



SPAFACON2021

Papers from the SEAMEO SPAFA International Conference on
SOUTHEAST ASIAN ARCHAEOLOGY AND FINE ARTS

13 - 17 December 2021

Editor: Noel Hidalgo Tan

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INTRODUCTION

This volume contains the extended abstracts from the papers presented at the SEAMEO SPAFA International Conference on Southeast Asian Archaeology and Fine Arts, which was held online from 13 to 17 December 2021. Also known as the SPAFACON2021, this conference was organised online due to the pandemic. Despite the disruption brought about by Covid-19 to our in-person events, training programmes and field research, it is heartening to see that archaeology and cultural heritage has continued under new modes of communication and collaboration.

This fourth iteration of the SPAFACON is also scheduled a year earlier than our usual triennial cycle to commemorate the 50th anniversary of SEAMEO initiating a centre dedicated towards archaeology and the fine arts. Over the past year, SPAFA has also been highlighting this legacy of international cooperation and capacity-building by sharing our photographic archives on our social media.

I am delighted by the high level of enthusiasm and intellectual curiosity brought by the participants to the conference. During our call for papers we received close to 90 submissions, but owing to the pressures of time and the online format, we were only able to accept 34 papers for the conference. The variety of papers present here, although a small set compared with our usual proceedings, reflects the breadth of the centre's ambit – covering not just archaeology, but also performing arts, visual arts, museum studies, and other aspects of Southeast Asian cultural heritage.

I would like to thank all the participants, without whom this conference would not be possible in its present form, in particular, our Governing Board members who represent every country in Southeast Asia, and to the Ministry of Culture, Thailand and the Ministry of Education, Thailand for their long-standing support of SEAMEO SPAFA and its activities.



Mrs Somlak Charoenpot

Centre Director

SEAMEO SPAFA

The Bronze Age People of Ban Kao: A Preliminary Analysis of the Human Remains from Ban Ta Po Archaeological Site, Western Thailand

คนสมัยสำริดที่บ้านเก่า : รายงานขั้นต้นผลการวิเคราะห์โครงกระดูกมนุษย์จากแหล่ง
โบราณคดีบ้านท่าโป๊ะ ในภาคตะวันตกของประเทศไทย

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Abstract

Ban Ta Po is located in the Ban Kao Subdistrict within an area that the Thai-Danish Expedition uncovered the famous Neolithic Ban Kao Culture in 1960. The two-season excavation in 2018 and 2020 discovered 17 burials dated to the Bronze age. The analysis of these individuals that were buried there were mostly infants and children. Two children appeared with some disease lesions on bones like porous on the cranium, a carious tooth related to the localized enamel hypoplasia, and the femoral bowing. All possibly indicate metabolic bone disease caused by a nutrition deficiency.

แหล่งโบราณคดีบ้านท่าโป๊ะตั้งอยู่ตำบลบ้านเก่า บริเวณที่พบวัฒนธรรมบ้านเก่า สมัยหินใหม่ที่เป็นที่รู้จักโดยคณะสำรวจก่อนประวัติศาสตร์ไทย-เดนมาร์ก ตั้งแต่ พ.ศ. 2503 จากผลการขุดค้น พ.ศ. 2561 และ 2563 พบหลักฐานจำนวน 17 หลุมฝังศพ กำหนดอายุสมัยสำริด ส่วนใหญ่เป็นหลุมฝังศพทารกและเด็ก โครงกระดูกเด็กสองโครงพบอาการของโรคเมตาบอลิกกระดูก สาเหตุจากการขาดสารอาหาร ทั้งรูพรุนบนกะโหลกศีรษะ ฟันที่สัมพันธ์กับภาวะเคลือบฟันเจริญพร่อง และกระดูกต้นขาโค้งมากผิดปกติ

Keywords

Bioarchaeology; Bronze age; Western Thailand; Ban Kao; Ban Ta Po

ชีวโบราณคดี; สมัยสำริด; ภาคตะวันตกของประเทศไทย; บ้านเก่า; บ้านท่าโป๊ะ

Background

Ban Ta Po (BTP) archaeological site is located nearby the Ban Kao National Museum in Ban Kao Subdistrict, Mueang Kanchanaburi District, Kanchanaburi Province in western Thailand. Its geographical coordinate is WGS84: 47P 532160.00 m. E, 1545688.00 m. N. Its boundary covers the former primary local school area, including the area of the present local temple (The 2nd Regional Office of Fine Arts Department Suphanburi 2020: 1-2). BTP is situated on the terrace deposits from an old oxbow of the Kwae Noi River, which has permanently changed its path and is far from the site, about 400 metres southward.

Based on the previous prehistoric investigations within and surrounding this area, a joint Thai-Danish Prehistoric Expedition conducted in 1960-1962 discovered Palaeolithic-Neolithic limestone cave and rock shelter sites along with the Kwae Noi and Kwae Yai River like as Chande cave, Ongba cave, and Sai Yok cave and rock shelter (Van Heekeren and Knut 1967). In addition, they discovered the Ban Kao Culture. This well-known Neolithic culture dispersed its material cultures in Thailand's west-central region and the Malay Peninsula. The excavation at Bang site and Lue site where are on the old river terrace of the Kwae Noi River tributary and far from BTP, about 1.6 kilometres, uncovered 47 burials associated with the grave goods like the earthen vessels, stone adzes, and the shell beads and ornaments can be the relative and absolute date to the Neolithic period approximately 3,720-3,310 BP, excluding two vaults from Bang site that related to the Iron Age (Per Sorensen and Hatting 1967)

After that, there are at least two archaeological research projects under direction by Thai scholars and their colleagues (Pookajorn et al. 1981; Phongmas 2001) but still have a lack of the Bronze age evidence, and the concept of the Three-Age system in this region have a limitation (Kanjana-juntorn 2020). However, in 2016, the TOT (The Telephone Organization of Thailand) staff accidentally found some pottery fragments while setting up a primary cell tower conduces to the rescue excavation and allowing the 2nd Regional Office of Fine Arts Department Suphanburi to form a complete systematic archaeological excavation since 2018 through 2021 under the direction of Supamas Duangsakul and her colleagues (The 2nd Regional Office of Fine Arts Department Suphanburi 2020). The project aims to investigate and develop this newly extending area of the Ban Kao National Museum as the site museum and the museum's landscape. While in May-June 2020, the staff from the Department of Archaeology, Silpakorn University, led by Pira Venunan in collaboration with the 2nd Regional Office of Fine Arts Department Suphanburi, also conducted an annual archaeological field school at BTP to training the bachelor and graduate students in archaeology.

According to the two excavation seasons in 2018 and 2020, at least 17 burials were unearthed. Primarily found in the southwest area of the local school with various types of grave goods such as earthen vessels, bone tools, polished axes, and significantly bronze socket axes. Relatively date of these artifacts is straight to the Bronze age of Thailand. Approximately 3100-2500 BP affirmed with the calibrated dating from the charcoal sample found associated with the baked clays and the metal crucible fragments is 3083-2953 BP (Duangsakul 2019: 5; The 2nd Regional Office of Fine Arts Department Suphanburi, 2020: 229).

Preliminary Result

Osteological Data

To take a preliminary analysis of these human remains, the estimation age at death, and the palaeopathology lesions observation using the standard method (Buikstra and Ubelaker 1994; Schaefer et al. 2009; White et al. 2012). About 13 individuals, or 76.47 per cent, were estimated their age as subadult from these uncovered burials. Unfortunately, due to the poor condition of bones, two adults cannot determine their sex, and two individuals (Burial 13 and 17) found the only pieces of long bone fragmentary.

Burial No	Area	Burial Orientation	Age at Death	Age Class
001	S9W38	NW-SE	7.5-10.5 months	infant
002	S9-10W38-39	NW-SE	2.5-4.5 years	child
003	S9W39	NW-SE	4.5-7.5 months	child
004	S9W39	NW-SE	0.5-2.5 years	infant
005	S9-10W38-39	NW-SE	7.5-8.5 years	child
006	S13W29	NW-SE	5.0-6.0 years	child
007	S14W29	NW-SE	1.0-2.0 years	infant
008	S12W29	NW-SE	4.0-5.0 years	child
009	S13W29	NW-SE	0.5-2.0 years	infant
010	S10W39	NW-SE	0.5-2.5 years	infant
011	S15W21	NW-SE	>18 years	adult
012	S15W22	NW-SE	>18 years	adult
013	S15-16W12	SW-NE?	undetermined	undetermined
014	S16W12	SW-NE	14.0-16.0 years	adolescent
016	S5W16-17	NE-SW	14.0-16.0 years	adolescent
017	S5W16	NE-SW	undetermined	undetermined
018	N3W11-12	NW-SE	4.0-6.0 years	child

Table 1 Description of the burials at Ban Ta Po archaeological site in 2018 and 2020.

Palaeopathological Lesions

The macroscopic analysis can observe the pathological lesions on the bone of two individuals. Firstly, a child skeleton, Burial 2, showed the periosteal inflammation on the anterior part of the proximal midshaft of the right humerus. This non-specific infection lesion is a reasonably common finding in palaeopathology (Roberts and Manchester 2012: 417-418). Also, the labial crown surface of the right maxillary deciduous canine displayed a carious lesion that possibly related to localized enamel hypoplasia (Halcrow and Tayles 2008).

Secondly, Burial 5, a child skeleton who interred with the bow legs and found them associated with the turtle carapace, laid above their groin. There is a porotic hyperostosis lesion on the ectocranial surfaces of the frontal, left, and right parietal. This stress indicator has been linked with various conditions, including anemia, infections, and vitamin deficiencies (Schultz 2001). In addition, the left femoral midshaft is bowing, including the exaggerated curvature of the left ilium. These bones affected indicate metabolic bone disease, possibly vitamin D deficiency, or some nutrition deficiencies, which required an in-depth diagnosis later (Brickley and Ives 2008: 94-105).

Mortuary Practices

Regarding the archaeological evidence, all of them were primarily buried in the supine position. Principally laid the deceased down in the northwest-southeast direction, excluding four individuals were found either in the northeast-southwest or southwest-northeast orientation. (Duangsakul 2019; Pongkitkarun 2018; The 2nd Regional Office of Fine Arts Department, Suphanburi, 2020). There is no difference in the mortuary rituals between infants, children, and adults. Unlike the prehistoric site in the other regions where sometimes the infant had buried in the burial jar, for example, the Ban Pong Manao site in central Thailand, Noen U-Loke and Ban Chiang in northeast Thailand (Towinus 2005; Wangthongchaicharoen 2013). They are all interred with various earthen vessels, animal bones, bones tools, and polished axes offering above their head, above and under their body, or legs. Some burial appeared evidence reflected that the corpse was bound at their ankles and possibly all bodies with clothes or textiles. However, they probably divided their specific area into the cemetery for each family, klan, or age group. Like the results of the first excavation season which only ten infants and children burials were found in the south area of the site, Supamas stated that might be the Metal age children's cemetery at Ban Kao, where is rarely in prehistoric settlements, especially in Thailand (Duangsakul 2019).

However, all these seasons unearthed the three burials associated with the bronze socket axes. And including the uncovered artefacts in the residential area related to the bronze smelting activities like as the bronze prills, baked clay crucibles, and the tuyeres fragments (Duangsakul 2019; The 2nd Regional Office of Fine Arts Department Suphanburi, 2020). These results revealed the missing Bronze age people and occupations in the Ban Kao area and Thailand's west region.

Discussion and Conclusion

A comparison study on the burial rites between new data from BTP and the previous results from the nearby prehistoric sites where locating along the Mae Klong and the Kwai Noi River and its tributary, like Ban Kao (Bang site and Lue site) (Per Sorensen and Hatting 1967) Ban Lum Sum (Yupool 2001) Prasat Mueang Sing (ASEAN 1988) as well as Ban Nam Daeng (Kanjanauntorn 2008), most settlements there from Neolithic through Iron Age tend to bury all the corpses in the supine position with some offering goods on mortuary practices. There are no shreds of evidence of the infant jar burial tradition preferred even though in the other Neolithic Ban Kao Cultural Tradition sites like Nong Ratchawat and the different regions. Nevertheless, the pattern of the mortuary cluster found at BTP can suggest a separate area for a diverse social group. Including the burial, orientation indicates either to the social, family, or individual belief and identities. These typical and dissimilar burial rites possibly reveal the integration of the rituals to the socio-settlement system clearly seen in the Metal Age of Thailand (White and Onsuwan Eyre 2010).

Period	Prehistoric Site	N (100%)	Infant-Children	Adult	Undetermined
Neolithic	Ban Kao	36	S-N 1 (02.78%) NW-SE 3 (08.33%) SE-NW 3 (08.33%) SW-NE 1 (02.78%)	SW-NE 8 (22.22%) NW-SE 7 (19.44%) NE-SW 6 (16.67%) SE-NW 4 (11.11%) N-S 2 (05.56%) S-N 1 (02.78%)	
	Ban Lum Sum	1		SW-NE 1 (100.00%)	
Bronze Age	Ban Ta Po	17	NW-SE 13 (76.47%)	NE-SW 1 (05.88%) SW-NE 1 (05.88%)	NE-SW 1 (05.88%) SW-NE 1 (05.88%)
Iron Age	Ban Kao	2		NW-SE 2 (100.00%)	
	Prasart Mueang Sing	4		NW-SE 4 (100.00%)	
	Ban Nam Daeng	7	S-N 1 (14.28%)	NE-SW 2 (28.57%) NW-SE 1 (14.28%) SE-NW 1 (14.28%)	N-S 1 (14.28%)

Table 2 Burial orientation from the prehistoric sites along the Mae Klong-Kwae Noi River

In conclusion, the excavation results at BTP revealed some critical information about prehistoric Thailand. Firstly, the expose of the Bronze age occupation fulfilled the prehistoric chronology based on the concept of technological development in the west-central region.

Secondly, there is evidence to support the concept of integrating the rituals with their belief and societies. And lastly, the cemetery demographic data of the BTP people are different from the others and rarely found. The total amount of infant and children burials and the ratio of subadults with adults were discovered higher than usual, possibly related to the random sampling excavation techniques. Or it reflected to the actual condition means that the Bronze people there have poor health and hygiene like the Khok Phanom Di prehistoric population (Tayles 1999). Two of them, about 11.76 per cent, were found with the lesions of the metabolic bone disease, similar to the six of 36 Neolithic Ban Kao individuals, 16.67 per cent who had an extreme thickness of the flat bone of the skull caused by Hemoglobin E anemia or the congenital hemolytic anemia (Sangvichien et al. 1969: 33-34). These stresses support that area had the nutrition limitation since the initial through the Iron age settlements.

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