



The diversity of Late Pleistocene and Holocene wild ungulates and kites structures in Armenia



Jwana Chahoud ^{a, b, *}, Emmanuelle Vila ^a, Adrian Bălăşescu ^c, Rémy Crassard ^a

^a CNRS, UMR 5133 Archéorient, Maison de l'Orient et de la Méditerranée, Lyon, France

^b Natural History Museum, Lebanese University, Beirut, Lebanon

^c National Museum of Romanian History, Calea Victoriei nr.12. Sector 3 030026 Bucharest, Romania

ARTICLE INFO

Article history:

Available online 18 May 2015

Keywords:

Southern Caucasus
Biodiversity
Wild ungulates
Habitat range
Procurement strategy
Kites

ABSTRACT

Kites in Armenia were recently discovered, and investigations into their construction, typology and dating are ongoing. With these discoveries, it has become necessary to investigate a series of unsolved questions. In order to test the functions of kites, we conducted a synthesis describing the occurrence and habitat range of Late Pleistocene and Holocene wild ungulates in Armenia. Wildlife is discussed by emphasizing animal behavior and distribution, along with the hunting strategies adopted by the communities that inhabited Armenia.

In spite of the fact that wild ungulates did not contribute largely to the daily meat intake or to the major raw products needed by humans since their domestication (around 6000 *cal.* BC), wild goats, gazelle and red deer were the animals most frequently hunted in Armenia in different time periods and in a variety of landscapes. Hypotheses put forward suggest that these preferences might be linked to using kites as traps for herds at different seasons of the year and on different altitudes, between 3000 and 500 BC.

© 2015 Elsevier Ltd and INQUA. All rights reserved.

1. Introduction

Wildlife in Armenia varies across the different geographic landscapes and biotopes, between the valleys, mountains, forests, and plateaus of the country. A wide range of large mammals inhabited the Southern Caucasus, in particular aurochs (*Bos primigenius*), bison (*Bison bonasus caucasicus*), Caucasian tur (*Capra caucasica*), bezoar goat (*Capra aegagrus*), wild sheep (*Ovis orientalis*), roe deer (*Capreolus capreolus*), red deer (*Cervus elaphus*), elk (*Alces alces*), wild boar (*Sus scrofa*), wild horse (*Equus ferus*), onager (*Equus hemionus*) and gazelle (*Gazella subgutturosa*). In Armenia, animal habitat varied through time, both during the Pleistocene and the Holocene. Hunting activities were the focus of Paleolithic meat-based subsistence. Wild game such as *Bison bonasus caucasicus* and *Capra caucasica* were gradually replaced by species from husbandry and transhumance activities, a process beginning from the Neolithic onward (around 6000 *cal.* BC). From this period onwards, hunting was no longer the unique source of

meat, inducing a change in hunting strategies towards a focus on various biotopes and a wider spectrum of animals: caprines (sheep and goat), gazelle, cervids, equids, and bovines (Mezhlumyan, 1972; Chataigner, 1995; Bălăşescu et al., 2010; Pinhasi et al., 2011; Wilkinson et al., 2012; Berthon, 2014). The direct influence of the landscape played an important role in directing the hunting strategies of inhabitants, through the procurement of available resources from steppe regions (*Gazella* sp., *Equus* spp.), open areas (*Bos primigenius*, *Equus* spp.) and forested biotopes (*Bison bonasus caucasicus*, *Cervus elaphus*, *Capreolus capreolus*) (Vereshchagin, 1967; Chataigner, 1995; Chataigner et al., 2012).

Several concentrations of stone structures known as “desert kites” (or simply kites) have been recorded along mountain chains in the Mount Aragats region (Barge et al., 2013; Gasparyan et al., 2013; Brochier et al., 2014; Crassard et al., 2014). Kites are located in temperate semi-arid to arid areas in landscapes including plateaus, steppe, semi-deserts, and dwarf shrub vegetation. Recent studies in the Aragats massif have brought to light the architectural characteristics of kites: two or more long driving stone lines or antennae leading to a large surface enclosure, the latter regularly hidden in the landscape and with a funnel-shaped entrance, the enclosure being associated with several small closed circular rooms or cells around its periphery (Brochier et al., 2014). The ongoing

* Corresponding author. CNRS, UMR 5133 Archéorient, Maison de l'Orient et de la Méditerranée, 7 Rue Raulin 69007, Lyon, France.

E-mail address: jwanachahoud@gmail.com (J. Chahoud).

excavations of kites in Armenia have yielded neither archaeological nor animal remains from kite structures. Lithic tools dated between the third and the first millennium BC have been recovered from the surface of certain kites in the northwestern fringes of the Ararat depression (Gasparyan et al., 2013). While hypotheses linking kites to hunting or husbandry were suggested for desert kites in the Middle East, kites in Armenia are mainly considered to be hunting structures (Gasparyan et al., 2013; Brochier et al., 2014). Even though kites are widely described as driving traps for gazelle herds, with the use of kite antennae as drive lines guiding animals towards the enclosures, no concrete evidence has of yet been recorded confirming this function (Échallier and Braemer, 1995; Legge and Rowley-Conwy, 2000; Holzer et al., 2010; Bar-Oz et al., 2011; Nadel et al., 2013; Zeder et al., 2013; Crassard et al., 2014; Chahoud et al., 2015). An analysis of the zooarchaeological record on hunting activities, along with reconstructing animal prehistoric occurrence and behavior in kite areas, are therefore needed in order to try testing the hunting hypothesis and the identification of the prey targeted by kite structures. Kites are mostly known from the observation of high-resolution satellite imagery, a technology that resulted in the increase of recorded kites to more than 4500 across the Middle East, Caucasus and Central Asia. Armenian examples were very recently discovered and represent an isolated concentration far from the Near Eastern ones to the South-West, and away from the Central Asian ones to the East (Barge et al., 2013; Crassard et al., 2014; a regularly updated interactive mapping of kite structures is available at <http://www.globalkites.fr>). This global zooarchaeological approach to better understand how kites were used and why they were built is innovative and will be applied in the near future to other regions where kites are highly concentrated (Chahoud et al., 2015). The Armenian case is therefore a first step to more comprehensive and global study of the kite phenomenon.

2. Material and methods

The preliminary dating of kites in Armenia has suggested a use of these structures between the Bronze and Iron Ages (third to first millennia BC) (Brochier et al., 2014). In this regard, kite distribution, as well as animal exploitation and occurrence, are analyzed with a special emphasis on the role of kites for hunting ungulates in Armenia. The available faunal studies from Armenia throughout the Late Pleistocene and the Holocene are not extensively detailed. Thirty-eight sites including 50 faunal assemblages are analyzed in this paper and cover the Middle Paleolithic, the Upper Paleolithic, the Mesolithic, the Neolithic, the Chalcolithic and the Bronze and Iron Ages periods of Armenia (Table 1).

Wild and domestic ungulates remains are recorded by their number of identified specimens (NISP). To prevent counting and inter-spectrum variability errors, only the ungulates are considered in the count of the total NISP (NISPu) including wild and domestic species. NISPw includes exclusively the number of identified specimens of wild animals. We noted the nature, chronology of sites, district, and faunal data from the literature, while each site location is shown on a Geographic Information System (GIS) that leads to producing thematic maps. In some cases the NISP of faunal remains is not presented, or is replaced by a minimal number of individuals (MNI) in the literature. Therefore, the species are marked as present (P).

Meanwhile, several limitations are noted. First of all, zooarchaeological studies from the region are relatively rare. A number of sites cannot reflect the reality of wildlife exploitation, because of the low number of analyzed sites. Most of the recent faunal studies are preliminary, due to the ongoing state of archaeological excavation and analyses. The number of faunal assemblages is

significantly different during various chronological periods (5 Paleolithic, 1 Mesolithic, 2 Neolithic, 7 Chalcolithic, 12 Early Bronze Age, 6 Middle Bronze Age, 10 Late Bronze Age and 7 Iron Age (Table 1, Fig. 1). Another problem lies in the absence of a clear standardized chronology from Armenian archaeological sites (Smith, 2005; Smith et al., 2009; Lindsay and Smith, 2006). We thus intended to keep a less granular division of chronological periods, which we divided into the Late Pleistocene (the Middle and Upper Paleolithic and the Mesolithic), Neolithic, Chalcolithic, Bronze Age and the Iron Age. From a methodological viewpoint, the total NISP of faunal assemblages is quite variable and could bias the results in the case of small assemblages. However, whether the latter are representative or not, they should be included in the analyses. We have chosen to include the small assemblages in order to have a greater overview of the region and to cover more geographic and chronological zones. The comparison between faunal assemblages was often conducted using the relative frequency or the percentage of NISP (Uerpmann, 1973; Grayson, 1979). Generally, the absence of homogeneous methods and published results of faunal assemblages highlights the problem of the identification of domestic or wild caprines, equids or bovines, a very delicate process indeed. The scarcity of fauna identified to a species level (e.g. *Capra* sp.: *Capra aegagrus* or *Capra hircus*?) is therefore the main reason explaining low NISP. Finally, the archaeological origin of assemblages also needs to be explored in a more balanced and detailed fashion. The diversity of ecosystems, environments, and landscapes of the distribution area of kites had a direct impact on hunting strategies. Therefore, the comparison between sites from the mountains, forest or steppe zones are subject to this bias. The nature of a site is another frequent source of error in such comparisons, as conservation of bone remains from caves, open-air camps, tombs or settlement areas is very variable. The comparison between the spectra of these sites could be biased by the difference of total NISP per site and in the degree of conservation of the bone (according to the nature of sites: settlement, graveyard, campsite, fortress; variable contexts: tomb, accumulation, deposit, floor ...). Moreover, details on spatial distribution of most of these faunal remains are not always made explicit in published reports.

Another aspect analyzed in this paper is the prehistoric and historical distribution in Armenia of wild animals. In order to establish the distribution of species over the complete territory of Armenia, we combined data from several references and elaborated historic and archaeozoological maps for each species. Archaeozoological records are based on available quantitative spectra from Armenian archaeological sites. When accurate quantitative data are not available, only presence or absence of species is recorded.

Historical data is defined by the range of habitats of species in historic times. In most cases the distinction between past and current distribution is not clear, due to the lack of updated records regarding the species' distribution. The current extent of species is integrated to the available data on extant animal range and current occurrence, according to the International Union for Conservation of Nature (IUCN, 2009). In some cases current species' distribution emphasizes the possible range of animal occurrence in an area, and not the actual observed distribution. References tend to combine historical records with fossils and archaeozoological data in order to establish the distribution area of several species. We kept these data under the banner "historical data", as there is no clear evidence or distinction of their occurrence in the archaeozoological spectrum, in the case of sites mentioned by Vereshchagin (1967). Data on species distribution is scarce, particularly with regards to range or area of occurrence (polygon on a map), while others are recorded as a localized observation in a distinct geographical position (point on a map). These issues introduce a slight error range

Download English Version:

<https://daneshyari.com/en/article/1040349>

Download Persian Version:

<https://daneshyari.com/article/1040349>

[Daneshyari.com](https://daneshyari.com)