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## Chapter 8

# *Research in 2005 at Kaus Kozah Cave*

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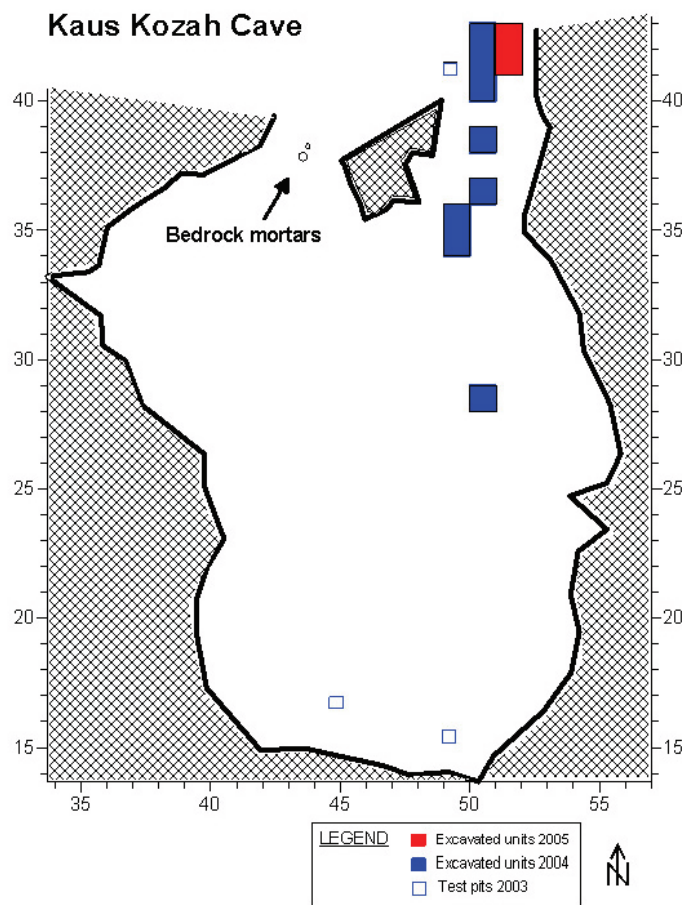
The team of the *Tübinger Damaskus Ausgrabungs- und Survey Projekt* (TDASP) identified Kaus Kozah Cave during the 2000 season. The cave formed in the Oligocene cuesta just north of the Ma'aloula canyon. Large limestone boulders near the two entrances to the cave trapped sediments and contributed to the development of a terrace in front of the cave (Photo 1). Although the cave is very near the town of Ma'aloula, it is so discretely placed in the massive limestone cuesta that it is difficult to see. The interior of the cave has been badly damaged by unauthorized excavations, but due to the favorable setting, the terrace in front of the cave has not been subjected to major disturbances. The site is located at an elevation of 1490 meters above sea level and commands an outstanding view of the highland Ma'aloula Basin including the springs and a small lake that existed above the current canyon during the Late Pleistocene (Dodonov et al. in press). The view from the site extends to the peaks of the Anti-Lebanon Mountains to the west, and from atop the nearby Oligocene cliff, the view extends over the lowlands to the east for many kilometers.



**Photo 1.** *Kaus Kozah Cave. View looking south with Ma'aloula cliffline in background. (1 October 2005, Photo N. J. Conard).*

Like the nearby Baaz Rockshelter on the Oligocene cliffline near the perennial spring at Jaba'deen (Conard 2002), Kaus Kozah is located near the permanent spring above the town of Ma'aloula. The presence of reliable sources of water helps to explain the location of the site. In 2004 the TDASP team conducted excavations at Kaus Kozah and recovered rich artifact assemblages dating to the Epipaleolithic and Neolithic (Chapter 7, this volume). The goal of the fieldwork in 2005 was the recovery of additional ecological data from the site.

We opened three new 1 m<sup>2</sup> excavation units near the eastern entrance to the cave (Fig. 1). These units are situated adjacent to the eastern edge of the 2004 excavation on the terrace of the cave (Photos 2 & 3).



**Figure 1.** *Kaus Kozah Cave. Plan view of cave and excavated areas from 2003-2005. Two bedrock mortars are depicted near the western entrance to the cave.*

To improve our database for botanical remains, we floated one quarter of the sediments excavated. As was the case in 2004, we screened all sediments through 20-, 5- and 2-mm mesh to facilitate the recovery of artifacts and organic remains of all size classes. Tab. 1 summarizes the lithic artifacts and ceramics, Tab. 2, the organic artifacts, and Tab. 3, the ornaments, recovered from Kaus Kozah in 2004 and 2005. In general the 2005 excavation proceeded more slowly than in 2004 with trained archaeologists rather than skilled laborers doing the screening. While progress was slow, the increased investment in screening clearly led to the improved recovery of shell and stone beads, small lithic artifacts and microfauna. Careful sorting of the heavy fractions of the flotation samples also produced a wealth of small artifacts.

While detailed analyses of the faunal and floral remains from Kaus Kozah are not yet available, some preliminary observations may be made on the artifact assemblages and their cultural stratigraphic context. The excavation currently extends to a depth of 70 cm below the surface, and we have thus far defined four stratigraphic units (Fig. 2). Following the conventions of the University of Tübingen the archaeological horizons (AH) are designated by Roman numerals that increase with depth.



**Photo 2.** *Kaus Kozah Cave. View of east (left) and west (right) entrances to cave with terrace in the foreground (1 October 2005, Photo N. J. Conard).*



**Photo 3.** *Kaus Kozah Cave. Overview of the 2005 excavation (7 October 2005, Photo N. J. Conard).*



The strata from the 2005 excavation at Kaus Kozah include the surface deposit, which is characterized by angular limestone rubble rich in flints, bones and charcoal. Little modern material was present on the surface. AH I is about 20 cm thick. This layer contains a mixture of fine and coarse angular limestone debris in a gray dusty matrix. Some parts of AH I are clast supported, while other areas are matrix supported. Like the surface deposit AH I is rich in flints, bones, and charcoal, with occasional pieces of ceramic, shell beads and other artifacts. AH I, as is the case with AH II and AH III, contains roots, that no doubt contributed to a degree of post-depositional reworking of the finds. AH II is characterized by a sharp drop in the amount of limestone debris. The upper part of this unit is a dusty, light brown silt, while the lower part of the deposit is light gray silt. AH II shows clear signs of bioturbation, roots are common and an animal burrow is clearly visible in the northern profile of the 2005 excavation. AH III is a medium brown humic silt that is best developed in the northern excavation units. In AH I-III, Epipaleolithic material is abundant, and some mixing has clearly taken place. This is indicated, for example, by an isolated piece of ancient glass in AH III and a small bronze ring in AH III (Photo 4). AH IV is a dense, red-brown clayed silt with high levels of slightly rounded limestone rubble. This stratum is best developed in the southernmost square of the 2005 excavation, 51/41. Here there is no evidence of mixing and find densities are lower than in the overlying units.

<b>GH</b>	<b>AH</b>	<b>Cores</b>	<b>Flakes &amp; Blades</b>	<b>Angular Debris</b>	<b>Tools</b>	<b>Total chipped stones</b>	<b>Unchipped stones</b>	<b>Ceramic</b>
<b>Surf.</b>	-	18	345	6	26	<b>395</b>	3	32
<b>1</b>	<b>I</b>	40	570	9	35	<b>654</b>	2	69
<b>2</b>	<b>II</b>	10	83	2	12	<b>107</b>	1	14
<b>3</b>	<b>III</b>	5	40	-	5	<b>50</b>	-	10
<b>4</b>	<b>IV</b>	-	14	-	-	<b>14</b>	-	-
<b>TOTAL</b>		<b>73</b>	<b>1052</b>	<b>17</b>	<b>78</b>	<b>1220</b>	<b>6</b>	<b>125</b>

**Table 1.** *Kaus Kozah Cave. Summary of piece-plotted lithic and ceramic artifacts from the main stratigraphic units found during the 2004-2005 excavations (GH=Geological horizon; AH=Archaeological horizon).*

<b>GH</b>	<b>AH</b>	<b>Fauna</b>	<b>Burnt Fauna</b>	<b>Charcoal</b>
<b>Surf.</b>	-	88	-	1
<b>1</b>	<b>I</b>	660	16	14
<b>2</b>	<b>II</b>	87	1	9
<b>3</b>	<b>III</b>	45	-	2
<b>4</b>	<b>IV</b>	215	-	-
<b>TOTAL</b>		<b>1095</b>	<b>17</b>	<b>26</b>

**Table 2.** *Kaus Kozah Cave. Summary of piece-plotted faunal and botanical finds from the main stratigraphic units found during the 2004-2005 excavations (GH=Geological horizon; AH=Archaeological horizon).*

GH	AH	Shell beads	Stone beads	Brass rings	Ochre
Surf.	-	3	-	-	-
1	I	12	1	-	1
2	II	11	-	-	1
3	III	21	-	1	-
4	IV	-	-	-	-
<b>TOTAL</b>		<b>47</b>	<b>1</b>	<b>1</b>	<b>2</b>

Table 3. Kaus Kozah Cave. Summary of ornaments and ochre from the main stratigraphic units found during the 2004-2005 excavations (GH=Geological horizon; AH=Archaeological horizon).

Detailed taphonomic studies will be needed to determine the degree to which AH I-III provide distinctive signatures. Although relatively rare, ceramics have been found in all of these units. Lunates and Khiam points are present in these layers (Photos 5 & 6). Combined with the mostly fine laminar debitage, tools on blades and bladelets, and the presence of small blade cores, the assemblage is consistent with the presence of a strong Epipaleolithic component in these deposits. AH I typically has the highest find densities. AH I and II also provided the bulk of the ornaments from the site. The ornaments include diverse perforated marine shells including *Arcularia gibbulosa*, *Columbella rustica*, *Theodoxus jordani* and naturally perforated *Dentalium* sp (Photo 7 & Tab. 3). The most common finds of shell correspond with those recovered from Baaz Rockshelter (Wahl-Gross 2004) One small, rectangular, perforated piece of siltstone, oval in cross-section, was also recovered.

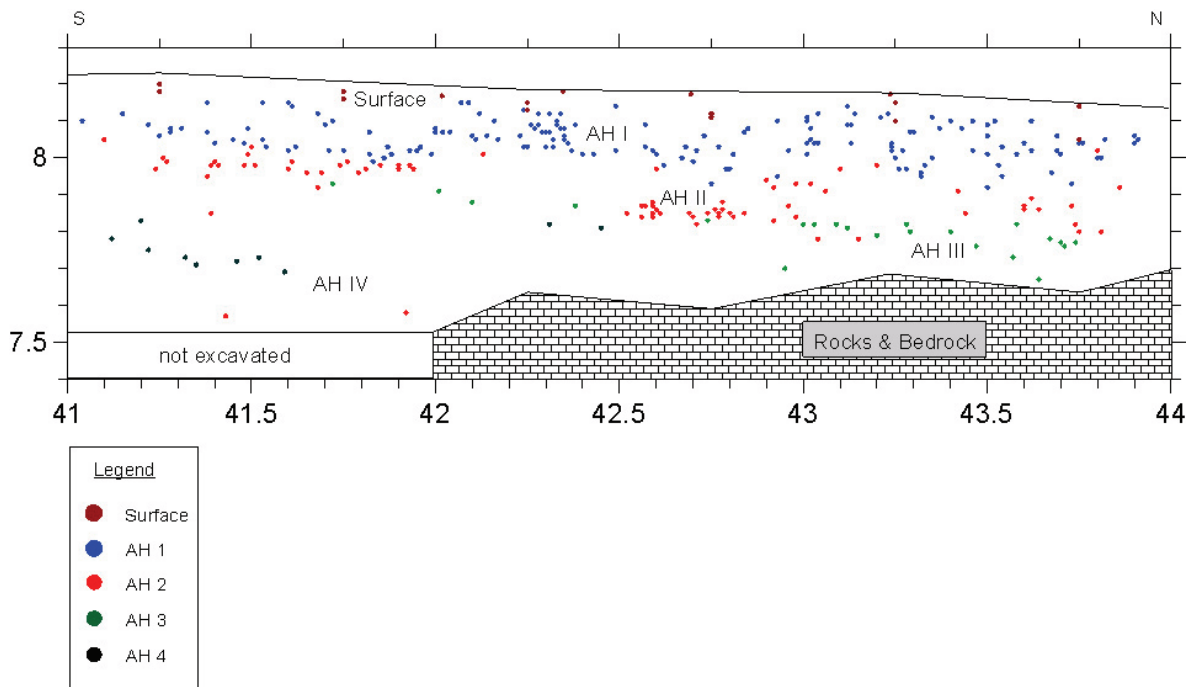


Figure 2. Kaus Kozah Cave. North-south profile of piece-plotted finds from 2005 projected onto the E=51-m line.



**Photo 4.** *Kaus Kozah Cave. Turquoise colored glass and brass ring, both from AH III (Photo K. F. Hillgruber).*

The earliest deposits at Kaus Kozah contain low densities of thin Levallois flakes with centripetal flaking scars on their dorsal surfaces and finely faceted striking platforms (Photo 8). In addition to the Levallois debitage, AH IV produced many juvenile human teeth and fragmentary postcranial bones that could be of particular interest, if they can be diagnosed as belonging to either modern or archaic humans. Initial results suggest that the human skeletal remains overlie the Levallois flakes in AH IV. The stratigraphic position of the human remains, nicknamed Charlotte, near the top of the Middle Paleolithic deposits could be of importance for reconstructing the human population dynamics during the late Middle Paleolithic and early Upper Paleolithic. Larger areas of excavation will be needed to characterize the assemblages from the deeper deposits at the site. In the 2005 season we were unable to reach bedrock in excavation unit 51/41, and it is often unclear whether or not exposed limestone surfaces in the northern two excavation units represent bedrock or the surfaces of boulders.

The 2005 season contributed significantly to the organic assemblages from Kaus Kozah. While some degree of mixing took place between AH I, II and III, we plan to use taphonomic, refitting, technological and typological analyses to determine the degree to which the finds from these strata have been reworked. At present it seems that only AH IV has not undergone significant taphonomic mixing.

Combined with the results from excavations at Baaz Rockshelter (Barth 2003; Conard 2002; Wahl-Gross 2004) and the Yabroud sites (Rust 1950), Kaus Kozah promises to provide important insight into the human adaptations at the end of the Pleistocene and into the economic and social changes that accompanied the development of agriculture. The Levallois finds from Kaus Kozah are the earliest stratified finds thus far recovered by the TDASP team. These artifacts suggest that further work at the site will provide additional materials to augment the sparse data on the Paleolithic cultural stratigraphy of the Damascus Province. Study of the faunal, botanical and lithic assemblages from Kaus Kozah also show considerable promise for helping us to reconstruct the changing patterns of human adaptations during the late Quaternary of the Damascus Province.



**Photo 5.** *Kaus Kozah Cave. Lunates from surface, AH I and AH II (Photo K. F. Hillgruber).*





**Photo 6.** Photo 6. Kaus Kozah Cave. Two Khiam points (left) and Neolithic arrowhead (right) from AH I and AH III (Photo K. F. Hillgruber).



**Photo 7.** Kaus Kozah Cave. Ornamental shells from AH I and AH II. From left to right: Two as yet unidentified species of marine gastropods, *Columbella rustica*, *Arcularia gibbulosa*, *Dentalium* sp. and *Theodoxus jordani* (Photo K. F. Hillgruber).



**Photo 8.** Kaus Kozah Cave. Levallois flakes with centripetal flaking scars from AH IV (Photo K. F. Hillgruber).

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