a complete groundplan of this depression feature, including the complex microstratigraphy in row 16 (Figure 17). This section shows at least three stratigraphic components of varying dark-greyish colours. In addition, two smaller pits (Klíma suspected these to be post-holes but they may also be caused by bioturbation) and a regular hearth with a red-burnt base, are visible at the top of this sequence.

**Feature 8.** Based on Klíma's notes, the groundplan is roughly oval-shaped, 5x4 meters in area, with two hearths in the center. A narrow lateral enclosure 2 meters wide forms part of the western section, with an additional hearth. The depression fill is up to 60 cm thick, and consists of 3-4 dark-coloured, ashy layers with more dark lenses in the overlying loess. The central hearth H23 was also stratigraphically complex with a layer of burnt limestone blocks overlying the ashy fill. A series of kettle-shaped pits, with diameters of 30-50 cm and the same depth, was recorded from around the central hearth. These pits were filled with ash mixed with burnt fragments of animal bones and with lithic artifacts. A more detailed crosssection in the northern part of the feature (row 20, Figure 18) clearly shows two occupation stages separated by a layer of sterile loess.

**Feature 9.** This feature is clearly composed of two superimposed layers, again separated by 10-20 cm of sterile loess in some places. The surface groundplan is an irregular rectangle 6x3 meters in size, with three or four hearths inside (one of them being more complex with a fill of limestone blocks). In the western section, the lower hearth forms a narrow lateral enclosure approximately 2 meters wide. The transverse sections through this feature (y = 8, y = 10, y = 11) show the profile, again consisting of two complex cultural layers being separated by a layer of sterile loess. Partial deformation, due to postdepositional processes (e.g. cryogenic processes, bioturbation), is also visible. Individual hearths with red-burnt bases and filled with burnt bones, are located in both layers. In one case, a hearth is covered with a mammoth pelvis.



## 10. The 1956-A Area (Figure 20)

This area covers the upper (southern) part of features 9 and 10. Higher up the slope, it partially dissects the lower part of feature 11. This entire area was dissected by a complete crosssection along the eastern wall ( $x = 16$ , Figure 23), showing microstratigraphies of features 10 and 4. A complete transverse section of the northern wall (Figure 24), dissects the two-stage layers of feature 9. Several additional sections document the hearths and other complex features (Figs. 21-22, 25-30).

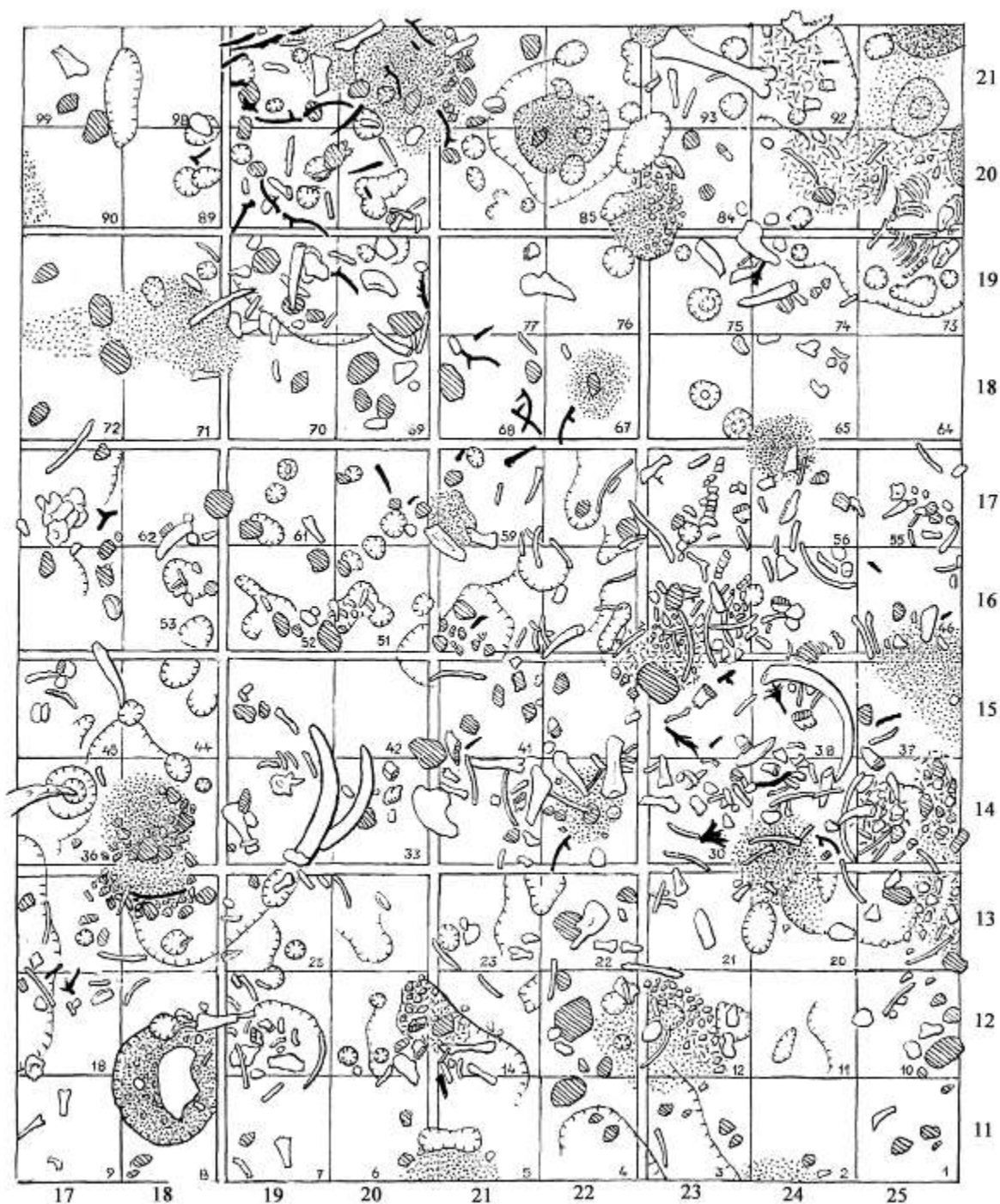
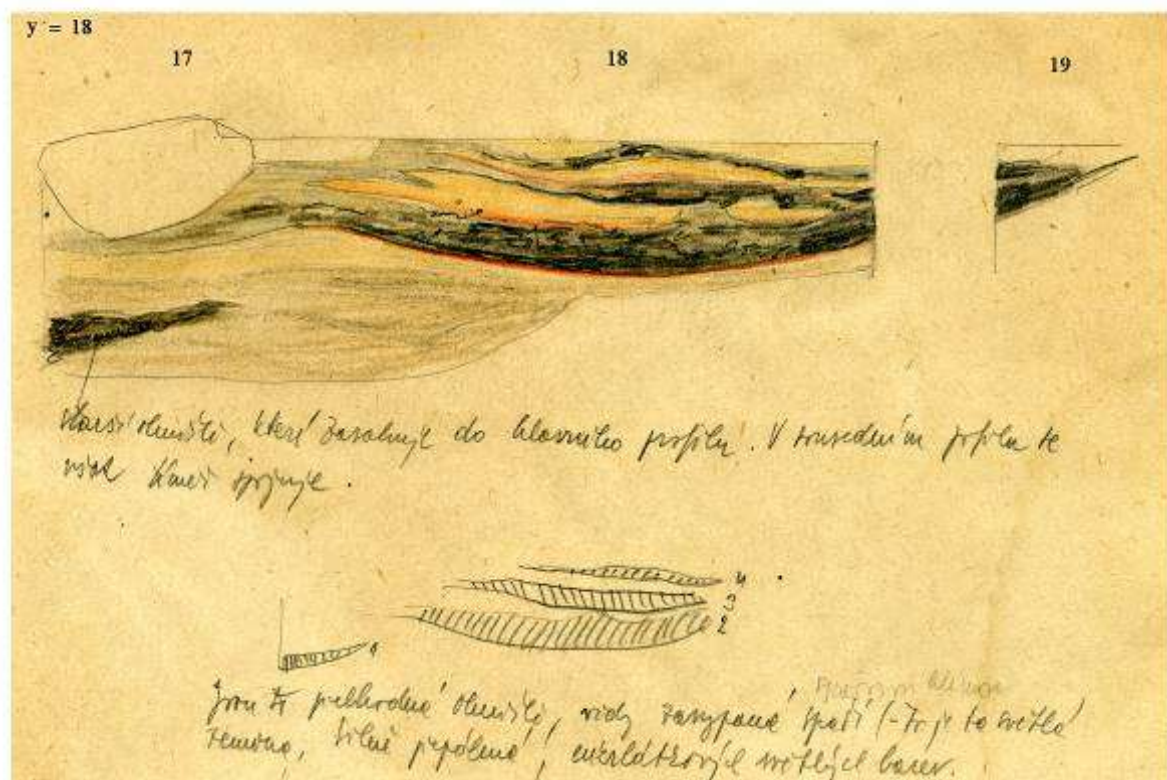
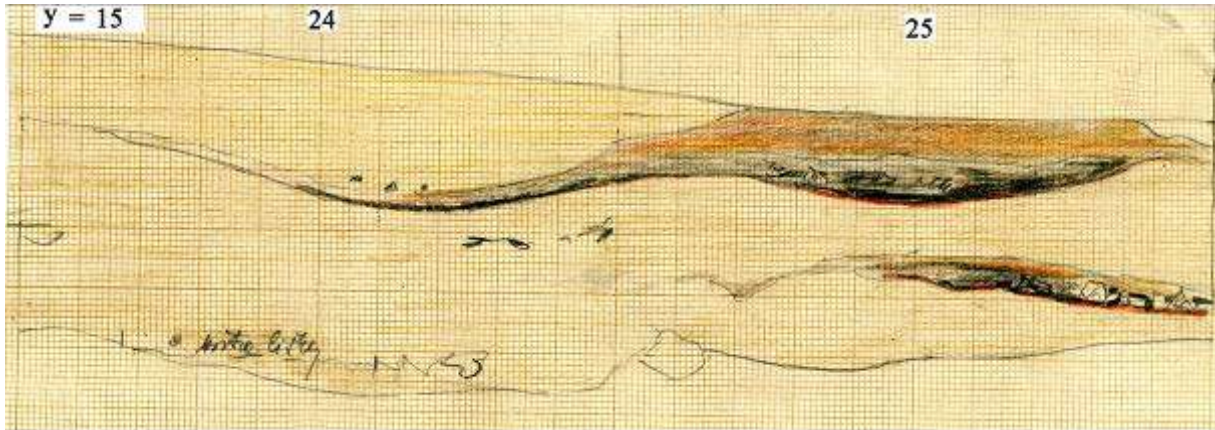


Figure 20. Plan of the 1956-A area, with features 9, 10 and 11 (after B. Klíma; feature outlines deleted).

At the western periphery of the area (squares  $x = 24-25$ ,  $y = 13-14$ ), B. Klíma (*Excavation diary*, June 26) mentions an accumulation of spongolite artifacts, which may be related to an earlier occupation (Aurignacian?) layer, related to the basal paleosol. This seems to be confirmed by the section in Figure 21, which shows a superposition of two hearths, the lower one forming a pan-shaped depression on the surface of the paleosol.

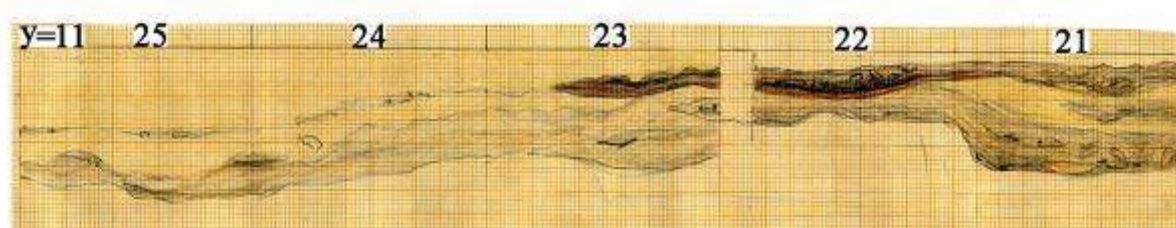
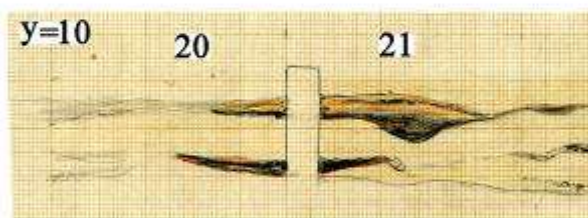
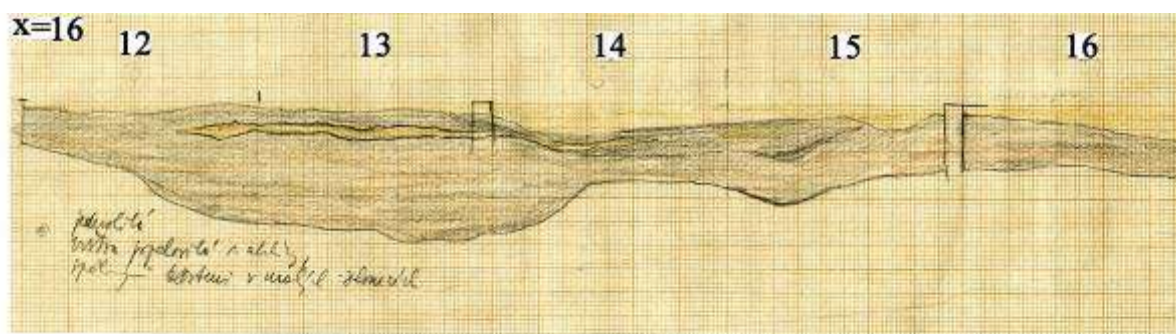
The Gravettian cultural layer is mostly homogenous, but the two separate horizons are clearly visible in feature 9. Underlying individual hearths are also documented in squares 18/19 and 20/21.



**Figure 21.** Superposition of two hearths H34 at the western periphery of the excavated area at  $y = 15$  ( $x = 24-25$ ). The lower hearth is related to the light-brownish paleosol surface, with a fox skeleton below (Aurignacian?).

**Figure 22.** Transverse sections of feature 4 at  $y = 18$  ( $x = 17-18$ ) dissecting one of the younger, complex hearths H38 at the western periphery of the feature.





**Figure 23.** Crosssection of the 1956-A area (eastern wall,  $x = 16$ ), showing microstratigraphy of feature 10 (left) and feature 4 (right).

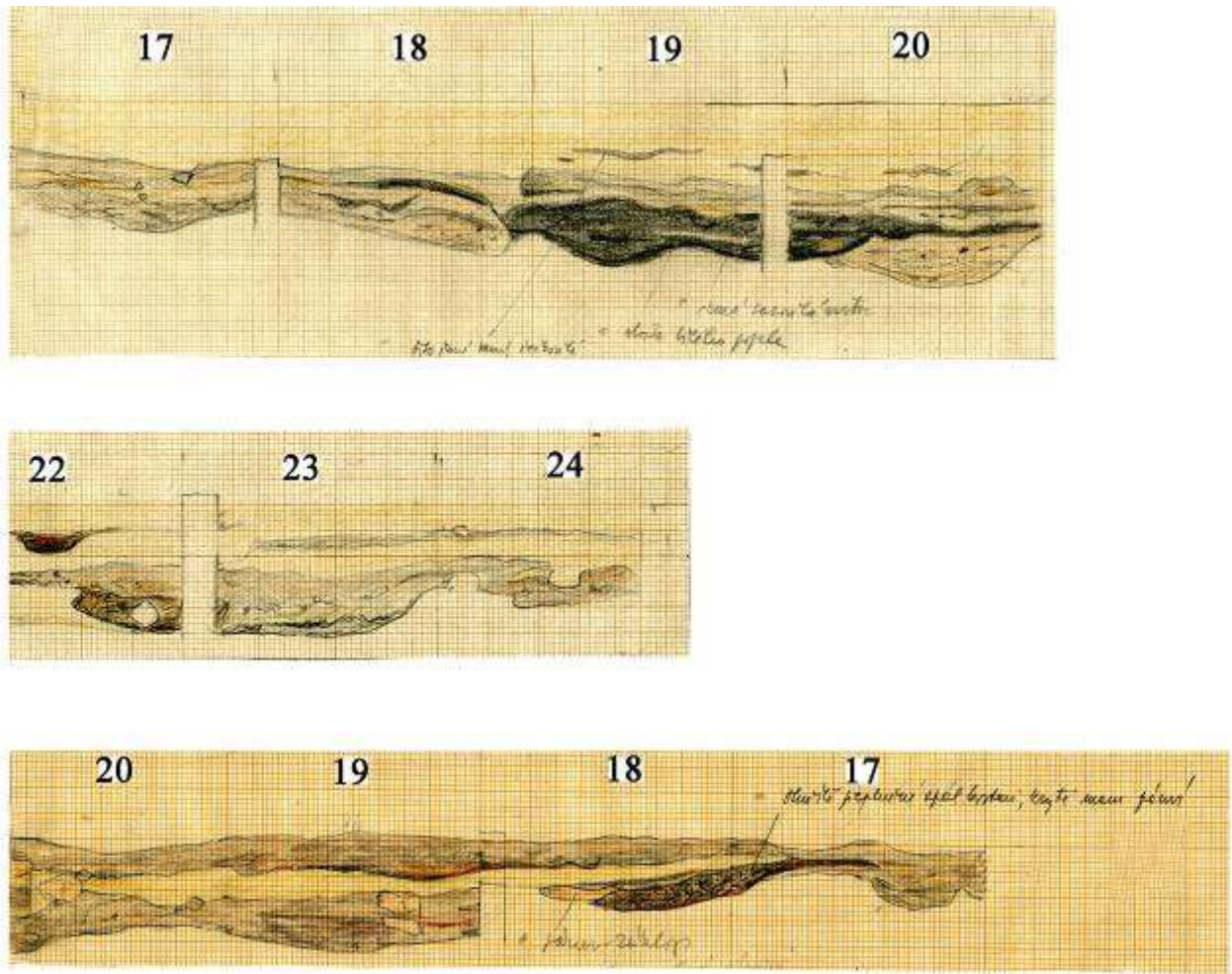
**Figure 24.** Transverse section of the 1956-A area (northern wall,  $y = 10$ ), with the two separate cultural layers in feature 9 clearly visible.

**Figure 25.** Transverse section of the 1956-A area at  $y = 11$ , with additional indications of the complex stratigraphy of feature 9 and the surrounding area.

**Feature 4.** As shown by the crosssection in Figure 23, the fill is formed by an accumulation of hearths, with extremely dark deposits of ash intercalated with white ash, and clay-like inclusions at the base. Figure 22 shows microstratigraphy of hearth H38 located at the western periphery (squares  $x = 17-18$ ,  $y = 18$ ) of the feature. It is clearly located behind the hearth, which is related to the central feature. It is separated into three sub-stages, each overlain by loess. The loess on top of the fireplace was clearly placed there intentionally.

**Feature 10.** As shown in crosssection 15, the fill consists of a homogenous, clay, ashy layer, charcoal and small burnt fragments of bones. Its inner stratification is documented by a transverse section in Figure 27 (square 18/13) dissecting the central hearth H33. This hearth is one of the most complex hearths excavated at this site. Stratigraphically, the hearth is located in the middle part of the fill. It is a regular structure with limestone blocks at the margins and at the bottom covered by flat sandstone tablets. These tablets were heavily damaged by fire, and in some places turned to sand. In the southern part of this feature, an interesting concentration of wood, ash, burnt bones and stones was found. One of the kettle-shaped pits in the area ( $x = 17$ ,  $y = 13$ ) is presented in Figure 28.

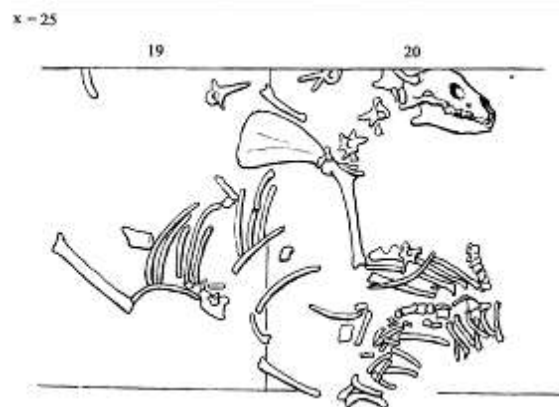




**Feature 11.** Figure 29 shows a crossection of the microstratigraphy of a complex hearth H42 in the lower part of this feature (square 20/21). The stratigraphy shows two superimposed stages, each having a concave, red-burnt base, and a very thin layer of loess in between. In both cases, the fill consists of ash, charcoal, burnt bones, and limestone blocks, which at some places display fine stratification. As Figure 30 shows, the fill of feature 11 is most complex in the lower part of the feature, where the intercalation of several very thin layers can be seen.

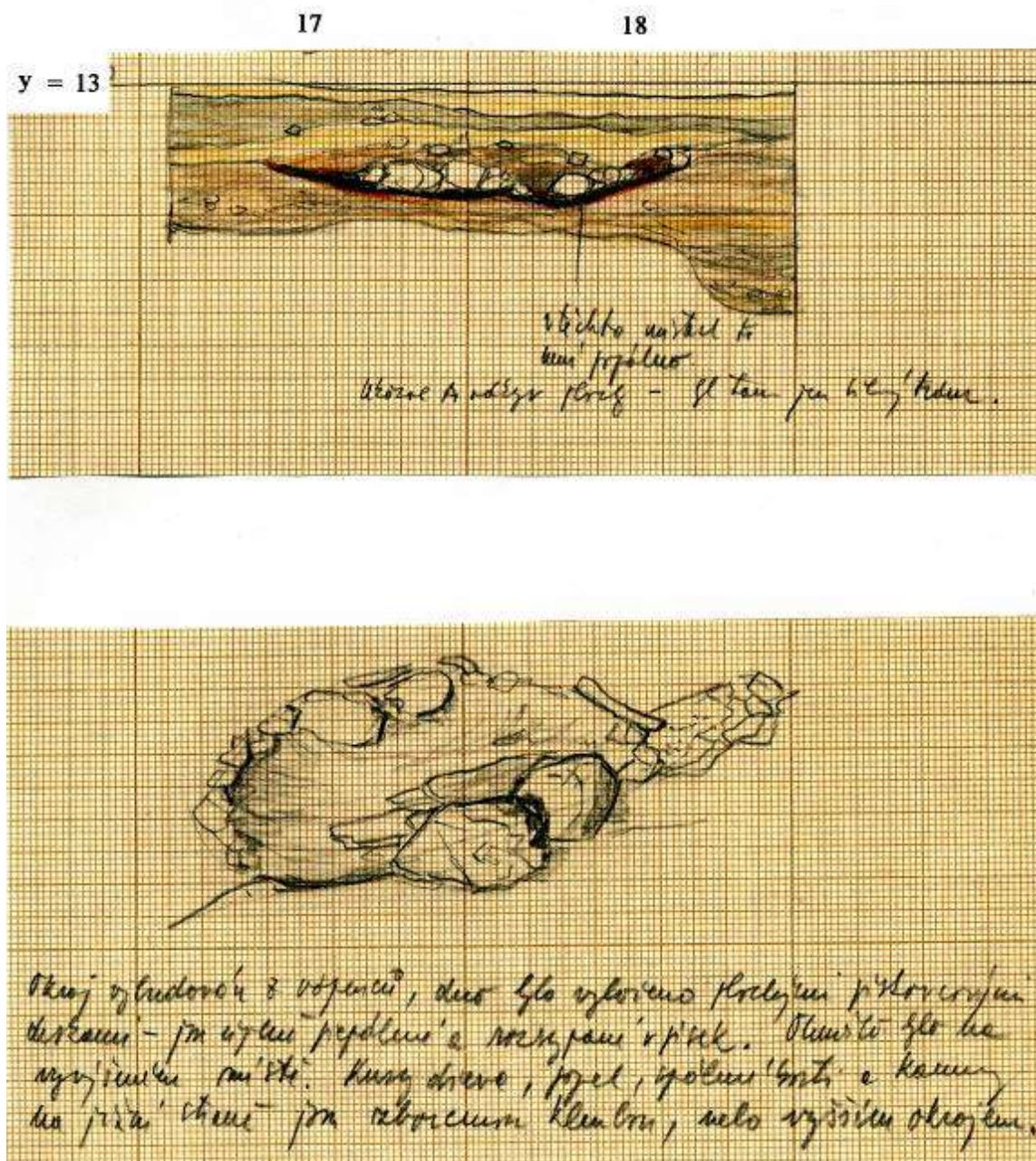
Outside feature 11, this section illustrates a remarkable pit at the periphery, oval-shaped and trapezoid in cross-section, and up to 80 cm deep. The filling was composed of ashy and red-burnt sediments, including limestone blocks, charcoal, and blocks of loess probably originating from the damaged margins of the pit.

Further towards the western periphery, the remains of an almost complete skeleton of a lion (squares x = 25, y = 19-20; Figure 26) were recovered.

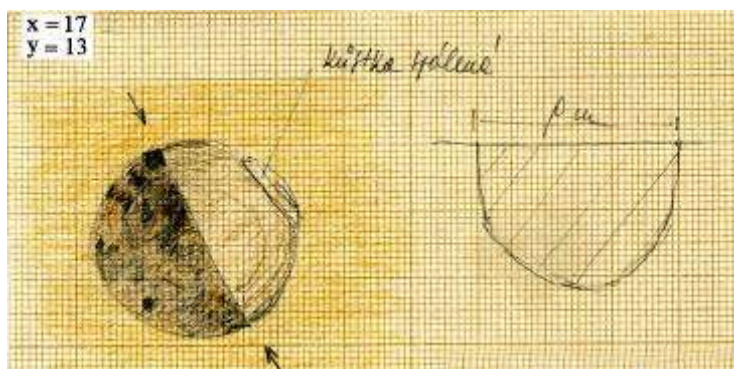


**Figure 26. Western periphery. An almost complete skeleton of a lion (squares x = 25, y = 19-20).**



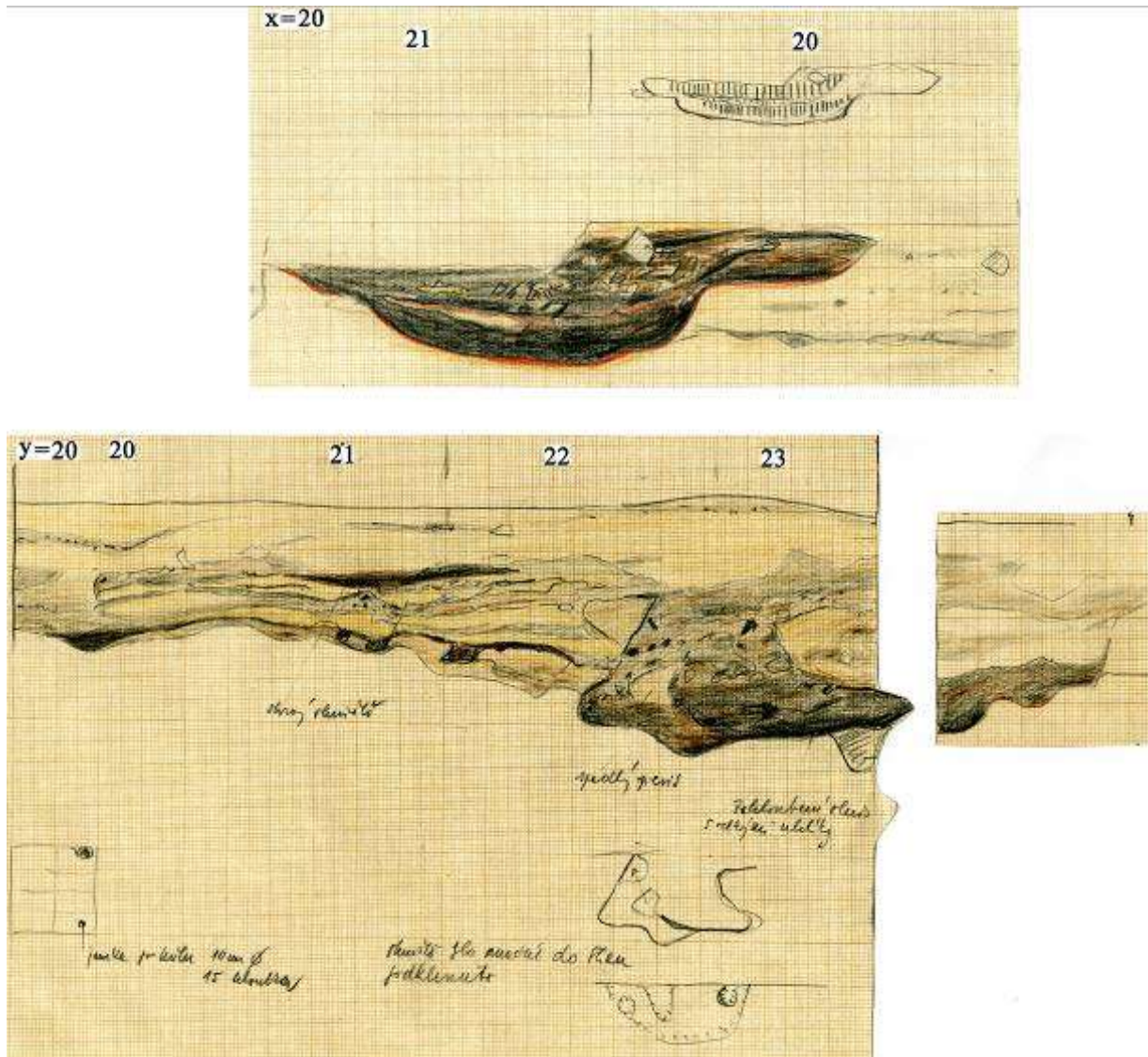


**Figure 27.** Transverse section of feature 10 at y = 13 (x = 17-18) dissecting the central hearth H33. It shows its stratigraphic location in the middle part of the fill (top) and its complex structure composed of limestone blocks at the margins and sandstone tablets at the bottom (bottom).



**Figure 28. One of the kettle-shaped pits (x = 17, y = 13). It is 9 cm in diameter and 7 cm deep. It contained several fragments of animal bones.**





**Figure 29. Crossection of feature 11 at x = 20 (y = 20-21), showing the northern hearth H42. It is composed of two superimposed levels, each having a red-burnt concave base. The filling contains ash, charcoal, burnt bones and limestone blocks.**

**Figure 30. Transverse section of the northern part and periphery of feature 11 at y = 19 (x = 20-23). It shows the multiple stratigraphy of the feature itself (left) and a large pit at its periphery (right).**

## 11. The 1956-B Area (Figure 31)

This area shows the remainder of the groundplans of features 7 and 11. As in the area A, the stratigraphic documentation follows a regular grid of transverse sections and crosssections, including two complete sections of the northern and southern walls (Figs. 3, 4), and partial microstratigraphies of the cultural layers at 2 meter intervals (Figs. 32, 33). Generally, all these sections document thinning of the cultural layers upslope, ie. towards the south and west. At the western margins, the cultural layer lies directly on top of the underlying paleosol: in some cases the two layers are parallel, in other cases, the upper layer sinks into the lower one. In addition, these sections provide more stratigraphic data of the various features: the two-layer character of the fill in feature 7, which is repeated in the western part as well. This can be observed in the 1954-A area (eastern part) as well. The fill in feature 11 (southern part) seems more homogenous than in the adjacent area 1956-A, and based on the excavator's notes, most of the finds originate from the middle part of the layer.

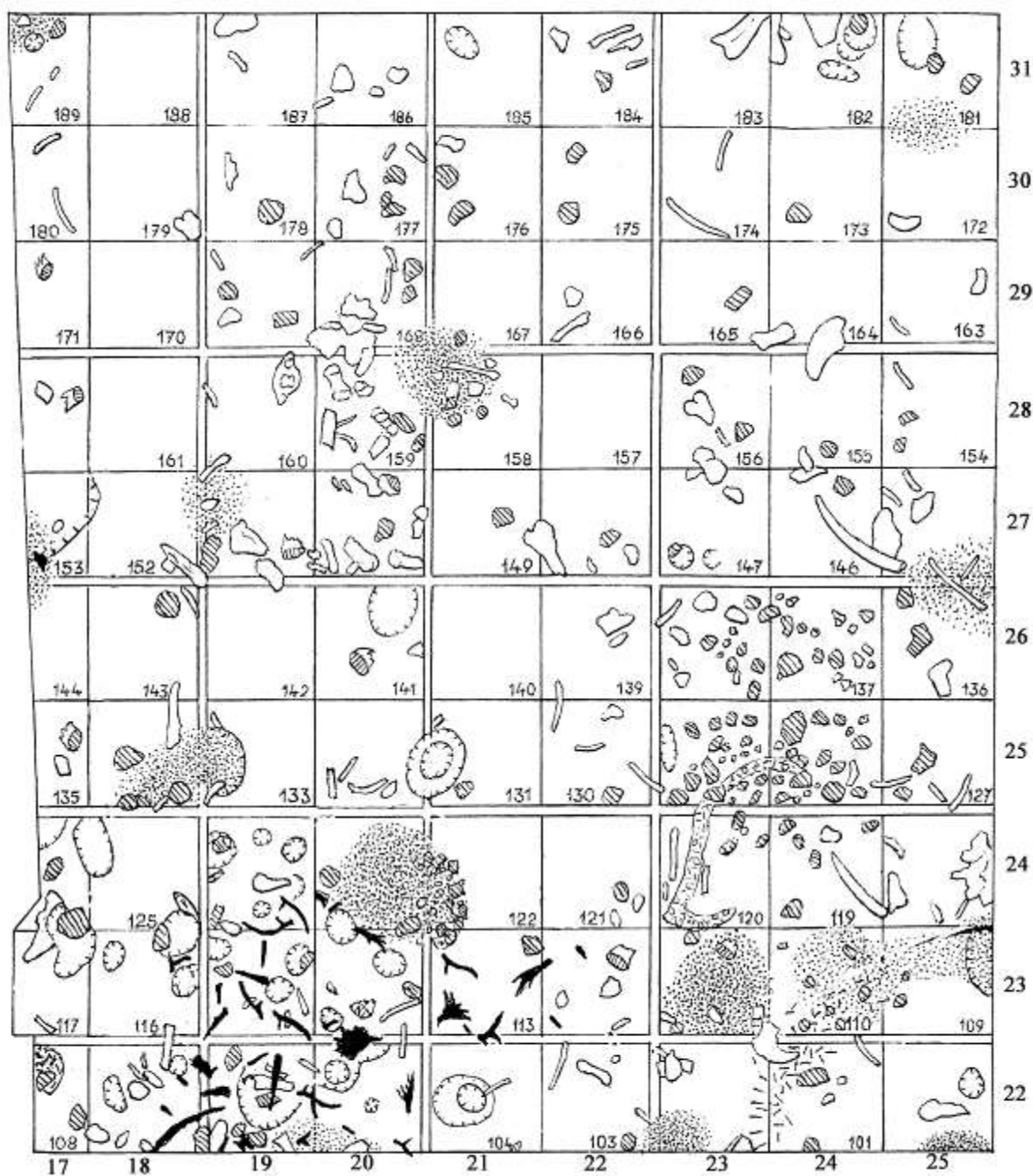


Figure 31. Plan of area 1956-B, with features 7 and 11 (after B. Klíma; feature outlines deleted).

A regular circular hearth H46 was documented in the upper part of feature 11 (square 20/24), lined with a peripheral structure of limestone blocks on the western side. A series of kettle-shaped pits lie adjacent to this hearth at the base of the same feature. The other hearths in the 1956-B area are smaller, and following Klíma's notes, „short-term“.



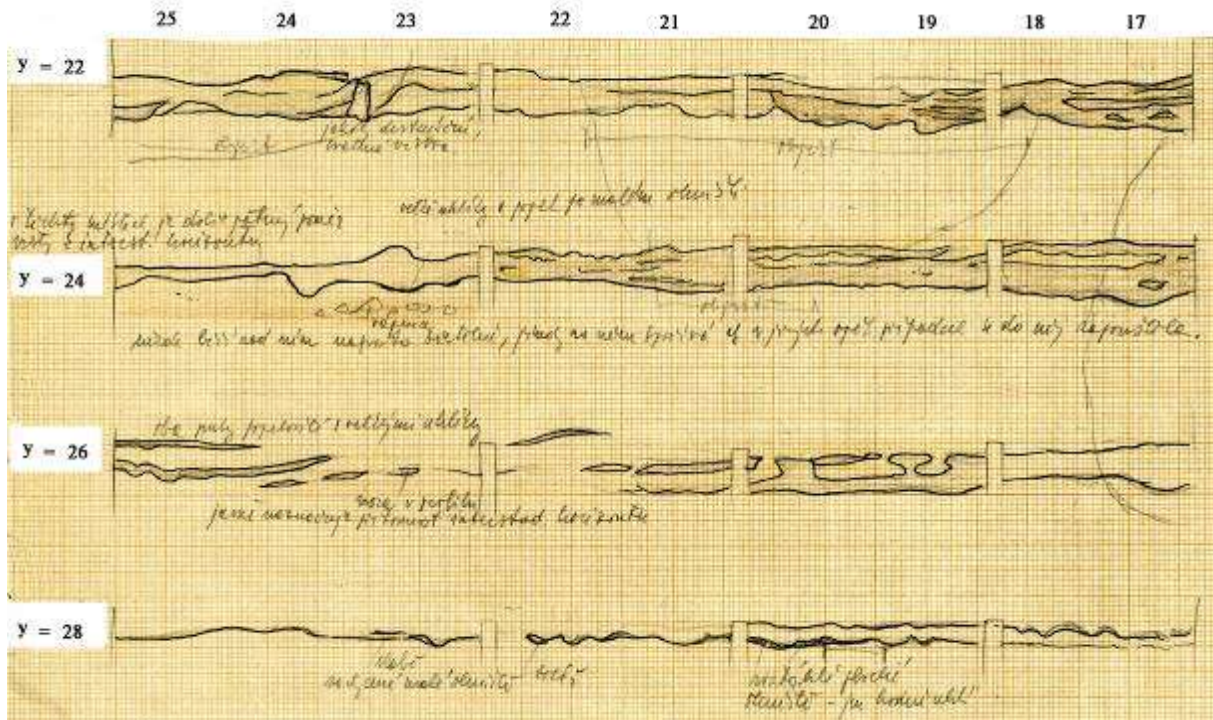


Figure 32. Area 1956-B, a series of transverse sections through the cultural layer, from north to south, at 2 meter intervals.

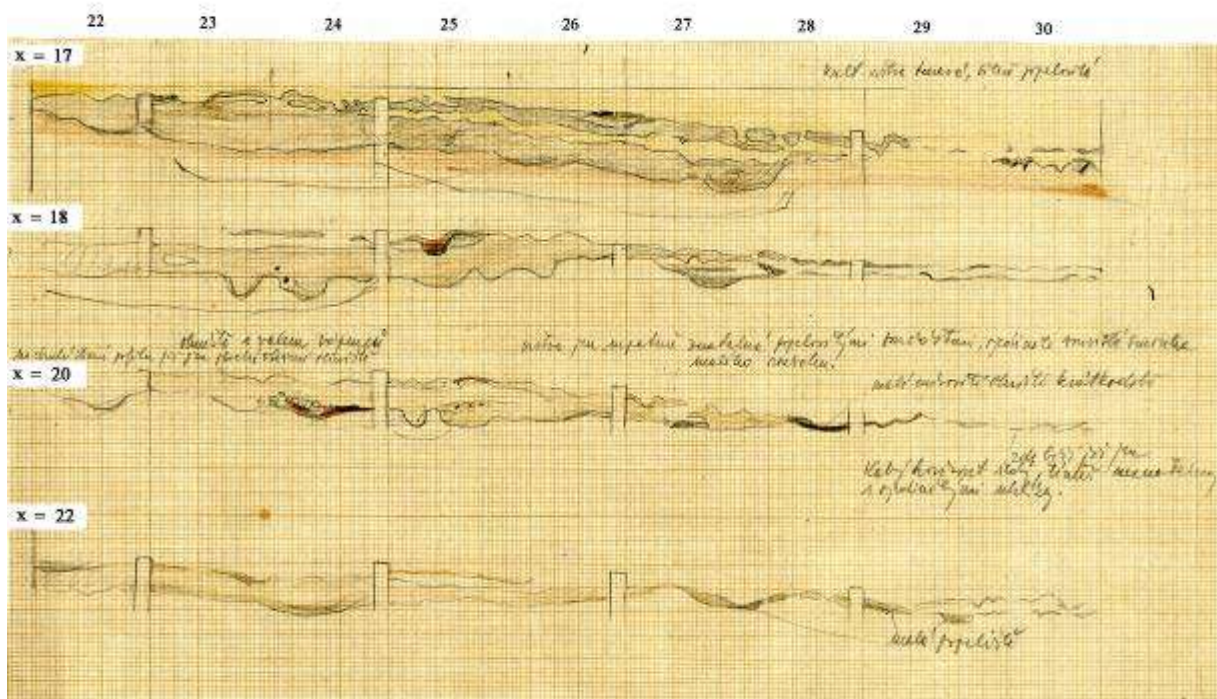


Figure 33. Area 1956-B, a series of crosssections through the cultural layers, from east to west, at 2 meter intervals. Feature 7 is dissected in the eastern section, and feature 11 in the middle section (left).



## 12. The Southeastern Periphery

This part of the site (excavated in 1957, 1964, and 1970-1972) is described by Z. Bartošíková. The area completes the eastern part of the feature and adds four separate hearths. Stratigraphically, the cultural layer is not as thick as in the central areas, but it clearly shows separation in microlayers at several places.

## 13. Conclusions

The spatial analysis of the Pavlov-Southeast area shows that the depression features and the multiple stratigraphies are usually correlated. This means that the „features“, or „settlement units“, were places of more intensive human occupation and activities, and when located inside a depression feature, conditions were more conducive to preservation. Shallow, archaeologically sterile loessic interlayers were deposited in these areas during time-intervals when the site has been abandoned. However, the idea that the features served as „traps“ not only for sediments but also for artifacts, is only partially confirmed by the spatial distribution of the artifacts (Chapter I.3).

Figures I.1.2-3 represent a general simplified plan of the features, reconstructed from partial plans and notes by B. Klíma. Our Figure 5 reconstructs the depressions as a summary of data from the available stratigraphic sections. It shows that no regular alignments were preserved at Pavlov and the features are circular, oval, or irregular in shape. In fact, only feature 5 represents a classic case of a circular, subsurface dwelling with a central hearth. In addition, interpretation of features and artifact distribution patterns should take in account both human activity and postdepositional processes (Svoboda, ed. 1997, 194, Verpoorte 2000a). Slope movements may be responsible for the destruction and deformation of features, disturbance of skeletons (cf. the human burial Pa-1), and selective accumulations of objects based on their weight (cf. certain concentrations of small bones and microliths). Spatial overlapping of features and artifact concentrations is only very general (cf. the 1953 and 1957 areas), and in certain areas (1954-1956) the artifact densities do not fit exactly with the supposed "dwellings".

Within the 1954-1956 areas, the situation is more complex compared to the previously analysed 1953 area, where both the stratigraphy and spatial patterning around the central feature 3 provided a more consistent and better readable picture. We interpret the situation at Pavlov 1954-1956 as a result of:

1. intensive reoccupations of the presumed „dwellings“
2. activities performed both inside and outside of the „dwellings“
3. effect of postdepositional processes.

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