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The first Neolithic urban center on China's north Loess Plateau: The rise and fall of Shimao

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ABSTRACT

Our recent interdisciplinary investigations have revealed an unexpected prehistorical complex settlement system developed in the north Loess Plateau, a region previously regarded as the frontier of Chinese civilization. Many of the settlements are stone fortifications built on hilltops, and the primary center was a massive (>400 ha) stone walled site at Shimao in Shaanxi (ca. 2300–1800 cal. BCE). Shimao was composed of a central palatial terrace surrounded by two layers of stone enclosures. The settlement was built as a sophisticated defensive system, consisting of baffled gates, gate towers, bastions, and corner towers. Shimao was a regional political and ritual center, evidenced by the discoveries of human sacrifice performed prior to the construction of the fortification, large quantities of jades (some embedded in the stone walls), bronze metallurgy, a main gate decorated with polychrome murals, and walls furnished with anthropomorphic stone carvings. Elites were buried with elaborate jade and bronze/copper items, part of an assemblage of prestige and exotic goods obtained from distant areas. The discovery of Shimao revealed a unique trajectory to urbanism in China. Parallel to the Neolithic complex societies established by agriculturalists in other parts of China, Shimao played a central role in the spiritual and political world among agro-pastoralists of the north Loess Plateau region.

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1. Introduction

The origin of urbanism has been an enduring research topic in world archaeology (e.g., Childe, 1950; Smith, 2009; Marcus and Sabloff, 2008a). In Chinese archaeology, studies have primarily focused on the origins and formations of early dynastic capitals in the Central Plain, the core area of Chinese civilization (e.g., Chang, 1985; Falkenhausen, 2008; Wheatley, 1971). However, new discoveries elsewhere in China have shown that early urbanism may have also developed in peripheral regions during the Neolithic period, exemplified by Taosi in the south Loess Plateau (He, 2013) and Liangzhu in the Lower Yangzi River (Wang and Liu, 2015; Guo, 2014). Both sites were regional centers in hierarchically organized settlement systems; each was enclosed by large rammed-earth enclosures, and associated with ceremonial architecture, elite burials, and abundant prestige artifacts. Our recent interdisciplinary investigations, in line with the latter discoveries, have revealed an

unexpected prehistorical complex settlement system that developed in the transitional zone from the Loess Plateau to the Ordos (hereafter referred to as the north Loess Plateau), a region previously regarded as the frontier of Chinese civilization. Many of the settlements are stone fortifications built on hilltops, and the primary center of this system was a massive stone walled site at Shimao in north Shaanxi. These new findings pose challenges as well as opportunities to the study of urbanization in Chinese archaeology. On the one hand, the temporal and spatial scopes of the research in the origins of urbanism have to be extended to the Neolithic cultures over broader regions, and the concept of cities, which has been influenced by the notions of urban centers in Mesopotamia, may need some revision. On the other hand, the archaeological data revealed from these early sites will enrich our understanding about causal factors and variation in processes of urbanization in ancient China.

In this paper, we investigate the major material components of the Shimao site and its environmental and social surroundings. The emergence of this settlement system and the rise of Shimao as a regional center show many characteristics of early urban landscapes, which often

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serve ritual, political, and economic functions (Smith, 2014). Therefore, this case study of Shimao demonstrates a unique trajectory to urbanism in the northern frontier of Chinese civilization.

2. The discovery of Shimao

Shimao is located in Gaojiabao town, about 40 km to the southwest of Shenmu county in Yulin district, Shaanxi province. The site has been known since the 1970s due to its association with jades (Dai, 1977). It is estimated that around three to four thousand jade items kept in museums and private collections around the world are probably derived from Shimao (Wang and Sun, 2011). Small-scale excavations were conducted during the 1970s and 1980s with intent to clarify the relationships between the Shimao site and jades (Xi'an Banpo Museum, 1988). However, neither the exact proveniences of the collected jades, nor the magnitude of the Shimao site, were made clear. The stone walls, which have been standing for thousands of years, were thought to be parts of the Great Wall built during the dynastic period. Beginning in the 1990s, rumors about jades in the walls at Shimao spread around local villages, resulting in escalated looting activities that caused severe damage to the site.

In order to protect the site and better understand its historical significance, the Shaanxi Provincial Institute of Archaeology has been conducting systematic surveys and excavations at Shimao and in the surrounding areas since 2011, gradually revealing the identity of this magnificent site. Shimao is now identified as the largest Neolithic walled settlement in China, dated to ca. 2300–1800 BCE. The surveys

and excavations yielded large amounts of artifacts, including jades, ceramics, tools, and stone sculptures, in addition to remains of murals and human sacrifice. Scientific methods have also been employed to reconstruct the architecture and analyze the artifacts.

3. Environmental setting

The Shimao site today lies atop a hill near the confluence of the Dongchuan River and the Tuwei River, a primary tributary of the Yellow River. Situated in the transitional zone from the Loess Plateau to the Mu Us Desert, the regional landscape today is characterized by diverse features including loess mountain ridges, eroded hills, and desert bottomland. The elevation is about 1100–1300 m above sea level on average (Fig. 1).

The climate of this region has been primarily influenced by the East Asian monsoon system, which is formed by different heating forces arising from the Eurasian continent and the Pacific Ocean. In summer, this region is dominated by the East Asian summer monsoon (EASM) from the western Pacific Ocean, which brings rainfall crucial for dryland agriculture. In winter, the region is dominated by Siberian high pressure; the frequent southward outbreaks of cold air cause cold and dry northwesterly winds, referred to as the East Asian winter monsoon (EAWM) (Li et al., 2011). Today, the mean annual temperature ranges from 5.5 to 8.0 °C and the mean annual precipitation ranges from 150 mm in the northwest to 450 mm in the southeast of the region. The vegetation is dominated by *Artemisia*, *Salix* and *Hippophae* (Huang et al., 2009). Situated in an area marginal to agriculture in the northern boundary of the

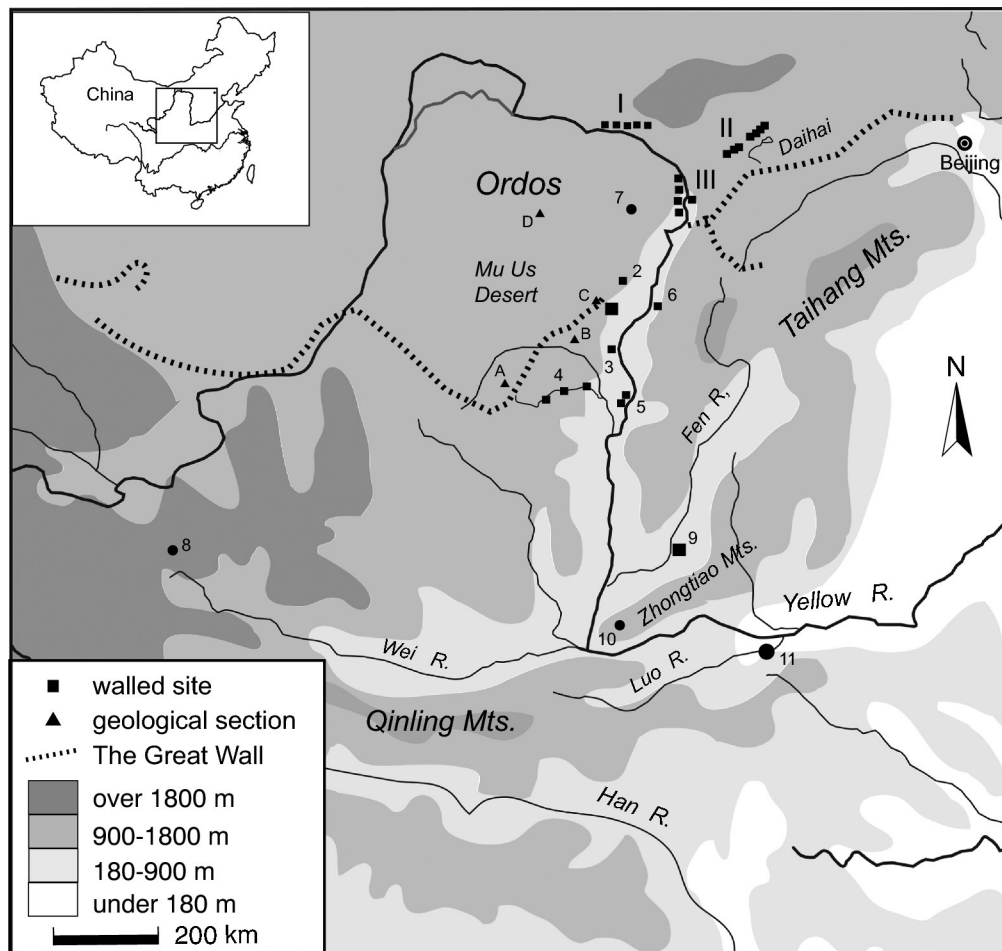


Fig. 1. Sites and geological sections discussed in this study. Stone walled site clusters. I: the Daihai Lake region; II: the south of Daqing Mountains; III: the Qingshui River valley. Archaeological sites. 1: Shimao; 2: Zhaimao; 3: Shiluluoshan; 4: three sites in the Dali River valley; 5: Houzhazimao, Guanhugadan; 6: Bicun; 7: Zhukaigou; 8: Mogou; 9: Taosi; 10: Dongxiafeng; 11: Erlitou. Geological sections. A: FT; B: SDG; C: JJ; D: BHN.

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