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Kiik-Koba Grotto: Significance for Paleolithic Studies in East Europe and the Former Soviet Union

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Introduction

Kiik-Koba grotto and its finds, including Neanderthal remains, occupy a special place not only in the Crimean Paleolithic. Their significance for Paleolithic studies in East Europe and the former Soviet Union in general is impossible to exaggerate. Its excavations in the 1920s and subsequent publication had a significant influence on trends in Paleolithic archaeology in this part of the Old World for many years (see Bonch-Osmolowski 1940), due to the scientific rigor of Gleb A. Bonch-Osmolowski of then Leningrad. According to Gladilin, his scientific works “entered into the Golden Fund of Soviet and World-wide archaeological science and till now remain exemplary” (Gladilin 1985).

The grotto is situated on the right bank of the Zuya river 120 m above the river’s modern water level, in a rocky massif of Jurassic limestone, within the northern spurs of Dolgorukovskaya Yaila, part of the first ridge of the Crimean Mountains in Eastern Crimea, about 25 km east of Simferopol and 7 km south of Zuya. The grotto’s

niche (Fig. 1) is quite large: 11 m wide, 9 m deep, and 9 m high and faces southeast.

Key Issues/Current Debates/Future Directions/Examples

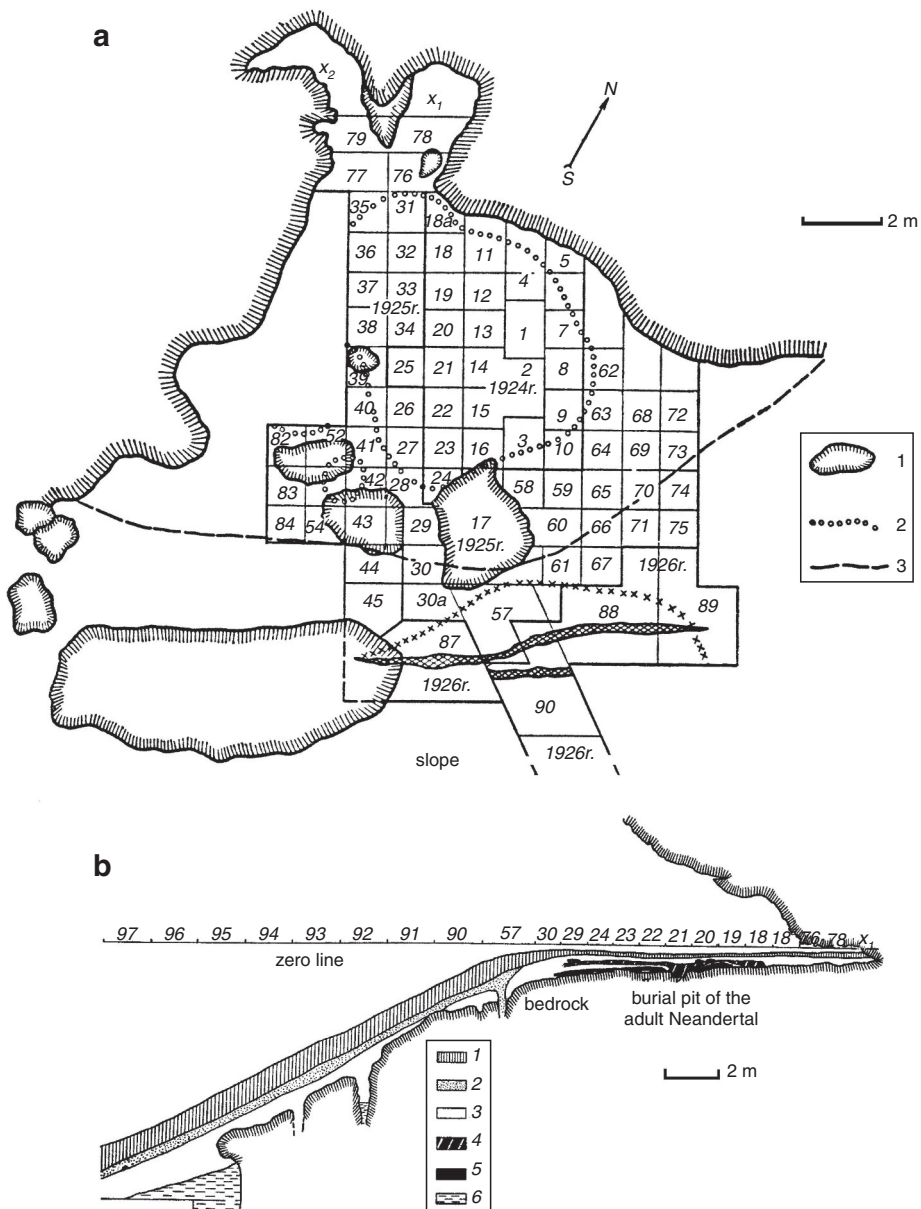
Discovery, Excavations, and Stratigraphy

The grotto was discovered by Bonch-Osmolowski in 1924 but known to local Tatars as “Kiikin-Kobasy” (Savage’s Cave) or “Kiik-Koba” (Wild Cave). The latter name was chosen by Bonch-Osmolowski.

Excavations were carried out in 1924 and 1925, while 1926 was devoted to two trenches on the slope outside the drip line, where Paleolithic artifacts were rare or absent. During a test excavation (1.5 m², see Fig. 1 – sq. 2), two brownish-gray/almost black *hearth layers* (stratigraphic layers IV and VI or upper and lower archaeological layers, respectively) with flint artifacts and animal bones were identified within a sequence less than 1 m thick. The deposits were mainly clayey and loamy with a varying number of limestone *eboulis*. The *lower hearth layer* was near bedrock, separated from it only by thin clayey layer VII. The dark color of *hearth layers* was due to multiple overlapping of hearths/fireplaces from different human occupation events and subsequent ablation and mixture during human activity into dark ashy depositional components. After the test sondage was dug, the site was spatially mapped using a 1 × 1 m² numerical grid system (Fig. 1) and several datum points were established for elevation measurements. Two Neanderthal burials were discovered in 1924. The 1925 excavations concentrated documentation of the stratigraphic and structural features of the two archaeological layers over as large an area as possible. In total an area of 60 m² was excavated. Limits of each archaeological layer within the grotto were identified, enabling Bonch-Osmolowski to consider many aspects of human settlement. The excavations concluded with sample collection for later laboratory studies: charcoal and burnt bone fragments and a sediment column sequence (0.2 m wide and almost 1 m thick) from square 41. All lithics and

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Fig. 1** Kiik-Koba grotto.
Plan and stratigraphy.

(a) Excavation plan
(Modified after Bonch-Osmolowski 1940: Fig. 10)
1 – limestone blocks in
modern lithological layer I;
2 – limits of lithological
layer II; 3 – the grotto’s drip
line. (b) The grotto’s
longitudinal stratigraphical
profile from northwest to
southeast through the
grotto’s central line
(Modified after Bonch-Osmolowski 1940: Fig. 11)
1 – Holocene lithological
layer I; 2 – gray limestone
loamy sand with some
“Tardenoisian” finds;
3 – lithological layer III;
4 – lithological layer IV
(upper hearth layer);
5 – lithological layer VI
(lower hearth layer);
6 – clay lenses



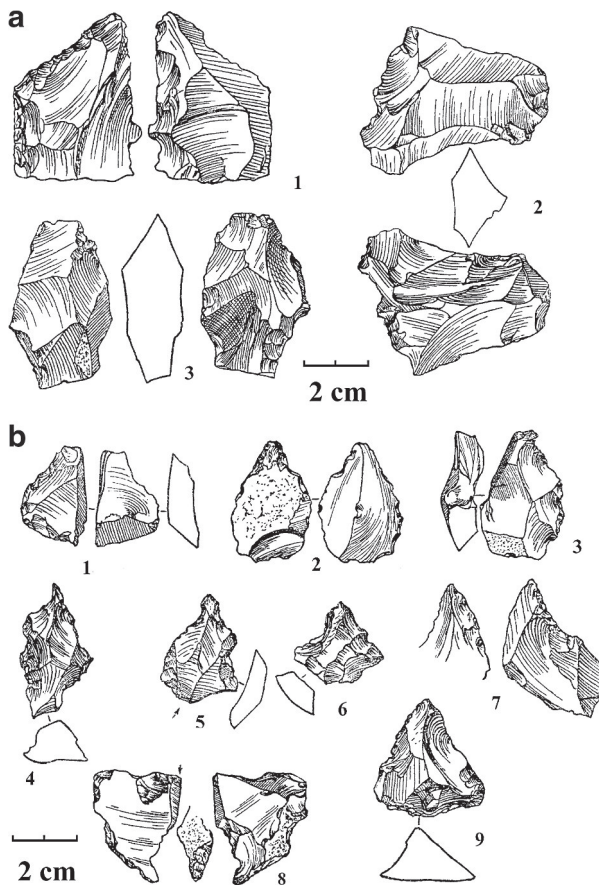
animal bones, including the smallest items collected by dry sieving through 1-cm mesh screens, were transported to Leningrad. Many stratigraphic profiles and sedimentary features were drawn and photographed. Indeed, the Kiik-Koba excavation documentation is quite similar to modern standards, with description cards for nearly all excavated squares and recording of stratigraphic and planographic data. This information allowed Bonch-Osmolowski himself, many of his contemporaries, and later colleagues to propose various interpretations of different aspects of the site.

Archaeology and Chronology

Many archaeological and chronological interpretations of the archaeological layers at Kiik-Koba have been proposed over the more than 80 years since the site's first excavations.

Lower Layer

Bonch-Osmolowski (1940) considered the layer's assemblage, with almost 13,000 flints, (Fig. 2) as “an amorphous stage of Pre-Chelleen,” finding that “the most similar . . . assemblages appear only far away in the West, in the lower layers . . . of La Ferrassie, La Micoque and Le



Kiik-Koba Grotto: Significance for Paleolithic Studies in East Europe and the Former Soviet Union, Fig. 2 Kiik-Koba, lower archaeological layer. Flint artifacts. (a) Cores – 1 – 2 – primitive parallel cores; 3 – discoidal core (Modified after Bonch-Osmolowski 1940: Table I). (b) Tools – 1–2 – retouched pieces; 3, 7, 9 – denticulates with Clactonian notches; 4–6 – Tayacian points; 8 – burin + perforator (Modified after Bonch-Osmolowski 1940: Tables I, VI - IX)

Moustier,” as well as the lower layer at Tabun Cave in Palestine and “numerous . . . horizons of alluvial find spots with Pre-Chelleen, Old Clactonian, ‘Tayacien’ and other atypical artifacts” having “the same absence of definite tool types, connected to a primitive variety of both the same massive primitive debitage and rough, denticulated edge retouch.” With respect to dating, Bonch-Osmolowski first attributed the lower layer to the “Last Interglacial epoch” (1934) but then proposed a considerably older position in “an Interglacial period preceding the Maximum (Riss) Glacial time” (1940) or even the “beginning of Mindel-Riss” (1940).

At the start of the 1950s in Soviet archaeology, the layer was considered to be Late Acheulian–Early Mousterian.

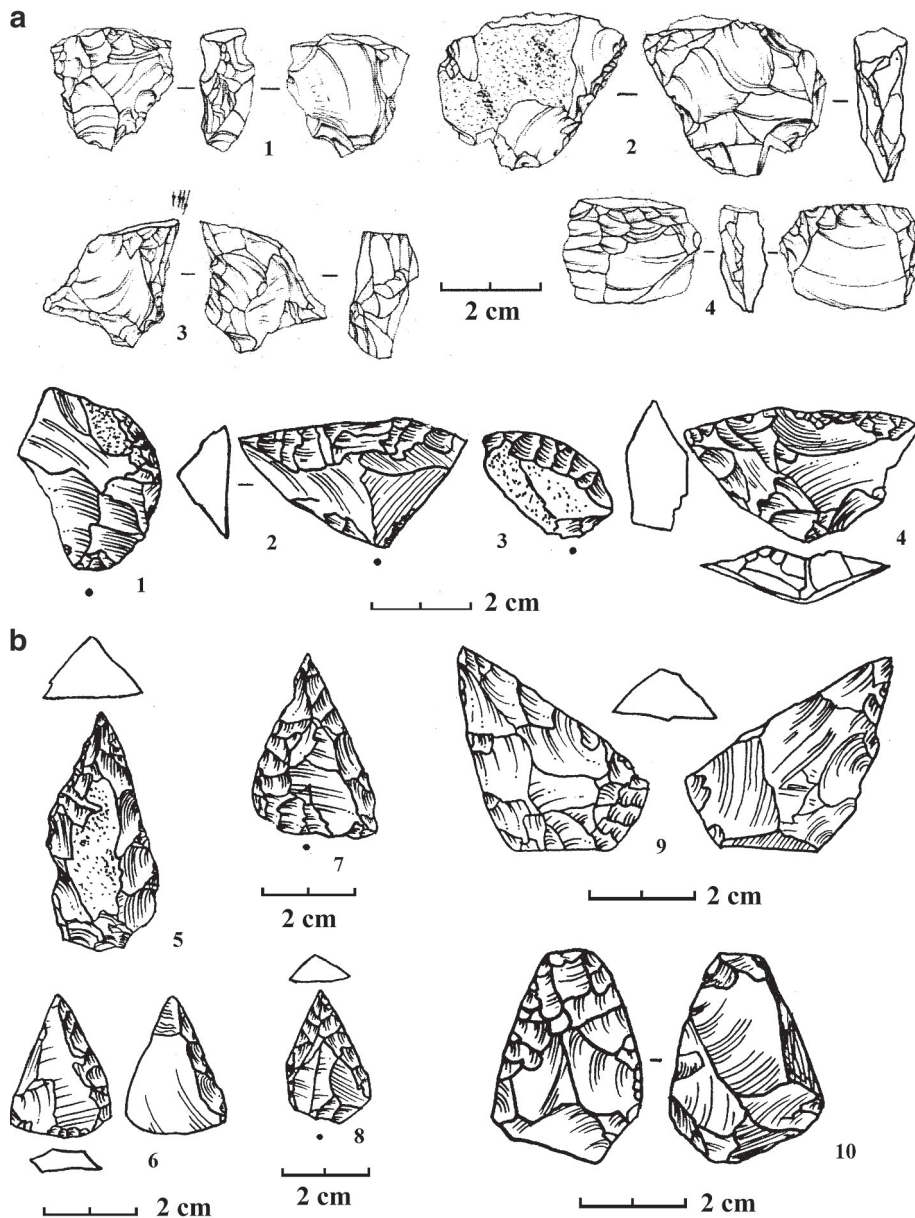
Since the late 1960s, Gladilin viewed this assemblage as a sort of Tayacian-like Denticulated Micro-Mousterian (Gladilin 1966, 1976, 1985). Also, given the presence of only Upper Pleistocene animal species, the lower layer was attributed to the end of Riss/beginning of Riss-Würm or Riss-Würm/beginning of Würm in the mid-1960s. Gladilin (1976) later noted stadial period sediment and pollen for both lower and upper layers at Kiik-Koba and proposed two chronological phases for the lower layer – “either . . . Riss II or . . . an initial phase of Würm I.” Since the early 1970s, the Denticulated Micro-Mousterian industrial attribution became widely accepted among Paleolithic archaeologists.

It was only in the early 2000s that another assemblage similar to the Kiik-Koba lower layer was found in the Crimea: Starosele, level 3 after the 1990s excavations (Demidenko 2003–2004). Starosele, level 3, is geochronologically attributed to the Lower Pleniglacial of the Last Glacial (MIS 4), c. 70,000 BP (Chabai 2004), which also appears comparable to the pollen data for the Kiik-Koba lower layer. Such comparisons between Kiik-Koba and Starosele have opened new doors for research on this Early Last Glacial Middle Paleolithic industry type in Crimea.

Upper Layer

Bonch-Osmolowski (1940) compared this assemblage, with c. 4,700 flints (Fig. 3), to the Micoquian from the eponymous French site and chronologically attributed it to the end of the Lower Paleolithic/beginning of Mousterian (Middle Paleolithic in modern terminology). He connected it to the “Late Micoquian, . . . very end of the Acheulian stage on its transition into Mousterian” (Bonch-Osmolowski 1934) or to the “end of the Acheulian or . . . to the transition from Acheulian to Mousterian” (Bonch-Osmolowski 1940). In his view, there was a group of similar Late Acheulian complexes in the Old World (e.g., La Micoque, upper layer in France, Okiennik and Nad Galonska in Poland, Koesten and Klausennische in Germany, Tabun Cave,

Kiik-Koba Grotto: Significance for Paleolithic Studies in East Europe and the Former Soviet Union, Fig. 3 Kiik-Koba, upper archaeological layer. Flint artifacts. (a) cores – 1 – discoidal core of triangular shape; 2 – orthogonal core of triangular shape; 3 – conventionally parallel transverse core of triangular shape/angle burin; 4 – conventionally parallel transverse core of rectangular shape (After Demidenko et al. 2013). (b) Tools – 1 – simple convex sidescraper; 2 – transverse convex sidescraper; 3 – transverse convex oblique sidescraper; 4 – convergent sidescraper; 5–8 – unifacial points; 9 – bifacial point; 10 – bifacial sidescraper (Modified after Bonch-Osmolowski 1940: Tables XI – XIV, XVI – XVII)



layer E in Palestine) with “a combination of Mousterian unifacial tools and bifacial hand axes of Late Acheulian type” (Bonch-Osmolowski 1940). Similar complexes were also identified by him in the Crimea (Volchiy grotto, Chokurcha, Adzhi-Koba Cave, lower layer) and in the Northern Caucasus (Ilkaya). Initially, Bonch-Osmolowski attributed the upper layer “to the end of the Last Interglacial or to the beginning of the Last Glacial” (1934) but then considered it to be much older – to “a dividing line” between Mindel-Riss and Riss (1940).

In the 1950s, however, Soviet colleagues attributed the upper layer assemblage to the

Mousterian and even to a sort of Mousterian with Acheulian Tradition.

Since the mid-1960s, based on lithological, faunal and pollen data, the geochronology of the Kiik-Koba, upper layer was discussed in terms of the Upper Pleistocene: either the beginning of Würm or end of Riss-Würm/beginning of Würm.

Gladilin first proposed a “Micro-Mousterian with Acheulian Tradition variant” attribution (Gladilin 1966) but concluded by arguing for the “Kiik-Koba culture of Mousterian period in Crimea” within the “Bifacial Micro-Mousterian variant” (Gladilin 1976, 1985). This was done on not only on the basis of clear differences between

the “Bifacial Mousterian in the Russian Plain and Crimea with sites of Mousterian with Acheulian Tradition in France” but also a major culture paradigm shift in Soviet archaeology in the 1970s for understanding all Paleolithic periods (Gladilin 1976). Based on lithological data, Gladilin attributed the upper layer to a stadial period, which is “not older than the first half and not younger than the second half of Würm I,” quite congruent with Bonch-Osmolowski’s (1940) reconstruction of the prehistoric landscape around the site based on fauna species composition: “a dry grassy steppe with a rather harsh continental climate.”

The existence of a “Kiik-Koba Mousterian culture” in Crimea was supported by Yu.G. Kolosov (see in Demidenko 2004; Demidenko et al. 2013) in the 1970s and 1980s, after his excavations at Prolom I in the 1970s and comparison of the Prolom I material with Bonch-Osmolowski’s and Gladilin’s data for the Kiik-Koba, upper layer assemblage. The Kiik-Koba upper layer was attributed by him to the “end of the Early Mousterian, in geological age close to the end of Early Würm I.”

The cultural paradigm for the Kiik-Koba materials was developed by V.N. Stepanchuk in the 1990s and 2000s (see in Demidenko 2004; Demidenko et al. 2013). Using the paradigm’s concept in which each tool was made intentionally, each Neanderthal tribe had its own industrial tradition, territory, hunting habits, etc.; he constructed the Kiik-Koba culture with a “distinct and syncretic tradition” of either a “para-Micoquian or Charentoid para-Micoquian” or an “atypical Charentian with features of a Micoquian influence” reflecting a “para-Micoquian Kiik-Koba industrial tradition” in the 1990s. Chronologically, the Kiik-Koba culture complexes were placed by him in the 1990s based on the following Last Glacial interstadial period intermittent sequence: Brörup (Kiik-Koba grotto, upper layer) – Moershoofd (Prolom I grotto, lower layer) – Hengelo (Prolom I grotto, lower layer) – Denekamp (Buran-Kaya III grotto, level 7: 2), lasting from c. 100,000 BP to c. 30,000 BP, about 70,000 years for the Middle Paleolithic. In the 2000s, he radically changed the culture’s chronology. After obtaining several new C14

dates for Kiik-Koba and Prolom I, the Kiik-Koba culture chronology became much shorter: the Stadial preceding the Denekamp interstadial and the Arcy interstadial (c. 35–28,000 BP), cultural characteristics remaining unchanged.

Since the mid-1990s a new approach for understanding Crimean Micoquian Tradition sites and find complexes, including Kiik-Koba, upper layer (Chabai et al. 2000; Chabai 2004; Demidenko 2004), was proposed. The Crimean Micoquian Tradition includes three traditionally defined industry types (Ak-Kaya, Kiik-Koba, Starosele). The industry types have the same primary flaking processes (a combination of radial, discoidal, multiplatform and parallel reductions without the Levallois method) and tool types, but tool type proportions differ by industry. Typological differences are connected to different human activities taking place at different sites, related to fauna processing and lithic reduction, as well as distances to high quality flint outcrops. As a result of the highest rates for human activities and the most distant location from flint outcrops, the Kiik-Koba lithic assemblages feature the highest indications of reduction with a medium amount of bifacial tools (c. 15 %), an abundance of points among the unifacial (c. 40 %) and bifacial (c. 50 %) tools, a rather low frequency of simple sidescraper types (c. 20–30 %) among unifacial tools, as well as mostly small (less than 5 cm long) bifacial and unifacial tools, which is why the industry was often attributed to the Micro-Mousterian.

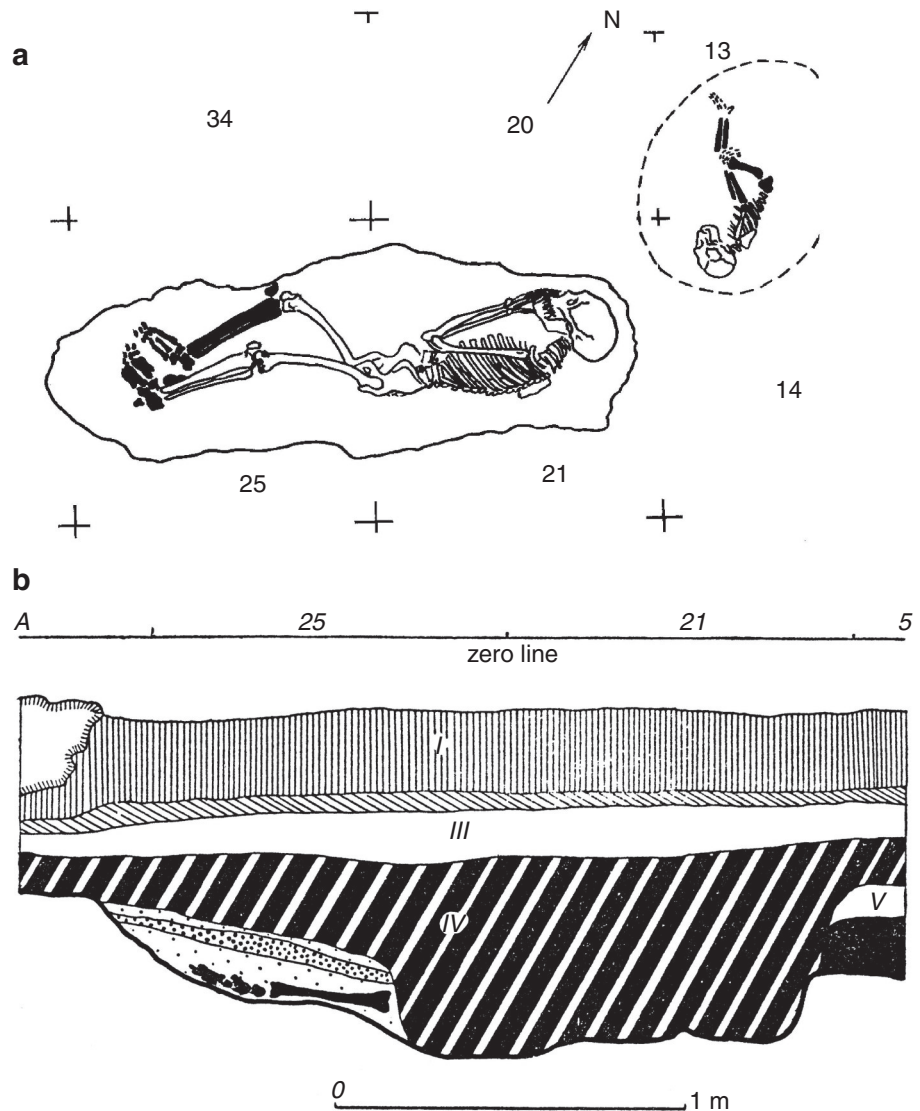
Complex reanalyses of the 1920s Kiik-Koba, upper layer lithic assemblage and fauna were recently realized (Demidenko et al. 2013), clarifying the features of this industry type. A chronological position has been proposed in the stadial preceding the Arcy/Denekamp interstadial (Chabai et al. 2000; Chabai 2004; Demidenko 2004; Demidenko et al. 2013).

Kiik-Koba Grotto: Neanderthal Burials

The first burial of a child (Bonch-Osmolowski 1940) was found “in sq. 13, in 30 cm distance to the North from northern corner of another grave pit, which is from head of the adult human.” The 5–8-month-old child “was lying in a so-called

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Fig. 4** Kiik-Koba.

Neanderthal burials.
(a) Human burial plans where *shaded* skeleton parts do indicate the ones found during the 1920s excavations (Modified after Smirnov 1991: Fig. 57; Chabai 2004: Fig. V-4).
(b) First host/economic pit in sq. 21 and 25 of upper archaeological layer that considerably destroyed the lower layer's adult human burial (Modified after Bonch-Osmolowski 1940: Fig. 33b)



uterine position, at left side, almost at very bed-rock. . . . The skeleton was positioned in a lower portion of VI layer being 15 cm thick at this place. Above, being unclearly separated from it, a so-called inter-hearth layer (Yu. D. –lithological layer V) is not present here, was distributed upper hearth layer, also c. 15 cm thick” (Fig. 4a). The child’s “bone preservation is very bad.” It was possible “to extract only part of skeleton bones, although most of them were in a defective condition” and “any skull and even teeth were absolutely missing.” The grave pit was not traced during excavations. At the same time, the Pleistocene age was definitely established for the skeleton, taking into consideration “non disturbance of all lithological layers above the upper hearth layer and fossilization degree for the child bones.”

But because “in this place the inter-hearth layer was absent and the upper cultural layer was directly resting on the lower cultural layer, to define stratigraphically the belonging of the child skeleton to one or another layer was not possible.” Thus, the layer to which the child burial belonged remained an open question for Bonch-Osmolowski. In the 1980s, Yu.A. Smirnov, using Bonch-Osmolowski’s unpublished field notes, reconstructed the stratigraphy of sq. 13 and 14 in detail, showing that the child burial “was done during the existence of IV upper hearth layer and already after deposition of about half of its thickness” and that it was dug into the underlying lower archaeological layer – “in a clay, . . . in one of sub-levels of lithological layer VII” (Smirnov 1991). No indisputable grave goods were identified with

the burial, although some unassociated lower layer flints were found when the grave was dug. The Neanderthal morphology for the child skeleton has established (Yakimov & Kharitonov 1979; Trinkaus 2008). As a result, Neanderthals appear to be the makers of the Kiik-Koba industry type of Crimean Micoquian Tradition.

More well-known Kiik-Koba hominin remains were found in another burial, also Neanderthal, but an adult 40–45 years old (Yakimov & Kharitonov 1979). Unlike the child burial, the adult burial had clearer stratigraphic and spatial features (Bonch-Osmolowski 1940). Although the grave pit was damaged for c. two thirds of its area by a host/economic pit, it had clear ovoid configuration with northeastern–southwestern orientation and size: 2.10 m long, 0.80 m wide, and 0.45 m deep (Fig. 4a–b). The pit was not only stratigraphically related to lower archaeological layer but it was also “cut into the grotto’s bed-rock,” where it was “partially deposited both in a solid limestone and clay pockets.” Taking the bone leg position, the human body was placed into the grave “on the right side with slightly bended legs” and by its head to northwest (Fig. 4a). The main problem was the burial’s stratigraphy relation to either upper or lower archaeological layer’s human occupation. The difficulty was caused by the pit, destroyed much of the grave. Initially, Bonch-Osmolowski (1940) was sure that the burial was made by lower layer humans – “the seemingly clear covering by lower hearth layer of human bones in not disturbed grave pit’s part, that has been authentically stated by photo pictures, alongside with common find characteristics, did not leave no doubts that the burial was realized by lower hearth layer people” (see Fig. 4b). But then in the same 1940 book, Bonch-Osmolowski changed his opinion connecting the adult burial to upper layer humans. “Indeed, it very hardly agrees with a common conception on a historical development of Old Paleolithic Man in combination with such the primitive material culture and such the perfect burial type. The burial seems to be more appropriate for upper hearth layer humans.” Moreover, in doing so, Bonch-Osmolowski (1941) also suggested that Kiik-Koba child burial also belongs to upper layer because of “general

considerations on a simultaneous burial probability for mother and child” close one to another at Kiik-Koba grotto. All these Bonch-Osmolowski’s contradictory notes and hypotheses were in details analyzed by V.N. Gladilin. He certainly concluded that the initial Bonch-Osmolowski’s opinion was correct and the adult burial belongs to human occupation of lower layer (Gladilin 1979).

So, now it is almost universally accepted among the ex-USSR archaeologists that the adult burial is related to lower layer and the child burial is associated with upper archaeological layer at Kiik-Koba grotto. And again, all the 1970s and 1980s new analyses on the Kiik-Koba human burials were only possible thanks to the detailed published and unpublished Bonch-Osmolowski’s field observations.

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Basic Biographical Information

Nam C. Kim received a Ph.D. in Anthropology from the University of Illinois at Chicago, a M.A. in Political Science from New York University, and a B.A. in International Relations from the University of Pennsylvania. Prior to a career in anthropology, he worked in the private and non-profit sectors. He is an anthropological archaeologist in the Department of Anthropology at the University of Wisconsin-Madison.

Major Accomplishments

Much of Dr. Kim's work has been dedicated to ancient state formation, social complexity, and various factors for social change including warfare, trade, and various leadership strategies. He has performed fieldwork in Belgium (Neolithic village fortifications of the Linearbandkeramik culture), the southeastern USA (historic Native

American Creek site), and Mesoamerica (postclassic and historic Mayan sites).

Most recently, his research has been geographically focused on East and Southeast Asia, specifically Vietnam, and he has been conducting investigations at the site of Co Loa in the Red River Delta of northern Vietnam. Kim was the first foreigner allowed to collaborate on excavations at the site, codirecting investigations with colleagues at the Vietnam Institute of Archaeology of the Vietnam Academy of Social Sciences. Nam Kim is an honorary member of the Vietnam Institute of Archaeology.

The Co Loa Middle Wall and Ditch Project (2007–2008) was the first full-scale, systematic investigation of the site's monumental system of earthen enclosures. The collaborative research at Co Loa is ongoing and aims to augment an overall understanding of the site's emergence as an early urban center and political capital for proto-Vietnamese civilization during the Iron Age. The research has been funded by various institutions and organizations, including The Henry Luce Foundation, the American Council of Learned Societies, the American Philosophical Society, the National Science Foundation, the George Franklin Dales Foundation, the University of Illinois at Chicago, and the University of Wisconsin-Madison.

The investigations at Co Loa have provided new data that Kim has presented at a variety of conferences and invited lectures in the USA and Asia, including the Society for American Archaeology, the Association for Asian Studies, the Indo-Pacific Prehistory Association, and the Archaeological Institute of America. Research findings have also been disseminated through journals such as *Antiquity*, *Journal of Archaeological Research*, and *Khao Co Hoc*. The research will also be featured in a book currently being written by Kim on the origins of the ancient state in Vietnam. Kim is also working with colleagues in Vietnam's Conservation Center for the Co Loa and Hanoi Citadels (also known as the Hanoi Ancient Wall-Co Loa Vestiges Preservation Center) in efforts related to cultural heritage management. Objectives include obtaining UNESCO World Heritage Site status for Co Loa, as well as the