



Project Gallery

A new post-Liangzhu Lower Yangtze culture: the Early Bronze Age Tiaotou and Pishan sites

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Excavations at Tiaotou reveal evidence for cultural continuity through the late third to the mid first millennia BC. This research explores shifts in subsistence, production and ritual at Tiaotou, and the emergence of the Pishan-Tiaotou Culture (1200–1000 BC). Tiaotou/Pishan-Tiaotou represents a missing link among Taihu Lake archaeological cultures and contributes to our knowledge of complex political formations and cultural change in Bronze Age southern China.

Keywords: China, Lower Yangtze, Early Bronze Age, Pishan-Tiaotou Culture, stone mould, bronzes

Introduction

The proto-urban Liangzhu site in modern day Hangzhou represents a zenith in complexity in the Lower Yangtze Valley region through the Majiabang (5000–4000 BC), Songze (4000–3300 BC) and finally Liangzhu (3300–2300 BC) periods (Renfrew & Liu 2018) (Table 1). Liangzhu society is considered to have collapsed around 2200 BC, as gradual climatic changes combined with political turmoil (e.g. Zhang *et al.* 2021). As with other ‘post-collapse’ societies, cultural adaptation and continuation is seen at Qianshanyang Culture (2300–2000 BC) and Guangfulin Culture (2300–2000 BC) sites (Schwartz & Nichols 2010). Excavations at Pishan (30°52′N, 120°08′E, 5m asl; Figure 1) and now Tiaotou (30°15′N, 119°54′E, 10m asl; Figure 1), both in the Liangzhu heartland, provide new archaeological evidence for post-Liangzhu change and continuity through the entire second millennium BC.

Occupied from the late Liangzhu period through the early first millennium BC (Figure 2), Tiaotou was repurposed from a late Liangzhu temple and continually adapted to shifting ecological and cultural challenges throughout the post-Liangzhu transition. Around 1200 BC, this culminated in a new cultural phenomenon, here labelled the ‘Pishan-Tiaotou Culture’ (1200–1000 BC). Understanding the trajectory of Tiaotou and other related sites contemporaneous with the late Shang Dynasty period (1200–1000 BC) provides a long-term view of the Liangzhu ‘collapse’ and cultural recovery in the Lower Yangtze Valley.

Tiaotou, situated in Yuhang District, Hangzhou City, was excavated over two seasons from 2020–2021. Artefactual typology and radiocarbon dating of archaeobotanical remains suggest occupation spanning the Liangzhu, Guangfulin, Maqiao and post-Maqiao cultural

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Table 1. Periodisation of key cultures in the Lower Yangtze area.

Culture	Date
Majiabang	5000–4000 BC
Songze	4000–3300 BC
Liangzhu	3300–2300 BC
Qianshanyang	2300–2000 BC
Guangfulin	2300–2000 BC
Maqiao	1900–1000 BC
Tiaotou-Pishan	1200–1000 BC
Wu and Yue States	770–221 BC

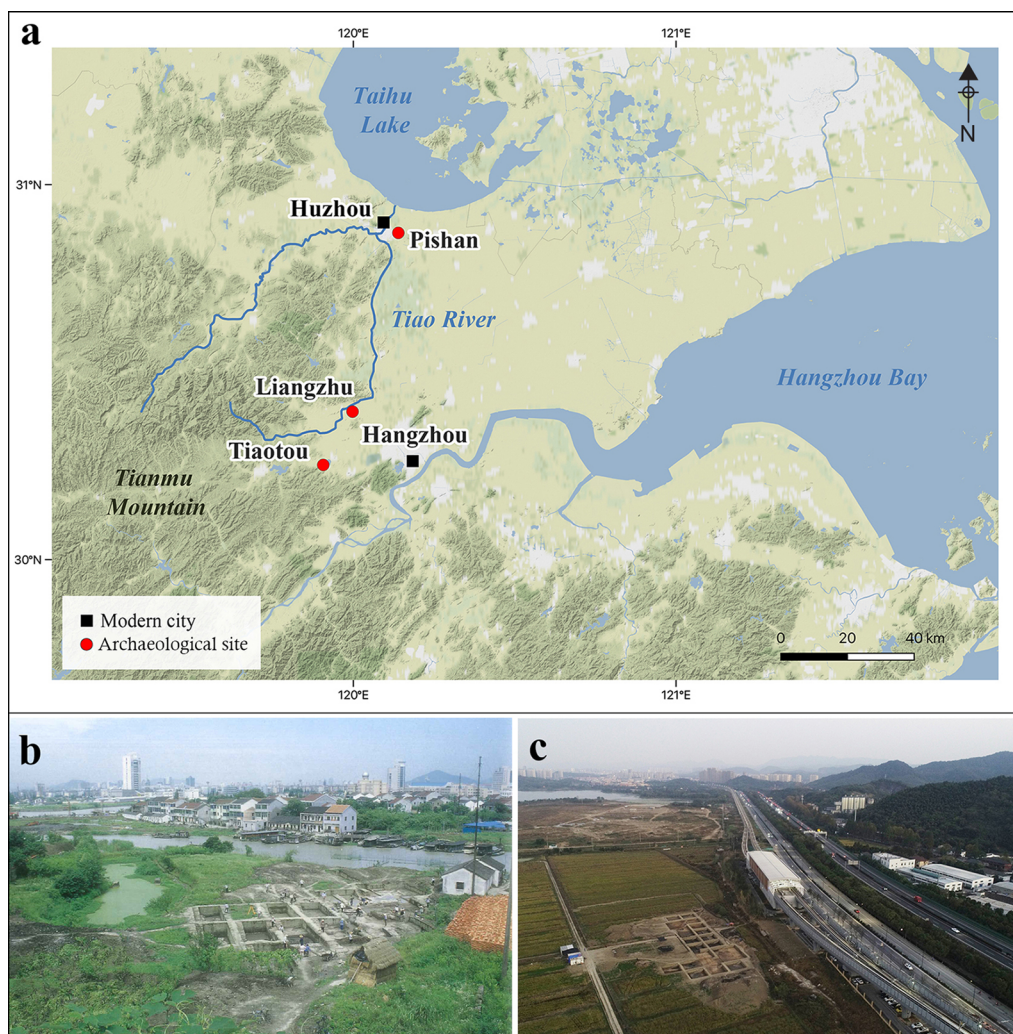


Figure 1. a) Location of the Liangzhu, Pishan and Tiaotou sites (map by P. Sheng); b) excavations at Pishan, 2004 (reproduced, with permission, from Zhejiang Provincial Institute of Cultural Relics and Archaeology & Huzhou Municipal Museum 2006); c) excavations at Tiaotou, 2020 (photograph by S. Lin).

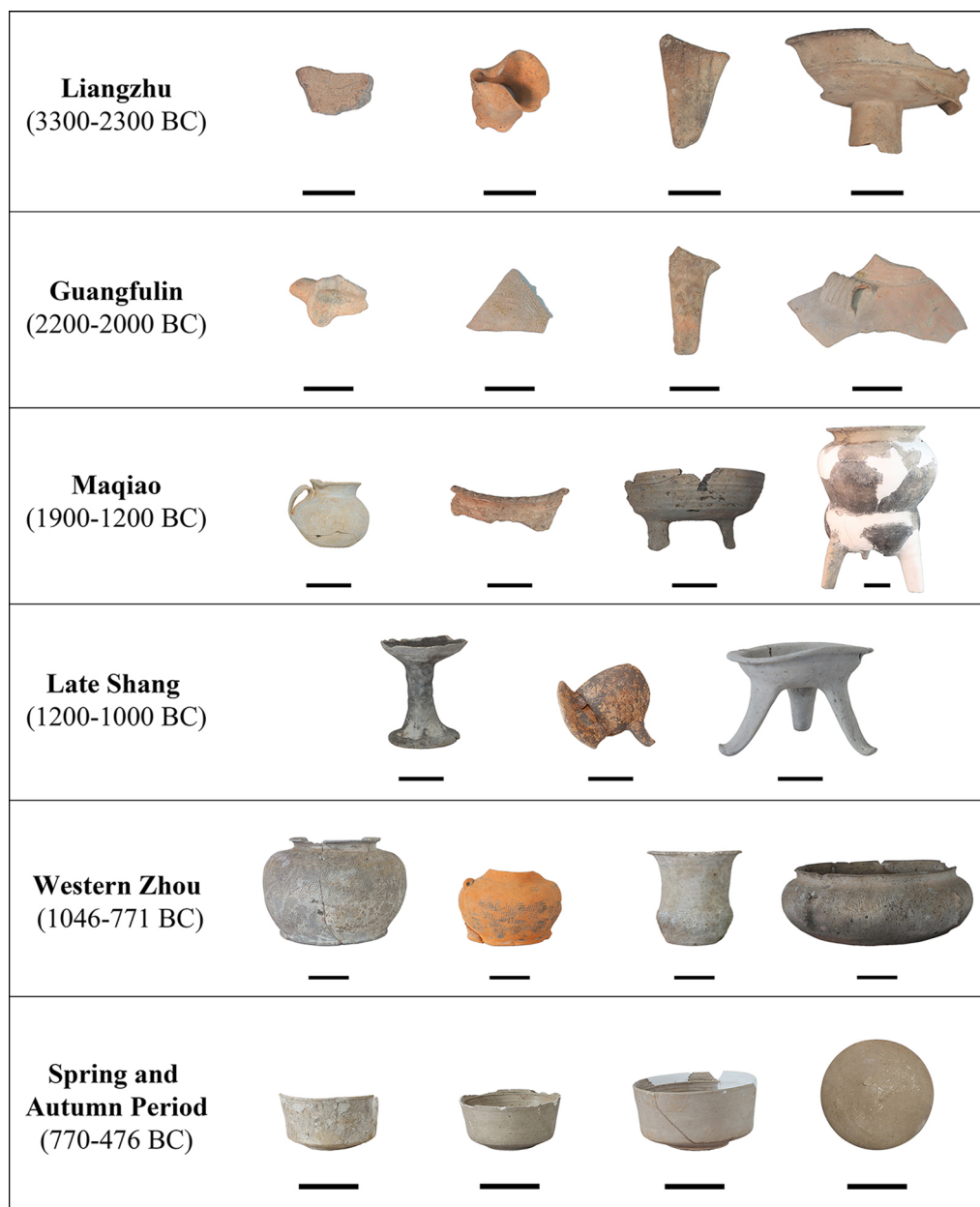


Figure 2. Artefacts recovered from the Tiaotou site divided by standard cultural period. Scales = 50mm (photographs by S. Lin).

periods—that is, the late third through mid first millennia BC (Figure 2). Along with several sites currently undergoing or scheduled for excavation, Tiaotou represents a transition from Liangzhu methods of spatial management to a new post-Liangzhu model (Figure 3).

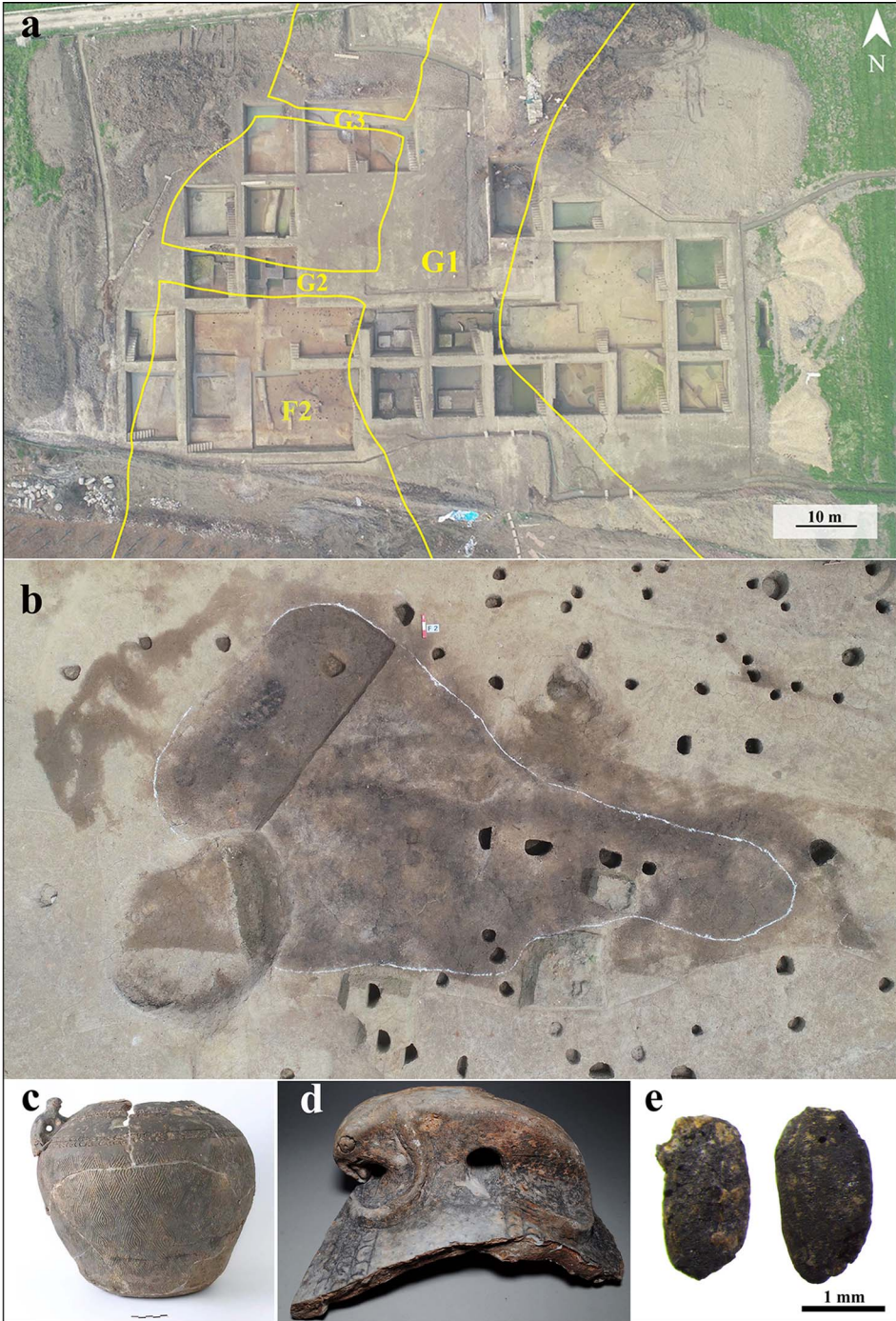


Figure 3. a) Aerial photograph of the excavated area at the Tiaotou site; b) house remains (F2); c) pottery container from the south-west corner of F2; d) lizard (?) handle from unknown container; e) charred rice grains recovered from F2 (photographs by S. Lin and P. Sheng).

Preliminary findings

Tiaotou's earliest post-Liangzhu level yielded a large quantity of sand-tempered grey and untempered red pottery with Guangfulin and Maqiao traits (Figure 2). Charred rice seeds recovered from ash pit H29 were dated to 1770–1610 cal BC (Beta - 583730: 3400±30 BP). The presence of a bowl-shaped *ding*-tripod, jar-shaped *ding*-tripod, impressed grooves on *ding*-vessel feet, and decorated vessel rims, point to influence from northern Erlitou and Shang Cultures (Figure 2). Localised traditions emerged during the latter half of the second millennium BC, possibly as Tiaotou began to integrate elements from the mid Yangtze Wucheng Culture (1600–1000 BC).

Site size expanded noticeably by 1000 BC, with areas of pottery/proto-porcelain and metallurgical production separated by ditches G1, G2 and G3 (Figure 3a). The unique pottery of this period features occasional animal pattern motifs and, in one example, a zoomorphic (lizard?) handle belonging to an unidentified container (Figure 3c–d). Expanding production may relate to increased population, as suggested by hundreds of carbonised rice seeds recovered from building F2 (Figure 3e)—tentatively identified as a rice storehouse. The centrality of F2 suggests spatial reorganisation of the site that ultimately reinforced a new cultural identity.

Meanwhile, novel metallurgical techniques emerged around 1200–1000 BC. Excavated stone moulds correspond with excavated bronze material (Figure 4). A related charcoal sample was dated to 2940±30 BP (Beta-603063). Tiaotou metallurgy contrasts with contemporaneous Shang sites at Panlongcheng along the Middle Yangtze (Liu *et al.* 2019). Similar stone moulds were found at Wucheng Culture sites and several Anhui loci (Peng 2005).

Pishan-Tiaotou Culture

Tiaotou's zenith around 1200–1000 BC exists outside of the current cultural framework in Chinese archaeology. As with dozens of related Huzhou-area sites to the north of Tiaotou known since the 1990s, post-Liangzhu period occupational histories may be common. While a 'Maqiao Culture' and post-Liangzhu cultural formations have been hypothesised and discussed in previous work (e.g. Zhejiang Provincial Institute of Cultural Relics and Archaeology & Huzhou Municipal Museum 2006), our project aims to examine the broader Pishan-Tiaotou phenomenon that emerged around the mid second millennium BC, flourishing 1200–1000 BC. Rooted in Liangzhu tradition, Pishan-Tiaotou may have been more influential than previously appreciated. Pishan (Zhejiang Provincial Institute of Cultural Relics and Archaeology & Huzhou Municipal Museum 2006) shows similar layout, pottery, and metallurgical practice to Tiaotou. Work is ongoing at a limited number of Lower Yangtze sites with similar attributes. Our study aims to comprehensively fill this picture of post-Liangzhu societies in the Lower Yangtze through continuing excavation at Tiaotou and other sites, and to examine connections with cultural phenomena to the north and south of the site.

Conclusion and future outlook

The Tiaotou site shows renewed proto-urbanism along the Lower Yangtze region for the first time after Liangzhu. It also points to a renewed level of integration and exchange between sites across the Lower Yangtze and shows clear markers of a distinct identity before the

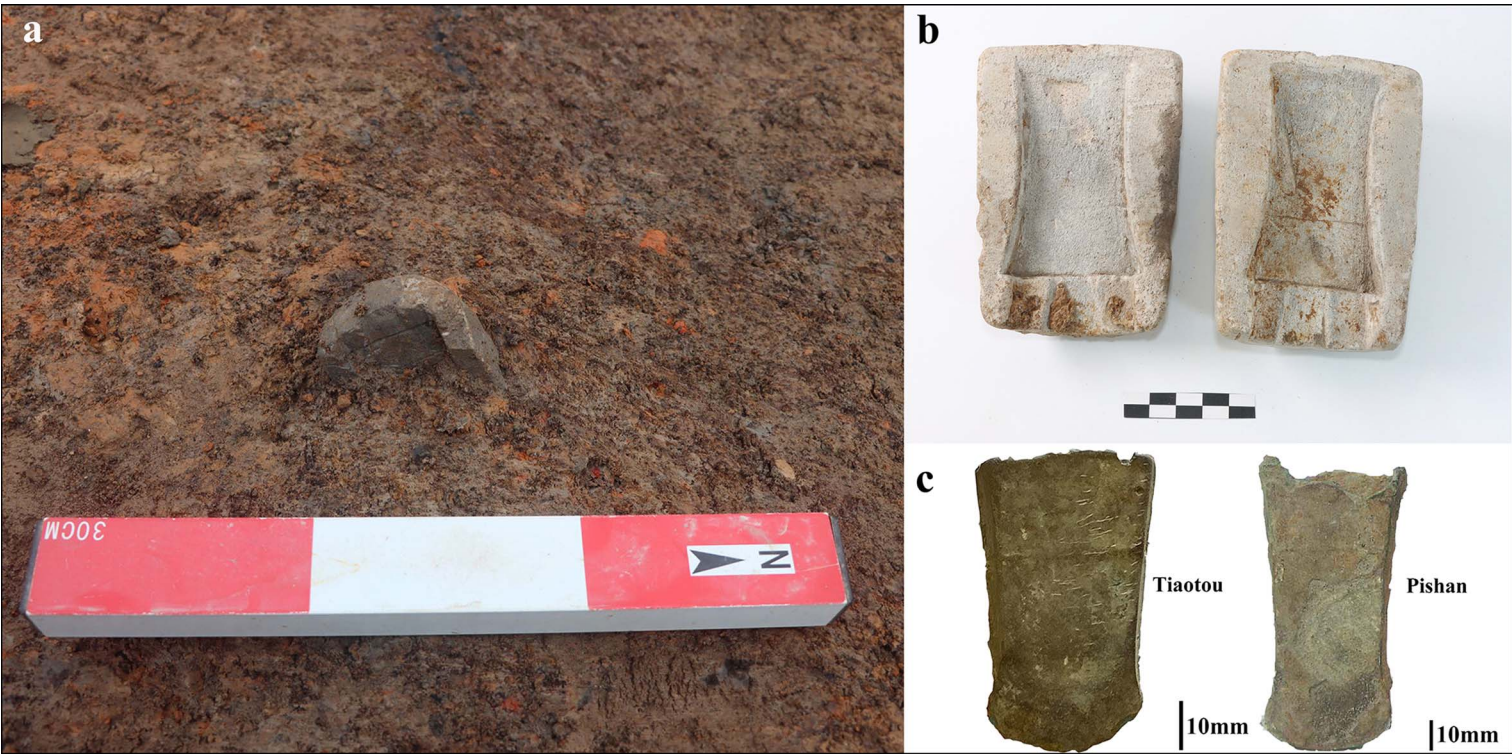


Figure 4. a–b) stone moulds found at Tiaotou; c) bronze tools found at Tiaotou and Pishan (after Zhejiang Provincial Institute of Cultural Relics & Archaeology & Huzhou Municipal Museum 2006) (photographs by S. Lin and P. Sheng).

historical Wu and Yue (770–221 BC) states. Tiaotou's occupational history bridges the first proto-urban event in the Lower Yangtze area and the historical emergence of this region, while its metallurgical and other aspects show involvement in underexplored southern and north–south cross-regional interaction. Our future research will aim to illustrate the post-Liangzhu Lower Yangtze region as actively modifying imported technologies through localised knowledge and traditions, and to quantify and qualify the impact that this process had on post-Liangzhu social organisation. We are eager to explore further the ritual, technological, economic and societal implications of this overlooked renaissance in Lower Yangtze culture. At the same time, reconsidering post-Liangzhu decline by way of an improved understanding of the long-term formation of Tiaotou and other sites can help us re-evaluate the current picture of overall and consistent cultural changes in the millennium or so post-Liangzhu.

To date, our work has two major shortcomings: 1) the framing of the Pishan-Tiaotou phenomenon requires further excavation to better understand site phenomena and artefact chronology; and 2) we await detailed analyses of the metallurgical objects and pottery at Tiaotou and other related sites. Renewed excavations at Tiaotou will help redress the former issue, and archaeometric work on production technique will assist in the latter. Both are planned within our current and future work.

Overall, this study, carried out by archaeologists at Fudan University and the Hangzhou Institute of Cultural Relics and Archaeology, offers contributions to our understanding of the complex post-Liangzhu phenomena of the archaeological and historical Jiangnan (Lower Yangtze) Culture. This work should also help reframe understandings of the rise of the Shang, and state formation from the second millennium BC through the Spring and Autumn (770–476 BC) and Warring States (475–221 BC) periods, and expand our perspectives on regional ritual, spiritual, economic and social phenomena at the dawn of Imperial China.

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