

This is an edited volume of twenty-one chapters resulting from presentations given at the British Academy conference of the same title. It celebrates the achievements and identifies the potential of interdisciplinarity in archaeology, with a particular focus on recent advances made possible through the application of (many recently developed) scientific approaches to answer key questions relating to the adoption of farming in Europe, covering a period from *c* 7000 to 3000 BC. Although organised on broad themes that encompass the origins and spread of Neolithic farming, lifeways and materialities, an overarching concern with scale, together with concomitant issues of complexity and the nature of questions asked by the archaeologist, emerges repeatedly.

A diverse range of scientific methods is represented, including isotope analyses, multi-agent modelling, aDNA and lipid analysis, together with more traditional osteological, zooarchaeological and palaeobotanical techniques and material culture studies. Particularly successful chapters are those that describe projects which have brought together a suite of complementary scientific approaches that form more than the sum of their parts when harnessed in combination. To pick just two examples, Brandt *et al* combine traditional osteological approaches with aDNA, light stable isotope and strontium isotope analyses in their examination of burials from Karsdorf, an LBK (*Linearbandkeramic*) site in Germany, to explore aspects of life that include mobility, familial relationships and community structure, while Bogaard *et al* discuss the value of employing weed ecology alongside stable isotope analysis to elucidate the nature of early agricultural practices. Emphasis is placed upon the meaningful and critical situation of research. Enhancing and developing existing knowledge is a feature of many contributions, and is to be applauded.

While acknowledging the exciting potential offered by the application of scientific techniques, Sheridan and Halstead are both right to urge a note of caution, highlighting the limitations of particular methods, and the necessity for informed application and interpretation. However, one of the strengths of this volume is its focus on research that actively demonstrates the value of *trying* new methods, rather than simply critiquing the status quo and calling for change, a malaise that has, frustratingly, blighted so many volumes in recent years. Key is a willingness to communicate effectively and to be open to adopting new, potentially challenging techniques and ways of working.

It therefore seems particularly apposite that these composite approaches, incorporating

methods developed in diverse specialisms, should find focus in research dedicated to the adoption of farming. New ways of being, of engaging with the world, inevitably involve experimentation, innovation and an element of risk, the impact of which can never be fully appreciated without the benefit of hindsight. Both the development of farming and a new cross-disciplinary, scientific archaeology arguably engender new ways of being: the depth of that impact is, of course, a matter of scale.

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The Origins of the Civilization of Angkor. Volume 1: The Excavation of Ban Lum Khao. Edited by C F W HIGHAM and R THOSARAT. 300mm. Pp xvi + 343, 301 col and b&w ills, 85 tables. The Fine Arts Department of Thailand, Bangkok, 2004. ISBN 9744176881. Price not given (hbk).

The Origins of the Civilization of Angkor. Volume 2: The Excavation of Noen U-Loke and Non Muang Kao. Edited by C F W HIGHAM, A KIJNGAM and S TALBOT. 300mm. Pp xxiv + 361, 536 col and b&w ills, 101 tables. The Fine Arts Department of Thailand, Bangkok, 2007. ISBN 9789744178237. Price not given (hbk).

The Origins of the Civilization of Angkor. Volume 3: The Excavation of Ban Non Wat: Introduction. Edited by C F W HIGHAM and A KIJNGAM. 300mm. Pp xvi + 264, 332 col and b&w ills, 25 tables. The Fine Arts Department of Thailand, Bangkok, 2009. ISBN 9789744179975. Price not given (hbk).

The Origins of the Civilization of Angkor. Volume 4: The Excavation of Ban Non Wat. Part 2: The Neolithic Occupation. Edited by C F W HIGHAM and A KIJNGAM. 300mm. Pp xiv + 223, 257 col and b&w ills, 40 tables. The Fine Arts Department of Thailand, Bangkok, 2010. ISBN 9789744173898. £50 (hbk).

The Origins of the Civilization of Angkor. Volume 5: The Excavation of Ban Non Wat. Part 3: The Bronze Age. Edited by C F W HIGHAM and A KIJNGAM. 300mm. Pp xxiv + 598, 665 col and b&w ills, 46 tables. The Fine Arts Department of Thailand, Bangkok, 2012. ISBN 9789744176271. £100 (hbk).

The Origins of the Civilization of Angkor. Volume 6: The Excavation of Ban Non Wat. Part 4: The Iron Age, Summary and Conclusions. Edited by C F W HIGHAM and A KIJNGAM. 300mm. Pp xviii + 403, 369 col and b&w ills, 36 tables. The Fine Arts Department of Thailand, Bangkok, 2012. ISBN 9786162830099. £100 (hbk).

This piece reviews the six volumes of *The Origins of the Civilization of Angkor* (henceforth TOCA) edited by Charles Higham *et al.*¹ The volumes are the result of more than twenty years of archaeological research in north-east Thailand, focusing specifically on the Mun Valley region and incorporating both survey and excavation techniques. In the words of the editors, the project was designed 'to illuminate the nature of prehistoric societies in Southeast Asia leading to the development of early states'.² To achieve this goal, they have undertaken the most sustained and extensive archaeological excavations anywhere in south-east Asia and their findings have transformed how we now view Thai and, by extension, regional prehistory.

But first, a caveat: I will limit my review to a summary of the volumes and a discussion of their overall conclusions. After this I will give my opinion on the impact that the volumes and the TOCA project have had on both Thai prehistory and the practice of south-east Asian archaeology in general. The review therefore does not go into the details and technical minutiae of each specific section and sub-section. This would be beyond both the scope of the review and, more importantly, my expertise. For instance, sections that deal with subjects such as the faunal and fish remains, glass bead analysis, detailed ceramic and burial assemblages and so on, would be much better served by being reviewed individually by specialists in these respective areas.

The volumes cover four sites, excavated over a period spanning 1995–2007. All four sites are ringed by moats and banks and are located within an approximately 10km radius of each other in the upper Mun Valley, Nakhon Ratchasima province. Volume 1 discusses the site of Ban Lum Khao; volume 2 the sites of

Noen U-Loke and Non Muang Kao; volumes 3–6 the site of Ban Non Wat.

The site of Ban Lum Khao was chosen because of the presence of Bronze Age occupation detected in the preliminary surveys. The researchers aimed to recover as large a sample of Bronze Age material as possible because, prior to this, relatively little work had been done on sites of this period. They also wanted to assess changes that took place once iron became available. Excavations took place between November 1995 to January 1996 and uncovered four phases of occupation, stretching from the late Neolithic (*c* 1280 BC) to three Bronze Age mortuary phases that appear to taper out at *c* 600–500 BC.

The site of Noen U-Loke was excavated over the course of two seasons in 1997 and 1998, while Non Muang Kao was only investigated for one. Both sites date to the Iron Age and provide an obvious progression for the project in regard to its aims in understanding the prehistory of the region. The cultural sequences start at the late Bronze Age (*c* 600–500 BC) and continue through four phases of Iron Age occupancy spanning about 700 years. Limited excavations at Ban Non Kao showed a similar Iron Age culture, but the site was not researched in depth. Through analysis of the mortuary goods in particular, the authors argued that the site of Noen U-Loke provided evidence for the presence of elite leaders and also specialised craftspeople. These factors, they argue, indicate prehistoric communities on the cusp of making the transition to 'civilization'.³

Chance and circumstance can sometimes come to the aid of an archaeologist and this was the case with the TOCA project when the village headman of Noen U-Loke stipulated the building of a site museum and road as a precondition for further excavation. Not bowing to this request, the project instead turned its attention to the site of Ban Non Wat just 2km away. As fate would have it, this site turned out to contain one of the most complete and longest stretching archaeological occupation sequences ever excavated in south-east Asia.

Volumes 3 to 6 are dedicated to the seven seasons of field research that were carried out at Ban Non Wat between January 2002 and December 2007.⁴ The excavations exposed a total area of 906 sq m, resulting in approximately

1. Volumes 3–6 have also been reviewed elsewhere. For instance, volume 3 has been reviewed by Elizabeth Moore (Moore 2011) and volumes 4–6 by Joyce White (White 2013). Charles Higham has also responded to White's review (Higham 2013).
2. Higham and Thosarat 2004, 333.

3. Higham *et al* 2007, 609.

4. Excavations are still in progress at Ban Non Wat, but are now under the direction of Dr Nigel Chang of James Cook University, Australia.

3,000 sq m of excavated material that offered up more than 20,000 artefacts and 635 human burials – by far the largest data set on prehistoric society to date anywhere in south-east Asia. This assemblage has been classified into twelve phases, stretching from late hunter-gatherers to Neolithic (c 1650 BC), up to the early historic period of around AD 500 onwards. Each phase is characterised by distinctive mortuary and occupational activity. The twelve phases are: a hunter-gatherer phase, two Neolithic phases followed by five Bronze Age phases and four Iron Age phases, the last of which, Iron Age 4, straddles the boundaries between prehistoric and historic phase for north-east Thailand.

As noted at the beginning, a complete analysis and critique of these six volumes is beyond the scope of this review. Below, I highlight instead some of the major achievements and outcomes of the TOCA project as well as a number of points where my opinions diverge from those of the authors.

The sheer volume of burials excavated – spanning a wide range of periods from Neolithic through to late Iron Age (early historic / proto-historic period) – has revolutionised our understanding of mortuary traditions within Thailand and south-east Asia at large. The variation in wealth distribution over these periods sheds new light on changes in social hierarchies and the rise of social complexity. In particular, the project has shown that the Bronze Age was shorter and more dynamic than previously thought, with variations in grave goods apparent between phases. In certain incidences subsequent mortuary phases are less well endowed than those that preceded it, indicating that wealth could be short-lived.

Another major achievement of this project was its presentation of a refined chronology based on more than seventy AMS radio-carbon dates obtained from freshwater bivalve shells recovered from burials.⁵ Before this, the

5. In her review, White (2013, 909) has questioned the suitability of freshwater bivalve shells, arguing that they may produce ‘erroneously young radio-carbon determinations’. However, the authors used a number of modern specimens collected at the site as controls as well as comparisons with charcoal-based samples. In both cases the excavators report good agreement between these results (see Higham and Kijngam 2010, 19). See also Higham’s response to White’s review in *Antiquity*, where he counters her claims regarding the potential

prehistoric sequence of north-east Thailand was primarily based on pottery chronologies and relative dating techniques supplemented by small numbers of radio-carbon determinations. By systematically dating samples from each of the twelve phases, the excavations at Ban Non Wat produced the first complete chronological sequence spanning the Neolithic to late Iron Age / early historic period. It therefore serves as an indispensable benchmark not only for Thai and south-east Asian archaeology but, arguably, also for the discipline at large.⁶

The first point of contention I have is that the authors appear to have become victims of their own success. By this I refer to the perennial problem of archaeological bias. Prior to their project, our knowledge of Thai prehistory came from a handful of sites, the best known being Ban Chiang and to a lesser extent Non Nok Tha, neither of which had been excavated on the same scale as those of the TOCA project. Therefore, at present the data sets for the region are somewhat skewed. Thanks to these six volumes, we now have extensive information about the upper Mun river valley and its occupational sequences. However, we have comparatively little data from the two other major river systems in north-east Thailand, namely the Chi and the Mekong. Therefore it is difficult to accept completely the authors’ assertions about the importance of the Mun river system over these latter two rivers when the data for them are not present. My own research in the Chi river system, for instance, indicates that by the historic period at least (c sixth to seventh centuries AD) a number of large-scale and important urban centres existed.⁷ Sites such as Muang Fa Daed, Kantharawichai and Ban Kon Sawan most likely arose out of well-developed prehistoric societies that may match the complexity and wealth of those in the Mun. Of course, this is an argument from the absence of evidence and the authors cannot be held responsible for the lack of data from these regions. But I would like to sound a cautionary note in terms of the apparent primacy given to the Mun. It is to be hoped that future research will flesh out the prehistory of the region more fully, thus allowing more accurate comparisons to be made between the three river systems.

inaccuracy of the dating techniques (Higham 2013, 1247).

6. For a detailed overview of the dating sequence and issues regarding Thai prehistory and south-east Asian archaeology in general, see Higham *et al* 2011.

7. Murphy 2013.

A second issue I would like to raise is what might be referred to as an archaeological 'bait and switch' tactic by the authors in terms of the title of their research project and publications, namely, the indication that their project relates to the 'origins of Angkor'. While a greater knowledge of prehistory in north-east Thailand can indirectly aid our understanding of how prehistoric societies in today's Cambodia developed and eventually evolved into what was to become pre-Angkorian and then Angkorian society, I do not see a direct link between the two. I highlight this point specifically because there is the possibility that non-specialists in the field may interpret the results of the six volumes as indicating that the origins of the Angkorian civilisation lie in north-east Thailand.

It should be noted that the geopolitics of south-east Asia have played a role here too. When the Khmer Rouge seized power in 1975, archaeology in Cambodia came to a standstill. Access to the country by foreign researchers did not resume until some twenty years later, when the country began to open up again in the mid-1990s and return to some form of normality. Accessibility to potential prehistoric sites in Cambodia, which would arguably illustrate a much more direct link with the Angkorian culture that followed, was not a realistic option until recently.⁸

Once again, archaeological bias comes into play. The authors make a somewhat tenuous link between developments in the Mun river valley and Angkor by inferring that these sites and their respective cultures are mirrored by sites in northern Cambodia.⁹ Until a large enough sample of sites within the latter region is excavated, however, these inferences remain unsubstantiated. The authors also at times attempt to sustain the link between the origins of the Angkorian civilisation and the Mun river valley by highlighting connections with the so-called 'Dangrek Chieftains', or 'pon'.¹⁰

The authors also try to indicate further links by emphasising that Phimai becomes an Angkorian centre in the eleventh to twelfth centuries and that construction of the impressive religious sanctuary of Phnom Rung also took

place within the region in nearby Buriram province.¹¹ Furthermore, they stress that the family of Jayavarman VII (r. AD 1181–1218), one of Angkor's greatest kings, came from the Phimai region. However, these events took place much later than the chronological phases represented at Ban Non Wat and after the region had already been under the control of the Angkorian empire for the better part of 200 years. The presence of both Angkorian architecture and prominent families can be attributed to the influx of Khmer into the region from around the ninth century onwards. Ban Non Wat's last phase of occupation, on the other hand, is approximately 400 years prior to this, in the fifth century.

That is not to say that Zhenla / pre-Angkorian influence did extend into the region of the Mun river from around the sixth to seventh centuries onwards, and the elite among the inhabitants of Ban Non Wat may in fact represent 'pon' as Higham suggests.¹² While similar trends were taking place within north-east Thailand and northern Cambodia during this period, it is misleading to assert the primacy of the Mun river valley in regard to the 'origins of Angkor'. It is generally agreed that the Angkorian civilisation grew out of the preceding Zhenla period centred on Isanapura (modern-day Sambor Prei Kuk)¹³ to the south east of the site of Angkor, Wat Phu Champassak in southern Laos near the confluence of the Mun and Mekong, and also to developments in the Mekong delta around sites such as Angkor Borei and Phnom Da generally associated with the 'Funan' culture.¹⁴ These two cultures in turn grew out of preceding prehistoric societies within what is today modern Cambodia. It is to these cultures and areas that I suggest we should turn in order to discover the 'origins of Angkor'. In many ways the TOCA project has set the example to be followed in this regard. A similar project of this scale, duration and professionalism, dedicated to prehistoric Cambodian sites either within the region of Angkor or northern Cambodia, would surely provide invaluable answers relating to the rise of this civilisation.

Despite this reviewer's reservations in terms of the authors' claims regarding the origins of Angkor, the TOCA project and its six volumes are a remarkable achievement that has clearly set the benchmark for all other excavations in

8. A number of prehistoric sites have now been investigated in Cambodia. See, for example, O'Reilly 2004 and O'Reilly and Shewan forthcoming.

9. Higham *et al* 2007, 609.

10. Higham and Kijngam 2012, 386–7. For a fuller discussion of the 'Dangrek Chieftains' and the role of 'pon', see Vickery 1998.

11. Higham *et al* 2007, 595.

12. Higham and Kijngam 2012, 386–7.

13. Vickery 1998; Parmentier 1927.

14. Stark 2004.

Thailand and south-east Asia in general. The contribution it has made to our knowledge of south-east Asian prehistory is unparalleled, with its exploration of mortuary traditions and a refined chronology of Thai prehistory being its standout achievements. It has also provided a fertile ground for many Thai and international archaeologists to develop their careers and specialisations and as such contributed greatly to the profession in this capacity. In closing, the six volumes are a testament to the dedication and determination of its lead author, Charles Higham, and a fitting legacy to his archaeological career, one which I daresay will not be equalled for many years to come.

Higham, C 2013. 'Ban Non Wat: a great site reviewed', *Antiquity*, **87**, 1246–9

Higham, C, Higham, T and Kijngam, A 2011. 'Cutting a Gordian Knot: the Bronze Age of southeast Asia: origins, timing and impact', *Antiquity*, **85**, 583–98

Moore, E 2011. 'Review of C.F.W. Higham and A. Kijngam (eds) *The origins of the civilization of Angkor, volume 3. The excavations of Ban Non Wat: introduction*', *Antiquity*, **85**, 677–8

Murphy, S A 2013. 'Buddhism and its relation ship to Dvaravati period settlement patterns and material culture in north-east Thailand and Central Laos ca. sixth–eleventh centuries AD: a historical ecology approach to the landscape of the Khorat Plateau', *Asian Perspectives*, **52** (2), 300–26

O'Reilly, D 2004. 'Excavations at Phum Snay, Cambodia', *Bulletin Indo-Pacific Prehistory Ass*, **24** (2), 129–32

O'Reilly, D and Shewan, L forthcoming. 'Phum Lovea: a moated precursor to the *Pura* of Cambodia? Socio-political transformation from Iron Age settlements to early state society', *J Southeast Asian Studies*

Parmentier, H 1927. *L'art Khmèr primitif*, Publications de l'École Française d'Extrême-Orient XXI–XXII, Paris

Stark, M 2004. 'Pre-Angkorian and Angkorian Cambodia', in I C Glover and P Bellwood (eds), *Southeast Asia, From Prehistory to History*, 89–119, Routledge Curzon, London and New York

Vickery, M 1998. *Society, Economics and Politics in Pre-Angkor Cambodia*, The Centre for East Asian Cultural Studies for Unesco, Tokyo

White, J 2013. 'Ban Non Wat: new light on the metal ages of southeast Asia', *Antiquity*, **87**, 909–11

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Gristhorpe Man: a life and death in the Bronze Age. Edited by NIGEL D MELTON, JANET MONTGOMERY and CHRISTOPHER KNÜSEL. 290mm. Pp xii + 217, ill. (some col), maps, plans. Oxbow Books, Oxford, 2013. ISBN 9781782972075. £60 (hbk).

A large oak-tree trunk coffin burial was excavated from a barrow at Gristhorpe, near Scarborough, Yorkshire, in July 1834 by the antiquarian, William Beswick. The recovered skeleton underwent a series of contemporary conservation and preservation techniques, including being boiled in a glue solution, prior to being wired together in an extended position for the purposes of display. This burial assemblage has proved to be one of the best-preserved log-coffin Bronze Age burials in Britain. The skeleton, wrapped in animal skins and buried with a bronze dagger with a whalebone pommel, a bark vessel and worked flints, became a central attraction for the Scarborough Philosophical Society's Museum and the focus of local interest for more than 175 years.

Refurbishment of the museum in 2004 provided an opportunity for modern scientific investigation of these ancient remains and associated grave goods. This book incorporates the results of multidisciplinary scientific studies undertaken during the years 2005 to 2008, co-ordinated by the Department of Archaeological Sciences at Bradford University. The results of these specialist investigations are explored within their Bronze Age cultural context. Furthermore, the implications and significance of this early archaeological investigation are considered with regard to the contemporary foundation and development of archaeological thought, theory and practice.

The closure of Scarborough Museum provided an unrivalled opportunity to analyse this burial assemblage in its totality, to reconsider each piece of evidence within the total context of the discoveries, and thus to provide new insights into this Bronze Age funerary rite for an eminent individual. The unusual burial rite, and a