

The Three-Age System: A Struggle for Southeast Asian Prehistoric Periodisation

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Abstract

This article explores the concept of the “Three-Age System” that has to some extent stymied the conceptualization of Southeast Asian prehistory. The direct transfer of this system from its European application to Southeast Asia has substantially influenced the analysis and characterization of Southeast Asian data. In particular, the chronological division of ‘Bronze Age’ and ‘Iron Age’ has overemphasized the linkage between the development of metal technology in relation to socio-economic development. It is agreed that absolute chronology needs to be established, however the terminology of ‘Bronze Age’ and ‘Iron Age’ should be used specifically for the classification of artefact chronology, separately from the explanation of stages of social organisation. Archaeological data from west-central Thailand will be discussed to demonstrate the issue of the incompatible framework of the Three-Age System (Figures 1-2). The apparent absence of clear age subdivisions and the lack of a “real” Bronze Age has made the chronology of this region seem incomplete. Stone tools had been abundantly used throughout the prehistoric period, and bronze and iron materials were often found at the same sites. However, little scientific data prior to 500 BCE has been obtained from any site in the region. This may or may not be the reason for west-central Thailand being considered peripheral in the discussion of the socio-economic development of mainland Southeast Asia. In consideration of these issues, archaeological methodology and the formation of knowledge from Southeast Asia prehistory will be discussed, including the necessity to move from the imported “Three Age System” to concepts that better fit the local data in west-central Thailand. The distorted prehistoric analysis needs to be adjusted so that our understanding of prehistory in Thailand does not become a scientific illusion.

บทความนี้เป็นการสำรวจและสะท้อนให้เห็นว่า “ระบบสามยุค” ที่ใช้ในการกำหนดอายุแหล่งโบราณคดีด้วยวิธีเทียบเคียงนี้ แทบจะกลายเป็นกรอบคิดในการศึกษาโบราณคดีสมัยก่อนประวัติศาสตร์เอเชียตะวันออกเฉียงใต้ ระบบการกำหนดอายุแบบโบราณคดียุโรปที่ถูกนำมาใช้ได้ส่งอิทธิพลต่อแนวทางการศึกษาโบราณคดีภูมิภาคนี้อย่างสำคัญ โดยเฉพาะอย่างยิ่งการกำหนดอายุ ‘ยุคสำริด’ และ ‘ยุคเหล็ก’ ที่มุ่งเน้นการศึกษาพัฒนาการด้านเทคโนโลยีโลหะกรรมแล้วนำไปใช้อธิบายเชื่อมโยงกับพัฒนาการทางสังคม การลำดับอายุสมัยมีความสำคัญสำหรับโบราณคดีก่อนประวัติศาสตร์ที่จริง แต่การใช้ ‘ยุคสำริด’ และ ‘ยุคเหล็ก’ ควรใช้ในลักษณะที่เป็นการจัดจำแนกประเภทโบราณวัตถุ แต่ไม่ควรนำไปผูกติดกับการอธิบายพัฒนาการทางสังคม ตัวอย่างที่จะนำมาอภิปรายใน

บทความนี้ก็คือ ข้อมูลโบราณคดีสมัยก่อนประวัติศาสตร์จากภาคตะวันตกของประเทศไทย โดยจะสะท้อนให้เห็นว่าการกำหนดอายุแหล่งด้วยระบบสามยุคทำให้เกิดความลึกลับอย่างไร จากการเป็นภูมิภาคที่ไม่พบยุคสำริด ‘แท้’ ทำให้กลายเป็นว่าลำดับทางวัฒนธรรมของภูมิภาคไม่มีความต่อเนื่อง หลักฐานประเภทเครื่องมือหินพบมากมายในภาคตะวันตก ในขณะที่วัตถุประเภทสำริดและเหล็กพบเพียงบางแหล่งเท่านั้น แหล่งโบราณคดีในภูมิภาคนี้ที่กำหนดอายุทางวิทยาศาสตร์เก่าแก่กว่า 500 ปีก่อนคริสตกาลมีจำนวนน้อยมาก ซึ่งอาจจะเป็นเหตุผลหรือไม่ก็ตามที่ทำให้ภาคตะวันตกของไทยไม่ค่อยถูกกล่าวถึงในการศึกษาพัฒนาการเศรษฐกิจ-สังคมภาคพื้นทวีปเอเชียตะวันออกเฉียงใต้ ในการอภิปรายประเด็นดังกล่าวนี้ ผู้เขียนได้หยิบยกข้อมูลว่าด้วยพัฒนาการของวิธีวิทยาทางโบราณคดีและประวัติการสร้างองค์ความรู้เกี่ยวกับโบราณคดีก่อนประวัติศาสตร์ในเอเชียตะวันออกเฉียงใต้ รวมทั้งข้อคำนึงในการแสวงหาคำเรียกลำดับอายุที่น่าจะเหมาะสมกว่า ‘ระบบสามยุค’ เพื่อให้การศึกษาโบราณคดีก่อนประวัติศาสตร์สะท้อนความเข้าใจเกี่ยวกับอดีตของประเทศไทยอย่างแท้จริงโดยไม่กลายเป็นมายาคติทางวิทยาศาสตร์

Keywords: the three-age system | ระบบสามยุค

Introduction

The purpose of this article is to point out that the study of prehistoric Southeast Asia should distance from the periodisation of the conventional European three-age system (Neolithic, Bronze and Iron Ages). This was once considered as a general timeframe as Higham has stated “...there is a clear temptation to name the cultural sequences according to the three-age system...this temptation should be resisted if only because we deal with a little known area in prehistory” (1989:28). Several decades later with more archaeological data, the three-age system is still in place. In fact, it is more than a broad timeframe, as it is applied extensively as a conceptual framework. This paper will explore what might be some consequences of this outdated periodisation and what might lead the prehistoric study of this region to some problematic situations. Metal technology has received remarkably extensive attention from prehistorians and appears to have dominated the account of prehistoric Southeast Asia (e.g. Higham 1996; 2002; 2014). The study of metal technology seems to share the basis of the three-age system that is the concept of technological stages. Or is it a derivation from the three-age system in modern archaeology? Nevertheless, archaeologists should seek to understand human behaviour and social dynamics with respect to cultural adaptation and natural exploitation. The advancement of metal technology was only one facet that has to be considered in relation to other social schemes.

The Three-Age System and ‘Prehistory’

A large part of the history of archaeology and prehistory as a sub-discipline involves the development of the three-stage periodisation, known in Scandinavia as the three-age system. It evolved from the long-termed devotion of a systematically detailed study of museum collections by Christian J. Thomsen at the National Museum in Copenhagen in early nineteenth century. Thomsen was in charge of museum collections and the preparation for exhibitions. Some artefacts had records of their discovery and context. He classified the objects according to their material types and functions in order to explain past society through the ages. He then recognised some patterns among objects with contexts and classified them into stages of stone, bronze and iron (Fagan 2018: 57-8). Thomsen might have had the idea from earlier literature as some people have suggested, or he might have developed it from his systematic cataloguing of the vase numbers and various of museum collections (Daniel 1950: 43; Trigger 2006: 104-5). Another prominent figure who played a major role in the establishment of the three-age system in Europe was Thomsen’s young colleague, Jen J. A. Worsaae. He took Thomsen’s classification on board and put it to the test

against contextual evidence from stratigraphic excavations making comparative studies on prehistoric artifacts throughout Europe (Wilkins 1961).

The chronology of human's past proposed by Thomsen, the three-age system, was received well in Europe. It was adopted by some British researchers in ethnology. Their works explained the diversity of people through examining their histories and migrations and subsequently they extended their analysis to objects from burials and suggested that agrarian people had been replaced by the Celts who came with the knowledge of metal technology (Morse 1999: 2-6). Scientific elements of the three-age system went well with the framework of the evolutionist in Britain, as scientific methodology helped to reduce the concern about political bias and nationalism (Kaeser 2008: 382). The fundamental scheme of the three-age system was to apply to all cultural materials beyond boundaries and nations. The criticism came when the stages of three-age system applied to archaeology. This generalised chronology faced questions of oversimplifying as if there was a connotation that an old tradition would be completely replaced by another (Heizer 1962). To address the criticism, certain statements made by Thomsen and Worsaae were quoted to illustrate their awareness of the limitation of their outlines and as a reminder that it was the work of an earlier period (e.g. Daniel 1950: 77; Heizer 1962: 264). The three-age system has earned its place in prehistoric studies in Europe and been referred to as an important part in the establishment of 'prehistory' as a discipline (Schnapp 2008).

'Prehistory' gained its status as a discipline in scientific research, as Kaeser has stated its crucial development, by institutionalisation and internationalisation (2008: 382-8). It started with a small group of people who branched out from antiquary – the traditional study of material remains, learned history, biblical texts, mythology, linguistics or philology. The difference between prehistory and antiquary is the methodology. Prehistory applies a scientific approach focusing on typology, stratigraphy and technology (Schnapp 2008: 401-4). The three cores specified are entangled, 'typology' categorises objects in a comprehensible manner; 'stratigraphy' provides a baseline for typology; and 'technology' suggests functions on objects and buildings. The three-age system experienced some disputes and resistance, but it was subsequently embraced by the 1870s (Rowley-Conwy 2007).

The interest of prehistory in Europe during the late nineteenth century was largely on the Pleistocene. The analysis of finds from excavations at cave sites in France resulted in modifications of the three-age system. The term 'Stone Age' was found insufficient for the chronology and the variations of lithic traditions. Thus, new terminology had to be introduced – Palaeolithic, Mesolithic, Neolithic – but ambiguities remained. Moreover, the archaeology in the Eastern Mediterranean opted to group ancient cultures by geography (Daniel 1950: 122-32, 149-50). From the early twentieth century onwards, the new prehistory moved the focus to a later period, one that is shared less with geology. The application of the three-stage chronology was still unsatisfactory, despite the insert of sub-divisions (Daniel 1950: 149, 248-9).

The speculation of the three-age system might not achieve universal chronology in prehistoric studies. However, it seemed that one aspect of this industrial-stage concept remained influential. That was the prehistoric theme of ancient technology, e.g. metal archaeology, as a major interest in archaeology at least from 1940s. This can be observed from the formation of Ancient Mining and Metallurgy Committee at the Royal Anthropological Institute whose first meeting was called in May 1946 (Ancient Mining and Metallurgy Committee (A89) n.d.). It was followed by formation of Copper Development Association, the British Non-Ferrous Metals Research Association, the Historical Metallurgy Group and the annual Archaeometry at Oxford University (Penniman &

Blackwood 1975: 3-4). Archaeological research on ancient metallurgy has been conducted throughout Europe resulting in a series of superb publications. Moreover, the earlier studies from late nineteenth century on metals from ancient civilisations – the Near East, Egypt, China and India – were rewritten (Penniman & Blackwood 1975: 5-7). The discovery of copper in the Near East has inspired the early twentieth century of the significance of copper metallurgy (Amzallag 2009). It was considered to be the central factor in the development of ancient civilisations, since advanced agricultural technology which secured the food supply which resulted in population increase, so demand for metals increased trading exchange and that was the mechanism which advanced technology.

After a century and a half of the establishment of prehistory, diverse empirical data has been accumulated in most geographical regions. The discipline of archaeology has developed significantly together with advances in methodologies and theoretical frameworks. Scholars assumed that the three-age system must have become less influential (e.g. Clarke 2008: 55), which might be the case for certain regions in the world where the three-age system was, in the first place, excepted with reservations. Apparently the concept was readily accepted and survived well in Southeast Asian archaeology. Besides, the research theme of technological development, e.g. archaeometallurgy has been favoured as it brought this region into the prehistory of the world.

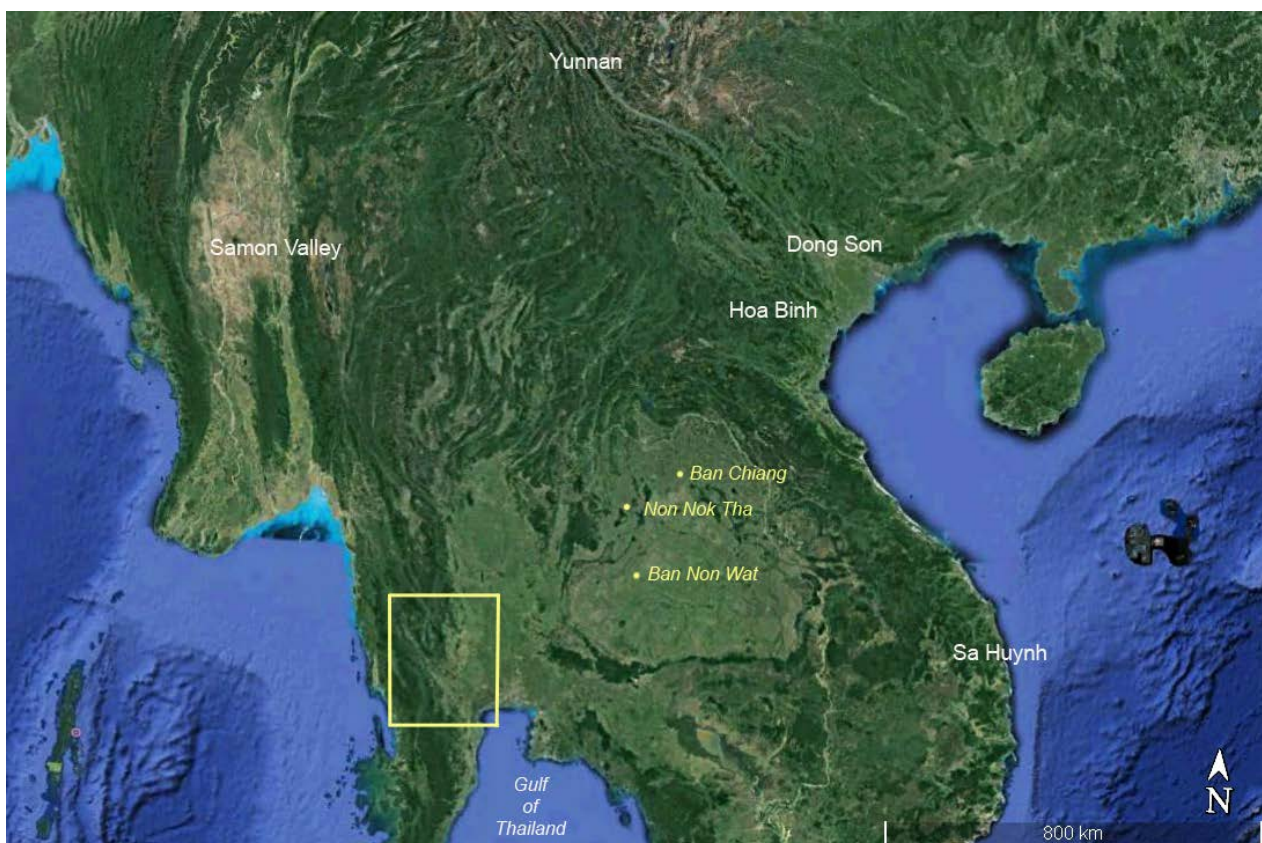


Fig. 1 Map shows locations of places and archaeological sites mentioned in the text. The yellow frame indicates the area in Figure 2. Source: modified from Google Earth, image of 14 Dec 2015.

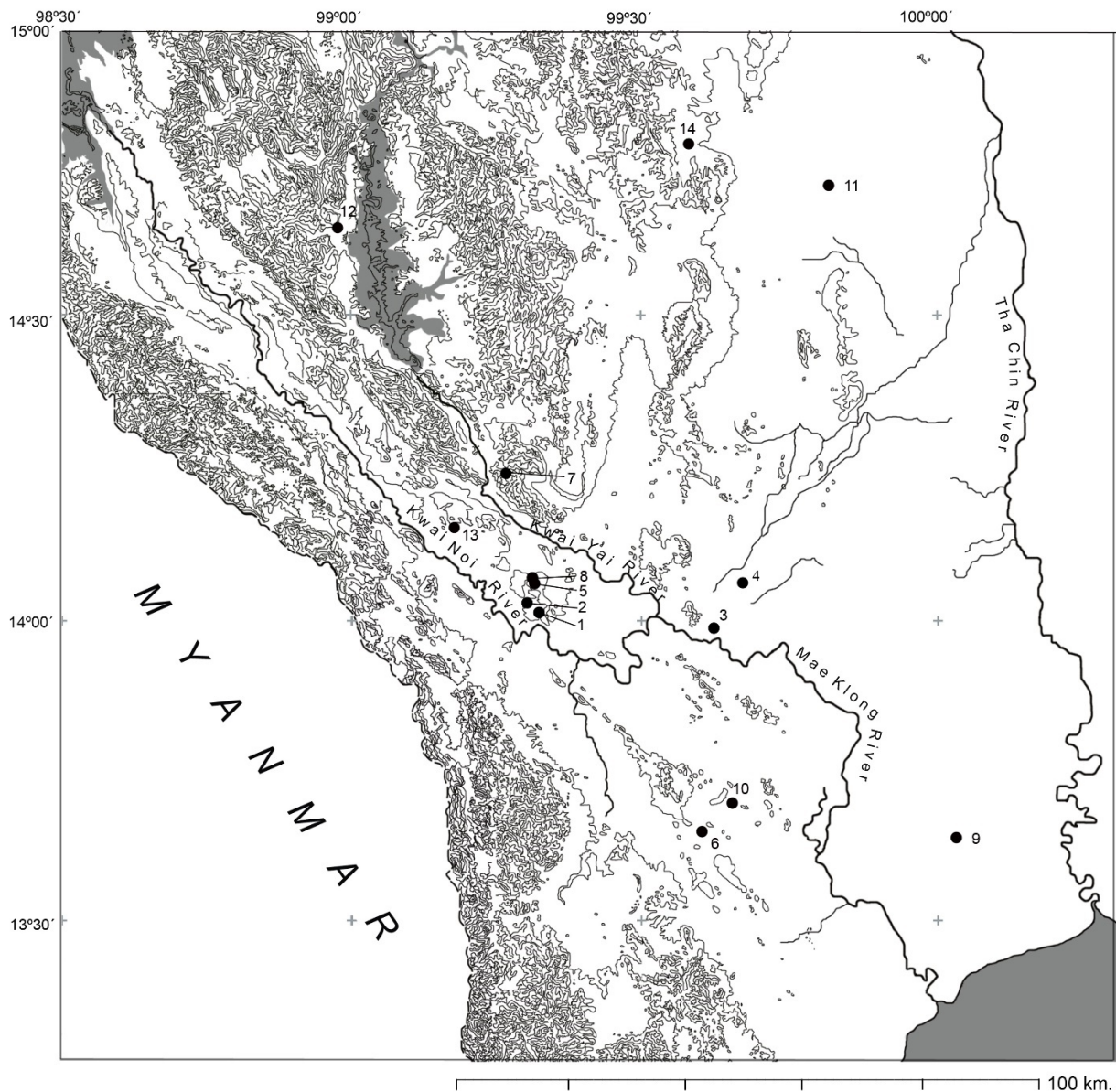


Fig. 2 Map shows locations of prehistoric sites and a local museum in west-central Thailand mentioned in the text. 1. Ban Kao, 2. Ban Tha Poh, 3. Ban Nam Daeng, 4. Ban Don Ta Phet, 5. Heap Cave, 6. Hua Tale, 7. Kao Sam Liam Cave, 8. Khao Talu Cave, 9. Khok Phlap, 10. Nong Kwang, 11. Nong Rajchawat, 12. Ongbah Cave, 13. Wang Pho, 14. Wat Phu Nam Ron Museum. Source: Map by Podjanok Kanjanajuntorn

Prehistoric Periodisation and Theoretical Development in Southeast Asia

The scholarly approach to prehistoric archaeology was introduced to Southeast Asia during the 1920s – 1930s by Europeans. Their interest was largely in cave sites and rock shelters in Burma (Myanmar), Cambodia, Malaysia, Indonesia, Thailand and Vietnam (Ketudhat 2016: 19, 23-4; Sarasin 1933). The European archaeologists who specialised in geology arrived in Southeast Asia not too long after the discoveries, from the period classified as ‘Palaeolithic’, with evidence of extinct animals, tools and rock paintings in cave sites in France which had caused excitement among scientists in Europe (Fagan 2018). It is possible that some of them went to Southeast Asia to extend their knowledge of the human past and their wishes to prove hypotheses outside Europe. In

Thailand an early reference to ‘prehistory’ appeared in G. E. Gerini’s article ‘Siamese Archaeology – A Synoptical Sketch’ published in Thai in 1905 (Ketudhat 2016: 16-17). At that time the concept of ‘prehistory’ was little known among local scholars. One of the few who did was a Thai noble and Head of Archaeological Service, H. R. H. Prince Damrong Rajanupab (1938), who took an interest in prehistory but could not pursue it whilst he was in exile in Penang (Ketudhat 2016: 19-21).

Foreign researchers in Southeast Asia found almost from the beginning that the European chronology of a three-age system was not applicable to this region (Hutterer 1976: 222). Nor did the definitions of Palaeolithic and Mesolithic fit. Unlike in Europe, Pleistocene animals were absent, whereas the Mesolithic tradition of microliths was not found. Archaeologists then adopted local places names to label their classifications when encountering assemblages of unknown traditions. The French archaeologist, Colani, who excavated caves and rock shelters in northern Vietnam, discovered unifacial flaked implements which resembled some features from European Palaeolithic. She coined the term, ‘Hoabinhian’ which was derived from the name of the Hòa Bình province, as a substitute for the term ‘Mesolithic’ (Colani 1927, quoted in Sarasin 1933: 194-5). However Sarasin, who conducted surveys and small excavations in northern Thailand around cave sites and rock shelters, introduced the term ‘Siamian’ for the implements of “archaic Hoabinhian” which “belonged to the same group as Palaeolithic cultures” (Sarasin 1933: 195-6, 199). He suggested dates for the Palaeolithic period of Southeast Asia to the fairly recent post-glacial age. Although the local names had been adopted to avoid the unsuitable three-age system, those names seemed to be based on technological development of a single type of artefact. Besides, there is no clear definition of such terminology relating to other types of cultural materials.

World War II was a turning point in the history of modern archaeology of Thailand. A Dutch archaeologist, van Heekeren, was captured and sent to Thailand as a prisoner of war to work on the infamous death railway in Kanchanaburi. During the rail construction along the Kwai Noi river he recognised pebble tools and collected them. After the end of the war, van Heekeren (1948) published his analysis of those ancient implements and generated interest in the Pleistocene archaeology of this region. He followed the French practice in labelling the unfamiliar period with local names. He gave a temporary name to the Kwai Noi river valley from middle Pleistocene to early Holocene period as ‘Fingnoian’. Movius (1948) who worked on similar tool industries in upper Myanmar introduced ‘Anyathian’ and in Malaysia, Tampanian. However, the three local terms are not commonly used today, unlike the ‘Hoabinhian’ whose definition has been re-defined by archaeologists who conducted late-Pleistocene research in other regions of Southeast Asia. They recognised the resemblance and diversity of the stone artefacts belonging to the Hoabinhian culture. However, the explanation of the term has been broadened from the development of stone technology to include aspects of ecology and its effect on people’s strategic adaptation (Gorman 1970; Marwick 2018; Matthews 1966). Some archaeologists consider Hoabinhian to be obscure because it needs to be defined in national and regional terms, and how the term could apply to pottery traditions, and its relationship with Neolithic cultures (Reynolds 1990: 112-3).

Modern archaeology in Thailand did not begin until the 1960s when scientific methods of excavation were introduced by western researchers. This was around the time when radiocarbon dating became available and the theory and practices of New Archaeology, also known as processual archaeology, were introduced. These challenged the way archaeologists conducted their research and viewed their data. Some foreign researchers from institutions in Europe and North America pursued the theme of Pleistocene archaeology (Knuth 1962; Nielsen 1961; Nielsen 1962;

Sharp & Sharp 1964; van Heekeren 1961). However, some attention turned from cave dwellers to early farmers (Bayard 1970; Boeles 1960; Gorman 1970; Nielsen 1962; van Heekeren 1962). Excavations at prehistoric sites undertaken during 1960s-1970s resulted in exciting discoveries (e.g. Bayard 1970; Sørensen & Hatting 1967). Since then the archaeology of Thailand has participated in the international debates including issues from early agriculture and early bronze technology. Research subjects based on these two issues have stimulated argument among archaeologists, whose speculations and hypotheses have challenged the limits of archaeological methods to produce relevant data. The prehistoric chronology of Southeast Asia is, however, still controversial (Bayard 1970; 1984; Higham et al. 2015; Higham & Kijngam 1984; White 2008; White & Hamilton 2015).

The theoretical movement of processual archaeology has affected the view of the three-age system as archaeologists tried to avoid typologies with universalistic implications and models for explaining or speculating about social developments of ancient societies became a new paradigm (Clarke 1972). During 1960s–1970s archaeological data in Southeast Asia was abundantly accumulated and concepts of social organization and social stratification were applied (Bayard 1992). However, some archaeologists found that some models are not always testable because of the lack of relevant data (Hutterer 1976). Besides, the terminology for addressing social organisations, i.e. chiefdom, is rather obscure and not suitable for the context of prehistoric Southeast Asia (Bayard & Solheim 2010). Bayard (1992: 17-18), who worked in the northeast of Thailand introduced the Thai terms *ban* and *muang* to substitute chiefdoms for different levels of complexity, the first for village-autonomous entities and the later for regional entities. The two terms were suggested in order to avoid the connotation of an ideal typology; however, these vernacular terms have not been used much by other prehistorians.

The vernacular terms mentioned above may not have settled in Southeast Asian prehistory discussions, however the concepts of socio-economic development have been applied and scientific dates of archaeological sites have, noticeably, become a significant part in the discussions. Hutterer (1976; 1983) has emphasised the understanding of ecological relationships as he believes that the development of culture has resulted from the continuing interaction between humans and the environment. He has suggested that early rice cultivation might have preferred tropical environments. However, he has pointed out that tropical conditions do not encourage specialisation in socio-cultural systems on a large scale since they tend to retain a diversity of cultures. White (1982) has also adopted the ecological viewpoint and conducted research on ethnoecology of Ban Chiang's past and present, and attempted to combine ecological data with archaeology. She has demonstrated the diversity of human patterns in the exploitation of natural resources and cultivation depending on the environmental potential of the region. She concluded that the development of agriculture in this region has resulted from "a transition from haphazard, opportunistic, and diffuse to systematic, integrated, and focused" (White 1995: 61). Higham's overview of Southeast Asian archaeology, as illustrated in one of his early books, has been outlined with the joint concepts of social organisation and the bare generic period – hunter-gatherer, domestic communities, emergence of chiefdom, and development of mandalas (Higham 1989). He has sub-divided the chronology from 10,000 BCE to 1500 CE into six periods – early hunter-gatherers (10,000 BCE), coastal settlement (5000-1500 BCE), general period A (3000 BCE), general period B (2000-500 BCE), general period C (500 BCE), and general period D (200-1500 CE) based on key sites on the mainland. The explanation given for general period B seems to emphasise bronze technology and general period C iron as the primary indicators for social changes, whereas other periods have been described using environmental conditions and social organisation.

Despite the conceptual flow of processual archaeology, the timeframe of the three-age system, Neolithic, Bronze and Iron Ages, has been used in prehistoric accounts of Southeast Asia in publications such as Higham's (1996) book, *The Bronze Age of Southeast Asia*. He has stated that "there is no agreed system of nomenclature for the prehistory of mainland Southeast Asia...it is, however, stressed that the Three-Age System is used only as a convenient shorthand and with no implications for similarity with other regions" (Higham 1996:7). The major theme of this book was to address two issues, the first is on the relationship between Bronze Ages in Southeast Asia and China, and the second is to understand how the communities who adopted metal technology have worked and develop it through time. Higham's latest study at the prehistoric site of Ban Non Wat in northeastern Thailand has yielded several hundreds of burials with stunning artefacts and evidence suggesting long occupation going back 4,000 years ago. The site is considered to be the largest excavation site in Southeast Asia and produced the largest numbers of prehistoric burials. Higham and his team have published many volumes about the site. Volume five is on "the Bronze Age", this volume has illustrated furnished graves identified as the "Bronze Age", however large parts of the analysis is devoted to the discussion of the development of copper and bronze technology (see Higham & Kijngam 2012). The research questions for prehistoric Southeast Asia, particularly on metallurgy, have become more and more complicated and sophisticated with the development of the latest laboratory techniques. These methods allow archaeologists access to the invisible information on the attributes of objects, such as their chemical trace elements, manufacturing processes and the possible provenance of raw materials. Importantly they can provide specific dates for objects which enables the reconstruction of the cultural chronology of the sites and then of the region. The study of bronze technology can be said to have connected Southeast Asia to world archaeology. Unlike metallurgical study, research on other cultural materials and practices seemed to have been limited mostly to the regional level.

Bronze technology was a favourite topic of the prehistoric study in Europe during the early twentieth century and helped strengthened the validity of the three-age system. The practice of scientific archaeology from Europe arrived in Southeast Asia and found that the classification of the three-age system did not fit, hence local geographical names were adopted. However, the basic focus on development of technology still remained and those geographical names were often attached to technological materials. It is, however, understandable that when confronted with an unfamiliar culture with no written records or grand monuments, prehistorians would have to look for materials as a baseline. Bronze can be an answer to that. This type of material has been considered as an achievement of humankind because of its sophistication and craftsmanship. As far as the prehistory of Thailand is concerned the best-known feature of prehistory is the red painted pottery from Ban Chiang (Figure 3). It caught attention from foreign scholars to visit and conduct archaeological research in northeastern Thailand. The discovery of bronze artefacts, then claimed to be the 'earliest' in the world, have received greater attention (see Ketudhat 2016). Since then, Ban Chiang bronze has been the centre of debate revolving around the early bronze in Southeast Asia.



Fig. 3 Ban Chiang Potter with stylistic red painted decoration, exhibited at the Ban Chiang National Museum, Udon Thai province. Source: Photos by Podjanok Kanjanajuntorn

After five decades of prehistoric research in the northeast of Thailand, the debate on the issues of the date of the early bronze age and its transition into Southeast Asia is still ongoing (Higham et al. 2011; Higham et al. 2015; White 2008; White 2015; White & Hamilton 2015; White & Hamilton 2018). White and Pigott (1996) argued against the theory of V. Gordon Childe, with their case study in the central and northeastern regions of Thailand, which showed that copper/bronze craft specialisation did not always result in socioeconomic centralisation. In fact, according to their overview research, the nature and technology of metal artefacts found in archaeological contexts suggests that their producers were independent specialists, whilst there is little evidence that people who possessed bronze objects also had control over bronze production and distribution. The point here is that marking the baseline for chronology is one thing, but explaining social development is another. When we are trying to understand the cultural systems of past societies, how we balance the data of prehistoric research because of insights from metal technology it is just one of several aspects.

The theme of bronze technology is not limited only to the northeastern region, it also extended to the central and west region of Thailand. The site of Ban Don Ta Phet became known through the find of high-tin bronze, an unusual find type in Southeast Asia (Figure 4) (see Rajpitak 1983; Rajpitak & Seeley 1979). The interesting find had brought I. C. Glover to the region and undertook the two-seasoned excavations in the 1980s (Bennett & Glover 1992; Glover 1990, 1991, 1982). The excavations yielded secondary burials with the offerings of exotic goods – stone and glass beads, stone ornaments and bronze ware. The focus has then shifted to the maritime trade during the period

around 500 BCE to 400 CE, so-called the 'Iron Age' (e.g. Bellina & Glover 2004; Francis 1990; Hall 1985; Srisuchat 1996; Vallibhotama 1984). Craft products have captured the interest of archaeologists and excavations were conducted in various regions in Southeast Asia on the mainland and on islands (e.g. Bellina 2016; Glover 1991; 1990a; 1985; Ramli et al. 2012; Chin 1976). Those studies have shed light demonstrating that some exotic beads have been imported from South Asia but some have been made locally to meet an increasing demand in Southeast Asia (Bellina 2003; Glover & Bellina 2001; Ono et al. 2018; Theunissen et al. 2000). However, those trading regions have yielded a moderate number of bronze artefacts although their appearance is rather late compared to those found in the northeast. Glover, who worked extensively in prehistoric Southeast Asia, expressed surprise as to why the cultural development of northeastern Thailand was different to the rest of the country (Glover 1991). He reasonably believed that the regional differences might have resulted from the conditions such as the natural environment and the variation of resources as well as contact with outsiders.



Fig. 4 Fragments of bronze bowl(s) found at Ban Don Ta Phet, Kanchanaburi province, displayed at special exhibition in the U-Thong National Museum, Suphanburi province in 2006. Source: Photos by Podjanok Kanjanajuntorn

The prehistoric archaeology of many regions in Southeast Asia is not yet understood well. However, northeastern Thailand has long been established on the archaeological map and has become a large part in prehistoric accounts. The history of modern archaeology of this region might hold some explanation. The archaeological activity in Thailand during 1960s-1970s has been seen as part of international politics during the Cold War (Peleggi 2016). The Thai-American excavations at Non Nok Tha and Ban Chiang caused a sensation by revealing beautiful red painted pottery and bronze objects possibly the oldest in the world. Several decades later the archaeology of northeastern Thailand is still flourishing and continues to yield significantly valuable information upon the prehistoric period (see Higham 2002; Higham et al. 2011; Higham & Kijngam 2012a; 2012b). The major publications of Southeast Asian Prehistory (e.g. Higham & Thosarat 1998; Higham 2002; 2014) have presented detailed data across the region, largely from northeastern Thailand, and they have outlined the regional chronology of the Neolithic, Bronze and Iron Age periods. The point that Glover (1991) raised some while ago about the cultural relationship of the northeast with other regions, whilst awaiting further data, has not yet advanced. Northeastern Thailand has become like an index of Southeast Asia prehistory. At the same time, however, some regions with different cultural developments have become the periphery in the prehistoric account. Archaeological methodology must be based upon objective study in those other regions. It is very important because archaeologists have responsibility for our findings; we have the privilege to write unwritten history.

Before pursuing the issue further in the next section, an overview of prehistoric periodisation in some countries in Southeast Asia will be briefly discussed here. The purpose is to illustrate recent fashions of prehistoric study in this region. Archaeological activities have been brought into the countries of this region in the second half of nineteenth century by westerners. The discipline has been developed in different ways according to the political situation and the attitude of local peoples. The establishment of national museums in Southeast Asia and their exhibitions and national historiography have often been a subject of thorny debate in colonialism and post-colonialism (e.g. McGregor 2004; Moschovi & Supartono 2018). This article has not yet mentioned an issue, the unequal relationship between local archaeologists and western ones who work in this region, especially in terms of resources and technology. Consequently, the development of theories and practice have mostly been conducted by non-Southeast Asians. It is undeniable, however, that Southeast Asian nations have taken pride in the glory of their past and benefited from national identities brought forward by archaeology (Peleggi 2002).

The tradition of using places names to label ancient cultures was introduced to Vietnamese archaeology by Colani and still continues. For instance, as seen above the term Hoabinhian, derived from the provincial name of Hòa Bình, was given to the distinctive lithic tradition dated during the middle to late Pleistocene period. The chronology with technological stages is generally applied but the focus is more on the geographical locations. Further cases have come from other prehistoric sites where Vietnamese village names were adopted to group distinctive archaeological assemblages. The best-known ones are the Dong Son culture in northern Vietnam and the Sa Huynh culture in the central region. The period of these two prehistoric cultures has been agreed to ca. 500 BCE – 100 CE (see Nguyen et al. 2016; Nguyen & Trinh 2014). Their identifications are associated with specific types of artefacts, i.e. Dong Son bronze drums and Sa Huynh three-knobbed earrings. It may be convenient enough to use those terms in a broad sense. However, it is not easy to address certain questions, for example where to draw the boundaries for those two cultures, what cultural characteristics would come in a package other than the distinctive artefacts, and how one should classify the variations of artefacts discovered outside the core areas. The bronze drums identified as 'Dong Son' are also considered to be 'Dian' drums in Yunnan, southwestern China. There is a

problem in classification of bronze drums since they have overlapped in time and shared symbolic designs (Calo 2014: 57-59). Some scholars have suggested that the earliest discovery was by the Dian and later the Dian and the Dong Son developed separately. Some scholars do not agree and have argued that the Dong Son people initiated the bronze drum (e.g. Nguyen 2014). Bronze drums have been found in many regions in Southeast Asia and are considered to be a symbol of inter-regional exchange. Chemical analysis of bronze drums unearthed in southern Vietnam has shown different casting methods to those found in the land of the Dong Son in the north which has been interpreted as illustrating the unity and diversity of the Dong Son when faced with Chinese domination (Pham 2014: 30). One of the problems with labelling an ancient culture with geographical names is that it has created a fictitious centre which may unintentionally undermine and undervalue the diversity of artefact typology encountered in different places. Perhaps there are enough problems in archaeological interpretations being undermined by recently defined state boundaries without the politics of modern ethnicity.

Myanmar has adopted the three-age chronology for the archaeology of the prehistoric period along with classifications of social organisations, which is relatively in line with Thailand (see Gutman & Hudson 2004; Moore 2007) although Moore (2003; 2007) has used some modifications to the three-age terminology with her subdivisions, 'bronze-using era/society/culture'. The archaeological excavations during 1950s – 1980s are said to have found no records of bronze objects, only iron objects have been unearthed. Probably therefor there was no bronze-using period in Myanmar (Moore 2007: 86). Iron artefacts are found co-existing with stone tools, whilst interestingly the iron from the earliest period was of poor quality whereas the stone implements were highly sophisticated (Stargardt 1990:13-14). Later research in Myanmar after the 1990s revealed rich burials with offerings including bronze objects in the Samon Valley, in the upper part of the country (Coupey 2008; Maitay 2008; Rambault 2008; Moore 2003). The scientific dates of the bronze-using period were expected as it is believed to determine the cultural chronology as well as to link up with the international period so filling in a knowledge gap of prehistoric Southeast Asia. Bronze technology and its transmission to this region has long been a subject of archaeological debate since it started in Thailand in the 1970s. Additional data from across Southeast Asia and further afield is needed. The narrative of prehistoric Myanmar has to a certain extent basic similarities to Thailand's where metal finds have been unearthed and the definitive dates for Bronze Age chronology have been determined by extensive careful investigation (e.g. Gutman & Hudson 2004; Pryce et al. 2018; 2015). In conclusion another similar aspect between Upper Myanmar and northeastern Thailand is that their socioeconomic development appears to be different from other regions which do not have defined bronze-using cultures.

The mission of archaeologists is to explain the history of humankind by illustrating the development of cultural and social systems over time. There is no problem in employing the three-age system to outline the prehistoric period. However, it becomes problematic when this three-stage generalisation is embedded too deeply and is transformed into a conceptual framework. This can be seen from the fact that the study of technological succession and transmission, metallurgy in this case, has surpassed the study of other components of ancient societies. It has been given a leading role in the prehistoric historiography and its scientific dates are so focused they sometimes cause fierce debates. Metallurgy certainly needs an overview analysis and sophisticated techniques to recognise also the invisible attributes of artefacts. The history of metallurgy is, however, only one part of social ecology. Moreover, the tradition of bronze-using is not common in certain regions, west-central Thailand being one example.

A Struggle of Prehistoric Periodisation: A Study Case of West-Central Thailand

Western-central Thailand has been a region of prehistoric interest since the early days of modern archaeology in Thailand as has already been mentioned in the early part of the previous section. Surveys and excavations were undertaken by joint-team projects of Thai-Danish in 1960s and Thai-British in 1980s. During those early days when archaeology of Thailand was still in its infancy the archaeologists who worked in the region expressed their views upon the discovered materials according to their conceptual expectations. Nielsen (1962: 13) remarked in his excavation report on a rock shelter in highlands in Sai Yok subdistrict, Kanchanaburi that "...in the first 1.5 m. an iron axe was found, together with mixed Mesolithic and Neolithic materials which can be explained by all these things having been washed down the slope". Nielsen's colleague, van Heekeren (1963) discussed bronze artefacts among various finds from his excavation at the Wang Pho site, situated on the Kwai Noi river terrace. He learned from local people that some Dong Son drums had been found at Ong Bah cave, but he did not adopt the term 'Dong Son culture' to all Bronze Age cultures, as proposed by K. G. Heider. Van Heekeren (1963: 79) also remarked that "stone continued to play an important part throughout the Bronze Age and, in fact stone axes were still widely used."

Larger scale excavations by the Thai-Danish expedition took place at the Ban Kao sites, where forty-four prehistoric furnished burials with distinctive pottery were unearthed. The most striking features of this site are the stylistic pottery, burnish tripods, red-slipped or burnished carinated pots, footed wares and so on. The age of the burials were considered to be from the Neolithic period, except for two of them, which were also found at the Neolithic level, which produced iron objects. Sørensen & Hatting (1967: 109) explained the unexpected iron finds "...Iron Age burials were situated right at the transitional level between its two subphases. This obviously may have caused some mixing up of the habitation refuse." The evidence at Ban Kao has been interpreted as an early farming community dating back to between 1770+140 BCE and 1300+120 BCE with the attributes of grave goods especially pottery which might possibly to have shared their origin with the Chinese Neolithic Longshan culture, but are not associated with the culture found in northeastern Thailand (Sørensen & Hatting 1967 : 111,125-7; Sørensen 1963; Tauber 1973). The proposal of an early date and the hypothesis that the period correlated with China have been challenged by Thai as well as western researchers. Parker (1968) believed that the occupation at Ban Kao might date back to the Neolithic period but the burials should be considered from the Iron Age period dated to 500 BCE – 500 CE. Bayard (1970: 140) has suggested that the various artefacts resembled those found at his Bronze Age site Non Nok Tha. Sangvichien (1966) cast doubt from his anatomical analysis of Ban Kao skeletons that there was a relationship between the populations at Ban Kao and the Longshan. The scientific dates of the site have been confirmed at ca. 1800 BCE, but an earlier date of 2420 BCE was rejected by Sørensen due to the uncertainty of its contextual relation (Tauber 1973). Some archaeologists considered the site to be pre-Metal Age but contemporary to the Bronze Age in the northeastern region (Glover 1991). However major literature of the mainland prehistory has classified Ban Kao in the Neolithic Period and referred to the dates of 2300 – 1500 BCE (e.g. Higham & Thosarat 1998; Higham 2002). Neolithic pottery types have been reported from several sites along the river valleys in the western part of Kanchanaburi and Ratchaburi provinces. The extensive archaeological finds encouraged Saengvichien and Subhavan (1978) to excavate at Kao Sam Liam cave where they discovered a significant amount of pottery. According to their analysis the site of Kao Sam Liam cave has been considered a 'late' Neolithic site which might be slightly younger than the sites in Ban Kao. The two sites shared some types of stylistic pottery.

The discovery of burials at Ban Kao has brought back the issue of the origin of the Thai nation. Sørensen is not the first to propose a hypothesis about the association of the Thai and Chinese

population. An American missionary, W. C. Dodd, who lived in the north of Thailand for more than thirty years and travelled extensively in southern China noticed the similarity of the Thai and Tai language in Yunnan, so he published his study and suggested a relationship between the Thai and Tai people (Dodd 1923). His hypothesis was furthered by the Thai government before WWII and was seen as serving their political ambitions and nationalism (e.g. Buranamatra 1985). During 1960s – 1970s archaeology brought in new evidence to the debate. Archaeologists and historians have cast doubt upon this hypothesis and demanded further evidence to prove it (e.g. Mote 1966; Sangvichien 1966; 1983). However, studies in linguistics and anthropology have pursued the hypothesis and pointed in the same direction (Chamberlain 1975; Pitiphat 1999; 2006). The archaeology of mainland Southeast Asia has been involved in this issue but has kept the degree of interpretation to a relatively moderate level. Ethnicity is subjective and highly political hence it cannot always be proved with artefacts assemblages or burial practices, nor by genetics. A recent genetics study has made an attempt to study the population history of mainland Southeast Asia (Lertrit et al. 2008). Data from Bellwood (2006: 121-2) has raised his concern that genetics, linguistics and archaeology should not be merged at their early stage. The diversity of population movements on the mainland must have occurred frequently but archaeologists need to accumulate data to enable them to see small pictures before constructing a bigger one.

Coming back to the small picture in west-central Thailand, Ban Kao is one of a few sites in the region with a secured date. On the highlands of the Kwai Noi – Kwai Yai rivers valleys other sites with scientific dates include the Khao Talu, Heap and Ongbah caves. The first two sites have been dated to 7580+1050 BCE to 1470+380 BCE and 6790+470 BCE to 1250+370 BCE and are considered to be Hoabinhian (Phu-khajorn 1981). In the Ongbah cave evidence of stone tools with Hoabinhian characteristics, wooden coffins, and iron tools have been found. The layers of early Holocene have been dated between 9230+180 BCE and 7400+140 BCE, whereas the layers associated with metal objects, including the wooden coffins are given the dates of 355 – 240 BCE and it is also suggested that occupation carried on possibly until 200 CE. The Metal Age is said to commence from the fourth century BCE or later (Sørensen 1988:24-8).

On the lowland of the region, I. C. Glover conducted a survey and excavated at Ban Don Ta Phet. Similar aspects to the above have been noted with significant numbers of stone objects but limited bronze finds. Glover said that “during the survey we found no evidence of a local Bronze Age cultural preceding the use of iron for tools and weapons in west Thailand” (Glover 1982: 106). His two-season excavations at Ban Don Ta Phet revealed secondary burials with various types of grave goods such as bronze ware, iron tools, beads and other kinds of ornaments (Glover 1981; 1991). The site was already known for colourful beads and bangles from a previous excavation by the Thai archaeologist, Chin Youdi (1976), and also from a later excavation by Thepsuriyanonta (2001). Exotic ornaments made of glass and semi-precious stone which are considered to be an indicator of long-distance trade with the western world were found. Youdi estimated the date of Ban Don Ta Phet to be 100 – 300 CE. However, the scientific date of the later excavation has indicated the date of 360 – 390 BCE (Glover 1981; 1991). This scientific date has somehow created the perception of a chronological gap between the Neolithic and the time of the appearance of metal. Glover, (1991: 349) remarked that “there was no true Bronze Age in this part of Southeast Asia, despite the existence of quite a number bronze tools... similar situation can be found in Peninsular India between about 1000 BCE and 500 BCE and also in Sub-Saharan Africa.” There is a question of how would one recognise an archaeological site of such period? Would the existence of bronze and iron be a satisfactory indication?

Unlike some sites in the northeast, there is no prehistoric site in the west-central region where an excavation has shown the chronology of more than one cultural period. The largest prehistoric excavations in the region are at the Neolithic site of Nong Rajchawat, which yielded 119 burials and scientifically dated to ca. 2100 – 1000 BCE (Doungsakun 2009; 2019 pers. comm.). This site has shown traces of a shared culture with Ban Kao, although it possessed distinctive pottery styles, for example footed wear with 2 horns and footed ware with 4 breasts. Archaeological data from a later period is believed to have come from burial sites at Khok Phlap (Daeng-iet 1978) and Ban Nam Daeng (Kanjanajuntorn 2013), but these two sites have no scientific dating. The indicators used to suggest the 'Bronze Age' period are bronze objects and semi-precious stone ornaments and the absence of iron and glass. A recently discovered site adjacent to Ban Kao is Ban Tha Poh where furnished burials have been found as well as samples of charcoal and freshwater shell which have been given the scientific dates of cal. 3,083 – 2,953 BP and cal. 4,453 – 4,348 BP respectively. However, the latter is unexpectedly early and has been discarded because of the possible dissociation of the shell from the context (Doungsakun n.d.). The previous date fits in with the concept of a bronze discovery since a grave offering of a socketed bronze axe as well as evidence of metal working have been found. Nonetheless, several years ago around the vicinity of Ban Tha Poh there was an accidental discovery of bronze objects, stone beads and iron tools. Some of those objects have been displayed at the Ban Kao National Museum. Perhaps the typology of the excavated bronze should also be considered in a wider context, i.e. in comparative studies with other regions, where it is assumed that the bronze was transmitted from outside, before settling the date of the site.

Scientific dating is vital to the reconstruction of regional prehistoric chronology, but it is not the only indicator when it comes to dating sites. The sampling criteria and the interpretation of the sample hold the key. Chronology building should not be totally attached to the appearance of certain objects, in this case bronze. Research has confirmed the view that the technologies of stone, bronze and iron can in many cases co-exist (Kanjanajuntorn 2005; 2013). Useful information has also come from the self-teaching and artefacts gathering of the local monk, Phra Kru Sanea, at Wat Phu Nam Ron, Dan Chang district, Suphanburi province. He has built a museum at the temple with the academic assistance of the Archaeology Division 2 Suphanburi, the Fine Arts Department, to display antiquities from the highlands of the province (Figure 5). There is a significant collection of pottery, implements and ornaments made of stone and metal ranging from prehistory to recent history. The prehistoric collections show interesting attributes and variations in the objects which indicate relationships between the highland and lowland, where socio-economic conditions are different. The study of the development of ancient technology should not focus strictly on the transmission or chronological succession. Another aspect that should be considered is the socio-economic conditions that existed at the time when stone, bronze and iron technologies were active. In other words, the understanding of the social ecology of an artefact is no less important than searching for their external connections.



Fig. 5 The temple museum at Wat Phu Nam Ron, Suphnburi province, exhibiting artefacts found in the vicinity of Dan Chang district. Source: Photos by Podjanok Kanjanajuntorn

Archaeologists have discovered evidence and produced sophisticated information on ancient bronze technology, but we understand less about the socio-cultural relationship among neighbouring regions. The resemblance of some pottery and other artefacts between Non Nok Tha and Ban Kao has already been pointed out (Bayard 1970:140), but the prehistoric narratives of the northeast and west-central regions of Thailand are somewhat different. However, it is noticeable that the two regions have a similar practice of supine burial which has been found from the Neolithic through to the Iron Age. In these two regions the dead were disposed of in a similar manner – the skeleton lay on the back with both knees as well as both ankles positioned together, whilst typical grave goods like pottery were often found arranged by the head or by the feet. Interestingly contrasting burial practices have been found in the west-central region. The practice of primary burial in a supine position has been found at the sites of Ban Kao, Nong Rajchawat, Ban Nam Daeng and Khok Phlap. The practice of secondary burials has been unearthed at and Ban Don Pa Phet (Glover & Bellina 2011), Nong Kwang (Kanjanajuntorn 2006; 2009), Hua Tha-le and other sites in Chom Bueng district (Fine Arts Department 1999). These sites with secondary burials have produced simple styles of pottery, typically with a rounded base everted rim and polished or corded-marked surface finishing, unlike the pottery finds at Ban Kao, Nong Rajchawat and Ban Nam Daeng. The differences in shapes and decorations of pottery might reflect both utility and style preferences, but they may be considered less significant in comparison with the contrasting mortuary rites, which reflect beliefs and their ideology of death.

According to the above, the history of the peoples in west-central Thailand is, perhaps, as interesting as much of the history of metal technology transmission. Higham (2002: 27) has suggested the movement of proto-Austronesian speaking people into mainland Southeast Asia around the Neolithic period around 2500 – 2000 BC, where they interacted with the existing population of Austroasiatic speaking people. Archaeological data has suggested the earliest occupations were during early Holocene in the mountainous areas including west-central Thailand where there is evidence of hunters-gatherers subsistence and the practice of flexed burials (see Tayles et al. 2015; Treerayapiwat 2005). The Neolithic period evidence signifies new populations, with knowledge of agriculture and burials in the supine position, who have dispersed from southern China into Southeast Asia. Might it be the case that west-central Thailand has witnessed cultural interactions between the Austroasiatic, proto-Austronesian as well as the Malayo-Polynesian? This resulted in diverse traditions such as different mortuary practices. The flexed burials of the prehistoric tradition appear to have died out, whereas supine burials became common among people on the hinterland. However, secondary burials were commonly found in the islands of Southeast Asia (e.g. Harrisson 1974; Johnson 1992; Lloyd-Smith 2012; Valentin et al. 2015), the Thai peninsular (e.g. Chalosantisakul et al. 2014) and also further from the coastal area in west-central Thailand. The above is only a general observation, but worth investigating further.

Archaeological evidence during the period 500 BCE – 500 CE has brought the west-central region into the archaeological limelight again. Regional research has produced evidence of long-distance trade, such as from the Ban Do Ta Phet site already mentioned earlier, and it has positioned this region as a significant indicator of ‘east meet west’ (Glover 1989). The Don Ta Phet site has become a site reference for such a period because of its secure date. The term ‘Iron Age’ has often been taken out and substituted with ‘late Metal Age’ or ‘late prehistory’ (e.g. Bellina 2003; Glover 1991; Kanjanajuntorn 2005) in order to avoid any misleading connotation. There has also been an attempt to sub-divide the latter part of this period as ‘proto-history’, the time leading to the emergence of early states of the region (Murphy & Stark 2016). However, there are so many factors to be considered before including such a period into the timeframe.

A major characteristic of Southeast Asia throughout prehistory is its non-hierarchical societies. Social stratification and monopolisation are not evident. The advancement of metal technologies has not impeded the progress of social organisations. Archaeologists are determined to explain the pre-conditions and the impetus that lead to the emergence of Dvaravati, a state-like society but it still needs clarification of its place and period. The accounts of the late prehistory of west-central Thailand and other regions include exotic objects, imported goods or special art crafts. These objects are often associated with trade, external contact and social development, and are probably associated with the elite classes at the high end of societies. However, when a society changes and moves forward, certain parts may be unable to adjust. Studies of late prehistoric archaeology have a tendency to concentrate on certain aspects relating to social achievements and power. In some respects, it is as if anthropology used a ‘study up’ approach when normally it employs a methodology of ‘study down’ focusing upon underprivileged and marginalised people (see Nader 1972). Perhaps archaeology should try the ‘study down’ approach devoting attention also to the ordinary, underdeveloped and disadvantaged of the society so as, to enhance our understanding of ancient societies from a different angle. This suggestion is more like a philosophical approach rather than a direct approach for archaeology. It is hoped that this paper contributes to social archaeology and underlines how important the perspective of the social dimension is.

Typology, Stratigraphy, Technology and Beyond

This paper reviews the conceptual framework of the prehistoric archaeology of Southeast Asia. It owes much to the pioneer work in the first half of the twentieth century. Its conceptual framework and methodology have been developed and advanced with aid from new technologies. Unwritten histories have been sophisticatedly reconstructed with timelines. It is believed that researchers are well aware of the limitations of the three-age system chronology and its limit with reference to the broad timeframe. The system is useful when encountering an unknown history and it helps manage archaeological data into a broad chronology. There would not be any problem except that it has unconsciously been allowed to become not only a general timeframe but a conceptual framework also. That is serious because there is a tendency towards idealism with the chronological succession of stone, bronze and iron. It may be the case in certain parts of the world, however, this generalisation may create misperceptions for some regions as has been discussed in the case of west-central Thailand.

The scientific methods of the three-age system concerned – typology, stratigraphy and technology – have helped establish prehistory as a respectable discipline in archaeology. However, the interpretation of archaeology should be taken beyond those methods. The study of archaeology concerns the analysis of objects in relation to their contexts, but archaeology is not only about objects but mainly about people and their societies.

Does Southeast Asian prehistory need a central chronology that is applicable for all regions? The answer is probably yes because all the sub-regions are culturally and socially related to one another. This article has discussed three concepts of classifications, 1) the general three-age system, 2) the geographical system, i.e. by place names, and by 3) social organisations. Each of them is still in use but all have certain limitations. However, one cannot pretend that this article offers a more satisfactory chronological frame to replace any of them, especially the problematic three-age system. Rather, the article may be seen as a mission to search for an idealistic system which takes into account all aspects of prehistoric societies. Such an idealistically universalistic system may be unachievable. However, perhaps more important than seeking such an ideology is to reflect upon the knowledge and conceptual framework as well as to be critical of one's own research questions and methodology.

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