Faunal remains from the Epipaleolithic site of Komishan Cave

And its dating, preliminary results

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Abstract

The recent study of the faunal remains from the Komishan cave in Southeast of the Caspian Sea provided new insight to the final Pleistocene fauna of the region that could be compared to the previously known late Pleistocene faunal assemblages from Belt, Hotu and Ali Tappeh caves. This paper provides a comparative analysis of these remains as a sketch for the definition of faunal exploitation by the Epipaleolithic populations of this region. The first plausible radiocarbon date indicates an occupation during the 12 millennium B.C. The fauna of Komishan Cave bears many similarities with the other adjacent sites, with the exploitation of gazelles, birds, and marine resources. A common Epipaleolithic "faciés culturel" can therefore be outlined in the southeast of the Caspian.

Key words: Archaeozoology, Epipaleolithic, Iran, Caspian Sea.

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Introduction

Komishan Cave is located at the northern slopes of the Hotukash Mountains near Behshahr, at an elevation of c. 25 m asl and its entrance faces north, overlooking the coastal plain of Behshahr. The cave was discovered during limestone quarring while a Buldozer removed colluvium sediments in front of the cave entrance in 1986 (Heydari 2003; Mahfrouzi 2003) (Figure 1).

During a preliminary survey for Paleolithic sites in the region conducted by a team of archaeologists directed by F. Biglari from National Museum of Iran and A. Mahforouzi from Iranian Cultural Heritage Organization of Mazandaran in autumn 2003, a pit (K1) dug by looters was found in front of the cave (Figure 2). Large number of lithic artifacts and faunal remains were visible on the backdirt around the pit (Shidrang 2003). In order to collect cultural remains from stratified context, a small area of 15 x 50 cm in size was excavated to the depth of 120 cm at the eastern edge of the pit. Because there was no clear stratigraphic changes, the deposits were excavated in arbitrary levels of 5 cm that revealed 12 arbitrary levels (Naderi 2003). Both excavated deposits and backdirts were sieved with common commercial sieves with a 2 mm mesh. In addition to the recovery of lithic material, this helped in the recovery of microvertebrates and fish bones generally not seen with bare eyes.

One of the main aims of this project was to document the dynamic of settlement in the area from its beginnings. Consequently, cave sites could potentially shed new lights on the question. This has been partly documented in the past with the excavation of Belt, Hotu and Ali Tappeh caves between the 1950's and mid 1960's by Coon (1951) and Mc Burney (Mc Burney and Payne 1968). (Figure 1).

Our knowledge on the earliest Holocene settlements in the southeastern part of the Caspian Sea is thus based on this Epipaleolithic complex to which the discovery of Komishan has been recently added.

A new excavation project is undergoing in the Komishan Cave directed by H. Vahdatinasab and A. Mahforouzi that started in 2009 which will consider complete the present knowledge of the archaeological sequence in the site.

Komishan faunal remains

Approximately 1100 animal bones have been recovered from the Komishan salvage excavation in 2003 (Mashkour, 2003). The bones can be grouped into two assemblages; one unstratified, belonging to the back dirt of the looters, the other more conventionally recovered through excavation in the pit dug originally by the looters.

The majority of the bones in this study were recovered in pit K1 counting for 922 bone fragments. A total of 227 bones of this assemblage show signs of burning or deliberate brakes which indicates its anthropogenic origin. The faunal composition of Komishan is dominated by the presence of Large and Small Herbivores. No major difference is observed between the Pit K1 and the back dirt.

Identified species

Bovine: The remains of this animal were too fragmentated and could not be identified clearly as Aurochs Bos primigenius. The majority of them come from the back dirt. Three cheek teeth (P4, M1, M2) of a large size are however complete and relatively large.

Gazelle: Since no skeletal elements could be clearly allocated to the Caprini, the majority of the small ruminant remains were allocated to the genus Gazella. Among the three species present on the Iranian territory, the goitered gazelle is the one that has the widest distribution. Moreover the other two gazelles, G. dorcas and G. bennetti have both a totally different distribution area, confined the Southeast of Iran.

Saiga: One of the most important finds of this excavation was the presence of a Saiga tatrica horn core within the faunal remains (Figure 3). Previously this species was identified in Zagheh in the Qazvin plain (Mashkour, 1999, Mashkour, 2001, Mashkour 2002 and Mollasalehi et al 2007). The discovery of this totally unreported species until then on the Iranian Plateau was indeed a surprise. It was then hypothesized that there was a kind of exchange with populations of Southern Turkmenistan and even further east of animal parts (horn cores) probably because of symbolic value.

Boar: The suids in Komishan were not too many; only an inferior premolar (K1L7) and a first phalanx (K1L12) of a juvenile specimen (less than one year old) were found in the assemblage.
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Figure 1. Location of the Komishan Cave and other known Epipaleolithic sites in the region (Courtesy F. Biglari 2008)

Figure 2. The profile of the Komishan Cave and the location of Pit K1 (according Heydari 2003, with some modifications)
Carnivores: Ten identifiable carnivore bones belong to the cats *Felis* and fox *Vulpes*. The *Felis* bones all come from level 12 of pit K1. A fragmented mandible with broken incisors belongs to a juvenile individual. Two fragmented tibia and coxal bone belong to a large individual which could not be identified.

The *Vulpes* bones come from levels 3 and 5 of the Pit K1. Three bones (phalanx and radius) also were found in the backdirt. Specific identification of the Komishan fox was not possible because of the lack of diagnostic criteria. The potential species which could have inhabited the surroundings of the site are *V. vulpes*, *V. corsac* and *V. cana*.

Rodents: Different skeletal elements have been found all along the Pit K1 from top to bottom. One left mandible found in L5 of pit K1 could be identified as vole *Microtus* without possibility of further identification since in this specimen, the first molar, the most diagnostic part is missing. The common vole, *Microtus arvalis*, is one of the candidates.

Also interesting was the discovery of a squirrel skull in K1 L11, which has been identified as *Spermophilus fulvus*. A specific study on the taxonomic issues of this taxa in Iran is undergoing (Chahoud and Mashkour, in prep.).

Birds: This group of animals is quite abundant in the assemblage. Sixty eight (68) bones could be allocated to birds. However only a small number had enough diagnostic elements for a specific identification. The bones are evenly distributed in all levels of Pit K1 and also in the backdirt. The identified taxa are: Anseriformes in K1 L12 (humerus and cranium), Charadriformes, in the back dirt 143 (coracoide), Columbiformes, *Columba sp*, in K1 levels 5 and 9 (coracoide), Gruiformes, Otidae. *Otis tarda* in K1 levels 9 (phalanx 1) and in backdirt 143 (humerus and phalanx 1).

Fish and Molluscs: The exploited marine species are represented by 3 unidentified fish remains and two bivalve mollusc fragments.

Chronological data

The lithic assemblages from stratigraphic cut and backdirt of Pit K1 are helpful to have a relative chronology of the late Pleistocene occupation of Komishan (Naderi 2003; Shidrang 2003). The high frequency of bladelets, notch-denticulates, end-scrapers, besides the moderate number of microliths, including both geometric (lunate, trapezoid and elongated triangle) and non-geometric (backed bladelets, truncated bladelets and borers) forms in the tool group, indicates that the industry belongs to the Epipaleolithic period (Shidrang 2003). Similar features were reported from adjacent Epipaleolithic sites in Hotu, Kamarband and Ali Tappeh Caves. Interestingly a pressure core, a flake and a bladelet with sheen are also indicative of later technological elements in this collection. If these are not intrusive from later Neolithic occupational deposits that were probably removed by Bolduzer, they suggest that the upper part of the deposits (levels 1-4) in the pit K1 may belong to the Neolithic period.

The Caspian Epipaleolithic sites have been dated by the excavators of the sites and later by Uerpmann and Frey 1981 who revised the faunal studies. For the aims of this study and for having a more accurate information about this site, a new radiocarbon dating program was run. From the 3 samples sent to the C14HRONO group (Queen's University Belfast), only sample K1 – UBA 11487 (Back dirt- Gazelle distal Tibia) yielded enough collagen for a measurement. However the result is of great interest for the understanding of the chronological position of Komishan in the general framework of the Caspian Sea prehistoric sites. The sample from Komishan indicates an occupation of the cave at the end of the 12th millennium B.C. (11339-11179 cal B.C.).
Discussion

The fauna of all these sites is dominated by the Gazelles, at least in the Pre-Neolithic periods (Figure 4). All the sites show intensive exploitation of the carnivores (fox, canids, felids, seals) and birds were extremely important in the diet of these hunters.

The presence of the Aurochs seems to be constant but low in all sites. The hemione is present in Belt and in Ali Tappeh, even if by an understandable error given the time period this study had been done, Coon allocates this equid bone to "Equus Asinus" (Coon 1951: p. 45). No equid bone was encountered in Komishan, but again this is certainly due to a stochastic effect; The species is in any case rare on all sites of the region. The other similarities between these sites, is the presence of the squirrel, Spermophilus, that was identified in Belt, Ali Tappeh and Komishan.

What was not known previously from the other sites is the presence of Saiga tatarica, but this can be due to the nature of the finds. There are many morphological and metrical overlaps between Gazella subguttutosa and Saiga tatarica as demonstrated before on the Qazvin plain material (Mashkour 2001: p. 178-188). This new evidence indicates the importance of such isolated finds in the definition of zoogeographic zones which should be followed carefully in the study of the archaeological fauna of this region.

The dominance of Gazelles in the Epipaleolithic fauna of the southeastern part of the Caspian Sea, indicates a steppic environment which can also match the presence of Saiga tatarica and Equus hemionus here and there. In the same time other faunal elements indicate more covered environment: The Aurochs, the red deer and the boar. The Bird record in Komishan indicates the exploitation of various ecological biotopes, like in Ali Tappeh (Uerpman, and Frey 1981) and Belt (Coon 1951).
As for the rodents the presence of Microtus arvalis suggests a habitat which is everything but dense forests, such as meadows, heath lands, and fallow land. The exciting discovery of the Komishan Cave will certainly be the basis of future deeper investigation in the region for a better understanding of the Epipaleolithic culture of the circum Caspian Sea. The other interesting question would be to have a high resolution chronostratigraphic analysis of all the existing data in order to define the duration of these cultures and their characteristics in the different phase of this Epipaleolithic / Early Neolithic sequence.

Despite the fact that the comparison between the previously excavated sites and Komishan is still rough because of the discrepancies between the excavation (like in Komishan) and publications (like the lack of a detailed chronostratigraphic analysis of the bird remains in Belt -cf Coon, 1951 Appendix 1 p. 90, a contrario the extremely detailed analysis of the bird remains in Ali Tappeh -Uerpmann and Frey 1981: p. 174) we can still observe general tendencies and already propose the adoption of the terminology of an Epipaleolithic circum Caspian culture.

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References
Chahoud, J. and M. Mashkour
in prep. "Morphological and morphometric characterization of prehistoric Spermophilus in the northeast of Iran.

Coon, C. S.
1951 Cave exploration in Iran, 1949, Philadelphia: University Museum of Pennsylvania.

Coon, C. S.

Coon, C. S.
1957 The Seven Caves Archaeological Explorations in the Middle East, New York.

Heydari, S.

Mahforouzi, A.

Mc Burney, C. B. M.

Mashkour, M.

Mashkour, M.

Mashkour, M.

Molah Salehi, H.; M. Mashkour, A. Chaychi Amirkhiz and R. Naderi

Naderi, R.

Shidrang, S.

Uerpmann, H. P and zW. Frey