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Adopting agriculture in the West African savanna: Exploring socio-economic choices in first millennium CE southeastern Burkina Faso

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ABSTRACT

While significant advances have been made towards outlining the diverse processes of agricultural adoption worldwide, many regions including sub-Saharan Africa remain poorly understood owing to uneven archaeological coverage. This paper presents a case study from the West African savanna of a relatively late adoption of sedentism and agriculture. While domesticates were available in the region by ca. 2000 BCE, residents of the Gobnangou Escarpment in southeastern Burkina Faso maintained mobile foraging strategies likely until the 1st millennium CE. Drawing primarily on faunal remains from three archaeological sites spanning almost 7000 years of occupation, this paper explores the complex relationships between the adoption of domesticates, sedentism and long distance logistical expeditions by presenting data from two new early agricultural sites with varying domestic and local/regional wild resource usage. We argue that the Gobnangou is indicative of the diverse choices local communities make during times of economic transition, and highlight the social implications of the adoption processes.

Introduction

The adoption of agriculture, like domestication itself, is a complex cultural process. Diverse motivations and influences, ranging from environmental factors to technological innovations, result in a transformation of economies that is fundamentally enabled by cultural choices as societies construct new mechanisms and organizational principles to mediate social anchoring and delayed return. Understanding regional variation in the adoption events that led to farming communities worldwide is critically important for investigating subsequent social complexity and cultural diversification trajectories.

Over the past few decades, our understandings of agricultural adoption have evolved significantly. Rather than being characterized as a rapid, unidirectional process, it has been well-established that aspects of agricultural economies are often incorporated gradually and/or piecemeal, that adoption may be associated with periods of significant experimentation resulting in diverse strategies, and that the proximal factors leading to the adoption of an agricultural economy are often regionally specific (e.g., Ford, 1985; Zvelebil, 1986; Price and Gebauer, 1995; Smith, 2001; Atalay and Hastorf, 2006; Denham et al., 2007; Cohen, 2009 (and others in same volume); Fairbairn and Weiss, 2009; Barker and Janowski, 2011; Price and Bar-Yosef, 2011 (and others in same volume); Gepts et al., 2012). However, despite rapid advancements in the region, the contributions of sub-Saharan African, and in particular West African case studies to these conversations are to a certain extent limited by the still comparatively patchy archaeological coverage (for reviews see Marshall and Hildebrand, 2002; Neumann, 2005; Kahlheber and Neumann, 2007; Gifford-Gonzalez and Hanotte, 2011). However, as argued by Kahlheber and Neumann (2007) and demonstrated by recent case studies (e.g., Hildebrand, 2009; Harrower et al., 2010; Marshall and Weissbrod, 2011; Neumann et al., 2012), the diversity of African farming traditions has the potential to make substantial contributions to our understandings of these processes.

Recent research in and around the Gobnangou escarpment in southeastern Burkina Faso provides a useful comparative case of the choices that societies make in becoming sedentary food-producers. Following an analysis of a previously published rockshelter (Péntènga) dating primarily to the 7th–1st millennium BCE, we present new results from two small late first millennium CE tell sites (MAS541, MAS502), which are currently the earliest examples of plant and animal domesticate use in the region. While multiple lines of evidence, including more intensive investment in architecture, increased use of ceramics and groundstone, and higher density midden deposits indicate a shift to a more sedentary lifestyle at these tell sites, we focus primarily on the rich faunal assemblages which allow for a more nuanced exploration of changes in landscape use and a richer understanding of the dynamism of this period. While these early farmers maintained the use of wild resources, their logistical mobility varies depending on the types

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of domesticates (grains, chickens, livestock) they incorporate in their economy. From this case study we explore the social contexts and processes motivating and enabling sedentism and the adoption of domestic plants and animals (including labor constraints and ideology), in particular highlighting the manner in which animals are used to create and maintain social relations amongst bounded groups in farming communities.

Farming in the Central West African Savanna

Environment

The Central West African savanna is defined as an area to the south of the Niger Bend, largely synonymous with the drainages of the three Volta rivers (Mouhoun, Nakambé, Nazinon) to their confluence (Fig. 1). Like much of West Africa, this is an old geologic landscape, characterized by heavily leached tropical ferruginous soils with localized floodplain areas of particularly rich soils (Sattran and Wenmenga, 2002). In general, environmental zones in West Africa are divided into horizontal east–west bands owing to the annual cycle of the Intertropical Convergence Zone (ITCZ), which shifts from the coast in the winter northwards to the Sahel-Sahara border in late summer (Grove, 1985; Chisholm and Grove, 1985; Nicholson, 1986, 1994; McIntosh, 2005). Consequently, annual precipitation decreases from south to north, and vegetation shifts from rainforest at the coast, to wooded savanna, grassland savanna, Sahelian steppe, and desert in the north. While this pattern is predictable on a macro-regional scale, with a short summer rainy season and long winter dry season, at the local level

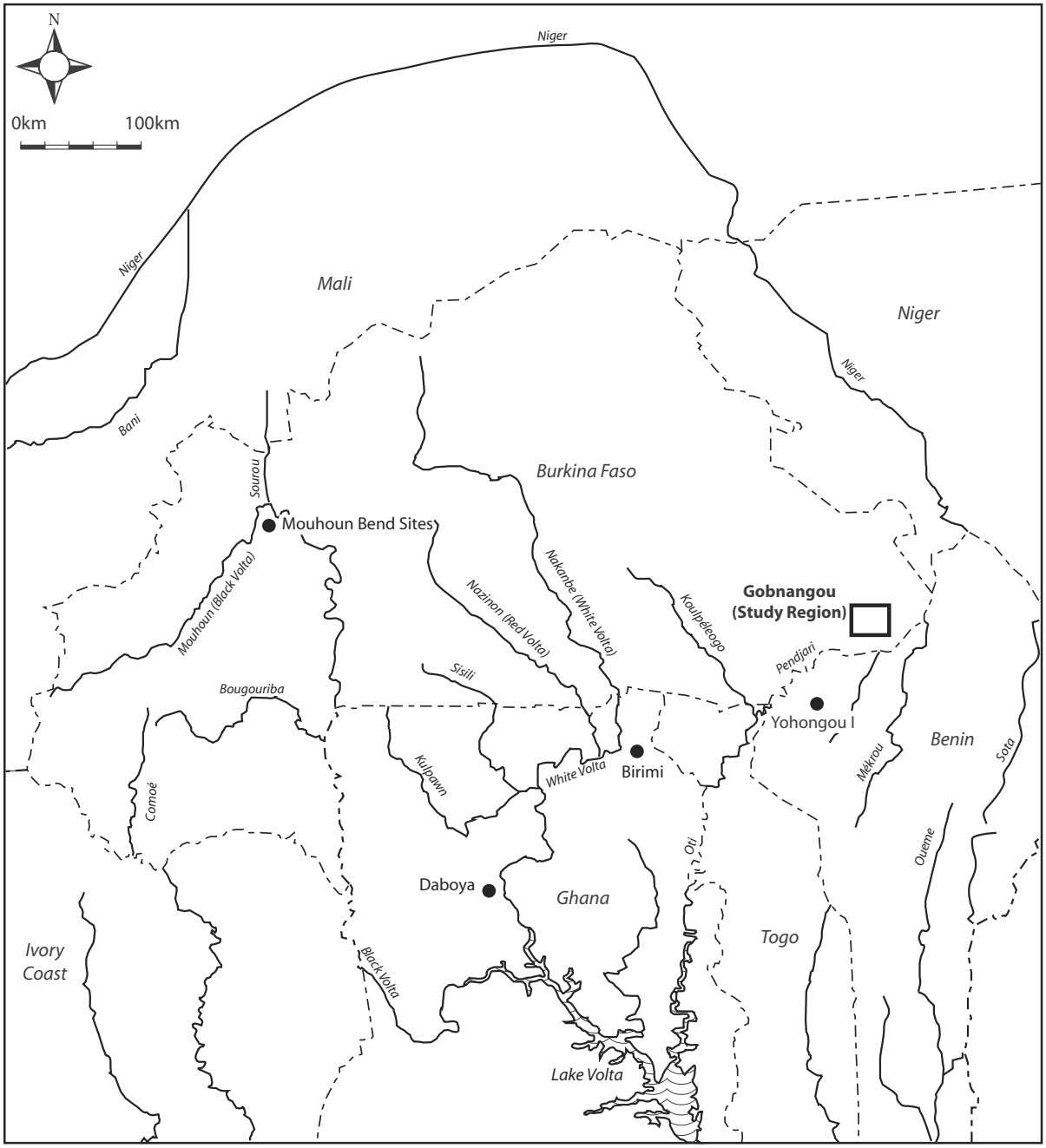

Fig. 1. Selected archaeological sites in the Central West African Savanna and neighboring areas (see text for citations).