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‘SEASONAL RHYTHMS’ OF A RURAL KURDISH VILLAGE: ETHNOZOOARCHAEOLOGICAL RESEARCH IN BESTANSUR, IRAQ

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This paper presents results from an ethnoarchaeological study of animal husbandry in a modern rural village situated in the foothills of the Zagros Mountains of Iraqi Kurdistan. We discuss how animal management, herding and local land use is affected by environmental and social factors. We explore seasonal variations in practice in respect to agricultural activities, resource availability and local traditions. The aim is to provide the groundwork for archaeological investigations of past animal husbandry practices in the local landscape on the basis that modern behaviours, identifiable ecological constraints and affordances can suggest testable patterns for past practices within the same functional and ecological domains. Semi-structured interviews conducted with villagers from several households provide information on current and recent behaviours illustrating notable shifts in practices and use of the local landscape in living memory.

Introduction

The modern rural village of Bestansur is situated in the foothills of the Zagros Mountains, Iraqi Kurdistan (Fig. 5.1). Repeated visits to the village at different times of the year have allowed first-hand observation of seasonal variations in animal husbandry and the opportunity to engage with local families to determine how and why the farming calendar changes. In this paper we explore these ‘seasonal rhythms’ with the aim of elucidating how animal husbandry is practiced within the local environment of Bestansur, and throughout the year, in respect to agricultural activities, resource availability and local traditions. Understanding the interplay of these factors at a local and regional level, and their influences on animal husbandry and arable farming practices (e.g. Bendrey, 2011; Colledge *et al.*, 2005; Dreslerová *et al.*, 2013; Manning *et al.*, 2013) are recognised as being key to developing more nuanced interpretations of animal management at archaeological sites.

The research presented here is part of a broader ethnoarchaeological study which has been developed in the context of excavations at the Early Neolithic site of Bestansur (Matthews *et al.*, 2014, p. 254), and which aims to contribute to ongoing archaeological analysis by providing a local framework and control data for these investigations. This is based on the premise that modern behaviours can suggest testable patterns for past practices within the same functional and ecological domains. Research has incorporated a programme of modern sampling aimed at exploring archaeologically identifiable signatures of modern animal use in the locale that can potentially be used to interpret archaeological evidence from the Neolithic settlement (Elliott *et al.*, in press). For example, strontium isotope analysis of modern plant material demonstrates that a measurable variation exists between the alluvial floodplain and the lower foothills (Fig. 5.2), which can be used to help constrain studies of past animal mobility in relation to

Figure 5.1. Location of the study area.

underlying geology/hydrology (e.g. Bentley, 2006), while analysis of modern dung samples shows clear variation between sheep (*Ovis aries*)/goat (*Capra hircus*) and cattle (*Bos taurus*) dung, in terms of numbers of faecal spherulites (Elliott *et al.*, in press).

Our investigations also build upon previous ethnoarchaeological research in the Zagros, which to date has mainly focused on the Iranian side of this region, with studies widely conducted in central western Iran during the 1970s and 1980s (Kramer, 1979, 1982; Hole, 1978; Watson, 1979). Notable among these is Kramer's 'Village Ethnoarchaeology' (1982), which considers animal husbandry within the context of agricultural activities and the constraints of seasonal and cultivation cycles. Crucially, Kramer (1982) emphasises that the utilisation of a specific landscape is limited by the interaction of environmental variables and social factors such as social organisation, territories and traditional patterns of land use

Here we present a synthesis of results from a program of semi-structured interviews undertaken with local participants during the months of August–September 2012 and March–April 2013. As well as providing information about current village dynamics these interviews have also highlighted

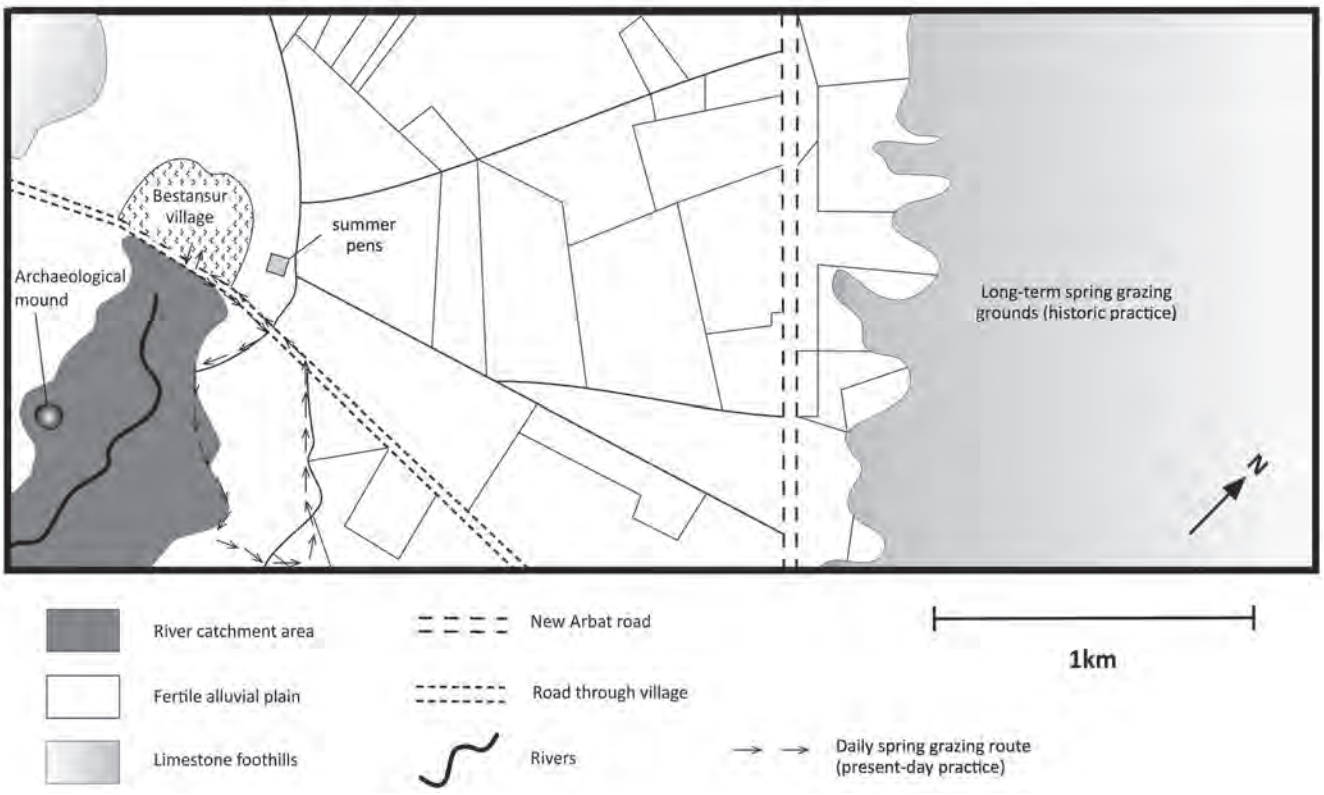

Figure 5.2. A simplified map of the local landscape around the modern village of Bestansur illustrating the three different ecological and functional domains – the river catchment area, the farmed alluvial plain, and the limestone foothills – and showing details of past and present sheep and goat grazing and penning locations.

Figure 5.3. Limestone foothills and edge of farmed alluvial plain, looking north-east from Bestansur village (April 2012).

the ever-widening dichotomy between past and present practices in modern-day Iraqi Kurdistan, and the value of oral histories as related by older-generation villagers who are able to describe traditional practices that occurred in the recent past (*c.* 70 years ago) and during their parent's lifetime, that may since have ceased and for which there is no written record. Where possible information on past practices is reported and evaluated in the context of this research while equally providing a written record for this rapidly disappearing knowledge set.

Study area

Bestansur lies *c.* 550 m above sea level (asl) on the Shahrazor plain of Iraqi Kurdistan, 27 km south-east of Sulaimaniyah and approximately 30 km from the Iranian border to the east (Fig. 5.1). The modern village is comprised of around 50 households, located near to a perennial spring and *c.* 700 m from the early Neolithic site of Bestansur (Fig. 5.2), this being one of several archaeological sites evidenced in the area today that attest to a long history of occupation in the region (Altaweel *et al.*, 2012; Nieuwenhuyse *et al.*, 2012). The main road running through the village joins up with the 'New Arbat road' in the North that continues onward to the Iranian border and is a major trade route (Fig. 5.2). In the past this area would have also been an important passage for trade into the Iranian highlands.

The Zagros Mountains are a dominant feature of the landscape in this region where the lower folded zone with peaks up to *c.* 1500 m consists of a series of long, narrow valleys composed of soft Upper Triassic well-bedded limestone. Although higher peaks are still some distance from Bestansur the lower foothills (*c.* 720 m asl) are less than 2 km away from the village and currently farmed right up to their limits. The geology here is characterised by cretaceous bedrock overlain by quaternary alluviation that supports modern arable farming (Saed Ali, 2008). For the purposes of this research the environment around the village of Bestansur can be further subdivided into three distinct physical zones (Fig. 5.2):

1 *River catchment area*: the river catchment area is dominated and constrained by the main water source in the village, a large karst aquifer (Saed Ali, 2008) located directly below the village. Impermeable beds around Bestansur prevent groundwater from percolating deeper and make this a substantial water source for the people of Bestansur (Saed Ali, 2008).
2 *Farmed alluvial plains*: the surface of the landscape around Bestansur comprises of slightly undulating thick alluvial sediments that are recharged primarily by the direct infiltration of rainfall, so that the surrounding lands consist of a gently sloping agricultural plain which now makes up the main cultivation land in this area (Saed Ali, 2008).
3 *Limestone foothills*: Limestone ridges mark the start of the lower Zagros in this area and the cessation of profitable alluvial soils for cultivation (Fig. 5.3). Soil cover is thinner with protruding limestone and scree characterising these foothills.

Climate, environment and food production

Iraqi Kurdistan has a semi-arid climate with a strong continental component (Maran and Stevanovic, 2009). Seasonal temperature variation for Erbil, located at 426 m asl and *c.* 173 km to the north-west of Bestansur, is

presented in Figure 5.4. These are average temperatures; summer peaks can, for example, approach 50°C. Normally, there is no rainfall from June until September, with the main period of precipitation lasting from December through to April (Fig. 5.4b). Variation in the topography of Iraqi Kurdistan significantly influences rainfall distribution, with precipitation rates decreasing from the mountains of the north-east to the desert-steppe of the south-west (Maran and Stevanovic, 2009, pp. 21–22). Seasons are unequally distributed through the year, with the long, hot summer dominating the year, and autumn, winter and spring relatively short (Fig. 5.4a–c). Following winter, air temperatures begin to rise in February and by late April summer conditions are setting in: the rainfall reduces and maximum day time temperatures increase to around 30°C. The transition from wintery to summery conditions can feel particularly abrupt. During the field season of spring 2012 we witnessed the transition from wintery conditions, with snow on the ground and freezing nights, through to early summery conditions with daytime temperature peaks of *c*. 30°C and warm nights. This transition occurred within approximately 5 weeks, between late March and late April. Rain is entirely absent from June through to September, with the first rains falling in October, but significant levels not falling until November. The summer is long, hot and dry. Autumn is short and begins late in the year and the winter is characterised by cold and snowy conditions.

Maran and Stevanovic (2009, pp. 103–104) provide an excellent overview of land use and food production in northern Iraq, which is summarised here. Arable agriculture is a key economic activity in Iraqi Kurdistan. Some 35% of Iraqi Kurdistan is currently used as arable land, covering substantial areas in the broad valleys and plains. The main crops include wheat (*Triticum* spp.) and barley (*Hordeum vulgare)*, sunflower (*Helianthus annuus)* and sesame (*Sesamum indicum*), chickpea (*Cicer arietinum*), lentil (*Lens culinaris*), broad beans (*Vicia faba)*, and sugar beet (*Beta vulgaris)*. Winter crops are normally grown between October and May, and summer season crops are grown from March to September (Fig. 5.4d). Wheat is grown as a food crop for human consumption, whereas barley is grown for foddering sheep and goats. Barley is predominantly sown in the drier areas where it is grown continuously or in rotation with fallow periods. Vegetable crops such as tomato (*Solanum lycopersicum)*, cucumber (*Cucumis sativus)*, onions (*Allium cepa)*, eggplant (*Solanum melongena)*, and okra (*Abelmoschus esculentu*) are grown under irrigated or locally favourable conditions, typically near water courses. Crops grown under rotation in the summer growing season (Figure 4d) include rice (*Oryza sativa)*, maize (*Zea mays)*, sunflower and cotton (*Gossypium hirsutum*). Maize is a relatively new introduction to the region, grown as poultry feed. The average size of a single family landholding is less than ten hectares.

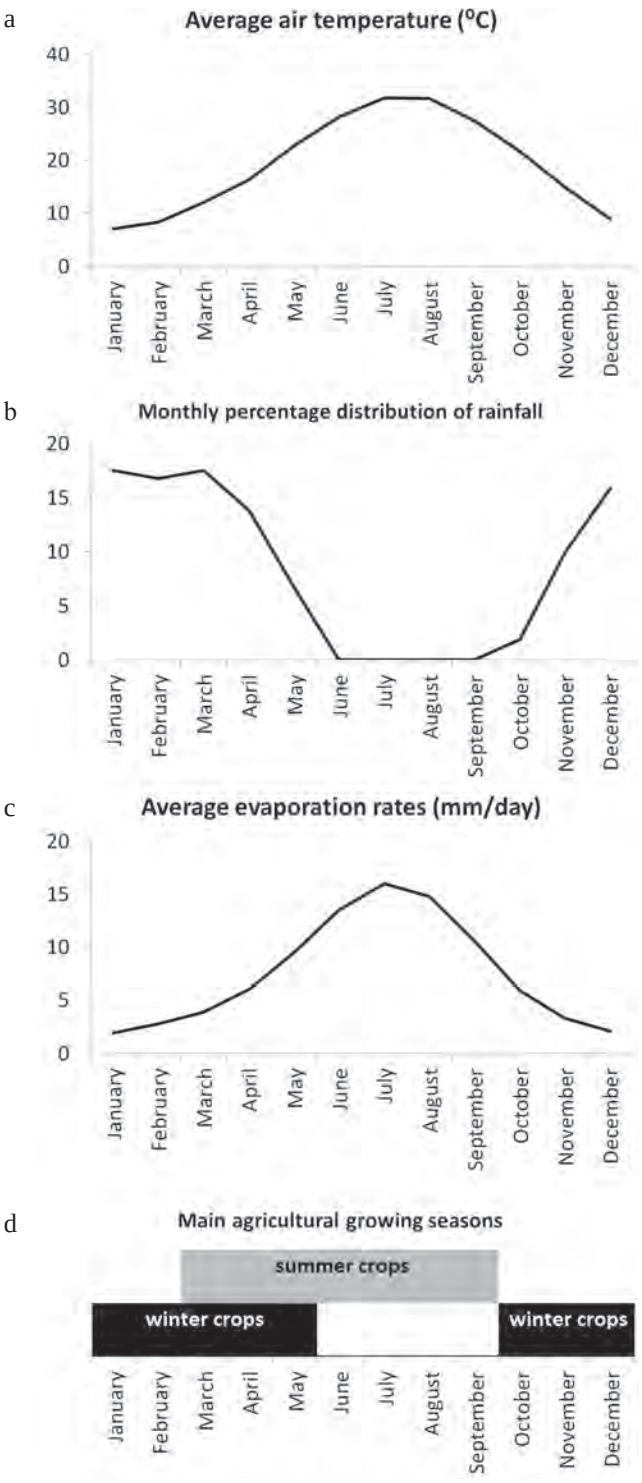

Figure 5.4. Seasonal variation in the climate of Iraqi Kurdistan: a) average air temperature (°C) for Erbil (1959–1972; Haddad et al., 1975 cited in Maran and Stevanovic, 2009); b) annual monthly percentage distribution of rainfall (1941–1975), typical data for the annual distribution of rainfall in Iraqi Kurdistan, no location given (Maran and Stevanovic, 2009, p. 24); c) average evaporation rates (mm/day) for Erbil (1966–1973; Haddad et al., 1975 cited in Maran and Stevanovic, 2009); d) the main agricultural growing seasons.