Archaeological Research in Asia xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Archaeological Research in Asia

journal homepage: www.elsevier.com/locate/ara

Full length article

Bronze Age Hill Forts: New evidence for defensive sites in the western Tian Shan, China

Peter Weiming Jia[a], Alison Betts[a,*], Paula N. Doumani Dupuy[b], Dexin Cong[c], Xiaobing Jia[c]

[a] University of Sydney, China Studies Centre and Centre for Classical and Near Eastern Studies of Australia, NSW 2006, Australia
[b] Department of Sociology and Anthropology, Nazarbayev University, 53 Kabanbay Batyr Avenue, Astana 010000, Kazakhstan
[c] Archaeological Institute, Chinese Academy of Social Science, 27 Wangfujing Dajie, Beijing 100010, China

ARTICLE INFO

Keywords:
Bronze age
Eurasia
Xinjiang
Walled sites
Social complexity

ABSTRACT

This paper reports on the recent discovery in western Xinjiang of three Late Bronze Age walled sites located on high hilltops, with a fourth on a terrace above a river bed. The hilltop sites contain very small clusters of residential structures and overlook one of the richest areas of seasonal pasture in the upper Bortala Valley, in the western Tian Shan. The walls do not fully encircle the residential structures but protect the most vulnerable points of access to the hilltops, and in particular protect against direct access from the pastures. The discovery of these walled sites in the western Tian Shan is surprising and significant in terms of regional patterns of increased social complexity in the Eurasian Late Bronze Age. It is suggested that the walled hilltop sites were lookout posts, with a small garrison of herders prepared to defend the area in the event of attack by rival pastoralist groups, and that in the Late Bronze Age the Upper Bortala Valley was home to a number of pastoralist groups who contested access to the best pastures.

1. Introduction

Sites defended by walls are generally associated with hierarchical societies, and most frequently with settled communities, although occasionally they have been constructed by mobile peoples. They are certainly rare across the Eurasian steppe which is, and has been historically, dominated by mobile pastoralist communities. The Mongol capital of Karakorum was established by Genghis Khan in 1220 but was only walled later under his son Ögedei (Rogers et al., 2005). Even then, the walls served to control access to the town but were not sufficiently well constructed to protect it against a major attack. Walled settlements are also associated with the Xiongnu in Siberia and Mongolia (Honeychurch, 2014: 304–5). These vary in function to include elite residences, ritual centres and village settlements with evidence for agriculture and craft production. The fullest flourishing of walled settlements in the Eurasian steppe was that of the Central Eurasian Bronze Age fortified sites on the south-eastern flanks of the Urals associated with the Sintashta-Arkaim cultural complexes. These have been linked to a specific phenomenon, exploitation and control over the rich copper resources of the Urals at a critical time in the spread of early metallurgy across the steppe (Doonan et al., 2014). However, such sites are unusual. Eurasian mobile pastoralists typically rely on movement for survival, do not convey ownership through fences, and their lifestyle is not normally suited to constraint behind defensive walls. It was therefore a considerable surprise to find in the Bortala (Bo'ertala) Valley in the western Tian Shan (Fig. 1) an area of rich upland grazing with no less than four Late Bronze Age sites in strategic locations, defended by substantial walls, and with signs of built structures inside them (Jia and Grili, 2016).

2. The Bronze Age in the Bortala Valley

The Bortala Valley is a long narrow straight-sided valley at the western end of the Tian Shan Mountains (Fig. 2). The peaks on either side rise up to 3800 m asl. and are covered in permanent glaciers. The valley floor in the study area in the upper reaches of the valley lies at c. 1000 m asl. Average annual rainfall is c. 300 mm. The economy up to the recent past has been based primarily on transhumant pastoralism with some limited dry farming, although today irrigated crops are now grown along the fairly restricted areas of flat land on the valley floor.

Fieldwork, including intensive survey and excavation of selected sites, has been in progress since 2011 along the upper Bortala River area in Wenquan County. The fieldwork is a collaboration between partners from the Archaeological Institute, Chinese Academy of Social Science (Archaeological Institute of Chinese Academy of Social Sciences, Bortala Museum and Wenquan Bureau of Relics, 2013) and a

* Corresponding author.
E-mail address: alison.betts@sydney.edu.au (A. Betts).

https://doi.org/10.1016/j.ara.2017.10.005
Received 17 May 2017; Received in revised form 17 October 2017; Accepted 30 October 2017

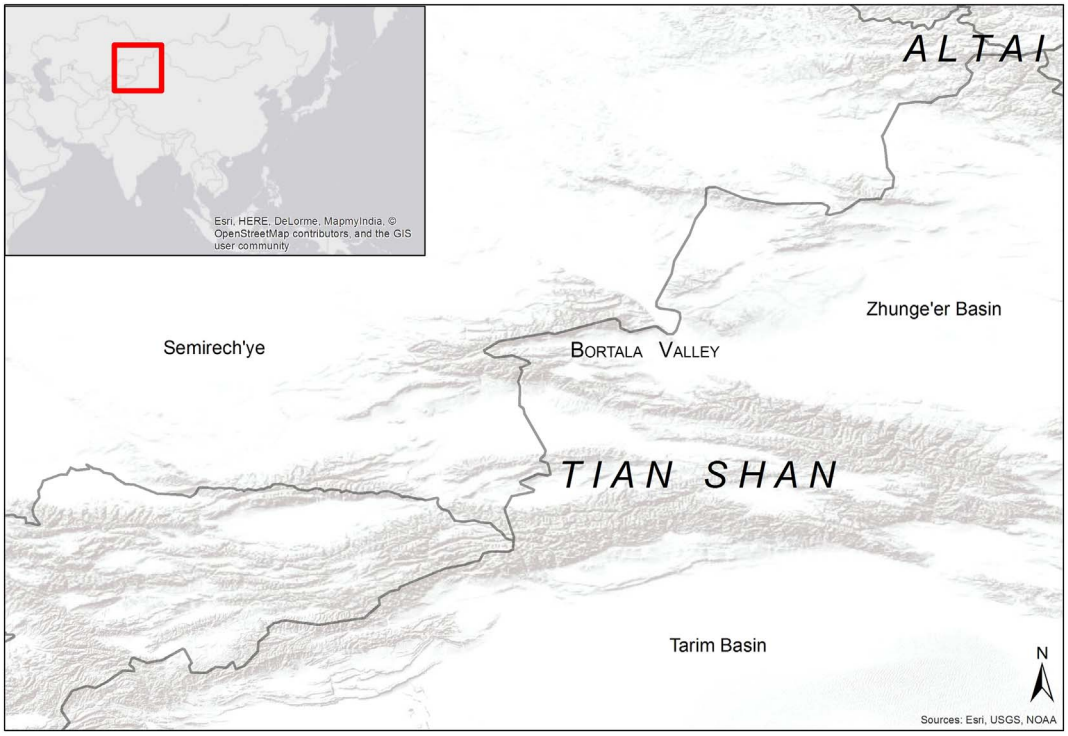

Fig. 1. Map. The western Tian Shan showing location of the Bortala Valley.

Fig. 2. General view of the Bortala Valley looking to the northwest.

team from the University of Sydney and Monash University (Jia et al., 2017). The field programme has included excavation of residential structures and cemeteries in two areas, together with intensive field survey along the headwaters of the Bortala Valley. The survey consisted of field-walking along the slopes of the Tian Shan mountains on both sides of the upper Bortala river over an area c. 80 km long and 15 km wide, covering around 1200 sq. km. Some parts of this area were not accessible on foot due to their proximity to the border. Typically the ground is covered in turf and there are no visible surface scatters of artefacts. Sites could be recognised only by the remains of stone cairns and walls. Each site was geolocated by GPS and a general description recorded in the survey database. The two areas selected for more intensive study and excavation are located in modern winter and summer pastures respectively. Adonqolu (Adunqiaolu) lies in the upper reaches of the Bortala Valley at an altitude of approximately 2300 m asl., below the foothills of the Alatao, one of the western ranges of the Tian Shan Mountains. It comprises an occupation complex of structures and graves lying on a slope cut by streambeds arising from springs or running down from the mountains. Adonqolu ('horses like stones' in the Mongolian language) is named after the unusual, glacially formed granite boulders strewn across the landscape (Jia et al., 2017). The second study area lies along the foothills to the east at a slightly lower altitude of c. 1400 to 2200 m asl. and comprises two adjacent mountain basins, Husta (Husita) and Turgen (Turigen).

The majority of sites found on survey were Bronze Age in date. These comprise burial grounds and occupation sites, only some of which are walled. Open sites have been studied at Adonqolu where one house and several burial grounds have been extensively excavated (Jia et al., 2017; Caspari et al., 2017). The walled sites have been found, along with open sites, in the second study area at Husta and Turigen (Jia and Grili, 2016), in a particularly favourable area of summer pasture (Caspari et al., 2017). The Bortala Valley sites are associated with a local variant of the Federovo tradition, a cultural sub-set of the wider Andronovo phenomenon (Jia et al., 2017). Based on an extensive series of calibrated radio carbon dates from burials and domestic contexts, they have been dated from the 19th to the 15th centuries BCE (Jia et al., 2017: 632–4). The occupation sites represent seasonal encampments of transhumant pastoralists, an economic strategy that is still practiced in the valley today. It is likely that this may have been supplemented by agriculture, on a varying scale dependent on opportunity, as is also the case today. A single grain of barley has been recovered from a residential structure at Adonqolu, but the presence of wheat on earlier pastoralist sites just to the west in the Semirye'che region of Kazakhstan at Begash and Tasbas (Frachetti, 2009; Spengler et al., 2014) suggests that varying balances of agro-pastoralism formed the basis of the general Bronze Age economy of the western Tian Shan region. By 1500 BCE there is evidence for multicrop agriculture at Tasbas, including barley, wheat, millet and peas (Spengler et al., 2014).

Together with excavation at Adonqolu, the surveys also conducted by the field team have resulted in the discovery of eighteen new sites (Table 1), including three walled hilltop sites and one walled settlement on lower ground. Prior to the start of fieldwork the research team studied previous records to see if any settlement sites had already been recorded, but there was very little data. Most sites noted in previous fieldwork were cemeteries dating to the Iron Age or later. Part of the