

ENVIRONMENTAL RECONSTRUCTIONS FROM THREE LATE MOUSTERIAN SITES IN WESTERN CRIMEA

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The Mousterian occupation of Anatolia has been the focus of renewed archaeological interest. The discovery of a relatively late Mousterian industry in that part of Anatolia which includes the Crimea and Western Caucasus has further stimulated interest in this region.

The goal of this discussion is to present a preliminary reconstruction of the environmental context of three late Mousterian occupations of Western Crimea, based on faunal remains. A more complete discussion of these data is forthcoming. Analysis of microfaunal (Markova) and malacofaunal (Michaellesku) components is complete. Identification of the large mammal faunas of Kabazi V and Starosele is also complete (Burke) and analysis is in progress. Identification and analysis of the Kabazi II assemblage is underway (Patou-Mathis).

Correlating the micro and macrofaunal components of the three sites enables us to reconstruct the local environments during the human occupations. Thus, the evolution of the regional climate and local landscapes can be traced, and potentially used to correlate the occupation phases across sites. Environmental reconstruction also presents us with the opportunity to examine human exploitation strategies in their physical context, and establish what attributes of the local landscape were salient features for the human inhabitants.

The three archaeological sites under study are: Starosele, Kabazi II and Kabazi V. These sites lie within roughly 100 km of each other, along the broad limestone escarpment which forms the second range of the Crimean mountains. Each site contains multiple, late Mousterian occupation phases (Marks *et al.* 1997) and preliminary dating of these sites indicates the rough contemporaneity of their uppermost occupations.

STAROSELE

Starosele is situated beneath a rock overhang, on the slopes above the Kanly Dere river gorge. There are four occupation levels at Starosele. Palaeoenvironmental reconstructions for each occupation phase are possible based on geomorphological data communicated to us by the archaeologists, and on macrofaunal, malacofaunal, and microfaunal data.

The lowermost occupation, level IV, apparently accumulated in an open, meadow-steppe context in close proximity to a water source. Temperatures were relatively warmer than during the succeeding level III. The sterile soils between level IV and III contain micro and malacofaunas which indicate an generally drier environment, possibly due to the downcutting of the canyon or,

alternatively, to the establishment of glacial conditions: both micro and malacofauna in level III represent a dominant cold-steppe phase. Level II shows the beginnings of a moderating climatic trend, especially in the malacofauna, which carries through into level I. The local landscape is dominated by steppe regions but a closed canopy environment, as well as a meadow zone, must have lain in proximity to the site (presumably in the more humid canyon floor). More humid conditions prevail in level I, according to malacofaunal and microfaunal data, and the steppe regions may have given way to more mesic, open environments with more extensive bush cover. (See Fig. 1)

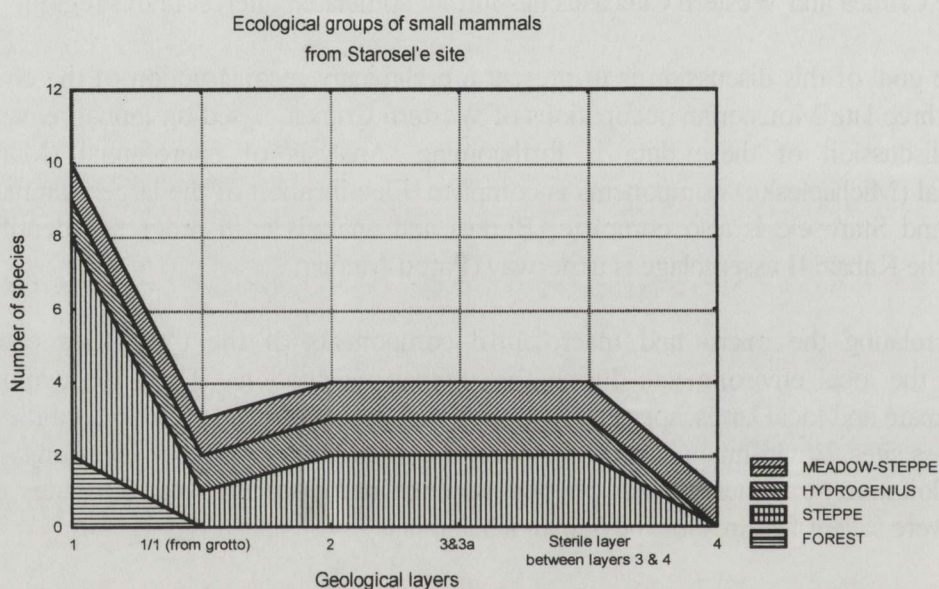


Fig. 1. Microfauna sample for Starosele.

Macrofaunal assemblages in all four levels at Starosele are dominated by steppe-dwellers such as *Equus hydruntinus* (the most important species) and *Saiga tatarica*, despite indications of a transformation of the local and regional landscapes. (See Fig. 2) The composition of the local animal communities must have fluctuated with the topography and micro-climate of the canyon bottom. Despite documented changes in the environment, however, the focus of the occupants of Starosele remained the upland plateau and the steppe-dwelling animals which inhabited it.

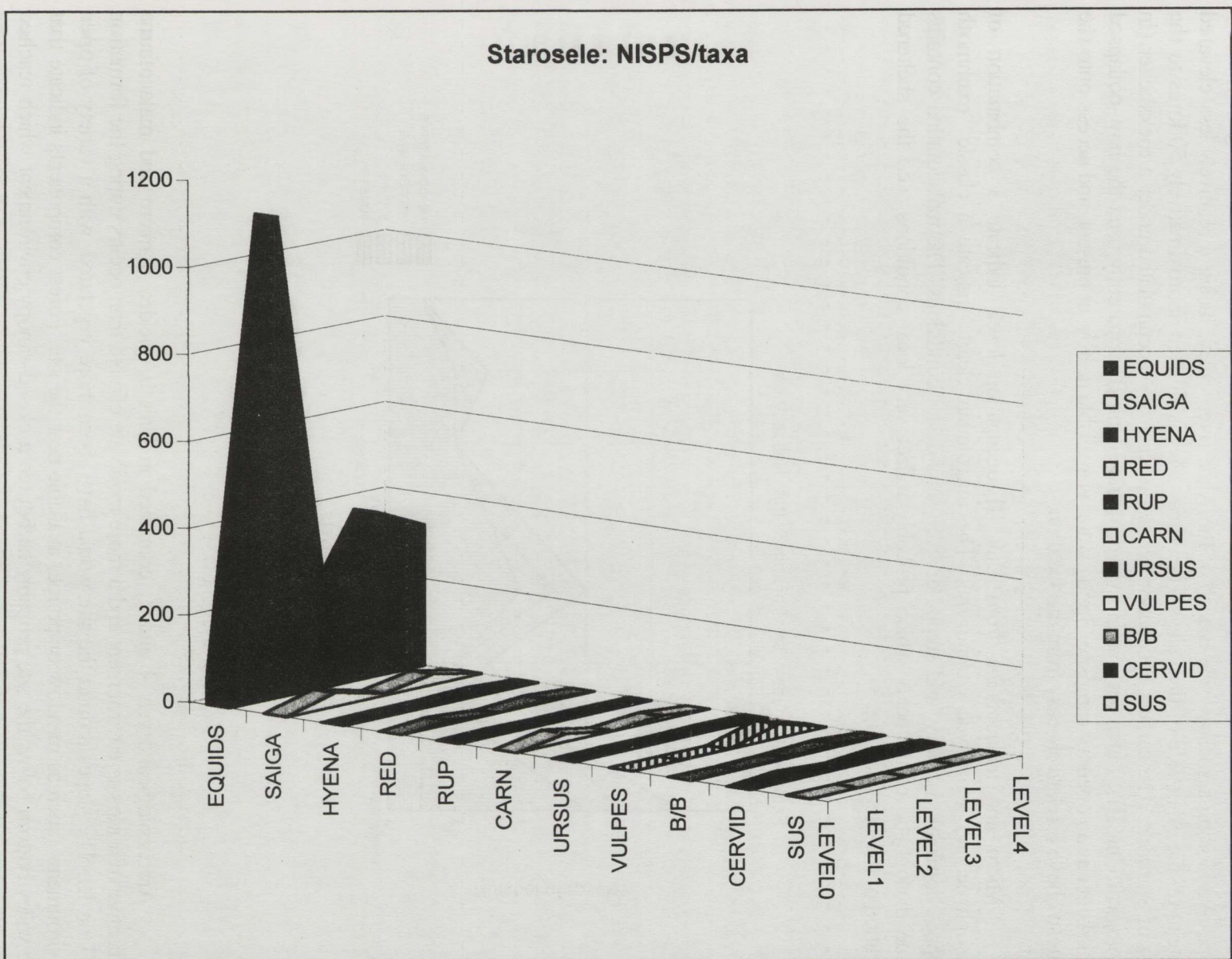


Fig. 2. Macrofauna from Starosele.

KABAZI V

The site is situated mid-slope, below the Kabazi escarpment, on a relatively gentle, sunny slope overlooking a shallow side-branch of the Alma river valley, facing a relatively less elevated plateau on the other side of the valley. The Alma valley is situated approximately 50 km.s to the east of Starosele. The earliest occupation phases at Kabazi V accumulated under a rockshelter (in geological Unit III). Later occupations (in geological Unit II) apparently used the now-collapsed rockshelter as an open-air campsite. Spring water is available nearby, at present, and access onto the plateau above is relatively easy from this location.

Micro and malacofauna from Unit III occupation levels indicate a combination of mesophytic and xerophytic components. The microfauna clearly indicate a classic "mammoth steppe" dominant, i.e., dry, arid steppe or even semi-desert conditions. The malacofauna contains some mesophytic components which probably reflect very local conditions, i.e., the sheltered location of the site. (See Fig. 3)

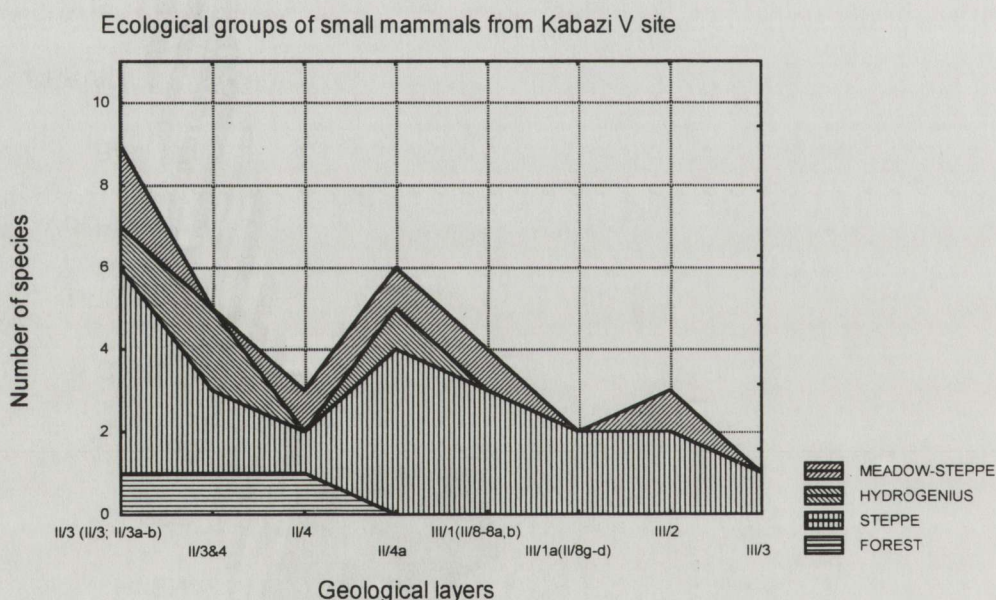


Fig. 3. Microfauna from Kabazi V.

Archaeological levels 4 and 3, contained in Unit II, yielded a micro and malacofauna indicative of a mosaic environment and a more moderate climate than occurs during the formation of Unit III. The slopes around the site would have been more vegetated, with a variety of open environments (such as meadow or prairie) available near the site. Forest components indicate that the valley bottom below the site probably harboured a closed-canopy environment which reached onto the slopes below the site. It is possible to draw a comparison between these indicators and environmental conditions which prevailed during the Middle Valdaic interstadials (such as the

Grazhdansi, dated to @ 50-40 Kyr, which is similar to the age proposed by McKinley for this Unit).

The macrofauna of Unit III is clearly dominated by cold steppe components. (See Fig. 4) *Saiga tatarica* dominates throughout, with *Equus hydruntinus* secondarily present, occasionally co-dominant. Species such as red deer and wild pig, present in very small numbers, indicate that the river bottom environments were at least sparsely vegetated - but apparently rarely exploited by humans. Unit II macrofauna continues to show a focus on steppe-dwelling species, with *Saiga tatarica* dominant.

KABAZI II

Kabazi II is an open-air, mid-slope locale situated within a twenty minutes' walk of Kabazi V, on the escarpment above the main Alma valley. The malacofaunal sample is small, and probably not representative of a biocoenosis, although an interpretation of local environmental conditions is nevertheless attempted on the basis of the species present in the sample. Preservation conditions prevented a microfaunal sample from being collected. The malacofauna indicate that the environment around Kabazi II has always been dry and open.

There are two major depositional phases at Kabazi II, represented by geological Units III and II, which contain several occupational horizons. Unit III apparently accumulated under xerophytic conditions, and Unit II accumulated during a cold steppe phase. The presence of a local water source is indicated on the basis of geomorphological evidence (Ferring, *pers. comm.* 1996), as well as the presence of malacofauna indicative of localized bush or tree cover. The macrofauna is currently under study but is obviously dominated by *Equus*.

DATING OF THE SITES USING CLIMATOSTRATIGRAPHY

Level IV at Starosele may well present early Valdaic conditions, persisting into level III. The faunal assemblages of levels I and II at Starosele, dated to @40 Kyr B.P. (Marks, *pers. comm.* 1997), present characteristics which fit well with a Middle Valdaic interstadial. Mosaic environments and milder conditions dominate at both Starosele (levels I and II) and Kabazi V, Unit II, although macrofauna at both sites are still dominated by steppe components.

The 'mammoth steppe' indicators at Kabazi V, Unit III, may possibly be correlated with early Valdaic conditions. This would support the attribution of the Unit II microfauna to a Mid-Valdaic interstadial phase.

Micro and malacofaunal data from Kabazi II is insufficient for the purposes of attributing the occupation levels to a climatic phase.

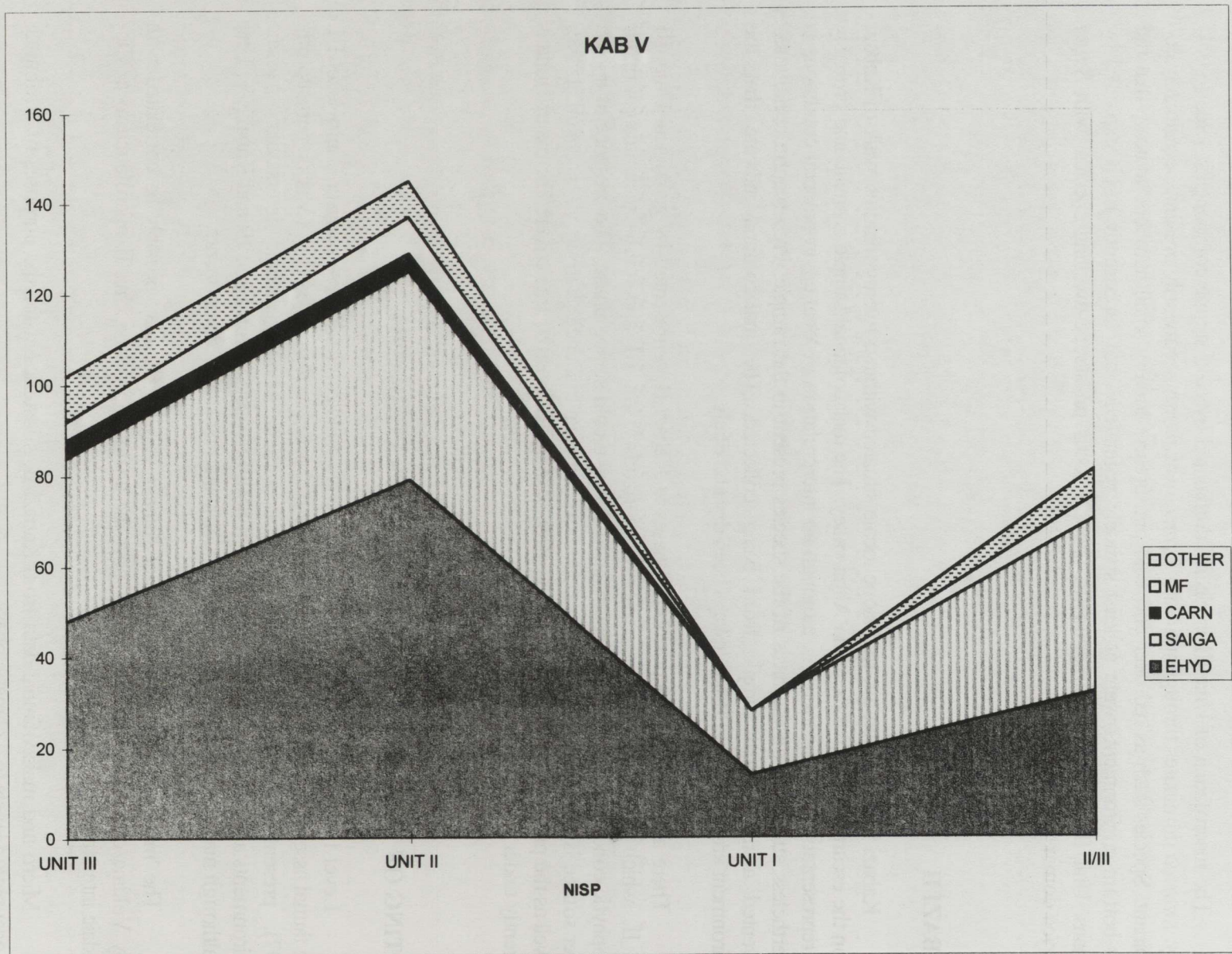


Fig. 4. Macrofauna from Kabazi V. (Please note that these are preliminary results.)

COMMONALITIES

All three of the sites examined here are situated at the margins of the Yaila plateau, which was certainly a steppe environment during the Mousterian occupation phases studied here. In each case, certain features of the landscape which may have been attractive to humans can be identified. The proximity of a water source, slope stability and/or access to a plateau, nearby shelter, a commanding view and an interzonal location are all potentially interesting landscape features.

Shelter is clearly not a motive for site location since Kabazi V was re-occupied after the rockshelter collapse. Starosele is an open-air deposit at the foot of a cliff, and levels I and II, in particular, are not sheltered deposits given the evidence for rockfall activity prior to and between occupation phases. Kabazi II is an open-air site.

Commanding views are another possible locational factor. Kabazi II and Kabazi V, in particular, dominate river valleys. Starosele, situated in a box canyon, does not offer a commanding view, however. The dominance of steppe-dwelling species in the faunal assemblages, which would have inhabited the Yaila plateau above the sites, also seems to contradict the importance of this factor.

An interzonal location, between valley-bottom and steppe, may have been a significant landscape feature for the inhabitants of all three sites. The more sheltered, relatively humid river valleys may have provided water sources, relief from excessive windchill and/or arid, hot conditions on the plateau, as well as an abundance and variety of plant foods. Of course, monitoring the movements of prey, themselves taking advantage of some of these landscape features, may have been the proximate cause for site location. Saiga, dominant at Kabazi V and co-dominant at Starosele, is notoriously unpredictable and swift in its movements - except during extremely cold periods, or under very arid conditions, when concentrations of animals occur in river valleys (Bannikov 1961). Similarly, equids often use valley floors and slopes above valleys as winter habitat when windchill is a factor (Berger 1986). Horses also frequently descend into river valleys in search of open water sources (*Ibid.*).

The macrofaunal assemblages indicate that river valley dwellers, such as red deer and wild pig, were rarely exploited by the Mousterian inhabitants of Western Crimea. People were therefore not situating themselves to exploit the faunal diversity of interzonal areas but, more plausibly, sought to take advantage of the relatively more predictable behaviour of steppe dwelling species in these environments. There remains the very strong possibility that plant diversity was also a significant factor.

SEASONALITY

In levels I to II at Starosele, foetal horse is present. At Kabazi V, foetal elements (mostly equid) were also found in Unit II and at the top of Unit III. Comparing the size of the fossil elements with modern pony foetuses results in estimates of foetal age. The normal foaling season for horse (*E. Caballus*) is April. Mares gestate for about 325 days. Assuming similar developmental

rates between *E. Hydruntinus* and *E. Caballus*, the fossil foetal elements are between 80-100 days old. The age of the foetal elements at Starosele and Kabazi V, therefore, indicates late summer/fall occupation. Foetal elements of a small artiodactyl are also found at Kabazi V. Since this site is dominated by *Saiga tatarica*, it is not unreasonable to assume that the foetal artiodactyl is Saiga. The bones are quite small, indicating an early gestation phase. At Starosele, the seasonal indicators show that the site was used well after spring floodwaters had receded, during late summer and fall. Kabazi V was probably occupied during the late summer/fall as well. Fuller analysis of the seasonal indicators in these three faunas is underway and results will be presented in a forthcoming publication.

CONCLUSION

All three of the sites surveyed in this presentation show evidence of sporadic occupations occurring over a long period of time, during which several distinct climatic phases succeeded each other and the local and regional landscapes evolved significantly. The hunting economies of these sites remained focussed on steppe-dwelling species such as saiga antelope and horse, however. The re-use of these sites over such a long period is probably attributable to their interzonal location, and their proximity to water, which made prey movements more predictable and ensured greater plant and animal diversity. The faunal data is consistent with an Early/Middle Valdaic period at Starosele and Kabazi V, at least, i.e., a persistent cold phase, arid and open, with more moderate oscillations of climate.

ACKNOWLEDGEMENTS

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