21

Chokurcha I: Introduction

Victor P. Chabai

The history of the investigations of the site of Chokurcha I and of its materials is most dramatic. Its first principal investigator, N. L. Ernst, was repressed by the political regime at the beginning of the 1930s, before he could finish the study of the materials he had excavated. The second principal investigator, B. I. Tatarinov, perished during the Second World War, again, before his study of the materials was complete. The field documentation, almost all faunal materials, and most of the artifacts from Chokurcha I were also lost during the war, although small artifact collections are in museums in Simferopol, Odessa, and Kiev. For about ten years after the war, the site was enthusiastically destroyed by local amateurs. During the mid-1950s, the site was well conserved under about 2 m of industrial debris when the area in which the site was located became a garbage dump.

The Chokurcha I investigators published only a few preliminary reports, describing the site setting, the stratigraphical overview, and providing some general impressions of the faunal and artifact assemblages, without reference to the stratigraphy (Zabnin 1928; Ernst 1929, 1934). In addition, the small portion of the faunal assemblage that was preserved in Leningrad and Moscow was published after World War II (Gromov 1961; Vereshchagin and Baryshnikov 1980).

As so often happens, in spite of the complete absence of information about industrial variability, stratigraphy, and chronology, the Chokurcha I material has often been specifically cited in broad syntheses of the region (e.g., Praslov 1984; Hoffecker 2002).

Setting and History of Investigations

The Chokurcha I rockshelter is situated in a limestone cliff in the Second Range of the Crimean Mountains, on the left bank of Malyi (Small) Salgir River. Now, it is in the Simferopol suburbs, but during the first half of twentieth century, it was close to the Tartar village of Chokurcha. The rockshelter is located at the base of a 25–30 m cliff of soft Middle Eocene nummulitic limestone and is 8 m above the present river valley. The distance from the rockshelter back wall to the river is 75 m (Ernst 1934:186–187). A relatively large semi-crescent-shaped, flat platform is situated in front of rockshelter. The diameter of this platform is about 30 m: that is, the edge of this platform is 40 m from the present river. Before the excavations, Chokurcha I was 7 m wide, 4.5–5 m deep, and 1.75 m high (Ernst 1934:186). If the original width and depth dimensions reported by Ernst are accurate, the height of the roof was increased up to 4 m after the removal of rockshelter deposits. At bedrock, the rockshelter had an area of a little more than 40 m^2.

The primary historical source for the investigations at Chokurcha I is the preliminary article of N. L. Ernst (1934). This article provided little information about the development of his excavation strategy, discussion of the meaning of the faunal and artifact assemblages, or what changes might have taken place

throughout the occupations. It did, however, present preliminary analyses of the site's stratigraphy and its fauna and artifact assemblages.

In 1927, a local amateur archeologist, S. I. Zabnin, dug a sondage inside the rockshelter and found rich archeological materials (Zabnin 1928). During four field seasons, from 1928 until 1931, the site was excavated by N. L. Ernst, a lecturer at the Simferopol Pedagogical Institute, together with S. I. Zabnin and a professor of geology, P.A. Dvoichenko. As reported in 1934, they excavated 120 m^2 of sediments (Ernst 1934). In fact, however, they exposed about 195 square meters (Figure 21-1a): it appears that Ernst counted only the squares in which culture-bearing deposits were found. At the same time, not all exposed squares were excavated to bedrock. With the exception of a 7 m^2 "control area," they removed all the sediments from inside the rockshelter. B.I. Tatarinov's excavations in the late 1930s exposed no more than 12 m^2 on the southern edge of the previous excavations and within the previously excavated area.

In Ernst's published preliminary stratigraphic observations (Ernst 1934:187–189), he subdivided the Chokurcha I stratigraphic sequence into five layers (Figure 21-2). The maximum thickness of deposits, ca. 5 m, was found in rows 13 and 14. The first (upper) layer contained Holocene sediments, while Layers 2, 3, 4, and 5 contained Pleistocene deposits. N. L. Ernst distinguished four horizons within Layer 1. He noticed that the first (upper) horizon of Layer 1 included artifacts from the "Russian period" back to the fifteenth century. The second horizon of Layer 1 contained ceramics of Medieval Byzantine times, the third had Late Scythian material, including two burials, while the fourth horizon was defined as belonging to the Kizil-Koba culture of the Late Bronze/Early Iron Ages. Nothing was found stratigraphically between the Late Bronze Age occupation and the Middle Paleolithic occupations of Layer 2. At the same time, it appears that during the Bronze/Iron Age occupations, the rockshelter and some of the platform area were flattened by their inhabitants: at least, it is obvious that the upper part of Layer 2 was cut out (Figure 21-2).

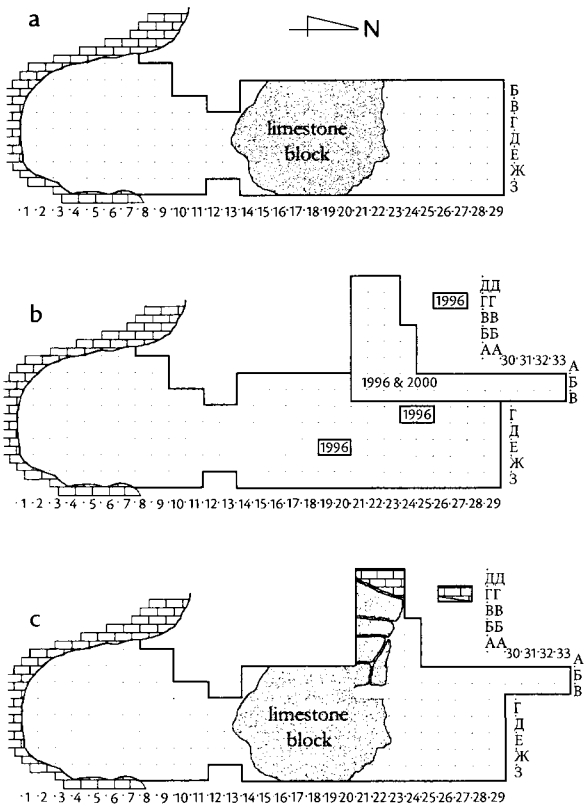

Figure 21-1—Plans of the excavated areas at Chokurcha I: *a*–the area excavated by N. L. Ernst; *b*–the areas excavated during the 1996 and 2000 field seasons in addition to Ernst's excavation; *c*–the configuration of the back wall and rockfall.

Ernst thought that the "bright yellow" Pleistocene deposits of Layers 2, 3, and 4 had the same content and structure. The only difference he saw was in the amount of ash content. He noted, "Layer 3 was a little darker than Layer 2, while Layer 4 was darker than both Layers 2 and 3, because of intensive exploitation of fireplaces by the prehistoric inhabitants of the cave" (Ernst 1934:189) and this served as the basis for the subdivisions. There were two 1 to 10 cm-thick sub-levels of "cemented silt" that separated Layer 2 from Layer 3, and Layer 3 from Layer 4. The cemented silt sub-levels were found inside the rockshelter, but outside they were not so pronounced, or not present at all. The origin of the cemented silt was explained as the result of low energy water processes. An additional difference between the rockshelter and the platform area was noticed: there were more big limestone blocks outside the rockshelter than inside. One of them, found "on the border between Layers 3 and 4," was a solid 1.75 m-thick block of limestone, which covered about 50 square meters of the site area (Ernst 1934:189, 190). Layer 5 was different from the overlying deposits: it contained only white limestone gravel. Neither bones nor artifacts were found in Layer 5.

Based on the 50 m^2 block and the cliff wall configuration, Ernst decided that the Chokurcha I shelter had a quite different shape before the series of rockfalls which destroyed it. He thought that Chokurcha I was a cave with a "relatively narrow entrance, which was not directly exposed to the north" (Ernst 1934:194).

The faunal remains recovered during these early excavations were mainly saiga, horse, bovid, and mammoth. *Hyæna spelaea*, *Ursus spelaeus*, *Rhinoceros tichorhinus*, *Cervus megaceros*, *Cervus elaphus*, and *Vulpes* sp. were also present. Saiga and horse were said to be well represented in all Pleistocene layers. Hyæna was found in Layer 2, while mammoth

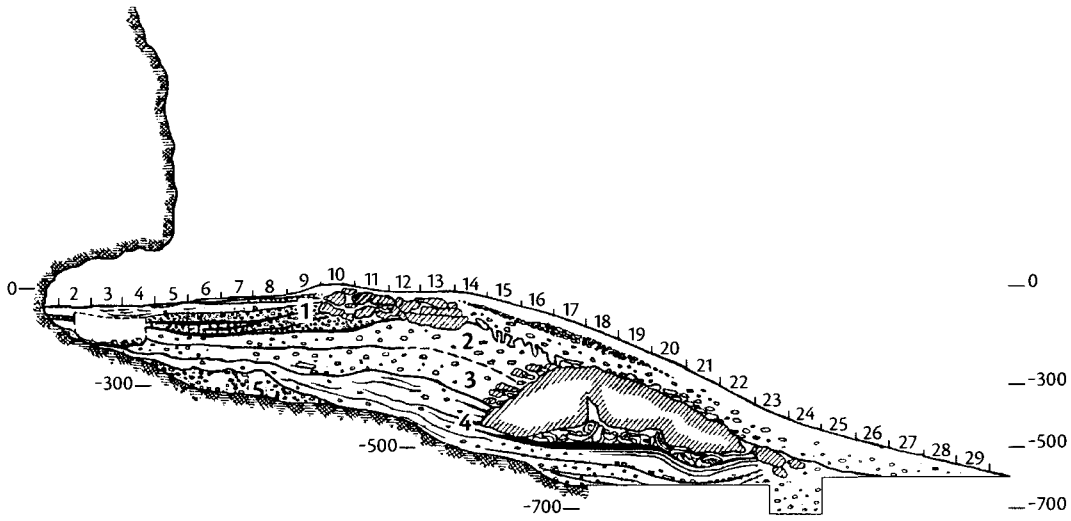

Figure 21-2—Chokurcha I stratigraphical section along the line B/Г from the 1928–1931 excavations.

remains were most numerous "on the border between Layers 3 and 4" (Ernst 1934:190–191). These mammoth remains at the Layer 3/4 interface were composed of a pile ("heap") of fragmented bones, skulls, and tusks. This 80 cm-thick pile covered about 18 m^2 of the site. The bone, skull, and tusk fragments belonged to twenty individuals. The tusks and mandibles were spatially separated from the skulls, as were the long bone epiphyses. The majority of long bone fragments exhibited clear cut marks. All skulls were pierced. No map of this concentration is available. A. P. Chernysh and V. P. Liubine interpreted this concentration as a "dwelling structure" similar to that of Molodova I (Chernysh 1965; Liubine 1970).

In spite of the preliminary nature of Ernst's article, some useful information was provided about the lithic artifacts. Ernst reported about one thousand tools from all Pleistocene layers. He mentioned that the percentage of tools was very high; "the assemblages of Layers 2 and 3 consist almost entirely of finished pieces," while "in Layer 4 both tools and debris were found" (Ernst 1934:196, 201). The tools were manufactured on a high quality black and grey flint and, sometimes, on flint pebbles. The bifacial tools composed about 24% of the tool assemblage, but only a few handaxes were found. The scraper shapes were variable and "do not show characteristic types" (Ernst 1934:196). The scrapers ranged from 2 to 9 cm in length. The bifacial points tended to be laurel leaf-shaped with a length : width ratio of 10 : 5.5. The unifacial points included both symmetric and asymmetric shapes, which very often had thinned bases. The size of unifacial points varied from 3 cm to 12 cm. Ernst especially noticed both unifacial and bifacial "triangular tools," with three more or less straight retouched edges. Usually, the length of these triangular edges was 3–4 cm and very rarely reached 5 cm. This type accounted for about 5% of the tool assemblage (Ernst 1934:199). Also, he recognized crescent-shaped tools, which had been previously described. These had two converging retouched edges: one straight, the other convex. Along with flint tools, Ernst reported the presence of pebble hammerstones, bone retouchers, and bone awls (Ernst 1934:195, 202–203).

Within the framework of a cultural-chronological paradigm, the characteristics of the tool-kit led Ernst to compare Chokurcha I with such sites as Kiik-Koba, Ilskaya, La Micoque, and Ehringsdorf (Ernst 1934).

Unfortunately, more detailed information about the previous investigations of Chokurcha I is not available. It is not clear what kind of excavation procedures were employed by Ernst, but it is not terribly important because, in any case, the materials from his excavations are lost. On the other hand, it is clear that the "layers" recognized by Ernst reflected both geological and archeological processes. Moreover, these "layers" were not archeologically homogeneous, as seen in the description of the Holocene Layer 1 horizons. There is no published information about the subdivision of the Pleistocene Layers 2, 3, and 4 into horizons or levels. Most likely, each of these 1 meter-thick layers contained several occupational episodes. At least, the site section profile, along the B/Г line, shows that Layer 4 consists of numerous ashy lenses (Figure 21-2). Because the layers have both archeological and geological content, the term "unit" will be used from now on. This means that Layer 4 of Ernst's excavations is equivalent to Unit IV of the 1996 and 2000 excavations.

Excavation Strategy and Methods of the 1996 and 2000 Field Seasons

The 1996 field season at the Chokurcha I rockshelter and the platform in front showed that all deposits 3 m or more above the datum used by Ernst no longer exist. There were no Pleistocene sediments left in the eastern part of the platform. Also, the rockshelter was empty. This meant that there was no chance to find even remnants of Layers 1, 2, and 3 of Ernst's excavations. The sondages and trench (Figure 21-1b) in the western part of the rockshelter platform revealed that more or less undisturbed Pleistocene sediments were partially preserved under the limestone blocks in 14 squares: 21ББ, 21А, 21Б, 21В, 22ББ, 22А, 22Б, 22В, 23ББ, 23А, 23Б, 23В, 24ББ, and 24А. Unfortunately, it did not mean that there was a 14 m^2 excavation area. The numerous holes made by local amateurs in the walls of this excavation block reduced this area at least by half.

The lower part of the newly exposed limestone block in square 21В has the same elevation (-500) as the limestone block in the border of squares 21Г and 21В in Ernst's stratigraphic section (Figures 21-1c, 21-2, 21-3). It is therefore apparent that the preserved portion of the Pleistocene sediments seen in the recent excavations belong to Layer 4 of Ernst's stratigraphic subdivision, or Unit IV in the newly adopted nomenclature. During the 1996 and 2000 field seasons, this limestone block was found in squares 21ДД, 21ГГ, 21ВВ, 21ББ, 21А, 21Б, 22ГГ, 22ВВ, 22ББ, 22А, 22Б, 23ВВ, and 23ГГ, while the back wall was exposed in squares 21ДД, 22ДД, 23ДД, 23ГГ, 26ГГ, and 27ГГ (Figure 21-1c). The connection between the "western back wall" and the limestone block rockfall exposed by Ernst and in the 1996 and 2000 field seasons is obvious.

The excavation procedure was based on methods previously adopted for carpet-like occupations (Chabai 1998b) and three-dimensional mapping at a scale of 1 : 10 cm was employed. All sediments were successively processed through 5 mm and 1.5 mm screens. Because of the soft sediments, brushes were the main, and sometimes the only, tool used during the excavations of Unit IV.

Stratigraphy

The stratigraphic sequence exposed in 1996 and 2000 contains about 2 m of Pleistocene deposits, divided into Units IV and VI (Figure 21-3). Unit V was found by Ernst within the rockshelter, but it is missing in the new excavation area. The maximum thickness of the soft sediments is about 1.5 m, subdivided into 22 layers within Units IV and VI. Most of the fine sediments in these layers were fluvial, while the larger fraction was mainly derived from local limestone exfoliation with some water-transported limestone gravel.

Layer III-IV is the limestone blocks, which probably separated the old geo-archeological Layers 3 and 4. The lower parts of these limestone blocks were exfoliated.

Layer IV-A is light grey sediment composed of clay, sand, and medium-sized (5–10 cm in maximum dimension) limestone fragments. Some of the limestone pieces are water rounded, but most are angular *éboulis*. The thickness of Layer IV-A varies from 5 to 14 cm. This layer contains some evidence of human occupation.

Layer IV-B is dark grey sediment consisting of sand and clay components. Small pieces (less than 5 cm in maximum dimension) of limestone *éboulis* were also found. The thickness of Layer IV-B is about 8 cm. The dark color of this layer is explained by the numerous ashy lenses in its middle part. The thickness of these lenses is about 1–2 cm. They are not continuous and do not have clear plans or profiles. Artifacts and bones stratigraphically correspond with these ashy lenses.

Layer IV-C is yellow-brown sediment of sand, clay, and small pieces of limestone. The limestone gravel includes both angular *éboulis* and rounded gravel. It is archeologically sterile. The thickness of Layer IV-C varies from 5 to 12 cm.

Layer IV-D is brown and composed of clay, silt, and small pieces of limestone, both angular *éboulis* and rounded gravel. The thickness of Layer IV-D is 1 to 5 cm. Some artifacts and fauna were found.

Layer IV-E is similar to Layer IV-D but it is lighter in color and is archeologically and faunally sterile.

Layer IV-F is grey sediment of sand and clay, with some small angular *éboulis*. The thickness of Layer IV-F varies from 6 to 10 cm. Numerous artifacts and bones were found.

Layer IV-G is yellow sand with a little clay and small to medium-sized pieces of limestone. The thickness of Layer IV-G varies from 1 to 12 cm. Some "ashy" lenses occur within this layer but their thickness does not exceed 1 cm. The artifacts and fauna in this layer were not associated with these ashy lenses. Most likely, these lenses are of natural origin: perhaps, they are lenses of organic material transported by alluviation.

Layer IV-H is grey sediment composed of sand, clay, and small/medium-sized rounded limestone gravel. The thickness of this layer varies from 1 to 10 cm. There are no artifacts or bones present.

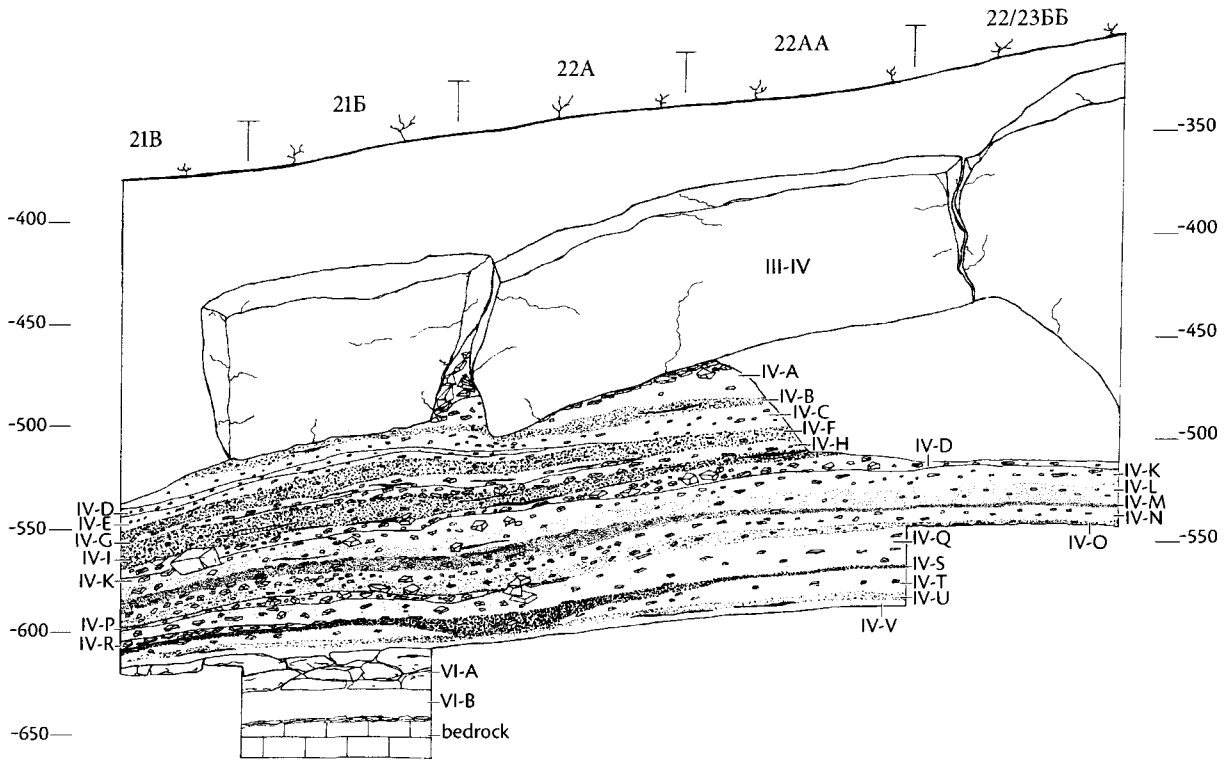

Figure 21-3—Chokurcha I stratigraphical section along squares 21В, 21Б, 22А, 22АА, 22/23ББ from the 1996 and 2000 excavations.

Layer IV-I is dark grey sediment of clay, sand, and small rounded limestone gravel. The thickness of this layer varies from 5 to 12 cm. There are two levels of ashy lenses with artifacts and bones. The thickness of each lens is about 1 to 2 cm.

Layer IV-J is light yellow sand with small/medium-sized rounded limestone gravel. The thickness of Layer IV-J is 5 to 15 cm. It is archeologically and faunally sterile.

Layer IV-K is light grey sediment of clay, sand, and medium/small-sized limestone gravel and *éboulis*. In addition, a few relatively large limestone pieces (20–30 cm in maximum dimension) were found. This layer varies from 10 to 4 cm in thickness. Some artifacts and fauna were recovered.

Layer IV-L is grey sediment with clay and sand components, and small and medium-sized limestone gravel and *éboulis*. The thickness of Layer IV-L is 4 to 11 cm. This layer contains two slightly ashy lenses with artifacts and fauna. The thickness of each lens is about 1 cm.

Layer IV-M is dark grey sediment composed of clay, sand, and a great deal of small to medium-sized limestone gravel and *éboulis*. The thickness of Layer IV-M varies from 2.5 to 10 cm. Some artifacts and fauna were found.

Layer IV-N is light grey sediment with clay, sand, and a lot of small to medium-sized limestone gravel. The thickness of the layer varies from 4 to 10 cm. Some artifacts and fauna were recovered.

Layer IV-O is dark grey, almost black, sediment composed of clay, sand, and many rounded small to medium-sized limestone gravels. The thickness of Layer IV-O varies from 3 to 12 cm. The dark color can be explained by its plentiful organic remains, including ash and burned bones. Numerous artifacts were recovered.

Layer IV-P is light grey sand with some limestone gravel and *éboulis* of different sizes. Some artifacts, as well as a few bones, were recovered.

Layer IV-Q is light grey sediment of clay, sand, different sizes of limestone gravel, and a few pieces of *éboulis*. The thickness of Layer IV-Q varies from 6 to 18 cm. Some artifacts and faunal material were found.

Layer IV-R is grey sand with small/medium-sized limestone gravel and *éboulis*. The thickness of the layer is 1 to 4 cm. It is archeologically and faunally sterile.

Layer IV-S is dark grey sediment, almost black, of sand, clay, and small-sized limestone gravel. The dark color is due to a high organic content, which is mainly ash. Some artifacts and fauna were recovered.

Layer IV-T is grey sand and contains limestone gravel of various sizes. The thickness of this layer varies from 1 to 12 cm. A few artifacts were recovered.

Layer IV-U is dark grey clay with small limestone gravel. The thickness of the layer is 5 to 7 cm. A few ashy lenses with some bones and artifacts were found in this layer. The thickness of each lens is less than 1 cm.

Layer IV-V is grey sand with small limestone gravel. The thickness of this layer is 3 to 10 cm. A few bones and artifacts were recovered.

Layer VI-A is a solid horizon of limestone gravel. The thickness of the layer is about 20 cm. Not a single artifact or bone was recovered.

Layer VI-B is yellow sand without limestone gravel. The thickness of this layer is about 12 to 14 cm. Neither artifacts nor bones were recovered. In addition, the same sand was found in a sondage in squares 35–38Б, situated at the edge of the Chokurcha I platform. The thickness of the sand in squares 35–38Б is at least 2.5 m (from -7.50 m to -10.00 m below datum). Unfortunately, there is no direct connection between the stratigraphic sequence of the sondage and the 1996/2000 excavation area, because along lines 25–34, Pleistocene sediments were absent (see Figure 21-1).

Bedrock was exposed in square 21Б at a depth of ca. -6.50 m below datum.

Apparently, the area excavated during the 1996 and 2000 field seasons is connected stratigraphically to the collapsed western part of the existing rockshelter since all the recently exposed layers have a similar west to east inclination (from the back wall of rockshelter to its entrance). It is also likely that the rock fall of Layer III-IV is related to the buried western wall, but not to the existing southern rockshelter. All of these observations support Ernst's hypothesis that the Chokurcha I rockshelter was originally much larger and different from its current configuration (Ernst 1934:187). If so, it means that area excavated in 1996 and 2000, as well as some of the platform area, were within the rockshelter and protected from colluviation.

Thus, about 1.5 m of sediments resulted from at least two major depositional events: alluviation and exfoliation of the ceiling and walls of the rockshelter. The alluviation is clearly seen by layers of sand (Layers IV-G, IV-J, IV-P, IV-R, IV-V, and VI-B), clay (Layer IV-U), and rounded limestone boulders (Layer VI-A). The exfoliation of the limestone roof and walls is seen by variably sized *éboulis* found in most layers, as well as by limestone blocks (Layer III-IV) from the collapsed roof of the rockshelter. The deposits of Layers IV-A through IV-F, Layers IV-H, IV-I, IV-K through IV-O, IV-Q, and IV-S probably resulted from both alluviation and exfoliation. Only Layer VI-A contains evidence of high-energy water: relatively large limestone blocks that are significantly rounded and that probably moved some distance. The accumulation of the sand layers, with the possible exception of Layer VI-B, resulted from low-energy alluviation.

The layers of Unit IV produced no rounded artifacts or bones. Some occupations within the sandy layers contain almost undisturbed structures, such as fireplaces. The color of the sandy layers varies from yellow to grey. This variation was caused by the amount of organic material present, which was the result of either human activity (fire?) or natural processes. In the latter case, it might have been caused by water transport.

In sum, the depositional history of the lower part of the Chokurcha I stratigraphic sequence might be described in following terms. The first documented stage of rockshelter evolution can be correlated with high energy alluviation that built up at least 30 cm of rockshelter deposits (Layers VI-A and VI-B). Most likely, the same kind of alluviation created more than 2.5 m of sand on the present day river terrace (sondage in squares 35-38Б). Thus, the deposits of Layers VI-A and VI-B were the part of Malyi Salgir riverbed. The second stage is characterized by alternating low-energy alluviation and rockshelter ceiling and wall exfoliation (Unit IV). During this second stage, the Chokurcha I rockshelter was inhabited by hominids. How long the rockshelter was affected by alluviation is unknown. According to Ernst, the sub-levels of cemented silt between Units II and III and between Units III and IV resulted from low-energy water processes (Ernst 1934:189). Yet, the origin of these sub-levels might be interpreted in two different ways: first, these lenses originated from flooding, and second, these lenses might be the result of cascading water from the plateau and cracks in the limestone roof of rockshelter. The second interpretation appears most plausible because the size of the area covered by cemented silt sub-levels and its position are almost wholly within the extant rockshelter. There were no cemented sub-levels on most of the platform area (Ernst 1934). Nor were "cemented silt"-type areas found in the 1996 and 2000 excavations. So, the low-energy alluvial process at Chokurcha I took two forms: pure sandy layers and sandy mixed with clay and limestone gravel. Alluviation was more frequent at the beginning of sedimentation at Chokurcha I rockshelter than it was later. If only sand and clay layers are considered alluvial, there are six episodes of flooding in Unit IV. Moreover, five of them happened during the deposition of the lower 50 cm of Unit IV. Thus, the Chokurcha I rockshelter was more affected by alluviation during the beginning of second depositional stage than during the later stage.

To some extent, depositional analogies to Chokurcha I might be seen at Starosele, Siuren I, Buran-Kaya III, and, probably, Prolom II (Marks et al. 1998; Demidenko et al. 1998; Monigal Chapter 1; Kolosov 1986). All of these localities are rockshelters close to present day valley bottoms and at all of them

the initial, uninhabited stages of deposits were alluvial. At the same time, these sites have no documented alluviation either during or between the human occupations. A series of alluviations was documented in the lower part of the Kabazi II sequence (Chabai in press). On the other hand, at Kabazi II, the human occupation surfaces were destroyed by these flooding episodes.

Thus, from a geological point of view, the Chokurcha I rockshelter is unique in Crimea, in that deposition was based on a combination of two major factors: the exfoliation of soft limestones and low energy alluviation. The combination of these factors produced a sufficient amount of sediments to quickly bury the remains of the human occupations, as well as to build up the sterile layers between them.

Chronology

In spite of numerous samples taken for ESR and AMS dating, only one date from Level IV-O is available. It is on bone, $\delta^{13}C = -19.8\%$, age >45,400 uncalibrated BP (OxA-10877). Two additional samples from Levels IV-B and IV-M failed to produce AMS dates due to their low collagen content. Dosimetry was conducted at the site by McMaster University and four samples (from Levels IV-B, IV-F, IV-M, and IV-O) were submitted for ESR, but these dates were still unavailable at the time of this writing.

Analyses of the snail and rodent remains indicate open steppe landscapes around the site during the formation of the Unit IV deposits (Mikhailesku Chapter 19; Markova Chapter 23). The rodent assemblage does not contain any boreal species. Such an environment is characteristic of conditions during the stadial between the Moershoofd and Hengelo Interstadials. In Crimea, this stadial was characterized climatically as the mildest, whereas the stadials preceding and succeeding it had harsher continental climates (Markova 1999; Gerasimenko 1999; Mikhailesku 1999). The Early Glacial Stadial is characterized by a humid and cold climate, with relatively widespread forested areas (Gerasimenko 1999). Furthermore, one of the most significant erosional down-cutting of river valleys took place during Moershoofd (Gerasimenko 1999; Chabai 1999). It is therefore probable that the Chokurcha I Unit IV sediments were deposited during the stadial between the Moershoofd and Hengelo Interstadials.

The Archeological Sequence and Occupation Characteristics

Twenty occupational levels were discovered within Unit IV. The majority of them contain clear occupational surfaces, some even contain structures. Yet, a few of these occupations may be questionable. Additionally, some traditional characteristics adopted for descriptions of occupational surfaces are meaningless in the case of the Unit IV levels. For example, artifact densities in Middle Paleolithic Crimean sites usually range from a few hundred to a few thousand pieces per cubic meter of artifact-bearing deposits. Only two of the twenty excavated levels here contain more than one hundred artifacts (without chips and chunks), and none of the occupation levels contain even a half of one cubic meter of artifact-bearing deposits.

Level IV-A contained artifacts and faunal materials from the upper and middle part of Layer IV-A (Figure 21-3). Level IV-A fauna and artifacts did not constitute a clear surface: rather, they were spread vertically over 5 to 8 cm. Average artifact density was 233 pieces per m^3.

Level IV-A2's occupation was situated in the lower part of Layer IV-A and was a clear carpet-like surface of bones and artifacts. The thickness of Level IV-A2 was determined by the thickness of a single bone or artifact. In fact, bones and artifacts of Level IV-A2 compose a thin carpet-like surface. It is difficult to evaluate the true amount of sterile sediments between Levels IV-A and IV-A2 due to the extremely low density of both bones and artifacts. The lowest elevations of Level IV-A were only 2-3 cm above the artifact/bone elevations of Level IV-A2. The artifact density was 200 per m^3. The artifact/bone distributions of both Levels IV-A and IV-A2 were limited to squares 22A, 22AA, 23A, and 23AA. The total area of these levels covered by artifacts was less than one square meter.

Level IV-B fauna and artifacts occurred in a 1 to 3 cm-thick ashy lens in the lower to middle part of Layer IV-B. The artifacts and bones here lie in thin carpet like surfaces within this lens (Figure 21-4a). The sterile sediments between Levels IV-A2 and IV-B were about 3–4 cm thick. The density of artifacts was 489 per m^3.

An elongated ovoid pit with abrupt, almost straight walls was discovered in this level (Figure 21-4a, b). The maximum dimensions of the pit were 28 cm in length, 9 cm in width, and 14 cm in depth. One straight scraper, one flake, three chips, and three small

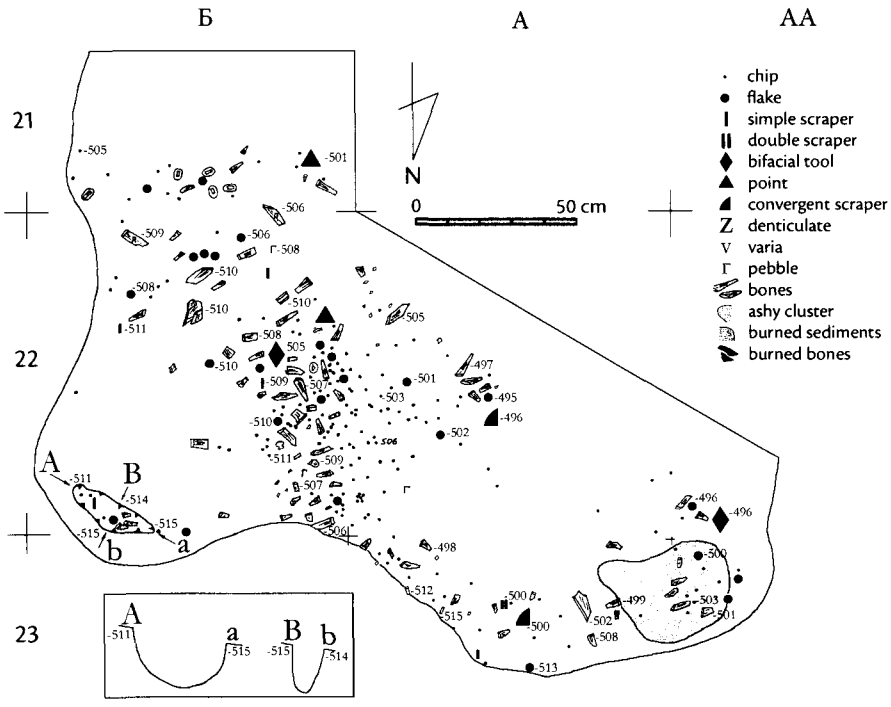

Figure 21-4—Chokurcha I: plan of excavations in Level IV-B, with cross-section of the pit in square 22Б.

pieces of bone tube fragments were recovered from the upper/middle part of the pit, while there was nothing at the bottom. The material from the pit, then, was all mundane, containing nothing special that might have been purposefully "hidden."

There was a dense cluster of ash in squares 23A and 23AA. This cluster had an irregular, close to ovoid shape with the maximum dimensions of 41 cm in length, 35 cm in width, and 0.5 cm in depth. It is quite possible to attribute this ashy cluster to an ephemeral fireplace. At the same time, the sediments below this "fireplace" were not burned, as is typical of other Crimean Paleolithic fireplaces. It might have been either a very ephemeral fireplace or an ashy cluster created by natural processes.

Level IV-D was situated in Layer IV-D and did not have a clear surface. Both fauna and artifacts were distributed vertically through the whole 1–5 cm thickness of Layer IV-D. The density of artifacts was about 150 artifacts per m^3.

Level IV-F occurred in the upper to middle part of Layer IV-F and was separated from Level IV-D by 11 to 14 cm of sterile sediments. The faunal material and artifacts of this level formed two ashy clusters. The first was found in squares 21–22B, 21–23Б, 22–23A and covered about 2.5 m^2. The second cluster of bones and artifacts was found in squares 23–24AA and 23ББ and covered about 1 m^2 area. Each of the clusters was about 2–3 cm thick. The density of artifacts in Level IV-F was 610 per m^3.

Level IV-G occurred in the upper part of Layer IV-G. Bones and artifacts were discovered in squares 23–24AA. The geological Layers IV-F and IV-G in these squares were very thin (about 2 cm each) and, in fact, there were no sterile sediments between the occupations of Levels IV-G and the second cluster of Level IV-F. The two archeological Levels IV-G and IV-F were subdivided because of the different color and structure of the geological Layers IV-G and IV-F. It is possible that Level IV-G and the second cluster of Level IV-F represent a single occupation, which began just after the deposition of Layer IV-G.

Level IV-I was found in the upper/middle part of Layer IV-I and was a ca. 3 cm-thick lens densely packed with artifacts, fauna, ash, and burned bones. The thickness of the sterile sediments separating Level IV-I from Levels IV-G and IV-F varied from 5 to 8 cm. Level IV-I was uncovered over an area of about 4.5 m^2. The density of artifacts was 1,119 per m^3.

Just under the Level IV-I ashy lens, in squares 22A, 23A, and 24A, three clusters of burned sediments were found. All of had roughly the same rounded shape and roughly the same maximum dimensions of 35 to 40 cm in diameter and 0.5 to 1 cm in thickness. These clusters of burned sediment might be interpreted as the remains of fireplaces. The upper parts of these possible fireplaces were not recognized because of the extreme ashy content of the sediments in Level IV-I.

Level IV-I2 was found in the lower part of Layer IV-I. It was separated from the uppermost Level IV-I by 4

to 6 cm of sterile—but still ashy—sediments of Layer IV-I. The Level IV-I2 artifacts and fauna formed a clear carpet-like surface. The thickness of this "carpet" was equal to the thickness of a single bone or artifact. Level IV-I2 was found in squares 21–22Б and 21В. It was probably only the periphery of this occupation. The artifact density was 1,000 pieces per m^3.

Level IV-K was found in the upper part of Layer IV-K and was separated from the uppermost occupation of Level IV-I2 by 5 to 15 cm of the sterile sand of Layer IV-J. The artifacts and fauna from Level IV-K formed a thin carpet-like surface. The density of artifacts was 140 per m^3.

The most pronounced concentration of artifacts and bones was discovered in square 24AA (Figure 21-5). The same square also contained an amorphous 1 cm-thick cluster of ash and burned bones. The maximum dimensions of this ashy cluster were 118 cm in length, 73 cm in width, and 0.5 cm in thickness. Just below the ashy cluster were two adjoining clusters of burned sediments, one rounded and one ovoid in shape. The maximum dimensions of the rounded cluster were 41 cm in diameter and 0.5 cm in thickness. The maximum dimensions of the ovoid burned sediment were 23 cm in length, 15 cm in width, and 0.5 cm thickness. This structure might be interpreted as a fireplace that was somewhat enlarged and modified by natural processes.

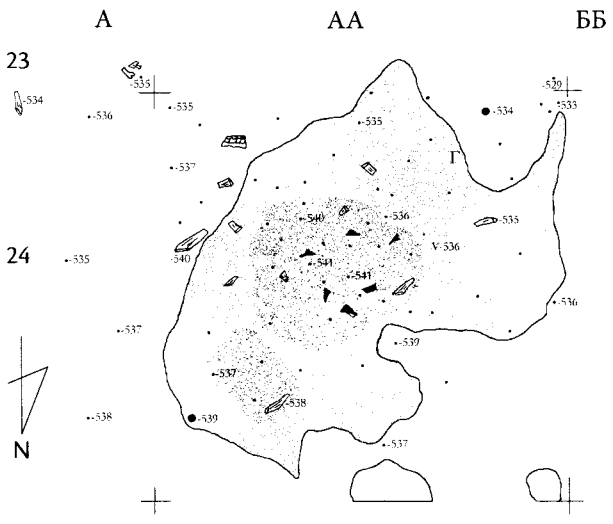

Figure 21-5—Chokurcha I: plan of excavations in Level IV-K, square 24AA.

Level IV-L occurred in the upper part of Layer IV-L. The carpet-like surface of artifacts and bones was part of a slightly ashy 1 cm-thick lens that covered an area of ca. 1.5 m^2 in squares 21–22В and 21–23Б. The Level IV-L artifacts were separated from the overlying Level IV-K by 6 to 7 cm of sterile deposits. The density of artifacts was 467 pieces per m^3.

Level IV-L2 comes from the middle/lower part of Layer IV-L. The artifacts and bones occurred as a carpet-like surface in a slightly ashy lens about 1 cm thick. The lens was found in squares 21–23В, 21–23Б, and 23А. The total excavated area of Level IV-L2 was about 3 m^2. It seems that only a peripheral part of the Level IV-L2 distribution was excavated in 1996 and 2000. The rest of it, to the north and east, was excavated and destroyed long ago. The sterile deposit between Levels IV-L and IV-L2 was 3 to 4 cm thick. The density of artifacts in Level IV-L2 was 367 per m^3.

Level IV-M originated from the upper and middle part of Layer IV-M. The level was represented by a solid, 2 cm-thick ashy horizon. The sterile sediments between Level IV-M and IV-L2 varied from 4 to 14 cm in thickness. The excavated area of Level IV-M was about 7 m^2. The density of artifacts was 800 pieces per m^3.

A combination of an ashy concentration with burned bones cluster and a burned sediment cluster was discovered in square 23А (Figure 21-6). The burned sediments were situated just under the ashy cluster. The maximum diameter of the ashy cluster was 44 cm, while the diameter of burned sediments was 25 cm. The combined thickness of both clusters was less than 1 cm. Most likely, this cluster combination is the remnants of a fireplace. The difference between the maximum diameters of the two clusters might be evidence of some sort of destruction of the upper part of the fireplace. Three smaller clusters of ash and burned bones were also found in squares 22А and 22Б.

Level IV-N occurred in the upper part of Layer IV-N. A few artifacts and bones were uniformly distributed through the 4–10 cm-depth of Layer IV-N. These artifacts and bones were uniformly distributed over about 7 m^2 of the Level IV-N area.

Level IV-O was discovered in the lower part of Layer IV-O. The level was a 3 cm-thick ashy horizon, with a homogeneous distribution of bones and artifacts over all of the excavated 8 m^2. It was difficult to evaluate the thickness of the sterile sediments between Levels IV-O and IV-N because the latter was not a clear level. The density of artifacts was 700 pieces per m^3.

Four ash/burned bone clusters were discovered in squares 23А, 24А, 23АА, and 24АА. They had irregular rounded shapes. The biggest had a maximum dimension of 46 cm in diameter and 0.5 cm in depth. The other ash/burned bone clusters were about the same size: 10 to 13 cm in diameter and less than 0.5 cm in depth.

Level IV-P was recognized from a few artifacts and bones in the sandy sediments of Layer IV-P. One tool, one flake, and thirteen chips were uniformly distributed throughout the 1 to 7 cm thickness of this layer and occurred over ca. 8 m^2 of excavations.

Figure 21-6—Chokurcha I: plan of excavations in Level IV-M.

Level IV-Q was a thin carpet-like distribution of bones and artifacts in the lower part of Layer IV-Q. The thickness of Level IV-Q was equal to the thickness of a single bone or artifact. The density of artifacts was about 280 items per m^3. Almost all artifacts and bones were situated at the border between the recent excavations and the old excavated area. That is, only the periphery of Level IV-Q was excavated during the 1996 and 2000 field seasons.

Level IV-S had the thickness of a single artifact or bone, and was a carpet-like occupation in Layer IV-S. Level IV-S was separated from the overlying Level IV-Q by 5 cm of the sterile sand of Layer IV-R. The density of artifacts was 167 per m^3.

Levels IV-T, IV-U, and IV-V were recognized on the basis of a few artifacts that were evenly distributed in Layers IV-T, IV-U, and IV-V.

Conclusions

There were three types of occupations at Chokurcha I. The first type is a very thin, carpet-like occupation, with a thickness equal to that of a single artifact or bone. This is the case for Levels IV-A2, IV-B, IV-I2, IV-K, IV-L, IV-L2, IV-Q, and IV-S. The second type is a relatively thick lens, up to 4 cm, of densely packed artifacts and fauna, which was seen in Levels IV-F, IV-I, IV-M, and IV-O. The third type has a uniform distribution of artifacts throughout the entire thickness of the geological layer, as in Levels IV-A, IV-D, IV-N, IV-P, IV-T, IV-U, and IV-V. There is no correlation between the type of sediments and the type of occupation. Both carpet-like deposits (IV-S) and artifacts uniformly distributed throughout the thickness of a layer (Levels IV-P, IV-T) were found in pure sand deposits. All three possible kinds of occupations—carpet-like (Levels IV-A2, IV-B, IV-I2, IV-K, IV-L, IV-L2, IV-Q), thick lens (IV-F, IV-I, IV-M, IV-O), and uniformly distributed (Levels IV-A, IV-D, IV-N) were found in deposits of mixed sands, clays, and limestone gravels.

There was no correlation between the preservation of artifacts and bones and the geology of the layers. The surfaces of bones and artifacts are consistently in excellent condition with neither water rounding nor weathering in both the mixed and sandy geological layers, as well as all three kinds of occupations. Artifacts in a vertical position were also very rare. On the other hand, the fireplaces were not well preserved. The upper ashy parts of fireplaces were slightly shifted in relation to the underlying burned sediments. The extent to which the ashy content associated with occupations resulted from human activity—as opposed to natural processes—is ambiguous.

It is difficult to evaluate the significance of the different artifact densities for so small an area. Artifact densities vary from 140 per m^3 for the carpet-like Level IV-K to 1,118.5 per m^3 for the thick lens of Level IV-I. On average, artifact density for the carpet-like levels was never more than 500 per m^3, while for thick lens levels, the artifact density was never less than 600 per m^3. These numbers do not mean that the higher densities equate with relatively longer occupations or even a greater range of activities of the same-sized groups as compared to occupations with low artifact densities. Even for carpet-like occupations, it is risky to state that they reflect a single visit. For example, both burned and unburned bones were found in the burned sediment cluster belonging to the carpet-like Level IV-K. It is also quite possible that thin carpet-like surfaces are merely peripheral areas of thick lens occupations. Most likely, the thick lens occupations reflect numerous different occupational episodes. In any event, fireplaces and clusters of burned sediments were always found just under thick lens deposits. That is, the clusters of burned sediments are evidence either of an initial occupational episode or the beginning of a single, longer occupation.

In sum, the occupation levels of Chokurcha I Unit IV, due to rapid sedimentation, are characterized by excellent preservation of both artifacts and fauna (Patou-Mathis, Chapter 22; Markova, Chapter 23), as well as by little, if any, post-occupational disturbance.