Chapter 7

THE ANIMAL ENVIRONMENT OF WESTERN CRIMEA

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INTRODUCTION

This chapter presents a reconstruction of the animal environment of Western Crimea during the late Middle Paleolithic occupation of the region. The faunal material which contributes to this reconstruction includes microfaunal assemblages and malacofaunal assemblages from the sites of Kabazi II, Kabazi V, and Starosele, and the large mammal assemblages from Kabazi V, Starosele, and Levels II/7E, II/8C, IIA/1, and IIA/2 of Kabazi II (see Chapters 1-5).

Correlating the different faunal components enables us to reconstruct the local landscape of each site from both a synchronic and diachronic perspective. The large mammal component helps track changes in the animal communities around the sites, and forms a basis for reconstructing short-term, seasonal changes in the regional movements of prey species. Ultimately, these reconstructions present us with the opportunity to contextualize human settlement of the region.

Starosele lies roughly 20 km to the west of the sites of Kabazi II and Kabazi V, which are in close proximity to one another. All three sites are situated along the broad limestone escarpment that forms the second range of the Crimean Mountains. Each site contains multiple Middle Paleolithic occupation phases (Marks and Chabai 1998). Absolute dating of the sites (Hedges et al. 1996; McKinney 1998; Rink et al. 1998) and palynological analysis (Chapter 6) indicate that the occupations of Kabazi II span from the Last Interglacial to the latter part of oxygen isotope stage 3. Levels II/7, II/8C, IIA/1, and IIA/2 at Kabazi II, which are reported here, date to the Hengelo and Les Cottés Interstadials of oxygen isotope stage 3. The occupations at Starosele occurred during oxygen isotope stages 3 and 4, and are probably partially contemporary with occupation levels at Kabazi V (Chapter 11).

Of the faunal assemblages described in this chapter, the fauna assemblage from Starosele Level 4, which probably dates to the Amersfoort-Brörup Interstadial, is the oldest, followed by Kabazi V Unit III and Starosele Level 3, which appears to date to the first stadial of the Last Pleniglacial. The lower levels of Kabazi V Unit II correspond to the Moershoofd Interstadial, while Kabazi II Level II/A2 dates to the following stadial. Starosele Levels 1 and 2, and Kabazi II Levels IIA/1 and II/8C all seem to date to the Hengelo Interstadial. The faunal assemblage from Kabazi II Level II/7E is the youngest for the occupational levels described in this report; it dates to the Les Cottés Interphasial. In sum, the faunal collections being analyzed in this research span isotope stage 5c to the second half of stage 3 (Chapter 11).

STAROSELE

Starosele is situated in a box canyon, at the foot of a slightly overhanging cliff wall, above the Kanly-Dere gorge (Fig. 7-1). There are four occupation levels at Starosele. The lowermost occupation, Level 4, accumulated in an open, dry steppe context in close proximity to a water source. The microfauna and malacofauna are dominated by xeric and mesic

Fig. 7-1—Kanly-Dere box canyon.

components, indicating that temperatures were more humid, and possibly cooler, than today, yet they also indicate that temperatures were relatively warmer than during the succeeding Level 3. The sterile soils between Levels 4 and 3 contain microfauna and malacofauna that indicate a generally drier environment, which may represent a regional climatic shift, or may be a reflection of the downcutting of the thalweg. Microfauna and malacofauna in Level 3 represent a xeric steppe phase; both open vegetation and a continental climate are indicated, although a mesic component persists. Level 2 shows the beginnings of a moderating climatic trend, which carries through into Level 1.

The composition of the local animal communities must have fluctuated with changes in the microtopography and microclimate of the canyon bottom below Starosele. The lack of faunal diversity in Level 4 (Chapter 1), for example, is probably less an indicator of regional environmental change than a reflection of the fact that the canyon was not deeply incised at this time (Marks et al. 1998) and probably didn't support a well-developed mesophytic microenvironment.

Generally, the local landscape around Starosele during all occupations was dominated by steppe regions with a moderate climate. This is entirely consistent with the large mammal assemblages from the site, all of which are dominated by *Equus hydruntinus*. A developed mesophytic environment and a meadow zone, eventually evolved near the site (presumably in the more humid canyon floor) by the time Levels 2 and 1 were occupied, according to microfaunal and malacological data (Chapters 4 and 5). The large mammal assemblages from these levels include components of animal communities that would have frequented these zones (*Cervus elaphus, Sus sp.*). More humid conditions prevailed in Level 1, according to these data, and the steppe regions may have given way to more mesic, open environments with more extensive bush cover, without affecting the distribution of major prey species.

KABAZI II

Kabazi II is an open-air site, situated mid-slope below the escarpment above the Alma River valley (Fig. 7-2), approximately 20 kilometers to the east of Starosele. The site lies within twenty minutes' walk along the Kabazi escarpment from the site of Kabazi V (see below). Overall, the malacofaunal sample is small and probably not representative of a biocoenosis, although an interpretation of local environmental conditions is nevertheless attempted based on presence/absence data (Chapter 5). Due to poor preservation, microfauna was found only in a sterile layer near the base of the sequence (Chapter 4).

The malacofauna generally indicate persistently dry and open conditions throughout the sequence of occupations. They also indicate the probable presence of localized bush or tree cover near the site during the formation of Unit II (Chapter 5).

Analysis of the large mammal fauna from Levels II/7E, II/8C, IIA/1, and IIA/2 (Chapter 3) indicates the persistent dominance of open, dry grasslands inhabited by *Equus hydruntinus* and *Saiga tatarica*. The faunal spectrum in Level IIA/2 is slightly more diverse than Levels II/7E and II/8C (red deer and bison are present) and indicates the probable presence of a second, more mesic biocoenosis. The large mammals at Kabazi II point to slightly more arid conditions in Levels II/8C and IIA/1 than in either of the other two levels examined here—either a result of a different season of occupation of the site (winter) or of a shift in the regional climatic regime (Chapter 3).

KABAZI V

The site of Kabazi V is situated just below the Kabazi escarpment on a relatively gentle, sunny slope overlooking the Kalinovaya Valley, a shallow tributary of the Alma. The site

Fig. 7-2—Kabazi Mountain.

faces a relatively less elevated plateau on the other side of the Kalinovaya (fig. 7-3). Spring water is available near the site at present, and access onto the plateau above is relatively easy from this location. The earliest occupation phases at Kabazi V accumulated under a rockshelter (archeological Units IV-III). Later occupations (Units II-I) apparently occurred in the open air, on top of the collapsed rockshelter (Yevtushenko 1998a).

Microfauna and malacofauna from occupation levels in Unit III are dominated by a xerophilic steppe or grassland component, with some mesophilic taxa (Chapters 4 and 5). The mesophilic component in Unit III probably reflects the local microclimate near the rock overhang. The large mammal fauna in Unit III is clearly dominated by an arid steppe or grassland component. *Saiga tatarica* dominates throughout; *Equus hydruntinus* is occasionally co-dominant (Chapter 2). Species such as wild pig, present in very small numbers in this unit, indicate that the river bottom was at least sparsely vegetated—but apparently rarely exploited by humans.

Unit II at Kabazi V yielded microfauna and malacofauna indicative of a mosaic environment, and a more moderate climate than during the formation of Unit III. In fact, the microfauna and malacofauna indicate more mesic conditions than those that exist around the site today. The slopes around the site would have been more vegetated, with a variety of open environments (such as meadow or prairie) existing near the site. This is consistent with an interstadial environment. The large mammal fauna of Unit II at Kabazi V continues to show a focus on steppe-dwelling species, but also contains more taxonomic diversity than the lower Unit III, including Bos/bison, as well as more mesophilic species such as red deer (Chapter 2). *Saiga tatarica* is dominant and *Equus hydruntinus* is a close second. Forest components indicate that the valley bottom below the site probably harbored a closed and relatively mesic environment that may have reached onto the slopes below the site.

DISCUSSION

Globally, xerophilic components and cold-adapted fauna are represented early in the regional sequence (at Starosele Level 3). A series of mild climatic cycles then commences, which affect the local landscape and vegetation while appearing to have had a lesser impact on the large mammal fauna. Kabazi V shows a progression from a predominantly arid, open steppe or grassland landscape in Unit III, to more mesophilic fauna and a mosaic of habitats during the occupation of Unit II. A progression to milder, more humid conditions in the final two occupation layers at Starosele is followed by predominantly xeric conditions at Kabazi II, in Levels II/8C and IIA/1.

Generally, in accordance with these climatic phases and the regional topography, two distinct biocoenoses are represented in the large mammal fauna. A cold, dry steppe or grassland community (including *Equus hydruntinus* and *Saiga tatarica*) is dominant in all levels at all three sites throughout the time span under investigation. A more mesic biocoenosis is also represented by red deer, suid, and red fox in many levels (see above). This biocoenosis must have been located in the river valleys and valley slopes below the sites. The quasi-absence of bovids is indicative of the generally arid character of the regional landscape and is in keeping with the observation that Bison in this region retreated to the river valleys of high plateaus during the Upper Pleistocene (Vereshchagin 1967:374).

The Ecology of the Large Mammal Fauna from Western Crimea

Equus hydruntinus (the European wild ass) is found across Europe from the middle Pleistocene to the Holocene. It is distributed as far east as Azerbaijan (Eisenmann and Patou 1980). *Equus hydruntinus* was well adapted (but not limited) to steppe regions and fed on

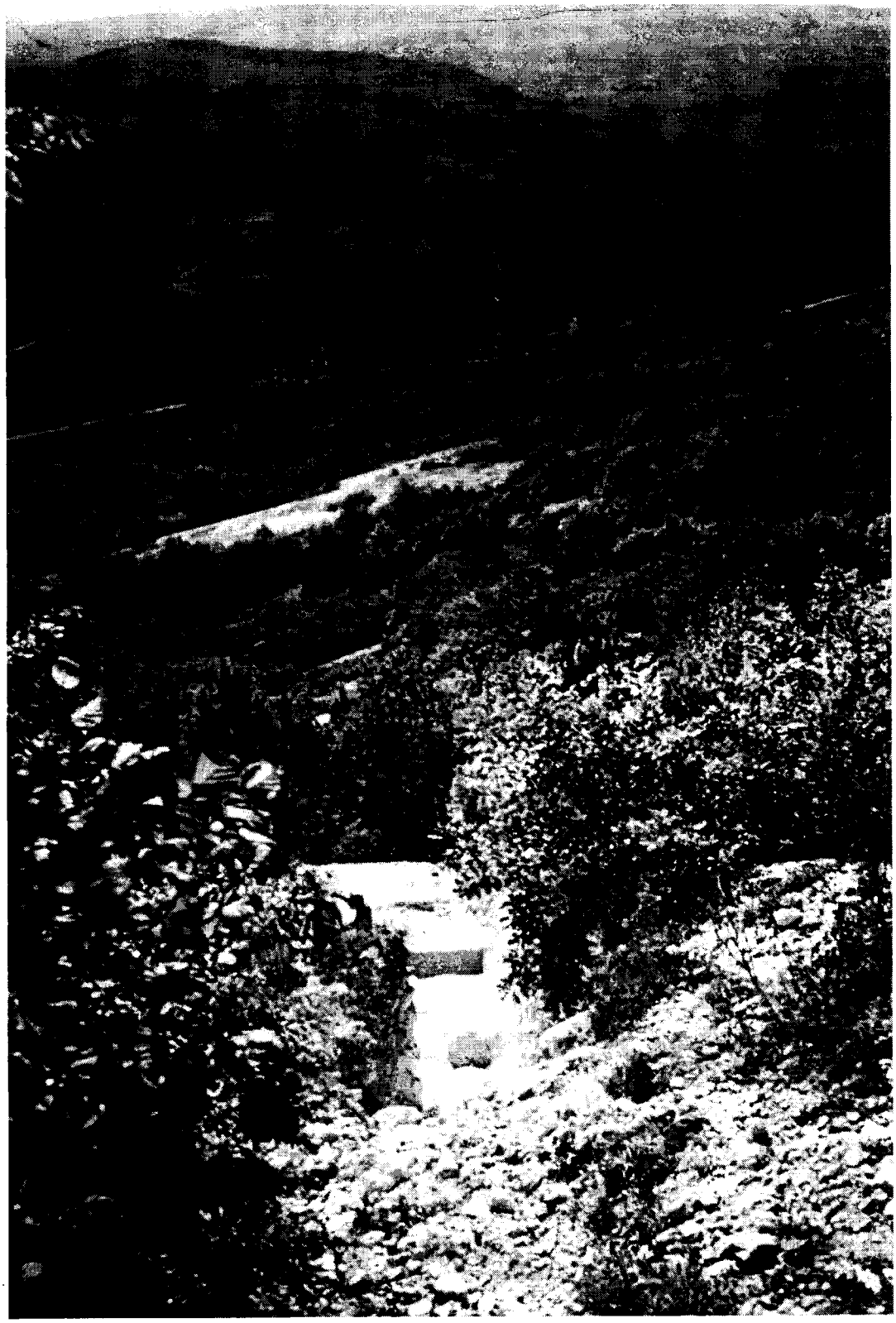

Fig. 7-3—View from Kabazi V over the Kalinovaya Balka.

coarse grasses (Vereshchagin 1967: 326). It is generally associated with wormwood steppes (Vereshchagin 1967: 328). Horses in the wild today often use valley floors and the slopes above valleys as winter habitat when wind-chill is a factor. Horses also frequently descend into river valleys in search of open water (Berger 1986).

Saiga tatarica is distributed today in arid steppes and semi-deserts of southern Russia to Mongolia. During the late Pleistocene, it was more widely distributed, ranging as far east as the Yukon Territories, Canada (Harrington 1981). This small artiodactyl thrives in sparsely vegetated grassland, avoiding broken ground (Bannikov et al. 1961: 56) and regions with heavy snow. A migratory animal, saiga is highly mobile (Bannikov et al. 1961: 79) and is both unpredictable and swift in its movements, changing grazing zones frequently and showing little attachment to particular ranges (Bannikov et al. 1961: 77-78). During extremely cold periods, or under very arid conditions, concentrations of animals occur in river valleys (Bannikov et al. 1961). Saiga typically winter in cereal-wormwood or cereal-Russian thistle zones on sandy soils (Bannikov et al. 1961: 57). Herds of saiga from Crimea are thought to have wintered in Ciscaucasia during the Late Pleistocene (Vereshchagin 1967: 355). It is likely that the foothills of the western Crimean Mountains represented summer grazing grounds for both saiga and horse, from which these animals migrated before the onset of rigorous winter conditions.

Animals from closed, relatively more humid environments are numerically under-represented in the assemblages described here. This may be a reflection of regional abundance, given their probably limited distribution in river valleys and valley slopes. Red deer (*Cervus elaphus*), and even more negligible numbers of wild pig (*Sus sp.*), occur sporadically in all sites.

Wild pigs are averse to strong winter cold, avoid deep snow, and are generally characteristic of interglacial and interstadial forest faunas (Kurtén 1968: 154). Their presence in western Crimea is consistent with the proposed isotope stages 4 and 3 dates, and is probably even indicative of interstadial phases. Wild boar will migrate, and have a vertical distribution, which includes alpine regions of the Caucasus, for example (Vereshchagin 1967: 333). Red deer are common across Europe, especially during the late Pleistocene. They feed on twigs, leaves, herbs, fruit, spruce bark, and lichens (Kurtén 1968: 163) and are generally confined to river valleys and wooded slopes (Vereshchagin 1967: 335).

The presence of chamois, *Rupicapra rupicapra*, in Levels 3 and 1 of Starosele is a reflection of the regional topography. Chamois prefer mountainous terrain and are adapted to cold, Alpine conditions across Europe (Kurtén 1968: 175). In western Caucasia, chamois are common in mid-altitudes and sub-alpine zones ranging from 300-3,000 meters above sea level (Vereshchagin 1967: 357). Chamois feed on clover and herbs, or mosses and lichens. A gregarious animal, chamois migrate to lower valleys in winter, where they form large herds (Kurtén 1968: 176). The individual in Level 3 and the second individual in Level 1 at Starosele indicate that the western Crimean Mountains probably hosted a population of these animals during oxygen isotope stages 3 and 4. The presence of a single reindeer element in Level 3 at Starosele could indicate that a remnant population resisted regional extirpation at the close of isotope stage 4/beginning of stage 3. This species would eventually become regionally extinct later on during stage 3, which explains its absence at Kabazi II and Kabazi V.

The carnivore component in western Crimea contains forms common throughout Eurasia, and belongs to both of the regional biocoenoses. Carnivores identified include the hyena *Crocuta crocuta*, the red fox *Vulpes vulpes*, and the cave lion *Panthera Leo spelea*. The hyena, *Crocuta crocuta*, is a specialized scavenger (Kurtén 1968: 71) adapted to a variety of middle and northern latitudes and is very common in Eurasia from the mid-Pleistocene onwards (Kurtén 1968: 69). They den preferentially in caves or rockshelters, and the

limestone outcroppings of western Crimea would have provided them an ideal habitat. The common red fox (*Vulpes vulpes Linne*) appears in Level 3 (MNI=2) and Level 1 (MNI=1) at Starosele. The red fox is fairly common in the late Pleistocene, in cave and open-air sites, and is adapted to a very wide range of conditions, although it does not inhabit the tundra (Kurtén 1968: 115-116). *Panthera Leo spelea*, or cave lion, appears in Level II/7E at Kabazi II (that is, later in the regional chronology). Although rarely found in large numbers, it is a common find in Europe and used to form a continuous population (Kurtén 1968: 87).

Seasonality

The open, upland steppe environment, which dominates the regional landscape of western Crimea on the northern flanks of the second mountain range, must have been seasonally variable. Fetal horse is present in Levels 2 and 3 at Starosele. At Kabazi V, fetal elements were found in some levels of Unit II, and at the top of Unit III. Assuming similar developmental rates between *Equus Hydruntinus* and the similar-sized modern pony, most of the fossil fetal elements are between 80-100 days old (Chapters 1 and 2). The age of the fetal elements at Starosele and Kabazi V, therefore, indicates fall (or possibly late summer) occupations. Fetal elements of a small artiodactyl are also found at Kabazi V. Since faunal assemblages at this site are dominated by *Saiga tatarica*, it is not unreasonable to assume that the fetal artiodactyl is Saiga. The bones are quite small, indicating an early gestation phase. Given modern data for gestation phases of Saiga (Bannikov et al. 1961), Kabazi V was probably also occupied during the fall.

At Starosele, additional seasonal indicators include the fact that Levels 4 and 3 were deposited after severe flash flooding had occurred in Levels 4 and 3 (Marks et al. 1998). Heavy rainfall patterns could be responsible for the flash flooding. Alternatively, sudden thaws bringing meltwater from the Yaila plateau into the drainage systems could have caused localized flooding, that is, during the spring. Occupations therefore would have occurred after spring thawing.

Avifauna also yield seasonal indications: bird taxa recovered at Starosele consist of cliff-nesting species such as alpine swifts, red-billed choughs, and jackdaws, as well as grey partridge (Mlikovski, personal communication 1997). The choughs and swifts are typical elements of southern paleoarctic mountains. The swifts are migratory, and the presence of sub-adults (Mlikovski, personal communication 1997) indicates that western Crimea was a breeding ground for this species, and that Level 2 deposits accumulated during late summer or fall. In contrast, Kabazi II Levels II/8C and IIA/1 may have been occupied during winter (Chapter 3).

Conclusion

The occupation levels examined here roughly span from the end of oxygen isotope stage 5 through mid-3. Many faunal indicators point to fall occupations (e.g., at Starosele and Kabazi V). The timing of these occupations is probably linked to the migration patterns of the principal prey species: *Equus hydruntinus* and *Saiga tatarica*. It seems likely, given the behavior of these animals in the wild today (see discussion above), that herds of both equids and saiga would have moved out of the high questas above the sites with the coming of winter, probably to escape the severe wind-chill which must have existed at these altitudes. Their movements would probably have been channeled by the system of river valleys which drains the questas, and along which Kabazi II and V are located. Starosele is located in a box canyon–but one that connects to a major drainage system.

During isotope stages 5 to 3, the local and regional landscapes near the sites must have

evolved significantly. The sites all share an important locational feature: they are situated in interzones between valley-bottom and steppe. The valley systems in particular must have evolved as the climate oscillated. The hunting economies of the sites surveyed here remained focussed on steppe-dwelling species such as saiga antelope and horse, however. The large mammal faunas indicate that although the sites were situated in interzonal locations, between the high plateau of the Yaila and river valley systems, their inhabitants preferentially exploited prey from a predominantly open and dry environment during all occupations of the sites.