Chapter 4

STAROSELE: THE EARLY EXCAVATIONS AND UNANSWERED QUESTIONS

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INTRODUCTION

Before describing the methods and results of the new excavations (1993-1995) at Starosele, it is obviously necessary to present the database which existed prior to the new excavations. Most of these data come from several articles and a final report (monograph), mainly by the site's first excavator, A. A. Formozov (1954, 1958), but by others, as well (Alexeyev 1954; Gerasimov 1954; Roginsky et al. 1954). The only excavations before ours were conducted between 1952 and 1956. Additional information is also available from the many published articles by archeologists and others referring to Starosele, its stratigraphy, its finds, and its place in the Middle Paleolithic systematics of Eastern Europe, and Crimea, in particular. Thus, there was quite a lot of information available before the new excavations but, in spite of this, all was not clear. Rather than present an exhaustive review of the previously published data, only the important points will be discussed here, in order that the reader may understand why, after so many years of inattention, the archeology of Starosele was revisited.

SITE LOCATION AND DISCOVERY

The site of Starosele is located in southwestern Crimea, within the Kanly-Dere, a side box canyon which runs north into the Bakchisaraiskaya Valley at Starosele village, now within the northern edge of Bakchisarai town (fig. 4-1). In 1952, Middle Paleolithic artifacts were discovered on a rock platform along the base of the cliffs on the eastern side of the canyon, 11-13 m above the canyon bottom, by N. P. Katsur, an associate of the Bakchisarai Museum (Kolosov, Stepanchuk, and Chabai 1993: 145; Chabai 1996: 116, but see Alexeeva 1997; Kris 1997). At the time of this discovery, a young archeologist from Moscow, A. A. Formozov, had just received permission from the Bakchisarai Museum to survey for Paleolithic sites around Bakchisarai and, as a professional archeologist, also was given the responsibility for excavations at the newly discovered sites (Formozov 1958: 5-6). Therefore, that same year, A. A. Formozov began excavations at Starosele.

FORMOZOV'S EXCAVATION OF STAROSELE (1952-1956)

Recognition of the Site and its Distribution

A. A. Formozov started to investigate the site in 1952, considering it a cave or rockshelter. He really never recognized the difference between the terms "cave" and "rockshelter," using them as synonyms when describing the site. In the following text, we will use only the term "rockshelter," because it is more appropriate, in terms of how Formozov understood and wrote about Starosele. First, A. A. Formozov considered the site (fig. 4-2) as being composed of a northern and a southern recess (in fact, he referred to them as caves). The northern recess looks like a real rockshelter, with a covered chamber ca. 15 m wide by ca. 5 m deep, while the southern recess is completely open to the sky, lacking any roof (fig. 4-3).

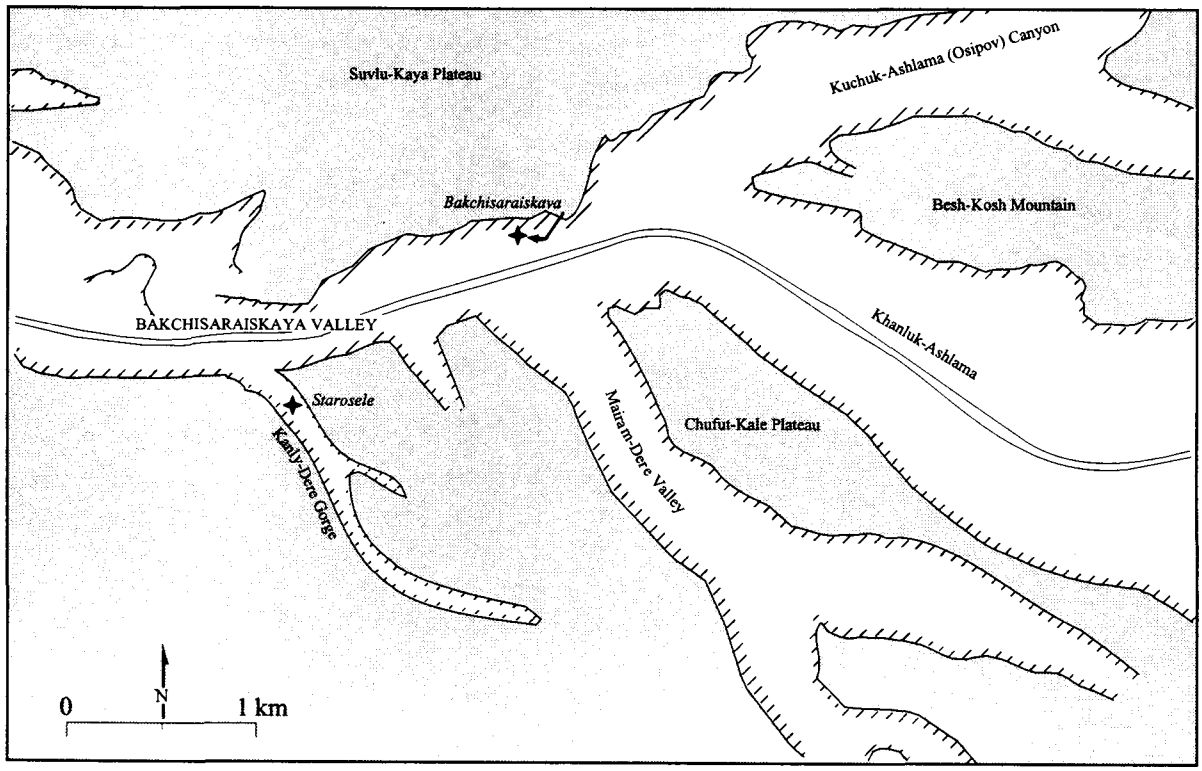

Fig. 4-1—Map of Bakchisaraiskaya Valley (redrawn from Formozov 1958: 13, pl. 5).

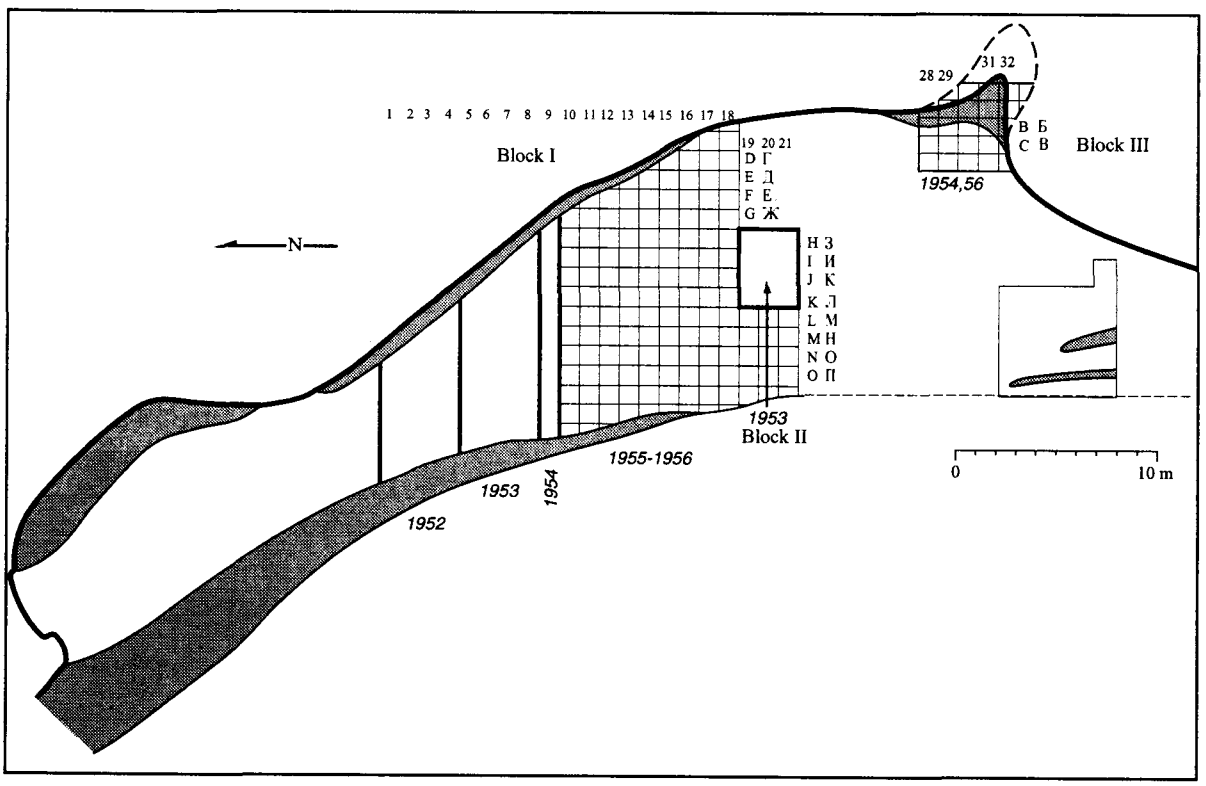

Fig. 4-2—Plan of Formozov's excavations at Starosele (Formozov 1958: 26, pl. 16).

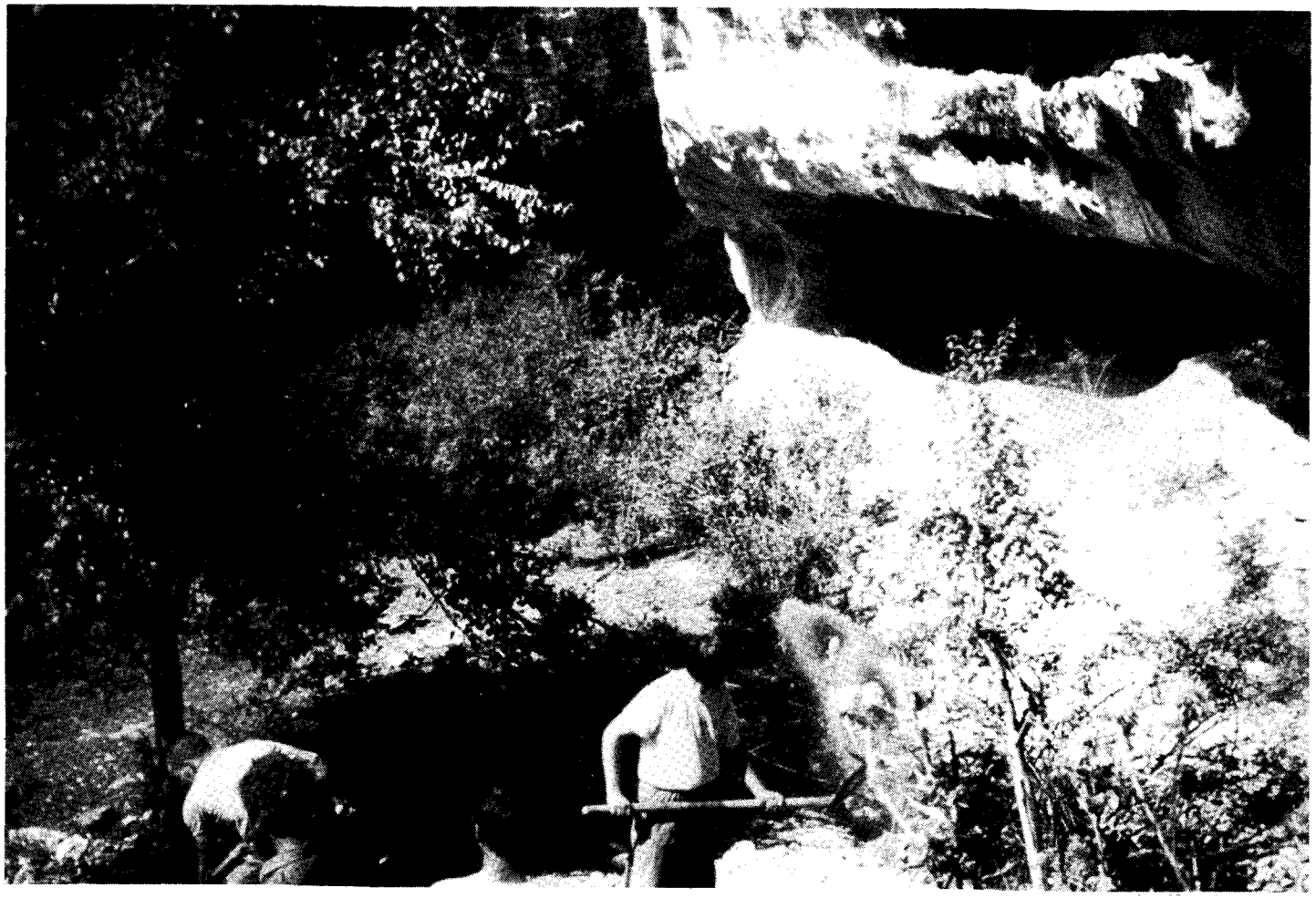

Fig. 4-3—Photograph of Starosele. View is to the north, with rockshelter/northern recess in background.

During the 1952 field season, A. A. Formozov excavated a layer of very recent sheep dung and ash in the northern recess, but below that layer was only bedrock. Therefore, he thought that the Pleistocene deposits with the Middle Paleolithic artifacts had been swept out in post-Paleolithic, probably Medieval, times by local people who wanted blocks of limestone from the bedrock of the shelter (Formozov 1954: 13).

After this initial test, A. A. Formozov started excavations in the southern "recess," beginning at its northern edge and, finally, found Middle Paleolithic artifacts and faunal remains in situ in Pleistocene deposits. During four field seasons, A. A. Formozov believed that he was excavating the preserved, central part of the site. In 1956, however, he was forced to change this opinion when the geologist M. V. Muratov, based on morphological observations of the bedrock of the northern and southern recesses, told A. A. Formozov that the northern recess was very recent, surely post-Paleolithic in origin, and that during the Middle Paleolithic it was simply a cliff wall (Formozov 1958: 21). So, given this, the Middle Paleolithic site was situated only in the so-called southern recess.

The Pleistocene deposits of the southern recess were located on an Eocene limestone bedrock bench. The maximum width of this bench is about 16 m, east-west, and its length is about 40 m, north-south. Consequently, the total site area could have been about 400 m^2 (fig. 4-2). Traces of early twentieth century limestone quarrying were visible on the cliff wall. The presence of large limestone slabs found during the 1953-56 field seasons within the Pleistocene deposits allowed A. A. Formozov to conclude that the site had been inside a rockshelter and that its roof (overhang) had collapsed partly during the Middle Paleolithic and then was almost completely destroyed by local people beginning in the eighteenth century or even earlier (Formozov 1958: 21-24).

Process and Methods of Excavation

A. A. Formozov, after his test of the southern recess, began his excavations from the northern edge of the site and moved south during the 1952 and 1953 field seasons. In this manner, he excavated about 70 m2—lines 1 through 8 of his excavation block, as illustrated in 1958 (fig. 4-2). The Pleistocene deposits had a considerable slope from south to north and, in accordance with this slope, the thickness of the deposits increased toward the south. Thus, the deposits along line 1 were about 0.30-0.70 m thick, while the deposits along line 8 were about 2 m thick (Formozov 1958: figs. 25 and 26). At the end of the 1953 field season, A. A. Formozov decided to excavate a 2x2 m sondage (squares J and K/19-20) in a central portion of the southern recess, in order to check and to define the stratigraphy in a part of the site with deeper sediments. In the upper part of this test (0.7-0.9 m below the modern surface) in square J20, A. A. Formozov uncovered a child burial, discussed below.

Although the test pit was excavated only down to the middle of the deposits, A. A. Formozov used this to define a level of huge limestone slabs across different parts of the site. It started from lines 5-8 and continued to lines 19-21 of his excavations (fig. 4-2). This level of huge limestone slabs, which was thought to be the collapsed roof/overhang of the rockshelter, was to serve as a major stratigraphic marker for Formozov's site descriptions.

During the 1954 field season, A. A. Formozov excavated both the squares of line 9 and the test pit of 1953 completely down to bedrock and began excavations of a new block (Block III) in the south-eastern portion of the site (fig. 4-2).

The excavations of the 1952-1954 field seasons can be considered the first period of the work at Starosele, because excavation methods were changed quite radically during next two field seasons (1955-56). First, prior to 1955, A. A. Formozov's excavation methods were very unusual, even for their time, because he did not use even a grid system (Formozov 1954: fig. 4), have any datum point, or make excavation maps of the vertical and horizontal spatial

distributions of artifacts. Perhaps, most surprisingly, he failed to excavate according to different stratigraphic layers or to correlate the recovered artifacts with them. Finally, not all his finds during the excavations were kept.

Owing to pressure from the head of the Crimean Paleolithic investigations, S. N. Bibikov, because of these "excavation methods" (Bibikov 1954), A. A. Formozov lost his official permission ("open list") to excavate Starosele. Dr. M. D. Gvozdover was given responsibility for excavations of the site during next two field seasons (Chabai 1996: 116-118).

Now, under the scientific and methodological control of Dr. M. D. Gvozdover, A. A. Formozov continued his excavations at Starosele. These excavations, during 1955-56, can be considered as the second period of excavations. At the beginning of the 1955 field season, the following methodological rules for excavations were initiated:

(1) A 1 m^2 grid system was established for the site and, accordingly, it was established that areas excavated from 1952 through 1954 were squares of lines 1 through 9 and 19 through 21 (fig. 4-2).

(2) A number of datum points were established, making possible accurate vertical controls, as well as the mapping of cultural stratigraphy and artifacts.

(3) All artifacts were kept, although only those animal bones thought to be identifiable were retained during excavations.

(4) Finally, it was decided that excavations would be carried out in four 50 cm thick arbitrary levels and that the artifacts and bone from each level would be kept separate. This was done because Middle Paleolithic artifact concentrations were found in several places, both above and below the level of the huge limestone slabs ("fallen roof").

Although the archeological levels were not separated according to different lithological horizons, nonetheless, such vertical subdivision of deposits during excavations could have permitted A. A. Formozov to get a sense of possible differences in both the natural stratigraphy and the vertical distribution of the Middle Paleolithic artifacts and bone in this site. Thus, the excavation methods were truly improved in comparison to those A. A. Formozov had used from 1952 through 1954.

During the 1955 field season, A. A. Formozov excavated the squares of lines 10-13 and, partly, squares of lines 14-16 (fig. 4-2). Only during this field season did he separate all finds by the four arbitrary 50 cm vertical levels. During the 1956 field season, A. A. Formozov decided that the upper two arbitrary levels should be lumped together, because there were not many artifacts in either of these levels. The lower two levels were also lumped together, because in Formozov's opinion they represented just one, quite thick cultural layer (Formozov 1958: 48). The level of huge limestone slabs ("fallen roof") served as the major stratigraphic marker between these newly recognized Middle Paleolithic cultural layers. During this last field season, A. A. Formozov excavated the squares of lines 17-18 and some squares of lines 14-16 and 19-21 (fig. 4-2). It must be noted that, even with the imposed improved excavation methodology, A. A. Formozov excavated about 140 m^2 of the site with a depth of deposits ranging from 2 to 4 m during last two field seasons. The speed of excavations was really incredible. Through such excavations, A. A. Formozov connected his excavation Blocks I and II and, accordingly, completely excavated the northern and central portions of the site (ca. 230 m^2). He also finished excavations of Block III (ca. 23 m^2).

At that point, A. A. Formozov finished his excavations at Starosele. The existing profiles along the southern end of the excavations were buried under 200 m^3 of backfill and limestone boulders. In this way, the site was closed by A. A. Formozov from possible "robber

excavations." By the end of the 1956 field season, a total of 250 m^2 of Starosele had been excavated (fig. 4-2) (Formozov 1958: 25).

Stratigraphy

Formozov's description of the Starosele stratigraphy is very complicated and, in places, confusing. A few examples of Formozov's approach to understanding site stratigraphy will be given before his description itself, so that it may become comprehensible. Although A. A. Formozov had the help of professional geologists, Drs. V. V. Bogachev and M. V. Muratov, they did not work constantly at the site during the excavations. In fact, they made only occasional and short visits to the site. Moreover, the geologists did not write any specific geological, stratigraphic descriptions either for A. A. Formozov's article or monograph. Therefore, all stratigraphic descriptions were done by A. A. Formozov himself.

In his stratigraphic descriptions, A. A. Formozov sometimes mentions advice given by the geologists (e.g., Formozov 1958: 29), in some other cases he describes situations when he forced the geologists to accept his particular opinion (Formozov 1958: 42-43). Although there is a chapter in his monograph specifically devoted to the stratigraphy (Formozov 1958: 25-52), stratigraphic information is found throughout all other chapters of the book. Therefore, it is very difficult to understand the real stratigraphic situation of the site, while reading the monograph. Thus, in one case, there is a statement that

> . . . [the] great thickness of cave sediments is connected not to a long period of site occupation, but to the speed of accumulation in the cave area of clay sediments by flood streams. Under such conditions, a great thickness of deposits could be accumulated quite quickly, while there were not any changes in the site's flint industry for this time period. Thus, we can combine in one unit all finds from the Starosele site and consider them as practically contemporaneous. (Formozov 1958: 77, author's translation)

On the other hand, on another page of the book, can be found an absolutely different statement, to the effect that the site ". . . was occupied in the Mousterian epoch more or less continuously during quite long period of time" (Formozov 1958: 52, author's translation). This example of contradictory interpretations is not the only one concerning the stratigraphic descriptions and this, again, shows how hard it is to understand the actual site stratigraphy, as seen by A. A. Formozov. Nonetheless, we will present Formozov's original stratigraphic descriptions, because it shows what was believed by A. A. Formozov and others who used his work. Our descriptions of the stratigraphy, as seen in the new excavations, will demonstrate the problems inherent in the original work.

Since the excavations of 1953, A. A. Formozov recognized two main types of Pleistocene deposits at Starosele. The first is a kind of reddish clay, while the second is represented by angular limestone blocks. Aside from these two main types of deposits, A. A. Formozov also noted some levels of gravel, a level of huge limestone slabs ("fallen roof"), and rolled and unrolled rocks embedded in reddish clay deposits. It is clear that Formozov's reddish clay deposits included different types of clay, loam, and silts of different color, as well as gravel lenses. Combining all these different types of deposits under one term was done because he believed that all these deposits were "not of different age, do not cover one another and each turns into another in different site areas" (Formozov 1958: 29). Additionally, the geologists considered such deposits to belong to one geological unit (Formozov 1958: 29). The level of huge limestone slabs ("fallen roof") was considered a geological marker and as a catastrophic event which happened during the middle period of the accumulation of the site deposits. Also recognized were two steps of bedrock, forming the rockshelter's bench.

Observations of all these sediments allowed A. A. Formozov to build a sequence of sediment accumulation at the site (Formozov 1958: 43). In brief, it was as described below.

Alluvial deposits of clay and gravel accumulated on the lower bedrock step and on some lower areas of the upper bedrock step by periodic floods in the canyon bottom. Such floods rolled and washed in some limestone slabs in the lower clay deposits. On the other hand, on higher areas of the upper bedrock step, only fallen limestone slabs from the rockshelter's ceiling were accumulated, because floods did not reach these high areas of the rockshelter's bench. Some temporary streams, derived from the edge of plateau cliff above the south-eastern corner of the site, also affected the site (the area of excavation Block III) by running to the northern edge of the site and, therefore, destroying some of the original sediments in the northern site area. As noted above, the huge limestone slabs (the "fallen roof") fell down onto site sediments during a middle period of sediment accumulation. After the "fallen roof" level, clay sediments accumulated again by new stream action. At the same time, limestone slabs were accumulating from the rockshelter ceiling. This limestone slab accumulation on the highest areas of the site was falling straight onto the "fallen roof" level, while in the other areas of the site, it was falling onto the clay level which had been deposited by stream action.

In accordance with these stratigraphic observations, A. A. Formozov saw different stratigraphic sequences in different areas of the site, because of the interaction of flooding from the canyon, the streams from off the cliff plateau, and because the "fallen roof" level was not present across the whole excavated area (e.g., in squares of lines 1-5).

The site's northern area had no "fallen roof" level and clay deposits there had been destroyed by water action, leaving sediments of clays and gravels. The central site area was partly covered by the limestone slabs of the "fallen roof" and both above and below this level were clay deposits. The southern area had the most complicated stratigraphy where clay sediments lay on the "fallen roof" level of the limestone slabs, as well as below them. Sediment accumulation stopped in post-Mousterian times, when the canyon bottom became deeper and new floods could not reach the rockshelter's platform and its sediments.

This stratigraphic description was based on the strong assumption that site deposits were accumulated quite quickly and that the differences in stratigraphy meant almost nothing for possible cultural sub-divisions at the site (Formozov 1958: 77).

The description of the sedimentary history of Starosele left many questions unanswered and seems to be inaccurate in some ways. First, even as described, the 4 m deep deposits of the southern excavated area are certainly characteristic of several periods of accumulation, with a clear break in the middle represented by the "fallen roof" level of huge limestone slabs. Second, the reported the occurrence of 13 intact fireplaces below and two above the "fallen roof" level (Formozov 1958: 51, fig. 34), the fresh, unrolled condition of most flint artifacts, and the excellent faunal preservation, as reported by Formozov, all indicate that not all the so-called "clay sediments" were accumulated by strong floods. Third, from Formozov's description of the gravel sediment accumulations, their origins are not clear; in some cases, they appear to have been deposited by floods (actual gravels) but, in other cases, they seem to be small, limestone fragments exfoliated from the cliff face. Fourth, the position of the rolled limestone boulders in the sediments is not clear—did they occur throughout all sediments or just in some particular stratigraphic positions? The answers to these two last questions are crucially important for the understanding of the overall sediment accumulation.

Even based on Formozov's descriptions, it is obvious that the Starosele stratigraphy is very complex, and does not represent one episode of rapid sediment accumulation. Given the some 12,000 flint artifacts, about 60,000 identifiable animal bones, and the fifteen fireplaces in very different stratigraphic positions within the site deposits (Formozov 1958: figs. 26-28), a greater consideration of the rate and manner of sediment accumulation was certainly warranted.

Human Remains

As is abundantly clear from A. A. Formozov's monograph (1958), the discovery of the "Starosele child" during the 1953 field season greatly influenced his opinions about the relative dating of the Starosele deposits within the Middle Paleolithic and, accordingly, of the flint materials found therein. Given the importance of the child burial both to Formozov and to later workers, the details of its discovery and the numerous interpretations arising from it will be described in Chapter 6. Here, only its stratigraphic position and the attempts to confirm it will be presented.

On 24 September 1953, a skeleton of a child was found at a depth of ca. 0.7-0.9 m below surface, in square J20 of a 4 m^2 sondage (squares J/K-19/20) (Formozov 1954, 1958: 61-75; Marks et al. 1997). Because of the potential importance of the find, excavations were halted and a commission was sent to evaluate the situation of the discovery. The majority felt that the burial was in situ and, therefore, was Middle Paleolithic (Roginsky et al. 1954).

The lack of unanimity regarding its association with the Middle Paleolithic deposits, as well as its unclear phylogenetic status, resulted in putting Starosele into the western scientific literature more than any other Crimean Middle Paleolithic site.

While a number of experimental systems were tried to date the sediments and the burial (see Chapter 6), there were the normal attempts using geological data to establish the age of the Middle Paleolithic occupation, not merely to date the burial. First, geologist V. V. Bogachev proposed a Riss Glacial period for the human occupation at the site (Formozov 1954: 15). The accepted decision, however, was made by another geologist, M. V. Muratov, who dated the bedrock sculpting at the site to Rissian times and the reddish clay deposits above bedrock to the Last Interglacial (Muratov 1961: 355). Here we should note that until the late 1960s, the predominant opinion among Soviet archeologists for the chronological placement of the Paleolithic followed that of the prominent geologist and paleontologist V. I. Gromov, who established the border between the Mousterian and the Upper Paleolithic periods as occurring during Rissian times (Gromov 1948). Therefore, a determination of a Riss/Würm age for the Middle Paleolithic occupation at Starosele site by M. V. Muratov was considered in the 1950s to be a very late Mousterian. This geological date for the site was fully accepted by A. A. Formozov, because it was consistent with his view of a late Mousterian age for the site (Formozov 1958: 45-47).

Fauna

The faunal sample obtained during the five field seasons of Formozov's excavations was incredibly rich. In spite of the fact that A. A. Formozov kept only bones considered identifiable by the paleontologists V. I. Gromov and N. K. Vereshchagin, and all other bones were mainly discarded during excavations, initially there were reported to be 58,909 bones from 287 individuals of *Equus hydruntinus* in a faunal sample of 59,845 bones from 379 individuals of 20 different species (Formozov 1958: 53). Later, however, a modified list was presented which lowered the number of identifiable bones to 18,368 but did not change the dominance of the *Equus hydruntinus* (Vereshchagin and Baryshnikov 1980: 39). It also should be noted here that all animal bones from every part of the site, disregarding their horizontal and vertical provenience, were combined into one group, and were analyzed and published as a single unit. Thus, the fauna was considered as originating from one Middle Paleolithic archeological level. The noted great predominance of *Equus hydruntinus* among the identified faunal remains led A. A. Formozov to a strong assumption that they were evidence for a very specialized hunting strategy during late Mousterian times (Formozov 1958: 55-58; Vereshchagin 1967).

Flint Industry

As mentioned above, A. A. Formozov considered all the Middle Paleolithic finds "as practically contemporaneous," without any significant variability, and, therefore, combined them together, describing them as a single assemblage. At the same time, he especially noted that the Middle Paleolithic flints below the "fallen roof" level were much more numerous than those above that "stratigraphic marker." The decisions concerning the Mousterian age of the "Starosele child," the skeleton's "transitional" morphological features, which should have corresponded to a late Mousterian industry, the subsequent geological and other dates of the Starosele sediments, all obviously forced A. A. Formozov to look for very late Mousterian characteristics in the flint assemblage and, not surprisingly, he found them. In particular, he defined fifteen "evolved Mousterian" and "Upper Paleolithic" features in the flint assemblage. They are the following: (1) thin bifacial tools, (2) secondary treatment of bifacial tools by parallel flaking, (3) the presence of projectile points, (4) the presence of prismatic cores, (5) a number of blades and blade-flakes, (6) thin pieces of debitage, (7) a number of thin scrapers and knives, (8) the presence of tools resembling Upper Paleolithic retouched blades, (9) tools similar to end-scrapers, (10) a number of narrow points, (11) some asymmetric points similar to Châtelperronian ones, (12) a number of tools with "perfect" retouch, (13) the presence of burins, (14) the presence of tools like *pièces esquillées*, and (15) a great variety of tool types for a Mousterian period (Formozov 1958: 106-107).

Careful reading of Formozov's work and the artifact illustrations surely allow most archeologists to conclude that the so-called "Upper Paleolithic" tool types are represented by only single, mainly atypical examples. Also, the technologically "Upper Paleolithic" traits, as well as the so-called "evolved Mousterian" techno-typological features, might well be quite common characteristics of any Middle Paleolithic industry, while others may relate to specific, on-site reduction processes, unrelated to time or developmental stage. Quite apart from the possible meaning of the attributes he thought significant, the lumping of all the artifacts, regardless of their stratigraphic position, made it impossible to judge just which attributes really coexisted.

The general characteristics of the flint assemblage (12,023 flint artifacts, including 121 cores, 734 complete and 373 broken tools) are the following: characteristic primary reduction processes produced both radial and parallel cores. For the tool-kit, it is worth noting that, along with a predominance of simple scraper types, there were a number of unifacially convergent tools, as well as bifacial and partly bifacial tools (Formozov 1958: 76-110). This prominent bifacial typological component additionally allowed A. A. Formozov to consider Starosele as belonging with those Mousterian industries "with a bifacial tool tradition."

Bone Implements

Aside from the flint artifacts, M. D. Gvozdover also recognized about 250 bone pieces with some marks (Formozov 1958: 105-106; Gvozdover and Formozov 1960). These bones were subdivided by M. D. Gvozdover into two groups: the first contained bones with cut marks—traces of cutting meat from the bones. Such pieces, of course, were not defined as tools. The second group, however, was represented by typical bone retouchers for secondary flint tool treatment (retouching). Of course, these bone pieces were defined as real tools but were not intentionally prepared or shaped. This type of bone tool was already known for the Middle Paleolithic of Crimea, since its first recognition in the materials from Kiik-Koba (Bonch-Osmolowski 1940).

CONCLUSIONS ON FORMOZOV'S EXCAVATIONS AND THEIR RESULTS

In sum, from 1952 through 1956, excavations at Starosele uncovered rich Middle Paleolithic remains with numerous flint and bone artifacts, as well as faunal material, some features (15 fireplaces), and even human remains. These came from deposits over ca. 250 m^2 in area, with depths ranging from 0.3 m to 4 m in thickness. The total excavations approached 250 m^3. Unfortunately, during his excavations, A. A. Formozov paid little to no attention to the interrelationship between natural and cultural vertical and horizontal stratigraphies. Therefore, his conclusions concerning stratigraphy and the age of the site were based on the assumption of rapid sediment accumulation, which never seemed very convincing. In addition, the combination of all Middle Paleolithic artifacts and faunal material into one unit, as if excavated from a single cultural level, never seemed justified, either. There were also some problems with the "Starosele child" because of very different dates and its many distinct modern morphological features. Thus, the very intensive and large scale excavations of Starosele during 1950s left many unanswered questions with its very contradictory data, in spite of Formozov's detailed monograph (1958).

ATTEMPTS TO UNDERSTAND STAROSELE AFTER FORMOZOV'S EXCAVATIONS

It should to be noted that even during Formozov's excavations at Starosele (Bibikov 1954), as well as after them, there was a wide range of opinions among Soviet archeologists involved in Middle Paleolithic investigations in Eastern Europe about Starosele. Many felt that because of Formozov's excavation methods, his interpretations of the site stratigraphy and the Mousterian assemblage, the site and its materials needed some additional evaluation (e.g., Grigoriev 1968: 125-126; Gladilin 1971: 25-26; Kolosov 1972: 125-126; Lazukov et al. 1981; Kolosov, Stepanchuk, and Chabai 1993: 145-151). At the same time, such a reevaluation could be done only using Formozov's data and materials because new excavations were not then possible. Some attempts at reevaluation were undertaken by a number of scholars, using what information and material was available.

Establishing the Age of Starosele

In the mid-1960s, utilizing both geological and paleontological data simultaneously, two different specialists proposed later dates for the upper Starosele sediments and their cultural materials than had previously been proposed.

Geologist I. K. Ivanova (1965) made the suggestion, reinterpreting Muratov's description of the Starosele stratigraphy, that Paleolithic man first occupied the site at the end of Last Interglacial and then, after the period of the "fallen roof," continued to stay there during the Last Glacial. According to Ivanova, the sediments below the "fallen roof" accumulated by alluviation, while the sediments above the "fallen roof" had a different origin. The reported presence of mammoth, woolly rhinoceros, and arctic fox in the faunal sample also supported a Last Glacial Age, at least for part of the site. More precise dating was felt to be impossible, given Formozov's data (Ivanova 1965: 106, 1983: 26-28).

Richard Klein also suggested that the faunal materials ". . . indicate a Last Glacial (rather than Last Interglacial) age for the site. Particularly indicative are the presence of reindeer and arctic fox" (Klein 1965: 48).

After these reinterpretations of the dating of Starosele, this general Würm date was accepted by all specialists who studied the Middle Paleolithic of Crimea and Eastern Europe. Of course, it was only somewhat earlier in the decade that the Mousterian of Western Europe had been defined as an early Würm complex (Bordes 1961).

Much later, V. P. Chabai, using Ivanova's interpretation, a careful reading of A. A. Formozov's volume (1958), as well as utilizing as much as possible the published site profiles, also came to the conclusion that only the lower site sediments with rolled limestone boulders were deposited by alluvial processes (Kolosov, Stepanchuk, and Chabai 1993: 148-149).

A quite original sedimentologic-based interpretation of Starosele was proposed by paleontologist N. K. Vereshchagin. In his opinion, a Mousterian site was initially situated at the cliff edge, on the plateau, and then was washed down, over the cliff into the "rockshelter" during seasonal rains. Therefore, the site's Mousterian materials were not in situ, at all (Vereshchagin 1961: 383; Vereshchagin and Baryshnikov 1980: 33-35; but contra see Chabai in Kolosov, Stepanchuk, and Chabai 1993: 149-150).

Attribution of the Starosele Industry and Question of the Multi-layer Character of the Occupations

After Formozov's description of the Starosele Middle Paleolithic industry, a number of archeologists tried to place it into a specific industrial facies. We will only note the main attempts.

F. C. Howell, who was very impressed by the child skeleton at Starosele, following Formozov's published data, included the artifact assemblage along with other Crimean Middle Paleolithic assemblages (Kiik-Koba, upper layer and Chokurcha I) as having Charentian characteristics (Howell 1959: 38). In doing so, it was the first attempt to place the Starosele materials into the defined Western European Mousterian type industries.

A similar definition, but after personal observation of the lithic collections in Moscow, was proposed by R. Klein (1965, 1969). He also emphasized that the Starosele assemblage resembled F. Bordes' Charentian Mousterian yet, at the same time, had some peculiar typological features which showed real differences from the French Charentian assemblages. It is interesting to note here that both these American scholars paid little attention to the presence of bifacial tools at Starosele. For instance, Klein viewed what Formozov called miniature bifaces as Quina-type bifacial scrapers or as bifacial foliates (Klein 1965, 1969). By placing these tools within the Bordian type list and emphasizing F. Bordes' tool frequency graphs, the Starosele material did, indeed, seem most similar to the Charentian Mousterian, compared to the other French Mousterian industries.

Then, we should take note of V. N. Gladilin's definition of the Starosele flint industry. His conclusions were based on his personal observation of Starosele lithic collections from Formozov's excavations stored in Moscow and Leningrad. Initially, Gladilin (1966) recognized it as a "Levallois-Mousterian of Acheulian tradition." To arrive at such a definition, V. N. Gladilin used the presence of a number of debitage pieces with prepared butts as evidence for Levallois flakes and blades, as well as viewing the bifacial tools as indicative of an Acheulian tradition. As is clearly seen from this Starosele typological definition, V. N. Gladilin used a "wide" definition of Levallois technique, similar to that used by F. Bordes for his industrial subdivisions.

In the mid-1970s, however, V. N. Gladilin developed his own systematics for the study and classification of Middle Paleolithic industries of the Russian Plain and Crimea (Gladilin 1976, 1985). In this new classification, the Starosele assemblage was included as a separate type within the Eastern Micoquian group of industries. Because Gladilin's characterization of the Starosele material was the most specific until the early 1990s, it is useful to present it here. In brief, the Starosele assemblage had the following significant features (Gladilin 1976: 98):

(1) There were about equal proportions of radial and parallel cores and only a few classic Levallois radial ones.

(2) Levallois flakes (classical, with radial scar patterns) and points were very rare.

(3) The main technological indices were IF = ca. 35, Ilam<15.

(4) More than 40% of the debitage had unidirectional parallel dorsal scar patterns.

(5) Bifacial tools accounted for ca. 10% of all tools.

(6) Denticulates were not numerous.

(7) There were a lot of sidescrapers and points.

(8) Aside from numerous simple, well-known tool types, there were newly defined types, such as unifacial crescent and semi-crescent scrapers and points, as well as bifacial ones with thinned ventral surfaces, amygdaloid bifacial points, unifacial laurel leaf and partly bifacial points, and rectangular and sub-rectangular unifacial scrapers. There were also a number of leaf "projectile" points, both unifacially and bifacially shaped laurel and willow forms.

(9) Notches and Upper Paleolithic tool types were quite rare.

During his studies, V. N. Gladilin, using the labels on the flints to separate artifacts from the 1955-56 excavations according to Formozov's two horizons (above and below "fallen roof" level of huge limestone slabs), was able to see some techno-typological differences between these two horizons but, unfortunately, V. N. Gladilin did not pay much attention to these differences at that time and, therefore, he combined all data and presented his characteristics of the industry for all flints as a single unit. Along with this, V. N. Gladilin always considered Starosele to have two Middle Paleolithic cultural levels and expressed the opinion that more careful techno-typological analysis of the industry, according to the two levels, would be very desirable (Gladilin 1976: 97-98).

V. N. Gladilin was not alone in seeing the typological characteristics of the Starosele material as a kind of Eastern Micoquian. This opinion, based on Formozov's published data, was also independently expressed by several more archeologists (e.g., Bosinski 1967; Mania and Toepfer 1973; Gábori 1976; Allsworth-Jones 1986). Moreover, based on the Starosele artifact illustrations published by A. A. Formozov (1958), a special Micoquian knife-side-scraper, of Starosele type, was defined (Ginter and Kozlowski 1969: 51).

The discovery in the 1980s of three new Middle Paleolithic sites (Kabazi II, Kabazi V, and GABO) not far from Starosele and containing some assemblages similar to that of Starosele, led to another reconsideration of the Starosele materials.

V. P. Chabai, as part of his work toward his dissertation, "The Early Paleolithic of the south-western Crimea," was advised by V. N. Gladilin to study the Starosele materials, especially to define differences between the samples from above and below the "fallen roof" level. This material, from Formozov's 1955-56 excavations, was stored in Moscow. In the late 1980s, Chabai's observations of the collections from above ("cultural level 1") and below ("cultural level 2") the "fallen roof" level allowed him to define typological similarities of these two collections. His techno-typological characteristics of these two collections agreed with Gladilin's characteristics, with only one great exception. Chabai saw virtually no Levallois radial cores in "level 1," while such cores were present, although rare, in "level 2," along with non-Levallois parallel ones. In addition, he specially noted, in both levels, a great number of multi-sided, mainly convergent, unifacial tools, including quite numerous points, often with thinned ventral surfaces, which are not typical in Eastern Micoquian industries. These typological features allowed V. P. Chabai to exclude Starosele from the Eastern Micoquian Middle Paleolithic industrial group represented by Rikhta and Antonowka, and to define it as a special, separate Crimean Middle Paleolithic industry with bifacial tools. The predominance of non-Levallois, parallel cores in both "levels" of Starosele also allowed V. P.

Chabai to consider the materials from Starosele as a technologically late phase of the Starosele type industry (Chabai 1991; Kolosov, Stepanchuk, and Chabai 1993: 133-134, 145-155).

The leading archeologist of Crimean Paleolithic investigations of the 1960s-1980s, Yu. G. Kolosov, also expressed some ideas on Starosele and its Middle Paleolithic industry. First, he was in complete agreement that there were at least two, and maybe more, Middle Paleolithic cultural levels and only Formozov's excavation methods prohibited recognition of them and their characteristics (Kolosov 1972: 125-126). Moreover, Yu. G. Kolosov proposed that one of the Starosele levels might represent an Eastern Micoquian industry of Ak-Kaya type, following his opinion of the connections between bifacial tools and mammoth remains in the Crimean Middle Paleolithic (Kolosov 1986: 117).

The last significant contribution toward an industrial attribution of the Starosele industry within the Crimean Middle Paleolithic was proposed by A. I. Yevtushenko (1995). Using Chabai's classification of lithics from Formozov's excavations, some preliminary observations of the lithics from Level 1 of the 1993 excavations, as well as some similar flint assemblages from Kabazi II and Kabazi V, he suggested his own industrial interpretation of the Starosele industry. Following Chabai's notion of the marked significance for convergent, unifacial tools, he proposed that the Starosele industry should be viewed as a kind of amalgamation of both Micoquian and Charentian industries (Yevtushenko 1995).

CONCLUSIONS

The data available from Formozov's excavations at Starosele and their publication did not permit subsequent attempts at understanding the site and its materials to be very successful. While ideas abounded, no one was very sure of their interpretations, because of the quite poor and unsystematic original manner in which Formozov excavated and recorded his finds.

The following main unanswered questions, among many, seemed to us to be the most important which could be resolved by additional excavations:

(1) What was the real nature of the site stratigraphy and how did it originate?

(2) What were the actual vertical and horizontal distributions of faunal and artifactual materials and would they reflect occupational continuity?

(3) Was Formozov's description of the artifacts, lumped together, an accurate reflection of the assemblages from different lithological layers?

(4) How did Starosele date; was sediment accumulation really so rapid and, if so, when did it take place?

Although questions had been raised about the association between the Starosele child and the Middle Paleolithic artifacts, it seemed unlikely that any new excavations would shed light on this problem. It was quite to our surprise when our excavations did, in fact, help solve this problem and this is discussed in detail in Chapter 6.

As already noted in the Preface of this volume, new investigations of the Crimean Middle Paleolithic were strongly connected with the need for new excavations at Starosele. The absence of detailed new data on this site would have made it impossible to develop and justify any serious new ideas about the Starosele type industry, since the data on the eponymous site were so contradictory and unclear. It was an old idea to undertake new excavations at Starosele (e.g., Kolosov 1972: 126) but it was only realized by the Joint Ukrainian-American project during the 1993-1995 field seasons of excavations and, then, not without some conflict (Kohl 1996, with comments).