



Complicating the frontier: Armaments, fortifications, and identities beyond the Great Wall



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ABSTRACT

The recovery of iron and bronze “bimetallic” crossbow bolts from walled settlements located in the Mongolian Gobi Desert reflects the presence of Han dynasty material culture along the Inner Asian frontier during the Xiongnu period (ca. 3rd century BCE - 2nd century CE). Seventeen artifacts, mostly from frontier outposts, including eleven of these bimetallic projectile weapons and two bronze components of crossbows, were examined for their bronze chemical composition and microstructure. A majority of these artifacts were cast from alloys containing substantial amounts of tin and lead, with the alloy content generally much higher and more consistent in the bolts than in other crossbow components. The standard use of both tin and lead in most of these objects, as well as their process of assembly, suggest manufacture in an environment supporting large-scale, mass-production technologies typical of the Han dynasty. Some of the bolts examined, however, were made following significantly different alloy recipes, suggesting that they were likely produced away from well-supplied manufacturing centers. Given the clear limitations of the small number of objects analyzed, we combine our metallurgical results with insights from surface survey around these settlements to propose some preliminary observations about site arrangements, armaments, and supply lines. Although preliminary in nature, these differences hint at the complexities of politics and affiliation along the Inner Asian frontier.

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1. Introduction

Histories of the Great Wall of China often imagine the Inner Asian frontier as a boundary line separating the “steppe” from the “sown.” North of the Great Wall stretched grasslands and deserts long frequented by horse-riding pastoral nomads; while to the south emerged the intensive farming civilizations of China. In sharp contrast to this historical stereotype, recent textual analysis and archaeological fieldwork reveal a frontier zone that was culturally much more complex. Occupying what today includes parts of northern China, Inner Mongolia, and the southernmost Gobi Desert, the Inner Asian frontier comprised a diverse region in which distinct cultures existed for millennia and played a pivotal role in the formation of East Asia as we know it today (Shelach, 2009; Linduff and Yang, 2012; Honeychurch, 2015:185). The emergence of this region as a specifically “political” frontier, however, can be assigned to the late fourth and third centuries BCE when conflicts between multiple states in China and smaller scale polities in the steppe zone culminated in the almost simultaneous rise of the Xiongnu state in Mongolia (ca. 209 BCE - 100/150 CE) and the

Qin and Han empires in present-day China (221 BCE - 220 CE). These powerful competing polities brought about a new era in the history of eastern Asia and nowhere is that interactive dynamic better exhibited than in the contested frontier region around and beyond the Great Wall (Lattimore, 1940).

The histories of the Han dynasty provide information about the frontier regions but these reports tend to be partial, imprecise, and dominated by elite oriented discussions of battles and government policy. Detailed information on daily life, identity groups, and interactions along the frontier is better captured by the material record of archaeology. While research at various sections of the Qin and Han Great Wall (also known as “long walls”) has increased appreciably (Xu, 2001; Institute of Archaeology, 2010:271–306), archaeological fieldwork further to the north within the Gobi Desert regions of Mongolia has only recently begun to add new data and perspectives on frontier life. Our survey and excavation project (2003–2008) at the site of Baga Gazaryn Chuluu (BGC) in the northernmost reaches of the Gobi Desert has made some progress towards understanding Han-Xiongnu interaction using metallurgical analysis of bronze technologies from the first millennium BCE (Park et al., 2011; Fig. 1). We observed a clear transition in alloy chemistry with the coming of the Xiongnu period at BGC. The transition was most obvious in the profuse use of lead in many objects of this period as opposed to those from pre-Xiongnu bronze formulas where the

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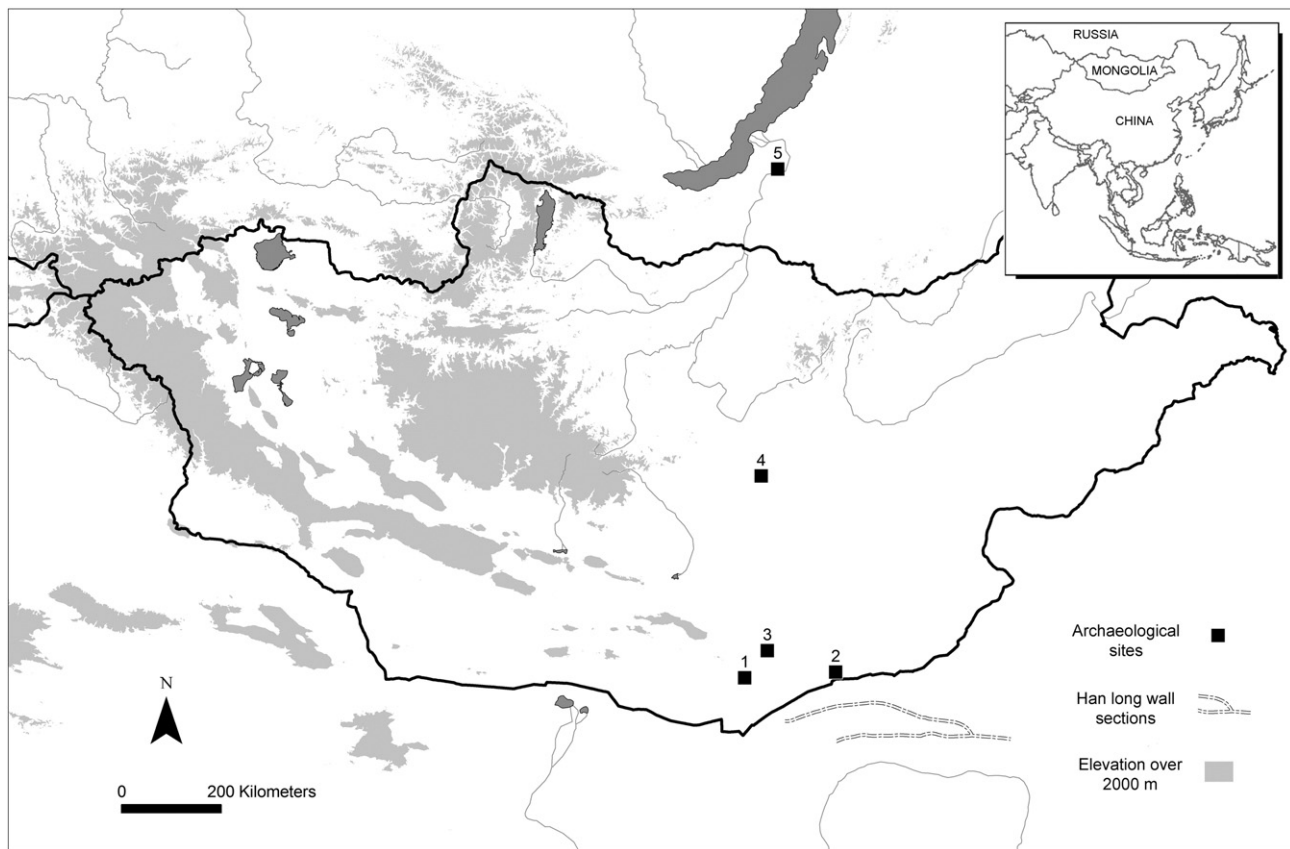


Fig. 1. Map of Mongolia showing geography and archaeological sites mentioned in the text. (1) Bayan Bulag, (2) Mangasyn Khuree, (3) Sairyn Balgas in South Gobi (Omnogobi) province, (4) Baga Gazaryn Chuluu (BGC) in Middle Gobi (Dundgobi) province, and (5) Ivolga in Buriatia, South Siberia. The location of the northernmost sections of the Han long wall fortification is based on field research by Kovalev et al. (2011).

addition of lead was exceptional and arsenic was a major ingredient. Notably, objects with added lead always contained substantial amounts of tin, with their resulting total combined alloy content thereby exceeding 20% (based on weight fraction). Levels of arsenic, however, were consistently negligible in leaded tin bronzes, although arsenic continued to serve as a separate alloying element during this period as well.

As other researchers have noted, this new tradition is characterized by features which distinguish traditional bronze technologies of ancient China (Jin, 2000; Barnard, 1961; Bagley, 1987; Rawson, 1990; So, 1995) from those in use by early pastoral nomadic groups inhabiting the Mongolian Plateau and Gobi Desert (Chase and Douglas, 1997:311–312; Chernykh and Kuzminykh, 1989; Khavrin, 2003; Korenevskij, 1982; Miniaev, 1980). The new alloys appear at Xiongnu sites in association with a major influx of items typical of Han workshops including silks, lacquer ware, bronze mirrors, and various decorative items, and these products are found across the hypothesized territory of the Xiongnu state in mostly elite burial contexts (Honeychurch and Amartuvshin, 2011). The presence of Han material culture among Xiongnu communities was likely due to tribute extraction from the Han dynasty on the part of the Xiongnu aristocracy (i.e., the *heqin* treaties), frontier exchange, warfare, and perhaps even the migration of Han artisans northward (Park et al., 2011; Honeychurch, 2013). The bronze technological shift at BGC, therefore, is best explained by new regimes of long-distance political interaction between the Xiongnu and Han states. These would have been the same processes of interaction that created the Inner Asian frontier as a novel kind of geographic and political zone.

Given the available evidence, however, BGC was not a frontier site but rather one of a series of major centers within the Xiongnu state proper situated a few hundred kilometers northward from what seems to have been an active frontier area during the late second and

first centuries BCE. This is supported by the identification of a string of fortified settlements in the Gobi Desert approximately 350–400 km to the south of BGC (Amartuvshin et al., 2009; Batsaikhan, 2003:46–55). At the walled sites of Bayan Bulag, Mangasyn Khuree, and Sairyn Balgas (Fig. 1), recent excavations, surveys, and analysis have provided important new material and chronological evidence about the frontier, but have also raised interesting questions about the roles and affiliations of these settlements. Central to these debates is the notion that the frontier zone was likely heterogeneous and that political affiliations of frontier groups may not always have matched their cultural identities. In fact, historical documents make it clear that the frontier included Xiongnu troops, Han troops, as well as defectors from both sides to the opposite side, in addition to a number of other frontier denizens and settlement types such as traders and trade centers, diplomatic garrisons, ceremonial sites, migrants, herders, and even irregular troops and brigand groups (Kovalev et al., 2011:507; Giele, 2011; Watson, 1993:Ch. 110). The Inner Asian frontier had a diverse collection of identities, affiliations, and activities and not surprisingly archaeologists have offered contradictory interpretations of who occupied the frontier settlements in question and what their roles may have been within the frontier zone (e.g., Perlee, 1961:34–35; Tseveendorj et al., 1994; Batsaikhan, 2003:54; Kovalev et al., 2011:507–508).

The latest research at the Bayan Bulag site by Kovalev et al. (2011) demonstrates material patterns consistent with the Han archaeological record including the settlement plan, the pottery and faunal assemblages, and the bronze tool and weapon sets recovered there. These results and the radiocarbon dates for the site argue strongly that Bayan Bulag was a northern outpost occupied by Han dynasty troops. Subsequent fieldwork at Mangasyn Khuree and Sairyn Balgas, however, suggests some variation between the three walled sites in terms of their layouts and arrangements and the make-up of sites around each

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