



The Middle Pleistocene handaxe site of Shuangshu in the Danjiangkou Reservoir Region, central China



Hao Li ^a, Chao-rong Li ^{b, *}, Kathleen Kuman ^{a, c}, Jie Cheng ^d, Hai-tao Yao ^e, Zhao Li ^f

^a School of Geography, Archaeology and Environmental Studies, University of the Witwatersrand, Johannesburg WITS 2050, South Africa

^b Key Laboratory of Vertebrate Evolution and Human Origins, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, 142 Xizhimenwai Street, Beijing 100044, China

^c Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg WITS 2050, South Africa

^d School of Earth Sciences and Resources, China University of Geosciences, Beijing 100083, China

^e Institute of Geomechanics, Chinese Academy of Geological Sciences, Beijing 100081, China

^f Hainan Provincial Museum, Haikou 570203, China

ARTICLE INFO

Article history:

Received 23 February 2014

Received in revised form

19 August 2014

Accepted 20 August 2014

Available online 18 September 2014

Keywords:

Danjiangkou Reservoir Region

Middle Pleistocene

Acheulean

Handaxe

Reduction sequence

Small-medium sized débitage

Large Cutting Tools

ABSTRACT

The presence of Acheulean tool types (e.g. handaxes and cleavers) in East Asia has recently attracted considerable attention. They challenge the long lasting concept that the Early Palaeolithic in East Asia is characterized only by Mode 1 technology, and they reflect the diversity and complexity of Palaeolithic culture during hundreds of thousands of years. In this paper, we present a detailed technological analysis of the in situ artifact assemblage at the Shuangshu site (Danjiangkou Reservoir Region, central China), as well as intra- and inter-regional comparisons of some characteristic traits used to test the difference between handaxes in the East and the West. The results show that there are two reduction sequences taking place. One is expressed in the predominant use of quartz in the production of the small-to-medium sized artifacts, which is an expedient technology that dominates the whole assemblage, and the other is represented by the predominant use of quartz phyllite and trachyte in the production of Large Cutting Tools (LCTs). The latter displays the technical criteria characteristic of Acheulean technology, although its origins are much debated. In addition, the number of LCTs and total artifacts is generally low for the size of the excavation area, which probably is a result of relatively small population size and the high mobility of hominids. The thickness of handaxes has been shown not to be a reliable variable in demonstrating the difference between the East and the West.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

One of the prominent characteristics of the Acheulean Industrial Complex is its variability across space and time. This is seen in tool type frequencies (Pope, 2002; Sharon et al., 2011), technological strategies (Clark, 2001; Schick and Clark, 2003; McPherron, 2003; Archer and Braun, 2010), and morphology (Gamble and Marshall, 2001; Lycett, 2008). Moreover, some assemblages (e.g., GnJh 42 and GnJh 50 sites in the Middle Pleistocene Kapthurin Formation of Kenya) actually lack the typical tool types of the Acheulean, such as handaxes and cleavers (Diez-Martín and Eren, 2012; Johnson and McBrearty, 2012). This has led some researchers to recognize the

need to form a more balanced focus on exploring a truly holistic version of the Acheulean concept (Tryon and Potts, 2011; Diez-Martín and Eren, 2012; Johnson and McBrearty, 2012). Current emphasis on the small-medium sized débitage component at Acheulean sites exemplifies this more holistic approach, as it helps our understanding of the overall technological innovations and adaptations at these sites (de la Torre and Mora, 2005; Tryon and Potts, 2011; Diez-Martín and Eren, 2012; Johnson and McBrearty, 2012; Gallotti, 2013). However, the study of handaxe-bearing assemblages in China has been constrained by an initial focus on surface collections and the Large Cutting Tools (LCTs) within them (Hou et al., 2000; Norton et al., 2006; Petraglia and Shipton, 2008). This has impeded the reconstruction of complete technological strategies, which are necessary to this more holistic approach.

In this paper, we will present a detailed study of the in situ stone artefact assemblage excavated at the Shuangshu site in the Danjiangkou Reservoir Region (DRR), central China. At the time of the

* Corresponding author.

E-mail addresses: wits_ivpp@hotmail.com (H. Li), lichaocong@ivpp.ac.cn (C.-r. Li).

construction of the national South-to-North Water Transfer Project, the field team of IVPP (Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences) conducted several investigations along the banks of the Han and Dan Rivers in the DRR (Fig. 1). The survey results show that LCTs are associated with three terraces (T4, T3 and T2) of the Han and Dan Rivers and are estimated to date from the late Early Pleistocene (T4) to the Late Pleistocene (T2) (Zhu, 1955; Shen, 1956; Yan, 1993; Huang and Li, 1995; Chen et al., 1996, 1997; Huang et al., 1996; Li et al., 2009, 2012, in press-a; Kuman et al., in press). Since intensive work began in 2006, more than 20 Palaeolithic sites have been excavated (Pei et al., 2008; Zhou et al., 2009; Niu et al., 2012, 2014; Fang et al., 2012; Li et al., 2013; Chen et al., 2014). Of all the excavated sites, Shuangshu contains the largest number of LCTs on the third terrace (T3) of the DRR, and it is one of the few sites where systematic

dating work has taken place. The purpose of this study is to have a closer look into the complete technological strategy of handaxe makers in the DRR. Furthermore, we discuss its implications for understanding the handaxe phenomenon in China within a comparative approach.

2. Geological setting and palaeoenvironment

The Shuangshu site is located in the Junxian Basin in the upper valley of the Han River (E111°07'19", N32°40'24"). Some parts of the basin have been submerged because of the construction of the Danjiangkou Reservoir (Fig. 1). Geologically, the Shuangshu site is located in the southern Qinling tectonic belt. Due to the Yanshan movement in the Mesozoic era, northwest-southeast intermontane fault basins formed (e.g. Junxian Basin, Yunxian Basin in Fig. 1)

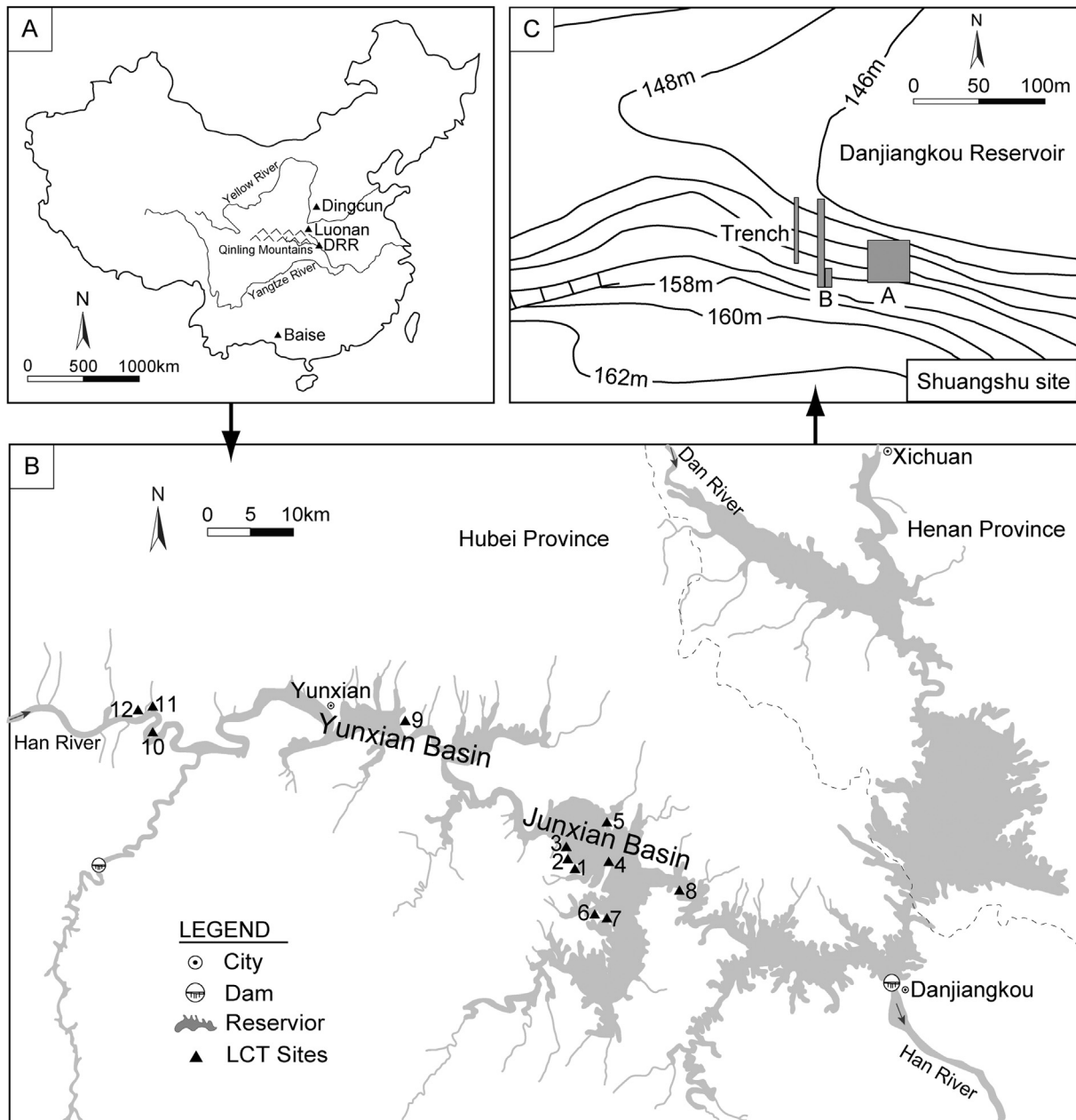


Fig. 1. Handaxe regions of China. A) geographic location of the main handaxe-bearing regions. B) the Danjiangkou Reservoir Region (DRR) with the Palaeolithic sites mentioned in this paper: 1. Shuangshu; 2. Shuiniuwa; 3. Beitaishanmiao II; 4. Beitaishanmiao; 5. Guochang II; 6. Datubaozi; 7. Waibianguo; 8. Pengjiahe; 9. Liuwan I; 10. Houfang; 11. Dishuiyan; 12. Xuetangliangzi (or Yunxian hominid site). C) the Shuangshu site excavation areas and trench noted in the text.

Download English Version:

<https://daneshyari.com/en/article/7442771>

Download Persian Version:

<https://daneshyari.com/article/7442771>

[Daneshyari.com](https://daneshyari.com)